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IAPS 2012 Abstract Book

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22. IAPS CONFERENCE

Human Experience in the Natural and Built Environment:

Implications for Research Policy & Practice

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FOREWORD

Human Experience in the Natural and Built Environment: implications for research, policy and practice

Today's rapidly changing world and its associated social and environmental challenges means that it has never been more important for research communities and those responsible for practice and policy decision making to be mutually well informed. Maximising the societal benefit of environment-behaviour studies more than ever requires research activity to reflect and respond to the complex problems and opportunities of real-world situations and for its outcomes to translate into areas of application and expertise in the field. For over thirty years the IAPS community has developed unprecedented resources from its autonomous research and critical thinking across a broad spectrum of areas relating to human-environment relations. In consequence it has unparalleled importance in facilitating effective communication and exchange, bridging research, practice and policy to optimise societal and environmental impact.

The 22nd International IAPS conference is a collaborative event jointly organised by the University of Strathclyde (Dr Ombretta Romice), University of the West of Scotland (Dr Edward Edgerton) and University of Sheffield (Dr Kevin Thwaites). This reflects and expresses an interdisciplinary framework of psychology, urban design and landscape architecture as a foundation for knowledge exchange between research, policy and practice within the overall theme of human experience in the natural and built environment. Contributions were invited to focus on three main areas: *geography and context; planning, design and evaluation; and implementation and management*. By this means, reflecting in particular their implications in both developed and developing world contexts, the conference will trace and record development in research within these areas and seeks to advance practice and policy by facilitating exchange between researchers and those engaged with development, management and design.

This Book of Abstracts expresses the richness, diversity and quality of work which the conference themes have attracted, demonstrating a global consensus of interest in the importance of developing greater understanding of the nature of human experience in the natural and built worlds and the application of that understanding. All sessions in the scientific programme reflect a wide range of research, knowledge exchange, and practice within the overarching conference themes including those relating to: the role of communication on issues of social and environmental development; sustainable approaches to transportation, organisational management and infrastructure; social and environmental responses to urban regeneration and economic development; environmental issues relevant to energy conservation; human relations with wildlife and natural habitats; social value from land and aquatic environments, and much more besides.

Collectively this presents a scientific programme of exceptional quality and breadth including 21 symposia, 59 posters and 48 paper sessions delivering over 340 paper presentations. The conference organisers are especially pleased to present, in addition, 15 case study papers, a new category of contribution specifically reflecting the conference aim to bridge research, policy and practice across the range of topics. Other events also contribute to this aim, including a special meeting of the Urban Morphology and Representation network which will bring IAPS expertise together with members of the local Barras and Calton community in Glasgow to discuss the future regeneration of the area. This is an excellent example of how the conference has been able to reflect its core themes by making research expertise accessible to a real-world practice context. Other special events of the conference will

include a Sustainability Science Group meeting and an initial discussion on a research project on the therapeutic role of construction projects in communities.

We would like to take this opportunity to thank everyone who has contributed to what we are confident will be a memorable and valuable conference, and in particular to thank and pay tribute to the contributions of our three distinguished keynote speakers, Professors Ian Bentley, Nabeel Hamdi and Gary Evans. Ian Bentley will cross scientific and design traditions to address the idea that we should apply ecological thinking to the design of human settlements in an attempt to better understand how to make human habitats that have benign ecological impacts. Nabeel Hamdi deals with the changing nature of practice in the context of some of the big issues impacting on people in the informal settlements of cities in the South, including: the changing scope and purpose of practice; the life and organisation of place; and the nature of professional interventions and the changing roles and relationships of practitioners to people and place. Gary Evans will focus on evidence revealing that poverty in childhood leads to physical and psychological difficulties throughout life, illustrating some of the negative impacts of childhood poverty and their relationship to psychosocial and physical risk factors low-income children must confront.

We are delighted to welcome all participants to this conference at the University of Strathclyde, Glasgow, UK and we hope that the content of this book will be useful during the conference and as a reference tool for research interests, bringing delegates with shared interests together.

Ombretta Romice, Edward Edgerton and Kevin Thwaites

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KEYNOTES

KEYNOTES

PRACTICE IN THE INFORMAL CITIES OF EVERYWHERE

HAMDI, N.

This presentation will focus on the changing nature of practice in the context of some of the big issues impacting people in the informal settlements of cities in the South. It will first profile some of the key themes dominating urban development today and in particular issues of vulnerability, inequity, social exclusion, identity and belonging. The impact of these issues on urban form will be highlighted.

In its second part the presentation will offer three themes to think about in response. First, the changing scope and purpose of practice, in particular insuring that practice is both practical in its objectives and strategic in its purpose. That is, triggering positive change, dealing with some of the primary causes of problems, not just symptoms, managing constraints, going to scale, for example.

The second theme of the paper will deal with the life and organisation of place. It will argue the need to craft a careful balance between the structures we design and those which we enable to emerge - between freedom and order, local organisations and urban, national, and even global ones, if we are to maintain the social and economic vitality of place in the face of the forces of globalisation.

The third theme will deal with the nature of professional interventions and the changing roles and relationships of practitioners to people and place. It will review four integrally related responsibilities which practitioners are bound to adopt if they are to respond to the themes and issues outlined above: providing, enabling, adapting and sustaining.

The presentation will conclude with a number of key principles for practice and for the code of conduct of practitioners drawn from projects and programmes internationally.

THE ENVIRONMENT OF CHILDHOOD POVERTY

EVANS, G.R.

Considerable evidence reveals that poverty in childhood leads to physical and psychological difficulties throughout life. In this talk I will briefly illustrate some of the negative impacts of childhood poverty and then argue that one reason for these adverse effects is because of the psychosocial and physical risk factors low-income children must confront. I will then illustrate with an 18 year longitudinal study how cumulative risk exposure across physical and psychosocial risks may help us understand the links between poverty and adverse developmental consequences

HUMAN SETTLEMENTS AS NATURAL HABITATS: A FRAMEWORK FOR DESIGN & RESEARCH

BENTLEY, I.

This paper addresses the conference's underlying theme: the idea that if we are to address today's intractable problems, we shall need to improve the relationship between research and practice in regard to settlement design. Thoughtful members of the research and practice communities usually want to improve these links, but currently find themselves separated by a major ideological divide.

Most researchers see themselves as part of a broader scientific community, whilst design practitioners often feel that they are linked more closely to the world of the arts and humanities. The differences between these perspectives generate important differences between the issues that stand out, and those that are hidden. In turn, these are linked to different sets of values, and different conceptions of what counts as data as between research and design practice. This paper is offered as a contribution to the ongoing debate about how this divide might best be bridged.

The paper is founded on the idea that we should apply ecological thinking to the design of human settlements. This idea attracts both scientists and artists at present, because it goes to the heart of what many of us see as the key settlement-design problem of our time: how to make human habitats that have benign ecological impacts. The paper explores how, in practice, this broad and rather abstract idea can be used to build bridges across the conceptual divide that separates the scientific and design traditions.

Following Giddens's "duality of structure" approach, the paper argues that we can only create new concepts by creatively using the stock of ideas we already have. Once created, the new concepts themselves become part of this stock; available for new creativity. The new "bridging" concepts we need must therefore be constructed from new ways of using existing ideas that are already in good currency within the research and design traditions; despite the fact that these ideas currently keep the two traditions apart.

The paper links ecological ideas from the scientific tradition with urban morphological ideas from the design tradition to construct a common vision of human settlements as ecological systems. The paper starts building this common vision from the design tradition's idea of "morphological levels"; seen as settlement subsystems that are distinguished one from another not only spatially, but also because they have different cycles of change. It goes on to link this with the scientific, ecological understanding that natural systems are formed from "systems nested within systems", and that the interactions between these are crucial to the working of the whole.

Using a range of practical examples, the paper identifies the existence of "keystone spatial relationships" between morphological subsystems. These are seen as analogous to keystone relationships in ecology, because they have disproportionate impacts on the working of the settlement system overall.

The argument concludes by demonstrating that these keystone spatial relationships appear to have evolved independently across a range of cultures that are otherwise very different. This suggests that a common vision of human settlements as natural habitats, opening a door to better cooperation between designers and researchers, might be able to sustain a transcultural relevance through a globalising future.

MEMORIAL LECTURE

MEMORIAL LECTURE

THE FLÂNEUR-RESEARCHER: AN APPRECIATION OF THE LIFE AND WORK OF GABRIEL MOSER

UZZELL, D.

Gabriel Moser was an important and influential figure for environmental psychology, not only in France, but internationally. In the obituary I wrote for the *Journal of Environmental Psychology* (2011; 31, 3, 272-273) I summarised inadequately his academic achievements. In the title of this Memorial Lecture, I have purposely referred to his 'life and work'. These were inseparable. In this lecture I want to set his life and work into the historical and cultural context of Paris, a city that was very important to him personally, for his relationships and the way he was in the world. Drawing on the concept of the flâneur through Walter Benjamin's writings as well as subsequent theorists, I will discuss Gabriel as the flâneur-detective, the flâneur-collector, and most importantly, the flâneur-researcher.

SYMPOSIA

SYMPOSIA

S1 ANTHROPOLOGY, ETHNOGRAPHY, & PEOPLE-ENVIRONMENT STUDIES

S1.1 TOWARDS A THEORETICAL BASIS FOR ANTHROPOLOGICAL PEOPLE-ENVIRONMENT STUDIES

LUCAS, R

Manchester Metropolitan University, United Kingdom

This paper presents a survey of the theory that underpins the strong correspondence between contemporary social anthropology and the field of people-environment studies. As the study of people and their life-worlds, anthropology has a great deal to contribute to people-environment studies - carefully argued and still contentious in places.

Rather than exploring a particular project or case study, this paper seeks to demonstrate the applicability of anthropological thought and ethnographic practices to both the understanding and the design of the built environment.

This is fraught with difficulties as well as correspondences, of course, and the fundamental nature of architecture and urban design as interventionist is the most problematic of all. Anthropology is conventionally understood as an observational practice; one which stresses engagement and participation, but methodologically atheist, apolitical, and philistine. The notion of taking these observations and making fundamental changes to the environment in question is often anathema to anthropologists, where it is second nature to architects and urban designers.

As an organisation, IAPS has a clear cross-disciplinary approach, and its stated goal is for a greater understanding of the relationship of people with their environment. Notable contributions to this have been made by anthropologists, of course, but there is a clear role for a deeper engagement with anthropological theory as complementary to the focus of IAPS on environmental psychology and sociology.

Anthropological theory, from conventional studies of class, gender, alienation, embodiment, agency, and dwelling can all inform and frame the multitude of different ways in which it is possible to engage with the environment - built or otherwise. There is after all, no single truth - but rather a great many overlapping ways of being human. This being is deeply contextualised in that we always live somewhere, and that our engagement with that place is informed by so many individual, social, and cultural concerns as to suggest a set of scales akin to the designer who moves from 1:1000 to 1:200 to 1:50, 1:5, or even 1:1.

S1.2 RE FRAMING WHAT INNOVATION COULD BE: OBSERVATION, JUXTAPOSITION, AND CHALLENGING TAKEN FOR GRANTED ASSUMPTIONS

GUNN, W[1]; CLAUSEN, C[2]

[1]Mads Clausen Institute, SDU, Denmark; [2]Danish Technical University, Denmark

In our paper we focus on understandings of innovation within a participatory innovation research project. We ask do company and university partners learn from being involved in a participatory innovation project? and how do they uptake "users" knowledge within an organization or institution? Company and university researchers involved in the development of indoor climate products and systems of control claims that there is limited innovation potential generated from users of indoor products and systems, and that there are only small movements (if any) within existing frameworks of innovation in the building industry resulting from users knowledge. Drawing on materials generated through the three-year SPIRE (Sønderborg Participatory Innovation Research Centre) research project, "Indoor Climate and Quality of Life"- offers an alternative approach towards designing indoor climate that – challenges current assumptions of innovations. Rather than reproducing existing ways of doing innovation we claim that through being confronted with design materials, generated through ethnographic and design anthropological investigations, different kinds of imaginings were made of what could be possible. Learning through practices of participatory innovation takes place not through changing "others" practices but through re-framing what innovation could be. Taking up user knowledge presents difficulties for doing innovation in a system where completely different kinds of knowledge(s) exist. By involving knowledge(s) generated through ethnographic and design anthropological investigations configuration of knowledge(s) was challenged, where design takes place was questioned and the notion of the user was reconsidered. Instead of problematizing the uptake of user knowledge(s) of what it means to inhabit indoor climate we present a more positive account.

S1.3 DESIGNING ENVIRONMENTAL RELATIONS: PERCEPTION, FORM AND EXPERIENCE

ANUSAS, M

University of Strathclyde, United Kingdom

This paper argues that modern physical design formations, which are based upon an object-based way of perceiving the world, have the effect of inhibiting rich and engaged relationships between people and their surrounding environments. Through drawing on critical perspectives in philosophy, anthropology, design, architecture and landscape architecture, the paper links anthropological critiques on the dualism of society and nature, with distinctions between human-made and natural objects, built and natural environments, physical surfaces and infrastructures and cartesian divisions between mind and body. These conceptions are shown to influence design thinking, and consequently, the material form of everyday products, architectures and spaces. With this, modern design demarcates physical boundaries within everyday environments and limits the human experience of physical formations to shallow interactions, simplified material contact and reduced structures of skill and practice. The result of this is a modern material culture which affords little opportunity for an environmental 'education of attention' (Gibson 1979: 254) which might draw human experience into the sensorial depths and complexities of environments around them; and consequently encourage inhabitants to become aware of how daily life is continually

sustained by flows of matter, energy and life. In response to this critical argument, the paper concludes through discussing an alternative perspective on environmental perception put forward by Ingold (2011) and extends this line of thinking to consider its implications for design practice. Presented here are examples of emergent and conceptual design practice in product, architectural and spatial design, which have the potential to disrupt conventional structures of perception and form, and draw people into intricate and layered environmental experience. The ideas in this paper emerge from current research work by the author and they are also informed by a recent international interdisciplinary research project between designers, artists, anthropologists and environmental researchers entitled 'Designing Environments for Life' (Ingold et al 2010). Elements of this paper were recently presented to the Scottish Government as part of a research and policy knowledge exchange activity. However, the ideas within the paper are not limited to a Scottish context, and their presentation at IAPS 2012 is to explore their relevance to a wider international audience in environment research and policy making.

S2. Case Studies of Post Occupancy Evaluations in Green Buildings

S2.1 Summer, Passive Housing and User Behaviour – A Field Study from Salzburg, Austria

Keul, AG[1]; Salzmann, R[1]; Lehmden, A[2]

Salzburg University, Austria; [2]Wienerberger AG, Austria

The successful implementation of a new housing technology needs social acceptance which has to be tested by post-occupancy evaluations. In discussions about strengths and weaknesses of passive housing, possible overheating in summer is a main critical point. A field project supported by Wienerberger A.G. asked about user behaviour and satisfaction in passive housing under summer conditions.

Ten apartments in three passive housing estates of Salzburg City, Austria, were analysed. Four apartments were part of Paradiesgarten, 5-floor low-energy brick buildings, three in Postareal, a concrete high-rise (8-floor) block, and three in Samer Moesl estate, a 3-floor wood construction. Participants received a diary form and were asked to evaluate three times per day their subjective living room temperature, humidity and air quality, and to record their sun shading and ventilation behaviour without behaviour briefings. Temperature/humidity loggers were installed in the living and sleeping rooms of every apartment. For every estate, an outside temperature logger profile was obtained. The survey period from the 1st to 18th, August, 2011 included several days with maximum temperatures over 25°C. Debriefings on optimum behaviour were given at the end of the project.

In total 322 diary records were obtained from the ten apartments together with a parallel 3,812 hourly temperature/humidity logger record series for two rooms each. A correlation analysis of the three estates showed that about 90% of the diary records came from living rooms. Logger living room temperatures correlated significantly with the number of persons present, and with subjective air quality. Logger living room temperatures also correlated significantly with subjective temperature wishes (lower/okay/higher) at Paradiesgarten and Samer Moesl, but not at Postareal. Logger living room humidity did not correlate with subjective humidity wishes.

Only at Paradiesgarten, measured living room air temperatures correlated significantly with shading behaviour. Effective self-reported ventilation behaviour (windows closed at daytime, open in cooler night-time) correlated with living room air temperatures in all three estates.

Problems with high living room temperatures were caused by open bottom-hinged sash windows at Paradiesgarten estate and by open balcony doors at Postareal estate. In 295 self-reported diary episodes, 69% recorded effective and 31% ineffective summer ventilation. As a result of the Salzburg field project, it is recommended to instruct occupants of passive housing how to shade and ventilate their apartments in hot summer periods to optimize performance of this building type and to reduce complaints.

S2.2 Occupant Behaviour in Multi-tenanted Office Buildings and Impacts on Energy Efficiency

Senick, J[1]; Andrews, C[1]; Sorensen Allacci, M[1]; Wener, R[2]
[1]*Rutgers University, United States;* [2]*Polytechnic Institute of New York University, United States*

Multi-tenanted buildings are notoriously complex to manage due to heterogeneous populations, work objectives and styles, hours of operation and other factors, requiring an extraordinary amount of flexibility in building design and operation that often is not present. This research on energy efficiency and occupant behaviour in multi-tenanted buildings investigates direct and indirect effects on energy use taking into account such factors as developer/owner requirements, building design and systems, construction outcomes, and building operator and occupant behaviour. Field work was conducted between 2008 and 2012 in the Greater Philadelphia region and focused on comparison of two adjacent LEED certified buildings. Research design and methods were drawn from the tradition of comparative post occupancy evaluation (POE). Data collected and analysed for this evaluation includes building owner, design team and tenant interviews, tenant and occupant focus groups, an occupant survey, building walk-through observations, utility bill and building automation system sensor log analyses, and building performance benchmarking.

Three findings of this research stand out in highlighting the moderating nature of human behaviour on building performance outcomes. They suggest that when building design and operation compromise usability, building occupants exhibit adaptive behaviours that can contradict the building's design and performance intent.

Disconnect between core and shell design and construction, and interior fit-out of tenanted spaces. In the subject buildings the intent of the design e.g., maximization of daylighting is counteracted by interior organization of workspace. This disconnect is a prime example of an on-going challenge for building designers to acknowledge the extent to which energy efficient design strategies are affected by a dynamic occupant workforce and result in compromised outcomes in energy efficiency. Concurrently, they render the building less usable by both building occupants and the building operator.

Diffused and confused locus of control In commercial building operation control over property management and function is diffused among the building developer/owner, manager, and tenants/occupants. A level of cooperation among these parties is therefore required to meet energy efficiency and related objectives. In this study, some level of confusion was discovered regarding control over lighting and HVAC. Occupant responses to these conditions are found to be

diverse, may adversely affect building performance and result in lower satisfaction with the building environment.

The role of direct feedback and lack of economic motivation

A third finding of this study, which needs to be confirmed by additional research, is that occupants of commercial office space may lack economic motivation to conserve energy, especially if it comes at the cost of individual comfort in the workplace, even while claiming to hold pro-environmental values. This contradictory situation may be compounded by a lack of direct feedback regarding energy use, which seems to be especially common in multi-tenanted buildings in the United States of America (U.S.A.)

The authors will discuss approaches to address challenges of energy management in multi-tenanted buildings. An important component of instilling these fixes is a more accurate portrayal of the moderating affects of occupant behaviour especially as it relates to the usability of various green building systems and conflicts among organizational scales.

This work was funded by the United States Green Building Council, Liberty Property Trust and the United States DOE Greater Philadelphia Innovation Cluster.

S2.3 Evaluating a Green Luxury Rental High-Rise Apartment Building in NYC

Andrews, C J; Hewitt, E; Krogmann, U
Rutgers University, United States

Green features often appear first in high-end markets where consumers are willing to pay a premium price. This case study of one of the first large residential buildings in New York City to receive a LEED Gold rating and illustrates how the luxury market responds to greenness.

This building is located in Manhattan within walking distance of the financial district. It is 27 stories tall and contains 293 apartments, most with spectacular views. The total floor area is 33,100 m2, and estimated occupancy is 578 people. The first tenants moved into this rental building in 2003. It is of glass-and-brick construction. Its green features include a vegetated roof, an integrated solar photovoltaic array, day-lighting, operable windows, a tight building envelope, energy-efficient HVAC systems, highly-filtered ventilation air, various smart-building features to facilitate monitoring and control, Energy Star appliances, green cleaning practices, and most unusually, a wastewater treatment plant in the basement to allow water re-use.

The data collected for this evaluation includes a building-wide survey of occupants' perceptions and motivations, occupants' utility bills, detailed occupant interviews and energy and water end-use monitoring for a subset of apartments, discussions with the building's owners and operators, and investigation of the neighbourhood context. The data collection period was from January 1st, 2011 to December 31st, 2011.

This paper highlights three findings of interest to the IAPS community, selected from the many results of this detailed evaluation. Each addresses a question about the role of green features and their interactions with human behaviour.

Can a green building also be luxurious, that is, can it meet the highest standards of occupant comfort and convenience? This building serves as an existence proof that green can be luxurious. Day-lighting and good indoor air quality are features that are directly visible to occupants and particularly add luxury. However, much behind-the-scenes work by operating personnel is necessary to ensure that green features function without placing demands on tenants.

Can a luxury building be resource-efficient, given that utility bills represent an infinitesimal economic burden for its wealthy residents? The answer is mixed. As with comfort and convenience, much of the building's resource efficiency is traceable to design and operating decisions that are not directly in the hands of residents. The operating personnel and the building's owner place a high priority on efficient operation of this well designed building, provided they do not affect occupant satisfaction. Some occupants pursue efficient energy and water use for non-economic reasons, because they harbour pro-environmental attitudes and beliefs. Others do not, so there is wide variation in relevant occupant behaviours.

Is greenness a significant differentiator that affects location decisions in upscale, urban rental markets? Greenness appears to be a significant driver of residential location decisions only at the margins, and among this sample it is less important than traditional factors such as convenience to jobs, great views, and a high-amenity neighbourhood.

These findings highlight the importance of understanding likely occupant behaviour from the outset, during design, in order to secure green performance and general success in the upscale urban rental market. The authors will close their talk by demonstrating a simulation model that brings such insights to the design process. This work was funded by the United States National Science Foundation.

S2.4 Expanding the definition of Green: Impacts of Green and Active Living Design on Health in Low Income Housing

Wener, R[1]; Andrews, C[2]; Senick, J[2]; Sorensen Allacci, M[2]; Manelis, G[2]
[1]Polytechnic Institute of New York University,, United States; [2]The State University of New Jersey, United States

This project attempts to broaden the notion of green building design to take into account other design–related issues that have important health consequences, addressing asthma and obesity in a new apartment building in a low income community. We examine how the synergy between environmental benefits and human health promotion is experienced by residents in a lower income community, and whether the health disparities commonly found in low income communities can be attenuated by sustainable, green residential building design.

Affordable housing is an underutilized opportunity to intervene broadly in the inter-connected problems of poverty, environmental conditions, and poor health. This includes addressing Active Living by Design to support healthful living by encouraging increased levels of physical activity among building residents, which has multiple health benefits. This approach, for example, encourages increased use of stairways, more outdoor and active versus indoor and passive activity, encouraging walking to local activities, etc.

We also address the impact of green management (that is, the actions of facilities maintenance personnel) and of green behaviour (such as the actions of occupants) to support the effectiveness of the design in increasing sustainability and improving air quality. The impact of even the best design may be muted or thwarted by poor or limited operation and maintenance (such as changing filters, keeping equipment operating optimally), and/or inappropriate behaviour by occupants (approaches to cleaning, adjustments of thermostats, etc.). We will therefore look at the impact of programs that encourage supportive action by facilities managers and occupants.

This is a participatory and longitudinal study that incorporates interventions and evaluations at multiple levels across multiple sectors that include (1) building-level policies and programs that can affect all residents and even neighbourhood quality of life; (2) apartment-level activities that can improve household economic and energy impact and indoor air quality; and (3) individual level education on healthy eating and active living that can improve health literacy and household health outcomes.

A number of features of the building environment are considered. Low-toxin / low-VOC materials, reduced chemical cleaners, integrated pest management, and ventilation using operable windows and mechanical systems are examined for their effects on health and satisfaction. The roof top garden, an aesthetic building design, and onsite services are also evaluated for their role in offsetting the stress of poverty, pollution, inequity, and neglected city neighborhoods.

This research was funded by a grant from the UnitedStates Department of Housing and Urban Development Green and Healthy Homes Technical Studies Program.

S3. COMMUNICATION AND UNDERSTANDING URBAN BEHAVIOR

S3.1 HEALTH AND THERAPEUTIC CITIES OF COMMUNICATION

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There is has been a great deal of research in the area of health communication and an equally significant body of work exploring the relationship between health and the person-environment. This paper will offer a bridge between these two distinct disciplines of related work. Dissemination of information about health in urban environments, and the phenomenon of communication as a constituent of health will be examined. Further, the authors introduce the concept of the "therapeutic city."

According to the World Health Organization, Health Communication embraces the following:
1) Health professional-patient relations,
2) Individuals' exposure to, search for, and use of health information,
3) Individuals' adherence to clinical recommendations and regiments,
4) The construction of public health messages and campaigns,
5) The dissemination of individual and population health risk information, that is risk communication,
6) Images of health in the mass media and the culture at large,
7) The education of consumers about how to gain access to the public health and health care

systems, and
8) The development of telehealth applications.

Their emphasis is on the dissemination of information about health. Missing is a focus on the phenomenon of communication as a constituent of health. The irony is extraordinary – the ability to communicate, or the inability to communicate, and the means of expression are irrelevant - placed somewhere in the recesses of insignificance.

These dissemination related approaches can be supplemented by exploring how modifications in the built environment can encourage physical activity and enhance socialization and help prevent the elderly, in particular, from being isolated. The therapeutic city recognize the connection of health and the physical and social landscape of cities. The link of design and health is an accepted notion. Yet, the conceptualization of communication as a co-existing determinate of quality of life, is strangely overlooked. The conception of the therapeutic city links both the physical and social landscape with media.

S3.2 CARTOGRAPHY AND COMMUNICATION

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Cartography can be seen as a form of communication currently undergoing a great deal of change. For centuries, cartography has been in the service of those in power, since map-making was such a highly specialized skill and only the royalty - and later, other governmental entities - could support the costly requirements of exploration, surveying, and gathering geographic data and producing maps. But with Geographic Information Systems (GIS), Global Positioning System GPS, and the Internet, mapping is now in the hands of virtually anybody.

VGI (volunteered geographic information) means that ordinary citizens collect and distribute geographic information via GPS and Internet mapping resources. Grass-roots community organizations and environmental advocates are using Geographic Information Science as a way of gathering information on their communities for organization of activities. This paper will trace developments in mapping and explore how maps can be used as a communicative tool.

S3.3 DAILY MOBILITY, ACTIVITIES AND TERRITORIAL INDEPENDENCE: TWO DAYS AROUND THE CITY WITH PRE-TEENAGERS

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Pre-adolescence is a crucial age where young individuals are in-between. The child is no longer young, but the teenager is not old enough to have the independence and the freedom to get around. However at this age the child strongly needs to leave the family nest, in order to perform independent activities in the urban environment. Independence is a key aspect that characterizes teenagers' development, especially when the young individual acquires motile competencies.

Research shows that in early adolescence young individuals exhibit needs for independence in terms of movements in order to construct their own activity space. This is observed through

increasing of both outings and interpersonal contacts outside the family environment. The trip from home to school is a journey that is one of the determinants of personal action space development.

However, it can be strongly dependent on parents and their automobiles if educational facilities are located outside the home neighbourhood. In metropolitan areas, many young teenagers find themselves in situation where schools, friends and points of interest are located on unreachable territories without the parent's car.

We explore these questions with action-research conducted in Luxembourg as part of Interreg IVb ICMA (Improving Connectivity and Mobility Access). Little information is available on these young urban actors. Indeed surveys relating to children are delicate to process, particularly because of strict regulations related to child rights and multiple needed authorizations (parents, schools, committees). In this context, 46 pre-adolescent children aged from 11 to 13 years old have been followed for two days using Geographical Positioning System (GPS) technology. This geographical data has been coupled with an assisted questionnaire on daily mobility, modes of transportation, mobility preferences as well as independence in movements in the city.

Combining these two techniques of investigation allowed improving quality of sensible data by controlling, according to space and time, information collected directly from children as well as their trips (number, duration) and their activities (location, time). A principal component analysis conducted on geographical datasets coupled to a hierarchical cluster analysis allowed to construct a children typology based on mobility patterns, visited places and mobility strategies. Results show that if the automobile and the role of parents explain much of the observed mobility patterns, spaces and times where autonomy was possible allow greater appropriation of the territory for these pre-teenagers. Well-serviced urban environments allowed for greater independence, but also for more extensive action spaces. Meanwhile, living in suburbs naturally induces greater (parents') car dependency. Given to the suburban children's mobility uses as well as their preferences and competencies still in development, major questions about the future of the mobility of these young "automobilist" must be putted forward.

S3.4 DESIGNING FOR MOBILE ACTIVITIES: WIFI HOTSPOTS AND USERS IN QUEBEC CITY

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The use of information and communication technologies (ICTs) has historically been bound to particular places. With the rapid proliferation of mobile technologies at the beginning of the 21st century, ICTs no longer connect places, but individuals [1]. Liberated by more powerful portable devices and an increasing ubiquity of telecommunications and wireless Internet (WiFi) networks, individuals may choose where and when their ICT-based activities are practiced. Binary notions of public or private and personal or professional, which were once confined to particular places, are blurring and mobile [3]. Places are both locally bound and globally connected [4].

The variety of devices upon which mediated activities can now be conducted in addition to the rising availability of free Wireless Internet in public places, facilitates the nomadic nature of the ICT-carrying individual. While ICTs have taken some of the blame for a loss of interest in public spaces in the past [5, 6, 7], their role in "reactivating" public spaces as places of work and leisure may reverse this trend [8]. In fact, the most recent study from the Pew Internet and American Life

Project [9] found that Internet users were more likely to visit public places than non-users, in contrary to the belief that Internet use leads to domestic cocooning.

In this context, activities—along with people—are mobile. How could an understanding of the mobility of activities aid in questioning the design of public spaces? For architects and urban planners, this goes against traditional Taylorist planning principles [10], in which single functions are assigned to specific spaces [11]. Mobile devices and their respective infrastructures (like WiFi) are seldom approached by architects and urban planners as something to be taken into consideration when designing public places: their presence is often reduced to something seen as ancillary or even invasive.

This communication will attempt to discuss the implications of 'mobile activities' on architecture and urban planning by looking at WiFi use and users as sources of inspiration for designing places of gathering in the 21st century. Analysis of server data from a local WiFi provider, ZAP Québec, and of results from an Internet survey of its members, carried out as part of a Master of Science (MSc.) in architecture conducted in Quebec City at the Interdisciplinary Research Group on the Suburbs (GIRBa) at Université Laval [12], identify the most frequented hotspots and three WiFi users profiles. A spatial analysis, derived from the Pattern Language developed by Alexander and colleagues in the 1970s [13], reveals the common urban and spatial qualities that characterize the most frequented hotspots. While the exploratory nature of the study may raise more questions than it answers, its findings aid in discussing the impact that mobile technology use may have on the conception of public places in the 21st century.

S4. Coping with urban vulnerability in the interface between research and practice

S4.1 Perspectives on urban vulnerability to environmental risks: Social capacities in growing and shrinking cities

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In this paper we develop a perspective on urban vulnerability to environmental risks (the case of flood risks) that particularly focuses on social capacities. We include knowledge, motivation, networks, trust, financial and institutional resources). We consider various strands of research such as social vulnerability to the negative impacts of natural hazards, concepts and approaches from the climate change debate as well as research situated within the field of urban studies. We will propose a social-science based conceptual frame of urban vulnerability encompassing the three dimensions exposure, susceptibility, as well as coping and adaptive capacities which are reframed via the concept of "social capacities". More specifically, we propose a conceptual approach that considers the tightly coupled interdependency between various spheres of urban life and the environment and argue that it is too short-sighted to capture the essence of urban areas simply by focusing on the sheer number or density of people or by simply focusing on changing state of nature or the environment. It is rather cities complexity and the various interconnections of their socio-technical and socio-ecological systems that need to be considered as central features of urban vulnerability. Of importance for such systems is that small but

destructive disasters may result in cascading effects that ultimately will have major and disastrous consequences for people, infrastructures and buildings. In this sense we argue that cities complexity might also increase their vulnerability. After having outlined the theoretical background, we will focus on two distinct urban development paths, namely on growing and shrinking cities: On a global scale, urban growth is the dominant mode of urban development at present. Yet rapid urbanization does not occur homogeneously across regions. Indeed, it is noteworthy that most of today's megacities are located in the Global South and that many cities in Europe, Northern America and Japan have experienced or currently face a considerable decline in population. In Europe, most of these cities are located in the central and Eastern parts of the continent. The dichotomy of growth and shrinkage not only leads to changes in urban development and land use, but it also impacts on the social capacities available to prepare for, cope with and recover from (potential) hazardous events. While in growing cities quantities and complexities of vulnerability seems to increase, the situation in shrinking cities is quite different as they seem to offer the potential to reduce their vulnerability as less people and buildings are exposed but further factors come into play. We will present empirical insights from both development trajectories and we will draw attention on the exchange between researchers and practitioners to underline the necessity of mutual exchange of knowledge, respect and willingness to learn from each other.

S4.2 MULTIPLE VULNERABILITIES IN INFORMAL NEIGHBOURHOODS: CONCEPTUAL AND ETHICAL ISSUES BETWEEN RESEARCH AND PRACTICE

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The presentation reflects on four years of action-research in a poor informal neighbourhood located in the immediate vicinity of Dakar's main garbage dump where multiple hazards, risks and vulnerabilities are encountered. Most often unrecognized except for their most visible forms, they are associated with air and water pollution, accident prone physical environments, flooding, climate change (and, more generally, ecological change), informal urbanization, poverty and patrimonialist governance. They are aggravated by rapid urbanization and population growth rate, if only for the sheer number of persons exposed to hazards and risks. How does one work in an unplanned and socially excluded settlement? How is the interface between research and practice then redefined? What kinds of research, action and knowledge transfer strategies are then effective? The presentation delves into conceptual, methodological and ethical issues facing the researcher in this context.

Conceptual and methodological approaches to vulnerability are examined in order to underpin the necessity for the researcher to navigate between broad ecological models and a finer grain ethnological examination of human environments. The weaknesses and usefulness of two comprehensive models are discussed: World Health Organization (WHO) ecosystems approach to health and Moser's asset-based framework to vulnerability. The first stresses the interconnectedness between environmental processes, although calling for positivist measurements of risks and impacts. The second sheds an interesting light on resources (assets) rather than problems, but its notions of vulnerability, resilience and adaptation raise questions of theoretical cohesion and utility. These models help in the detection of unrecognized problems and resources, but grounded research and small-scale action-research are still called for to understand persons/community/society/environment interactions and processes of social change.

Various ethical challenges ensue from research choices in informal settlements blurring the links between research and practice. Researchers must learn to navigate between an understanding of the local culture and the irreversibility of social change, across the complex landscape of power relationships, between the praise for autonomous development and the requirements of structured urban services. Two particular dilemmas are discussed. What are the avenues for knowledge transfer to practice when decision makers only pay lip service to research results and participatory processes? How does one react to divergent attitudes between local and foreign researchers to sharing research results with a destitute community? Complementing approaches to vulnerability such as Moser's, Sen's human rights and capability framework offers ethical guidelines to these practical challenges, leaving however unresolved the theoretical gap between the notion of vulnerability and the win/win rational for participatory action-research.

S4.3 URBAN VULNERABILITY CONCERNING FLOOD RISK IN GROWING AND SHRINKING CITIES

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Using the concept of urban vulnerability, we would like to discuss the specific coping and adaptive capacities of cities and their inhabitants in hazardous situations. In this frame social vulnerability and the vulnerability of the built environment are of high relevance. We draw our attention to natural hazards like floods, fire or earthquake which become a social catastrophe by human action and behavior.

Three main points are in the focus:

i. the concept of urban vulnerability with its specific characteristics in contrary of and as addition to other vulnerability concepts as base for discussing empirical cases and developing adaptation and management strategies,
ii. results of empirical research and experiences of coping with hazards with special focus on the effected population,
iii. observations and reflections on concrete experiences in bringing research results in practice action and decision making.

On the example of both success stories as well as failures we will discuss the challenges of dealing with vulnerable situations in different social contexts. The scientific questions revolve around the level of preparedness to hazards, the adaptation, and the recovering from catastrophes. Within this context, communication strategies and trust are important in terms of distribution of appropriate information and behavior strategies. Based on empirical research results the exchange between scientists, planners and decision makers is simultaneously intended to evaluate the research results for being practice relevant. The overall aim of the session is to strengthen the interrelations and the contact between experts coming from research and from practice. What kind of scientific results do we need to generate in order to address specific knowledge in different urban habitats? Summarizing, how can we transfer scientific knowledge into professional practice? At the end of the symposium we would like to shape take home messages concerning what can we learn from each other and how can we improve our competences in dealing with uncertainties and surprises in vulnerable situations

S4.4 THE SOCIAL DIMENSION OF FOREST FIRES: EFFICIENT COMMUNICATION AND PARTICIPATION IN VULNERABLE HUMAN HABITATS

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Forest fires, and the risk they generate for the ecosystem and for human beings, are not only technical problems that can be solved solely by technical experts and their evaluations. Fires possess a social dimension, and addressing this type of disaster involves environmental understanding, the active commitment of citizens, and their participation in land management.

This paper aims to analyse and evaluate the value of citizens' subjective perception of forest fires and explore the dimensions that explain their perception. The study of social perception brings the perspectives of citizens into the equation.

The risk management of forest fires inevitably demands a social education and communication strategy that promotes participation and favours a change of attitudes and values, bringing them more in line with preventive practices. This paper also includes a discussion on how to make public policies in the fight against fires more efficient by taking into account a number of technical and objective criteria, together with other more subjective aspects.

A number of aspects are addressed, given their importance as lessons with implications for the field of risk policy and management:

a) the attribution of responsibility and perceived causes;
b) trust, in relation to communication and information management processes; and
c) improving task coordination and social participation. The results presented here come from a study done with a representative sample of Galician population (northwest of Spain) after the devastating forest fires of 2006.

S4.5 COMMUNITY RESILIENCE IN THE URBAN CONTEXT: CASE STUDIES FROM THE UK

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Community resilience can be defined as: "The capacity of an individual, community or system to adapt in order to sustain an acceptable level of function, structure, and identity" (Edwards, 2009 and United Kingdom (UK) Strategic National Framework on Community Resilience, Cabinet Office, 2011). It has become a key concept within the UK context of emergency planning, in response to the policy drive to local accountability and decision making and in acknowledgement of the limitation of statutory emergency responders in extreme events. Within the policy literature the relationship of resilience to vulnerability is not fully discussed but they are, inextricably linked, the understanding and reduction of vulnerabilities will support the development of long lasting adaptive community resilience which can be drawn upon in emergencies.

The key question this research was focussed on was what is the role of communities in response to emergencies and how do different types of community (e.g. with different types of social capital) emerge, develop and adapt before, during and after those emergencies.

The two case studies presented here are part of a larger project carried out for the Civil Contingencies Secretariat, Cabinet Office (UK Government) and the Defence Science and Technology Laboratory which is inputting to the development of community resilience policy. This research informs guidance on practical action to develop community resilience to emergencies.

The two case studies are very different but both in urban areas with high levels of deprivation: Great Yarmouth which is at risk of flooding (tidal, pluvial and fluvial) and was affected by a "near miss" tidal surge in 2007 and Peckham, London which was affected by the "riots" in August 2011. The case studies focus on how is the community structured?, How did the community respond to the event? What relationships are there between the community and organisations? What has happened since in terms of resilience building?

In terms of Great Yarmouth community resilience is being built on community development. In terms of vulnerability, a key vulnerability of disempowerment is being addressed. There are community development workers who involve, engaged and then empower people to act. By doing this they provide people with connections to others and services, which increases their resilience in emergency situations.

In Peckham the event was very recent and so resilience is emerging. The community is working out different ways to build up the community with one group now meeting together because people in the same street stayed indoors alone, frightened because they did not know each other. Other groups are working with young people to support them. In this case study the complexity of relationships within an urban community: formal and informal networks, links with authority are discussed. The paper discusses how resilience emerges and develops in the context of these urban communities responding to emergency situations. It draws on the concepts of resilience, social capital and vulnerability to provide some practical recommendations for action.

S4.6 COPING WITH URBAN VULNERABILITY THROUGH HUMAN DESIGN BEHAVIOR

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The authors examined the deterioration of the water environment. They went back to the process of human development to check how human design behaviour step by step destroys the water balance on earth. Behaviour such as deforestation, the digging of ground for basement space for buildings, hard pavements in the cities, the sewer systems, developments in wetland areas, and reclaimed lands in waterfront areas all disturbed the water system. It is found that human beings large scale disturbance of nature is to be blamed for all the flood disasters that have happened in recent years around the world. Although new technology and big construction projects such as Thames barrier, the Mose project in Venice were created to prevent flood, the impacts are still unclear. It is concluded that concept for design needs to be altered and human economic growth needs to be limited if we want to mitigate the threat of flood hazard.

S5. EMOTIONS TOWARDS WILDLIFE: IMPLICATIONS FOR POLICY AND MANAGEMENT

S5.1 SELF-REPORT MEASURES OF EMOTIONAL DISPOSITIONS TOWARD WILDLIFE: RELIABILITY AND VALIDITY

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Emotions form an important component of human relationships with wildlife, and researchers seem increasingly interested in this phenomenon (Jacobs et al., 2012a). An important methodological question is how emotions can be measured in surveys (Jacobs et al., 2012b). Previous studies have predominantly focused on fear, and have employed single item self-report measures (e.g., Arrindell, 2000; Davey et al., 1998; Kaltenborn et al., 2006; Røskaft et al., 2003). The aim of this paper is to address the reliability and validity of various self-report measures of emotional dispositions toward wildlife. Our survey (n=369) included three different measures of emotional dispositions toward wolf and deer. Valence – the positive-negative dimension of emotions – was measured by four items, as was arousal – the excited-unexcited dimension. The discrete emotions of interest, disgust, surprise, fear, joy, anger, and sadness were measured by one item each. In addition, we assessed acceptability of two management actions (doing nothing or destroying problem wildlife) in problem situations that included either wolf or deer. Internal consistencies of valence measures were high for both wolf (α=.92) and deer (α=.89). Internal consistencies of arousal measures were neither acceptable for wolf (α=.56) nor for deer (α=.57). Internal consistencies of discrete emotions measures (surprise excluded) were acceptable for both wolf (α=.74) and deer (α=.71). Composite indices for valence and discrete emotions were calculated for further analyses. The discrete emotions scale primarily reflected valence, as correlations with valence were .77 for wolf and .58 for deer. Overall, reliability (assessed as internal consistency across items) of valence was superior to reliability of basic emotions for both wolf and deer. Valence toward wolves predicted acceptability of lethal control (r=-.39) and doing nothing (r=.26). Discrete emotions toward wolves predicted acceptability of both management actions as well with similar effect sizes (r=-.39 and r=.24). Fear predicted acceptability of the actions as well, but the effect sizes were different: (r=.13 and r=-.21). Valence toward deer predicted acceptability of lethal control (r=-.34) and doing nothing (r=.12). Discrete emotions toward deer predicted acceptability of lethal control (r=-.32) but did not predict acceptability of doing nothing. Fear toward deer predicted acceptability of doing nothing (r=-.12) but not of the other action. Overall, construct validity (assessed as predictive potential) of valence was at least as good as, and often superior to construct validity of discrete emotions or fear only. Based on these results, we suggest two recommendations for future studies into emotions toward wildlife. First, include a broader domain of emotional dispositions than fear only (e.g., valence or several discrete emotions). Second, include multiple items in order to assess internal consistencies.

S5.2 DO EMOTIONAL DISPOSITIONS TOWARD WILDLIFE HAVE PREDICTIVE POTENTIAL NEXT TO WILDLIFE VALUE ORIENTATIONS?

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The concept of wildlife value orientations (WVOs) has guided several studies into human relationships with wildlife. WVOs are patterns of basic beliefs that give direction and meaning to fundamental values in the context of wildlife (Manfredo, 2008). Research has revealed two primary orientations: domination (wildlife exists for humans to use) and mutualism (wildlife have rights and deserve care). WVOs have predictive potential for acceptability of wildlife management actions (Teel & Manfredo, 2010). As emotions are a basic mental capacity that shape many mental

dispositions (Jacobs et al., 2012), we hypothesised that emotional dispositions have predictive potential for acceptability, next to WVOs. In a survey (n=369), we measured emotional dispositions toward wolves in two ways. First, valence (the positive-negative dimension of emotions), measured by four items (á=.92).

Secondly, seven discrete emotions, measured by one item each. WVOs were measured similar as in previous studies (e.g., Vaske et al., 2011). As dependent variables, acceptability of two potential wildlife management actions in problem situations was measured: lethal control or doing nothing. Four regression models were tested to predict acceptability: (1) valence, (2) discrete emotions, (3) valence and WVOs, (4) discrete emotions and WVOs. Valence only predicted acceptability of lethal control of wolves (R=.39) and acceptability of doing nothing (R=.26). Also, discrete emotions predicted acceptability of lethal control (R=.49) and doing nothing (R=.30). Including WVOs increased the predictive potential for lethal control (R=-.60 for valence and WVOs, and R=65 for discrete emotions and WVOs). In these models, domination was consistently the best predictor (â=.40/.38), and emotions were better predictors and mutualism (e.g., â=-.25 for valence, â=-.12 for mutualism). Predictive potential for acceptability of doing nothing was not increased by including WVOs in the models. Neither domination nor mutualism was a significant predictor for this management option. We conclude that emotional dispositions toward wildlife have predictive potential next to WVOs. Remarkably, for acceptability of one extreme management action (lethal control) domination was a better predictor than emotions, while for another extreme action (doing noting) emotion was the only statistically significant predictor. Our results suggest that emotional dispositions toward wildlife are relevant for policy makers and managers, as they explain support for or opposition against wildlife management measures.

S5.3 Are attitudes towards wolves changing? a case study in Sweden

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In year 2000 the Swedish parliament settled goals for the large carnivore population size. In a survey conducted in 2004 a majority of the Swedes were supporting the goals set by the parliament. However, the survey also showed that the inhabitants in rural and sparsely populated regions with a high density of large carnivores had a much more reluctant or even opposite view towards the population size goals. Now when the parliamentary population size goals have been achieved, and the number of large carnivores has increased, the question is if a majority of the Swedes still are as pleased with the policy objectives or whether attitudes have changed as the large carnivores become more numerous? We conducted a mail survey in 2009, replicating the study from 2004, in order to determine if the Swedes attitudes towards large carnivores changed over the last five years. In addition we contrasted the national, regional and local levels across the two studies. Our results, which relate to the conference themes: 3. Policy Implementation and Management: Attitudes, Trust, and Environmental Concern, will be presented at the symposium “Emotions towards wildlife: Implications for policy and management”, and demonstrate that the opinion gaps, in particular between people living in urban and rural areas are increasing.

S5.4 The feared object in fear of brown bear and wolf

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The presence of large carnivores such as brown bear (Ursus arctos) and wolf (Canis lupus) is exciting to some people while others see these species as a nuisance or source of stress (Manfredo, 2008). Several surveys based on self-report show that a substantial amount of Swedes are afraid of encountering the large carnivores, brown bear and wolf in nature (Ericsson, Sandström, Kindberg, & Stoen, 2010). Johansson and colleagues (in press) interpreted the experience of fear of brown bear and wolf in the Human Environment Interaction Model (Küller, 1991). They found that fear is fuelled by the individual's appraisal of the carnivore species and social trust. This model did not take into account to what extent people were afraid of being attacked themselves or attacks on pets. In order to introduce relevant mitigation measures in large carnivore areas, managing authorities also need information about what the feared object is in the fear of brown bear and wolf. Moreover, information is needed on the implications of people's experience of fear for acceptance of mitigation measures. These issues were addressed in analyses of survey data including 391 persons (corresponding to a response rate of 53%) with experience of living in areas with either presence of brown bear (n = 198) or wolf (n = 193) in Sweden. The respondents were asked to respond to the questions such as "How strong fear do you feel that brown bear/wolf would attack (husbandry, pets, children, yourself) from none at all to very strong on 10 cm long lines. In both the case of brown bear and wolf fear, the self-reported fear of the different feared objects were significantly correlated (r = .53 - r=.89). The level of fear differed however between the feared objects, and more so in the case of wolf than in the case of brown bear. The presentation will further discuss the impact of self-reported fear on acceptance of various mitigation measures and its implications for sustainable co-existence between human and carnivores in areas with presence of brown bear and wolf. The presentation will be part of the symposia: Emotions towards wildlife: implications for policy and management and will address the conference theme Policy Implementation and Management: Attitudes, Trust, and Environmental Concern

S5.5 MANAGING HUMAN FEAR OF BEARS AND WOLVES

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Decision-makers and managers spend substantial amounts of funding everyday on various interventions aimed at management of the large carnivores, for example different measures to mitigate depredation on livestock, e.g., removal of carnivores and fencing of livestock (see Linnell et al. 1996 for an extensive review). Management of species that occur in low numbers is challenging as relatively small management actions may have a large impact on the population. Management of controversial species is challenging because management actions may trigger public responses that have a large impact on support for political goals (Feral 1995, Okwemba 2004). Large carnivore management involves species that may be both rare and controversial. It is therefore important to study the effects of proposed management actions before they are implemented.

Research points to a complexity of interacting socio-cultural (Skogen and Thrane 2008) and psychological factors (e.g. Manfredo 2008; Teel and Manfredo 2010) behind human responses to

wildlife. This complexity makes it hard to predict the public response to single management interventions (Hazzah et al. 2009).

In order to gain insight on how people view different management actions aiming at reducing human fear for wolves and bears, we asked people in areas with presence of large carnivores (n=391), their opinion on one or more of a limited number of management actions to be applied in their region. Preference for or against different management actions was captured by nine sub-questions: “What is your opinion on the authorities implementing the following management actions in the area where you live?”. Responses were given on a 5-point Likert scale (1 = Should not be implement and 5 = Should absolutely be implemented). The suggested management actions are currently used or discussed in Sweden and ranged from different types of information to carnivore population limits and allowing personal protection like pepper spray and firearms.

Based on the responses a Potential Conflict Index (PCI) (Vaske et al. 2010) was calculated. The PCIvalues indicate that different types of information, setting a management goal for carnivore populations and making it illegal to dispose of potential large carnivore feed close to houses are more often preferred and have a lower potential for conflict compared to measures such as a more liberal use of pepper spray or fire arms.

S5.6 Physiological and behavioural responses in human fear of bears and wolves

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Research on human emotions towards large carnivores is often based on self-reported emotions. This study aimed to investigate physiological and behavioural responses to feared animals among people who say that they are fearful or not fearful of brown bear and wolf. Participants were recruited to be bear fearful only (n=8), fearful of both bear and wolves (n=15), or fearful of neither carnivore (n=14). Three experiments were conducted, including recordings of ECG, skin conductance and eye movements. In the first experiment the task was to look at different pictures of bear, wolf, moose and hare. In the second experiment the participants had to screen 3x4 search arrays with moose pictures. The task was to decide if a hare picture was present in the arrays or not. A bear or a wolf picture could also occur in the arrays, but should be ignored. The third experiment was an implicit association test where the task was to pair wolf, bear or hare, with good or bad words.

The results suggest that bear pictures are potent stimuli for eliciting sympathetic activity regardless of not if the individual is bear fearful. Wolf pictures showed more negative associations and attention capturing effects regardless or not if the participants were fearful of wolves. These results might imply that cognitive interpretation of physiological arousal has an important role for bear fear, and that cognitive interpretation of negative association has an important role in wolf fear. Being fearful of only bear, but not wolf, or being fearful of both these carnivores made a difference. The group fearful of only bears did also display an increase in parasympathetic activity to bear pictures. The group fearful of both carnivores did not show this increase, however, they did show more difficulty in associating bear with good words, an effect that was not shown in the group only fearful of bears. These results imply that specific fear of one specific carnivore species have a different etiology than being fearful of carnivores in general.

When a picture of a feared animal appeared among the moose the response time increased. Thus, perceiving a feared carnivore is distractive and has an effect on performance. The group fearful of bears, but not wolves, did respond faster when a wolf picture occurred among the moose pictures. This implies that mental resources are allocated to the feared animal when it is potentially present but not perceived, and that these resources can be freed if the individual is "assured" that the feared animal will not appear.

This study showed that fear is a central emotion in relation to wildlife, and that experimental methods are needed to get a substantial understanding of fear. An understanding of the etiology of bear and wolf fear and its relation to cognitions and performance is important for wildlife policy decisions. The presentation will be given within the symposium human emotions towards wildlife: Implications for policy and management

S6. INITIATING CHANGES IN ORGANISATIONS - A FORGOTTEN FIELD OF ENVIRONMENTAL PSYCHOLOGY?

S6.1 SAVING ENERGY IN SHARED OFFICES: THE IMPACT OF INDIVIDUAL ATTITUDES AND BEHAVIOUR ON LIGHTING AND HEATING

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Individual employees affect an organisation's energy demand, by using equipment and building systems and through decisions made in employment roles (Stern, 2000). Previous research into organisational energy use has examined building performance, or energy demand from an organisational level of analysis, but little research has examined energy use by individuals in organisational contexts (Lo et al, in press). Environmental psychology has primarily focused on individual energy use within domestic settings (Steg and Vlek, 2009). The research presented in this paper adds to current knowledge by using environmental psychology approaches to examine influences on lighting and heating use by individuals in shared offices.

The study was conducted among a sample of office-based employees in two local government organisations in the East Midlands region of the United Kingdom. Employees were based in a variety of office buildings with differing levels of control over lighting, heating and equipment. Online questionnaire surveys (n=746) explored self-reported behaviours, social and organisational influences, attitudinal/psychological variables, and contextual factors such as levels of individual control over heating and lighting and the numbers of people sharing the office. The surveys utilised the Theory of Planned Behaviour (Ajzen, 1991) to address behavioural control issues, and Values-Beliefs-Norms Theory (Stern et al, 1999) to address moral and normative concerns. Interviews and measurements of actual energy use provided further insights into the potential for energy demand reduction in office buildings through individual behaviour change.

The research identified three key areas. Firstly, the effect of actual and perceived control over heating and lighting in shared offices on individual office workers' attitudes towards and performance of heating, lighting and other energy use behaviours. This included whether influences on energy use in one setting, the office, also influence energy use in the home. Secondly, how individual motivating factors such as values, personal norms, and attitudes towards

energy conservation influence heating and lighting use in the cooperative setting of a shared office. Thirdly, the effect of social and organisational factors, such as social norms and organisational expectations, on attitudes and behaviours relating to heating and lighting use in shared offices. Differences found when the behaviour was perceived as affecting the actor alone rather than other people in the shared office will be highlighted. The insights and limitations of the approach, which focuses on individual behaviours and motivations in a shared environment, will be identified. The presentation will also discuss the implications of the findings for the design of behaviour change interventions, and the potential for reducing energy demand in office buildings through changing the behaviour of individual office workers.

S6.2 SAVING ENERGY BY CHANGING DAILY ROUTINES - A HABIT-FOCUSED APPROACH TO PROMOTE ENERGY-EFFICIENT BEHAVIOURS IN ORGANIZATIONS

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In times of global climate change and rising scepticism towards conventional energy production, saving energy has become one of the most pressing societal goals. The task of saving energy is an interdisciplinary one: while engineers are trying to find technological innovations to reduce energy consumption, psychologists should concentrate their efforts on the behavioural side of energy consumption.

In Western societies a big deal of energy consumption emerges in public buildings and private households. Here, many curtailment behaviours concerning energy use are shown. It is reasonable to believe that most of these everyday behaviours are determined by habits. Therefore, psychological interventions targeting behavioural changes towards energy saving in everyday live should focus on breaking these habits and establishing new, more energy-efficient ones.

In the research project “Change”, a specific energy saving campaign, has been developed to promote energy-efficient behaviour of employees in public buildings. Elements particularly to break energy consumption habits were integrated in the intervention package.

In winter 2008/09 and 2009/10, the intervention was initially tested in eight universities using three different versions. Short term results were promising, especially when experts’ support was given during the intervention implementation. Long term effects were mixed and depended on the type of energy consumption. While electricity could be saved in the long run, heat energy consumption revealed rebound effects.

During the presentation, the results of the interventions will be exemplified in detail. Especially, we would like to discuss possible reasons for the varying results concerning electricity and heat consumption. Beyond that, we would like to present and discuss our latest approaches to improve the intervention.

S6.3 THE ROLE OF FEEDBACK AND COMMITMENT ON ENERGY SAVING BEHAVIOUR IN AN ORGANIZATIONAL SETTING

STAATS, H[1]; LOKHORST, AM[2]; HAJEMA, A[1]; VAN ITERSON, J[1]

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A longitudinal study was conducted to assess the effects of several intervention techniques on energy conserving behaviour in an organizational setting (N = 150). During the first phase the effects of three-weekly feedback, weekly feedback and no feedback were compared through self-report questionnaires. In the weekly feedback-condition electronic data collection about energy consumption was used for feedback; in the three weekly-feedback condition self-report data were used. In the second phase, after a withdrawal period of 4 months, commitment and information were added as intervention techniques. Results will be discussed during the presentation.

S6.4 Saving energy in the workplace: transforming universities in low-carbon organizations

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Universities have a considerable impact on the environment in terms of greenhouse gas (GHG) emissions, due to their patterns of energy and materials consumption, waste generation and organization-related mobility. They also play a key role in the education of citizens in general, and thus have the potential to be an important contributor to a low-carbon Europe. Their direct and indirect impact on society is considerable, as it can form citizens who are knowledgeable of environmental problems and solutions in our society today and who also know how to act in sustainable ways both in their homes and in the workplace – and are motivated to do so.

At the University of Corunna (Spain), energy consumption in the university buildings is related, on one hand, to the general needs of heating, lighting and technology use and, on the other hand, to other specific needs of groups of users given the characteristics of certain buildings. Overall, 56 % of total emissions are a result of electricity use and the other 44 % to the use of diesel fuel.

The study we present here is part of a larger European project studying factors influencing sustainable practices in large scale organizations in six different countries and the barriers and drivers to achieving the reductions in GHG emissions that the European Union (E.U.) needs in order to mitigate climate change (please, go to www.locaw-fp7.com for further information). This study aimed at diagnosing energy consumption patterns at the University of Corunna and to identify areas of most significant change. Thus, it used a combination of qualitative methodologies such as document analysis and focus groups which yielded interesting results. These showed that there is a big gap between university policy and intended strategies to promote sustainable practices in the workplace both through structural changes such as adaptations of infrastructure and technology and through human changes such as campaigns to change behaviours at work, and the perception workers have about this policy. Possible explanations for these findings will be presented, and implications for policy will also be discussed.

S8. Lighting, mental wellbeing and performance

S8.1 How do you like your light in the morning? Preferences for light settings as a function of time, daylight contribution, alertness and mood

Smolders, K; de Kort, YAW

Eindhoven University of Technology, Netherlands

Research has shown that lighting can have an influence on wellbeing, health and performance. In this study, we explore whether lighting preferences reflect these effects. Results of a longitudinal field study by Begemann and colleagues (1997) revealed that on average, office employees preferred a higher illuminance than prescribed by current standards for office environments, which are mainly based on ergonomic needs for visual tasks. In addition, they found that the light preferences varied with time of day – roughly following a natural daylight curve. These individual light preferences are said to also depend on a person's level of alertness and mood, although this has not been investigated yet. In this study, we explored whether time of day, daylight contribution, alertness and mood have an influence on light preference.

Preferred light intensity, i.e. illuminance, was investigated in two experiments to assess light preferences with and without daylight contribution. In both experiments, a mixed-group design was applied in which respondents participated in two to four separate visits with N = 36 (72 sessions) and N = 27 (78 sessions), respectively. Participants first completed the 5-minutes auditory Psychomotor Vigilance Test as an objective measure of alertness. After this test, participants completed self-reported measures of alertness and mood. During this first part of the experiment, the light condition was 500 lux and 4000K at work plane. After completing the subjective measures for alertness and mood, the illuminance was set to 200 lux (4000K). We then asked participants to select the lighting level they felt would be optimal for performance on a subsequent attention task. To avoid a stimulus range bias – Fotios and Cheal (2010) suggested that participants tend to adjust the lighting to the middle of the range in preference tests – the paradigm was designed such that participants could only alter lighting settings upward in small steps of 100 lux, i.e. increase the illuminance up to the point they felt the lighting was optimal. Participants then completed the Attention Network Task, evaluated the lighting condition, and reported their beliefs concerning the effect of light on performance and mood.

The results of the first study (without daylight contribution) show that subjective alertness and vitality influence people's light preferences: when participants suffered from sleepiness or a lack of energy, they preferred a higher illuminance level than when they felt more alert and energetic. Participants preferred a higher illuminance than current standards for office environments, especially when participants felt sleepy and less vital. Light preferences did not vary with time of day, as reported in Begemann and colleagues (1997). Data analyses of the second experiment (with daylight) are still ongoing and will provide insights into whether daylight exposure also plays an important role in light preferences throughout the day.

S8.2 AN EYE TO HEALTH: NON-VISUAL EFFECTS OF BLUE LIGHT FOR OLDER PEOPLE

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Natural day light is good for us; particularly the bright light of the day – or 'blue light'- in the shorter wave length spectrum (460 nm). This blue light helps set our internal body clocks via special light receptors in the eyes and keeps us in sync with the day-night cycle and our everyday activities which revolve around this – simply known as our circadian efficiency. Too little blue light – or too much of it at the wrong time of day – disrupts the internal body clock, which in turn can lead to

serious health problems including depression, cancer, heart disease and diabetes (Holzman, 2011). Older people are particularly susceptible to body clock disruptions owing to the aging lens of the eye which begins to deteriorate – and yellow - in middle age onwards and reduces the transmission of blue light to the light detecting cells in the retina. Because older people are also less physically active the problem is confounded because, generally, they are not getting sufficient exposure to blue light outdoors in order to compensate for the reduced transmission capacity of the aging lens.

This paper firstly, sets out the literature context for a study of the non-visual effects of blue light and reports on two exploratory studies exploring effects in older people where the aging of the eye lens has led to cataracts. The first study shows the positive effects of increasing blue light transmission in patients with cataracts on sleep patterns and cognitive function involving complex (rather than simple) reaction time tasks (Schmoll et al, in press). The post operative data was collected 12 days post surgery, suggesting a fairly immediate improvement. The second study is currently exploring the effects of yellow versus clear intraocular lens implants – which have different blue light transmission capacities – in patients with cataracts (n=60) and any differences in sleep outcomes and cognitive reaction times post-surgery. We will discuss the findings in relation to future research designed to explore the effects of artificial blue light exposure versus natural daylight on circadian efficiency in older people.

S8.3 The impact of indoor lighting on human performance and affect: A meta-analysis

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Light is a fundamental aspect of people's environment and has various impacts on perception, well-being, and productivity. Several qualitative review articles provide an overview over how illumination affects visual and biologic processes, health, and productivity (Boyce, 2004; Juslén & Tenner, 2005). However, up to date, only one meta-analysis has quantified the influences of lighting (Gifford, Hine, & Veitch, 1997). In the last 15 years, a lot of research has investigated the effects of indoor lighting on both productivity and affective variables like mood and activation. Hence, in this paper, our objective was to quantify the effects of different lighting conditions on task performance and affect. Specifically, we wanted to take a closer look at the two most prominent parameters of lighting: level of illuminance and correlated color temperature. Based on previous research and theorizing, we expected that higher levels of illumination would lead a better performance. Second, due to melatonin suppression under cool, bright lighting conditions, high color temperature and high levels of illuminance should increase activation. Third, we expected that low levels of illuminance and warm light (low color temperature) would trigger positive affect because this lighting should create a warm and psychologically safe atmosphere. In a systematic review of the available psychology, ergonomics, and lighting literature, a total of 1699 references were collected. Studies were included when they investigated artificial light (1), manipulated or measured either illuminance or color temperature objectively (2), and reported at least one measure of performance or one measure of affect (3). Sixty-one articles met the selection criteria, providing 231 effect sizes for analyses. Preliminary analyses indicated a small positive effect of level of illuminance on task performance. Performance at low illuminance level (below 300 Lux) was worse than performance at medium illuminance levels (300 to 700 Lux; k = 19, d = .26) and performance at high illuminance levels (above 700 Lux, k = 26, d = .29). Moreover, performance was better at high compared to medium illuminance levels (k = 11 studies;

d = .39). In the next steps, we will test whether the effects of how level of illuminance and color temperature on performance vary as a function of task type. Based on research on biological effects of lighting, it could be expected the high levels of illuminance and cool color temperature should be most beneficial for cognitive tasks requiring a focused attention. Moreover, in our analyses we aim at identifying other variables that moderate the lighting effects such as proportion of indirect lighting and potential interaction effects between level of illuminance and color temperature. In sum, this quantitative review should provide a strong aid in advancing theory and practice.

S8.4 LIGHTING AND SELF-REGULATION: CAN LIGHT REVITALISE THE DEPLETED EGO?

DE KORT, YAW; SMOLDERS, K; BEUTE, F
Eindhoven University of Technology, Netherlands

Recent research has demonstrated that light increases alertness and performance on cognitive tasks even during daytime (Phipps-Nelson et al. 2003; Smolders & de Kort, submitted; Vandewalle et al., 2006). Neuroimaging has indicated that light during daytime – in particular after sleep deprivation - increases activity in the thalamus and prefrontal cortex (Vandewalle et al., 2006). The prefrontal cortex is the area where executive functioning is said to reside, and perhaps also self-regulation (Wagner & Heatherton, 2011). After earlier experiments demonstrated improvements in performance on vigilance tasks during an hour long exposure to bright light (Smolders & de Kort, submitted), we now wanted to test the effect of brief lighting exposure on replenishment after ego-depletion.

Ego depletion is the term used for the mental state after exerting self-control. Research has shown that performance on subsequent tasks is impacted after ego-depletion, indicating that self-regulation relies on a limited resource (e.g., Baumeister et al., 1998). Considering the effects of light on performance and brain activation we hypothesised that bright and/or blue light might help replenish this limited resource. We therefore designed a study to test such effects.

In a pilot study (n=64), we depleted participants' resources for self-regulation by asking them not to eat from a dish of freshly baked muffins. We then offered them a 1-2 minute light treatment of a high (6000K) vs. low (3000K) colour temperature. Immediately following this light treatment, they performed the grip test, of which a baseline measurement was taken upon entering the lab, and completed a short questionnaire assessing mood. As control measures we used self-reports of perceived lighting characteristics and evaluation, and beliefs concerning effects of light on physical and cognitive performance. Initial results showed non-significant trends of the colour temperature manipulation on changes in subjective vitality ($p=.07$) and duration of the grip test ($p=.11$). However, if we selected only the participants (n=41) who accepted the muffin we offered at the end of the experiment (a behavioural indicator for their appetite for muffins and hence an indirect indicator of how taxing the depletion induction was), the effect of the light manipulation was significant, both on subjective vitality ($F=6.79$, $p=.01$) and on duration of the grip test ($F=4.35$, $p=.04$). Persons in the high CCT group improved their performance on the grip test (M=12.3), whereas performance in the low CCT group worsened (M=-.15.8). For the actual experiment we will employ a different ego-depletion induction and the design will also include the non-depleted conditions for both light settings. The experiment is currently being planned; results will be presented at the conference.

S9. METHODOLOGICAL INNOVATIONS IN RESTORATION RESEARCH (1): NEW INSIGHTS IN RESTORATIVE MECHANISMS AND EFFECTS

S9.1 ATTENTIONAL RECOVERY: AN OVERVIEW OF COGNITIVE MEASURES

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The literature on restorative environments has grown rapidly over recent years. This growth has been accompanied by increasing diversity in aspects of the methods used. This holds true in several ways. Researchers are sampling from a broader range of environments, and trying to capture sensory aspects of those environments other than the visual alone. Researchers are also considering a greater variety of antecedent deficits from which people might need to recover, and with them a greater variety of processes through which they can recover the diminished resources. They also are beginning to address the temporal parameters for those recovery processes and the need for valid measures to represent those processes.
These developments are encouraging, but this diversification and the concomitant growth in the complexity of the literature also give reason for concern. In this presentation we address two related concerns that have to do with the measurement of cognitive capabilities thought to be sensitive to fatigue, in particular directed attention capacity. First, research has been troubled by questions about how to establish or represent the need for attention restoration which research participants experience prior to the time available for restoration in one or another environment. Second, research on attentional recovery has produced inconsistent results, and it is not certain what this depends on. Possible reasons include, but are not limited to, a lack of any substantial need for restoration on the part of some subjects, a lack of time allowed for restoration, and the use of measures that are insensitive to the theoretically assumed mechanism. The purpose of this presentation is to overview the cognitive measures that have been employed in efforts to detect restorative effects and consider how long the restorative period must endure to give positive outcomes on performance. We begin by describing the different approaches that have been taken to measuring the antecedent condition, the temporal aspects of the restorative process, and the outcomes of the restorative process within discrete restorative experiences. We then look more specifically at approaches used to induce attentional fatigue within experimental studies, and the measures used to establish whether directed attention restoration has occurred. We emphasize outcomes that reflect on actual changes in cognitive resources with restoration, rather than potential changes or variation in variables described in theory as mediators of attentional recovery (i.e. the components of restorative experiences specified in attention restoration theory).

The general conclusion we draw is that researchers need to further specify the term "directed attentional fatigue" and the cognitive processes involved in the development of attentional fatigue and recovery from it. We will end the presentation with suggestions from theories within working memory and some ideas for future research.

S9.2 HUMAN EEG RESPONSES TO EXACT AND STATISTICAL FRACTAL PATTERNS

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Attention restoration theory points to nature as a particularly good candidate for restoring the ability to focus and inhibit distractions. However, little effort has been directed to elaborating on what makes nature's visual pattern unique for restoration purposes. One suggested explanation is the fractal properties of natural patterns (Hagerhall, 2005). Both perception studies (Hagerhall et al., 2004) and studies using quantitative electroencephalography (qEEG) (Hagerhall et al., 2008) have pointed to that visual patterns with mid fractal dimension, D, seem to be the most relaxing and preferred. However, it has so far not been investigated if these responses are being driven by fractal geometry in general or by the specific form of fractal geometry found in nature. In natural scenery it is so called statistical fractals that are common because of nature's integration of randomness with the underlying fractal scaling properties. A natural fractal hence looks different from an artificial exact fractal (where the patterns repeating are identical at all scales), even if the two patterns have the same D value. We have here conducted the first study in which we consider both types of fractals and morph one type into the other.

qEEG was recorded from 35 participants viewing 9 images, combining 3 fractal dimensions and 3 levels of randomness. Each image was shown for 60 seconds, interspaced by 30 seconds of a neutral grey image. The data was analysed using an analysis of variance (repeated measures design), including both within-group (fractal dimension, level of randomness) and between-group (order) variances. Bonferroni correction was conducted and the significance level set to $p<.005$.

The study confirmed our hypotheses in that it showed that alpha power (an indicator of a wakefully relaxed state and internalized attention) was largest for fractals found in nature, i.e. fractals incorporating high randomness and mid to low fractal dimension. Statistically a majority of the results were tendencies (with $p\leq.05$) but the reaction patterns showed consistencies which point towardsthe human response to the patterns, and the parameters randomness and fractal dimension, having some fundamental base. The results must be considered as preliminary, but encouraging given the relative visual simplicity of the patterns.

S9.3 Does need for restoration direct us to nature? Testing viewing patterns after emotional and cognitive stress induction

de Kort, YAW; Beute, F
Eindhoven University of Technology, Netherlands

Restoration theories teach us that views to nature and spending time there help us restore from attention fatigue and socio-emotional stress. Research has also indicated that we have a beneficially adaptive taste, in that our preference for restorative environments increases with our need for restoration (Hartig & Staats, 2006; Staats et al., 2010). Such an adaptive appetitive system would help us seek out more restorative contexts when we need them. In the current studies, we wanted to investigate this adaptive system further, exploring whether need for restoration would not only have us prefer natural elements more, but also direct our visual attention towards natural elements – opportunities for restorative escape – faster and more explicitly. We used eye tracking to investigate the elements individuals scan and fixate on when presented with new scenes.

Eye movements are rapid and largely beyond our conscious control. In between movements the eyes briefly fixate on specific elements in a scene. This scene scanning involves both top-down and bottom-up processing. Bottom-up processing involves matching the position of certain critical objects with stored cognitive maps. Top-down processes were first demonstrated by Yarbus (1967), who showed that cognitive tasks will influence which objects are attended to. Whether restorative need impacts such top-down processes in scene processing is as yet unknown. Our research question therefore was: Does need for restoration influence scene processing; more specifically, do people fixate more, and more quickly, on natural elements of scenes after stress induction?

We performed two experiments (n=60 and n=50), in which we fitted participants with an eye tracker, induced stress (vs. no stress in the control condition), and then presented them a set of pictures. In Study One we employed an emotional stressor: we induced a mood by asking participants to recall an episode in their life where they experienced this emotion (e.g., Hucklebridge, 2000). In Study Two we used a cognitive stressor: the Markus & Peters Arithmetic Test (MPATest, Peters et al., 1998). The images all contained mixed content (i.e. natural and man-made elements, which were coded as either natural or urban Areas of Interest (AoIs). In both studies we compared heatmaps (the duration of fixation on natural vs. urban AoIs) and scanpaths (the order in which participants scanned the image) between the stress and control conditions. The studies were ongoing at the time of submission; results will be available in December 2011. These will tell us whether our visual scanning system helps us seek out opportunities for restoration under stress as compared to neutral mental states.

S9.4 GREEN SPACE AND WELLBEING: RELATIONSHIPS BETWEEN GENDER, PATTERNS OF SALIVARY CORTISOL, SELF-REPORTED STRESS AND LEVELS OF GREEN SPACE IN DEPRIVED URBAN COMMUNITIES IN SCOTLAND

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Although levels of green space have been associated with positive health benefits, including stress reduction, very few studies have investigated these associations using stress biomarkers with participants in everyday, residential settings. This paper follows an earlier, exploratory study (Ward Thompson et al., (under review 2011)that showed significant relationships between self-reported stress, the diurnal pattern of cortisol secretion, and quantity of green space in the residential environment using a small sample from a deprived UK city (Dundee) (n=25). This study replicates the study design in a larger sample (n=106), comprising multiple measurement of salivary cortisol over two days in men and women not in work, aged 35-55, in the same city context. The sensitivity of measures of green space in predicting patterns of cortisol concentrations in participants was tested using both a continuous measure of percentage green space in the neighbourhood and a binary category of green space split at a regression discriminator of 43%. Results from linear regression analyses show a significant and positive effect of higher green space levels on self-reported stress and diurnal slope patterns of salivary cortisol (3, 6 and 9 hours post awakening). Main effects of gender were found on self-reported stress, with stress being higher for women. Significant interaction effects between gender and percentage green space were found on mean cortisol concentrations, showing a positive effect of increasing green space on cortisol levels for women, but not for men. This study confirms and extends findings from our earlier study showing how - in deprived city areas – higher levels of green space close to home are associated with better health and how these effects may be particularly pertinent to women and/or those in poorer mental health.

S9.5 NO ARTIFICIAL INGREDIENTS ADDED: NATURALNESS AND THE REPLENISHMENT OF EGO-DEPLETION BY BRIGHT AND SUNNY NATURE

BEUTE, F; DE KORT, YAW

Eindhoven University of Technology, Netherlands

Both views to the outside and exposure to light can help us recover from stress and improve health, mood, vitality, and cognitive performance (Berman et al, 2008; Boyce et al, 2003; Partonen & Lonnqvist, 2000; Ryan et al, 2009; Walch et al, 2004). People often prefer being in a natural, rather than artificial, built environment (Hartig & Staats, 2006), and prefer daylight over artificial light (Veitch & Gifford, 1996). Preference has been linked to restorative potential (Van den Berg et al., 2003). Beneficial effects of nature are attributed to psychological processes (Kaplan, 1995; Ulrich, 1983) whereas effects of light exposure have mostly been attributed to biological processes, although psychological mechanisms have also been proposed (Boyce et al, 2003).

The striking overlap in effects attributed to daylight exposure and viewing nature - both natural phenomena - inspired us to investigate and compare the restorative effects of both phenomena within various paradigms. In the current series of studies, we have investigated the ego-replenishment potential of these two phenomena. Ego-depletion theory (Baumeister et al, 1998) holds that self-control relies on a limited resource. When exerting self-control on a task, performance on a subsequent task also requiring self-control will be reduced either through resource depletion or resource conservation (Muraven et al, 2006). Recently, a theoretical link between ego-depletion and restoration theory has been made (Kaplan & Berman, 2010). In the present studies, we tested whether nature and light indeed can help overcome ego-depletion. More specifically, we tested whether the degree of naturalness of these two phenomena influence the restorative potential.

For this purpose, we performed a series of studies (all n = 80 – 90). We used a typical ego-depletion design, in which a first task requiring self-control was followed by a second task also requiring self-control (dependent variable). Inbetween the first and the second task participants were exposed to our experimental stimuli (pictures or light), enabling us to test ego-replenishment. In study 1 we manipulated view type (natural vs urban). In study 2 we manipulated the perceived naturalness of light (natural vs artificial) by providing participants with differential descriptions of the same light-source. A third study is foreseen, testing real daylight versus artificial light. In all studies light intensity was kept constant, thereby excluding biological effects. During the experiments, psycho-physiological measures were taken and perceived stress, trait and state self-control, and need for restoration were probed where possible.

Results of Study 1 indicate a clear replenishing effect of nature on self-control. Data collection and analysis of study 2 are still ongoing. The joint results of these studies will provide insights in the underlying restorative processes, the role of naturalness, and the restorative potential of daylight and nature.

S9.6 Virtual reality, restoration and aversive experiences: distraction, relaxation and perceived control

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It is a general belief that distraction is helpful in coping with pain (McCaul et al 1992). The use of cognitive processes, such as distraction, can alter pain perception (Melzack 1996). The notion that attentional capacity is limited suggests that if a task draws enough attention from the unpleasant stimulus, someone would experience less distress. Distraction is often combined with other ingredients, such as positive mood, most often reached via relaxation or pleasant imagery (McCaul et al 1992).

Research on restorative environments suggests that certain environments are capable of promoting recovery from stress, especially natural environments (Hartig et al 1996). Additionally, exposure to natural elements has been shown to lead to positive moods.

Evidence is available that exposure to Virtual Reality (VR) distraction is more effective in offering pain control than exposure to a video or a standard care situation without distraction (Hoffman et al 2001). Another reason why VR can be more effective than other distraction interventions is the

difficulties some people may have in evoking images that are vivid enough to be effective (Mühlberger et al 2007). Two studies will be presented that investigated the beneficial effects of VR exposure in healthcare contexts that are experienced as aversive (fear- or pain-inducing).

Study 1 took place in a simulated dental care context. Participants sat in a dental chair and listened to an audio tape of a dental treatment. During the treatment we measured their heart rate. Afterwards we collected several other measures, and one week later we collected follow-up measures. Sixty-six participants were randomly assigned to one of three groups. The experimental group watched the virtual reality environment of a beach area and used a controller to navigate this environment. The first control group was a yoked control group; meaning we recorded the navigation of the previous participant and showed this video recording to this group. The second control group wore the goggles, but watched black screens. Results showed, among other things, that participants in the active VR group felt more present in the VR than those in the passive VR group, particularly for people with high dental anxiety. Participants in the control group had more vivid memories of their visit to the dental lab a week later than both VR groups, but only if they have higher dental anxiety.

The second study aims to shed light on the effectiveness of VR as a pain distraction technique. The same conditions as in study 1 will be employed and we will investigate the role of distraction, relaxation and perceived control. Additionally, we will have a more detailed investigation of memories. Data collection will be done in November 2011.

Findings of both studies will be presented and discussed in relation to the ideas of distraction, relaxation and perceived control.

S10. Methodological Innovations in Restoration Research (2): New insights in restorative preferences and strategies

S10.1 Links between enclosure and potential for restoration

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Parks play an important role as restorative places in urban areas, and it has been shown that even small urban parks can fill this need, but to a varying degree dependent on the content and size (Nordh et al., 2009). Small parks have a disadvantage in relation to large parks in that you cannot escape the impact of the surrounding buildings and streets just by walking further into the park. Hence it is likely that the properties of the edges are especially important to consider in the design of restorative small urban parks. Spatial borders and their openness, what you can see and by whom you can be seen, has a prominent place in some of the main theories of the field. For instance Prospect Refuge Theory (Appleton, 1975) promotes that enclosure, such as cover behind ones back, is important for the possibility to relax. As found by other researchers enclosure, such as a dense vegetative edge, can also promote the feeling of entering a whole other world, an experience that in the vocabulary of Attention Restoration Theory (Kaplan, 1995) is referred to as a sense of 'being away'.

In this study we will explore the impact of enclosure on the likelihood to rest and recover from stress. Based on an existing small urban park, that in a previous study scored medium on a restorativeness scale, we have built a digital model in which the park content is kept constant while the closure of the edge differ from open (no edge vegetation) to semi open (only trees) to enclosed (trees and bushes). These are edge conditions that would also be commonly found in practise. Each park model will be experienced by an independent group of subjects by means of a pre-fixed walk from outside the park, via the edge and into a central point of the park. Questions about restoration and the sense of being away will be asked. Results will be presented at the conference.

S10.2 A CONJOINT METHODOLOGY FOR EXPLORING PLACE AND ACTIVITY PREFERENCES FOR STRESS REGULATION AND RELATIONSHIPS WITH GREEN SPACE

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Significant associations have been found by a number of researchers exploring the relationship between green space and stress. People's preferences for stress regulation have also been shown to vary by activity and the environmental characteristics of green space (Stigsdotter and Grahn, in press). This current study builds on an earlier pilot indicating that people living in areas of high urban deprivation in Scotland may experience stress differently according to the levels of green space in their living environment (Ward Thompson et al, under review). Our aim was to explore, in a similar population, preferences for stress regulation in relation to self-reported stress and wellbeing and a range of environmental attributes. The research design grew from focus groups carried out with residents in four case study areas in Central Scotland characterised by high levels of deprivation and high versus low levels of green space (n= 29). Findings indicated that preferences for stress regulation appeared to vary in relation to the percentage of green space in the living environment. To explore this further, we used adaptive conjoint analysis, coupled with hierarchical Bayes estimation, to assess activity preferences when choosing a place for stress regulation. Via a computer aided household survey, adult residents living in areas of high and low green space in Edinburgh and Dundee, Scotland (n=406) were presented with a series of scenarios in relation to a question on the need to 'get away' when under stress: 'where would you go to clear the head?' Participants selected one of four behavioural options based on findings from the focus groups; to seek peace and quiet, to go for a walk, to seek company, or to stay at home. For each option, attributes of the environment were offered in combinations, to explore preferences for achieving stress relief. The attributes – selected on the basis of focus group findings – were specific to each chosen behavioural option but included location, activity, traffic density, distance to preferred location, views, greenspace and the social context. Self-reported stress and wellbeing measures were also captured.

Conjoint analysis was run to prioritise the attributes that were most important for achieving the chosen behaviour. Early analysis for all respondents shows location, activity and views to be important attributes in relation the chosen behaviours, but that this varies by sub-groups, for example, by gender and employment status. The full findings will be presented and discussed in relation to the potential of green space to promote stress regulation.

S10.3 NEARBY OUTDOOR RECREATION IN SWISS PERI-URBAN AREAS: RESTORATIVE NEEDS AND BEHAVIOURS OF DIFFERENT USER GROUPS

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This study aimed at identifying types of users of nearby outdoor recreation areas (NORAs) with respect to individuals' recovery needs and behaviours. We applied a combined cluster and linear discriminant analysis approach to analyse workday and weekend visits of 389 respondents with respect to 17 recovery goals, seven recreational activities, and the use of eleven recreational infrastructure elements (road type, bench, etc.). The analysis revealed four user groups which were labeled (a) the "Contemplative Distance Seekers", (b) the "Nature-related Retreatants", (c) the "Reflective Sporty", and (d) the "Childfriendly Sociables". They differed not only with respect to why and how they use the NORA, but also regarding their age composition, their use frequency of the NORA, duration of stay in the NORA, and the routine of their route usage. The findings support the hypothesis that visitors of NORAs form different user groups that discriminate by their specific recovery strategies. We conclude that landscape management measures aiming at improving public health should be designed by keeping the needs of these user-groups in mind.

S10.4 CREATING A RESTORATIVE STAFF ROOM IN AN EMERGENCY DEPARTMENT; THE PROBLEMS OF A WINDOWLESS INTERIOR ROOM

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Working in an Emergency Department (ED) is a demanding occupation, requiring high levels of concentration and long working hours. Stress and burn-out are commonly reported by medical staff, and can result in job dissatisfaction, absenteeism, and high staff turnover, in addition to the negative effect on patients, both medically and of their overall hospital experience. The attentional demands of the multiple tasks staff have to juggle can add to the build-up of stress and potential burn-out. Therefore staff need a quality period of restoration during their short breaks to ensure they recover from attentional fatigue and have time to reflect over their experiences on the shift so far, both emotionally and technically. As well as supporting staff well-being, having a restoration break helps staff maintain the provision of quality patient care.

Much research has shown that visiting natural environments, viewing nature through windows, or the addition of indoor plants can enable restorative moments. Unfortunately, plants are often not allowed in hospitals because of infection control and not all rooms in a hospital have windows, thus other environmental features need to be considered to create a restorative environment. This study therefore took a participatory design approach as research into psychological restoration has largely ignored windowless, interior environments, thus limiting possible evidence-based solutions. This also ensures that staff themselves can help shape and decide on the future of their own staff room, which will maximize its compatibility with their restorative needs.
To identify problems with the current staff room postcards with postboxes were placed around an ED asking staff to describe occasions when they were able or unable to restore in the staff room. These provided all staff the opportunity for brief contributions. This was complimented with ten in-depth interviews with staff members discussing problems with the staff room. From this key issues with the staff room were established involving features within the room, but also how they wanted

to use the staff room and how colleagues' behaviour helped or hindered their chance of restoration. All staff members (n=193) will then be invited to provide suggestions for possible solutions to the identified problems via an interactive ipad/computer kiosk located in their staff room. Through a series of different stages, staff will be able to suggest ideas, comment on other's ideas and vote for the best solution. Staff's attentional capabilities (necker cube puzzle) and self-report restoration measures will be assessed before and after any modifications are made to monitor the effectiveness of the staff room as a restorative environment.

The proposed solutions, modifications made to the physical environment and/or people's attitude and use of the staff room will be described. The success of making an indoor, windowless, staff room into a restorative environment within an ED will be discussed.

S10.5 COMMUNITY GARDENING SERVING RESTORATION AND EMPOWERMENT PROCESSES

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Urban environments offer various opportunities in an individualized society. At the same time they bear considerable risks, requiring adaptive demands due to a high complexity of external stimulation, arousing a strong need for restoration (Hartig, 2007).

Attention restoration theory states that physical characteristics in natural environments support this process by evoking automatic attention and restoring focused attention (Kaplan, 1995). Small-scale natural environments in an urbanized society could actively support people’s physical activation, social contact and psychological well-being in an every day context.

Urban gardening projects experienced a strong resurgence in Europe in the last years and could play a key role in an escape experience for urban dwellers searching for restoration. A temporary project has been initiated at a former airport in Berlin, serving neighbour’s every day restoration by community gardening. On a 5000 m2 public space, about 1000 people with different cultural background built and planted raised plant beds. Additionally, they organized events such as community picnics and workshops on sustainable behaviour.

Due to the groundbreaking interest in the former airport area, several interdisciplinary studies serve the evaluation of the effects of self-organized community gardening on the social, physical and psychological level.

In an explorative approach, qualitative half-structured interviews with initiators and participants are carried out at different stages during the first year after initiation of the project. Questioning the perception of the restorative and social aspects, the research aims to explore direct and indirect effects of community gardening. A focus is laid on the effect according to different economic, social and cultural background.

Results show the relevance of restoration and additional factors such as meaning of place and identity processes. Participation and repeated social interactions in the project is shown to increase responsibility and empowerment of the protagonists.

Results suggest that community gardening in the neighborhood can provide a base for low-threshold social support. The temporary character of the community garden is critically reflected.

Discussing the results, the potential to enhance public health and social equity is promising. By activating people and serving their individual need for restoration, urban intercultural gardens provide an important opportunity to enhance quality of life for urban inhabitants. The positive effect of community gardening in a natural environment is enhanced by social interaction and self-organization. Spatial concepts such as place attachment and identity processes need to be considered carefully in future. Longitudinal designs are planned to represent the development of restoration, social interaction and empowerment processes. An outlook for planning concepts achieving the need for restoration of urban inhabitants is given.

S11. NEW WAYS OF LIGHTING THE STREETS AT NIGHT: IMPLICATIONS FOR PRACTICE AND RESEARCH

S11.1 RESIDENTS' PERCEPTION OF OUTDOOR LED-LIGHTING DURING THE WINTER SEASON

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Light Emitting Diodes (LED) are considered to have large energy saving potential, thereby constituting an ecologically sustainable alternative to conventional lighting. The spectral as well as lighting distribution from LED differs from conventional light sources. Knowledge of how this light source is perceived both initially and over time, and the possible effects on perceived accessibility and safety, is limited and thereby its impact on social sustainability is also limited. The present study will provide insights for policy-making and implementation of LED in the outdoor environment of residential areas.

Well-designed artificial lighting can increase the perceived safety and accessibility of out-door environments after dark (Painter, 1996), and subjective quality of light might be a better predictor than objective measures of illuminance regarding individuals´ psychological responses to the environment (Küller et al., 2006). The perceived brightness of the lighting along a footpath has been found important for accessibility, whereas hedonic tone along with brightness predicted perceived danger (Johansson et al., 2011). In an intervention study all conventional light sources in out-door public spaces of two multifamily residential areas were replaced by retrofit of LED´s. Residents above 18 years of age (n = 40) rated the quality of light, perceived danger and accessibility, while being outside on a weekday after dark at three occasions during the winter season. Assessments were made one month, five months and six months after installation.

Preliminary analyses with ANOVA repeated measures design show that residents initial perceptions one month after installation of the LED is stable over the six month period, and initial differences in subjective lighting perception between the two investigated areas remained throughout the intervention period.
The results will be presented in relation to the photometric measures obtained. The study will inform policy-makers on how future out-door lighting projects need to be designed, for example regarding retrofitting in residential areas, with focus on providing safe and secure, and at the same time energy efficient, out-door environments.

S11.2 BRILLIANT NIGHTS AND BRILLIANT LIGHTS: HOW DOES LIGHTING AFFECT SAFETY FEELINGS?

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Due to a raised cultural awareness of problems related to climate change and the impending scarcity of fossil fuels, conventional road lighting systems are commonly considered to be a source of energy waste. Recent advancements in LEDs offer promising solutions to reduce energy consumption. Combined with sensing technology, the light may adapt to a pedestrian's needs, providing light only when and where it is needed. Unfortunately, we do not have a sufficient understanding of how lighting affects a pedestrian's sense of personal safety to determine how such intelligent dimming should be implemented. According to Fisher and Nasar (1992) peoples safety feelings result from their subjective appraisal of three safety-related characteristics of a street (so-called proximate cues): prospect, concealment and escape. Lighting may be regarded as an objective characteristic of the environment. Yet, how does it affect the more subjective proximate cues and thus people's safety perceptions?

In a first study, participants (n = 31) rated 100 photographs of urban environments either on questions relating to perceptions of safety or on questions relating to prospect, concealment and escape. Participants were very consistent in their judgment of how safe they would feel in each depicted environment. In accordance with Fisher and Nasar (1992), we obtained high correlations (r^2.643) between the independent measures of perceived safety and the measures of prospect, concealment and escape. More importantly, measures of the brightness of the scenes were found to be highly related to peoples appraisal of prospect and concealment (r^2 .312), but not to perceptions of safety, suggesting that lighting may have an effect on safety through the appraisal of certain proximate cues. The high correlations between appraisals of the three proximate cues suggest that a more rudimentary psychological mechanism may be underlying these environmental assessments. Closer examined, the proximate cues reveal a clue to a common mechanism. The absence of hiding spots, having a clear overview, and having many possibilities to escape in case of an emergency may all be related to perceptions of control. We tested this hypothesis in a second experiment (n = 82), in which we manipulated participants general perception of control (low vs. high) after which they assessed the safety of 30 urban scenes (i.e., the 10 highest, middle, and lowest ranking photographs of Study 1). We did not find any differences in perceived safety, but our analyses suggest that we might not have succeeded in our manipulation of control. Nevertheless, we did obtain a convincing replication of the safety ratings of the photographs, signifying that (a) lighting may have an indirect effect on safety perceptions through other inferred environmental characteristics and (b) our sample of stimuli has sufficient breadth and internal consistency to vindicate continued use in further experiments.

S11.3 SHEDDING LIGHT ON PEDESTRIAN ATTENTION: ANXIETY AND GAZE PATTERNS

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Current day road lighting systems are increasingly associated with energy waste and luminous pollution. They illuminate the streets during most, if not all, of the night even when no street users are present. Luminaries based on Light Emitting Diodes (LEDs) will reduce energy consumption, but only to a limited extent.

Additional savings become possible when LED technology is combined with sensors to detect the presence and behaviour of road users. Such intelligent dynamic road lighting provides light only when and where it is needed most. However, where do people benefit most from road lighting? Haans and colleagues (2011) found that pedestrians feel safer when their immediate surroundings are illuminated even if this means having less light in the more distal parts of the road (see Vita and colleagues in this symposium for a similar finding). Strangely, participants also indicated to have a better prospect or a better overview over the street, despite there being less light in the distance (cf. Fisher & Nasar, 1992). Unfortunately, we still know too little about how lighting affects safety feelings to understand these findings. One explanation might be that a more strongly illuminated action space allows pedestrians to respond more effectively to immediate threats. One possible way of exploring this hypothesis is by means of eye-tracking. Do pedestrians pay more attention to their immediate surroundings, including the road sides, than to the road ahead? Are such gaze patterns dependent on the emotional state of the pedestrian? In other words, do gaze patterns change when people are happy or a bit anxious?

To test these hypotheses, we implemented a three condition (anxious, neutral, or happy emotional state) between-subject experiment with participants' gaze patterns as the dependent variable. We are currently running the experiment and are aiming at total 60 participants, both men and women. Emotional state is induced by having the participants watch one of three short movies (e.g., Schaefer et al., 2010): A scene from the movie "The shining" to induce fear or anxiety, a scene from the animation movie "Jungle book" to induce happiness, and moving geometrical figures accompanied by elevator music for the neutral control condition. While sitting in front of a monitor, alone, and in an otherwise dark room, each participant first watches one of the movies.

Subsequently, participants are shown a series of photographs taken at different positions along a street after sundown. These photos are displayed on a computer screen, one after the other, with each photo displayed for three seconds. This creates the suggestion of walking through the street (Wang & Taylor, 2006). A Tobii eye-tracker and the Tobii-studio software is used for collecting gaze patterns and performing the analyses. Results will be discussed in relation to the effect of lighting on safety feelings and user requirements for intelligent dynamic lighting.

S12. PERSON-ENVIRONMENT FIT: CAUSES, MECHANISMS, AND CONSEQUENCES

S12.1 MAPPING THE PERSONALITIES OF CITIES

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The cities in which we live are profoundly important to our way of life: Cities are places where individuals come together, fall in love, start families, go to work, worship, and spend their free time. In other words, cities are where the psychology of everyday life unfolds. Curiously, however, psychology has had hardly anything to say about person and city interactions, or how people shape cities and vice versa. This is odd considering that cities differ on so many characteristics known to be linked to psychological factors. For example, some cities are liberal (e.g., San Francisco), some have strong economies (Houston), and some have high crime rates (St. Louis); at the same time, research in psychology suggests that political orientation is linked to Openness, that occupational success is linked to Conscientiousness, and that prosocial behaviour is linked to Agreeableness. It is therefore conceivable that such city-level trends reflect, at least in part, the psychological characteristics of the residents. Perhaps San Francisco is liberal because a lot of openminded people live there; and maybe Houston's economy is vibrant because there are large numbers of conscientious people there. The present research attempts to integrate theory and research in psychology and regional science by examining the personality profiles of cities. Using personality data from large Internet samples, this work examined citywide personality differences in the US. The results showed clear personality differences between cities. For instance, San Francisco, New York, and Austin ranked among the highest cities on Openness, whereas Detroit, Cleveland, and St. Louis ranked near the bottom; Boston, New Orleans, and Pittsburgh were among the highest cities on Neuroticism, whereas Miami, Salt Lake City, and San Diego ranked near the bottom. To determine whether city-level personality is represented at the geographical level, correlations between city-level personality and various social indicators were examined. The results showed that city-level Openness, for instance, was positively linked to the proportion of gay residents and artists, as well as patent production; and city-level Neuroticism was positively related to mortality rates. Taken together, these results suggest that some personality traits are concentrated in certain cities and that the links between personality and behaviour emerge at broad regional levels.

S12.2 A TALE OF MANY CITIES: UNIVERSAL PATTERNS IN HUMAN URBAN MOBILITY

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The advent of geographic online social networks such as Foursquare, where users voluntarily signal their current location, opens the door to powerful studies on human movement. In particular the fine granularity of the location data, with GPS accuracy down to 10 meters, and the worldwide scale of Foursquare adoption are unprecedented. In this work we study urban mobility patterns of people in several metropolitan cities around the globe by analysing a large set of Foursquare users. Surprisingly, while there are variations in human movement in different cities, our analysis shows that those are predominantly due to different distributions of places across different urban environments. Moreover, a universal law for human mobility is identified, which isolates as a key

component the rank-distance, factoring in the number of places between origin and destination, rather than pure physical distance, as considered in some previous works. Building on our findings, we also show how a rank-based movement model accurately captures real human movements in different cities. Our results shed new light on the driving factors of urban human mobility, with potential applications for urban planning, location-based advertisement and even social studies.

S12.3 The role of décor choice in regulating emotions and the resulting effects on air-quality

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People devote considerable effort to selecting and decorating their living spaces. Decorative objects and materials are chosen by occupants to project their identity and affect the ambiance of a space (e.g., to evoke a feeling of relaxation in their bedroom and productivity in the kitchen). But the items used to convey ambiances also inadvertently pose significant health risks in the form of pollutants emitted by the materials. Here we examine the potential effects on air quality of 20 desired home ambiances. Study 1 mapped the ambiances that people aim to elicit in the different rooms of their homes. Study 2 identified the materials and items (e.g., flooring, fragrances) participants use to elicit desired ambiances (e.g., romance, comfort); for each room of the home (e.g., bedroom, kitchen) we converted these psychological profiles into pollutant profiles. These findings demonstrate how psychological processes can have an inadvertent impact on health in real-world settings.

S13. Place Attachment and Place Identity (1)

S13.1 Sense of workplace: The role of place in the modern work environment

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Over the past decades technological advances have drastically altered the ways in which we work. Because of this the modern workplace is an organic and ever changing environment. As more emphasis is placed on mobility and flexibility, the role of the physical environment in which work is done will change as well. This may prove to have a profound effect on the way in which we experience our places of work. From these ideas the question arises, 'As work environments become more mobile and dynamic does the physical workplace still hold some significance to workers?'

To answer this question, the current study employed a simple non-experimental case study design in which the independent variable of workplace mobility is measured against the dependent variable of workplace attachment to examine if a correlational relationship exists. Workplace mobility is defined as the ability to work from a variety of settings both within and away from what is seen as the conventional workplace. Workplace attachment is defined as an affective bond between an individual and their place of work, the main characteristic of which is the tendency of the individual to maintain closeness to such a place.

Each construct was operationalized through the use of an online survey. The workplace mobility scale was created by the authors for the purposes of this research. The workplace attachment scale was created by modifying previously existing scales to fit within the context of work environments. The modified scale includes two sub-constructs of place, identity and dependence, as well as two dimensions of place, physical and social.

The hypothesis of this study is that individuals with both high and low levels of mobility will report higher levels of attachment to their workplace. Conversely, those with moderate levels of mobility will have low levels of attachment to their workplace. The reasoning behind these thoughts is that mobility may influence the sub-constructs of place attachment in different ways. High mobility may increase an individual's place identity while low mobility may increase place dependence. As a result, this research will attempt to discover a main effect of workplace mobility on workplace attachment.

Although the study of people-place bonding has received increasing interest over the last decade a limited number of studies are available that specifically tests the relationship between mobility and attachment. In regards to the study of place attachment to working places only one study has been found. Hence, one of the goals of this research is to add to the current knowledge base while possibly stimulating more empirical studies in the topic.

S13.2 Investigating the role of variety and intensity of place attachment in predicting social acceptance of energy infrastructures

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Several recent studies have proposed a role for place attachment in understanding so-called 'NIMBY' ('not in my back yard') responses to large-scale energy projects, including hydro-electric power stations and offshore wind farms. This study seeks to extend the literature on social acceptance of energy infrastructure in two ways. First, it goes beyond a single measure of intensity of attachment to place to include two measures of varieties of place attachment: place discovered and place inherited. Second, the conceptual framework included several constructs shown to be relevant in influencing social acceptance: procedural justice, trust and perceived impacts – yet not captured in previous place attachment research. These were investigated in an empirical case study of a controversial proposal to construct a 60km high voltage overhead powerline through a rural area of South West England. In total 503 adult residents of the town of Nailsea, Somerset, completed a questionnaire survey in July/August 2009. A series of logistic regressions were conducted to establish the relative importance of several sets of variables: socio-demographic characteristics (age, gender and educational attainment), project related beliefs (negative and positive impacts, procedural justice and trust in the development organisation) and place attachment (intensity, discovered and inherited). Findings suggest that collectively, these measures explain 39% of the variance in levels of acceptance, with most of the variance explained by project-related variables, with trust being the most important of these. In the final model, socio-demographic variables were not significant; however, two place attachment measures did significantly contribute to explaining social acceptance of the powerline after controlling for project related variables: intensity of place attachment and place discovered.

Interestingly, these effects were in different directions: stronger place attachment related to stronger powerline support, with the opposite the case for place discovered. Conceptual and applied implications of the findings for the literature on place attachment are discussed.

S13.3 THE MEASUREMENT OF PLACE ATTACHMENT AND PLACE IDENTITY: CHARACTERISTICS, CONSTRAINTS, OPPORTUNITIES AND SOME FUTURE DEVELOPMENTS

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The purpose of the presentation is to analyse the procedures of measurement of place attachment and place identity. Firstly, we describe the characteristics of the most common instruments, their limitations and the results obtained. The psychometric properties in terms of structure, reliability and validity are discussed in second place. Thirdly, some of the conceptual and methodological problems associated with these instruments are presented. Finally, future lines of methodological development are presented.

S13.4 PLACE ATTACHMENT AND IDENTITY OF PLACE: MAPPING THE ROLE OF THE PHYSICAL ENVIRONMENT

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The renovation of several neighborhoods in the Netherlands meets with serious resistance from the inhabitants. Consequently, the renovation process has been postponed in a number of cases or reduced to only social measures in others (thus delaying interventions in the physical environment). Yet, a representative group of inhabitants was involved in the planning process leading up to the renovation. They participated in so-called branding sessions as a part of neighbourhood branding initiatives and they approved of the measures that were to be taken.

Preliminary research has led to the assumption that, beside a possible incorrect translation of the outcomes of the branding sessions into actual measures, another mechanism could be at work. The neighborhood brand and the ensuing plans that were agreed upon should strengthen the specific character (i.e. the identity of place) of these areas. That idea was supported by most inhabitants. The actual interventions communicated at a later stage, however, could have distressed residents because these measures also included activities affecting environmental elements that were related to the inhabitant's attachment to the neighbourhood. Thus, the conflict may reflect the fact that the latter elements were insufficiently taken into account during the branding sessions, or that there is potential discrepancy between the physical features related to identity of place and those that are related to place attachment. This assumption constitutes one of the questions in a PhD research project by one of the authors (Havermans).

An instrument was needed to establish the environmental elements connected to the concepts of identity of place and place attachment. These sets of elements should be comprehensive (on a meaningful and feasible level of aggregation), they should contain the relevant attributes and perhaps locations of those elements that promote their importance for both concepts and they should offer possibilities for systematic comparison. There are few existing instruments for taking inventory of these physical elements and the available instruments do not entirely fit the demands

(see Fornara, Bonaiuto and Bonnes, 2010; Lewicka, 2011). Therefore, a new method has been designed. The paper will focus on this method, the motivation underlying its design and its feasibility for use in fieldwork. The project is not yet finished, but some preliminary results may serve as examples of the possibilities offered by this method.

S13.5 INTEGRATION OF PLACE-MAKING THEORY

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This paper reviews the different theories used to define and recognize factors which contribute to an enhanced quality of space (sense of place). It also looks for similarities in different approaches. Human geographers have stated that a strong sense of place is the result of human interaction with the environment. Some have stressed the importance of activity (Relph 1996) and practice (Cresswell 2009) as well as materiality (physical setting) and meaning. Agnew (1987) offers a conception of place as the geographical setting for social action. As a result, he defined three components: locale, the setting for social relationships; location, the geographical area encompassing the setting for social interaction; and sense of place, the local structure of feeling. For these researchers meaningful places emerge in a social context and through social relationships. Psychologists view the quality of space as a linkage between conception, physical setting and activity (Canter 1977). Urban designers also contribute meanings to their designs to make successful places (Montgomery 1998).

Different specific studies have looked at one or two of these components or have investigated links between them: physical setting and activity (Gehl, 1996), physical setting, meanings and symbols (Eco, 1968), built environment and perception (Lynch, 1960), behaviour and physical setting (Gibson, 1966). In a study of successful spaces the Project of Public Space (2000) found four keys for successful place making (access and linkage, comfort and image, activities and sociability) which all result from physical setting, meaning and symbols.

With advances in transportation and mobility, and increasing globalization, traditional definitions of the three elements of place are being questioned. Physical distance is shaped by use of transportation and the internet and place is now a switching point in the world network. Mobility shapes a multi cultural society (through migration, tourism, refugees) that gives multiple meanings and different responses to globalization. These make different physical settings and activities in different societies. As a result, Doreen Massey (1994) advances the notion of a progressive sense of place and global sense of place. She sees places as a social relationship and argues that with globalization, relationships are becoming more stretched than before. As a result, there is no boundary between inside and outside. So while in the first definition people defend the outside, here there is nothing to define a boundary. She questions the traditional theories of place as these do not see place as a process. Instead, she talks about a global sense of place and defines place as a progressive process.

However, this paper contends that meaning, physical setting and practice are still the elements of place. The first is rooted in culture, the second is about materiality, and the last is influenced by human behaviour.

S14. PLACE ATTACHMENT AND PLACE IDENTITY (2)

S14.1 LOCALISM AND ACTIVITY AS TWO DIMENSIONS OF PEOPLE-PLACE RELATIONSHIPS: TOWARDS A MORE DIFFERENTIATED VIEW OF PLACE ATTACHMENT

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Based on a series of interviews with residents of Worcester, David Hummon (1992) distinguished five different attitudes held by people towards their communities: everyday and ideological rootedness (here called traditional and active place attachment), alienation, place relativity and placelessness. Lewicka (2011) in a large country-wise survey confirmed existence of these five types also in the Polish population and demonstrated that they differed with respect to a number of psychological variables: socio-demographics, social capital, cultural capital, value structure, measures of life satisfaction etc. Although the two place-attached (rooted) types had a lot in common (they were more satisfied with their life than the nonattached types, had a better social capital and were more other-directed), they also differed on a number of dimensions (e.g. cultural capital, social activity).

In this paper I will show that the typology of people-place relationships applies to other countries as well by demonstrating similar results for Ukraine (country-wise survey, n=3000 participants). I will also show results of the discrimination analysis performed on all correlates of attachment with the purpose of identifying basic dimensions that differentiate the five types. Included into the discrimination analysis were socio-demographic measures such as age, education, measures of mobility; measures of social capital (bonding and bridging, neighborhood ties, trust, social activity), cultural capital (cultural activity, size of home library), measures of self-continuity and of personal values, life satisfaction etc. Of the four discriminatory functions the first two, labeled "localism" and "activity" were identical in the two countries and explained over 80% of variance. In both countries the actively attached participants scored high (above zero) on both functions (were both "local" and "active"), the traditionally attached participants scored high (above zero) on localism but low (below zero) on activity, and all nonattached types scored low on localism and either low or average (around zero) on activity. The data are discussed with reference to the concepts developed by Maslow, to Beckley's ideas of place as anchor and as magnet, and to the social psychological theories of "Big Two" (community versus agency personality dimensions). It is concluded that research on place can be easily incorporated into a broader framework of social and personality studies.

S14.2 WORKING FOR CHANGE: A CASE STUDY OF THE RELATIONSHIP BETWEEN PLACE AND SENSE OF COMMUNITY ON A DEPRIVED LONDON HOUSING ESTATE

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The work was funded by Greenwich Primary Care Trust and Greenwich Council as part of their Physical Environment and Mental Wellbeing Project (2009/2011). An Estate that ranks 6.11 on the Index of Multiple Deprivation with a high level of social housing, low levels of employment and high numbers of single parents provided the context. An 18 month Intervention Scheme was designed to encourage residents to work together to improve their quality of life. Phase 1 of this two-phase qualitative study explored residents' ideas, values and beliefs regarding improving life on the Estate; the depth and breadth of an existing sense of community; participants' personal attachment to their home and their attachment to the Estate; evidence of identity indicators and identification with the Estate; and participants' hopes of what might be achieved during the Scheme. Phase 2, in addition, focused on positive/negative impacts and perceptions of the Intervention Scheme.

Two theories, Place Attachment (PA) and Identity Process Theory (IPT) were used to assess the baseline conditions. Past research has shown that for people to be able to form an attachment to their home and/or area, 5 PA aspects are required (Speller, 2000): security; autonomy; appropriation; stimulation; and congruence. In addition, the existence of a collective identity was examined in terms of Breakwell's 4 IPT principles (1986;1988): distinctiveness; continuity; self-esteem; and self-efficacy. The Phase 1 sample consisted of 13 participants. Interpretative Phenomenological Analysis was used to explore how participants perceive, communicate and make sense of their experiences on the Estate. Findings included a severe lack of PA, especially in terms of sense of security and only scant evidence of a collective identity and identification with the Estate was found. The Phase 2 data was collected at the end of the 18 months period from a reduced sample of 10 participants, using Thematic Analysis to examine changes within the Phase 1 themes with a greater focus on perceptions of the intervention Scheme. Overall findings suggest that the Scheme would have benefited from an extension of at least 6 months as involving residents at the start proved to be a lengthy process. Nevertheless, there have been achievements in terms of setting up a Residents' Association and encouraging residents to join various community based projects. However, at the time of Phase 2, only minimal positive change was noted in terms of PA aspects, collective identity and identification with the Estate. Four key points were identified: problems entailed in dealing with anti-social behaviour; the Residents' Association not listening adequately to members; poor communication across the Estate; and the lack of a community centre to provide facilities and a sense of ownership for all ages.

S14.3 THE ROLE OF NEIGHBOURHOOD ATTACHMENT IN PEOPLE TRANSACTIONS WITH LOCAL FLOOD RISK

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Past research suggests that Place Attachment (PA) is relevant in regulating people-environment transactions across a number of environmental-psychological processes, such as perception, concern, attitudes, intentions, behaviours (e.g., Giuliani, 2003; Speller, 2000). However, a more specific and relevant environmental issue such as environmental risk lacks empirical studies assessing the role of PA on environmental risk perception, concern, attitudes, intentions, behaviours (with very few recent exceptions about flood risk, e.g., Twigger-Ross, Whittle and Medd 2010). These few previous studies have shown the positive main effect of PA (precisely genealogical and economic vs. religious PA) on flood risk preparedness (Mishra, Mazumdar, Damodar, 2010); or the positive main effect of Neighbourhood Attachment (NA) – PA to one's own residential neighbourhood – on Flood Risk Perception (FRP) and concern; as well as (especially in areas of low risk) on attitudes toward flood coping behaviours, intentions to engage in flood coping behaviours, and self-reported flood coping behaviours (i.e., prevention behaviours and/or action to take/avoid in case of flood – Bonaiuto, De Dominicis, Fornara, Ganucci Cancellieri, Mosco, 2011).

The main goal of this research is to develop the empirical knowledge about the role of NA on psychological pattern related to flood risk (i.e., perception, concern, attitudes, intentions and behaviours). On the basis of previous findings – general, on PA, and specific, on NA in flood risk context – the main hypothesis is that higher Objective Flood Risk (OFR) is related to higher FRP, concern, attitudes, intentions and coping behaviours, especially for the more attached inhabitants.

Two Italian survey studies carried out in two different cities (n_1=236 – Rome; n_2= 230 – Vibo Valentia, south Italy) are presented here. The two areas were chosen after a preliminary qualitative analysis of Authorities' knowledge and responsibilities, and after a quantitative preliminary study aiming at understanding citizens' flood knowledge systems and flood experiences. The two studies used a purposive sampling procedure in order to include those citizens in flood risk areas who experienced flooding in the past. Three sub-areas (and three sub-samples), subjected to three different level of flood risk (no risk vs. low risk vs. high risk neighbourhood), were selected within each case study, in order to improve case studies comparability. Shifting from the neighbourhood to the city level, we considered Rome (Study 1) as a low risk city and Vibo Valentia (Study 2) as a high risk city.

Multivariate analyses and structural equation models were used to assess the hypothesised moderating role of NA in the relationship between OFR and, respectively, FRP, concern, attitudes, intentions, and coping behaviours. Results are discussed within the framework of the general positive effects that PA can exert on inhabitants' transactions with their own environment.

S14.4 UNDERSTANDING BARRIERS TO URBAN CHANGE: A LIFE HISTORIES APPROACH TO PLACE IDENTITY

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Berkeley, California is one of many American cities slated for transit-oriented development (TOD). Voters passed a measure to significantly raise height limitations in an expanded "downtown" in 2010, but there is also strong current of opposition to TOD. Public discourse from urban planners, transit advocates, and developers tends to dismiss this as "NIMBYism." As Devine-Wright has noted, NIMBY (Not In My Backyard) behaviour can also be seen as "a form of place-protective action, which arises when new developments disrupt pre-existing emotional attachments and threaten place-related identity processes" (2009, p.426). As part of the Symposium on Place Attachment and Place Identity, I propose to present a paper using place identity to examine resistance to density in Berkeley and factors that could help overcome these barriers. Place identity (Proshansky, 1978), defined as the subidentity formed by a person's relation to the physical environment, has been useful in understanding reactions to urban redevelopment and attitudes towards environmental sustainability (Uzzell, Pol, & Badenas, 2002). The sustainability of TOD is based on the idea that people will choose to live in dense, apartment-style housing in places like downtown Berkeley rather than in single-family suburban homes. As Brindley has observed, such "re-urbanization" tends to be marketed towards young, high-earning, childless professionals (2003, p.73). Berkeley—a small city of 112,580 with high density by California standards—affords a distinctly different lifestyle from both San Francisco and its modern sprawling suburbs. Thus, resistance to TOD may be tied up with concerns about who these developments are for and the type of lifestyle they are imagined to support, as well as physical change. The life histories methodology has been gaining popularity in the social sciences because of the deep insights it is able to provide into the development of behaviours and preferences across the life span (Uzzell, Gatersleben, & White, 2010). Life histories seem particularly well suited to the study of place identity, but surprisingly have never been applied. Portelli, a scholar of oral history, explains the value of the subjective premise of this approach: "the representative quality of oral sources and life histories is related to the extent to which they open and define the field of expressive possibilities . . . it is measured less by what materially happens to people, than by what people know or imagine might happen" (1997, p.86). In this paper, I will use life histories to examine the relationship between place and identity in Berkeley and how this affects attitudes towards changes in urban planning and design. In using life histories, I hope to gain insight into factors that may make more sustainable development more appealing to Berkeley residents. This topic relates to themes 1.3, scale and pace of development in urban environments, and 1.1, urban sustainability and ecological impact.

S14.5 PLACE IDENTITY AND PLACE SCALE: THE IMPACT OF PLACE SALIENCE

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Research about place scale and place identity supports the idea that bonds towards places may differ depending on the place scale. Based on the idea that identity is context-dependent, this paper wants to add to this discussion the impact of manipulating the salience of place identity on the intensity of place identity reported. One study was designed in order to study place identity and

place attachment in two groups of residents (permanent and temporary) at three different scales (neighbourhood, city and country), in which the salience of place scale was manipulated. The results showed that place salience can have an impact on the intensity of place identity and place attachment in permanent residents and temporary residents, but only at the neighbourhood scale. These results are in consonance with the predictions of social identity theory (Tajfel & Turner, 1079) and self-categorization theory (Turner, 1985) and show the relevance of exploring the concept of place identity within this theoretical approach. But it is not clear in what conditions we can make an identity salient to the individual or the group. This aspect needs to be further explored in future studies. This study also supports the idea that identity with the neighbourhood is not as strong as identity with the city or country, as many previous studies have indicated (e.g., Hernandez et al., 2007, Lewicka, 2010).

S15. Place-Identity Research Issues – Impact on Practice and Policy

S15.1 A customization of urbanites

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The construction of places in today´s urban agglomerations is frequently associated to place-making and place-marketing policies. This trend clearly represents a global contemporary planning style. One of its typical manifestations is the insertion of prettified images of places in order to competitively use “urbanity” as a tool to attract people and entertain them in an interspersed assortment of iconic places. Results of empirical research studies demonstrate that stimuli that influence human experiences in the built environment, usually employed in macro levels of urban planning policies, are being increasingly adopted in local level projects, allowing for the presence of global influences in the definition of their identity. This paper addresses the impact global planning transfer renders to the context of local place identities – so as not to distort them exceedingly – and the best ways to evaluate the potential impact of environment-behaviour research on urban-architectural practice.

The actual symposium brings a good opportunity to further develop the topic of situating local place identity within a global perspective. From the literature, there are several interesting research inputs that can work as guidance for this purpose. Three of them will be highlighted in the paper, namely the ones that deal with changes: (i) in the control of land (fragments); in the behaviours of people (urbanity); in the uses of vacant land (placeLeaks). Minton’s research indicates that new invented places can create extended fragments, entailing discontinuities in the morphology of the city fabric (Minton 2009:15-18). Consequently, the manifestation of urbanity in these areas may result different from urbanity encountered in spontaneously created places (Castello 2011 a). In other words, place-identity may experience variations, which determine variations in the fruition of urbanity. Finally, as for change in vacant land uses, recent studies argue that people are appropriating cities’ loose spaces and attributing them original uses (Franck and Stevens 2007) besides setting up new informal places of urbanity in the interfaces as PlaceLeaks (Castello 2011 b:3).

Figuratively speaking, one can imagine being faced by a sort of a customization of urbanites going on in contemporary places. This disturbing hypothesis implies that design practice and policy,

when appropriately managed, can effectively influence – and act – upon the interaction between people and environment, upon present day transactions between urbanites and their places.

S15.2 PLACE MAKING AND ARTIFICIAL IDENTITY: THE EXAMPLE OF SUPERPLACES

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"Place" is a space which binds ("take place") the human planning action. Many authors like Heiddeger, Bollnow and Merleau-Ponty, Norberg-Schulz and Rossi, distinguish -in their own way- the idea of space, an abstract ambit, from place, a specific field with its specific attributes. The result of this analysis is that places take identity, and become systems designed to accept life and human activities through a set of intentional practices. A place's identity is a specific attribute which characterises both physical reality and formation process. Identity gives meaning to places, and makes them recognisable. A place's identity relates with liveability, and marks the place's capacity to be inhabited and used by humans. Identity is not a static attribute, but a dynamic character, and evolves with the place itself. Also, identity plays an active role in attracting users, and suggesting various ways of inhabiting it. The idea of identity of space is commonly accepted, but its own characteristics are often intangible, and ephemeral. Consequently, in my opinion, even if identity is the result of a series of intentional actions (Castello 2010), it is very difficult to be artificially designed.

In order to explain this contradiction, I will use the category of superplaces.

Superplaces (Boeri 2005) are complex sites where exchange, mobility and services coexist. These collisive sites (Lyster 2006) are crowed by technical functions: airports, stations, stadiums, theme parks, shopping malls where users move and consume. Not always a superplace is the result of a design strategy. Sometimes different functions, localized in the same area by different developers, generate spatial tensions and dynamics. The distinctive character of these kinds of places -their identity- is the adaptive use, or reuse (Berger 2006) of space by users. Adaptation process is only possible on the boundaries of the complex site, in the flexible, un-programmed in-betweens which are neglected by econometric and engineering criteria. Designers and developers should perceive this double reality of place and planning strategy that respects, and promotes interaction between users and the environment. In this way it is possible to develop the potential inter-scalar (Balducci A., Fedeli V. 2008) character of the superplaces: identity affects the project and, sometimes, contributes to shape it.

S15.3 THE PROBLEMATICAL INVOLVEMENT OF LOCAL COMMUNITIES IN BUILT-HERITAGE CONSERVATION INTERVENTIONS: THE CASE OF HISTORIC CAIRO

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Heritage is a constituent of the cultural tradition, and an important part of societal and community well-being. This comprehensive vision merges both tangible and intangible dimensions; architectural and historical values. As a result of globalisation, residents of heritage sites have started to realise the significance of their influencing voices in shaping their life and future. They have recognised that heritage sites are dedicated to promoting appreciation and knowledge of

their history and its importance to understanding the present and anticipating the future. Thus, the principles of residents' involvement in decision making have gradually evolved aiming to achieve and maintain sustainability in the built-heritage and guide significant development in the planning and management of those particular contexts. Hence, it is the responsibility of nation states to safeguard and rehabilitate its heritage sites by encouraging and facilitating the active involvement of local communities throughout the stages of planning and implementing development schemes.

Historic Cairo is currently considered the fifty fifth most visited world heritage site, amongst almost 1000 sites. It has the largest concentration of Islamic monuments in the world and has been included in the world heritage list of UNESCO in 1979. However, and despite historic Cairo's international and local significance, it has been highly vulnerable to negligence and deterioration as a consequence of modernisation and rapid changes in cultural and traditional lifestyles. Hence, historic Cairo has started attracting numerous rehabilitation, preservation and restoration initiatives and projects by national and international bodies. Regrettably, many of those rehabilitation schemes have overlooked the amalgamation of the scheme objectives with the physical and socio/cultural urban context of the area, and another key factor of successful schemes: community involvement.

The paper presented aims to examine the major problem issues of local involvement in the heritage conservation of historic Cairo. It elucidates a chronological review of key interventions and development schemes that have taken place in this unique heritage site. It critically evaluates those interventions in light of how successful community participation has been incorporated and how effectively it has been applied within those schemes. The paper proceeds into effective means of incorporating community participation in rehabilitating and maintaining historic Cairo's urban, social and cultural fabric. The identification of critical requirements for a successful rehabilitation strategy in historic Cairo by exploiting community involvement initiatives is consequently recommended.

S15.4 Place-Identity: An Integrative Dimension in Housing Policy

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Places are not only backdrops for humane activities, but rather an integral part of personal and social identities.

Hence, the term Place-Identity refers to the bonds that are built over time from human experiences and are influenced by an individuals' psychological and emotional outlay in relation to place (Proshansky et al., 1983; Giuliani & Feldman, 1993); and, to the dual impact people and place have on each other (Gifford, 2002). As a dimension of place-attachment, it is concerned with the "symbolic importance of a place as a repository of emotions and relationships that give meaning and purpose to life" (Hauge, 2007)

One of the major purposes of residential environments is to create settings that nurture residents' sense of identity, the process is generated through two main actions: on one hand, residents' efforts to articulate self and communal identity, perceive spaces as an extension of their own behaviour; on the other hand, designers are challenged to create spaces that invite and facilitate taking possession and personalisation.

In Egypt, people shape and reshape their residential environments, from the micro home level to macro district and city levels as a reaction to the inappropriateness of the urban-poor housing. Processes of personalisation of 'places' occur to express their preferences and to reflect how they see themselves. Such deeds result in a more chaotic built-environment, consequently leading to more 'informalisation' of Egypt's housing stock with an average of sixty five percent of the total built up area

Thus, while economic pressures appear as a core aspect leading to previous situations, a lack of understanding the relation between 'place and identity' needs in home environments is obviously revealed

This research evokes the question of "how do people identify with the places they live in?"

The main purpose is to draw a workable framework that links research with design and decision making when planning for low-cost housing projects.

From an alternative environment-behaviour approach, the research aims at revisiting the theories of 'place-identity' and 'place-making' in a sample of low-cost housing environment in Cairo.Interpretations of the results will create a framework to be incorporated within housing policies, decision-making, regulations, design and implementation

S16. SENSORY INTERACTIONS IN THE CITY: EXPERIENCES AND DESIGN

S16.1 'MY IDEAL HOME': A SENSORY EXPLORATION OF HOUSE AND HOME BY YOUNG PEOPLE LIVING IN 'HOME LIKE' ENVIRONMENTS

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This paper draws on preliminary findings from a two year ESRC funded research project examining how young people maintain and (re)create identities and a sense of belonging (or not) in 'home-like' environments where they are not living with their biological parents. Influenced by a diverse body of work (DeNora, 2000; Bull, 2007; Smart, 2007; Mason and Tipper, 2010; Miller, 2008; Pink, 2010), which argues for greater attention to be paid to sensory experience (and objects) in sociological research, this paper will highlight the importance of embodied, sensory experience for young people to feel at home or belong within a space.

May (2009) highlights the importance of embodied, sensory experience to feeling at home or belonging within a space and urban and music sociologists have argued that 'sensory experience can [...] provide a strong sense of place and belonging' (Adams et al. 2007, p. 206). For example, several writers have pointed to the use of music to gain a sense of control and 'warmth' in public and other spaces (DeNora 2000; Bull 2007). Indeed DeNora points to the potentially heightened importance of music to those living in reduced material circumstances. The links between young people's relationships and sensory experience of space of places are also suggested in important human geographical work on the meanings and feelings attached by children to particular spaces (Hart 1979). Rasmussen refers to architect Norberg-Schulz's 'genius loci' or the 'sensations and interpretations that are linked to particular spaces' (2004, p. 168). However, young people's

embodied, sensory experience of domestic space and its links to their relationships have been less explored.

Based upon an analysis of sensory data (photographs, audioscapes, maps, drawings and interviews) created by participants in the Young People Creating Belonging research project, this paper will discuss their experiences of living in 'home-like' environments. In particular, it will present and examine the ideas of participants in creating the ideal material and sensory environment to enable them to feel 'at home', across multiple spaces.

S16.2 EXPERIENTIAL MAPPING: A SENSORY EVOLUTION OF PROFESSIONAL PLANNING AND DESIGN TOOLS THROUGH COMMUNITY PARTICIPATION

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Whilst communities' everyday environments are increasingly subjugated to the will of professional trends and tools, concern arises as to the potentially damaging impact of the experientially sterile spaces that result (Habraken 1998; Dovey 2010). People with learning disabilities (PWLD) are amongst some of our most excluded communities, for whom environmental change has a heightened impact and who are rarely included in design decision-making (Mathers 2010). As identified by Hall (2010), in order to address the imbalance in professional control we must seek to transform the processes that facilitate current inequality.

In the field of landscape architecture, Experiential Landscape (EL) has developed mapping tools and training workshops to aid understanding of individual/collective experiences in environmental planning and design (Thwaites and Simkins 2007). Previous use of these tools has focused upon professional employment; therefore to assess their effectiveness for community use, a knowledge transfer partnership was formed with a local vocational training centre for PWLD. In 2010 a four-month qualitative study was carried out with centre trainees and staff. The EL mapping toolkit was employed to reveal existing and aspirational site experiences, facilitated through use of complementary sensory methods which included visual, auditory and kinesthetic techniques.

A number of community benefits arose from this process including empowerment of the involved PWLD and development of their environmental awareness (the fieldwork experience activated the participants to create a self-organised, conservation group to tackle environmental issues of key significance such as littering and site-specific garden development). Academic outputs included the advancement of a jargon-free professional mapping technique and the development of sensory action-generating research. In addition, Sheffield City Council selected this project for their 2011 Sheffield Showcase in order to publicise good practice in community participation.

S16.3 OUTDOOR THERMAL COMFORT IN A HOT ARID CLIMATE: THE THERMAL EXPERIENCE OF PEOPLE FROM TWO DIFFERENT CONTINENTS

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The thermal environment in outdoor spaces can significantly influence users' thermal perception and thus their use of these spaces. The means in which people thermally adapt influence their evaluation of their environments. Consequently, aiming to improve microclimatic conditions in urban spaces can enable people to spend more time outdoors, with the potential to influence the social cohesion of a space and increase economic activity. Since these issues have been rarely approached in the context of the hot arid regions, this study had the purpose of extending the understanding of the complex relation between the outdoor thermal environments, in its micro level, and the use of outdoor spaces in hot arid regions by studying the thermal sensation of the visitors. It aims at finding relationships exist between these issues and cultural and social aspects of their local visitors. Case studies were carefully selected in two different parts of the world (Marrakech in North Africa and Phoenix-Arizona in North America) to represent a variety of users in a similar climatic context. This enabled us to study the effects of the socio-economic and cultural diversity on thermal sensation, behaviour and use of space. Field surveys included structured interviews with a standard questionnaire and observations of the human activities, along with micro-climatic monitoring, were carried out during winter and summer. The analysis evaluated the thermal sensation of participants and investigated the socio cultural impact of their behaviour in the outdoor space.

S16.4 DEGREES OF ENVIRONMENTAL DIVERSITY FOR PEDESTRIAN THERMAL COMFORT IN DENSE STREET NETWORKS

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The present work addresses the contribution of local urban design towards the development of a comfortable microclimate at street level for pedestrians. The current environmental agenda for urban design points towards compact urban form and walkable polycentric city structures. In designing connected street patterns as social places that enhance permeability, a certain degree of complexity seems to be deemed necessary to avoid the monotony of a rigid grid and thus, provide environmental diversity and freedom of choice. The two latter concepts have been found to affect crucially the thermal sensation and microclimatic preconceptions of pedestrians and consequently their use of public space.

Walking in the city and having the possibility to do so comfortably and safely in terms of environmental conditions seems to form an informal measure of space quality with environmental benefits, as well as socio-economic correlations. Central point of this research is the pedestrian network of streets and squares and their urban morphology (fine urban grain). Recent studies in urban design emphasise the importance of environmentally friendly ('sunlit, wind- and pollution-free') spaces and successful places with vitality. Metropolitan city centres provide an example of a palimpsest of urban patterns and historical urban layers that present adaptive opportunities to continuous use and vitality. In view of the current debate on sustainability and compact urban form, the research addresses the quality of pedestrian street movement in relation to the

awareness of available choices through environmental diversity. The latter is defined as the spatial and temporal variation in the environmental conditions of the different urban spaces that form the pedestrian network (including, along with the linear street element, different spatial configurations that form widenings and small squares along main routes). In that context, emphasis is given on the microclimatic variations between different 'thermal urban rooms' and their influence on the outdoor environment and users' comfort.

Addressing pedestrian movement through a methodology of sequential analysis, along with the assessment of variations in the thermal sensation of users through 'microclimatic walks', could lead to a greater understanding of use patterns, pedestrian experience and behaviour. The degree of diversity that results from different urban geometries along street networks (more realistic forms in dense historic cores) is coupled with the relevant occupancy and frequentation patterns by people on a daily basis and also between seasonal variations. The expected outcome will provide an insight in the link between microclimatic conditions and pedestrian experience of dense street networks. One of the main research aims is to develop an architectural language that integrates information of pedestrian thermal comfort in the design process.

S16.5 How does the building sound? developing a hearing aid for architects

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Imagine you were asked to name your favourite building. Have you ever closed your eyes when visiting that building and listened to its sound?

When the Italian architect Renzo Piano was asked in a BBC Interview how he begins to start thinking about a building, he answered: "... I don't remember one single job ... that I started to work on without trying to understand the place, and to listen. You know place[s] talk, you just have to shut up and listen..." (R. Piano, BBC 2004).

While Renzo Piano in his interview obviously refers to listening skills in a rather metaphorical way, there is also an environmental dimension to hearing in architecture: noise and sound.

In the context of architectural design education, noise and sound awareness appears to be slightly underdeveloped. While a 5 year architectural program will primarily focus on the visual, building acoustics, even in the real world, is mostly limited to noise control, and room acoustics tends to be reserved to specific projects such as concert halls or theatres.

In our approach to architectural education, we have set up a programme that integrates sound perception into the design process from the conceptual stage.

In recent years, we have been confronting architectural students in 2nd year design studio with audio samples, hoping to stimulate them and to make them reflect on sound as an exciting design tool in architecture.

Every time we introduce the topic to 2nd year students, we provoke surprise: "Hearing in architecture"? However, students who have learned that light is much more than just being bright

or dark, will easily understand that sound is much more than noise or silence, and that sound planning can be much more than just using anti-noise-panels.

We have used audio samples that would represent real-world-situations, and our experiences so far suggest that most young architects, even at the early stage of 2nd year studies, are very curious and interested to (re-)think sound, and that they are well able to derive precise descriptors from their aural stimulation such as reverberation and speech intelligibility (J. Bauer, 2009).

Currently, we are extending our catalogue of stimulating audio samples and the identification of acoustic descriptors deriving from it. At the same time, we do not want to overload this list; we believe that fewer hearing experiences and their meaningful conclusions are more valuable for a sound design process than an endless list of criteria that hinder rather than aid the creative design act, particularly in the framework of an undergraduate design education. We are also working on the idea to use our class room (and its poor acoustics) as a sound design lab “on the job”.

The paper aims to summarize the latest experiences and findings in our approach to build up a “Hearing Aid” in 2nd year architectural design studio.

S16.6 THE SENSORY IN THE MARKETPLACE: A COMPARATIVE STUDY

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This paper uses the Sensory Notation methodology established by the Multimodal Representation of Urban Space research group in order to discuss the marketplace. The market is a fundamental site of human activity – not only economic, but also social and cultural.

The approach is strongly associated with the work of psychologist James J. Gibson, whose Senses According to Perceptual Systems forms a prototype for the attendance-led approach taken by the notation. One other influence on the notation was Christopher Alexander, whose Pattern Language suggested the construction of an alternative set of patterns based upon the whole sensory experience of the environment. Attempts to find commonalities across similar forms and functions are, however, frustrated significantly by the marketplace typology.

This indicates that the approach needs to look beyond typologies and conventional morphology towards a consideration of the cultural specificity of each site.

Sensory audits of markets in Daegu (Seomun), South Korea, are compared with those found in Rome (Via Cola di Rienzo), Jakarta (Serpong), Montreal (Jean Talon), and Glasgow (Barrowlands). The comparison serves to underline some common themes, but also the breadth of sensory experience available in the market. Such approaches are revealing of the deeper commonalities and surprising differences between places which often occupy formally and geometrically similar places.

The paper builds on the work of Sensory Notation by developing its use as a critical tool and analytical framework for interrogating the broader sensory experience of the spaces.

Informal spaces of accretion, ad-hoc development, and marginal activity are often much more sensorially active than the controlled, corporate shopping environments of globalised city centres. By understanding the complexity of the bricolage present in the marketplace, one can find ways to preserve instances where this occurs in the urban environment, design new sites with this sensibility in mind, and also to extend the right to space beyond the visual and into the aural, haptic, thermal, olfactory and gustatory environment.

S17. SUSTAINABILITY AND HABITAT: POSSIBILITY OR CONTRADICTION?

S17.1 HUMAN-ENVIRONMENT RELATIONSHIPS IN THE CONTEXT OF INTENSE RAINFALL: THE CASE OF A COMMUNITY AT THE PERIPHERY OF CARACAS

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Increases in frequency and intensity of extreme weather events such as heavy precipitation and droughts have been observed worldwide (World Meteorological Organization, 2010). As a result, people around the world are being and will be affected by the loss of homes, water scarcity, food insecurity and the incidence of diseases, among others (Richardson, et al., 2009). In Latin America, the increased intensity and frequency of such events adds to the complex social problems facing the continent's most vulnerable populations, exacerbating problems of provision of basic services, pollution, poverty and unemployment (Garibaldi & Rey Santos 2006; Hardoy & Pandiella, 2010; Magrin, et al., 2007).

In the case of Venezuela, heavy rains that have hit the most vulnerable sectors of the country have highlighted the complexity of the underlying social vulnerability to these climatic events. However, few studies have investigated the relationships between individuals and their local environment in the context of extreme weather events in vulnerable populations. This presentation will discuss the findings of a PhD research project that aims to explore human-environment relations from a psychosocial perspective, using as research strategy qualitative case study of a community located at the periphery of the Metropolitan area of Caracas. It is suggested that human-environment relationships can be better understood through an exploration of a) the social impacts of intense rainfall in that particular place, b) people's understandings of the local environment in the light of their experiences of intense rainfall c) the particular socio-economic issues of the place that are shaping the relationships between people and the local environment and finally d) people's understandings of community and their own ability to influence community decision-making towards the local environment. Ethnographic methods such as participant observation, walking interviews and group discussions were used for data gathering.

S17.2 PARTICIPATORY PUBLIC POLICY, PUBLIC HOUSING AND COMMUNITY SUSTAINABILITY: A VENEZUELAN EXPERIENCE

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Latin American Environmental Community Psychology (ECP) has among its goals contributing to improve living conditions of residents in precarious settlements. Literature in ECP mostly refers to projects with community and/or professionals. These professionals promote processes and

actions for enhancing communities' empowerment and participation, for its members to improve their residential living conditions. Such endeavor is also expected to influence public policy. Nevertheless, little has been reported on communities' influence in public policies and on joint work with agencies in charge of devising and implementing them. Our presentation focuses precisely on community guidelines for housing and habitat public policy, developed within a government agency. Guidelines were supported by (a) ECP's principles, (b) critical constructionist paradigm (Wiesenfeld, 2001); (c) an approach for public management based on community and agency's members participation and co-responsibility; (d) sustainable development model; (e) information gathered in workshops, meetings, interviews and discussion groups, with the institution's personnel and community members in a Venezuelan State.

S17.3 FARMERS AND FARMKEEPERS: ARCHITECTURAL SUBORDINATION AND SOCIAL SUBJECTION

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The research has been developed in the rural area of Rio de Janeiro, Brazil, a place that has undergone major socio-spatial transformations in the 1970s under the impact of the "green revolution". The small agricultural production that fueled the urban centers became unviable when the markets began to be supplied on a massive scale for the production of agriculture focused business. The intense process of migration from rural to urban population, coupled with the organization of leisure that was already occupied the highly urbanized societies caused a territorial fractionation in the region and the entry of an urban middle class that became the owner of "farms "used as second homes. The remaining local population was impoverished and found a way to survive in domestic service in resort properties, in which we meet now interpersonal experiences, whose power analysis reveals situations of coercion in family-family relationship, deepening the sense of social exclusion as present in Brazilian society. From the architectural point of view, the units adopts a pattern that tends to play on a miniature scale the big house / slave quarters relationship, the typical socio-characterization of the period of slavery in colonial Brazil: a larger building, super busy at certain times and under busy most of the time, and a smaller building attached to the first, all the time occupied by a family contracted to provide various services to owners, and they keep the vegetation of the land and any creations (especially dogs), the practice of cleaning external and internal areas of the home, and pay homage to the owners and guests of varying lengths. In our research we interviewed the farmers and their respective farmkeepers of four towns. It was a total of 40 interviewees. In the analysis of the interviews we concluded that the owners think about themselves as an elite social group. The most common among them is an attitude of exclusion related to the other segments of the local population. On the other hand, homekeepers women express negative feelings concerned to the living conditions of their children, unable to fully exercise their citizenship in the place they inhabit. The two houses do not have physical boundaries that separate, and the rules of interaction include a sense of convenience introjected by all who inhabit the lower housing, responsible for containment of movements in an imaginary circle that never exceeds three meters in radius. Those who inhabit the headquarters of the property do not recognize the existence of any limit and use the whole area, even some internal areas of the farmkeeper residence. The practice of places allows us to conclude that the relationship farmer-farmkeepers is marked by repression, domination and expropriation of identity, in which architetural subordination and social subjection are part of the same series of phenomena.

S17.4 THE TRAJECTORY AND ISSUES OF SOCIAL HOUSING IN INTEREST IN GOIOERE/PR PLANNING PHYSICAL SPACE, URBAN SOCIO-SPATIAL SEGREGATION, HOUSING SHORTAGE

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The Social Housing (SH) is an infrastructure for social purposes, a primary and the preservation of life. Public policies often move away from quantitative and qualitative analysis of housing needs, taking anodyne and compensatory measures, against this problem impact quality of life in urban or peri-urban, regardless of size and level of economic development of the city. The research addresses the scenario of the City of SH Goioerê,in central-western state of Paraná/Brazil, housing demands related to some indicators of quality of life of the nine sets an intra and peri-urban areas to consider: The size of the in m2 units, infrastructure, proximity to basic services and provision of public leisure facilities, considering the evolution of the spatial morphology of the tissue spaces and resulted in social and housing segregation, or locis poverty. The Municipality of Goioerê/PR has a population of 29,018 hab. Of the total urban household is 87%, and annual growth rate of 1.53% (IBGE,2009). The HDI (Human Development Index) is 0.746, below the state and national levels. According to the map of poverty and social inequalities of Brazilian municipalities (IBGE, 2003) the city is relatively high rates of 43.81(statewide average between 25 and 52.21) and more than 1,500 poor families (IPARDES,2005). The high levels of poverty and the provision of decent housing are even analytical. The calculation considers the housing deficit households lacking deficiency constructive cohabitation and infrastructure which characterizes 91.64% of the municipal deficit. The study found the combination of the three items in which the high incidence is the result of historic urban setting and to understand the way to SH "as an instrument of electioneering maneuver." In history, the first set of SH was built in 1980 to house the number of rural population, as in other regional cities, impoverished by the coffee crisis of the previous decade. The 149 units had 32, 44 and 47 m2 in the following decades remained an average of 43 m2 (1128 units) and 2009 (42 units), 36 m2. The reduction in area is not built on reducing the size of families, for the last two decades remains 63.40% of the total number of occupants, from 4 to 6 people, IBGE (2011), is related to lower debt capacity; rates increases the funding and prevent the expansion of poverty and investment in the unit that meets the decent homes. Another factor is the high turnover of families in migration; are groups of individuals who do not qualify as manpower able to be inserted into the new socio-economic patterns - the surplus of one region in successive processes of economic re-arrangements, seeking new ways to enter into the exclusive economic structures of global networks.

S18. PROCEDURAL JUSTICE

S18.1 THE RELEVANCE OF JUSTICE – SHAPING PARTICIPATIVE PLANNING PROCESSES AND ACCEPTABLE CHANGES OF THE ENERGY SUPPLY SYSTEM

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The planning and construction of renewable energy plants and new transmission lines often lead to strong societal controversy. In the planning and decision making process the perceived justice plays a crucial role for the acceptance of the technological changes. Besides distributive justice also in form of regional creation of value, issues concerning procedural justice and interpersonal justice take effect in this context and can be addressed in the planning process through participation measures. Despite their relevance opportunities for participation are still rather rare.

One aim of the research referred to in this presentation was gaining a deeper understanding of the relationship between participation and the acceptance of changes in the energy system and particularly of the role of the different forms of perceived justice for acceptance respectively for this relationship. In doing so, different levels and forms of participation, how they are perceived, evaluated and used, were analysed. Furthermore different psychological constructs like trust, local identity and competence were included, and their part in this relationship was specified.

These questions were addressed for one thing in the context of the construction of renewable energy plants in different communities in two German federal States, for another thing in two communities affected by the possible construction of new transmission lines. For both fields of application a multi-method approach for the data collection was used. Interviews with key actors and questionnaires (n = 859 and n = 450) were complemented by the participation in two local information events. Additionally the results and recommendations for the practical field were discussed with and verified by practitioners and other researchers in two workshops.

In both fields of application procedural and distributive justice appears to be of particular importance. Regression analyses show their influence on whether and to which extent there exists an active acceptance supporting the acceptable construction of renewable energy plants. In the field of the planning and construction of transmission lines justice becomes a transregional issue, necessitating adequate approaches of compensation, as qualitative analyses of the interviews emphasized. Transparency, trust and interpersonal justice not only constitute relevant aspects of the relationship between involved stakeholders like residents, local initiatives, operating companies, grid operators and local authorities but also in the planning and decision making process.

Concerning participation as the practical structure for issues of procedural and interpersonal justice the results point towards a contrast of high wishes for participation and a (perceived) lack of participation offers, indicating a distinct need for action in this field. Among the participation methods favoured most are visits of existing plants and information through media and events.

S18.2 INVESTIGATING THE ROLE OF PROCEDURAL JUSTICE IN EXPLAINING DIFFERENT FORMS OF PROTEST BEHAVIOURS: A POWERLINE CASE STUDY

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Several recent studies have emphasised the importance of procedural justice in going beyond simplistic 'NIMBY' ('not in my back yard') explanations for public protests against large-scale energy infrastructures such as wind farms and high voltage powerlines. These have drawn on calls for planning procedures to be more transparent, equitable and participatory, as advocated by sustainable development theory and legally enshrined in the Aarhus convention. This study seeks to extend the literature on procedural justice and the social acceptance of energy infrastructure by seeking to explain the determinants of different forms of behavioural engagement, arguing for important distinctions between diverse actions such as petition signing, making financial donations to protest groups and attending public meetings organized by development organisations. This was investigated in an empirical case study of a controversial proposal to construct a 60km high voltage overhead powerline through a rural area of South West England. In total, 503 adult residents of the town of Nailsea, Somerset, completed a questionnaire survey in July/August 2009. A series of logistic regressions were conducted to establish the relative importance of procedural justice, as well as other variables (including socio-demographic characteristics, perceived impacts, trust and place attachment) in explaining behavioural engagement. Three specific forms of engagement behaviours were used as dependent variables in the analyses: attending meetings organized by the developer, signing a petition to object against the proposals and engaging with a local action groups set up to protest against the powerline. These analyses showed that procedural justice was significant in explaining protest group support but not petition signing, supporting the proposition that distinctions should be made between different forms of public engagement. Conceptual and applied implications of the findings for the literature on procedural justice are discussed.

S18.3 ENVIRONMENTAL PROCEDURAL JUSTICE FROM A HOUSEHOLDS` PERSPECTIVE

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Procedural justice is dealing with the meaningful and equal inclusion of people in political decision making processes. In the discourse on environmental justice, procedural justice is seen as a prerequisite for distributional justice (Maguire & Lind, 2003). In principal all citizens have the equal right to engage in decision making processes. Such an engagement is one option for people to cope with their local environmental burden. For example those who are exposed to transport related emissions (e.g. noise, air pollution) could form a pressure group, take part in local transport planning processes or sue. But why don't they do so? Is this a matter of social disadvantage or of people's attitude only?

To follow thesequestions a theoretical framework called MOVE (Model on Households' Vulnerability towards their local Environment) has been developed (Köckler, in print). MOVE explains the interplay of environmental quality and coping capacity of people living in the respective environment that leads to their coping-behaviour. Getting involved with environmental decision making processes is one option for a household to cope. As MOVE is integrating the Theory of Planned Behaviour (Ajzen, 1991) and the Conservation of Resource Theory the factors of coping capacity go beyond common variables like income and education.

Furthermore factors like fluency and communal mastery are considered (Hobfoll, Jackson, Hobfoll, Pierce, & Young, 2002). These resources determine the actual behavioural control, which is part of the Theory of Planned Behaviour (Ajzen & Gilbert Cote, 2008). With regard to environmental procedural justice it is presumed that unequal access of resources determines peoples coping behaviour.

Based on MOVE a telephone survey was carried out in winter 2010/2011 reaching about 300 households. The quota survey aimed at reaching households in polluted or less polluted neighborhoods equally. Therefore the Ruhr Area, an old industrial region in western Germany, with high social and environmental gradients was selected as the research area. With regard to socially disadvantaged groups the survey aimed at including Turkish migrants in polluted and less polluted neighborhoods. Regarding environmental quality there is a focus on noise (Lden) and air pollution (PM10; NO2).

First results of regression analysis show that for people in heavily polluted areas different resources predict their behavioural control compared to those in less polluted areas. Furthermore people who live in heavily polluted areas have fewer resources available with regard to all the resources that produced significant results in the regression analysis.

S18.4 THEORETICAL REFLECTIONS ON SPATIAL STRATEGY MAKING FOR ENVIRONMENTALLY JUST URBAN GOVERNANCE

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Given that urban planning is committed to equitable living conditions, environmental justice should be an inherent quality of spatial strategy making. A short glance on visions and instruments of current planning practice is enough to acknowledge a vast potential for environmentally just governance.

As a societal activity, urban planning is engaged in social systems. Any urban policy is intrinsically linked with labour and housing markets and local welfare regulations and at least partially accounts for the local reproduction of social and environmental inequities. Amidst increasing urban complexity, financial crises and privatisation of public goods, urban planning is still too often absorbed in adjusting routines, and planning options for inclusionary governance efforts remain unrecognised.

In this contribution, aspects of spatial strategy making for environmentally just urban governance are reflected against the notion of socially transformative work as inspired by Healey. In the light of shortcomings as well as chances in German planning practice, key elements of an environmentally just strategy making process are extracted.

In line with Healey, capturing the determinants of urban development and their effects on residents' quality of life is presented as a prerequisite for urban planning strategies dedicated to environmental justice. Without identifying dynamics involved in social exclusion of specific social collectives in specific places, urban planning does not fully understand local opportunity structures and residents' perception of them. These are crucial factors, because they shape residents' capability to assert themselves in the decision-making process and to master perceived

environmental justice successfully. Thus, urban planning encounters different types of vulnerabilities in the urban population.

With regard to procedural justice, Healey's work is particularly valuable, since it reveals a deep understanding of the inadvertently ambivalent implications of strategy making. Based on residents' opportunity structure, planning standards should be defined for a) the distribution of environmental risks and resources, b) inclusionary discourse, and c) the appropriateness of compensation where exposure to environmental risk in inevitable. As strategy making is bound to generalising rather complex unjust situations, environmental risks and resources ensuing from planning policies must be communicated in a transparent way. When conceiving potential urban futures, urban planning should consciously deal with latent conflicts – and compensation. Compensation may not be equated with relocating environmental risks, but with favouring those disadvantaged by adverse exposure and social exclusion.

Following the policy action cycle in Healey, the contribution explicates what it might mean to "scope the situation", "mobilise attention" and "enlarge intelligence" in order to create strategies serving an environmentally just urban governance.

S19. THE BLUE GYM: HEALTH AND WELL-BEING FROM AQUATIC ENVIRONMENTS

S19.1 EFFECTS OF COAST, COUNTRYSIDE AND URBAN OPEN SPACES: PSYCHOLOGICAL RESPONSES TO VISITING DIFFERENT ENVIRONMENTS

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Introduction

In the context of high and rising levels of mental ill health, research interest in the potential health improving effects of physical environments is growing. Outdoor environments including the coast, countryside, and open spaces in towns and cities, can provide valuable opportunities for recreation and leisure activities. To date, research on the wellbeing benefits of outdoor environments has primarily focused on what have been defined as green spaces. Yet recent work on the role of blue space (including the coast, beaches, rivers, and inland waterways) has indicated that blue spaces may be preferred and have greater restorative effects, over and above green or urban spaces without water.

Method

Using data from 2750 English respondents drawn from 2 years of the Monitor of Engagement with Natural Environment (MENE) survey (Natural England, 2011), this study investigates psychological responses to leisure visits to different environment types (coastal and seaside; countryside; open spaces in towns and cities). Specifically, we explore if visits to the coast and seaside are more likely to be associated with (i) higher affective responses (i.e. positive emotion) and (ii) relaxation and peace as a motivation for the visit, when compared to visits to the countryside and open spaces in towns and cities.

Results

The findings show that visits to coastal and seaside locations are associated with more positive psychological responses than visits to the countryside or open spaces in towns. These findings hold when taking account of (i) demographic variables, (ii) the presence of others on the visit and (iii) walking (one of the most frequent activities undertaken in the natural environment). We also find that relaxation and peace is more likely to be cited as a motivation for visits to the coast and seaside, than visits to the countryside or open spaces in towns and cities.

Discussion

This study provides new evidence that visits to coastal and seaside locations are associated with (i) more positive affective responses and (ii) relaxation and peace as a motivation for the visit, when compared to visits to the countryside or open spaces in towns and cities. This study also presents novel evidence that walking in coastal and seaside environments is associated with more positive affective responses than walking in the countryside or open spaces in towns and cities.

Conclusion

Further research is required to fully understand the beneficial effects of exposure to different types of natural environments on both psychological and physical health, in addition to the mechanisms that may underlie a blue space effect. Nonetheless, for policy makers, health care practitioners and academics these findings imply that greater attention needs to be paid to coastal and seaside environments and the role they can play in promoting human health and wellbeing.

S19.2 Riding the wave: Health and well-being from a surfing programme for children excluded from mainstream school

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Young people excluded from mainstream school in the UK are at particular risk of not participating in education, work, or training when they reach 16. This results in detrimental outcomes for both the young people concerned and society in general. Interventions that motivate and engage young people are one way of addressing this problem. There is increasing evidence that natural environments have a beneficial effect on people's mental and physical health but most of this research has focused on green spaces such as parklands and woodlands. Our research, however, points to a special benefit of aquatic environments (blue space). We evaluated an established surfing intervention programme that by its very nature utilises the aquatic environment. Global Boarders Surf to Success intervention programme was designed for young people either already or at risk of social exclusion and includes aims to promote personal and social development and environment awareness.

Two studies were conducted in order to quantify the anecdotal benefits that have been noticed for students following participation in the surf programme. Pupils from 2 Cornish Short Stay Schools and 3 Community Schools between the ages of 12 and 16 took part. Pupils from short stay schools have typically been excluded from mainstream education and many have social, emotional, and behavioural difficulties. Pupils from the community schools were considered to have similar difficulties by teachers of their respective schools. The pilot study compared the well-

being of 25 children before and after 12 weeks on the surf programme with several measures, including self-report well-being questionnaires (the youth section of the British Household survey) and videoed interviews with the experimenter coded for positive and negative affect. The follow-up study comprised 67 participants and ran the following year from Easter to July. This study also measured heart rate, blood pressure, teacher reports on pupil behaviour (SEAL questionnaires), and how connected students felt to different areas of their life.

Results from the pilot study showed that overall wellbeing had improved and participants had higher positive affect and lower negative affect following the surf programme. Study 2 replicated these findings and also found significantly lower heart rate and blood pressure following the surfing programme. Significant improvements in motivation and social skills were also reported by teachers. Beneficial effects were irrespective of school type. The most noticeable changes related to physical self-worth and appearance, a key predictor of global well-being at this age.

These studies provide initial evidence of improved physiological and psychological well-being for those students that participated in the surf programme. The next step is to develop an adequate programme of control activities in order to compare the benefits of specific Blue Gym interventions with other activities.

S19.3 "I DO LIKE TO BE BESIDE THE SEASIDE": A FIELD STUDY ON THE PSYCHOLOGICAL BENEFITS OF VISITING ROCKY SHORES

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Introduction
Nature has been found to be restorative in numerous ways, for example for health, attention and mood. However, nature is often examined in a very broad way without considering the varying types of natural environment. Recent reports (e.g. UK National Ecosystem Assessment, 2011) and psychological literature have indicated that water is an important element (Völker & Kistemann, 2011; White, Smith, Humphryes, Pahl, Snelling & Depledge, 2010). Studies have shown that psychological benefits increase with the amount of blue space (White et al., 2011). However, ecological validity can be low as the work is typically carried out in the laboratory using a fairly homogeneous sample such as students. More research is therefore needed that examines psychological effects within a more water-based environment and with a broader general public sample.

With over 20,000 km of coastline, the UK is spoilt with many blue space environments. Over 35% of this coastline is an intertidal area where solid rock predominates (rocky shores), which has numerous biological functions as well as being a popular destination for visitors. Consequently, this study examined before-after effects of a visit to the coast on current visitors.

Methodology
A before-after survey approach was used. Current visitors (n = 214) to two sites were asked to complete two short surveys, one before they entered the shore and one as they left. Both surveys examined affect (via positive and negative affect and attention) and marine awareness towards rocky shores. A novel measure was also used during the after-survey that examined each

individual activity performed, whereby participants described every activity they did during their visit and rated their mood and arousal based on the Circumplex Model of Affect for each one.

Results & Discussion

Even though visitors were found to arrive in a positive mood, analysis found that visitors leave the coast with significantly heightened positive mood. It has also been found that marine awareness towards the biology and ecology of a rocky shore significantly increases with this simple leisurely visit to the coast. The specific activities carried out on the coast were also seen to have different impacts on affect.

The findings clearly support the laboratory studies indicating that blue-space environments are psychologically beneficial. These findings show that specific environments need to be examined in both a controlled laboratory as well as in the field, and that blue-space may be a key ingredient in the beneficial effects of nature.

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S19.4 COSTAL PROXIMITY AND HUMAN WELL-BEING

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Research regarding the positive role of natural environments in supporting good health has primarily focussed on urban greenspace, woodlands, or undifferentiated 'nature'. Little attention has been paid to increasing our understanding of the potentially different impacts on health and wellbeing of different environments - either in terms of environment type or quality. As part of the Blue Gym programme of research around aquatic environments ("bluespace"), health and wellbeing, we carried out a study to investigate relationships between proximity to the coast and self-reported health. The coast has long been used as an environment for convalescence, holidays and physical activity, and in this study we set out to investigate whether simply living near to the coast could be associated with better population health and wellbeing.

Applying methods similar to those used in some previous greenspace and health research, we used 2001 census data and carried out a small-area cross sectional study. The 2001 census asked every person to rate their general health status in the previous 12 months as 'Good', 'Fairly Good' or 'Not Good'. We calculated the proportion of the population rating their health as 'Good' for Lower Layer Super Output Areas (LSOAs) across England. There are 32,482 LSOAs in England, and these areas are used to produce small area statistics on a wide variety of issues including health and socio-economic status.

These census data have frequently been used to study the distribution and determinants of poor self-rated health. However, we considered good health as the outcome, reflecting our interest in salutogenic (health promoting) environments. Responses to this type of simple single item question have been shown to be strongly related to more sophisticated measures of physical and mental health such as SF-36.

We used a Geographic Information System to calculate each LSOA's proximity to the coast. We then used multivariate regression models to investigate associations between good health

prevalence and coastal proximity. Analyses were adjusted for potential confounders including greenspace, inland waters, age, sex and socio-economic deprivation, and were stratified by urban-rural status. Proximity to the coast was found to be positively associated with good health, with effects strongest in urban areas. There were also indications of interactions between coastal proximity and area deprivation, with consequent implications for health inequalities.

S19.5 THE RESTORATIVE POTENTIAL OF SUB-AQUATIC BIODIVERSITY

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Introduction
Despite anecdotal evidence that people find watching fish in aquariums relaxing there has been little systematic research. The present study investigates this issue by monitoring people's psychological and physiological reactions to watching a large exhibit at the National Marine Aquarium. The tank is currently undergoing refurbishment enabling us to monitor people's reactions to the growing biodiversity introduced to the tank over a twelve month period and to compare this to a control condition before any fish were introduced. Data are presented from the first three conditions: a) "No Fish", b) "Low", c) "Medium" biodiversity.

Method
Participants were shown to a booth in front of the exhibit and baseline measures of heart rate, blood pressure and mood were taken. Participants then viewed the tank in one of three conditions: a) No Fish, n = 29, b) Low, n = 27 or c) Medium, n = 30. Fish in the Low condition included 34 Thick-lipped grey mullet (Chelon labrosus) and 14 dogfish (Scyliorhinus spp.); additional fish in the Medium condition included 19 Ballan wrasse (Labrus bergylta) and 5 Thornback rays (Raja clavata). Participants watched the tank for 10 minutes before the baseline measures were repeated along with evaluation questions.

Findings to Date
Heart rate dropped in all three conditions over 10 minutes but was significantly moderated by tank: (No Fish: -2.57, Low: -5.40, Medium: -5.88, p = .023). Further analysis showed that both tanks with fish showed significantly greater drops than the No Fish tank but were not significantly different from each other. While patterns for blood pressure were broadly similar none of the effects were significant (ps > .05): Systolic (-1.81, -4.21, -3.96), Diastolic (1.24, -3.92, -5.43). Heart rate data were reflected in self-reported mood, with mood at the end of the 10 minutes most positive (controlling for baseline) in the Medium condition: (2.54, 3.06, 3.37, p = .023). This effect was also revealed in people's post-study experience evaluations: 'Enjoyment' (3.14, 4.58, 4.73, p < .001); 'Interest' (4.14, 5.38, 5.63, p < .001); 'Positive Mood' (3.34, 4.19, 4.20, p < .05). Follow-up tests suggested, though, that Low and Medium conditions were more positive than No Fish but not significant from each other.

Conclusions
As far as we are aware, these data are the first to systematically monitor the added benefit of populating an environment with different levels of biodiversity. Results so far suggest that even watching an empty tank may be physiologically and emotionally restorative but that the presence of fish improves these effects further. For all of our dependent variables the Medium biodiversity

tank produced the most restorative effects but the differences from Low biodiversity were not significant. Nevertheless, given the pattern of data, we predict significant improvements during the next phase of restocking (Spring 2012) when biodiversity will increase yet further.

S20. VISIONS OF THE PAST AND FUTURE: PARTICIPATORY APPROACHES TO IDENTIFYING SUSTAINABLE PATHWAYS...

S20.1 CREATING VISIONS OF THE FUTURE: THE USE OF BACK-CASTING SCENARIOS IN DEFINING CHANGE IN UNIVERSITIES

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Back-casting scenarios constitute a relatively new methodology in the field of sustainability and climate change. Despite its appearance and theorization in the decade of the ´70s, it is only recently that it has become widely used as an instrument in helping decision-making processes in policy-making. The back-casting scenarios methodology appeared in response to the discontent with the traditional methods of trend extrapolation in energy forecasting, where it was assumed that energy demand would increase gradually and renewable energy technologies and energy conservation efforts were ignored (Vergragt & Quist, 2011).

In future and sustainability studies, back-casting scenarios are defined as a methodology that allows us to envision and analyse different types of sustainable futures and develop agendas, strategies and pathways to reach them (Vergragt & Quist, 2011). It has a strong normative component, as it starts from desirable future states or set of objectives and then analyses the steps and policies that are needed to get there, in order to be able to design agendas that can be implemented and that normally require cooperation and communication among different types of actors in complex socio-economic and political environments. It is considered a useful qualitative tool in going toward alternative futures in issues of climate change (Giddens, 2009).

The present paper will present the results obtained from applying the methodology of back-casting scenarios to the study of sustainable objectives and pathways to reach them in the case of universities. It will present results obtained at the University of Corunna, by using a process-oriented scenario-development method which combined stakeholder and researcher input to generate images of the future and desired end-states. We will discuss the pros and cons of the method of back-casting scenarios, its uses in studying (un)sustainable practices in large scale organizations and the implications for future research and policy development in public organizations.

S20.2 TRANSFORMING SUSTAINABLE PRACTICES IN WORK AND AT HOME; A LIFE HISTORIES UNDERSTANDING

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There is a tendency to see work as distinct from the rest of life. Not only do individuals in organizations bring to work their values, lifestyles, socio-economic conditions, and multiple

identities and find creative ways of adapting to the organizational environment, they are also active agents in creating, maintaining and transforming work practices. Moreover, they also have the potential to take learned practices from the workplace to their homes and other everyday settings. How do people connect practices from one area of life to another and what impact does this have on their identities, roles and everyday behaviours related to sustainability?

This study, part of the LOCAW project, is examining sustainability practices of a major international oil extractor/producer located in Aberdeen, Scotland. The research seeks to understand the social dynamics, vested interests, and forms of communication that drive or hinder practices towards more sustainable and low carbon production processes and workplace behaviours.

This study is significant not only in terms of the subject of the research which has rarely been investigated (cross-border sustainability practices in and between work/home), but it is also unique in terms of the methodology. To our knowledge no other research has been undertaken using a life histories methodology (Portelli, 1997) to explore the development of individuals' (un)sustainable practices across the lifespan. What is particularly valuable about a life histories methodology is that these accounts are positioned within a context of temporal, spatial and social relations. The life histories methodology, rather than focussing on particular sets of attitudes or behaviours, involves the recording of an individual's memories and experiences from across the lifespan, in terms of their simultaneous 'situatedness' in local, national and international spaces, and in the context of social relations within the family, the community and salient institutions. This allows us to understand how people experience, interpret, engage and respond to changes in the world of work and home and how they become active agents capable to plan, initiate, facilitate as well as prevent changes.

This paper will report on life history interviews conducted with members of the workforce (blue and white collar), trade union officials and members of the management in the oil industry in Aberdeen. By selecting interviewees from each of these positions we will obtain a cross section of people in different social positions and come to a closer understanding of the effects of different lifestyles on green house gas (GHG) emissions. The interviews, analysed by means of discourse and narrative analysis, will focus on the ways in which the relationships between work, domestic life and leisure activities affect people's decisions concerning their GHG emission-relevant practices.

S20.3 Individual and organizational drivers and barriers to low-carbon practices at work: a preliminary qualitative analyses in an Italian energy company

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Large organizations are responsible for a significant amount of GHG emissions, and recent estimates suggest that the potential contribution of large organizations to global warming over the next 100 years will even increase. Within this framework, a worthy issue for environmental psychological research is the investigation of the factors promoting or hindering the transition to more sustainable everyday behaviours and practices in the workplace.

The study presented here is part of a larger EU-FP7 funded research project, currently in progress, which groups together seven different research teams from six different European countries: Spain, Italy, Romania, Sweden, The Netherlands, UK. In this case, we will present the results of a qualitative study, carried out with the aim of assessing the existing everyday practices and behaviours in the workplace, which have an impact on the level of greenhouse gas emissions, in a large Italian company in the energy production sector. The environmentally-relevant everyday practices in organization considered referred to three main categories of organizational practices: 1) Consumption of materials and energy; 2) Waste generation and management; 3) Organization-related mobility. Three different sources of data and information were used: a) interviews with key-informers situated at different levels of decision-making; b) focus groups; c) analysis of organizational documents. All the material gathered was subject to thematic content analysis procedures, using Computer Assisted Qualitative Data Analysis Software (CAQDAS), specifically the ATLAS.ti software.

Results from the three data sets converge in showing the presence of main barriers (e.g.: 'Time is a barrier for sustainable mobility'; 'There is no automatic switch off of lights at work') and drivers (e.g.: 'People save energy at home to save money'; 'The organization encourages policies of consumptions reduction') at both the individual and organizational levels. These identified factors are incorporated into a theoretical model, predicting sustainable individual and collective practices in the workplace. This model will be subsequently tested in a quantitative study, conducted through standardized psychometric tools.

The implication of the findings will be discussed, in light of the possible organizational strategies and policies in order to enable transition to a more sustainable working environment and working

practices.

S20.4 THE PERTINENCE OF USING FOCUS GROUPS AND IN-DEPTH INTERVIEWS IN THE STUDY OF SUSTAINABILITY-RELATED ISSUES IN PRIVATE ORGANIZATIONS PROVIDING PUBLIC UTILITY SERVICES

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We conducted our reasearch within the LOCAW project in a company which is the Romanian regional operating company of public water and waste-water services. We find very appropriate the use of two participatory methods, focus groups and in-depth interviews, as research tools in our study given the fact that the specific characteristics of our case study organization, the 'natural monopoly' and the 'essential service', could impact the efficacy of data collection methods. Water and sanitation are tipically associated with a combined obligation to serve and to use for health and for environmental reasons (Chisari, Estache & Waddams-Price, 2003). Therefore it is very important to find out how employees analyse their company own situation, how they address issues, analyse options, and carry out activities.

Focus groups allow access to people's attitudes, beliefs, values, and also to the meanings that individuals attribute to their life experiences in situations of social interaction. Therefore we used this method to explore perceptions, attitudes and evaluations of workers in relation to individual and organizational (un)sustainable practices. Focus groups had the aim of stimulating an open discussion and a comparison of perceptions, attitudes, beliefs and everyday practices as they were individuated and described through preliminary interviews with key-informants and to identify other potential practices that were not detected during the interviews and also aimed to throw light on the normative understandings that groups draw upon to reach their collective judgements.

In-depth interviews were used to investigate the structural and organizational factors influencing sustainability-related everyday practices in the workplace. The key feature that highlights the opportunity of using this method in our case study can be seen as a three pole game, by the empathic interference of investigators' and informants' subjectivity and the third pole of the relationship: the research object. The informant "has only pieces of object, and he sees the third pole more like his own life - the raw material of the interview – which he has to analyse from a totally different perspective. The raw material represents a much larger framework for the investigator: the problem-solving of research. Even if there is a disagreement between the two actors concerning the definition of the third pole, yet they use it as if there is an agreement for attacking along, more profoundly. This three pole game acquires sustain efforts for moving forward towards the results.

S20.5 DRIVERS OF AND BARRIERS TO SUSTAINABLE PRACTICE AT WORK PERCEIVED BY THE EMPLOYEES OF AN ROMANIAN COMPANY

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This study was conducted as a part of Work Package 2 within the project LOCAW, in order to identify drivers of and barriers to sustainable practice at work in a company which is the Romanian regional operating company of public water and waste-water services. The data were obtained from processing the open answers in the 119 questionnaires which were structured in the analysis of three categories of practices: consumption of materials and energy, generation and management of waste and organization-related mobility.

The results show that the most of the perceived barriers against adopting sustainable behaviours related to the responsible consumption of energy and other resources seemed to be placed at different levels, in equal measure (3 factors for each category): individual and collective human elements (carelessness, habit and convenience), sociocultural elements (education, mentality and lack of environmental culture), and also political, economic or institutional elements (high prices for water systems and electricity use, lack of environmental policies and lack of founds). Retrospectively, the mentioned drivers for the consumption behaviours were more widely represented: organisational and institutional elements (awareness of environmental responsibility, changing working hours, management involvement and inspection), discursive constructions of actors and popular discourses (accountability campaigns, media promotion, open information and posters for environment protection), political economic and institutional elements (fines, rules and creating conditions for the exercise of the ecological instinct), material elements and spatial physical features (using e-mails, using economic bulbs and control prints) and, with fewer items, individual and collective human elements (encouragement and exemplification).

Waste generation and management - the most represented attitude towards the perceived barriers is that there are none or that they don't know. The subjects indicated as stoppers the individual and collective human elements and sociocultural elements. The attempt to map the drivers for these waste collection sustainable behaviours brings up the same weird observed situation. The most important perceived facilitators for actions related to waste were selective waste collection, as much as there are none.

Organisation-related mobility - The most important mentioned barriers against adopting responsible travel behaviours seemed to be: individual and collective human elements and organizational/institutional elements. The same phenomenon of polarity previously identified, the prevalence of the "potential disengagement" factors/attitude close after the most important factors, can also be observed here. The drivers for the responsible travel behaviours in the organization: material elements and spatial physical features, organizational and institutional elements and political economic/ institutional elements.

S22. Rethinking Participatory Approaches Using a Transdisciplinary Framework

S22.1 Collaborative Urban Planning and Design Production, Type and Value of Knowledge

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I will discuss the type of knowledge generated in participation research, both in terms of its production mode and scientific value. I will argue that Environment-Behaviour participatory research has been by and large taught and practiced away from any epistemological paradigm and that this situation may have contributed to its limited dissemination and to the underrating of its value as scientific knowledge. I propose that the way knowledge is built in participation, as well as its resulting integrative nature, are fundamental contributions to the development of post-normal science, and more specifically, of a transdisciplinary research paradigm.

Although the concept of participation has been used in planning and architecture since the early 1970s, namely with advocacy planning growing out of a reaction to the urban renewal movement in the 1950s and 1960s, its meaning and use extends far beyond these professions. The renewed intensity given to participation to emerging research fields in the late 1980s, can be related to emerging societal problems and pressure from user groups in relation to peace and conflict research, international cooperation, women's studies, and nursing care (Elzinga, 2008). Professional workers, often motivated by social movements, asked for their tacit (know-how) knowledge to be integrated in academic research production. As examples of theoretical and methodological outcomes, Elzinga (2008) cites: 1) the concepts of empathy and coping brought by nurses beyond medical knowledge; 2) action research developed by social workers where target groups are integrated in the research at all steps. Elzinga goes on saying that these claims led to the development of innovative research strategies and to the entry of the prefix "trans" to express something beyond "the interaction of different academic tribes as centrepiece", something transcending disciplinary boundaries.

As guest editors of a special issue of the journal Futures on Transdisciplinarity, Roderick Lawrence and I (2004) defined transdisciplinary research as projects tackling complex and heterogeneous problems, using non-linear and reflective knowledge production modes, and dealing with local contexts (see also Balsiger, 2004; Klein, 1996, 2004). With no doubts, the concept of transdisciplinarity better fits problem-solving-oriented participatory research than the concept of interdisciplinarity which main aim is to produce scientific knowledge. Moreover, since ethical and aesthetical issues are inevitably imbedded in urban planning and design, they induce a part of uncertainty in the knowledge produced, which is also more readily associated with transdisciplinarity. Finally, transdisciplinary research recognizes the contribution of individuals' practical reasoning as valuable, which participative and collaborative processes also allow for (Després, Brais, Avellan, 2004).

The lack of dissemination of case studies on participation has also contributed to the lack of integration of knowledge in this area of research. Indeed, participation, as a type of applied research most often sponsored, is often left with little or no time and/or money for retroaction and

often for publication. Elzinga (2008) criticizes the fact that the literature on participation is largely dominated by descriptive case study reports. In fact, participation theory is underdeveloped, and evaluations of participation methods are rare and often limited to ad hoc suggestions and criticisms about the advantages and disadvantages of various techniques. Indeed, if a fair number of useful handbooks have been published in the last ten years, their main goal is most often to provide toolkits to assist. Despite the exemplary work of several researchers to bring participation in architecture and planning to new analytical levels (Fainstein, 2000; Feldman & Staal, 2004; Forester, 1999; Healy, 1997; Innes & Booher, 2000; Sanoff, 2007; Toker, 2007), we are still is missing a clear framework to compare and contrast the relative merits of participation research, and integrate its resulting forms of knowledge. I believe one reason why this research has been underrated as scientific knowledge is because it has been by and large taught and practiced away from any epistemological paradigm. I propose that the way knowledge is built in participation studies, as well as the integrative nature of the resulting knowledge, are two fundamental contributions to the development of the transdisciplinarity in science that needs to be better acknowledged. Indeed, this recent paradigm might help structure participation as a maturing component of a complex research program on people-environment relations.

S22.2 POST-POLITICS, PARTICIPATION AND PUBLIC SPACE: A CASE STUDY OF COMMUNITY INVOLVEMENT IN THE PLANNING AND DESIGN OF PUBLIC SPACES

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Over the last decade participatory approaches to the planning and design of public spaces have become mainstreamed particularly in the renewal of deprived neighbourhoods. Despite the increasing acceptance of public participation as being one of the cornerstones of effective and sustainable public spaces, there is the need for critical analysis of these practices without suggesting that they all represent successful examples of deliberative democracy. Consequently, the paper analyses an urban renewal project in a deprived neighbourhood of Barcelona where the local community was involved in the planning and design of its public spaces.

The case study is used to illustrate some of the ideal principles that are considered to be needed for successful participatory processes in the provision of public spaces, as well as to show some of the challenges that come with trying to involve more actors into decision making processes. Among the ideal principles were the implementation of a variety of participation arenas where methods and ways of communication were adaptable to different social groups of the neighbourhood and where issues that are commonly difficult to address in formal participatory settings could be discussed. This allowed the participants of the process to discuss issues concerning the neighbourhood's public spaces based not only on the physical problems of these spaces but also on the multiple and diverse use, concerns and perceptions that people had of them.

Among the challenges was the low capacity that the process had to change decisions that were made in other stages of the project, the impossibility to include all stakeholders in the decision-making process, difficulties of transforming complex and contested issues into solutions that were agreed by all participants, and the non-implementation of proposals made during the process by

the local community. These challenges have resulted in critics from the community and limited the outcomes of the project.

The case study serves to illustrate some critical issues regarding participatory processes in the planning and design of public spaces today. On the one hand it shows the gap that often exists between the ideals and reality of participation. On the other hand it shows what some theorists call a post-political stance of participatory process, in which discussions are guided towards topics that have been determined in advanced, where experts' solutions can seldom be questioned and changed, and where complex and contested issues are rarely addressed. As such, the case study serves to highlight important concerns related to the way in which participatory processes cope with power structures present in planning practice, deal with conflicts present in planning processes and reach consensus. The paper highlights the need to better understanding these concerns and aims at contributing knowledge that helps cope with them.

S22.3 Creating Sustainable Places - Enquiry by Design and Knockroon

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The quest for ensuring the liveability and functionality of human settlements engages politicians, professionals, investors and not least local residents and stakeholders, often with divergent interests, with tasks of considerable complexity. The revitalisation of deprived communities, as well as the creation of sustainable new ones, is one of them, and the magnitude of the task requires appropriate techniques or models of engagement, based on robust and time-tested design principles, which involve local stakeholders at the earliest possible stages of the planning and development process. This presentation uses the case study of Knockroon, an urban extension to the town of Cumnock, Scotland master-planned by The Prince's Foundation to illustrate an influential model of planning in practice.

In the UK, the Prince's Foundation for Building Community, an educational charity established by HRH The Prince of Wales, which exists to improve the quality of people's lives by teaching and practising timeless and ecological ways of planning, designing and building, has pioneered a collaborative planning approach called Enquiry by Design (EbD). It trusts in empowering people to join the design process and make a real difference to the design of their local communities. It also believes that successful towns – old and new – share certain design characteristics which, when deliberately applied to today's town-making and appropriate technologies, result in enduring, thriving neighbourhoods that don't damage the environment, result in improvements in public health and deliver development rooted in its location. In contrast to conventional development, where specialists who act in series often successively limit the outcome, direct interaction often results in the identification of new and better design possibilities, i.e. the process is proactive rather than the 'normal' sequentially reactive modal of planning. This collaborative, holistic and highly disciplined process harnesses the talents, technical expertise, local knowledge and energies of all interested parties to create and support a viable design solution. All concerns – technical, political, environmental and social – are tested and challenged by the design itself, so that the design leads rather than follows the process. At the close of the EbD the product, often a masterplan, is a shared vision for future development based on robust sustainable design principles. The intensity of the process can be disquieting to those in the habit of sequential meetings however, once experienced few doubt the capacity of such a process to be a more

exciting, cost-effective and efficient means of civic engagement and community building than conventional public processes.

The process is explained in detail through the example of Knockroon in Cumnock, one of the most deprived towns in Scotland. In July 2007 HRH The Prince of Wales put together a rescue package in conjunction with the Scottish Government, Historic Scotland and the Prince's Charities to save Dumfries House and its contents from being sold at auction. Knockroon Farm formed part of the estate, and there was an opportunity to consider developing this land to strengthen links between the Dumfries Estate, Cumnock and the neighbouring town of Auchinleck. A five day Enquiry by Design was held by The Prince's Foundation in February 2008 to explore potential options. The EbD resulted in the production of the Knockroon Masterplan, a blueprint for an urban extension to the town founded on sustainable principles. Thanks to the consensus building, consultative process Knockroon is being built as be a compact, walkable new neighbourhood whose design concepts have been inspired by the best architectural and town making traditions of Scotland. Although construction only commenced in April 2011 Knockroon is one of the most talked about recent developments in Scotland, in regards to the process used to produce the masterplan and for the nature of the development itself.

In May 2009 the Scottish Government awarded Knockroon exemplar status under the Scottish Sustainable Communities Initiative (SSCI) identifying it as one of 11 such projects within Scotland selected as best capable of demonstrating how sustainable communities can be delivered.

S22.4 Beyond Disciplinary Confinement to Imaginative Transdisciplinarity

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This contribution explores several ways and means of overcoming the barriers to using transdisciplinary concepts and methods that are being applied in both research and professional practice. As an example of a 'wicked problem' this chapter uses housing as a multi-dimensional human construct and process. The author argues that if there is agreement that there are multiple determinants of health, and if there is agreement that there are multiple dimensions of housing, then there is need to move beyond disciplinary confinement to develop new knowledge about housing and quality of life. The author also draws on innovative contributions in Switzerland that extend beyond traditional sector-based approaches by using transdisciplinary principles that integrate the point of view of many actors including those from the affected communities and organizations.

Our incapacity to deal with 'wicked problems' as defined in Chapter 1 is related to their complexity, to the compartmentalisation of scientific and professional knowledge, to the sector-based division of responsibilities in contemporary society, and to the increasingly diverse nature of the societal contexts in which people live. In addition, the lack of effective collaboration between scientists, professionals and policy decision-makers has led to the 'applicability gap' in sectors that deal with both the natural and human-made environment. There is an urgent need for innovative approaches in many situations, such as the blatant failure of the wealthiest countries of the world to provide all citizens with secure employment, affordable housing and appropriate health care that meet at least minimal requirements.

Current shortcomings of traditional scientific research and professional practice are not necessarily the result of the lack of political commitment, or financial resources, or viable solutions. They are, above all, the logical outcome of the narrow vision of so-called experts who do not address fundamental issues but only topics isolated from their societal context. In order to deal with these limitations, various sets of obstacles need to be revised or dismantled. First, ontological frameworks or world-views that do not embrace the complexity of the natural and human-made environment; second, constructions of knowledge that value rational, utilitarian approaches to interpret the layout, use and management of human and natural ecosystems; third, specialisation, segmentation and bureaucratisation of knowledge and expertise; and finally, the lack of transfer and communication between professionals, politicians, interest groups and the public.

ORAL SESSIONS

ORAL SESSIONS

O1. ECOLOGY: STRATEGIC AND LARGE SCALE EFFECTS OF GREEN SPACES

O1.1 INVITING LANDSCAPES – FACILITATING PEOPLE-NATURE COLLABORATION FOR URBAN SUSTAINABILITY

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Although the majority of people worldwide now call a city home, many urban landscapes convey the message that the city is beyond the control of ordinary citizens. These landscapes often communicate obduracy with large fixed structures that seem resistant to change (Hommels, 2005). In addition, they tend to limit direct contact with nature and conceal ecosystem functioning (Hough, 2004; Miller, 2005) as well as ecosystem services (the benefits that people derive from nature).

These messages conveyed by urban landscapes combine to discourage citizens from active participation in enhancing the resilience of urban ecosystems. This is unfortunate because people and nature can fruitfully collaborate in the provision of green infrastructure ("natural, semi-natural and artificial networks of multifunctional ecological systems within, around and between urban areas, at all spatial scales" (Tzoulas et al., 2007)). Urban landscapes have the potential to facilitate this collaboration. This untapped potential warrants exploration, particularly in the current context of crumbling conventional infrastructure, limited resources, and uncertain climate and energy futures.

There are many ways that citizens can interact with nature that will contribute to the development and maintenance of green infrastructure. Activities might include planting and looking after trees; introducing more permeable surfaces; restoring streams and wetlands; greening vacant lots and roofs; growing food; constructing adventure playgrounds that reconnect children to nature; and making footpaths and cycle routes more attractive to promote active transportation. The possibilities are wide-ranging and the idea is not to dictate but rather to invite actions that are driven by the skills and interests of the people involved—and the ecosystem in which they find themselves. This will hopefully initiate a virtuous cycle of social learning (collective learning through action and reflection), skill development and deeper engagement, which will lead to further action. As the landscapes in which these activities unfold communicate strong messages about what should happen there, it raises the question of how to stimulate citizen-led greening of infrastructure using the medium of landscape. This requires an understanding of the complex ways in which people and nature interact in cities.

This paper proposes a conceptual model of people-nature interactions in cities that combines the concepts of the cultural landscape, the ecological landscape and the social-ecological system (SES) within a critical realist framework. An analysis of interviews with people involved in greening initiatives in North West England contributes to validating this model.

The goal of this exercise is to explore how urban landscapes could be made more 'inviting' to citizens who might wish to collaborate with urban nature and transform urban places in ways that enhance sustainability.

O1.2 INTEGRATED GREEN INFRASTRUCTURE AND WATER VISIONING - FIVE DESIGN STUDIES WITHIN THE GLASGOW AND CLYDE VALLEY

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The Green Network Integrated Urban Infrastructure Project demonstrates best practice in sustainable urban drainage and inclusive urban planning by developing a series of exemplar design studies for five sites across three local authority regions in South West Scotland.

The project was commissioned by Glasgow City Council and chaired by the Scottish Environment Protection Agency (SEPA) in association with the Glasgow and Clyde Valley Green Network Partnership. The stakeholder team included South Lanarkshire Council, Renfrewshire Council, Scottish Natural Heritage, and the Forestry Commission.

A strategic surface water management strategy and associated site arrangement were developed for each site through collaborative working between stakeholders, local authorities, the architect and the strategic drainage engineer to inform an integrated approach towards site development.

The exemplar sites vary significantly in size, topography and hydrological constraints ranging from a rolling greenbelt site within East Kilbride (2500 new homes, parkland and primary school) to an urban quarter in Glasgow City Centre (live-work units, new cultural area, river walk). The resultant proposals described within the design studies create new and distinct neighbourhoods with a range of residential and community facilities with unique characteristics relevant to their individual site's constraints and opportunities.

Integrated urban design and visioning is a harmonious sequence of built and landscape components, with placemaking at its core. It explores contemporary urban design challenges brought about by sustainable design ambitions to support the health and well-being of people along with maintaining the natural equilibrium in the face of climate change.

The key project principles are as follows:

• Plan integrated infrastructure to inform future development;

• Consider topography, local context and the water journey in parallel with one another;

• Establish partnership working;

• Create holistic water environments;

• Ensure a multi-benefit approach towards open space (health, ecology, recreation, flood alleviation);

• Prioritise safe walking and cycling above vehicular movement.

The presentation will provide an overview of the principles of integrated urban design and water visioning and outline the process undertaken by the Project Board and design team to realise the design study proposals. This will be demonstrated through a detailed description of the approach taken for two of the five study areas under the following themes:

- Multi-disciplinary working and stakeholder collaboration;

- Hydrological strategies that respond to site topography;

- Forming blue-green routes and quality open space, and

- Enhancing wildlife habitats and ecological benefits.

O1.3 URBANISATION AND GREEN SPACE DEVELOPMENT IN EUROPE. A QUANTITATIVE ANALYSIS OF EUROPEAN CITIES

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An increasing number of people live in cities and urban regions. In line with this global urbanization trend, urban residents face many negative environmental impacts. These are pollution, noise and missing space for recreation. Thus, there is a growing need for the adequate supply of urban green spaces (UGS) to enhance the quality of life of urban residents. Case study research already reports on beneficial functions of UGS through air filtration, noise reduction, cooling or biodiversity and wildlife experiences. Contrary to this knowledge, comparatively little is known about UGS provisioning across a number of cities.

Set against this background, in the first part of this paper, we analyse urban growth, related UGS provision and population size in more than 150 European cities over a time period of almost 20 years (1990-2006). We add the variable "number of households" as this seems to be an important factor when explaining different distribution patterns of UGS. We show an overall annual growth of UGS from 1990 to 2006 which is higher in the period 1990-2000 than 2000-2006 but clearly exceeds the growth of urban area. Accordingly, the population size varies between decline (1990 to 2000) and low growth (2000 to 2007) while household numbers remarkably increase. Further, growth rates of UGS exceed those of population density to a clear extend while household density shows similar values.

One of the cities with high UGS provision values is the German capital city of Berlin. Zooming in on the city level to shed light on the above discussed city-wide data, we focus on UGS development in Berlin. Berlin's target UGS provision is 6 sqm per resident. At current, Berlin's total population number is increasing with about 3.5 million accompanied by a significant growth of the urban area. Both, population number and urban area are supposed to grow even further in the next decades. Looking for the equity of UGS provision under these conditions, the results show

significant negative relationships between the share of UGS, population density, share of foreigners and areas of lower residential quality. Further, we found a heterogeneous picture of small scale areas in Berlin showing diverging areas of higher and lower provision of UGS. Thus, urban planning has to focus more on an equal distribution of UGS quantity not regarding at the UGS quality at all. Thus, the analysis of this local example helps to evaluate and to embed European-wide UGS studies as presented in the first part of this abstract.

O1.4 THE EFFECT OF WATER PONDS ON THE HEALTH OF THE PEOPLE

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The fast pace of modern living has caused tremendous amount of stress on the bodies and minds of many people. Physical and psychological fatigues can affect the capacity to concentrate and lead to negative consequences on health and wellbeing. Kaplans Attention Restoration Theory (Kaplain, 1995) and Ulrichs Stress Reduction Theory have suggested that there is a link between nature and physical and psychological health. Past research has also found that interacting with the natural environment can alleviate stress, generate positive emotions and contribute to physical and psychological health. However, to be restorative, Kaplan suggests, the natural environment should fulfill four requirements of fascination, being away, extent and compatibility.

A question is raised. What type of landscape in nature can people benefit from most in terms of stress reduction and attention restoration? What are the qualities people perceive to be restorative in the environment? Answers have to be found in the experiences of people in the natural environment. In Taiwan, due to limited space and the lack of large green open space in urban areas, college campuses in cities usually serve to provide natural environments to the neighbouring residents and opportunities to access nature.

Initially, a larger project of four types of landscapes (wooded area B green open space B water ponds and rows of trees along the streets) in three college campuses in Taichung city located in central Taiwan (i.e. Feng Chia, Tunghai and National Chung Hsing University) were chosen to study the effect of natural environment on human health. College students were used as samples. Biofeedback technique was employed to acquire their physical responses. A questionnaire was administrated to acquire their preferences for the landscape scenes as well as their perception of the restorative qualities of the environment. Relationship between preferences, perceived restorative qualities, and physical situation were analysed.

Water ponds, one type of the four landscape, either landscape or ecological ponds, have been reported to have many functions in the city. Yet its relationship with health is less investigated. A large body of water has a soothing psychological effect. It is also good for water retention in land, increases the biodiversity, and decreases the urban heat island effect. During big storms, water ponds can help regulate large quantities of water and mitigate flood damages. The paper to be submitted, therefore, will focus specifically on the effect of the water-based landscape on human health and wellbeing in the three campuses.

O1.5 THE LANDSCAPE AS A SOURCE OF IDENTITY: EXPLICIT AND IMPLICIT RESPONSES TOWARD EUROPE AND THE MEDITERRANEAN

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According to the Council of Europe (2000), the landscape "contributes to the formation of local cultures and […] is a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity".

We know that the landscape experience can affect people in different ways, by influencing their aesthetic appreciation, health and wellbeing (Velarde et al., 2007), and includes identitarian implications, which are expressed by the Place Identity concept, addressing those aspects of personal identity which are connected to the places with which the individuals interact (Proshansky, 1983; Lalli, 1992). Places which are potential sources of identification can differ for the level of territorial scale, i.e. from smaller (e.g., one's neighbourhood or city of residence) to medium (i.e., one's nation) to broader (e.g., European Union or "Europe" or "the Mediterranean area") levels. EP research literature on this topic has typically considered the smaller and medium levels, whereas little is known about the broader level.

Starting from these assumptions, the present study aims to investigate whether prototypical European and Mediterranean landscapes are recognized as sources of identity for residents of a country which is both European and Mediterranean (i.e., Italy). In particular, both explicit and implicit identity responses toward Europe and the Mediterranean were analysed.

It was hypothesised that:

H1) European landscapes trigger a higher score of implicit identification than Not-European ones;

H2) Mediterranean landscapes trigger a higher score of implicit identification than Not-Mediterranean ones;

H3) there is a positive relationship between respectively i) the implicit identification with the European landscapes and the explicit identification with Europe; ii) the implicit identification with the Mediterranean landscapes and the explicit identification with the Mediterranean.

Participants (n=72 residents in the city of Rome, balanced for gender) had to perform 2 IAT (Implicit Association Test: Greenwald et al., 1998) tasks concerning respectively their identification with prototypical landscapes covering 2x2 different categories: European vs. Not-European and Mediterranean vs. Not-Mediterranean. For each category, pictures were balanced for the built/natural dimension: half of them represented built places, whilst the other half portrayed natural places (i.e., not including any kind of building).

The 2 IAT tasks were randomized across participants (i.e., half of them performed the European vs Not-European task first, the other half performed the Mediterranean vs Not-Mediterranean task first).

After performing the IATs, participants had to fill in a questionnaire including the Graphical Identity Scale of Bergami and Bagozzi (2000) related respectively to Europe and the Mediterranean.

Implications of the results, which confirmed the three research hypotheses, will be discussed.

O2. URBAN DEVELOPMENT AND LAND USE MANAGEMENT

O2.1 IS URBAN SUSTAINABILITY POSSIBLE IN THE FACE OF ACCELERATED PROPERTY DEVELOPMENT AND MAJOR PUBLIC WORKS? THE CASE OF RECIFE, BRAZIL

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Some Brazilian cities are currently growing very fast because of the increased construction of skyscrapers, or public works in the context of events for the 2014 World Cup. One example is Recife, a coastal city in northeastern Brazil. Its flat topography, close to sea level, together with a pattern of occupation marked by reclamation of mangroves and floodplains, cutting into embankments on hillsides, insufficient macro and micro drainage networks, and precarious maintenance and operational services combine to make Recife one of Brazil's most vulnerable cities.

Regional development policy has encouraged growth, for instance in industry associated with the Port of Suape, and this is set to increase. Rental and freehold property values have risen steeply. The number of cars on the roads during rush hour causes gridlock, while the public transport system is inefficient and underrresourced, reducing quality of life and increasing CO2 emissions. Urban accesbiility and mobility have become one of the city's main problems. Though Recife is known as the “Venice of Brazil” because of its topographical similarity with the Italian city, its lack of appropriate infrastructure to deal with the physiographical limitations make the region highly vulnerable to flooding and major catastrophes, a tendency aggravated by climate change. This geophysical vulnerability could be mitigated by efficient municipal management (public bodies, institutions, planning, projects, political initiatives) together with a drainage infrastructure and other elements needed to reduce the impact of heavy rains.

This article discusses the city's growth and its present and future impacts, seeking to analyse how the municipal management system is equipped to deal with these changes and associated impacts. What are the possible implcations for climate change? What contribution is made to global warming? How could these impacts be reduced through mitigation at the level of administration? These reflections are intended to contribute to a deeper understanding of possible ways to turn a situation of vulnerability in Brazil's coastal cities into the potential for resilience, taking Recife as an example with a view to reinforcing urban planning and city management in the face of climate change. The results of this process form part of an ongoing postdoctoral research project.

O2.2 MONITORING AND MANAGING BROWNFIELDS IN THE CITY OF LEIPZIG

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Tremendously high dynamics of urban development where growth and shrinkage processes occur at the same time are observed in cities of many Northern American and European countries. Suburbanization going along with an expansion of residential and commercial areas at the urban fringe is simultaneously observed and interacts with a declining or stagnating population as a consequence of de-industrialization. In the last 50 years, about 370 cities with more than 100,000 residents have undergone population losses of more than 10%. In extreme cases, the rate of loss reached up to 90%.

As a diverging development inner cities with their compact urban form suffer from residential vacancy and are mostly affected by industrial derelict land. New steering concepts need to be elaborated and put next to the well-established planning instruments to become helpful and innovative and multi-purpose governance in this situation. The existence of urban derelict land can be the opportunity to minimize the amount of further land consumption, to develop a different inner structure of the city, and to redevelop urban areas of residential vacancy with densification projects and urban brownfields into commercial sites or to revitalise derelict land as new open spaces for an enhanced environmental quality.

The City of Leipzig, Germany, is a typical case study for de-industrialisation processes and offers a multitude of brownfield sites. During the German Democratic Republic it gave home to labour for thousands of industrial workers, but after reunification took place in 1989, the industrial sites were outdated, and Leipzig first underwent typical shrinkage processes. During the past decade Leipzig slowly changed its character into a modern urban centre of the tertiary sector with urban brownfields as a challenge and creative opportunity.

It is a challenge for planning authorities as well as for scientists to handle the brownfields in terms of their different qualitites, quantities, neighbourhood context and options for re-valuation. Location, amount and spatial configuration of urban brownfields need to be followed-up in terms of their spatial and ecological fingerprint to support sustainable management decisions. Therefore researchers and planners work together: they map, monitor and analyse brownfields in order to regenerate the valuable space for different purposes. The City Council's compensation land use management tool helps to consider if sites are suitable for revitalisation of green networks to enhance the environmental quality in certain residential areas and to compensate the sealing of soils through newly developed sites. Another aspect is to redevelop brownfields for commercial purposes for which the commercial sites information system has been established.

For the sake of sound planning, monitoring and analysis have become a transdisciplinary task for science and governance institutions that allows us to picture different perspectives for brownfield sites.

O2.3 LANDSCAPES OF HOPE: THE ROLE AND VALUE OF AN URBAN BROWNFIELD SITE FOR COMMUNITY AND TOWN

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This paper deals with the role and value of an urban brownfield site as a mediator and driver for developing urban design concepts in the context of Chelmsford town, historic market and former industrial town in Essex, UK. The case study site is a former industrial site in Chelmsford. The Marconi Company Ltd. was founded by Guglielmo Marconi in 1897 as The Wireless Telegraph & Signal Company. Marconi was the first who established the radio factory and from Chelmsford it was exported all over the world. Opened in June 1912, the site has obtained the character of its former industrial use and is still intact in its presence as part of the heritage and town infrastructure. Marconi's factory site is now derelict and a vast hole in the urban grain. It is almost 10 acres in the heart of the town centre surrounded by residential and mixed areas including a university, and green corridor with River Chelmer. The site is now in the hands of developers waiting for its future scheme.

Throughout this time Marconi Site has gained different meanings to different groups and become a landscape of opportunity and hope as each of these groups such as owners, developers, town authorities, NGOs and communities have had their own expectations and value systems for its future use. In order to combine research and policy making, the site was investigated, and redesigned by the postgraduate landscape architecture course students at Writtle School of Design. Future scenarios were identified as new urban development models regarding the role and value of ecological and socio-economical processes. Three groups were aimed to be involved in this process: Local authorities, NGOs representing locals and developers. Local authorities such as Chelmsford Borough Council and Essex County Council, Changing Chelmsford and RSA (Chelmsford) (NGOs) were actively engaged in the development process. Communities were considered as catalysts for the development of a new scheme.

As the last step in the process, projects will be exhibited in the town centre to assess the residents' ideas, values and perceptions for the present situation and proposed scenarios for the site in this design based research project.

The project intends to remake urban space conspicuously responsive to an urban situation, performing in a periurban landscape through concept, context, function, meaning, affect, form, and aesthetic. The remade landscape is created in response to the following needs: ecological function, local and regional identity, public art and design practice, and functional use and dynamic of buildings, and associated spaces, as well as community use and movement by people. Innovative design and research, creation of urban public landscapes and related rural landscapes introduce a pedagogy informed by interpretation and realisation for a more sustainable connected urban landscape system.

O2.4 EXPLORING THE RELATIONSHIP BETWEEN COMMUNITY-BASED URBAN GREENING AND NEIGHBORHOOD GREEN SPACE USE IN BOSTON, MASSACHUSETTS (USA)

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Disinvestment in many post-industrial cities has led to property abandonment in residential areas, creating vacant lots in the urban fabric. In the inner-city neighborhoods of Boston, Massachusetts (USA), some vacant lots have been transformed into community gardens and parks through the efforts of local neighbourhood organizations, while other lots continue to be abandoned and neglected, with successional vegetation recolonizing the sites. This research study focused on evaluating the social and ecological impacts of these urban greening projects. The study used behavioural observation of green space users, as well as interviews with volunteers who helped build and/or maintain these gardens, to understand use patterns and other benefits that local residents derive from these gardens. Other ecological studies, not reported in this presentation, involved sampling of birds and insects. Conducted over two field seasons, the study compared 10 pairs of urban green spaces with nearby vacant lots. The first field season studied an array of urban greening projects, including parks, schoolyards, street improvements, and community gardens, while the second field season focused primarily on parks and community gardens. The results of this study found significantly more use in the community developed green spaces, including both passive use, as well as active use. Neighbourhood engagement with these small sites included both entering the site for passive recreation, as well as often talking with neighbours and others on the adjacent sidewalks. Community gardens along with parks with playground structures received the most use compared to other parks and urban greening projects. This pilot study is part of the larger Boston Metropolitan Area Urban Long-term Ecological Research Area (BMA-ULTRA-EX) Project which is an interdisciplinary project developed to study the relationships between urban ecosystem state and structure and the socio-economic and bio-physical drivers of change to these systems.

O2.5 THE DEVELOPMENT OF NEW DESIGN GUIDELINES FOR SOCIALLY BENEFICIAL URBAN PUBLIC SQUARES IN A CHINESE METROPOLIS - THE CASE OF GUANGZHOU

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Introduction: In contemporary China, a phenomenon exists relating to the use of urban public space that has emerged since the end of the 20th Century: many existing and newly established squares in China are not used by people as frequently as designers or developers had expected. This problem indicates that although the 'Public Square'in China has been recognized and designed as an important part of urban open public space, it appears to neither encourage nor support a diversity of urban social life, especially when compared to the social value of precedents found in western countries. Therefore the key objectives of this research are, to seek the causes of these problems and to find a way of handling design to enhance the social value of urban public squares in modern China.

Research questions:

- What is the current situation as regards to the human use of urban public open space in Guangzhou in modern times?
- What desires are emerging from people in terms of their use of public open space, especially urban squares in the 21st Century, and how can these desires be determined?
- Once these desires are determined, how can they be translated into a conceptual framwork for urban squares, which could then be applied in urban design practice?

Method: The methodology framework is made up of four phases to achieve the research objectives.

The first and second phases of the methodology are literature reviews. The objectives of the first phase are to: firstly recognize the socially beneficial principles of urban public space in western societies; secondly indentify the evolving pattern of use of urban squares in China; and finally find a way to further develop the definition and classification of urban squares in contemporary China. The second phase is a literature review in carrying out successful fieldwork which provides the foundation for the third phase of work.

The third phase is to undertake the fieldwork. This includes conducting questionnaires and field observations of users in selected urban squares, and then conducting semi-structured interviews. Qualitative methods will then be adopted for data analysis to obtain current usage patterns and people's desires in terms of their use of public squares in modern China.

The forth phase of the work is to determine the desires obtained from the three previous phases. Furthermore, this will be used as a foundation to set up a conceptual framework for socially beneficial urban public squares.

Discussion: This research will produce a valuable conceptual framework, which will include conceptual models for establishing socially beneficial urban squares in China. This will identify a way to increase the social value of urban open public space through appropriate design in modern China. This work will be not only a valuable contribution to the theoretical structure of Chinese urban public realm but also a positive and applicable reference to be used by practitioners in practical projects.

O3. Social Dynamics Amongst Different User Groups

O3.1 Walking School Bus in urban environments: the sustainability in question?

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Over the past decade, a way to reduce children's automobility and to encourage parents to change escorting behaviours for school journeys is to promote walking-school bus (WSB). This one consists of the supervision of a procession of children escorted by parents who in turns volunteer leading groups of children going to school on foot(and sometimes on the return home from school). Related to several institutions, it is also the result of the creation of a school travelling plan, also known as the home-school travelling plan or the school establishments travelling plan (PDES), set up with the collaboration between the town, the educational community and the parents. The emergence of walking school buses over the past few years has given rise to

a few studies which are still very fragmented. Many praise the effects of this organisation in terms of ecology: the development of new values related to de-motorisation, (Kearns et al.,2003), economy or health (French et al., 2001). However, because of its social organisation, this spatial device tends to be a fragile organisation that municipalities attempt to support. Beyond educative and environmental values of this device, we can ask not only how sustainable are the WSB as an innovative device in urban contexts but also how sustainable may be parents and children's behaviours. In order to assess WSB and its potential sustainable forms (as a device, as a way to change behaviours and as a way to promote children's autonomy), a survey was carried out in Rennes and its suburbs (France) according to two phases: 1/ a first step consists on an on-line survey with the official correspondent of WSB in every municipality and agree to answer the questionnaire (15 correspondents); 2/ in a second step, a sample of parents (52) and children (40) were individually interviewed at home in 4 selected municipalities of Rennes and its suburbs (France). Those four urban and suburban areas differ from their social and institutional organisation of the WSB. Results will allow discussing WSB involvement according to parents-environment relationships (from attachment to implication and commitment). Results will indicate why and how parents get involved in WSB and what the social profile of families is. We will attempt to debate on the sustainability of practices and devices of WSB. It will be shown how institutional contexts as well as residential environments and school situations (private vs public) may create distinctive involvements (clubbing vs political and environmental activism). Finally, because WSB may also generate limits due to social division we will discuss on psychological and social limits of WSB for children.

O3.2 SPACE APPROPRIATION BY DRUG ADDICTS: NEW POSSIBILITIES FOR PUBLIC POLICIES

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This study is a qualitative research that aimed to describe how the space appropriation by drug addicted and temporarily accommodated men in a therapeutic community occurred, in a city of the metropolitan region of São Paulo. We used circular concept of space appropriation (Pol, 2002), composed of the dimensions of action-transformation and symbolic identification, considering behaviour, cognitive, emotional and identity aspects in the process of construction of the meaning of space. Data collection was performed with four men, aged between 30 and 40 years old in hospital stay between 03 and 12 months, and used the partial replication of the Bassani's (2003, 2004) methodological proposal: thematic interview and direct observation with photographs. The results indicated the following characteristics of space appropriation for these participants: the importance of the work in the institution, with well-established rules and regulations (e.g. recycling workshop, household chores, food); the transformation in the environment due to the institution rules necessary for the treatment; the choice of the most significant place in the institution by the subjects is given precisely by the possibility of transformation, although limited, of the space and marking of individual identity (rooms); the marking of the space occurs by the insertion of physical elements that portray personal characteristics, demonstrating the possibility of building a new life from the proposed treatment adopted in the institution. The results point to the importance of the work developed by the psychologist in institutions for chemical dependency treatment, as well as the contribution of environmental psychology, in order to understand the importance of space for a most appropriate intervention for this population. These research results, in spite of being descriptive and detailed to a small sample, could complement public policies for the chemical

dependency treatment, taking into account that the therapeutic communities (host institutions for drug addicts) must be included in the community, in residential areas, enhance the strengthening of community life of people who require hospitalization for treatment, promote preventive actions regarding the use and abuse of alcohol and other drugs as well as actions aimed at sustainable development for both the institution and the community. (Supportedby CAPES, Ministery of Education, Brazil).

O3.3 INFLUENCE OF TERRITORIAL BEHAVIOUR AND GROUP IMAGE ON SOCIAL INTERACTION BETWEEN DIFFERENT SOCIOECONOMIC GROUPS

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The intensive changes in the last century have affected the way people cope with their environment. There was a rising of ephemeral social contacts in this process of social life segmentation and increased heterogeneity. In spite of that, local sociability is still considered an important mechanism of social integration and of coping with diversity. Place identity and use of the neighborhood are understood as influencing on the social interaction in a community, nonetheless, evidence has not been provided so far to suggest which variables most affect social interaction between different socioeconomic groups living in the same urban environment.

According to literature, aspects such as socioeconomic status and ethnic background help to explain use on urban places, and many authors (e.g. Rapoport, 1978) corroborate that perception of similarities can affect territorial behaviour, influencing the social interaction in a place. Territorial behaviour helps to organize social life in terms of who, what, how and where any activity can be done, also informing the levels of privacy and territorial control regulating a place. On one hand, it is related to the definition of physical and symbolic boundaries that promotes the emergence of social image, and place identity. On the other, those barriers define the level of access into a place, allowing to identify who is or not part of the place, regulating the social contact.

This paper empirically addresses the effects of spatial attributes that mainly relate to territorial behaviour. It discusses how those practices can be arranged when different socioeconomic groups are living in the same local neighbourhood, especially in terms of how they can regulate the interaction between them and the establishment of a social image. The research consists on a comparative study of three central areas in the city of Porto Alegre, South of Brazil. In these areas, characterized by high and medium income population, low-income groups were introduced through social housing re-urbanization projects. Results show that the possibility of identifying a common image, defined on the basis of territorial behaviour, hence perception of homogeneity in the neighbourhood, satisfaction with residential place and relationships between neighbours, contributing to promote social interaction between different socioeconomic groups. Furthermore, for one of the studied areas, it was confirmed that differences in territorial behaviour increase the perception of diversity among residents and also the desire to avoid contact in neighbourhood public spaces, which implies less potential for social interaction among the different groups. The findings enable better understanding of social interaction between different socioeconomic groups living in the same neighbourhood. It is expected that it can stimulate discussion on the issues of diversity, identity and its effects on social interaction, in order to implement congruent urban policies.

O3.4 CONVIVENCIA: CO-EXISTENCE AS A PROBLEM AND SOLUTION IN A STATE-SANCTIONED SOCIAL HOUSING DEVELOPMENT IN BOGOTÁ, COLOMBIA

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This paper will address the emerging theme of convivencia, or co-existence, from my doctoral dissertation that examines the influences of the meanings of home and habitat of key actors (e.g. residents, municipal agency staff, planners, and architects and developers) involved in the production and consumption of social housing in Bogotá on associated housing, neighborhood and community building practices. There is an absence of research that explores their conceptual clarity among involved actors, which is fundamental to success in the kinds of consensus-building and participatory initiatives that housing planners argue is the basis of good housing practice (e.g. Healey, 2003). It is believed that through their distinct communities of experience and professional practice and resulting parlances, the types of actors differently incorporate psychological, spatial and socio-structural dimensions in their meanings of these two taken-for-granted terms. For example, developers, designers, and municipal entities are more concerned with function, aesthetics and costs of the project. Whereas, residents might be more concerned over decision-making and space control in and near their houses (Sinha, 1991). While the final goal is to improve living conditions, the various voices sharing this goal have yet to be deconstructed in the housing, planning or policy literature in either the United States or Latin America.

Utilizing an interdisciplinary perspective culled from the social sciences, architecture and urban planning literatures, this study will examine the issue through a field-based qualitative case study of one of Bogotá's state-organized social housing initiatives. Data collection methods of in-depth narrative interviews, participant observations, a focus group and archival research have been able to capture Metrovivienda's varying efforts in their new communities. Referencing socio-structural forces, the dissertation will illustrate the multi-faceted stories of each kind of actor that highlight the influence of their personal, social and physical understandings of home and habitat on the housing, neighborhood and community building practices of the agency's social housing development process. Influenced by post-modernist epistemological practices, planning and housing research have begun to embrace this narrative turn to understand practice through stories and rhetoric (Sandercock & Attili, 2010). Preliminary analysis of data is revealing that convivencia is surfacing as a major theme whose dynamics in state-sponsored housing poses significant challenges. However, convivencia, as envisioned by research participants, can also serve as a concept by which to organize planning at the housing, neighbourhood and community development scales.

O4. EXPERIENCING ARCHITECTURE

O4.1 AN ARCHITECTURE OF EXPERIENCE

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Over the past 20 years technology has become embedded in almost every part of our lives, and nowhere more than in building design and construction. We are now witnessing the results of this technological shift in process within our built environment – some good, some not; as architects utilise and become more reliant on the computer.

Thoughtfully created environments offer inhabitants comfort and security and a sense of wellbeing. The consideration and design of experience is an essential component of good architecture, get it right and the users' quality of life can be enhanced. Get it wrong and there is the potential for a poor and damaging experience for the inhabitant.

Has this extensive use of the computer detached architects from the non visual experiences of their designs? Has this new technology moved us away from issues that we once deeply valued – regionality, skill and longevity and replaced them with homogeny, expediency and globalisation? Are we too eager and excited by the initial impact of these astonishing constructions facilitated by the technology at the expense of the end user and their experience when inhabiting these 'forms'?

'Architecture has the capacity to be inspiring, engaging and life-enhancing. But why is it that architectural schemes which look good on the drawing board or the computer screen can be so disappointing 'in the flesh'?' Juhani Pallasmaa

Pallasmaa's statement is key to the direction and the formulation of studio design briefs for third year undergraduate students at the Mackintosh School of Architecture. The ambition of the year is to provide a platform where human experience within the spaces designed is valued equally alongside planning issues, construction and aesthetics, and aims to embed a social dimension to the process. One of the programme's intentions is to question the prioritisation of visual experience in the conception and making of buildings through investigations into the multi-sensory realms of architecture with the human at the centre.

Through a series of connected briefs the students are challenged to design buildings and environments that have been holistically considered. Technology is embraced and supports hands on workshops and experiential recordings. Slow Architecture and its philosophies are considered alongside the pragmatics and the poetics of the proposals. With sustainability at the core, materiality, construction and how these contribute to an architecture where craft, sensuality, delight and contentment are also explored. Working on the premise that speed driven architecture can result in a visually dominant architecture, one in which the spaces created are viewed rather than felt; the projects require a 'slow' haptic response.

O4.2 AESTHETICS OF URBAN SCENES: AN ANALYSIS THROUGH VISUAL PERCEPTION

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This paper analyses the aesthetics of urban scenes, characterized by different levels of order and visual stimuli, through visual perception of users of Porto Alegre. It follows an investigation regarding the dichotomy between the philosophical and the empirical aesthetics approaches, as well as the impact of formal aesthetics. The existence of differences between the aesthetic responses of architects, non-architects college graduates and non-college graduates is also examined. Still, the reasons for the assessments conducted by these three groups are identified. Considering the environmental aesthetics approach, evaluations of urban scenes with varying degrees of harmony and visual stimuli may provide additional knowledge concerning the dichotomy between philosophical and empirical aesthetics. Data was collected through questionnaires and interviews conducted with 60 architects, 60 non-architects college graduates and 60 non-college graduates. Questionnaires and interviews were complemented by a photographic kit consisting of 3 A3 sheets, each sheet with 3 street scenes. A sample of the street scene consists of scenes of contemporary buildings in Porto Alegre (3 scenes) and historic buildings in Porto Alegre (3 scenes), Prague (1 scene) and Florence (2 scenes), in a total of nine scenes grouped into three categories (not mentioned to the respondent), with three scenes in each category: order and visual stimulus - scenes with a clear organization of architectural elements and compatibility between neighbouring buildings, and with clear visual stimulus or focus of attention; order and low visual stimulus - scenes with a clear organization of architectural elements and compatibility between neighbouring buildings, but with low visual stimulus, what might allow the perception of monotony; and disorder - scenes without a clear organization, both between buildings and among the architectural elements of buildings, preventing the perception of order. Data from the questionnaires were analysed by means of non-parametric statistical tests, such as cross-tabulations, Kendall W and Kruskal-Wallis. The main results show the potential of empirical aesthetics to explain aesthetic evaluations, and reveal the dominant and positive impact of the idea of order and visual stimuli in such evaluations. Nonetheless, regarding the examination of whether or not the differences between aesthetic evaluations of people with different levels and types of training, a greater aesthetic value was given to the idea of order and a greater aesthetic devaluation was given to the idea of disorder on the part of architects, compared to the group of non-architects college graduates and to the group of non-college graduates.

O4.3 AN ANALYSIS OF THE AESTHETIC IMPACT OF VIEWS FROM APARTMENTS

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The aim of this paper is to assess the aesthetic impact, by architects and non-architects college graduates, of views from the living rooms of apartments. Studies of apartments, offices, prisons and hospitals have revealed the importance of views from these buildings. The results have revealed the positive impact of broad and organized views, with the presence of natural elements and some variation. For example, the recovery of patients in hospitals, as well as, the attitudes of office workers, was positively influenced by the existence of views of nature from the interior of such buildings. Yet, besides increasing the architectural quality of the interior of buildings with views to a scenic landscape, a view with a positive aesthetic impact is often the basis for

preferences and choices regarding, for example, a place for recreation or residential, also tending to produce an economic appreciation of such sites. On the other hand, views to parking lots, blind walls, and views from buildings too close to each other and monotonous facades have caused a negative impact. However, it is necessary to deepen and sustain the universality and reliability of the results already produced, including the aesthetic impact generated by built and natural elements, as well as their distances from the observers. Data gathering methods include photographic records, questionnaires and interviews carried out with 60 architects and 60 non-architects college graduates, including an A3 sheet with six views from the living rooms of apartments in Porto Alegre. These views are characterized by buildings with openings, buildings with blind walls, and natural elements, with different distances from the observer and distinct views of the sky, which according to some previous studies tend to produce different aesthetic impacts. Data from questionnaires were analysed using nonparametric statistical tests such as Mann-Whitney U test and Kendall W. The results show, for example, that the views constituted by natural elements tend to be evaluated as positive and to be preferred, while views characterized by blind walls tend to be evaluated as negative and to be the last in order of preference. Yet, views with no sky sight and characterized by smaller distances between the observer and the viewed elements tend to be less satisfactory or more dissatisfactory than more distant views. The difference in the type of college education (architects and non-architects) did not affect the aesthetic evaluations of views, and did not affect the reasons given to justify the most preferred and least preferred views. The results also reinforce the importance of empirical and formal aesthetics, revealing that views attributes provoked similar reactions for different people and groups. Concluding, this study contributes to knowledge about visual perception and aesthetic quality of views from buildings, specifically, from residential buildings located in different urban areas.

O4.4 VERBAL RESPONSES AS A MEANS OF DETERMINING VIEWERS' SHIFTS OF FOCAL ATTENTION IN VIEWS OF ARCHITECTURAL SETTINGS

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Architectural settings create interest by their ability to arouse a variety of perceptions and imaginative readings in appropriately engaged visitors. Underlying this observation is a belief that particular vantage points, and conditions of illumination are at least partially responsible for varying percepts and readings of the same space, but this is not an easy phenomenon to test. The main issue is to capture what a visitor actually perceives in a space in ways that are comparable across visitors or that can be quantified. Recording and tracking of saccades is one possible means to do this, but is not very satisfactory since it only captures the points at which foveal vision is directed and attention can move independently of saccadic movements and with different radii of focus.

In a study below we test a procedure that tries to capture differences in perceived configuration of a given space by using verbal reports to identify the object of attention. This approach depends on some key findings in studies of perception - that attention is necessary for conscious perception, and that verbalizing can identify objects of attention without preventing the subjects to switch from spatial to object attention or vice-versa.

We tested this approach in an experiment that used selected views of Tadao Andoâ's Pulitzer Foundation for the Arts (St Louis, Missouri) as a case. The views were grouped into 4 distinct

exploration routes of the same setting, each route described by a set of photographs. Each subject was assigned to one of the 4 routes. The subjects were asked to visualize the space presented to them in the photographs and to report in a prescribed format of single sentences a narrative of their progress through the visualized space. The aim was to test if the differences in the routes correlated with differences in the description of the mentally traversed space.

Comparing the sentences, we have found systematic and statistically significant differences between the routes in the number and types of prepositional phrases that subjects used, and in the order in which they selected, and therefore, attended to, the different features of the scene presented to them. The analysis of experimental results supports the hypothesis that different exploration routes influence and alter the observer‘s attention that results in a distinct complexity and nature of the observer’s understanding of the setting.

In the proposed paper, we summarize the results of the experiement conducted in two different settings, one in Atlanta (in English) and one in Budapest (in Hungarian), and offer some reflections on certain methodological challenges that were raised in the course of the work. Comparing the Hungarian and English experiments, we discuss how using verbalization in specific formats provides a simple and useful way to capture the objects of subjects’ conscious attention and we offer some insights into the relationship between language and space.

O4.5 ORDER, SIMILARITY AND VARIETY: HOW TO CREATE ATTRACTIVE PLACES THROUGH FORMAL AND SYMBOLIC ATTRIBUTES OF BUILDING FACADES

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City centres are public areas where human experience is transformed into signs, symbols and patterns of behaviour, which result from the combination of formal and symbolic factors. The intensity of use and changing demands of shop owners in how they operate their shops make the application of aesthetic controls related to commercial signs and building facades fundamental. With regard to these controls, reconciling design considerations with commercial needs of shop owners and the interests of the local community is a particular concern. In this context, this study seeks to identify formal and symbolic attributes of commercial street facades that influence user perception and evaluation of visual quality taking into account the following users groups: consumers of social classes A and B (annual salary ≥ £30,000), and consumers of social classes C and D (annual salary ≤ £30,000 ≥ 20,000). The objective is to identify principles of architectural design that make places become satisfactory for people, stimulating diversity in public space.

The case study approach is applied in Pelotas. This is a city located in the South of Brazil and its commercial city centre is comprised of historic and contemporary buildings. In the last few years, this city centre has experiencing a change in its shops location: shops, which are focused to a certain social class, have been located near each other. This fact contributes to the fragmentation of the public space in different social classes. Questionnaires and a focus group are applied to 132 respondents to understand which type of streets people most like: the ones characterized by similarity (where shops look the same and are built to attend similar social classes) or by variety (where shops look different and are built to attend different social classes). As other studies already prove, standardisation of design can result in all city centres looking the same, with little

sense of place. On the other hand, fragmented strategies of aesthetic control can result in a series of conflicting styles.

Qualitative and quantitative methods are applied to analyse the data. Photomontages of the streets facades analysed are printed out and attached to the questionnaires. The first results indicated that users prefer streets with higher variety of shops when the formal elements of facades are ordered according to the principles of Gestalt Theory. Streets comprised of shops which attempt to attend just one specific social class are evaluated as less interesting, while some of the streets comprised of different shops according their formal attributes are evaluated as negative when the complexity is too high or when order does not exist. In this way, the outcomes of this paper indicates a set of principles that can help local authorities to avoid social fragmentation in commercial city centres and at the same time promote streetscapes evaluated as positive by the majority of users.

O5. SPATIAL INFLUENCES AND SOCIAL INTERACTION AT A MACRO LEVEL

O5.1 EMOTIONS AND AFFECTIVE QUALITIES EXPERIENCED IN URBAN SPACE

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Introduction: Navigation systems help us make decisions in environments. The outputs are route calculations on the basis of objective data. However, environments are perceived not only according to physical features but also in terms of their affective qualities (Russell, 2003). Information about the external world is translated into an internal affective state that indicates whether approach or withdrawal is required (Feldman Barrett et al., 2007). Hence, we argue that the affective perception of space moderates individual's decisions in space and thus also route decisions. However, route calculations on the basis of affective data about space, is a novel approach. Before we can provide this kind of user-centered navigation services, we first need to understand how urban space is perceived. This paper reports on results from quantitative and qualitative studies, conducted in the project EmoMap (funded by the BMVIT program line ways2go), exploring people's emotions and affective qualities in response to urban space.

Method: We assembled sets of emotions and affective qualities deriving from literature. A focus group selected all terms relevant to urban space and amended missing or inaccurate ones, resulting in two extended sets of 68 emotions and 67 affective qualities. Subsequently, online questionnaires were carried out, with the aim to reduce the sets of emotions and affective qualities to the most relevant terms. Participants were instructed to use a rating procedure to indicate frequency and importance of emotions or affective qualities for pedestrians in Vienna.

Results & Discussion: Results of the online questionnaire on emotions (n=99) suggest that the most relevant positive emotions evoked in Vienna are in relation to the categories of excitement (e.g., feeling curious, interested, stimulated, inspired) and safety; whereas negative emotions refer to experiences of stress (e.g., tensed, rushed, confined). Results of the online questionnaires on affective qualities (n=102) suggest highest ratings for the positive categories of diversity, interest and attractiveness, and highest ratings of the negative affective qualities of traffic, noise and stress.

In our research, we applied retrospective methods for obtaining information about subjective experiences in urban space. However, these methods are susceptible to cognitive biases. Hence, future work of the project EmoMap will focus on subjective experiences not only about space but in it. Affective data will be gathered georeferenced and in real-time. The future aim of the project is not only to gather a great number of affective space-data, but also to enrich navigation systems with them and therewith improve services for wayfinding.

O5.2 SPACIOUSNESS & PREFERENCE: A STUDY IN THE PERCEPTION OF DENSITY IN THE SUBURBAN RESIDENTIAL BUILT ENVIRONMENT

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Density, as a concept and metric, is widely used to describe the built environment. However, this complex topic deserves further attention because it is inadequate at describing physical and spatial relationships. In the wake of increased urbanization it will be crucial to merge quantitative and qualitative properties with the discussion of density. Residential suburban communities, in the United States, are often designed to achieve a low dwelling unit/area density with its inhabitants preferring an antidote to the perceived congestion and crowd of the urban core environment. In spite of automobile use and land conversion contributing to increased concentrations of carbon dioxide in the atmosphere; car oriented developments, consisting of single family detached homes on individual lots along wide streets, are ubiquitous. The question this study asks is; how do residential built environment spatial characteristics influence the perception of low density? In other words, can we design an environment which is perceived as low density, while utilizing less land area than its actual low density counterparts? A survey with residential street scenes was used to investigate this question. Three housing typologies (single family homes, row houses, and stacked row houses) and three spatial characteristics (street width, set back distance, and tree coverage) were systematically altered and combined in graphically represented images of the residential street scene. The survey was sent to 400 randomly selected inhabitants of Beaverton, Oregon who were asked to choose the scene they felt was the most spacious and most preferred, from sets of stimuli, using discrete choice modeling.

O5.3 CONTRASTING DEMOGRAPHIC AND LAND-USE DYNAMICS: THE DICHOTOMY OF URBAN AND SUBURBAN DEVELOPMENT IN THE METROPOLITAN AREA OF SANTIAGO

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Population growth and ongoing expansion in Santiago puts enormous pressure on the environment: agricultural land is being transformed into built-up areas, while the share of green space dwindles. Suburban construction produces long-term environmental impacts such as higher imperviousness of land surfaces. Demographic and land-use change are major drivers of urban growth. The simultaneous processes of increase and decline of population and expansion of built-up areas into the suburban area are studied for the 34 municipalities of the Metropolitan Area of Santiago de Chile (MAS), subdivided into 22 central urban municipalities and 12 suburban municipalities.

Land-use dynamics occur as a result of population and economic growth, and the subsequent increase in transportation infrastructure. Population growth and socio-spatial differentiation increase housing demands to satisfy both basic and higher accommodation requirements. Identifying the principal features of land-use change is an important task and findings provide information on time, space and quantity. Changes in the demographic dynamics of MAS will be analysed as major drivers of environmental quality and quality of life. Environmental quality is described as a complex multi-dimensional set of abiotic, biotic and human characteristics localized in place and time. Human beings highly influence the urban environment through various constructions modified and perceived as components of their surroundings which impact their social circumstances, health and well-being.

In order to investigate population change as a driving force for urban growth, use was made of urban and regional statistics taken from census data. Using census data and Geographic Information Systems (GIS), the number of inhabitants per municipality was determined. Investigations of population dynamics made on two spatial levels comprise the MAS in total and the subdivision of the urban and suburban municipalities. The analysis of population dynamics was made for the time period 1992-2002-2006-2009 to establish the spatial distribution of the population and the changes over time, and to identify growing, declining or stagnating municipalities in the MAS with respect to the spatial indicators of environmental quality.

Land-use classifications and changes were calculated based on remotely sensed data for four time steps (1993, 2002, 2005 and 2009). They indicate urban growth by delineating built-up areas, and transformation from agricultural use and other open spaces in the MAS showing the increasing amount of built-up areas for each of the years under investigation and the direction and pace of urban growth. The increase in built-up areas shows how settlement expansion rises from 500km² to 575km²(=15%) between 1993 and 2009.

Selected source and performance indicators are analysed to assess the impact of human settlements on the ambient environmental conditions towards environmental health and well-being.

O5.4 Japanese Neighbourhood, A Study on Morphology and Development

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Japanese neighbourhood can be characterized as mixture of houses, apartments, schools, shops and offices. Here, the street facade changes constantly due to the continuous ups and downs, and backs and forth following the changing numbers of floors in neighbouring houses and apartments as well as their position to the street and also to one another. Consequently the presence of the a range of open spaces formed and scattered among the buildings, in scale and character depending on where the buildings rest free from their neighbours, has contributed to the visual excitement and more importantly adaptability of these neighbourhoods to various forms of buildings and structures. As a consequence, individual buildings are recognized more as masses than merely facades as it is the case in many jammed neighbourhoods in big cities around the world. As Barry Shelton says “There can be an enormous variety of plots (shape and size) Thus much of it is a collage-like scene which offers little clarity of pattern, form or line.”(Shelton, p. 152)

Here, despite the character of most individual houses and apartments which nowadays more or less resemble Western types one can however, very much, appreciate the atmosphere of a Japanese city and neighbourhood considering their scale and arrangement in particular which still follows their precedents in the traditional neighbourhoods.

There are certain qualities which make the distinctive character of a contemporary Japanese neighbourhood such as the intimate scale of its grains - the plots and the buildings - their different sizes and shapes, and their arrangement contributing to the intimacy and visual sophistication and excitement of the residential areas, as oppose to large housing or high-rise developments to accommodate the large population. However, as a consequence, these neighbourhoods are stretched out far from the urban centres but on the other hand are easily connected and reached by the introduction of fast and extensive transportation systems.

This research identifies the distinctive spatial arrangement of a typical residential environment in a Japanese city through a morphological and typological study of a neighbourhood in Sapporo, as an example of a city influenced by its western precedents from the very early stages of planning. Later it studies the evolution of the neighbourhood over the past many decades in search for any development in its pattern; and finally introduces the pattern and development of a typical contemporary Japanese neighbourhood as a unique and notable example of the coexistence and integration of dwellings and functions of diverse scales which accommodate different purposes within the scale of the neighbourhood and are adaptable to the ongoing developments.

O6. SPATIAL INFLUENCES AND CULTURE

O6.1 HEALTH CARE FACILITIES IN RAPIDLY URBANIZING CITIES: THE CASE OF DAR ES SALAAM CITY, TANZANIA

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For long time provisioning of health care facilities in Tanzania has been based on threshold population and hierarchy of administrative units. Even after liberalizing health care service delivery, the motive has been the same and the approach has been applied to both urban and rural settlements. However, this approach has been seriously overtaken by the rapid urban population growth in towns and cities in Tanzania. Sustainable urban form and central place theories are used as a framework of analysis of the research issue. This paper applies multiple case study analysis to understand key variations that exists among the administrative units in Dar es Salaam which prompt for new approach for providing urban health care facilities.

Focusing on the case of Charambe and Chamazi Administrative Wards, which are among the 73 Administrative Wards which comprise Dar es Salaam city, the study analyses physical accessibility, densification of settlements and population dynamics, and how they influence location and distribution of health care facilities. The geographical information system (GIS) is used to analyse the spatial distribution of health care facilities and how they correlate with other urban functions such as physical accessibility and residential housing.

The study has found that provisioning of health care facilities based on the hierarchy of administrative units is not successful due to the oversight of the variation which exists among

administrative wards due to rapid urbanization. The specific limitations of provisioning of health care facilities based on the administrative units includes its failure to analyse the demographic characteristics of both urban and peri-urban wards; settlements' densification due to informalities in land development and potentials of physical accessibility in attracting private health care providers.

The paper concludes that location and distribution of health care facilities in rapid urbanizing context should respond to the population dynamic, nature of the city growth and physical accessibility. Due to difficulties in regulating spatial location of private health care facilities, there are very big spatial disparities of distribution of health care facilities in urban areas. It has been empirically confirmed that private health care providers concentrate in highly accessible areas in the inner city leaving peri-urban and less accessible areas with poor distribution of health care facilities. Therefore, public-private model of health care service delivery which emerged after privatization, should not only focus on the administrative units and threshold population as the key criteria to provide health care facilities but also take into account variations that exist within these units.

O6.2 INTERACTIONS BETWEEN URBAN DYNAMICS AND NEW SPATIAL PATTERNS: THE CASE OF ISTANBUL

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Recent urban dynamics clearly developed new types of urban developments, urban behaviour,spatial politics and an interactive spatial culture. Globalization, internationalization and the rapid flow of information have played a significant role in the transformation of socio-cultural and urban identities.Cities are more into fluidity and mobility where social,cultural and economic facts can rapidly be transferred from any one locality to other. Yet, powerful effects of globalization on economy, society, and urban environment created fragmentation as well as an interesting transition of each system accordingly.While urban transformation in regard to globalization created sharp cuts on former urban texture and typologies, new spaces and identities had been produced with the formation of recent networks and encounters.These changing dynamics have affected continuity and development trends in urban-housing patterns and housing preferences.Multidimensional outcomes of this transformation are manifesting peculiarities of activity patterns, behavioural relationships, and socio-cultural norms, as well as architectural and urban configurations.

As a rapidly growing city, Istanbul has currently become the 'stage' of global social, economic, political transformations, visualized in the urban and architectural field. While the urban boundaries of the city rapidly extend, rapid architectural and urban transformations in the inner city raise crucial questions. A series of luxurious housing settlements have been erected in and/or around the informal housing areas of the globalizing city. In the context of transformation process within the recent years, this paper is aimed to expose the relationship between urban dynamics and new developments of Istanbul.The paper consists of three main sections.It starts with the main discussions on globalization and urban dynamics within cities in general. It will focus onto the society culture, fragmentation of the built environment and politics of space under globalization effects on this rapidly growing city.Secondly, the paper focuses on the city of Istanbul's changing

urban texture. It exposes the effects and outputs of recent urban dynamics onto the city and focuses to the newly emerging housing patterns. The authors are aiming to bring out a critical discussion on the city silhouette, where separating and overlapping urban functions are easy to catch through on any site section.The paper targets to conclude its urban development statements for the city, where recent urban dynamics are restructuring the cityscape and the society in physical, social and cultural means.

Based on the general framework, the general discussion will focus on recent housing projects, new development trends, former urban patterns and new forms of socio-cultural interactions.Authors aim to bring reflections as a concluding discussion about the city's general development attitudes and a critical review on its ongoing and forthcoming development.

O6.3 THE SUCCESSION OF LIVING BEHAVIOURS AS A RESULT OF ENVIRONMENTAL IMPROVEMENT FOR URBAN VILLAGE OF HOUJING IN KAOHSIUNG, TAIWAN

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In the process of urban growth, some villages are urbanized with environmental improvement and become some kind of urban areas, named "urban village" in this paper. The subject chosen is Houjing, a traditional residential area located in Kaohsiung, which is built since A.D.1661. The lands around Houjing that were used for farming in the past are gradually developed into industrial, residential, or commercial areas since 1940's. The urban planning in Houjing is put into practice since A.D.1980. Nowadays, the rebuilt houses are mixed with some traditional houses in Houjing.

The main objective of this paper is to find out how the residents in Houjing continue the living behaviours and adapt themselves to the improved environment in the process of urbanization. Methods used include analyses of the transition of environment with historical maps, as well as participation observation and non-participation observation for the survey of living behaviours. For outdoor living behaviours, "laundry / clothes-poles", "planting / flowerpots", "sitting / chairs", and "social gathering / tables" are surveyed. Interviews with government employees and 12 residents are also carried out. Transitions of three traditional housing areas lived by extended families in Houjing are also analysed.

The three findings below are worth mentioning:

(1) The succession of living behaviours: The residents in Houjing use the space of the roads for drying clothes, because some courtyards of the traditional houses were destroyed during the environmental improvement. Some of the residents even used a part of the roads temporarily for a wedding banquet. Some living behaviours are maintained through the flexible use of space by the residents in Houjing.

(2) The rebuilt territory: The destroyed environment or territory is partially rebuilt as a result of the residents' flexible lifestyle. For an example, the residents in Houjing put some chairs or benches in the arcades or roadsides that enabled them to sit and chat there while watching the surrounding environment at the same time. This turned the public spaces of the roads into semi-public spaces.

(3) The neighborhood relationship: Even with the undertaken environmental improvement, the residents still maintain the neighborhood relationship formed since long time ago. Social gatherings among old and new residents in the arcade of the rebuilt terrace houses in Houjing are also found. This implies that the residents are flexible in adapting improved environment.

The above findings show the possibility for Houjing to survive as a sustainable residential area in a community that is able to maintain the residents' modified lifestyle due to the changed environment. To conclude, this paper suggests some implications on how to maintain a sustainable community in urban village like Houjing, which may contribute in sustaining the local culture or improving the living quality in the future.

O6.4 PETTY TRADING SPATIAL PROCESSES IN MARKETPLACES IN DAR ES SALAAM, TANZANIA

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Petty trading is a prevailing socioeconomic activity serving the multitude of low-income population in the rapidly urbanizing developing countries. Spaces for petty trading activities have, therefore, important role to play in the urban development processes. Marketplaces are the geographically defined sites for the growing petty trading activities. However, there is limited knowledge on the spatial processes that generate and sustain petty trading in the marketplaces, hence inadequate planning and architectural design solutions for the same.

The aim of this paper is to present and analyse the spatial processes that surround the petty trading daily operations in marketplaces using Temeke Stereo Marketplace in Dar es Salaam, Tanzania as the empirical case. The paper examines the processes pertaining to generation, use and management of the petty trading spaces. The processes from formal design of the marketplace to traders' informal appropriations of the spaces are described and critically appraised.

The paper argues that petty trading spatial processes reflect the interplay between the entrenched social and institutional frameworks within specific contexts. Integration of defined and legitimate power structures among different actors is a prerequisite for smooth management and operations of petty trading activities. For instance, definition of space boundaries and timely use of spaces are expression of the embedded regulative, normative and cognitive institutional aspects in generation, use and management of the petty trading spaces. In other words, petty trading spaces are produced and reproduced in response to conceptions, actions and reactions within the prevailing social and institutional structures. The paper finally attempts to position the roles of professionals such as architects and planners in guiding the provision of adequate environments for petty trading given these conditions. These should be highly considered if planning and design for the well-functioning marketplaces is desired. A trans-disciplinary approach in studying and designing marketplaces with a special focus for petty traders is proposed.

O6.5 Dynamics of building activity in historical residential neighbourhoods in Tartu and Tallinn, Estonia. Spatial planning perspectives

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Concerns about the quality of living environment have been in the focus of spatial planning since the very beginning of the discipline. The idea that the physical form of the environment could affect social and economic wellbeing or even determine the quality of life has been quite central to planning thought. Although the understandings what makes a good living environment and how could it be achieved have varied greatly over time, the recent sustainability paradigm in spatial planning has been seen as a 'common good' to improve process/procedural approaches, alongside substantive/design approaches.

Our paper is taking a closer look at the planning procedures and documents in four valuable residential neighbourhoods in Tartu and Tallinn, Estonia. The historic residential districts near the city centre constitute remarkable cases for contemporary spatial planning with great potential in achieving the three E's - environment, economy, and equity - of sustainability and demonstrating a strong "spirit of place". We are presenting a critical analysis of strategic comprehensive plans and theme plans of the neighbourhoods, looking at the theoretical approaches lying behind the planning solutions. The description of Estonian planning system and factors influencing it (like Soviet legacy) are given for background information.

The general purpose of the comprehensive plans in historical neighbourhoods is both to preserve the historic physical character of the district and to ensure the residents good living conditions. The new buildings and extensions of the existing ones should not overuse the site and take advantage of the sparse density of neighbouring plots.

In Estonian planning framework, comprehensive plans can be changed by detailed plans, which provide the obligatory grounds for issuing the building projects and permits. Although the planning act sees this as an exceptional procedure with possible alterations carefully considered, it was a common practice in the beginning of the century. In our analysis overview of the detailed plans and new buildings constructed over the years in research areas is given. The magnitude of the alterations is assessed as well as the conformity with the comprehensive plans. Thus the detailed plans and new buildings indicate the scale, pace and character of the actual developments in built environment.

The conclusions deal with trends of development in historical residential neighbourhoods. Future potential of the research areas supported by current comprehensive plans is envisaged and suggestions for the planning practice are given.

O8. RESTORATIVE EFFECTS OF NATURE

O8.1 THE POWER OF NATURE: INVESTIGATING THE RESTORATIVE EFFECTS OF MYSTERY ON ATTENTION

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Introduction

There has been an abundance of research amassed confirming the beneficial effects that nature can have on restoring a person's capacity to direct attention (Berman, Jonides, & Kaplan, 2008). All nature however, is not equal. Certain natural settings are likely more supportive and effective at facilitating restoration than others. Settings that contain patterns of mystery (i.e., screening, distance of view) tend to compel a person to explore an area further by presenting only partial information about what lies ahead. That process of exploration can be quite involving, and mind-filling. As a result, settings of this sort may be more apt to elicit a person's fascination, a form of attention that is less demanding. By avoiding circumstances that require mental effort, a person can rest their overworked directed attention capacity. Therefore, the purpose of this study was to investigate the effect of viewing nature scenes containing patterns of mystery on restoring attention.

Methods

Using a 2 x 2 between subjects experimental design, this study examined the effect that scene type and presentation duration had on restoring a person's capacity to direct attention. A total of 80 subjects participated in the study. Initial efforts involved participants performing the Backwards Digit-Span Task and the Attention Network Task (ANT) in order to obtain a baseline measure of attention. Following that assessment, participants viewed 40 nature images on a computer screen that were either high or low in perceived mystery. Each image appeared for a specific duration of time (1 sec. or 10 sec.), after which participants provided a response rating for how much they liked the image they had just seen. Once participants viewed and rated all of the images, they then performed the ANT and Digit-Span Task a second time. Gain scores on attention provided a means by which to assess the restorative effects of the presented images.

Results

Data analysis involved two primary sets of analyses. The first, a factorial ANOVA, yielded a significant main effect for scene type, $F(1, 79) = 13.61$, $p < .05$, on digit span scores. Participants who viewed images perceived high in mystery generally performed better on the Digit Span Task. Using a multivariate analysis, the second test examined the effect of each independent variable on participants' performance for the different facets of the ANT (Executive, Alerting, and Orienting). Results obtained from that analysis produced a significant main effect for scene type on the executive portions of the ANT, ($F (1, 79) = 10.25$; $P < .05$).

Discussion

Collectively, the results from the study suggest that settings containing mystery can offer a person certain cognitive benefits. In recognition of the evidence garnered, urban and park planners may more intentionally make use of the physical attributes related to mystery to maximize the restorative potential of open and green spaces.

O8.2 VIEWING SCENES OF NATURE BEFORE EXPOSURE TO A STRESSOR ENHANCES RECOVERY OF HEART RATE VARIABILITY

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Exposure to acute stress reduces heart rate variability (HRV) during both the time of exposure to stressor and also the recovery phase. Protracted recovery from a stressor is unfavourable. Reduced HRV demonstrates a poor adaptability of autonomic control on heart rate (HR) and is associated with an increased risk for development of cardiovascular disease. Furthermore, viewing scenes of natural environments demonstrate increases in HRV when compared to viewing scenes of built areas. Therefore, the purpose of this study was to investigate whether viewing scenes of nature before a stressor would increase HRV in recovery from stress compared to viewing scenes of built areas.

Ethics approval was obtained from the University Ethics Committee. Twenty-three healthy participants attended the lab on two occasions a week apart in a randomized cross-over study. Each visit, which was counter-balanced, consisted of a rest period before viewing ten minutes of slides depicting of either nature scenes or built scenes. Electrocardiogram data were recorded continuously throughout. This was averaged out into five minute segments for analysis of HRV. HRV analysis included: HR, standard deviation of R-R intervals (SDNN). Markers of vagal mediated variability were given by route mean square of successive differences (RMSSD) in the time domain and high frequency (lnHF) in the frequency domain. After viewing the slides participants were exposed to a five minute stressor. Five minutes of recovery data was finally recorded.

There were no differences at baseline between the two views or any significant effect of visit order. HR during both views showed a segment interaction, showing higher HR during the stressor ($F = 27.307$; $P = 0.001$). A view*segment interaction showed increases in RMSSD and SD1 in recovery for the viewing nature scenes condition compared to the viewing built condition. RMSSD showed a mean difference of 15.13ms (95%CI 2.82/27.43; $p < 0.025$) and SD1 of 10.71 (95%CI 1.99/19.43; $p < 0.025$). Post-hoc paired t-tests showed lnHF was greater by a mean difference of 0.47 (95%CI 0.07/0.9; $p < 0.025$) in the viewing nature condition during the recovery period compared to the viewing built condition. This is the first study in a controlled environment that suggests that viewing nature enhances HRV in recovery from stress. This augmented HRV is likely due to the elevation of vagally mediated variability observed in recovery following viewing nature. A previous study during viewing nature scenes showed enhanced effects on parasympathetic activity. In this study, exploring the recovery after exposure to a stressor following viewing nature, we have shown that the benefits of nature remain present in the recovery to a stressor. Viewing scenes of nature prior to exposure to acute stress could be considered protective against the blunted HRV recovery usual seen following a stressor. In conclusion, viewing nature could be beneficial in enhancing recovery from acute stress.

O8.3 THE RESTORATIVE POTENTIAL OF PRIVATE GREEN SPACES

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Green spaces show positive impacts on well-being and health; the most important issues thereby are stress reduction and recreation of visitors (e.g. Abraham et al., 2007; Kaplan & Kaplan, 1989). The Perceived Restorativeness Scale (PRS) invented by Hartig and colleagues in 1997 proved useful to assess the restorative potential of different scene types (Ivarsson & Hagerhall, 2008). Studies applying the PRS revealed natural environments having a higher restorative potential than built environments (e.g. Korpela & Hartig, 1996; Purcell, Peron & Berto, 2001).

However, there is a lack of scientific knowledge on the restorative potential of private green spaces like gardens or indoor living space equipped with plants. The study was aimed to examine the perceived restorativeness of three different types of private green spaces: 1) indoor living space equipped with plants 2) balconies, 3) home gardens. Because of the closeness to nature we hypothesized the latter to show the highest restorative potential.

During October 2011, a community sample (n=561; 66% female, mean age 48,8 years) completed an online-survey. The questionnaire consisted of a German version of the PRS (range 0-10), questions concerning the different types of private green spaces, the most preferred private green space for restoration and socio-demographics.

The distribution of private green spaces in the sample was the following: n=452 (81%) had a garden, n=384 (69%) had an indoor living space with plants, and n=225 (40%) had a balcony. The majority of the participants (n=403, 72%) chose to rate their garden and not another kind of private green space. Eighty-five (15%) subjects rated their indoor living space and 72 (13%) rated their balcony as the most preferred private green space for recreation. Results showed the garden to have the highest restorative potential (M=8.17, SD=1.40). It differed significantly from the indoor living space (M=7.07, SD=1.88) and the balcony (M=7.37, SD=1.40), $F(2,499)=20.64$, $p<.001$. Between the indoor living spaces and the balconies no significant differences were found, $p=.587$. Calculating PRS sub-scores (Being away and Fascination) gained similar results. Effects of age didn´t appear, neither on the PRS-total score nor on sub-score values.

The results demonstrate the very high restorative potential of private green spaces. As expected, private gardens were rated as preferred places for restoration in first place. Further, they showed a significantly higher restorative potential compared to the other two types of private green spaces. However, balconies (which were expected in second place because of their outdoor-component) did not differ significantly from indoor living spaces. On the one hand we discuss connectedness with indoor-plants as a possible explanation of findings, on the other hand we wonder if “greening” of balconies would increase their restorative potential.

O8.4 RESTORATIVE EFFECTS OF NATURE IN CHILD-CARE CENTRES

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The features of the physical environment can influence children cognitive, affective and social development. This is true also in educational settings, where the physical environment acts as a third teacher, in addition to the educator and the peers. Empirical research in environmental psychology has mainly investigated the role of the physical environment on children behaviour in primary and secondary schools, while less attention has been devoted to the analysis of child-care centres.

This study investigates the effects of a specific environmental feature of child-care centres, namely the presence of natural space, on children well-being. A consistent bulk of research has shown that contact with nature promotes many beneficial outcomes. Among the others, psychological restoration, namely the recovery of an effective cognitive functioning and the reduction of stress level. In addition, nature can promote positive social interaction. In this study, we tested the hypotheses that contact with nature in child-care centres promotes psychological restoration and increases the quality of children's social interaction. Children's performance in structured activities and behaviour in free play after time spent in indoor space vs. outdoor green space were compared, controlling for several confounding variables (e.g. environmental quality of the indoor and outdoor space and classroom density).

Results of a pilot study in a child-care centre in Rome, Italy, attended by 16 children (age range 18-36 months) suggest that contact with outdoor green space reduces stress levels and positively influence both children's performance in a visual-spatial task and social behaviour. The main study involved 39 children (age range 18-36 months) attending three different child-care centres. Observations of children behaviours, with specific reference to attention in the activity performed, stress levels and quality of social interaction, were made in a longitudinal design during daily activities in the day-care centres.

Results showed the positive effects of contact with nature on children's cognitive functioning, stress reduction, and quality of social interaction: no significant difference in the dependent variables emerged in the activities before free play; conversely, after free play in the outdoor green vs. indoor space children showed more focused attention in the performed activity, reduced stress levels, and more positive social interaction. A further study in another child-care centre, in which more structured measures of the dependent variables were included (e.g., a cognitive test of attention) confirmed the positive effect of contact with nature for children in child-care centres.

O9. RESTORATIVE EFFECTS OF NATURE: IMPLICATIONS FOR DESIGN

O9.1 ENGINEERING THE RESTORATIVE GARDEN: EXAMINING THE EFFECT OF FLOWER COLOUR ON RESTORATION

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There is a great deal of research which demonstrates that living near nature has beneficial effects on wellbeing (e.g., Kaplan and Kaplan, 1989; Kaplan, 2001; Leather et al., 1998), that exposure to natural scenes has positive effects on physiological arousal and health (e.g. Bodin and Hartig, 2003; Hartig, Evans, Jamner, Davis and Garling, 2003; Ulrich, Simons and Miles, 2003; Parsons, Tassinary, Ulrich, Hebl and Grossman-Alexander, 1998) and on cognitive functioning (e.g. Kaplan and Kaplan, 1989; Hartig, Mang and Evans, 1991). There is, however, very little research which specifically examines the environmental features that promote restoration. And yet some research has shown a difference in perceived restoration with different vegetation types. White and Gatersleben (2011), for example, found that participants reacted differently to particular types of plants on green roofs, finding tall, flowering, meadow plants more restorative than shorter, succulent plants.

This research examines the role of flower colour on restoration. According to the Flowers and Plants Association (2008) around 2 billion pounds are spent annually in the UK on cut flowers. And there is some evidence that people respond positively to natural scenes with flowers (e.g., Kaplan, 2007; Todorova et al., 2004). Very little is known, however, about how the colour of flowers affects people. Wexner (1954) found that people readily assign moods to colours, such as serene for blue and exciting for red. And garden designers and those in similar fields use colour in order to evoke particular moods in the viewer. An experimental study with undergraduate students at the University of Surrey examined the effect of flower colour in gardens on environmental restoration. Participants were asked to imagine that they were mentally exhausted and in a negative mood. They were then asked to imagine walking through a garden shown in a photograph. The photographs showed either blue/purple, yellow/green, or red/pink flowers. Analyses were conducted to examine whether preferences, affective quality and restorative effects were influenced by flower colour and whether this varied depending on people's attitudes towards the different colours.

O9.2 RELATIONS AMONG BIODIVERSITY, PERCEIVED RESTORATIVENESS AND AFFECTIVE QUALITIES OF URBAN AND PERI-URBAN NATURAL SETTINGS AND RESIDENTS' WELL BEING

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Research on restorative environments has frequently compared the restorative potential of natural and built environments, and showed a higher impact of the former on human psychological functioning and well being. In addition to the psychological outcomes of being in contact with restorative environments, the process and mechanisms leading to restoration in nature are a relevant issue for psychological research in this field. The role of biodiversity might also be

important in this respect: it is arguable that biodiversity richness is a relevant feature positively related to the restorative potential of natural settings.

In a first study, five typologies of urban and peri-urban green spaces in Italy were identified, ranging from a minimum of biodiversity and a maximum of man-made elements to a maximum of biodiversity and a minimum of man-made elements: an urban plaza with green elements, an urban park, a pinewood, a botanic garden, a peri-urban natural protected area.

A convenience sample (N = 696) was contacted in four different Italian cities. Self-reported measures of individual's experience in the environment (length and frequency of visits, activities performed, perceived restorativeness, affective qualities of the place, perceived well being during and after the visits) were taken through a paper and pencil questionnaire. The relationship between individual exposure to green spaces and perceived well being, as well as the mediating role of perceived restorativeness and affective qualities upon this relation was tested. Results showed that perceived restorative properties are the highest in the peri-urban green areas, and significantly increasing as a function of biodiversity levels. Results also confirmed that frequency and duration of visits positively predict self-reported well being, and as expected, this relation is mediated by perceived restorativeness and positive affective qualities of the settings.

In a second study, we aimed at replicating these findings through a laboratory experiment. Subjects (n = 178) from the same four cities were presented with pictures taken from the same five settings of study 1. In addition, measures of also other possible psychological correlates were also taken (e.g., pro-environmental values, attitudes, connectedness to nature, place attachment). To check for the role of familiarity, subjects were also asked to assess pictures taken from five similar settings located in a different city. Results confirmed the pattern emerged in the first field study, and showed also the role of the other social psychological factors considered. The theoretical and practical implications are discussed.

O9.3 Trees or Popular-style architecture? Some effects of architectural styles and trees on the perceived restorative potential of residential streets

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Introduction

The quality of public spaces is particularly important in high-density urban environments. Residential streets are daily used by urban residents and by providing the opportunities for daily brief restorative experiences these public spaces may support the essential needs for restoration in a city (Berg van den, et al., 2007). Little is known about the design related characteristics of residential streets that are likely to facilitate restorative outcomes. In the present study we emphasized two street attributes: architectural context (high-or popular-style) and natural elements (trees). Consistent with Staats et al. (2003), we assume that environmental preferences are related to the perceived possibilities for restoration. We used the knowledge about the preferred attributes of a street to select the variables for the investigation. Studies on preferences for architectural styles have indicated that the general public prefers popular-style to high-style houses (e.g. Stamps & Nasar, 1997; Purcell, 1995). Additionally, the presence of natural elements seems to affect the preference for buildings (e.g. White & Gatersleben, 2011).

Method

This experiment consisted of two studies. In study1 we assessed the possible effects of popular- and high-style houses on the perceived likelihood of restoration, affective quality and environmental preferences for people with different restorative needs. In study2 we tested whether trees in front of popular-or high-style houses have a different effect on the same judgements. We manipulated directed attention capacity between two groups and architectural context within subjects in both studies. The presence of natural settings was manipulated between groups (trees/no trees) in study2. To induce attention fatigue we used a time consuming and high-level IQ-test, (Raven part II, 1973).

We focused on Dutch attached single-family houses. To distinguish the popular-style from the high-style category we varied a set of physical attributes related to roof and windows as proposed by Stamps and Nasar (1997). We presented 32 visual stimuli as static colour photographs for the rating task to the respondents. The blocks of houses were made up of six, identical façades and were simulated as a collage of elevation photographs in the software PhotoshopCS3.

Non-design students from TU Delft participated in these studies. They were randomly assigned to one of the antecedent conditions and completed the manipulation check items (Staats et al., 2003). Next, the members of the control group started with the rating task; meanwhile, the intervention group performed the IQ-test. Following the attention fatigue induction the intervention group completed the manipulation check items for the second time and started with the rating task. Mixed-design analysis of variance will be performed to explore the data.

Results and discussion

We are currently collecting the data. The results will be presented and discussed during the conference.

O9.4 EXPLORING PERCEPTIONS OF BIRDSONG AS A RESTORATIVE STIMULUS

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Introduction:

Exposure to nature can restore positive mood and attention after stress or fatigue (Kaplan & Kaplan, 1989; Ulrich, 1983). Restoration literature has largely focused on visual experience of nature, but recent studies have indicated the importance of audio stimuli in such environments. For example, Kjellgren and Buhrkall (2010) noted that participants missed natural audio stimuli such as birdsong when absent, and Alvarsson et al. (2010) found that bird and water sounds together were rated as more pleasant than sounds from the built environment. Pleasant music has been shown to act positively on mood and performance (e.g. Thompson et al., 2001), and research into such effects as a function of natural sounds will enhance multisensory understanding of restorative environments. However, the authors are not aware of any published studies on perceptions of isolated birdsong as restorative, or how such perceptions and preferences may vary between different bird calls.

These questions will be addressed through an exploratory qualitative study, in the context of a larger project examining quantitative restoration from stress and fatigue after exposure to preferred and non-preferred bird calls (cf. Alvarsson et al., 2010; Jancke et al., 2011; Goel & Etwaroo, 2006). It is expected that birdsong will be related to positive perceptions of the natural environment, and that preference and perceptions of restoration, as well as familiarity and symbolic associations, will vary between different bird calls.

Method:

The research questions above will be addressed via semi-structured interviews. Topics will include:

- Sounds positively and negatively associated with nature, including birdsong, and psychological states generated by them
- Preference or non-preference for natural sounds, including different bird calls
- Restorative perceptions of different bird calls (after imagined stress or fatigue)
- Familiarity and associations with different bird calls

Findings from this study are expected in early 2012.

Implications:

Examination of the unique contribution of audio stimuli to subjective restoration will more accurately represent sensory experience in restorative environments than study of visual stimuli alone. This will enable prevailing theories of restoration (e.g. Kaplan & Kaplan, 1989; Ulrich, 1983), which focus heavily on visual experience, to be tested in additional modalities. Study of responses to and associations with natural sounds may also clarify whether restoration is a product of the symbolic or perceptual qualities of a stimulus, or both.

The project also aims to increase public engagement with nature via empirical evidence of the effects of natural sounds such as birdsong on mood and performance. This work will strengthen links between ecologists, conservationists, and social scientists, and support evidence-based policy for conservation and heritage groups.

O9.5 PSYCHOLOGICAL ASSESSMENT OF HOSPITAL GARDENS AND OPTIONS FOR REDESIGN

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Green spaces have many positive effects on peoples' well-being and health. This is valid for hospital gardens in particular, as the users of hospital gardens are notedly in need of nature's stress reducing and recreational effects. Hospital gardens are mainly designed by urban planners and architects. People's experiences in such hospital gardens are of vital importance but stay unstudied in most cases. Prior research (Haidl et al., 2010) clearly demonstrated the positive effects of hospital garden redesign on individuals' experiences, independent of the physical appearance of the gardens. We adapted the method and applied it to hospital gardens that currently are under reconstruction. We compared people's experiences of four hospital gardens in Lower Austria with an ideal hospital garden by using an adapted version of the classical semantic differential.
First results show that the four semantic differential (SD) patterns differ among each other and from the ideal garden, according to their natural features. Differences between the settings were attributed to specific structural design properties. In cooperation with a landscape planner, options and recommendations for the redesign of the hospital gardens were developed in a participatory process, together with the hospital staff.

So far, findings revealed the influence of structural properties of gardens on the experience of the garden settings. The SD is a simple, economic and reliable measure of evaluating individuals' experiences and impressions and making design features ascertainable and objectifiable. The integration of both psychological methods and methods of landscape planning in pre- and post-occupancy evaluation exceeds the benefits of traditional technical evaluations common in hospital planning.

O12. VALUES, ATTITUDES AND EXPERIENCES IN NATURE

O12.1 DO PEOPLE FROM URBAN AND RURAL AREAS DIFFER REGARDING RESTORATION IN THE FOREST? A SWISS NATIONWIDE COMPARATIVE STUDY

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There is good evidence that people generally prefer natural environments, for example, forests, over urban environments regarding restorative purposes (e.g. Hartig & Staats, 2006; Nordh et al., 2009). However, it is still an open question whether people from urban regions differ from people living in rural regions regarding their preferences for forest characteristics, their motives for visiting forests, their perceived person-environment congruence, and in their self-reported restoration after forest visits.

We focused this issue by eliciting a Swiss national representative sample (n = 2623) using computer assisted telephone interviews and a web-based survey. We split the sample into an urban (n = 2182; mean age 52.7 years, SD 16.3; 51.7% female) and a rural (n = 441, mean age 50.7 years SD 15.6; 50.8% female) subsample, based on criteria provided by the Swiss Federal Statistical Office. In a second step, we compared both groups regarding their agreement on eight

motives for visiting forests, their preferences for different forest attributes, their performed activities, their travel mode to the forest, their rating of restoration, and perceived disturbances while recreating. Furthermore, we also analysed in how far a calculated person-environment-fit value (based on preferred and perceived forest characteristics) contributes to reported restoration.

Results indicate significant differences between people living in rural and urban environments. For example, people from urban areas reported more disturbances while being in the forest, agreed more to the motive 'experiencing nature', and preferred brittle wood more compared to people from rural areas. On the other hand, people belonging to the rural subsample reported a significantly higher person-environment fit for forest characteristics, liked the forest more, and needed less time to reach the forest than people from the urban subsample.

A linear regression analysis on reported restoration resulted into different beta weights for both groups. For example, the person environment fit was only significant for urban peoples' reported restoration, while agreement on motives was relevant for both. However, experienced disturbances did not impair reported restoration, whereas having a forest-related job significantly lowers reported restoration for both groups.

Overall, our findings suggest that people differ depending on whether they live in a rural or urban environment regarding restoration relevant dimensions, although they report a comparable amount of restoration after forest visits. This is congruent with results from other studies, emphasizing the general restorative effect of visiting natural environments like forests. Interestingly, having a forest-related job was negatively associated with reported restoration, independently from living in a rural or urban environment, although the effect was stronger for the rural subsample. This might be an indicator that restorative environments can be threatened or 'contaminated' by interweaving work, every-day life and recreation. Therefore, we suggest that future research in the human-environment domain should focus the role of possible 'carry-over effects' and address the question, how restorative qualities of different environments can be preserved or even enhanced.

O12.2 RECREATIONAL FORESTS: USE, EXPERIENCE AND MOTIVATION, SELECTED SITES IN SELANGOR, MALAYSIA

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Forest give many benefits to human beings such as economy, biological and ecological resources such as food, clean water and etc., also as a recreational place. Research suggests that recreational forests have the potential to provide many benefits to urbanites related to health and well being (Konijnendijk, 2008), such as restoration (Kaplan and Kaplan, 1989) and improvement in mood states (Ulrich et al., 1991). Recreational forests were established within the permanent forest estate in Peninsular Malaysia by the Federal Forest Act 1978 to preserve areas for recreation, ecotourism and to raise public awareness regarding forestry. These recreational forests are unique to Malaysia because of their physical characteristic and provide forest amenities such as picnic areas, waterfalls, green ambiance and etc. for the urbanites. Two study sites have been selected which were Ampang Recreational Forest and Kanching Recreational Forest located in Selangor state. Selangor has been chosen because it is the most develop state in Malaysia. The physical characteristic of Ampang Recreational Forest is more flat compare to Kanching Recreational Forest is steep and sloppy. The methods used in this study are self-

administered questionnaire and semi-structured interviews. The questionnaire was divided into six sections (Section 1: Visits to the recreational forest; 2: Attitudes towards physical features; 3: Motivation for using forest; 4: Feelings when in the forest; 5: Expectations towards recreational forest and 6: Demographic information). Factor analysis results from a self-administered questionnaire presented here as a partial from a PhD research. It is to answer the first research question which is to explore factors that motivate visitors to engage in activities and use of the recreational forests. Overall, there are seven factors (forest amenities; restorative experience; inter-generational experience; self-actualization; incivilities; perceived danger and fear in the forest; and younger activity preference) explaining motive of forest use and experiences while in the forests. Overall, forest users felt positive about the recreational forests. This study is important to help the management (the forestry department/Selangor Tourism) to understand the forest users' need, motivation and experience while in the recreational forests in terms of planning, design and management. This is to ensure the recreational forests could sustain for the future generation.

O12.3 Environmental restoration in natural environments high and low in prospect and refuge

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Introduction

There is plenty of evidence to suggest that people recover more quickly from stress and mental fatigue in natural then in urban environments (e.g. Berto et al., 2005; Hartig et al., 2003; Ulrich et al., 1991). But, we know little about the environmental features that aid restoration. Environmental Restoration Theory (Kaplan and Kaplan, 1989) suggests that non-threatening natural environments help people rest their mental fatigue because they attract attention involuntarily. Environments which are difficult to negotiate or may harbour a threat are not likely to be restorative, as they require directed attention to deal with such threats or challenges. In reality most natural environments are full of factors that demand directed attention (e.g., to prevent tripping). We studied actual and perceived restorative in natural environments which score high or low in prospect and refuge. Prospect-refuge theory suggests that humans prefer environments high in prospect (a wide field of vision) and refuge (places to shelter), because they afford survival (Appleton, 1975). Prospect and refuge affects preferences and fear ratings for both natural and urban environments (e.g., Andrews and Gatersleben, 2010; Fisher and Nasar, 1992), but we know little about the restorative potential of such environments. Environments which provide little shelter or no field of vision are expected to be less restorative as they required directed attention to deal with potential threats.

Studies

In an on-line study people (n = 198) were exposed to slides of natural environments scoring low, moderate or high in prospect-refuge. As expected, environments high in prospect-refuge were perceived as more restorative and less threatening. But findings varied for perceived physical and social threats. In a lab and field experiment 17 participants completed a walk through of both a real and a similated environment, low or high in prospect-refuge. In both the field and the lab experiment respondents recovered more quickly from mental fatigue and negative mood in

environments high in prospect-refuge than in environments low in prospect-refuge. Significant results were found for physiological measures as well as self-reports. Fear arousal increased during exposure to environments high in prospect-refuge but actually increased in environments low in prospect refuge.

Implications

The findings of the research have implications for the planning and design of natural environments such as country parks which many people visit because of their restorative potential (a place to get away and relax). Such benefits may not be achieved if a visit requires directed attention and if the environment is perceived to harbour physical and social threats. Creating open environments with high levels of prospect and refuge are more likely to be restorative.

O12.4 EXPERIENCES OF SAFETY IN NEIGHBOURHOOD GREEN ENVIRONMENTS

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Neighbourhood green environments in direct proximity to people's homes are important for many reasons. Mixed, naturalistic vegetation close to where people live or spend time, such as in local neighbourhoods, has particular values for e.g. people's physical activity and wellbeing (Björk et al., 2008), social connections (Coley et al., 1997), children's outdoor play and ecological values such as biodiversity. However, while such woodland vegetation is much appreciated by people, it also commonly has a negative effect on their perception of safety (Jorgensen, 2004). Women and the elderly in particular are limited in their use of public space by their feeling of fear, especially after sunset. Such fear is also negative for people's social lives, health and quality of life (Stafford et al., 2007).

Today the many different values of naturalistic vegetation close to residential areas are often lost in the process of creating safer neighbourhood environments, as vegetation is restricted to concepts that have low levels of complexity and density. However, research shows that the perception of safety related to naturalistic vegetation can be controlled by vegetation design and management (Jorgensen et al., 2002), and principles for developing safer green areas have been proposed (Luymes & Tammiga, 1995). The perceived visual control connected to vegetation has been given particular attention (Herzog & Kutzli, 2002). However, there is a lack of knowledge on precisely how existing naturalistic vegetation close to residential areas can be modified to create a higher perception of safety.

This study sought to develop new concepts for vegetation design and management based on people's perception of safety, but without risking the social and ecological values of neighbourhood green areas. It also sought to develop qualitative on-site methods for studying vegetation as part of people's complex physical and social environment, where naturalistic vegetation is seen as part of a larger context affecting individual perception of safety.

The methods used included the development of different vegetation concepts and their stability, and a study of their effects on safety experiences through outdoor walking interviews with residents after dusk before and after changes to existing naturalistic vegetation in their neighbourhoods. So far, two such field studies have been conducted in multi-family residential

areas in southern Sweden, one small pilot study with four young, female interviewees, and one larger study with twelve interviewees with varying age, gender and ethnicity.

The perception of safety was described as complex, associated with visual control in many aspects, but also with other people and closeness to home. Ways in which naturalistic vegetation can be developed to improve visual control were identified. However, the effects are strongly dependent on co-effects, e.g. with lighting.

O12.5 SOCIAL VALUES, ECOLOGICAL UNDERSTANDINGS AND URBAN PARK MAKING IN SYDNEY

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This paper reports on a research project which explores the planning and design process of converting landfills, quarries and other brownfield sites to parklands in the Sydney metropolitan region. This adaptive reuse of perceived wastelands in the Sydney area dates to the late 19th century when the Sydney Common was transformed from an expanse of sand, wetlands and a night soil tip into a large urban park, Centennial Park, with playing fields, garden beds, ornamental ponds and a 'Grand Drive'. The process of reclaiming wastelands accelerated in the mid 20th century, to such an extent that today many of Sydney's most popular local and regional parks are situated on former wastelands. Current urban growth patterns and waste management technology and policy indicate that more landfills and quarries will be decommissioned in the near future and more parks will emerge from their remediation. In the absence of a comprehensive study of park-making from wastelands in Sydney, the broader research project is designed to identify both the drivers and outcomes of transforming former landfill sites into valued regional parks. The sequence of state and local government initiatives, policies, and master planning documents are charted alongside changes in urban context, conceptual approaches, and park locations in order to evaluate the key factors influencing the transformation of these landscapes.

This paper presents the results of a pilot study from the larger research project, and is focused on how changes in social values and meaning are represented in the design process and outcomes of one of Sydney's most significant regional parks. Sydney Park, on the southeast edge of the Sydney CBD, formerly a brickwork and landfill site, has been developed as a park since the late 1970s. After three iterations of master-planning and extensive filling, the park now figures as a large 'patch' in the Sydney 2030 Strategic Plan as a major recreational and ecological hub. Drawing on evidence gleaned from planning documents and design reports, the paper documents shifts in the conceptualization of the park's meaning and value, particularly in regard to its program of uses and its perceived natural and cultural heritage. Using visitor surveys and on-site observation, the paper also considers how people using this park experience it, and how their experiences align or not with intended outcomes. The paper concludes with a discussion of the ways in which emergent ecological knowledge and understandings of cultural heritage underpinned the vision and reality of this park from its inception in 1970s to the present. In particular, the evidence base harnessed by the early planners and designers is considered in light of outcomes, and preliminary thoughts are offered on how changes in policy and practice have helped this park become a significant element of Sydney's urban experience.

O13. SCHOOLS AND CHILDREN

O13.1 STUDENT PERCEPTION OF SCHOOL BUILDING QUALITY

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One of the functions of schools is to promote the acquisition of knowledge and skills. But another function of schools is to transmit societal values and ideas (Rivlin & Weinstein, 1984). The physical environment of schools has the potential to communicate messages to students about who is valued in society.

Place identity theory and the bio-ecological model of human development form the theoretical basis for this investigation. Place identity theory states that children develop a sense of who they are through interactions with their physical surroundings (Proshansky & Fabian, 1987). It is through interactions with, and understanding of, the places of their daily lives that they learn about who they are. The bio-ecological model (Bronfenbrenner, 1979 & 1998) emphasizes the role of the individual's day to day experiences particularly in the proximal settings of home, school, and neighbourhood. These settings play a critical role in development because they are the places where the individual most closely interacts with the environment and where important social relationships form with family, teachers, other adults, and peers. These relationships (with both the physical and social environment) serve as a context for development and it is through these reciprocal relationships that individuals obtain feedback about themselves.

Research indicates that school building quality and student achievement are linked. Earthman and his students (Al-Enezi, 2002; Cash, 1993; Cash et al., 1997; Earthman et al., 1995; Hines, 1996) found that achievement scores in math, science, and reading were correlated with aspects of building quality. Aesthetic building quality attributes such as graffit or locker condition were more strongly correlated with achievement than structural quality (i.e. condition of the roof). Perhaps students read aesthetic quality as messages that somebody cares about them. A study of New York City elementary schools found that structurally poor building quality was linked to poor student attendance and lower standardized reading and math reading scores (Duran-Narucki, 2008).Various components of school building quality are also linked to socio-emotional development (Weinstein, 1987; Sanoff, 1995). Although school building quality seems to be linked to student outcomes, none of the previous research asked students their perception of the school building.

This presentation discusses on-going research investigating students' perception of their school's physical environment and how well the building meets their academic and socio-emotional needs. It includes findings from several studies conducted by the presenter with students in elementary, middle, and high school. The discussion focuses on the implications for school design and educational policy and contributes to our understanding of person-environment congruence in the school setting.

O13.2 SOCIAL SPACES IN SECONDARY SCHOOL ENVIRONMENTS

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Outside of the home, school is the most important setting in children's development. Education is more than academic ability; it includes students' behaviour, self-esteem, integration, motivation, initiation, confidence and social skills, to name but a few. Many 'environmental' factors have been shown to have an impact on the educational process. The quality of school experiences are determined by the school environment (Gump, 1991) and there is a direct relationship between students' perception of their school environment and satisfaction with it (Ozdemir & Yilmaz, 2008). Dudek (2000) claims architects should design school buildings to accommodate and facilitate meaningful social interactions, which are a crucial aspect to the development of children's social, emotional and cognitive processes. As children enter adolescence their interactions and relationships with peers and friends become increasingly important (Bukatko & Daehler, 2004), particularly in schools, as they "reveal complex webs of meanings, reputations and identities" (Coleman & Hendry, 1999, p.145). The physical environment is an influential aspect in determining how satisfied students are with their education, which includes the interactions they have therein. This paper comes from a PhD research project, which aims to investigate how secondary school students in Scotland (age 11-18), perceive and utilise the social spaces within their learning environment. Social spaces are defined as the internal and external areas within the school buildings and grounds where students go to when they are not in the classroom.

This paper is based on responses to an open-ended question which was added to a questionnaire that was part of a much larger study (Edgerton, McKechnie & McEwen, 2011). The questionnaire was completed by S1, S3 and S5 students (ages 12-13, 14-15 and 16-17 respectively) at six new build secondary schools in the same demographic area of Central Scotland. The question asked, 'Within your school buildings/grounds, what are the best and worst features about the places you meet with friends?' Responses were received from 1843 students.

Participants' responses varied inasmuch as some provided responses to both aspects (i.e. a best & worst feature), while others provided a response to only one feature (i.e. best or worst) and some participants gave more than one response to a feature. Collectively, there were 1,866 responses to the 'best' feature and 1,942 responses to the 'worst' feature.

The results indicated that in general the S1 students from all six schools provided more 'best' responses, whilst the S3 and S5 students provided more 'worst' responses. The findings show variations between schools and year groups. The latter highlights the dangers of viewing school students as a homogenous group. This paper will discuss these results in more detail by focusing on how students' perceive the social spaces in their schools and the implications for school design.

O13.3 DO THE CHILDREN'S INVOLVEMENT OF DIFFERENT SCHOOL CAMPUS AREA AFFECT THEIR PERCIEVED SENSE OF PLACE AND SCHOOL IDENTITY?

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The main purpose of this study is to discuss the relationship of children's behavioural involvement, sense of place, and school identity in schools. This study chose students from third to six grades to take quantitative surveys and assisted with qualitative in-depth interviews. A total of 122 students took the survey and 21 of them did in-depth interviews. This study discovered in students' involvement, the involvement of ecological area mainly came from importance; this indicated that children thought doing activities at the ecological area was more important and more meaningful. The involvement of play area and outdoor spaces came from centrality; this showed that these two areas were the children's main activity area, and they mentioned these two areas to others more often. The sense of place of ecological area and play area mainly came from place dependent, and the sense of place of other outdoor spaces came from place attachment. Involvement had significant positive influence on sense of place, which indicated students had higher attachment to the place when with more involvement behaviour. Although the ecological area in the school had lower student behavioural involvement, it played an important role on students' social psychological involvement, and was also an important basis on forming sense of place. It could be further used to promote positive identity of the school.

O13.4 A COMPARATIVE STUDY ON THE UTILIZATION OF COMMUNITY AND SUPPLEMENTAL TYPE TOY LIBRARIES

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Since the establishment of first toy library in Japan at Mitaka in 1981, the concept of toy library started to spread among Asian countries. Unlike public library, toy library exists in different ways varies from stand alone facility, supplemental service for hospital or kindergarten to mobile toy library. This variation has caused confusion to many and after many years its existence still remained negligible among the general public. However, a closer look to this toy library will leads one to recognize its contribution and significance to the users as it is not only allows children and their parents to borrow toys, games and others as they would books from a public library, it also provides a place for the children from different families to play together and encourages the exchange of ideas among parents about the development of their children. Therefore, it is necessary to have a better understanding on the utilization of toy libraries before the suggestions for future improvements can be made. Generally, toy library can be divided into two categories, which are Community Type and Supplemental Type toy library. Community Type Toy Library can be considered as a type of welfare facilities under community center, volunteer center or it itself is a stand-alone community facility. Whereas the Supplemental Type Toy Library is usually attached to another main facilities like hospital or nursery and operated as an additional service. Before pin-pointing the existing problems in toy library, it is important to find out the similarities and differences of utilization among different types of toy library. Therefore, this study is generated to compare the users' utilization of Community Type and Supplemental Type toy library by focusing on the spatial elements as well as the users' behaviours. From there, merits from each type are

suggested for another for better usage of space and more user-friendly environment. For methodology, case studies are used and 2 toy libraries from each type are selected for further survey. The survey is carried out during the operation hours of each sample, by using non-participation observation, behavioural mapping and interviews. The results show: 1) Spatial planning of each sample differs according to the objectives of the toy library, which is largely affected by the type of toy library. 2) The users' utilization and atmosphere of the place is influenced by the type of space provided in the toy library, as well as the type of toys available at each sample. 3) The way of communication among children users and parents are different at each sample, which is also highly related to the type of toy library. In conclusion, although the 2 types of toy libraries have different target users, the spatial planning should not be limited to certain pattern only. Since each type of toy libraries have their pros and cons, the merits should be integrated into the others in order to optimize the function of toy library.

O13.5 AN ANALYSIS OF SPATIAL EVALUATION ON ELEMENTARY AND MIDDLE SCHOOL SPECIAL CLASSROOMS

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Since the 1980's, Japan's school buildings have introduced multipurpose spaces. It is considered due to the legislation for increasing the area of elementary school 18.0%, middle school 10.5% (based on 2001) by installing multipurpose spaces.

Introducing a new learning space has allowed more flexible response to research activities, etc., which used to have limitations in general classrooms.

On the other hand, a special classroom has betrayed the necessity for specialized spaces and facilities so that it may correspond to activities of dirtying the floor, involving a loud noise, etc. and meet effective IT service and media space, which are not allowed in general classrooms and multipurpose spaces. In the meantime, there arose problems of difficulty in use by school staff, including efficient activities by special classrooms, securing receiving and notice spaces, co-ordinating preparation room, etc.

So this study made a survey of awareness on the usage of classroom spaces from the view of a teacher. This survey was intended to investigate the relations between students' learning activities and spaces by understanding teachers' satisfaction with class environment by subject with significance in independent character of this thesis. It aims to grasp by summary the relativity of each space between activities made in such space and elements required.

This thesis carried out a survey to identifu the awareness of teachers. A questionnaire was prepared to understand the present condition from the teacher-side evaluation on relations between students' behaviour and space. For subjects, 92 elementary and middle schools whose building was completed between 2000 and 2009 were extracted though reference to literature. Of them, considering elements of public/private, downtown/suburbs, subject classroom/special classroom type, etc., 56 schools were asked for questionnaire to collect responses from 38 schools.

By analyzing the results of survey, common complaints for each type of classroom were understood. From a low satisfaction with “notice space”, it is understood that despite expectations for children’s learning desire to improve from seeing wallcharts, its space is actually not sufficient. From a low satisfaction with “furniture”, it suggests that in the case of lectures, there is need to install furniture for children’s convenient use, such as direction of experiment and practice tables, number of persons for one table, etc. Satisfaction with “environment easy for research activity” was also found to be low, revealing the biggest complaint about “lack of references, books and computers” in the classroom. This is probably because even special classrooms are gathering demands for the scene of research activity. It is considered necessary to investigate the results of the survey by continuing the research.

O14. ENERGY, SUSTAINABILITY AND USER ENGAGEMENT

O14.1 REDUCING DOMESTIC ENERGY CONSUMPTION: THE EFFECT OF BEHAVIOURAL INTERVENTIONS AND THE ROLE OF COMFORT, STOCK CONDITION, AND PSYCHOLOGICAL VARIABLES

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To achieve environmental sustainability, energy usage has to be reduced drastically. Reducing energy consumption in the private realm is of prime importance, considering that 27% of all carbon emission stem from domestic households. In order to successfully reduce energy consumption, it is essential to understand what determines the amount of energy used in a household. Stock condition in terms of energy efficiency of the building and occupants behavioural patterns are of great impact but are often studied in isolation.

We conducted a study in which we assessed the success of two behavioural interventions while taking stock condition and psychological variables into account. Fifty five social housing tenants participated in the study. An initial home visit was conducted in spring and summer 2011 during which tenants were interviewed about their behavioural practices regarding home and energy use, their definition of comfort and their comfort actions. Participants also filled in a questionnaire measuring psychological variables such as awareness of consequences of energy consumption, personal norm, and environmental worldview. Participating landlords provided stock condition information, including the Standard Assessment Procedure-Rating (SAP), building fabric and building services information, and floor area of the each dwelling.

Participants were split into three groups. Meter readings were collected from each group on a monthly basis. One group, the local benchmarking group, received monthly feedback on their energy consumption in comparison to that of people in their local area. They also received a poster on a monthly basis with information on ways of saving energy by changing behaviour. Energy consumption was normalized by square meter to take the size of a dwelling into account. A second group served as a control group for the local benchmarking group; they came from a similar area but did not receive information on their energy consumption or the posters. A third group received a user-guide with detailed, specific information on how to save energy by behavioural means. The interventions were in place for six months. A second home visit in February 2012 was completed to assess if changes had occurred to the building fabric, home appliances used, lifestyles, and also in psychological variables, such as a greater awareness of environmental issues.

Data from the initial visit showed that warmth is the key aspect of comfort, and that money is a motivator for saving energy even though concern for the environment is also high. The presentation will present results of the effectiveness of the interventions, and will show how stock condition, comfort meanings, and psychological variables contribute to the success or non-success of the interventions. The implications of these results for social housing landlords and policy makers are discussed, with emphasis on how to use this information to reduce energy consumption in housing.

O14.2 SMART BUILDINGS AND SUSTAINABLE BEHAVIOUR: PSYCHOLOGICAL FACTORS IN ENGAGEMENT WITH SMART ENERGY METERS

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Technology is becoming increasingly embedded in the built environment, and increasingly important in encouraging or supporting sustainable behaviour. A case in point is smart meters. In order to meet its greenhouse gases emission reduction targets, the UK Government is planning the deployment of smart meters in all homes and small businesses (DECC/Ofgem, 2011). Through real-time monitoring of energy, smart meters will enable householders to view information on their own energy usage. Benefits to emissions reduction are expected to amass, in part, from changes in consumer behaviour. In particular, consumer behaviour change is expected to result from provision of more detailed, accurate and up-to-date information to energy users: the 'information deficit model' of behaviour change. However, the literatures of health and consumer psychology present substantial evidence that provision of information alone has limited influence on behaviour change. The current research explores additional psychological factors.

Motivation has been shown to relate to pro-environmental behaviours, including recycling, consumption and waste management (GreenDemers et al., 1997; Villacorta et al., 2003). However, most research on motivation to reduce energy use focuses on knowledge and attitudes and has investigated provision of feedback on energy, carbon or financial costs and savings. From the perspective of motivation theory, providing external incentives such as savings may contribute to extrinsic motivation (Deci & Ryan, 1985) but external rewards can undermine intrinsic motivation (Deci et al. 1999). In contrast, intrinsic motivation is a form of self-determined motivation proposed as critical in encouraging engagement in more difficult sustainable behaviours (Crompton & Kasser, 2010). The current research explores the types of motivation which may influence technology use and behaviour change.

Pro-environmental behaviour is generally perceived to be motivated by altruistic motives (saving the environment for future generations) or by egoistic motives (saving money) (Schwartz, 1992). However, when it comes to technologies, other motivations may also be pertinent, such as people's affinity with technology. This has rarely been examined in energy behaviour studies. An interest in modern technology, however, may promote acceptance of new technologies as well as motivate interaction with these technologies, leading to increased behaviour change.

A field study in an office environment is now underway, with 90 participants. Having gathered measures of baseline energy use and motivation towards the environment and technology, participants have been given access to up-to-date summary and detailed energy usage data, for themselves and their work groups. Findings will be presented on levels of technology engagement

and behaviour change, and their relationship with environmental motivation and self-efficacy. Implications for policy will be discussed.

O14.3 HOW TO ATTAIN ENERGY EFFICIENT AND HUMAN WORKING ENVIRONMENTS?

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Sustainable development is global, continuous and controlled change that meets the needs of the present without compromising the ability of future generations to meet their own. This means that environment, humankind and economy are taken into equal consideration in planning and decision-making.

People spend the majority of their lives in build environment in enclosed rooms. Therefore, the quality of buildings has a decisive effect on the well-being and satisfaction of the users. The human dimension of sustainable development requires that work and work environment will be planned in such a manner that a person will be able to work efficiently and maintain good health and working capacity. Workplace solutions should support the meaningful work, feeling of control and participation, as well as sense of community and well-being. User-oriented and participatory approaches are relevant when planning working environments that support well-being and productivity. Participative planning can also be used to motivate users to save energy and improve space efficiency.

This project is based on multidisciplinary approach for user needs as a driving force to develop a model for future working environments according to latest knowledge about workplaces, indoor environment and energy efficiency. This study focuses on evidence-based research on human experiences in the build environment and its practical implications in three pilot organizations, where improving energy efficiency is the primary purpose of renovation.

The aims of the project are, firstly, to develop a participatory design approach to promote energy efficiency targets and sustainability in renovation project, and secondly, to assess the impact on user well-being and productivity. We have a prospective longitudinal research approach, in which the impact of renovation of the building is examined from both a process and end result standpoint. As an intervention method during the renovation process, we apply common meetings, participatory workshops and user journeys in order to meet user requirements and their ideas for improvements.

We evaluate user's experiences of their workplaces, their well-being and work performance with quantitative and qualitative methods both before and after the renovation process. Survey method is applied to assess perceived indoor environment, satisfaction with the working environment and functionality of the places, work performance and occupational well-being of all users. With thematic interviews, we collect viewpoints of different user groups, their work specific needs and wishes for their workplaces as well as their occupational well-being and satisfaction.

O14.4 REBOUND AND SPILLOVER EFFECTS: OCCUPANT BEHAVIOUR AFTER ENERGY EFFICIENCY IMPROVEMENTS ARE CARRIED OUT IN LOW-INCOME HOUSING

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The UK government has set targets to reduce carbon emissions by 80% (from the 1990 baseline) by 2050 (Defra, 2008). Buildings contribute around 50% of the energy used in the world and of the buildings that will be standing in 2050, 87% already exist. Domestic dwellings account for between 25 and 27% of CO2 emissions (Boardman, 2007) and it is suggested that improvements in energy efficiency will reduce CO2 emissions in existing buildings.

Although the energy intensity of industrial economies fell before the recession, the absolute energy use attributed to UK households (and associated CO2 emissions) continued to increase (Druckman et al. 2010). One explanation for the failure to reduce energy consumption is that occupants 'take-back' some of the potential energy savings. This 'rebound effect' for energy efficiency improvements can occur both directly or indirectly and the indirect rebound effects remain largely unexplored (Druckman et al. 2010).

Research also suggests that taking part in 'simple and painless' behaviours will lead to increases in motivation for the individual to adopt other (possibly, more ambitious) related behaviours; known as 'spill over' (Thøgerson and Crompton, 2009).

The main aim of this research is to investigate the spillover and rebound effects of occupant behaviour after energy efficiency improvements have been carried out in their homes.

It is proposed that a longitudinal study will be conducted to examine the behaviour of occupants in existing properties in Wales which are due to have energy efficiency improvements carried out by the Welsh Government (Arbed Phase 2).

Under the Arbed phase 2 scheme, 1560 homes per annum (for three years) will have energy efficiency improvements carried out. All of the participants will be social housing tenants. The control group will also be eligible for the Arbed phase 2 energy efficiency improvements, but these improvements will be carried out at a later date.

The participants will be asked to complete a questionnaire before and after the energy efficiency improvements are made. A selection of participants will also be asked to complete an additional questionnaire one year later. A sub-sample will have physical monitoring (indoor air temperature recorded and gas and electricity meter readings) carried out in the heating season of 2012/2013 and 2013/2014. The first wave of data collection is due to be carried out in February 2012 and the data will be analysed using SPSS.

The findings from this research should help to contribute to understanding how people respond to energy efficiency improvements and whether they 'take-back' some (or all) of the energy savings made and/or whether their behaviours spill over to other related or non-related behaviours.

O14.5 TARGETING PEOPLE'S BEHAVIOUR FOR EFFECTIVE POLICY DELIVERY: COMMUNITY ENERGY SAVING PROGRAMME (CESP) IN ASPLEY, NOTTINGHAM

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The urge for lower carbon emissions from buildings has seen the development of policies to cater for energy conserving methods in new and existing buildings in UK., As the domestic sector is responsible for over 27% of the total carbon emissions in the UK, hence upgrading existing domestic buildings to higher energy efficiency levels represent a 'win-win' opportunity in delivering more carbon reductions faster than the UK's current carbon budgets. However, in order to meet the carbon emissions reduction target, the government's approach in confronting household carbon emissions is predominantly policy-based. Policy instruments with standards for limiting energy loss through buildings have succeeded in imposing building codes and standards that take account of energy efficient design and upgrade. However, patterns of consumption and user behaviour have proved to have the effect of negating some of the benefit expected from those policies.

Although government can play a pivotal role in changing those behaviours; it needs to engage individuals and the public in supporting the development of new social norms and fostering sustainable behaviour in a long-term approach to behaviour change. Yet in a growing world population and an increasing number of people now living in urban areas, achieving high levels of sustainable behaviour fronts many challenges. Among those is overcoming the barriers that society poses; that of behavioural and social patterns which drive energy consumption and resource use. It is argued that such factors form the basis of choices, habits and values of individuals which in turn dictate an individual's decision to either adopt environmentally sustainable behaviour or not to. One viable solution to achieve this target is to drive positive environmental behaviour by means of appropriately tailored policy interventions, where the policy could, in effect, drive positive change in people's energy consumption behaviour.

This research reflects on how this specific area of energy policy is being enacted through policy and regulation, particularly in Community Energy Saving Programme (CESP), launched in 2009. A survey questionnaire is undertaken to identify how tenants of energy inefficient homes react to and perceive one of the pilot CESP schemes which is currently under delivery in Aspley area in Nottingham. The aim is to understand residents' attitudes and behaviour to help develop appropriately tailored approaches that support and maintain effective delivery of current and future policy schemes. Thus, 60 households have been surveyed and data has been collected and analysed to provide significant correlations and findings concerning energy consumption behaviour and the need for suitable means of communication and information dissemination. The outcome is an examination of the likely impacts of the policy on energy consumption behaviour, together with investigating how delivering on the policy may (not)lead to the presumed target.

O15. PERCEPTION AND THE URBAN ENVIRONMENT

O15.1 INFLUENCE OF CHROMATIC COMPLEXITY AND COHERENCE ON EVALUATION OF URBAN SCENES

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In this paper we discuss the aesthetic quality of the historic centers related to polychromy of the urban environment. According to various sources the main cause of people discontent with respect to the city coloration is a decreased knowledge on perception of environmental colors during the last decades. Different researches on colors could be of interest for urban planners and designers for several reasons. The most important aspects are the chromatic perception properties and aesthetic qualities, which are intimately related to people preferences and general well-being of public. In the designing for a community, the search for the reasons, which are behind the evaluation of beauty and feeling of pleasantness, becomes highly useful and important to suggest chromatic strategies and principles of color planning in the urban environment.

The aim of this study is to investigate a relationship between aesthetic appreciation of urban scenes (with old buildings of different styles) and such factors as presence of different levels of chromatic complexity and coherence in these scenes. Also, a study and comparison of perception of the urban environment by individuals of different cultures and backgrounds are carried out. The concept of aesthetic response developed by Nasar (1998) and Stamps (2000) is used as a criterion for such evaluation. The result of the aesthetic appreciation of the built environment, in this case, appears as a synthesis that includes different points and perspectives of evaluation, related to the representative values of the physical forms themselves (formal characteristics of the applied colors) and also to the semantic values enabling the color interpretation (symbolic characteristics of colors). In this work both aspects, formal and symbolic, are considered.

The study data are collected through questionnaires distributed among 96 Russian and Brazilian respondents (also divided in groups of non-architects and architects). Questionnaires are provided with kits of images including urban scenes with historical buildings in the city of Pelotas, Brazil. The scenes are classified into three categories with different degrees of chromatic visual complexity. Data of questionnaires are analysed by nonparametric tests.

The obtained results show, in particular, that color contributes to assessing the coherence and complexity of the scene by means of chromatic attributes. Scenes with moderate level of complexity tend to be positively evaluated and to be preferred, while scenes with low and high level of complexity tend to be negatively evaluated and have fewer preferences. The study points out that scenes including old and new buildings can be considered coherent by respondents, if these scenes have a unified style of coloration. It is worth to note that similarity of hue selection is not so important as that of the overall tone of the facades (related to the clarity value of color and contrasts among used chromatic combinations).

O15.2 Exploratory study on Fractal Analysis for Linking Urban Streetscape and Pedestrian Perception

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Being capable of describing organic objectives such as snowflakes and leaf veins, the fractal geometry is suggested by Mandelbrot(1982) in order to depict the natural order lays beneath the chaotic and irregular impression. This movement of the field of modern mathematics has been identified as increasingly topical to the built environment as well. The new understanding offers potential for analyzing the complex nature of the spatial growth of cities, architecture design and cityscape assessment (Batty and Longley, 1994; Bovill, 1996; Hagerhall et al., 2004).

The special interest in the cityscape aesthetics has motivated several attempts to investigate the potential of fractal analysis techniques for visual quality evaluation. Considering the complex and comprehensively composed streetscape, it is a critical issue for urban designers to make street features aesthetically ordered and visually coherent while still keeping the character and the variety. Our intuitive capacity for visual appreciation, including senses of rhyme, rhythm, balance and harmony, can result in visual pleasure. Notably, while the similarity in the patterns and elements varies from the simple kind to more complex subsystems, it comprises of 'a system of interesting affinity' which composes aesthetic coherence and visual pleasure (Carmona et al., 2003, p.131). In order to systematically evaluate the aesthetic order of streetscape, there have been a number of studies adopt the fractal analysis method as a new approach to investigate the relationship between cityscape's fractal character and the corresponding human perception of visual quality.

Based on the fractal analysis methodologies and examinations for British townscape (Cooper, 2003; Cooper and Oskrochi, 2008), the aim of this research is to investigate the wider applicability of the relationship between fractal dimension and environmental perception for streetscape, and takes Taiwan as the case study area. The research focuses on two facets: 1) physical domain and 2) psychological domain, starting by identifying the potential of fractal geometry to be applied in man-made environment. And then three issues: the fractal dimension, streetscape and pedestrian perception.

This study is one of the ongoing studies for environmental fractal analysis. It has initially identified and developed the correlations between fractal dimension, pedestrian perception and streetscape elements. It gives the confirmation that fractal dimension are strongly consistent with the level of environmental aesthetic attributes. This piece of research is regarded as preliminary in fractal study and therefore hopes that this work will encourage further studies aimed at investigating the relationship between fractal dimension and high quality urban spaces.

O15.3 YOUNG PEOPLE' PERCEPTION OF THE DETERMINING FACTORS OF ENVIRONMENTAL QUALITY, CASE STUDY OF SURABAYA- INDONESIA

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The quality of the environment, including its social role, could be determined through representation and imageability of the environment (Marling 2008). Lynch's theory of the 'Image of the City' (1960) states that there is a strong correlation between the representability of urban elements through mental maps and the quality of an urban area. However, contemporary urban issues, such as urban agglomeration and high dependence on cars, especially in a Third World city, produce a significantly different understanding and reading of the city (Soja 2000). Young people in particular are a group of people who are very much exposed to urban traffic and mobility. They also largely experience very specific building typologies such as malls, pubs or cafés, and they have a high dependency on IT technology. Furthermore, they have different patterns in imagining the city in contrast to any official city identity and conventional landmarks and city structure.

Experiencing the urban space and identifying the urban artifacts is not only important for individual needs of human orientation but also, more generally, to define an urban/environmental identity of a city which is facing current issues of globalization. Some effects of globalization, including hyper mobility, global communication and neutralization of place and distance (Sassen 2001), are important factors to be considered here. The ability to distinguish space or place should be preserved, in order for buildings and cities being able to play an important role in the understanding of passing history (Holl, 2006).

This paper will present research that has been conducted in Surabaya, the second biggest city in Indonesia, with young people from a mid to high economic family background that a have high dependency on private cars. Respondents were asked to imagine their city through drawing mental maps and were also interviewed in order to understand the reasons behind their choice of location and route in these maps. Purpose of the research is to examine the urban meaning for and perception of these young people and to identify the factors which are determining environmental quality for this particular social group.

O15.4 MAKING A BRIDGE OR A DOOR? THE CHANGING INTERFACE OF SHOPPING CENTRES AND SURROUNDING URBAN PUBLIC SPACE

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More recently, in many developed cities, there has been a shift away from the common inward-looking and enclosed shopping centre towards designs that lead to the emergence of new kinds of spaces, where the public space of the city and the private space of the shopping centre meet and overlap - what will be termed 'interface spaces' in this paper. Through the rapidly growing opening up trend of shopping centres, especially in the Sydney metropolitan area, what is revealed is the ambiguity of these interface spaces. Although shopping centres have been criticised for their negative consequences attributed to privatization of urban public space, interface spaces are undefined in what has been recognized as private and what has been known as public. Indeed,

rather than negative development, the opening up of shopping centres to surrounding urban public space and emergence of interface spaces signify the provision of a balance between the public and the private realms – i.e. 'publicization' of private spaces rather than 'privatization' of public spaces. To clarify the concept of interface spaces in the contemporary urban context, this paper explores the theoretical analysis concerning provision and challenge of 'publicness' in relation to the emergence of interface spaces in the Australian urban context. Drawing on the notions of 'bridge' and 'door' in order to connect or separate, this paper proceeds to investigate the interconnectivity of interface spaces and urban public/private spaces to understand what role these new spaces can physically and experientially form in the urban future.

O16. RESPONDING TO ENVIRONMENTAL THREATS & DISASTERS

O16.1 THE OPEN-SPACE NETWORKS IN RESIDENTIAL ENVIRONMENT IN CHINA FOR DISASTER MITIGATION

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China is a seismically active country. Over the past decades, we have witnessed growing threats to the living environment by natural disaster. Since the beginning of the 20th century, China had nearly 800 quakes over 6.0 on the Richter scale and costing a large number of fatalities and losses. Disaster mitigation and prevention have been major concerns especially after the 2008 Sichuan earthquake.

The key issue of the disaster mitigation system is the safety of residential settlements in urban environment. As China's economy develops at a rapid pace, urbanization has sped up, urban fabric of its cities is becoming more and more intricate. In most Chinese cities, the population distribution within residential areas is quite dense and concentrated. Since many residential structures are fireproof, the main dangers posed by an earthquake are building collapse and falling debris. Both present crucial challenges for evacuation and refuge.

The layout of Chinese city is mostly divided into superblocks with wide avenues, and residential area especially the new ones are more likely to be enclosed. Although refuge to those avenues is recognized as a safe evacuation route, it may not be reached directly because of the difficulties such us: the massive scale superblocks, the accessibility and all other restriction of the superblock. Therefore when the earthquake comes, the important role of open spaces within the superblock which act as a direct evacuation area are needed to be considered.

This research focuses circulation spaces of the urban residential environment. Field survey of different types of residential areas in the Chinese city of Tianjin is conducted. Based on survey observations of the outdoor spatial arrangement and details of buildings and environment, developing a computer program to evaluate the different spatial characteristics, we can figure out disadvantages or advantages and earthquake vulnerabilities of each location by the criterion of circulation spaces. An open-space network diagram is generated by spatial sequence which indicates the connections between differently scaled open spaces and circulation routes. Areas with disadvantages and advantages for evacuation of optimization are identified based on the network diagram and analysis results, as well as several proposals for improvements are brought forward and compared.

O16.2 LOOKING BACK ON A POST-DISASTER RESPONSE: ANALYZING MEDICAL ACTIVITIES TO UNDERSTAND THE TRANSFORMATION OF PUBLIC BUILDINGS TO MEDICAL FACILITIES

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The Halifax Explosion in December of 1917 in Nova Scotia, Canada resulted when a munitions ship collided with another ship in the Halifax Harbor during World War I. This resulted in approximately 12,000 damaged buildings, 6,000 people left homeless, approximately 1,600 people dead, and close to 9,000 people injured (Kitz 1989: 23). This was the largest human-caused explosion prior to the atomic bombs dropped on Hiroshima and Nagasaki in Japan during WWII, causing a tsunami in the Halifax Harbour as well as total destruction for miles.

Numerous perspectives on the explosion exist including historical accounts, literary expressions, scientific studies, and relief responses. However, the medical aspect of the disaster has not been analysed in a way that provides a reconstruction of the post-disaster built environment in Halifax that emerged to handle the injured and the remains of the dead. Numerous public buildings were quickly transformed into medical facilities such as dressing stations, depots for medical supplies, eye surgery clinics, emergency hospitals, and a city morgue.

This research is an analysis of the descriptions of the post-disaster behavioural activities of the medical personnel to help construct an accurate representation of the post-disaster built environment. My argument is that by looking at the documented human behaviour and activities of the medical personnel, the socio-spatial characteristics of the newly transformed medical buildings will be reflected in much the same way that the opposite approach of behavioural plan analysis works to reveal behavioural implications.

My research questions include, what architectural characteristics of the buildings enabled the transformation from one building type to a medical facility building type? How well did these buildings accommodate the new programmatic requirements? Careful review of the activities and physical setting descriptions found in personal narratives, letters, newspaper articles, committee notes, and pension claims documents found in the provincial archives have revealed how people managed and experienced the immediate medical response required and the physical settings that accommodated these activities.

Halifax had preparedness unlike other disasters because it happened during World War I, it was a major military port, and at that time in Halifax, there were numerous trained medical personnel, military and convalescent hospitals, as well as many war-time activities done by volunteers and an infrastructure already in place for returning war veterans. This interpretive-historical study contributes new insights to the existing perceptions of the post-disaster phase of the Halifax Explosion. It also contributes to the research on ‘disaster healthcare’ illustrating how types of disaster readiness and the transformation of the built environment can contribute to a reduction in medical complications and deaths.

O16.3 Residents' Behaviour in a Potential Area for Tsunami Disaster after the Great East Japan Earthquake

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On March 11, 2011, Japan was hit by the Great East Japan Earthquake that caused massive tsunami along the shore of Tohoku to Kanto region and brought serious damage. More than 15,000 people were killed. Since the delay of evacuation had caused many victims, importance of the behaviour studies in field of disaster prevention measurement has been recognized. To understand how coastal residents made decision and how they behaved at urgent situation become important because this knowledge will aid in the reconsideration of effective announcement in case of emergency and disaster education.

Right after the earthquake, meteorological agency gave a large-scale tsunami warning including the coast area of Onjuku town, Chiba prefecture where the local government also issued an evacuation counsel to coastal residents.

In this study, we distributed to all households in the coastal area of Onjuku town, totally 2,272 questionnaire forms. We asked to respond only who were in the town at the time of the earthquake. The questionnaire asked about their behaviour in the form of flowchart and mapping with which we can identify where they were at the time of the earthquake and trace how they behaved after that as well as the reason of their choice such as knowledge and information used. With these, we aim to clarify the influential factors on their decision-making and path choice.

From the data, 451 responses (collection rate: 19.8%), we analysed residents behavioural patterns. As a result, respondents acquired information from various source, while the degree of influence on decision-making varied with what type of information and how they received. Behavioural patterns are different according to the location and situation at the time of earthquake. At the same time, we found some risky behaviours made by the residents; some people came back to the home near the sea and others went to the seaside to watch tsunami.

O16.4 Vulnerability assessment of urban populations in Africa: the case of Dar es Salaam, Tanzania

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Hundreds of millions of urban dwellers in low- and middle-income nations are at risk from the direct and indirect impacts of climate change (Satterhwaite 2007). Worldwide, there has been a rapid growth in the number of people seriously impacted by climate induced hazards and also in the amount of economic damage caused (Dodman 2009). African cities are not exempt to these natural disruptions. In fact severe weather events are expected to increase in the continent. Climatic threats ranging from flood, sea level rise and decrease in river basin and water availability are predicted to have negative effects on the human, economic and environmental assets of populations. The CLUVA project (Climate Change and Urban Vulnerability in Africa), an EU funded program with focus on environment and climate change aims at developing context-

centered methods to assess vulnerability and increase knowledge on managing climate related risks. CLUVA brings together the knowledge of eight European institutions and five African Universities. The research team is composed of experts in climate change, vulnerability, risk management, urban planning and sociology. This multidisciplinary consortium works in close collaboration on selected cities to propose innovative resilience strategies for Africa. In case study cities such as Dar es Salaam features of vulnerability are rather dynamic, context-dependent and manifest themselves in different ways. Identified unplanned settlements in Dar es Salaam city are often flooded due to natural and anthropological factors which pose serious challenges to local communities, municipal and city authorities. Part of building the capacity of scientists and local institutions in CLUVA is to place attention towards understanding the vulnerability of populations and identifying local-based adaptation measures that can be included in broader strategic responses to prevent present and future threats. Field trips taken in several locations and exchanges with locals have shown that the risk people face has different degree depending on their capacities and their access to resources. While poor constructions, location in flood prone areas and limited accessibility among other conditions are signs linked to physical vulnerability, some social arrangements witnessed in Dar es Salaam in the form of family support groups, and micro-financing systems appear to be a determinant form of social wealth that may serve as an indicator of capacity and resilience. Hence there is a necessity to develop an understanding of vulnerability and an assessment procedure that allows capturing the complex, embedded and nuanced manifestations of vulnerability in African urban contexts. Vulnerability is co-produced in everyday interactions among residents, local authorities and their environment. This implies that vulnerability as well as adaptive capacity need to be more contextualized at different levels and integrated to different planning and education instances.

O16.5 The role of participation in vulnerability assessment of urban populations in Africa

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Despite worldwide efforts, the multidimensional impact of natural disasters in emerging and developing countries continues to deeply affect communities. The challenge for many African populations is to absorb the social, economic and environmental impacts caused by natural disasters. CLUVA (Climate Change and Urban Vulnerability in Africa) is a project, which is part of the European Seventh Framework Programme. Its aims are to develop context-centered methods to assess vulnerability and to increase knowledge on managing climate related risks such as floods, droughts and sea level rise. Vulnerability assessment emerges from the idea of understanding and contextualizing the condition of people when affected by a hazard. This implies highlighting and interlinking the social, institutional, physical and attitudinal dimensions of a disaster and focusing on the question of how individuals anticipate, resist and cope with, as well as recover from extreme events. The empirical research is conducted in three CLUVA case study cities: Addis Ababa in Ethiopia, Dar es Salaam in Tanzania and Ouagadougou in Burkina Faso. These cities, located in West and East Africa, encompass highland, coastal and inland urban characteristics and feature a growing mix of population that are confronted not only with increasing climatic hazards but also with the pressure of progress, traditional beliefs, safety and equality. Urban development demands improved assets, more functional institutions and more suitable physical and social infrastructure, and as such, it subjects CLUVA cities to continual challenges to

adapt in the face of a changing continent. Participatory approaches focus on creating action plans at a community level enabling actors to voice their concerns and take responsibility for their locality. Such approaches have an empowering and ownership agenda, offering those involved to increase their autonomy and developing skills to face hazardous developments. In CLUVA, participatory elements imply identifying and mapping relevant local authorities in hazard prone areas. Community-based actors and local residents are also encouraged to provide their own interpretations of their own vulnerability and put forward ideas on what is contextually suitable in terms of adaptation measures in African cities.

O17. HEALTHCARE ENVIRONMENTS

O17.1 HOW HOSPITAL' PHYSICAL AND SOCIAL ENVIRONMENTS RELATE WITH PATIENTS' WELL-BEING

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Evidence has been accumulated showing that the objective features of hospital physical environment have an impact on patients' general well-being. For example, Ulrich (1984) showed that the patients in a room with a view of nature had shorter postoperative hospital stays, recovered with more emotional well-being, and took fewer potent analgesics doses than patients in similar rooms with a view of a brick wall; and Swan, Richardson, and Hutton (2003) found that appealing rooms result in more favorable patients' judgments of the hospital, stronger intentions to use the hospital again, and stronger intentions to recommend the hospital to others, than typical rooms in the same hospital. Despite this evidence, little attention has been paid to the psychological processes through which this well-known relationship occurs. Using structural equations models, we tested the general hypothesis that the relationship between healthcare physical environment conditions (assessed by two independent architects) and satisfaction with the care unit is mediated by perceptions of quality of physical environment (e.g., design features of hospital inpatient area) and social environment (e.g., interactions with staff, privacy) (Study 1). Results showed that the effect of objective environmental quality (assessed by two independent architects) on satisfaction with care unit is only mediated by perception of quality social environment. We also found that this mediation is moderated by patients' status.

Using multi-group analysis, we found that, as for the total sample, for inpatients the effect is mediated by quality perception of social environment, whereas for outpatients mediation occurs through perception of physical environment. In addition, quality perception of physical and social hospital environment were significantly correlated, a result also found in previous studies.

The goal of study 2 was to disentangle the contribution of physical and social environment to the variability of patients' well-being (measured by satisfaction with care unit and mood). To this end, we planned an experimental study in which we manipulated the perceptions of quality of physical and social environment, opening a window for exploring how much these dimensions affect well-being and how they interact with each other. In this study, we focused on outpatients experience in a healthcare centre. Pre-tested stories of care and pictures of hospital areas were used to manipulate the perception of quality of social environment and physical environment, respectively. In a 3 (social environment: positive vs. neutral vs. negative) X 3 (physical environment: good vs.

neutral vs. bad) between participants design, the effect on well-being was analysed. Results of studies 1 and 2 will be discussed.

O17.2 DEMENTIA-FRIENDLY ARCHITECTURE: INTEGRATING EVIDENCE IN ARCHITECTURAL DESIGN

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The rising life-expectancy promises a compression of morbidity and the acquisition of several additional years in good health. However, at the same time the risk of developing dementia increases by age. Experts estimate that currently 35.6 million people with dementia live worldwide. This number will double within the next twenty years and will rise to 115.4 million in the year 2050. The symptoms of dementia occur slowly over time, affecting memory, orientation, attention, language and problem solving. In absence of effective medical therapies the individual's quality of life has been focused by researchers of various professional backgrounds, among them Architects, striving for the design of therapeutic environments.

People with dementia's well-being, functionality and behaviour can be supported through dementia-friendly design, which supports autonomy, provides sensory stimulation and promotes social interaction (Cohen & Weisman, 1991). Further, a specific spatial design is necessary: Research indicated that with advancing dementia storing and retrieving a mental visual image becomes increasingly difficult and results in the inability to generate a cognitive map (Poettrich et al., 2009).

In nursing homes, the circulation system has been identified as the most determining environmental factor on the resident's wayfinding abilities: In straight circulation systems, residents were able to find their way better than in any layout that featured a shift in direction, such as L-shapes (Marquardt & Schmieg, 2009). Therefore, people with dementia need direct visual access to all places relevant for them to perform their activities of daily living.

Further architectural studies also indicated that people with dementia's spatial recognition need to be supported. In order for them to understand the meaning and function of a room it has to be architecturally legible and needs boundaries that clearly separate it from other spaces. A study using the architectural methodology space syntax showed a relationship between the spatial layout of the home and the successful performance of the resident's activities of daily living (Marquardt et al., 2011). The results imply that enclosed rooms with a clearly legible meaning and function (such as kitchen, hallway, living room) might be better memorized and associated with the spatial layout of the home, resulting in better performance. Floor plan designs that are very open and interconnected might account for difficulties in the spatial representation of people with dementia, increasing the level of dependency on a caregiver.

The need to combine two contrary goals striving for evidence-based architectural designs for people with dementia constitutes a challenge for architects: To allow for visual access to all relevant places, and simultaneously to create boundaries to separate spaces one from another in order to render them architecturally legible.

O17.3 EXPLORING THE INFLUENCE OF DESIGN ON COMMUNICATION IN MATERNITY CARE

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Title: Exploring the influence of design on communication in maternity care.

Aims: To capture the organisational and communication dimension of birthing in order to analyse if the birthing space has any impact upon these dimensions. The study will explore the benefits of using video ethnography to observe, record, and analyse the effect of physical context/environment on communication, behaviour and interactions between women and their care providers within the labour and birth room in two Sydney maternity units in Australia.

Background: Prior research about birthplace and communication has been undertaken through narrative accounts of experiences provided by women and midwives and via observation. These studies have revealed that women, midwives and other health care providers regard the hospital labour and birth environment as a highly stressful location that is often characterised by poor verbal communication that may lead to unsafe care. In other studies women have reported less than adequate or limited options for use of the physical spaces within the birth room that they regard as contributing to difficult and unsatisfying birth experiences.

Experts in the area assert that most communication occurs at a non-verbal level, therefore filming interactions between women and staff within particular labour and birth environments is important to fully understand the relationship between environment and non-verbal as well as verbal communication.

The premise of this study is that optimally designed birth units could reduce staff and women's stress, positively influence the quality of communication and quality of care, facilitate physiological birth, and increase woman/baby safety thereby reducing the likelihood of adverse events and litigation.

The influence of design on communication has been established in other video ethnographic work in health that we have recently completed. Video filming is internationally recognised as an innovative research method in the areas of intensive care, emergency, spinal care and trauma units as well as ambulance services, handover and open disclosure studies.

Participants: Volunteer staff and a total of 10 birthing women and their supporters will be recruited to provide video recordings for analysis.

Video: Using an unobtrusive, hand held video camera, recordings will be made of samples of communication interactions between staff (at the desk and during handover), and between staff, women and supporters (during admission plus one hour; handover plus one hour). In depth interviews will be conducted with each woman and with staff, during which the video will be reviewed for reflexive interpretation and for any edits or deletions of footage.

Analysis: Video and interview data will be subjected to qualitative ethnographic analysis.

O17.4 THE CHALLENGES OF COMPLETING SOCIAL RESEARCH WITH CHILDREN AND YOUNG PEOPLE IN A MEDICAL CONTEXT AND ITS IMPLICATIONS FOR RESEARCH, POLICY AND DESIGN

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Twenty years after the United Nations Convention on the Rights of the Child (UNCRC) (1989) which enshrined children's right to participate in processes that have the capacity to affect their lives, researching children's and young people's experience of hospital and health care environments is still extremely difficult. Many barriers exist to completing participatory social research with children and young people in a hospital setting. Beginning with the dominant medical culture of these contexts; coupled with a persistent scepticism of qualitative research and its contribution to knowledge in medical circles; restrictive contextual barriers also include methodological and practical challenges such as acquiring ethical approval, acquiring access, negotiating gatekeepers and recruiting participants.

Together, the many barriers hamper 'good' research practice and the capacity to maintain quality data; as well as impeding children's participation in research. The layers of challenge experienced by social researchers in this context can equate to many compromises which fundamentally alter research projects and the integrity of the research. Contextual constraints can also severely compromise the capacity of researchers to structure and deliver optimal participatory research practice from children's and young people's perspectives. These constraints form barriers to children's participation, undermine children's interest and ability to participate and the recognition of their competence to do so. This ultimately undermines the quality and quantity of this research and its usefulness to health care design, planning and policy development.

The challenges of conducting participatory qualitative research in hospital contexts will be discussed based on the experience of two studies in paediatric settings in Australia. One of these studies was completed in 2008 and one is continuing at present. The aim of the paper is to articulate the issues inhibiting this kind of research and their implications for research practice; children's right to participate; and the quality of the evidence that is ultimately available from children's perspectives to support the design of paediatric settings; and the development of relevant policy.

Finally, the paper will make recommendations for change which could strengthen and improve this research experience for children and young people and for researchers. A greater degree of shared understanding is needed across all those involved in the whole research process in a hospital context. Educating and building awareness needs to begin with ethics committees, gatekeepers and researchers working in this context. Strategies for these aims also need to be coupled with increased awareness of the potential value of qualitative research to policy, research and design which means greater attention is also needed on processes of knowledge transfer and information exchange, so as to improve the likelihood that this research can contribute to policy, research and design practice.

O17.5 STUDY ON THE PATIENTS' MANNER OF USAGE BY WARD CLASSIFICATION IN PSYCHIATRIC HOSPITAL

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In Japan, which has the most number of psychiatric beds among the developed countries, finding out the form for Japanese psychiatric health care, which aims to improve the quality of life for patients while maintaining the form of a psychiatric hospital, is an urgent task.

With the opinion that matching the diversifying needs of patients, and building Psychiatric hospitals to ensure life with the grade and quality equal to life in the communities, is one way to go forward for psychiatric health care in our country. This study aims to explore the form for psychiatric hospitals from the perspective of architectural planning.

The survey targeted a total of 5 wards in Fukushima Prefecture with a focus on Hospital A Building A 4-bed rooms (Acute period ward, Convalescent ward, Stress care ward). and Building D with all private rooms (Super emergency ward, Stress care ward). Spaces are organized into Private space, Semi-private space, Semi-public space, Public space, by stages, And a spatial feature of the surveyed targets, is that the ward is shaped in a cluster surrounding the S-pri. The summary is showed below.

1. Shared space utilization, was high for multi-bed rooms, and wards with many schizophrenia patients, and lowered with the lessening of symptoms and longer hospital stays.

2. Usage characteristics of shared space and behaviours are influenced by the disorder. A tendency was seen for Schizophrenia patients preferring to stay in the S-pub.space, and stress disorder patients preferring to stay in the semi-private space.

3. Regarding interactions with others, as seen through the manner of stays, the differences in behavioural traits by disorder, maintaining of distance with others, showed the differences in spatial needs. At that time, the element that has decisive influence is the spatial composition. For multi-bed room wards, the percentage of there alone; for all private room wards the percentage of gathering; and in wards with many acute phase schizophrenia patients, the percentage of there with others was large. For all private room wards, there were many patients who used the Chat corner as there with others space.

O18. ENVIRONMENT AND AGEING

O18.1 A LONGITUDINAL STUDY OF SHARED SPACE STREET IMPROVEMENTS AND OLDER PEOPLE'S QUALITY OF LIFE

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There is a growing body of literature suggesting that access outdoors and use of public spaces in the local neighbourhood plays an important role for older people in maintaining their quality of life (Sugiyama et al., 2009). In the context of demographic change across Europe, it is important to

know whether current policies for designing and renewing neighbourhood environments, especially where there are currently high levels of deprivation, provide appropriate support for an ageing population. Yet older people's needs are often poorly researched in relation to urban regeneration initiatives. Residential streets represent a readily available outdoor space and a necessary route to activities outside the home and thus may be important determinant of quality of life.

This longitudinal study is part of the I'DGO TOO (Inclusive Design for Getting Outdoors 2) research project (see www.idgo.ac.uk). It examines whether and how modifications to the residential street environment based on pedestrian-friendly, shared space approaches such as 'Home Zones' contribute to older people's quality of life. The study was carried out in eight locations across the UK where shared space street projects were planned. Older residents were interviewed in two time periods – in 2008 before the environmental intervention took place and in 2010 or 2011, after the environmental changes had happened. Each experimental site was matched with a control site (where no environmental change was proposed).

The data collected by interview included:

a) Personal projects involving outdoor activities – what kinds of activities people prefer to undertake, where, and how they evaluate them
b) Perceptions of the environment in relation to outdoor spaces around the home, local streets, and the neighbourhood in general.
c) Quality of life and self-rated health, using previously validated and tested scales i.e. CASP 19 and EUROQOL
d) Frequency of getting outdoors in summer and winter months.

In addition, objective measures included accelerometer data, behaviour observations and street audits. When comparing data from 2008 and 2010, initial findings show that time spent outdoors and the number of personal projects involving outdoor activity have increased in the intervention sites by comparison with control sites. However, quality of life and frequency of going outdoors (especially in winter) has decreased for participants in intervention sites by comparison with control. The presentation will discuss these findings in the context of further analyses and explore the potential reasons behind the findings. The presentation will also identify the challenges and limitations of a study such as this, where the context of deprivation and the age of participants meant retention of study recruits was particularly difficult. Nonetheless, these findings may help inform the design of streets spaces in the UK and Europe by showing which aspects make a different to older people's everyday life.

O18.2 Environmental factors influencing older adults' walking for transportation: a study using walk-along interviews

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Background: Current knowledge on the relationship between the physical environment and older adults' walking for transportation is limited. Qualitative research can provide valuable information and inform further research. However, qualitative studies are scarce and fail to include neighbourhood outings necessary to study participants' experiences and perceptions while interacting with and interpreting the local social and physical environment. The current study sought to uncover the perceived environmental influences on Flemish older adults' walking for transportation. To get detailed and context-sensitive environmental information, it used walk-along interviews.

Methods: Purposeful convenience sampling was used to recruit 60 older adults (50% females) residing in urban or semi-urban areas. Walk-along interviews to and from a destination (e.g. a shop) located within a 15 minutes' walk from the participants' home were conducted. Content analysis was performed using Nvivo 9 software (QSR International). An inductive approach was used to derive categories and subcategories from the data.

Results: Data were categorized in the following categories and subcategories: access to facilities (shops & services, public transit, connectivity), walking facilities (sidewalk quality, crossings, legibility, benches), traffic safety (busy traffic, behaviour of other road users), familiarity, safety from crime (physical factors, other persons), social contacts, aesthetics (buildings, natural elements, noise & smell, openness, decay) and weather.

Conclusions: The findings indicate that to promote walking for transportation a neighborhood should provide good access to shops and services, well-maintained walking facilities, aesthetically appealing places, streets with little traffic and places for social interaction. In addition, the neighbourhood environment should evoke feelings of familiarity and safety from crime. Future quantitative studies should investigate if (changes in) these environmental factors relate to (changes in) older adults' walking for transportation.

O18.3 Physical environmental factors related to walking and cycling in older adults: the Belgian aging studies

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Background: Socio-ecological models emphasize the relationship between the physical environment and physical activity (PA). However, knowledge about this relationship in older adults is limited. Therefore, current study aims to investigate the relationship between area of residence (urban vs. rural) and older adults walking and cycling for transportation and recreation. Additionally, the relationship between the physical environment and walking and cycling was studied in eight subgroups (2 x 2 x 2: urban vs. rural, 65-74 year olds vs. ≥ 75 year olds and males vs. females).

Methods: Data from 30,597 Flemish older adults collected in 2004-2010 through peer research were analysed. Walking, cycling and environmental perceptions were assessed using self-administered questionnaires. The Study Service of the Flemish Government provided objective data on municipal characteristics. Multilevel logistic regression analyses were applied.

Results: Urban participants were more likely to walk (OR= 1.40; 95% CI= 1.33, 1.48) but less likely to cycle daily for transportation (OR= 0.82; 95% CI= 0.76, 0.89). Area of residence was unrelated to weekly recreational walking/cycling (OR= 1.05; 95% CI= 0.98, 1.12). Perceived short distances to services was significantly positively related to daily walking for transportation (ORs ranging from 1.08 to 1.16) in all subgroups and to cycling for transportation in rural females and the oldest urban females (ORs ranging from 1.10 to 1.18). Satisfaction with public transportation was significantly positively related to the different PA domains in several subgroups (ORs ranging from 1.12 to 1.18).

Conclusions: Our findings point to the importance of access to services and public transportation for increasing older adults' active transportation. The importance of other environmental characteristics remains unclear. Few differences between subgroups were observed.

O18.4 Objective and subjective impressions of an environmental intervention in dementia care homes

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The physical environment has been increasingly recognised as an important therapeutic tool in dementia care. This study was designed to demonstrate the positive impact that environmental interventions can have on people with dementia. The present study involved designing and implementing a simple and cost effective intervention in the living areas of dementia care homes, by re-arranging the existing furniture in the room. The research was based on the theoretical background of Lawton's Environmental Docility hypothesis (1979) and the Behaviour Constraint Model of the environment-behaviour relationship (Proshanky et al., 1970). From these theories a number of principles were developed to inform the intervention. The intervention was designed to increase the choice of areas in the room and affordances for different activities, as well as providing visual access to nature with views from the window. Based on these principles an intervention was put in place in 7 living areas across three dementia care homes. A behaviour mapping methodology was employed to assess the behaviour of the residents pre and post intervention. Following the intervention in each care home, a focus group or interview was conducted with care home staff to explore understanding of the environment-behaviour relationship, their perceptions of the intervention in the care home and their understanding of the impact on the residents.

The results demonstrate positive changes in behaviour post intervention, including an increase in active behaviours and a decrease in agitation. Staff views of the intervention and their knowledge of the environment-behaviour relationship differed between care homes. This has been placed in context of supporting information from other sources (e.g. the Care Commission) which showed that staff who worked in care homes which were rated poorer on aspects of the environment had a deeper understanding of the importance of the environment, viewed the intervention more positively and were more likely to comment on a change in the behaviour of residents, for example

noticing an increase in positive social interactions between residents. The staff perceptions of the intervention will be discussed alongside the objective behaviour observations of the residents. These results will be framed in terms of implications for integrating the use of environmental interventions with existing policies in dementia care.

O19. IDENTITY AND ATTACHMENT (1)

O19.1 THE SOCIAL SIGNIFICANCE OF PLACE

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Whilst much research on the relationship between people and places is based upon a construct of 'place' comprising the physical realm, the activities within that realm, and the meaning produced therein, other place research focuses on the social networks that extend beyond the geographic location of place, thus apparently contradicting two of three components of those earlier constructs. This paper reports on empirical research into one 'product' of place, namely the commercial retail mall, the results of which reconciles these contradictions through a refinement of both arguments.

The research, based in Hong Kong, was a grounded theory investigation into consumer processes for creating retail place image. The theory that resulted from that research proposed that consumers associated the retail place with a particular stratum of society, through a series of interpretive processes that attach personal and social meaning to that place. The resultant consumer image conceptualized the place as an integral and representative part of that social stratum and, in consequence, there was an associated series of consumer actions, behaviours, and appearances deemed to be expected and appropriate for that mall.

The research produced a hierarchy of consumer engagements, both self- and social-engagements, that led to the development of personal/social meaning related to the place. This in turn led to the consumer production of a ‘character frame’ - a set of socially acceptable parameters governing action, appearance and behaviour – from which a variety of identities could be adopted or assumed that were considered appropriate to that image of place. Based on that image consumers could determine whether they accepted or rejected the positioning of that place as ‘suitable’ or desirable to themselves.

This paper compares this theory firstly to traditional models of place (e.g. Agnew (1987); Canter (1977, 1997); Gustafson (2001); Relph (1976)) which treat place as a construct comprising the physical realm, activities, and meaning. Then, secondly, the theory is compared to place models that focus on social interaction (e.g Easthope 2004; Massey 1994, 1995). The outcome is a restructuring of these models that presents place as a process (rather than a construct) whereby meaning is created through social engagement within the broader context of physical, cultural, historic, and political activities. This meaning is then used to formulate personal and community perceptions of place.

The purpose of this paper is to emphasise the social significance of place to people, to articulate the process of meaning creation in relation to place, and to propose that much of this meaning is processed through social interaction.

O19.2 Differences in place attachment and place identity in natives and non-natives of Israel and Tenerife

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Attachment and identity are the two links most studied in the recent decades, which leaded to numerous definitions and theoretical positions on the relationship between each other. Increasingly more authors, who agreed on the distinction between attachment and identity, have dedicated their studies to test such differences (Chow and Healey, 2008, Devine-Wright, 2009; Hernandez, Hidalgo, Salazar-Laplace and Hess, 2007; Lewicka , 2008; Rollero and De Piccoli, 2010). A line of research that aims at extending the scope of these investigations is concerned with the comparison of place attachment and place identity in territories where the motivation of residents to establish themselves differs. In this study we present the hypothesis that in territories such as Israel, non-native speakers quickly develop an identity with place, whereas in other places such as Tenerife, place identity takes longer to develop. In order to test this claim, a questionnaire containing scales of attachment and identity with the city (Hidalgo and Hernandez, 2001) was administered to a sample of 493 participants - 219 residing in Tenerife, and 274 in Israel. From participants of Tenerife, 121 were natives and 98 non-natives, while in Israel, 171 were natives and 103 non-natives. In order to compare the means in both variables, we calculated the averages in each scale for each subject, and their scores were considered as standardized z-scores. A MANOVA analysis was performed with the standardized scores as dependent variables and two factors: place of residence (Tenerife or Israel), and origin (native or not native).

Results indicated a significant interaction of site X origin for attachment and identity with the city. For the non-natives, no significant differences in attachment were found between Tenerife and Israel. However, differences in identity were observed for this group, where the non-natives from Israel scored higher. Moreover, the mean scores obtained for both links in the group of natives were higher in Israel than in Tenerife. Regardless of whether participants are native or not, mean scores for place attachment in Tenerife were higher than those for place identity. In contrast to this, mean scores in place identity in Israel were higher than those of place attachment.

An explanation for these findings might be that while people who move to Israel already have an attraction to the territory, non-natives who displace themselves to Tenerife are usually more motivated by economic reasons than by their attraction to place. We discuss these and other results in light of their contribution to the clarification of differences between place attachment and place identity, and their possible consequences for adaptation and integration to place.

O19.3 INDIVIDUAL AND FACILITY FACTORS AFFECTING HIGH LEVELS OF SOCIAL INTERACTION AT FACILITIES

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Mixed-use development has been promoted by the UK government in new housing developments as an urban form which provides opportunities for people to interact which in turn is seen as a prerequisite for 'building new communities' (ODPM, 2003). Research has confirmed that social interaction is an important building block for social cohesion, sense of community and health (Cattell, 2008; Jacobs, 1963).

However, there is an ongoing debate about whether socio-economic or environmental factors (such as the built environment) are the most important determinants of social interaction (Haggerty, 1982). Empirical research into built environment factors considered important for social interaction has so far neglected the contribution facilities can make to this and has instead focused on housing layout, street design and public spaces (Gehl, 2001). Three areas with a range of local facilities on the outskirts of a British City were chosen to investigate whether individual or facility factors contribute the most to social interaction at facilities and to draw relevant conclusions for policy makers. Households were selected by random sample within the three suburban areas (n=167) using a self-completion survey questionnaire. The data was analysed using logistic regression.

The dependant variable was created combining 2 variables measuring high intensity social interaction (greet or talk to) and high frequency social interaction at a facility (every time or most times). The independent variables were grouped into five individual models (demographic, socio-economic etc) and two facility factors, type and accessibility. Several individual factors were found to be significant contributors to high levels of social interaction, such as employment status, having children, class and residency length. Gender on its own was not significant, unless it was tested in interaction with household composition. On the facility side, the area was found not to impact on levels of social interaction. Preliminary results also indicate that the type of facility has an impact on social interaction, the accessibility only with regard to certain types, and that some design features also have an impact. Overall, it appears that individual factors play a more important role in determining whether a person has high social interaction at a facility or not. This means certain 'types' of people not only use facilities in different ways (Fisher & Bramley, 2006) they also have different levels of social interaction at them. This questions the government's implied assertion that communities can be built as long as the 'right' mix of uses and facilities are supplied (ODPM, 2003). If high levels of social interaction remain a policy goal in new housing areas, then policy makers and planners should match the expected resident profiles with the type of facilities this particular group will use and thereby increase the likelihood of social interaction happening at these facilities.

O19.4 PLACE ATTACHMENT, SENSE OF COMMUNITY AND LOCAL CIVIC PARTICIPATION IN PARTICIPATORY URBAN RENEWAL CONTEXT

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The relation of people to places has been addressed using a wide variety of concepts, well known in people-environment studies. The conceptual definition of, and the relation between, place attachment and place identity is embedded in this debate.

From the usual approach, place identity concept stresses how places shape part of people's identities, whilst place attachment focuses on the evaluation of places. We can also consider the social and physical aspects of the evaluation of places. Sense of community and neighbourhood ties are related to social aspects, while place attachment and place identity are associated to physical ones. But from another point of view, we can take into account the fact that place attachment and place identity processes occur at the same time and spatial bonds symbolize social bonds. According to recent trends on place attachment research, we adopt the three dimensional framework (person, place and process) to understand bonds between people and places.

In this framework, we are interested in discussion regarding the role of social and spatial bonds to explain local civic participation (i.e. activities on behalf of the neighbourhood, involvement in local organizations, membership of neighbourhood groups). There are two main orientations involved. The social path, explained by place attachment and neighbourhood ties, and the cultural path, consisting of cultural capital (e.g. education, intellectual interest). These are two different ways to describe civic participation, which is also affected by other factors (e.g. age, education, type of residence or activity).

According to the first path, we are interested in exploring links between social bonds (i.e. sense of community), spatial bonds (i.e. place attachment) and local civic participation, at a neighbourhood level. Specifically, we explore the role of social and spatial bonds in local civic participation in places with an on-going participatory urban regeneration process. This process can be understood as a threat and/or an opportunity by residents and may affect their degree of local civic participation and their place attachment and sense of community.

We selected four neighbourhoods in Valparaíso and a neighbourhood in Illapel (i.e. Chile) where a project of urban regeneration called "Quiero mi barrio"(I love my neighbourhood) was taking place by Ministerio de Vivienda y Urbanismo (Ministry of Housing and Urban Development) of Chile. We applied scales of place attachment, sense of community and local civic participation in sample of 995 people in two cities. Results show that civic participation is related to social and spatial bonds.

O20. IDENTITY AND ATTACHMENT (2)

O20.1 PATTERNS OF PLACE AND COMMUNITY; LINKING PHYSICAL PLACE AND SOCIAL CAPITAL IN THE CAMPUS

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Many studies on the role of environmental design in college campuses have focused on the influence of the properties of the physical place on users' individual and social needs. Factors like the effect of lighting, music, aroma, movable furniture, signs and symbols, artwork or posters, sittable spaces, open spaces, view, safety, connection to nature, ability to territorialize, legibility and wayfinding, and so forth, have often been studied for the purpose of examining good places on the campus. However, a campus community is not merely a good place in a sense that is 'about' something. It supports quality relations across cultural and disciplinary boundaries, and thus all multiple facets of both the physical and social environment are integral to the process of promoting social capital and the sense of community.

Following this, the goal of this study is to investigate how people in a culturally and disciplinary diverse campus, use the physical place as a resource and/or are influenced by it in order to contribute to the process of generating and accumulating social capital and the sense of community. In other words, such a community is an ecology in which places, individuals, and groups are resources for one another. Therefore, diversity in this study is viewed as an outcome of creating settings that enable people to value, embrace, and use differences for their collective good (Kelly et al, 1994). Such social ecology represents the opportunity to share and exchange ideas and artifacts through bonding and bridging interactions in order to develop new knowledgeable, cultural, and personal identities.

A qualitative study including interviews with a sample of students along with participant observation was conducted in the campus of UW-Madison in the US in order to identify patterns of place and community. Studies on environmental influences on psychophysiological stress-reduction (e.g. Ulrich, 1983; Evans, 1987), restorative environments (e.g. Kaplan, 1995), third places (Oldenburg, 1989), settings that are supportive of cultural diversity (e.g. Townley et al., 2011; Karl et al., 2011), learning communities (Lave & Wenger, 1991), place attachment (e.g. Scannel & Gifford, 2010; Lewicka, 2008), place identity (e.g. Proshansky et al., 1983; Twigger-Ross & Uzzell, 1996), bridging and bonding social capital (Putnam, 2001), and meanings of home (e.g. Moore, 2000; Tognoli, 1987) conducted this research. Finally, a number of themes emerged in relation to various attributes of socio-physical patterns and students' experiences of those patterns.

O20.2 SYMPHONY AND THE CITY: PLACE- AND ORGANIZATIONAL-ATTACHMENT OF CONCERT AUDIENCES AND ORCHESTRAL PLAYERS

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Within environmental psychology, place attachment has been shown to be an important aspect of an individual's sense of identity and well-being. This study demonstrates that such attachments and sense of ownership and belonging can be at a range of scales, from particular buildings to whole cities (and wider)

Further more, attachments can also be to organizations, activities and memberships that are place-linked.

In our research with the audiences and the players of the City of Birmingham Symphony Orchestra (CBSO), we demonstrate that for many (but not all) members of both groups their loyalty relates to both the City that gives the orchestra its name, and to the dramatic Symphony Hall which is its home. And it is interesting to note that the CBSO's marketing publicity emphasizes both city pride and the membership of the orchestra-hall 'family'

Our study asked what is the concert experience for audience and for musicians alike? What role do place attachments play? We used surveys and interviews to explore audience members' identities relating to concert going at local, organisational and personal levels, with the aim of examining loyalties to Birmingham as a centre for culture, to the CBS Orchestra and its musical activities, and to the personal musical identities of audience members. 'Ownership' of the organization runs through the publicity and marketing. How far is this reflected in the ways that audience members describe their concert going, compared with other more musical reasons (e.g. attraction to repertoire)?

Our interviews with orchestral players paralleled these themes, asking them about perceptions of a classical music audience; the position of the CBSO in the musical culture and image of Birmingham; and their own musical and performance history. We also asked for their feelings about the marketing department using images and vignettes of players to build a sense of 'ownership' for the audience

'Symphony Hall (SH) is my second home, where I feel comfortable, at ease, excited at the prospect'

'SH is easily the most civilized place in Birmingham'

The idea of the CBSO belonging to and being an icon for Birmingham are important to many of the respondents, especially those who live locally or who have roots locally

Symphony Hall is seen as a venue to be proud of, and some of the facilities, such as being able to regularly book the same seats helps to encourage this sense of familiarity and shared experience. Regular seating enables people to gain a sense of familiarity through seeing the same faces within the wider audience, their closer neighbours, and the orchestra.

Many positive responses focused on a sense of ownership: some viewed musicians as a family, to which they also belonged, others talked of pride in the Hall and the city's culture.

O20.3 Children's Attachment to Place from the Perspective of Developmental Psychology

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To understand how place attachment is formed during childhood, Morgan suggests a 'developmental theory of place attachment' (2010), which relates children's environmental experiences to the interaction with and dependence on their caregivers. Morgan's model emphasizes how children alternate between exploring the physical environment and seeking reassurance from nearby adults. Two motivation systems are at work, that of exploration and assertion and that of attachment and affiliation (Lichtenberg 1989). Place attachment in view of this model can be characterized as the outcome of the child's experiences when exploring the physical environment on his own in an emotionally safe way, expressing the child's own experiences as well as how these have been shaped and influenced by his relationship with the caregivers. In theories on attention there is a similar emphasis on the interaction taking place between the child and his caregiver for the child to attend to aspects of the surrounding environment (Vygotsky 1979, Hansen 2002). Morgan, Vygotsky and Hansen refer to early stages of child development. In this presentation emphasis will be on the environmental experiences of children around puberty. A relational interpretation of children's dependence on adults for their environmental experiences will be put forward, understanding puberty to be that stage during mental development when the dependence on adults wanes and the individual instead asserts his emotional independence, his own 'self' and individuality. At that phase of development physical environment loses concomitantly the fascination that it holds to children, giving place psychologically to a pronounced social environmental interest like finding out about who uses what physical spaces and how. This author has found that place experiences vary considerably between children in different environments. In urban environments children tend to have much less detailed descriptions of their physical environment than children of the same age in countryside environments (Nordström 1990; 2000a, b; 2010). Adult influence is clearly reflected in children's environmental experiences in places where children belong to different social groups. Children in families not rooted in the local culture show less emotional involvement with the physical environment than children in families who are part of that culture. The author's presentation at the symposium will describe children's environmental experiences as an interactive relationship between children and their physical environment from the perspective of children's parental dependence in an attempt to put attention to the concept of attachment of place from the perspective of developmental psychology.

O20.4 The experiential construction of place, the case of open spaces in informal settlements in Bogota

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Open spaces in informal settlements can be seen as social production and construction of place. The production of space in informal settlements is largely self-helped and several times also self-

built by the people. The 'space is permeated with social relations; it is not only supported by social relations but it is also producing and produced by social relations' (Lefebvre, 1991: 286). 'Social space "incorporates" social actions, the actions of subjects both individual and collective who are born and who die, who suffer and who act' (ibid.: 3). But the production of space is also mediated by consumption, as Harvey (1996) argues: production and consumption processes work in a dialectical relationship. Therefore, production and consumption are part of the same spatial transformation process.

It is also argued that not only do people transform places, they are transformed by the interaction with them; as Holloway and Hubbard (2001: 7) suggest 'as people construct places, places construct people'. Open spaces can be seen as social produced and constructed places, with no 'natural' meanings but created (Cresswell, 1996); 'where value and meaning are not inherent [...], they are created, reproduced and defended' (Lombard, 2009: 64). People are related to places, and places are related to people in an emotional bond (Groat, 1995), in a subjective and emotional attachment (Cresswell, 2004); in informal settlements this relationship can be even greater because people are involved with places since their production.

The relationship between people and place can be seen as the experiential construction of space, and it is originated from the everyday use of places; including social and cultural usages. Attachment and identity are arguably among the most important outcomes of this experiential construction of place. The aim of this presentation is to investigate open spaces social cultural consumption patterns, from both functional and symbolic perspectives. What is the relationship between open spaces and the people (users) who create them? This question investigates the consumption of open spaces in the barrios and its implications. It is about the experiential construction of open spaces.

O21. CULTURE AND HERITAGE

O21.1 BUILT HERITAGE AND VISUAL QUALITY OF URBAN LANDSCAPE

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The article addresses evaluation of cultural built heritage and its contribution to the visual quality of urban landscape, in order to ascertain the level of importance attributed to heritage buildings and identify the physical characteristics of existing buildings on sites of heritage value that are more and less attractive to users, as well as the indication of historical and affective values which possibly influenced the user's perceptions with respect to environmental and aesthetic quality.

It follows the assumption that the aesthetic quality of the urban landscape is related to physical attributes and associations of morphological and typological elements that make up the urban landscape. Aspects related to the important role urban legislation plays when directed to preservation of urban areas and historic centers were also considered. Historic areas of three cities were selected as a case study. Piratini represents cities with preserved historic centers, with a pioneering urban legislation; São José do Norte represents cities where cultural heritage was adulterated due to a lack of legislation that guarantee the preservation of built heritages; Porto Alegre represents cities where cultural heritage was partly preserved. The research was implemented through the use of qualitative and quantitative methods. Mental maps and interviews

to users of historic areas allowed the identification of the strongest positive and negative images of public buildings and urban spaces. Questionnaires were administered to evaluate images of urban scenes with different levels of homogeneity, in order to investigate the role built cultural heritage has on the visual quality of urban landscape, measuring the damage to the aesthetics of the city caused by the lack or non-inclusion of issues relating to preservation of cultural heritage in the process of urban planning and subsidize the elaboration of public policies on the preservation and planning issues. Results indicate the relevance of studies focused on the visual quality of the urban landscape as a need to promote actions for qualification of public spaces, and in this context include the recognition that the facades of buildings that make up the urban landscape are collective assets that should be considered for the establishment of guidelines for new interventions and projects that generate positive evaluations. On one hand, results confirm the positive contribution of buildings which constitute the built cultural heritage in the visual quality of the urban landscape, on the other, the adulteration of cultural heritage generate negative evaluations. Accordingly, it is evident the need to curb the actions of distortion, mutilation and even demolition of buildings located in the ancient period of historic centers.

O21.2 ADAPTATION OF HOUSING DESIGN TO CULTURE CHANGE IN SYRIA: CONCEPTS AND PRACTICES OF PRIVACY, FOOD PREPARATION/CONSUMPTION

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Rapid cultural change in contemporary life is affecting housing use and design in Syria, with these becoming more out of sync. This study is investigating the nature of cultural change and its impact on housing use to investigate to what extent it is affecting the appropriateness of housing design.

The study is theoretically based on a social constructionist approach due to the complexity and multidimensionality of the study especially in understanding how people interpret their housing use and cultural identity. The academic literature review focuses on the overlap between culture and housing design and reviews the changing nature of these in Syria. Based on a case study approach, the research focuses on the cities in Syria most affected by modernization, westernization and globalization (coastal tourist Lattakia). The research investigates the contextual nature of cultural issues in relation to built environment, drawing on qualitative research methods at both a macro and micro level - e.g. different techniques were used- considering the holistic yet individual implications of the subject. Empirical investigations were conducted with appropriate samples of representative households in two formal ‘generically designed’ housing areas - i.e. those not designed for a specific client and not self-designed/built, but designed by either government or private sector architects for a general population. The first housing area was developed by the state with subsidised housing (Youth Housing) which represents a lower middle class group. The second area was the university area (Tishreen university area) which represents a middle class group with houses designed speculatively by the private sector. In these two areas, 39 households were interviewed using face-to-face questionnaires, photographic documentation, documented licensed housing design plans, and direct observation. Semi-structured interviews with actors involved in generic housing design (i.e. academic architects, professional architects and developers) were also conducted. Two key housing use/design issues were chosen to be investigated as key cultural aspects of housing and also highly changeable in the Syrian context: concepts and practices of privacy in the home (i.e. family privacy, intra-family privacy, and woman privacy) and trends in food preparation and consumption. Although still in the analysis stage, the

study is providing as yet unavailable detailed social and cultural information on actual house use and residents' aspirations on a number of implications arising from these factors. The output of this research is to recommend design approaches more attuned to current cultural change through a deeper understanding of inhabitants' current social needs e.g through guidelines for bigger kitchens with dining space, which reflects the change in food preparation and consumption, increasing the number of bedrooms to provide more intra-family privacy, and providing study/work space in the dwellings

O21.3 THE INFLUENCE OF CULTURAL BACKGROUND ON WAYFINDING CUES IN UNFAMILIAR BUILDINGS

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Previous studies comparing European Americans and East Asians indicate that European Americans are better at recognizing and remembering focal objects in scenes, whereas East Asians are more likely to perceive and remember contextual or background information (Masuda & Nisbett, 2006; Nisbett & Masuda, 2003; Nisbett, 2003). These cultural differences have only been explored however with experimental stimuli in cognitive science paradigms. Wayfinding difficulties occur in many settings, including buildings, which contribute to anxiety, negative impressions of the organization, and time inefficiencies (Arthur & Passini, 1992). Many studies indicate that wayfinding signage is not sufficient. Moreover, architectural features of building such as floorplan complexity, visual access, and distinctiveness appear to be more critical for successful orientation in buildings (Carpman, Grant, & Simmons, 1985; Arthur & Passini, 1992; Carlson, et al, 2010).

This study integrates these two literatures, conducting an experiment based on focal and background wayfinding cues in building interiors among American and Korean college students. We hypothesize that there is difference between the two culture groups in recognizing and utilizing background cues when finding their destinations in unfamiliar built environments. To perform the same experiment in the two countries, this study utilizes virtual environments; which enables control over other spatial features based on previous studies' findings as well as to eliminate signage. The virtual environments depict the interior spaces of two hotels, one of the building types with a large number of unfamiliar users. Each environment contains five decision points that have either focal cues only, background cues only, or no-cue conditions.

This study will use college students in Cornell University in USA and Hongik University in Korea for the experiment. Participants will be informed that this study is to examine wayfinding behaviours; however, they will not be told about cultural background variable. The experiment will be performed in a small office that facilitates a PC. After getting familiar with navigation interface of a virtual environment, the participant will take a guided tour of a novel environment. Then, using cross-over design, a destination will be given that requires navigation through a different route from the guided tour. The primary dependent variables are the number of errors and time spent at each decision point. We will also incorporate a measure of collectivism-individualism and administer a standard cognitive index (change blindness) used in prior research on cultural differences in perception. The results of this study will not only contribute to cognitive science research and spatial cognition theory but could also be applicable in architectural practice, particularly as globalization increases multinational use of many building sites such as hotels, offices, and transportation facilities.

O21.4 THE ROLE OF THE MUSEUM IN THE EDUCATION OF YOUNG ADULTS: FROM THE ARCHITECTURAL CONTEXT TO THE VISIT EXPERIENCE

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The present research studies the attitudes and behaviour towards museum visits among undergraduate students. University students can be considered a potential public for museum where they can get an informal education. Nevertheless, various recent estimates suggest that young people do not visit museums very frequently. In order to promote museum visits among young adults, it might be important to better understand the impact of the interplays between the social and the architectural features of these places. Very often, the museum architecture itself is considered a work of art that deserves credit.

Several studies, even of an interdisciplinary kind, focused on the interaction between the qualities of museum design (from the architecture to the educational-expositional strategies) and visitors characteristics (Bitgood, 2002).

Two previous studies conducted in Italy (Mastandrea, Bartoli & Bove, 2007; 2009), investigating the experience of the museum visit in different art museums, varying for the art styles of the collections hosted (ancient vs. modern/contemporary art), showed that visitors appreciate very much the artwork collections hosted in the museums (either ancient or modern) but museums characterized by a courtyard and a garden in which natural elements (light, plants, water, etc.) were present together with built objects (works of art, sculptures) were much more appreciated. The study presented here will continue along the same research line. A total of about 500 undergraduate students of the University of Roma Tre took part to a questionnaire survey.

With regards to the question about the frequency of museums or gallery visits during the last 12 months, results showed that about 30% of the sample did not visit any museum. The explanations for not visiting museums was ascribed to lack of time, or interest; little information about exhibitions; the cost of the tickets. However, the majority of participants stated the importance of museum visits and indicated a potential interest for this specific experience.

In particular, aspects such as the pleasantness of the museum environmental context (the presence of natural elements) may contribute to facilitate a positive approach to museums and consequently the possibility of increasing the number of visits.

A further development of the present research programme is also currently in progress, and will aim at extending these preliminary results in a more systematic way, through a larger study focused on the museum visit experience among young adults, across several European and extra European countries.

Taken together, our preliminary results seem to show that the physical layout of the museum could be an important feature that we should take into account in order to enhance the attractive power of museums, especially in relation to those particular target groups that might be, apparently, more reluctant to be systematically involved in museums and art exhibition experiences.

O21.5 THE IMPACT OF MODERN ENVIRONMENTS ON TRADITIONAL CULTURAL PATTERNS: THE CASE OF PRIVACY IN MODERN APARTMENTS IN TEHRAN

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The study of environment – behaviour theories indicate a two way relationship between people's behaviour and the built environment. This relationship, with regards to privacy, takes different forms among people from diverse social and cultural backgrounds, in the context of modern Iranian housing. This paper investigates the significance of traditional cultural patterns in the design of modern apartments. Application of a mixed-method case study research in a multi-story apartment complex in Tehran indicates that while lack of privacy is unsatisfactory for a group of people, another group demands the more fashionable, open interior plans. Both groups, however, maintain its privacy by either permanent alterations or temporary remedies or change in behavioural patterns. The extent of this two way relationship is dependent to the people's behavioural patterns in the use of space and its relationship with cultural values and attitudes.

For centuries, house form, living patterns, and building techniques stayed unchanged in many parts of Iran. By entering the 20th century Iran, like many other countries, involved with radical political, economic, and social changes. The urbanization and modernization process of the country, left profound influence on built environment generally, and house form particularly. Building form changed the shape from one- or two-storey, inward looking, courtyard buildings to higher, extroverted buildings, to high-rise apartments.

The change was not limited to the exterior, but the interior plan of the house was also transformed from a closed, hierarchical arrangement to an open plan space. Distinguished patterns of privacy - a cultural institution within Iranian-Islamic cultural context, which concerns two core elements of women and family started to be faded first in Tehran and later larger urban areas as many western patterns of life and architectural plans spread out.

Many social changes also helped the transformation. Increasingly participation of women in social activities blurred the sharp boundaries of this section of society from male section. The process of modernization, which easily became the dominant culture of intellectuals and upper class of the society, transferred to the middle class too. The urbanization process and rural-urban migration, rapid population growth, and demand for housing was simultaneous with development of modern architecture and construction methods. Hence, construction of high rise buildings and apartment blocks as mass housing became the country's housing policy. The boundaries within the house removed one after another and the pattern pulled into the houses of all sections of society. The contemporary Tehran is a composition of both the recent forms of modern apartments and people from all backgrounds adapted to modern patterns and plans.

O22. HOUSING AND COMMUNITY

O22.1 UNDERSTANDING ENVIRONMENTAL ATTITUDES IN ECOLOGICALLY INTENTIONAL AND CONTEMPORARY HOUSING IN SOUTH EAST QUEENSLAND, AUSTRALIA

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Sustainable development defined by the Brundtland report of the World Commission on Environment and Development not only gave emphasis to the environmental sustainability but also recognized its relationship with human well-being. Sustainable development considers a balance between social, cultural, environmental and economic aspects to achieve environmental and human well-being. It is argued that sustainable development requires a balance between resource efficiency and behavioural adaptation, and focusing on any one would not ensure environmental and human well-being. Thus, principles of sustainability necessitate living within the environmental limits by achieving both technological and behavioural sustainability.

Resource efficiency in terms of technological sustainability means achieving functional efficiency by employing environment friendly strategies such as, reducing resource consumption and using energy efficient products. Behavioural sustainability, on the other hand, is about being sustainable by adopting positive environmental attitudes which encourages taking individual responsibility to tackle environmental problems. It is generally believed that if people have pro-environmental attitudes, they will think about nature protection, would use less resource and hence, would live more sustainably.

Quantitative research methods are generally used to evaluate technological aspects of sustainability. However, understanding behavioural aspect of sustainability is not as straightforward, since it depends upon personal characteristics and is subjective in nature. Behavioural intentions of sustainability can be deducted by using environmental attitude approach. Environmental attitudes are widely used to measure environmental concerns.

This paper aims to understand behavioural sustainability through environmental attitudes of residents living in an ecologically intentional housing. Ecologically intentional communities, such as ecovillages aim to achieve both technical and behavioural sustainability, without sacrificing quality of life. They are designed to achieve individuals' well-being in addition to the environmental well-being. Ecovillages are examples of small communities that try to maximise people-environment congruity by developing inter-dependent relationships with the surrounding environment. In the process, the design and community management framework makes certain assumptions about environmental behaviour of the residents. For example, people with pro-environmental attitudes would try to practice low energy lifestyles, engage in waste recycling, water and energy conservation behaviour, and take leadership role in community activities. If the residents do not possess such behaviour, it is unlikely that sustainable outcome and human well-being can be achieved. Thus, it is important to understand the environmental attitudes of people living in ecologically intentional housing.

Since environmental attitudes are subjective in nature, this study compares people's environmental attitudes in two different housing types by comparing the attitudes of people in ecologically intentional housing and in conventional housing – a control group from a nearby

suburb. This paper employs two dimensional value based orientation – Preservation and Utilization, to measure environmental attitudes. Preservation expresses the general belief in prioritising preservation of nature. Utilization expresses the general belief that it is right, appropriate and necessary for nature and all natural phenomena and species to be used and altered for human objectives.

In early 2011, a questionnaire survey was conducted to a group of people living in an ecologically intentional housing (the Ecovillage) and a contemporary housing (the Observatory) near Gold Coast in south east Queensland, Australia. This study confirmed that majority of the Ecovillage residents had high Preservation attitudes and low Utilization attitudes which aligned with the ethos of the Ecovillage. On the other hand, people living in the conventional housing provided mixed feedback, but majority of them had high Utilization attitudes and low Preservation attitudes.

O22.2 EXTENDING 'HOME': STRATEGIES FOR A SUSTAINABLE REGENERATION OF PUBLIC HOUSING

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The development of affordable urban housing, historically, has been linked to the process of industrialization and the contextual urbanization of the labour masses (Arku & Harris, 2005; Morgan, 2005). The transformations produced by the shift from the industrial to the post-industrial era involved profound changes in the city, and the stock of public housing built during the industrial era is now often obsolete, showing its limits not only in terms of construction, materials and technology, but also at the urban, social and economic levels (Kennett, 1994). The problem of regenerating or re-building important stock of social housing, which have became increasingly obsolescent and unpopular, requires specific responses from policy-makers and social housing landlords (Hall & Hickman, 2005), and can play a major role in the urban transformation to adapt to a post-industrial and sustainable era (Smith 2006).

Numerous factors indicate good practices for contributing to sustainable housing regeneration (Winston and Pareja Eastaway, 2008), however their synthesis in a project process appears extremely complex.

The integration in the urban context, or, more often, the lack of integration of the architectural and urban form, is the factor that probably contributes most heavily to the stigmatization of the social housing areas (Blanc, 1993). The ghetto-effect due to the concentration of low-income households is among the most frequently recognised urban character of public housing areas (Priemus and Dieleman, 2002).

This study analyses the sustainability of different responses to the problem of obsolete public housing, particularly focusing the perceived values and meanings of home, (a) as abode/house, (b) as living environment (immediate surrounds and neighborhood) and (c) as where I come from (home town, etc).

Looking at three case studies in Italy, Belgium, and France, it discusses competing strategies for approaching the regeneration processes, studying the impact of political, spatial (urban and architectural), social, psychological, economic factors on the social and cultural values of 'home'.

The case studies show that sustainable regeneration projects of obsolete public housing encompass multiple levels of complexity, and therefore the criteria for the decision making are numerous and can be contradictory.

The social identification and the socio-cultural values take particular account of the role of the place in generating references of identity (i.e. we belong to that settlement); extending the meaning of 'home' and challenging the boundaries between private and public action; and the embodiment of the memory of the place. The successfulness of the regeneration project in addressing these factors, and in enhancing and extending the meaning of 'home' and a shared perception and sense of responsibility and ownership between residents appears to be a key factor for a regeneration sustainable and successful at various levels.

O22.3 THE IMPORTANCE OF HUMAN BEHAVIOUR IN THE SUCCESS OF SUSTAINABLE COMMUNITIES – A REVIEW

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The transition towards sustainable communities is one of the key challenges facing today's society, and bridges a broad spectrum of subjects and disciplines which includes economics, environmental impact study and a wide range of engineering disciplines. However, a technological shift in itself, while still crucial, does not guarantee the success of sustainable communities, and it is the complex and often uncertain issue of human behaviour that often has the definitive say when it comes to the ultimate success of any sustainable community project. The aforementioned transition involves a behavioural shift, whereby the 'performance' of the user can have just as great an impact on the success of a sustainable community as the performance of the buildings and systems which comprise it. Higher levels of user involvement require a greater level of interaction between the sustainable built environment and its users.

This paper intends to highlight the importance of human behaviour in the long term success of sustainable communities by first providing an overview of the human behaviours and attitudes towards sustainable communities. These factors are examined in a number of real world contexts from across Europe in order to highlight their potential impact on the success of sustainable communities. This is followed by a review of the various measures and practices which could be deployed to ease the transition towards sustainable communities by facilitating positive interaction between the sustainable built environment and its users. These range from matters of policy and public opinion to financial and technical measures, and will also be examined in context, thus allowing their successes and limitations to be identified.

The findings of the study support the view that the interaction between a sustainable community and its occupants must reflect the sustainable principles that form the basis of its design in order for it to be deemed truly successful. The results also demonstrate the merits of community education and interaction when it comes to making the transition towards truly sustainable communities.

O22.4 EFFECTS OF SIZE, SPATIAL CONFIGURATION AND LOCATION OF SOCIAL HOUSING SCHEMES ON SOCIAL INTERACTION

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The article deals with social housing implemented by the BNH (National Housing Bank) in Brazil in order to subsidize future social housing production by government agencies. It aims at understanding how the layout of housing schemes related to size, spatial configuration and location, can affect social interaction among dwellers as well as interaction between the housing scheme and its urban context.

Methodological procedures included archives information, physical measurements, observation of behaviour, mental maps with interviews and questionnaires. Following the perceptive approach adopted, user satisfaction and environmental behaviour are employed as indicators of environmental performance and social interaction. The layout characteristics studied are related and influence the type and intensity of social interaction between residents and its urban context. Furthermore, it is verified if the integration of scheme in the urban context, due to its configuration, helps residents integrate into the district/ city and feel recognized as belonging to the city, as well as increase satisfaction with their place of residence. It is intended to provide theoretical subsidies that might contribute to implementation of housing schemes that will encourage social interaction among dwellers and between the housing scheme and its surroundings, based on the premise that it is an essential quality of cities to fulfill the role of place of meeting and social exchange, promoting contact between people. That is, urban structures might stimulate the occurrence of interaction among citizens as a consequence of density, level of permeability between public and private spaces, urban diversity and urban vitality.

O22.5 HOUSING EXPERIENCES AS INDICATIONS FOR LIVABILITY: A CASE FROM SEREMBAN MUNICIPALITY AREA, MALAYSIA

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Housing experiences describe the livability of a place in a manner that synthesizes economic and social considerations that make up the decision of purchasing a housing and settling down in a place. The perceived values of house and place can change either positively or negatively once the individuals experience living in a neighbourhood. This paper discusses such an experience in a rapidly urbanising context of Malaysia. It highlights the findings of a research at the local municipality level, using the Seremban Municipality area as a case in point. The study links place perception during the time the individuals in the neighbourhoods made the decision to purchase or rent with the post-occupancy perception of the housing areas after a certain period of stay. While the first perception was based on post experiences of others, the perception was later modified by personal experiences. Both types of experiences contribute to the perceived livability of the place and the subsequent decision of continuing to live in the area or move elsewhere. This approach differs from the classical view of housing that relegates housing to just another service for basic economic activities. The view infers that the spatial pattern of housing growth is largely due to the location of economic activities. While this was the case of urban growth that was highly dependent on spatial proximity, current development trends, especially that of transportation technologies and

a post-fordist de-clustering of economic activities, have extended the potential interaction distance between land uses, and resulted in a different basis for housing expansion patterns. Housing projects are currently built spatially farther from economic hubs and draw the dwellers from all over the place, even outside the region. Housing construction projects at times even precede basic economic activities for the area. While there are many land economics variables that potentially contribute to the location of these housing projects the paper argues that the pattern of housing proliferation is also due to earlier local settlements that serve as seeds for the growth of the housing sector. Using in-depth interviews and a questionnaire survey of residents in several housing areas, the study analysed the perceptions and decisions made based on several parameters. Considerations that structure the study include a need to understand how people at the neighbourhood level perceive their surrounding environment and the problems that work against the neighbourhood to become livable. The paper also looks into the steps that should be taken to deal with the problems and the spaces of hope that resulted from both expectation and experienced reality. The implications for housing education and planning also will be discussed in an attempt to link housing experiences with sustainability.

O23. Office environments - performance, design and behaviour

O23.1 The influence of building energy performance standards on user satisfaction in office buildings in Germany

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With approx. 40% of the German primary energy consumption, buildings are of special interest in the context of sustainability. As an important work environment office buildings are a worthwhile challenge for designing buildings with low energy consumption. The research initiative EnOB (funded by the German Federal Ministry of Economics and Technology, BMWi) targets the monitoring of new technology concepts and materials, which address energy relevant environmental parameters such as heating, cooling, indoor air quality or daylight. In parallel, excellent workplace conditions with high comfort are expected. So far little is known about the perspective of the occupants in energy-optimised buildings. The question at hand in the presented project is to which extent the occupants accept their ambient environmental conditions in comparison to occupants in conventional buildings.

The sample consists of 23 energy-optimised buildings and 15 conventional buildings. Surveys have been carried out in winter (N=1,969) and summer (N=1,814) from 2004 to 2011 based on a questionnaire.

Occupants were asked to rate their degree of satisfaction with comfort parameters and control options on a five-point-scale from 1 to 5 (very dissatisfied – dissatisfied – neither/nor – satisfied – very satisfied). In order to assess effects of the building context on occupants' voting Multilevel Modelling has been applied. The benefit of this method is that individual and contextual characteristics (e.g. energy standard) can be considered simultaneously and ecological fallacy can be avoided. Occupants in the buildings are understood as units of the individual level (level 1), buildings are in the context level (level 2). As the dependent variable the overall rating of the workplace was chosen. The independent individual variables include ratings for temperature,

control of temperature, indoor air quality, daylight and acoustics. On the context level the energy standard was chosen.

Analyses revealed that all individual variables as well as the context variable had significant influence on the overall rating. In contrast to the expected high comfort, for most of the energy relevant comfort parameters the occupants' votes in energy-optimised buildings showed lower scores than users votes in conventional buildings. Daylight concepts seemed to enhance visual comfort in energy-optimised buildings, but indoor air quality, temperature, influence on temperature and acoustics turned out to be crucial issues for optimisation.

The gap between the predicted high comfort in energy optimised buildings and the occupants' feedback can probably be attributed to a complex bundle of aspects such as designing, construction, maintenance and user expectations. Additionally, occupant behaviour might not fit with the energy concept.

O23.2 HEALTHY WORK ENVIRONMENTS: PSYCHOSOCIAL EVALUATION IN ORGANIZATIONAL ENVIRONMENTS

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The term Healthy Organizations, in relation to Healthy Work Environments, was developed for the first time by Rosen and Berger in 1991 and included in "The Healthy Company: Eight Strategies to Develop People, Productivity and Profits". Using this concept they tried to identify organizations that share a group of common values in order to identify a set of environmental and organizational common practices (Pulido et al., 2009). Gimeno *et* al (2008) propose ten theoretical dimensions as a group of the most important components to help us identify a Healthy Organization: Self-confidence and tranquility to continue in the position, Training, Participation in the job organization, Equality and no discrimination, Health and safety conditions, Competitive strength, Recognition/Appreciation and reward, Autonomy and responsibility, Identity and loyalty, and Involvement and motivation.

The aim of this study is to analyse the conceptualization of a healthy organizational environment through the workers' perceptions in order to contribute to the improvement of the screening methods of determining dimensions of organizational health status perceived by the Personnel of Administration and Services (PAS) occupying jobs in the areas of Reception, Library, Student Bureau, Dean Bureau and other administrative offices and campus services in A Coruña, at the campus of Oza, Elviña and Zapateira of the University of A Coruña (Spain). The sample was attempted with a total number of 232 workers. Of these 232 subjects, valid data was collected from 86 subjects (n = 86).

A descriptive analysis of the sample and a factor analysis, multidimensional scaling analysis and cluster analysis were conducted with all collected data. Analyses performed with the data showed three main factors or dimensions that characterize the university as an organization that are Healthy and Equality, Stability, Recognition and Working environment, Involvement, Excellence in management and Occupational safety and health policies and Participation and Quality of resources. It also verifies the existence of two dimensions in relation to social perceptions of collective PAS of the university as healthy organization, one organizational dimension, which

includes aspects related to the organization environment, and a personal dimension, which includes aspects related to the worker.

These results may imply a guide for future research on the study and evaluation of the presence and intensity of psychosocial risks in organizational environments as well as a more effective and efficient development policy of human resource management to promote adaptation between the employee and the organization in a healthy environment.

O23.3 Analysis of natural lighting with regard to design of sustainable office buildings in Poland

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A new model of sustainable development is based on reducing energy demand and on improving performance and process. The energy efficiency can be achieved through proper natural lighting design strategies, like optimal building form, skin, and orientation for daylight. By using daylight to illuminate the interior of a building, the need for electrical lighting can be reduced and internal heat gains can be minimized. Moreover, buildings that are properly designed to take advantage of natural light provide healthy indoor environments, that are linked to gains in productivity, decreased absenteeism, improved employee morale and increased occupant satisfaction. Daylit office buildings can improve the overall well-being of their occupants.

Nowadays the architect begins to have the biggest influence on decisions which shape the indoor environment and conditions perceived by building occupants, and building's energy efficiency. The process of creating sustainable office buildings starts at the beginning of a building life cycle, at stages of planning, architectural programming and conceptual design. The early stages of architectural design involve the design decisions that are crucial for achieving high performance of the designed buildings. Moreover, the right decisions about the massing of energy-efficient buildings are unachievable without advanced computer simulations. However, daylight and other energy tools are under-utilized in the majority of architectural offices.

This paper investigates the potential of integration of natural lighting design strategies into the early stages of architectural design process, to improve the energy efficiency of office buildings in Poland and the well-being of their users. A review on new and innovative technologies for utilizing daylight in office buildings is presented. This article also demonstrates results of the analysis of various ways to redirect sunlight or skylight to areas where it is required. This analysis has been made with the assistance of Autodesk Ecotect performance analysis tool. Models of selected architectural solutions, for example massing, have been simulated for a parametric analysis. Influence of these decisions on the building’s performance has been calculated and visualised. A brief survey on how natural lighting systems have been integrated in the latest office buildings is provided. This article also describes possible methodologies for approaching the design of sustainable high performance office buildings in the moderate zones, providing continental climate with temperatures in winter to -15°C and in summer to 32°C.

O23.4 The effects of chronobiologically driven dynamic lighting on office workers' wellbeing, sleep quality and physiology

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The current study aims to investigate the effects of dynamic lighting on humans' well-being, sleep quality and physiology in an office setting compared to standard static lighting. The variation of the dynamic lighting is based on humans' circadian rhythms, in this case we chose the wake-rest cycle (Zulley, 1995). Previous research has shown that high illumination levels as well as high colour temperatures increase subjects' alertness and activity. Also higher concentration and motivation levels could be found when lighting with high illumination levels and high colour temperatures were applied (van Bommel, 2006). Vigilance and alertness of people should though not be increased while ignoring the time of day and the natural rhythm, since this could create several disorders (Boyce, 2006). A review by Begemann et al. (1997) on dynamic lighting claims that people prefer to follow a daylight cycle instead of constant levels of light and that individual lighting levels correspond to individual circadian rhythms. He concludes that meeting biological lighting goes far beyond solely meeting visual needs.

This quas-experimental cross-over study employs one independent variable which is split into an endogenous condition (the illumination level supports the wake/rest cycle by becoming lower during rest periods and getting higher during wake periods) and an inverse condition which contradicts the circadian wake/rest cycle. Both conditions will be compared to a two-week baseline/standard static condition. Thirty-five persons of three different open plan offices are included in the study. To control for seasonal effects, two offices (n=20) will start with the endogenous condition and one office (n=15) will start with the inverse condition. Both lighting conditions will last for three weeks with a two-week washout period in between. Each week (will always be the same day of week) during baseline, the two test conditions and the washout period, following variables will be collected to determine the effects on wellbeing, sleep quality and physiology.

Wellbeing:

- Multidimensional Mood Questionnaire (Steyer et al. 1997)
- Medical condition List (Zerssen, 1976)
- Recovery-Stress Questionnaire
- Sleep Quality:
- The Pittsburgh Sleep Quality Index (Buyesse et al.,1989) Physiology:
- 24hours-hear rate and heart rate variability recordings
- Saliva cortisol measurements
- Melatonin measurements

Additionally, semantic differentials and satisfaction with the office environment are determined. As control variables weather conditions, electric smog and acoustics are assessed.

For statistical calculations a two-factorial ANOVA for repeated measurements will be performed.

We expect that the endogenous lighting conditions will increase wellbeing, sleep quality and benefit physiology in contrast to the inverse condition. Data collection has just started and will last till the end of February.

O23.5 THE INFLUENCE OF PERSPECTIVE-TAKING ON PREFERENCE FOR AND EMOTIONAL RESPONSES TO OFFICE ENVIRONMENTS

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Perspective-taking is a theoretical framework that has been used to understand how the perception of different phenomena is shaped according to the point of view from which it is evaluated. Theoretically, perspective-taking encompasses both the cognitions and emotions that take place during situations where one person attempts to take the perspective of another. This has been largely used to study issues of social cooperation (e.g. Batson, Early and Salvarani, 1997; Galinsky et al., 2005) and, more recently, other areas such as pro-environmental behaviours (Berenguer, 2007).

This study explored the effects that mood and perspective-taking have on the emotional reactions (pleasure, arousal and dominance and freely generated emotion words) and preference for office environments, and whether it is possible to predict preference from the emotional reactions people have to the offices. This study simulates the particular instance of presentation of final design by professionals to non-trained audiences, within an architecture and built environment context.

By manipulating the perspectives that participants took during the evaluation of stimuli this study replicated the common place stated preference experimental situation (i.e. a self perspective people take) but also explored the particular case that professionals in the field of architecture and built environment disciplines do when they design: taking the perspective of a general other (i.e. a detached perspective) or taking the perspective of the client (i.e. the perspective of other).

The results of the study found that taking a perspective is a mixture of drawing on self experiences and considering what others may say about it, the extent to which self and other references are used depends on the perspective taken, but it was clear that other and detached perspectives did lead to a reduction of self-knowledge references but also that these perspectives were significantly more difficult to take than a self perspective.

Overall, the perspective-taking results revealed that there was an inter-personal perception bias as participants in the self condition gave lower pleasure, dominance and preference scores to the environments than those in the detached and other conditions, in colloquial words: it is "only 'OK' for me but it should be 'good' for you". Results are discussed in light of existing knowledge and some recommendations are made for future research and practitioners in architecture and built environment disciplines.

O24. SMALL SCALE ENVIRONMENTAL DESIGN

O24.1 DWELLINGS DESIGNED TO REDUCE IN-USE CARBON EMISSIONS: TEMPERATURE, HUMIDITY AND PERCEIVED COMFORT

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It is internationally accepted that the human race is affecting climate change due to its carbon intensive infrastructure and institutions. In many developed nations one third of carbon emissions are created by domestic energy. In response, many building assessment tools have been developed to reduce carbon emissions in construction and use. The UK aims to reduce carbon emissions by 80% by 2050 relative to a 1990 baseline. With this aim, the UK has implemented the Code for Sustainable Homes (CSH) as a national standard, mandatory for all new social housing. CSH assess the sustainability of a home across nine categories: water, energy, minerals, surface run-off, waste, pollution, health and well-being and, management and ecology. There are six levels of achievement. Code 3 requires 10% reduction in carbon emissions compared to 2006 building regulations and code 6 aims to achieve zero carbon in-use.

This paper discusses the role of new housing in reducing carbon emissions. Studies outline that even if occupants live in identical homes, some households use up-to-three times as much energy as their neighbours. Inhabitant perceptions and behaviours will therefore largely determine the energy efficiency of a home. This study investigates how domestic energy consumption is related to inhabitant perceptions and consumption behaviours, focusing on heating and ventilation by investigating inhabitants': perceptions of climate change; perceptions of their consumption behaviours; actual consumption behaviours; and, perceived comfort related to actual temperature and humidity. Where relevant, the impact of fuel poverty will be considered.

Two social housing schemes (accessed through Oaklee Housing Association) were selected to offer insight into differing approaches to achieving Code 4 of CSH: natural materials and timber frame construction (6 homes); and, masonry construction (12 homes). Oil/gas and electricity monthly meter readings will be taken during the winter period from August 2011 to March 2012 (18 homes). In-depth data collection will consist of the following (10 homes): household qualitative interviews, including inhabitant perceptions; temperature and humidity in each room during one week (January to March 2012) alongside a household diary of perceived comfort and use of heating and ventilation systems.

Results will be outlined and are expected to identify: variation in energy consumption; drivers and barriers to reducing household energy consumption; impact of household perceptions on consumption behaviours; and, variation in temperature and humidity required for comfort. This methodology will be repeated in summer (April to August 2012). Conclusions will consider if such dwellings both reduce domestic energy consumption and meet comfort and economic need. Findings will be disseminated to policy makers and designers to advise a way forward to reducing domestic carbon emissions grounded in the perceptions and behaviours of the inhabitant.

O24.2 THE DESIGN OF DEMENTIA NURSING AND RESIDENTIAL CARE HOME ENVIRONMENTS: BEST PRACTICE FROM BELFAST, NORTHERN IRELAND

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This paper presents the findings of a study on the design of dementia nursing and residential care homes in Northern Ireland which aimed to establish the extent to which these facilities perceived themselves to be dementia-friendly according to the design guidelines published in the Design for Dementia Audit Tool of the Dementia Services Development Centre (DSDC).

There are about 750,000 people in the UK living with dementia, whose care costs the UK economy around £20 billion. Long term institutional care and informal/unpaid make up the majority of this cost. Given the demographic implications of ageing the expected increase in the prevalence of dementia, provision of care environments which meet their needs become critical. As a result of the impairments caused by dementia, people with dementia need an environment which supports them to optimise their abilities.

Depending on the needs of the person with dementia, some people require access to nursing home or residential care home. Most guidance on the current Disability Discrimination Act does not include the impairments of dementia.

Poor design which is not sensitized to the needs of people with dementia, places the person with dementia at more risk of environment-induced problems - many will present as being more disabled than they truly are as a result. Way-finding, agitation, anxiety, higher rates of incontinence, more incidents of aggression and frustration, and being at higher risk of falls are just some of the consequences of poor design. The person with dementia is often pre-disposed to these symptoms and consequences, but the risks become compounded, perpetuated and exacerbated within a poorly designed space. Therefore consideration and prioritization to design for the person with dementia as the critical 'end-user' in any facility becomes compelling.

This study used postal questionnaires addressed to facility managers in order to collect information on the design of nursing and residential care homes. The DSDC Audit Tool was used to design the questionnaire. This tool was developed by a multi-professional team of architects, a lighting engineer, academics, and clinical and social care professionals such as, nursing, social work and occupational therapy.

This paper concludes that the majority of homes perceive themselves to meet over 50 percent of the essential criteria, with just over five percent below the 50 percent mark. Four homes out of 54 perceive themselves to meet all essential criteria. Managers agree that the design of the physical environment is important and can positively support people with dementia and their carers.

The paper established a self-assessed level of compliance with current design recommendations for dementia care facilities, and identified which aspects need more attention. Moreover, the paper highlights the need for more care in the design of such facilities, and the importance of practical advice to those designing and managing these environments.

O24.3 RESEARCH ON THE SOCIAL SPACE IN THE REHABILITATION HOSPITAL FOR CHILDREN IN RADZISZÓW, POLAND

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Hospitals cease to be treated like a “healing machine” by patients and the medical staff. Treatment facilities should be balanced between strict medicine treatment and the healing space, which has a positive influence on the patient’s mind and body. Attention focusing so far on the medical diagnosis needs to be expanded to encompass sociological, psychological, aesthetical factors. These aspects have not been studied, so it is necessary to initiate new research, draw new conclusions and implement them into the design process.

The paper presents the research results on the social space in hospitals, obtained in the rehabilitation hospital for children in Radziszów, Poland. The social space in the present research was defined as a readily available place for patients, their parents or guardians and staff in the time when no treatment procedures are taking place.

The hospital under study carries a comprehensive rehabilitation for children and teenagers suffering from orthopedic, neurological rheumatic disorders and osteoporosis. The specificity of the treatment influences the obtained information.

Third year students from the Faculty of Architecture at the Silesian University of Technology in Gliwice took part in the project. The main aim of the research was to obtain information about spatial preferences and demonstrate the shortcomings of the social space facilities. The data obtained can be useful in showing new directions in designing social space at health care facilities. The following research methods have been used:

- workshop with children 1 – 12 years;

- workshop with teenagers under 18 years;

- interviews with patients ‘parents and teachers;

- surveys with doctors, nurses and medical staff.

During research interviews several research tools appropriate for each target group have been used:

- art classes;

- drawing classes;

- projects;

- surveys;

- interviews;

- notes;

- photographic analysis etc.

The study showed children's likes, needs and dreams. The awareness of these can help to cure patients faster than without it.

The study indicated that there is no leisure rooms for fun, science or recreation.

The author also indicates free spaces and room possible to be arranged or rearranged for these purposes.

The undertaken analysis has shown that social spaces are required. Studies showed how the variety of social spaces could satisfy users' needs and indicated the time when the patients could use it.

The results have been summarized, interpreted and translated to the "architectural language", which makes the presented project a source of valuable information helpful in the designing process.

O24.4 How can architecture contribute to the re-socialization process of the forensic psychiatric patients?

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Introduction (motivation)

Forensic psychiatric care is a Dutch care system for those who have committed a crime partly due to a mental disorder. A forensic psychiatric patient is a convict who has committed a severe crime resulting in a prison sentence of at least 4 years. During the trail or during the imprisonment the convict is found to have (a) severe mental disorder(s). This convict will be placed in forensic psychiatric care where he will be place under (obliged) psychological treatment. These, now called, patients live in forensic psychiatric care from 2 to 10 years. Some will never leave forensic psychiatric care institutions since the treatment does not result in enough safety for society.

The buildings for forensic psychiatric care fall within the requirements of as well prisons as psychiatric hospitals. There is a big contrast in these institutions since one should feel as punishment and the other as a treatment environment. Problem statement: How can the build environment contribute to the resocialization process of the forensic psychiatric patient? How can one design a treatment environment where the patient feels safe and at home with the security levels needed within an enclosed facility with the contrast of survivability and possibility for privacy?

Method

The study consists of three approaches; a theoretical study, four case studies and a design study.

The theoretical study is a result of interviews, literature studies and documentaries about forensic psychiatric care. The limited literature is found in documents from the Dutch Government, architectural literature of normal psychiatric care and psychology literature. Also in the literature on healing environments and environmental psychology. The main goal of this study was to find out

what forensic psychiatric care is, how it came to be and how people become forensic psychiatric patients. I have interviewed psychologists, facility managers of forensic care institutions, architects with experience in forensic psychiatric care institutions and had short talks with patients.

When analyzing the case studies the focus did lay on several keywords and how these where implemented in the design. The keywords where found in the theoretical research; natural environment, order and disorder, survivability, autonomy, safety layers to protect society and protection from that same society and fellow forensic psychiatric patients, the quality of the spaces [bronnen]. The focus of the research lays in architectural elements, which contribute to those elements. The cases are also being compared by their quality of the spaces by looking at the admittance of daylight, used materials and acoustics. The methods are observations of the environment and of behavior (of different users groups) and in mapping the environment.

The design study is testing the found results of the first two steps by translating this into a new forensic psychiatric institution. The design focuses on the entire process of resocialization and research the differences between different steps of this resocialization . It is an example on who to design for this specific target group. In the context of the research, the design is not only testing the results, but also a hypothesis for a right solution.

The next step would be to test the building on its actual effect on length, stay and quality of living and usability for all user groups. To conclude whether the hypothesis is correct and were we need improvements.

Results and Discussion

The result of the theoretical study was an overview on what forensic psychiatric care is, what kind of people live in this type of institution and what requirements the forensic care institutions should care about. This includes an overview on the researches done on this type of build within environmental psychology and specially in the field of healing environments.

The comparison of the several cases resulted in do’s and don’ts for forensic psychiatric institutions.

The design research is still in progress. At this point there are design guidelines and is a general idea on how to translate the specific needs to a building.

There is a discussion on whether the patients in forensic psychiatric are a being ‘punished’ enough within those institutions. One may say that the imprisonment is enough punishment and one should have an ideal treatment environment with extra attention to a good environment since they should feel at home in an enclosed environment. Another might say those patients live in better environments like many ‘normal’ people do and they do not deserve this. This will become a more in-depth discussion by starting from the variation of perceptions of the target groups of this institutions and the affordances the building should deliver taken the different users groups into account

O24.5 Hierarchy In Space Definition Of Interiors Within The Shopping Centers As Recreational Public Spaces, A Case Study From Ankara, Turkey

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Shopping centers are among the most influential contemporary structures and have recently emerged as recreation complexes due to recent social and cultural developments. Shopping centers can be considered as spaces in which concepts such as; interior and exterior, private and public, domestic and non-domestic, place and non-place could be discussed significantly. This study aims to question the effects of interior space definition, space compositions, space hierarchy and significance of space in food court areas on both shopping center users and also on the shopping center itself.

The main aim of this study is to analyse the effects of the spatial characteristics and interior arrangements in food courts which are significant places in shopping centers regarding spatial preferences and behaviour of its participants. Private and public space territory definitions through space determination and grading will be discussed. In the content of the study, theories and development process of the recreation concept will be discussed. The role and effects of emerging recreational public complexes and the supportive role of recreational activities in public complexes will be evaluated.

The development of shopping culture and shopping centers with respect to contemporary consumer culture will be identified. Concepts and collaborating aspects of interior space, space hierarchy, space definitions and their relationship with the users will be examined in food court areas of shopping centers. A case study will be conducted in three of the selected shopping centers in Ankara, Turkey. Aim of this case study is to analyse the spatial relations and organizations in recreational areas of a public space. The obtained results will be discussed and evaluated to provide a source of information regarding the design of spatial relations and interior space organizations in contemporary public recreation complexes.

O25. LARGE SCALE ENVIRONMENTAL DESIGN

O25.1 THE NEW GENERATION OF GATE COMMUNITIES IN BRAZIL: "NEW LAND" FOR LOWER MIDDLE SOCIAL CLASS

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Gated communities are a phenomenon that has been occurring in many countries in order to create unique and safe spaces through the spatial segregation and qualifications of the internal spaces of such communities.

In Brazil, the most widespread form of gated community initially it was the object of desire of the upper classes but it now has extended to lower social classes as well.

In the last 10 years there has been a significant increase in acquisitive power of Brazilian lower classes, this parcel of the population is comprised of a lower middle class and today it accounts for 94.9 million people, being perceived by both companies of urban development and purchasers.

It contributed in 2007 for a boom in the housing market in Brazil, just before the beginning of the grand recession that affected economies worldwide including Brazil. In order to counteract the impact of the crisis, the Brazilian government launched “My Home, My Life” aiming to build 1 million houses, facilitating access to credit.

In regard to this context, this work seeks the causes and consequences of the current changes of Brazilian housing market. The main focus is given to a new generation of gated community projects in Brazil, built to attend the lower middle social class. The main case studied is a gated community called “New Land”. In Pelotas, a city in southern Brazil, three “New Land” communities are being built, and each one is comprised of approximately 500-700 houses.

The architectural design of the proposed houses and/or flats and the urban design addressed to common areas are built in series. In other words, this new model of gate community is designed in the same way for different parts of Brazil without taking into account the cultural and physical characteristics of each region, multiplying like a virus, so to speak.

This paper identifies and analyses three factors of this new housing model and the change of urban structure, as well as its social and political implications: 1) the lack of commitment of the Federal and Local Authorities in Brazil, which allows this kind of development in suburban areas of cities; 2) the pursuit of higher profit and the lack of knowledge and interest in urban design principles of the private companies responsible for the design of these communities, and 3) the Brazilian issues concerning safety have high influence on people’s perception and choice for places to live, and the advertisement of these enterprises sells the idea of safe land detached from the frightening context of the city.

Thus, we are able to identify future problems: the segregation of the city, which comes from this process as well as problems of management and maintenance of these segregated spaces. The quality of life in this enclosed housing estate of lower classes depends much more on its relation with the public services such as schools and health centers and its urban insertion, than the higher class housing, which does not depend on these services primarily.

O25.2 SENSE OF PLACE IN SUBURBIA: IMAGE OF “HOMETOWN” OF JUNIOR HIGH SCHOOL STUDENTS IN A NEWTOWN AND EXISTING COMMUNITY

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Residential Newtowns are commonly referred to as settings lacking sense of place, socially homogenous, and isolated from the surrounding existing community. In contrary, we considered suburbia as a place and “hometown” in this study. The question posed was: is sense of place and attachment different between youth brought up in the Newtown and the existing rural community? If so, how are they different?

A city in the outskirts of Tokyo was chosen for the context of study. The area was mainly farming villages until a government-developed Newtown project, one of the largest in Japan, begun in the 1970s. 8th grade students of three junior high schools in the city were given a questionnaire on images of their “hometown”. One school district is in the Newtown, one school district is in the existing community, and one school district stretches over a Newtown neighborhood and rural

village. Students were asked to rate their attachment to “hometown” on a five-point scale and to name places they like, places they often go to, landmarks of the city, and local festivals they are familiar to. They were also asked to identify the area they feel attachment to, by marking the range they consider “hometown” on a map.

Attachment scores to their hometown were generally positive and there was no significant difference between Newtown and existing community students. Places they like to go to, and landmarks were similar in both groups. However, existing community students named natural landscapes more frequently than Newtown students. While existing community students often used place names (village names) in their responses, Newtown students did not use this kind of expression and pointed out single facilities and spots. Some existing community students also named the entire “Newtown” as a single landmark or place.

Approximately three fourths of existing community students marked their elementary school district or area bounded by a place name as their “hometown”. Less than half of Newtown students did so and tended to indicate more precise boundaries. There were some extreme cases of existing community students indicating areas excluding the Newtown, and Newtown students indicating only their apartment building, school, and shopping mall as “hometown”.

The results suggest that Newtown and existing community students may recognize places in different ways. Newtown students tend to structure their knowledge of places around individual experiences and spots, and by noticeable physical elements. Existing community students tended to identify places more comprehensively as a district. However, Newtown students in the school with existing community students had more knowledge of traditional festivals and natural landscapes than in the Newtown-only school, suggesting that knowledge and sense of places could be affected by students of a different background. Factors which form such differences in sense of place, physical and social, are to be investigated further.

O25.3 UNIVERSAL DESIGN AND URBAN DESIGN: VISUAL AND NON VISUAL ATTRIBUTES THAT INFLUENCE PEDESTRIAN´S PERCEPTION OF ACCESSIBILITY IN HISTORIC CITY CENTRES

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This study focuses on a theme that has been discussed by many researchers in the last few years – Universal Design. This concept refers to an urban design and planning process that aims to create and maintain places accessible to both people without and with disabilities. In this context, the aim of the study presented here is to identify the visual and not visual attributes of the built environment that may difficult and/or help pedestrian’s accessibilities in historic city centres where urban frame is already consolidated. The outcomes may help local authorities to design guidelines to promote effective universal design without damaging the character of historic places.

The case study methodology is applied in Brazil, in a historic city characterized by contemporary design interventions in the public space that do not help users’ accessibility and, at the same time, damage the city´s character. Pelotas is a city located in the south of Brazil, in the Federal State of Rio Grande do Sul; its urban scene is comprised of buildings with Portuguese, French and Spanish influence due to the immigrants that came from Europe. Questionnaires with different user groups are applied in situ with the objective of identify what interfere on users perception of

accessibility in the main streets of the city centre; interviews are also applied with city planners responsible for design interventions of those streets; and a focus group with a group of 12 users is also developed with the aim to collect qualitative data about the level of accessibility of the city centre as a whole, when considering the pedestrian experience. These data are analysed through qualitative methods and non parametric statistic tests.

The main outcomes indicate that just physical interventions in the built environment do not promote places perceived as accessible by users. The following non visual attributes have major influence on users' responses: senses of hearing, smell, and temperature. This study detaches a set of design guidelines that, based on the results, may help urban designers and planners at local authorities to develop planning policies to create places that become accessible to a broader range of people without make major interventions in physical aspects of historic cities. Many respondents and participants of the focus group indicated that streets with noise and bad smell are always avoided even when their design is focused on pedestrian easy walking. At the same time; they described situations that show a waste of public money, where several physical alterations in sidewalks were done without necessity because the main problems of accessibility of those places were related with temperature and smell. In this way, this study produces a series of design guidelines that can help the improvement of areas which are not perceived as pedestrian friendly due to aspects not linked directly with physical attributes of the built form.

O25.4 Analysis on Relationship between Attachment and Community Safety-The example of safety promotion of Komoro city in Japan

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Introduction

Komoro city is located in eastern part of Nagano Prefecture in Japan. At present this city has a population of approximately 44,000 and 16,000 households. The mayor of Komoro city, suggested a study about Safe Community activities in December of 2009 and Komoro city decided to apply to Safe Community in the March of 2010 which was then awarded certification in 2012. Safe Community activities were launched in the middle of 1970's in Sweden for injury prevention and have prevailed all over the world under the system of certification provided by the World Health Organization (WHO).

Purpose

The purposes of this study was to grasp how citizens of Komoro city evaluated their community at the point of security and safety, to grasp citizens' intentions for preparedness of security and safety depending on the degree of household, community based and municipality based, and to analyse the interrelation between their evaluation and their attachment to their home town, Kormoro city.

Method

Self-administered questionnaires were send by mail to the 4350 household with random sampling between February and March 2011, with the request that the completed questionnaire to be

returned by mail by the end of March. We received 2035 valid response and response rate was 49.1%. The contents of the questionnaire were personal and household data, evaluation on community and neighborhood environments, evaluation on traffic safety and crime safety, evaluation on attachment to their hometown, Recognition and interest of Safe Community activities, preparedness depending on the degree of household, community based and municipality based and so on.

Results

The largest age group of subjects was between 65 to 74 years old (27.6%, n=590). The second largest group was between 50 to 59 years old (22.6%, n=482). On the composition of the household, 43% (n=919) were two-generation household and 26.5% (n=566) were couples household. Overall, 74.1% (n=1583) of subjects continued to live in Komoto city over 20 years. To evaluate their attachment to their hometown, we asked about their intention to continue to live in Komoro City. We found that 60.4% (n=1289) of subjects answered that thye intended to continue to live in present domicile and 58.2% (n=1243) indicated that they intended to continue to live in Komoro city. The results of preparedness depending on the degree of household, community based and municipality based were that on the household level preparedness, 41.9% (n=895) of subjects chose “Promotion of traffic accidents”. 40.5% (n=864) chose “Injury and accident prevention in house”. As the community based preparedness, 56.5% (n=1207) of subjects answered “Promotion of traffic accident” and 54.4% (n=1162) chose Safety promotion for elderly people.On the municipality based preparedness as SC activities, 47.0% (n=1003) of subjects answered Safety promotion for elderly people as the most common reply.

O25.5 THE BARRIERS AND OPPORTUNITIES OF ADAPTING SUBURBS TO CLIMATE CHANGE

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Suburban neighbourhoods offer a challenge for climate change adaptation as the land and assets are largely privately owned. Therefore, it is difficult to engage and motivate agents of change, such as resident homeowners, to act in an effective manner to ensure that suburbs are suitable for a future changed climate. It is however important for actions in suburbs to be taken in a way which can achieve a beneficial cumulative effect, and avoid a negative impact on the area as a whole. This paper draws on research findings of the EPSRC funded SNACC project which aims to determine how suburbs can adapt to climate change. The research was undertaken in three separate cities, Oxford, Bristol and Stockport. In each city residents were gathered in workshops to view and comment on potential adaptation and mitigation options that could be applied in their suburb. The adaption options covered changes at the house, garden and neighbourhood scale and were customised to the local built typology and land morphology. The workshops sought to determine the respondents' perceptions of the effectiveness, feasibility and acceptability of the adaptation options and how their perception of climate change as a risk, and their exposure to previous climate related hazards (e.g. floods), had influenced their responses. The paper addresses a gap in knowledge on the barriers and opportunities to adapting for climate change, within the context of suburbs which have complex ownership status.

O26. BUILDING EVALUATION AND ASSESSMENT

O26.1 A USEABLE BUILDING IS A NAVIGABLE BUILDING

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This paper presents the argument that navigational ease has a greater impact on building usability compared to other factors, hence it subsumes other usability considerations. Patterns of human behaviour inside buildings can be held to consist of two types, static occupancy and dynamic movement and need to be readily accessible to both regular users as well as infrequent/first time visitors. Furthermore it is the circulation system of a building that facilitates a high proportion of informal, unprogrammed social interactions that contribute to the social life of a building.

This paper will highlight a number of design moves/considerations that appear to either aid or conversely hinder navigability through a series of case studies. The case studies described in this paper primarily include the Heinrich-Luebke-Haus in Guenne (a 1960/70s conference centre in NW Germany), the Kollegiengebaeude I (a picturesque, Jugendstil campus building of the University of Freiburg unsuccessfully fused to an adjacent 1970s addition, located in SW Germany) and The Seattle Public Library (by OMA with LMN Architects, 2004, located in Seattle USA). Through these case studies, the authors will illustrate how certain design guidelines (for example, the use of straighter, more direct routes (Conroy Dalton 2003); unimpeded lines of sight connecting key building spaces (such as entrances, atria, stairs, lifts and escalators) (Gaerling et al, 1986); the avoidance of abrupt changes of direction in corridors; ensuring that differences in floor layout between floors are not significant (Hoelscher et al, 2009); the avoidance of excessive spatial complexity and locations bearing a strong visual similarity to other locations (Weisman, 1981)) can have a strong effect upon navigability. Evidence for these guidelines is demonstrated through studies conducted in the above-mentioned buildings.

The methods employed by the authors in these case studies include visual and spatial analysis (space syntax analysis (Hillier 1996), the use of experimental methods (wayfinding tasks, think aloud protocols, pointing tasks, eye-tracking (mobile and on-screen), memory recall tasks and direct observation, social science methods (self-reporting questionnaires, interviews), simulation methods (virtual reality simulations of both actual buildings and alternative design-solutions of existing buildings and agent-navigation simulations), problem analysis and redesign tasks (architect's redesign tasks/interviews), a focus on signage (sign and signage-placement analysis and signage re-design alternatives) and standard psychological spatial ability tests (for example mental rotation tests).

The evidence from this considerable corpus of work presents a compelling case for the importance of ease of navigation for a building user. It is finally argued that whilst other aspects of a building's usability may be tolerated, a dysfunctional circulation system rapidly leads to widespread user frustration.

O26.2 COMPARATIVE STUDY ON RESIDENTS ACTIVITIES, PERCEPTION AND EVALUATION IN TWO DIFFERENT TYPE OF DONATED POST DISASTER HOUSING

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This paper reports the results of comparative study on two different types of donated post disaster housing projects after Java 2006 earthquake relate to residents' perception, evaluation and activities of their outdoor spaces. One project is located at New Ngelepen, Yogyakarta where residents were relocated to a new type of settlement and given fixed design post-disaster housing, which drastically differed from their Javanese vernacular dwellings and settlement.

Another project is located at Tembi village, Yogyakarta where the residents were given more flexible design post disaster housing and rebuilt on their original settlement. Outdoor spaces in both residential settings function as essential places for the residents daily and community activities were observed. Place-centered behaviour mapping was conducted by observations on random days (weekday and holidays) between 8 am and 8 pm. volunteers observed the residents' activities by walking a specific route within 15 minutes intervals and documenting the types of behaviours, age and sex, location, estimated time, and number of people on diagrams and maps. Questionnaires and structured-interview were also conducted.

The purpose of this study is to understand how the residents respond to the changes of their dwelling environment by analyzing their behaviour in their outdoor space as well as the changes to their community activities and their perception and evaluation on the house outdoor and neighborhood space.

Results suggest that because of fixed design limitations of the house and its private outdoor space, residents show high level of dissatisfaction. Furthermore since it could not facilitate their social activities, neighborhood facilities and streets now have a bigger and a more essential role in facilitating social interactions.

O26.3 STATISTICAL MODEL OF PSYCHOLOGICAL EFFECTS IN SCHOOL STUDENTS GENERATED BY ENVIRONMENTAL NOISE IN CLASSROOMS

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Studies of the effects of environmental noise in educational settings have increased since the 1970´s, Lercher, Evans, and Meis (2003) affirm that the literature indicates a clear pattern of mediocre acquisition of reading skill when there are high noise levels.

Over 40 years the negative impact of environmental noise in academic assessment has been an object of study in the international educational context. These studies have been performed with different conceptual and methodological perspectives and have founded that noise has a harmful effect over the cognitive development of elementary students, especially in children going in higher grades (WHO, 2004; Shield and Dockrell, 2008). Likewise, Evans (2006) confirms that children exposed to noise present significant deficits in their reading abilities, long-term memory, attention and speech perception, regardless the sound levels and previous reading deficiency. Evans indicates as principal noise sources: transportation (automobiles, airplanes and trains), music and people. Based on our review of the specialized literature, we will present a brief overview of the principal findings relating to: Interference in communication (i.e changes in teacher conduct; disruption of educational activities; annoyance). Academic performance (i.e. reading; grammar;

mathematics and science). Cognitive processes (i.e. memory; attention; motivation; problem solving; speech intelligibility). Summarizing the negative effects on students produced partially by classroom acoustics.

The general objective of the study was to prove the congruency of an explanatory model of the multiple relationships that have been observed in classrooms between the physical variables of noise and teacher-pupil distance with certain psychological and educational attributes of pupils. The design of the study tested the independent physical variables of environmental noise and teacher-pupil physical distance. The psychological (dependent) variables evaluated in 521 pupils were: the three that made up the latent variable Emotional impact, which were discomfort and interruption of communication with the teacher and with classmates.

Simultaneously, the Speech intelligibility and the educational variable of reading comprehension were evaluated. To determine the relationship between acoustical, design, and psychological variables, a system of structural equations was applied. The model explained with optimum fit quality ($x2 = 12.59$, $p = 0.63$, CFI = 1.0, RMSEA = 0.0) the set of relationships of dependency of all the variables evaluated. In conclusion, this model explains the global relationships among the classroom acoustics and its psychological effects in elementary school students, identifying the noise and physical design impacts on emotional aspects and reading comprehension. Also, it identified a direct influence of emotional impact on reading comprehension, likewise, a direct influence of student age on speech intelligibility and reading comprehension.

O26.4 VANDALISM IN THE SCHOOL ENVIRONMENT: A DISCUSSION ADDING THE SOCIAL CLIMATE ANALYSIS TO POST-OCCUPANCY EVALUATION

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Although nowadays “quality of life” and “environmental care” are slogans around the globe, in the last decade the violence in the school is growing in several countries, materialized by degrading actions that affect the schools’ space. They are translated into striking images: walls with lots of bad graffiti; broken furniture and equipment; destroyed doors and windows; a wealth of bars placed in name of safety and security. In Brazil, this contradictions are interpreted from various points of view, including: (i) as a result of errors/omissions in educational policies; (ii) as a reaction to poor facilities/services; (iii) as the youth’s dissatisfaction towards limited future prospects; (iv) as a difficulty in accepting/submitting to the educational activity. This situation can lead to some questions: is it violence of school, violence at school, or violence against the school? In other words, what is the involvement of the educational community (i.e. students, faculty, staff, family and neighbors) in this process? The understanding of this framework requires investing the evaluation of the school environment and strategies to the comprehension of the vandalism acts against it. Our research analysed the interaction between the educational community and the environment of 10 public middle schools located in the metropolitan area of Natal-RN (city in Brazil’s northeast, with one million inhabitants). The schools were selected according to data from the State Board of Education, and are located in 4 administrative regions of the capital (strategy to reduce bias of the socio-economic communities’ characteristics). Methodologically, the research strategies amounted to knowledge from the fields of Architecture-Urbanism and Environmental Psychology. It was based on a Post-Occupancy Evaluation (POE), and combined quantitative and qualitative perspectives focusing on physical, functional, behavioural and socio-cultural context.

The research used: walkthrough, analysis of behaviour traces, interviews, questionnaires, and focus groups. The questionnaires included a social climate scale. Although results are still under analysis, the data indicate that, although all institutions have suffered some kind of vandalism, these actions were more strong/evident in four situations: (i) very large schools (more than 2000 students) in which students felt less individually recognizable/identifiable; (ii) schools with high social density; (iii) schools in which conflicts between teachers and students were very evident, (iv) schools closed from the community, with little participation of parents in daily activities. Institutions with the supplementary support of social programs, such as "Friends of School" (particular program) and "Open School" (public program), have an improved maintenance, a factor that also seems to interfere with the collective self-esteem and the current social climate.

O26.5 IPFAD: AN IPAD APP FOR THE REAL-TIME RECORDING AND ENCODING OF DIRECT OBSERVATIONS OF WAYFINDING BEHAVIOR

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This paper describes an iPad App, known as iPfad ('Pfad' means 'path' in German) created for the real-time recording of wayfinding behaviours in buildings and outdoor environments. This paper will start by describing antecedents to the iPfad App and will cover computer- and hand-based methods formerly employed by researchers of navigation in complex environments. In particular, it will describe the real-time data logging tool WayTracer (Kuhnmuench & Strube, 2009), upon which iPfad was based, highlighting the similarities and differences between the two approaches.

The main section of the paper will describe the primary features of the iPfad App. These consist of the 'Home page' (where new participant records are entered and where the experiment-recording phase is initialized) and the 'Map' page (for behaviour recording/encoding). The Map page screen is further divided into two sections: the upper 'map' section and the lower 'events' section. The map section displays the current floor level (for a multi-level building) and is a 'drawable' part of the screen, allowing the experimenter to trace the path of a subject onto the screen as they observe their progress through an environment. (For GPS enabled iPads in outdoor environments with good GPS coverage this path is created automatically, however since this is not applicable to most interior settings, the hand-drawn trace option is available.) The coordinates of the participant's location are recorded in real-time. The lower half of the screen consists of a series of buttons to log actions. The buttons are classified as changes in floor level (the displayed map will be updated accordingly), as path events (starting a new task, pausing, backtracking, arriving at a false destination, becoming lost/giving up the task), the use of external aids (signage, maps, external views to the outside or equivalent invariant views, asking for help) and other log/action events (saving a compass direction in a pointing task, recording the location of a significant remark, if simultaneously recording an audio transcript). Every time an event is logged a colored 'dot' on the traced-path is created: it is time-stamped and its location noted in the log-file. The text-based log-files, annotated maps and any associated audio files are saved for subsequent retrieval.

The third section of the paper will describe a case study in which the iPfad App was used. This took place in The Seattle Public Library and consisted of four wayfinding tasks undertaken by 28 participants and observed using iPfad. Post-experiment, the experimenters were asked to gauge the usability of the iPfad App by filling in a usability questionnaire and selecting descriptive words

from a version of Microsoft's Product Reaction Cards (Benedek and Miner, 2002). The final section will discuss the usability of the iPfad App based on the case study's feedback and will discuss implications for the automation of data gathering of human behaviour in the future.

O27. EVALUATION AND ASSESSMENT OF LARGE SCALE ENVIRONMENTS

O27.1 PROPOSING A PROGRAM OF POST OCCUPANCY EVALUATION FOR OLYMPIC SITES

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The Olympic Game stake place on a complex multiuse site, rebuilt every 4 years, that has intensive use for two weeks of the games followed by a different use afterwards. A post occupancy evaluation (POE) could be extremely valuable in addressing on-going design problems and creating an iterative process that would improve the prototype with every experience.

Billions of dollars are invested in significant urban planning and infrastructure efforts for each Olympic Games. The same essential site is built every four years in a different city, providing the potential to learn from previous experience and outcomes through an iterative design and evaluation process that addresses technical and behavioural aspects of design. Olympic sites are also unique because after the games much of the site is converted for other uses. Each site, then has two sets of uses and users. The athletic and temporary residential facilities have to support and house up to 10,000 athletes, plus coaches and support personnel for several highly stressful weeks. Millions of visitors flood the venues and other areas of the city and region. Issues of environment as it relates to stress and performance come to the fore, as do questions of wayfinding and orientation. Security concerns have become a significant factor in design and operation.

Cross-cultural issues are also critical in these sites – people from every nation in the world use the same facilities at the same time for the same purpose. The potential for using these evaluations to study cultural differences in use and perception of space is significant.

We propose to use this session for an open discussion, engaging the attendees in a dialogue of conceptual and methodological approaches to POE in an applied setting, including consideration of the potential for creating an international team that could approach the International Olympic Committee and various national Olympic Committees with proposals to carry out such a research effort. Such an effort would be best supported by international environment & behaviour organizations, such as IAPS, EDRA, PAPER, MERA, EBRA, etc.

O27.2 AN ANALYSIS OF OCCUPANCY PATTERNS IN BARCELONA'S PARKS REGARDING THE LEVEL OF PERCEIVED SAFETY IN THE NEIGHBORHOOD

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Fear of crime has become one of the most serious problems of our time, either as a result of living in neighbourhoods objectively more 'dangerous', or of the diffuse fear and the obsession with security that characterizes today's society. According to a semiannual public survey, fear of crime

and unemployment are on the top of main worries of Barcelona's citizens. Together with the kind of social processes that characterizes public space in big cities (increased monitoring systems, privatization, standardization and avoidance) more complex patterns of uses and forms of occupation can be found because of higher rates of unemployment, poverty, ethnic diversity, new actors and forms of leisure. University of Barcelona and Barcelona City Council is carrying out research on the relationship between fear of crime and public space's occupancy patterns. Our interest stems from 1) the risk that urban parks become more conflicted and marginalised areas, feared and avoided by certain groups and 2) the need of psychosocial and environmental evaluation strategies of public space to benefit planners, designers and policy makers.

We have developed an ad hoc observation tool, EXOdES, which combines field formats and category systems to allow a systematic recording of variables of different nature (e.g., types of users, activities, psychosocial and environmental variables). During the last quarter of 2010, uses and forms of appropriation of 40 urban parks and squares in Barcelona have been studied. More than 35,000 series of data (or configurations) providing co-occurrence information about who is where, when, doing what, and in which environmental conditions, have been collected.

A preliminary analysis of data to explore differences in types of users of public parks, activities and psychosocial and environmental variables regarding the level of perceived security in the neighborhood have been conducted. We have compared observed frequencies in 3 public parks located in high security perceived areas (Les Corts, Sarrià-Sant Gervasi and Gràcia) and 3 parks located in the lowest security perceived district (Ciutat Vella), according to the last Barcelona's Victimization Survey. The results in a sequential analysis suggest a significant lower presence of women and elderly, adults with children and adults with elders in public parks located in Ciutat Vella rather than in those located in high neighbourhoods perceived security. Other differences include a significant presence of immigration, homeless people and signs of social and environmental disorder in low neighbourhood perceived security.

O27.3 URBAN PARKS IN CURITIBA, BRAZIL: UNDERSTANDING THE INFLUENCE AND MUTUAL RELATIONSHIP OF INTERNAL STRUCTURE AND OUTER GRID CONFIG

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Jacobs pointed out already in the 60's that carefully choosing the location of urban parks is of paramount importance for their use by different people and for different purposes. According to her, parks must be located where there are people, and not the other way around. But is it true that location alone guarantees that a park will be well used? We have reasons to believe that the way these public open spaces are connected to the broader network of open spaces play an important role in the way people get to interact with the park, and that it can influence its intensity of use.

Therefore, this research analyses two urban parks in Curitiba, Brazil, in terms of their relationships to the surrounding urban tissue and their internal distribution of paths and activities. The goals are (1) to study if there is continuity and accessibility between internal paths and the street grid in which it is located; (2) to verify if there is any observable coherence between the hierarchy of the street grid and that of internal paths, as well as the distribution of activities; and (3) analyse how and if these two factors influence the use of the park, in terms of patterns of co-presence and movement. In order to do that, an axial map was initially built that encompassed both parks and allowed the accomplishment of goal 1 stated above. The results showed two very distinct location strategies, which reflected the also distinct types of ambience intended for each park.

One of them was then chosen for analysis in greater detail, in which we used visibility and permeability graphs, as well as all-line maps, to analyse different types of integration (physical and visual access) and their relation to patterns of movement and co-presence. This park, called "Passeio Público", is located in the central area of Curitiba and is intensely used. A theoretical difficulty emerged at this point concerning the formal definition of barriers to physical permeability, since architectural space can't be viewed in a black-and-white manner. Strictly speaking, many barriers can't be considered as actual barriers to movement, but are perceived as such in varying degrees of intensity. Such is the case of low curbs and level differences, or even changes in surface treatment.

In order to examine these subtleties, four alternative descriptions of barriers were tested and compared to observed patterns of movement and co-presence, gathered in on-site observations. These analysis yielded an interesting conclusion as to how the internal configuration of the park, and its relation to the street grid, can influence the use and distribution of activities, as well as clues about what can be done if one wants to improve the connection between internal and external context of urban parks in general. The differences of visual and physical accessibility are also explored, suggesting that there exists a complementarity between them that can be used to great effect in the design of open public spaces.

O27.4 THE SHARE OF PEOPLE IN URBAN LANDSCAPE DESIGN; COMPARISON OF BERLIN'S SQUARES THROUGH LANDSCAPE READING

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Interpretation of civility in diverse societies is different. According to the type of interpreting, diverse structure of society is shaped. Asymmetrical presence of triple parts of societies (i.e. Governmental, Private and Middle Realm) in construction and management of the city makes different urban landscapes. Since presence and participation of these parts in public spaces is clearer than the other urban spaces, the landscape of these spaces is a symbol of civility thoughts. Whereas the city is interpreted as a text, in order to read this text, the language of signs and patterns should be learned. Local and spatial patterns in public spaces such as squares, streets and entrances, and also social patterns in social, economical and political places are sources of ideological, social and political thoughts. By reading these patterns as language, ideological and existential reasons of a period of the city will be announced. In other words, through reading a landscape a different structure of an urban text is distinguished which indicates "the reasons of human presence in the environment". The output of reading landscape lies in these presence reasons. In this essay, through reading landscapes of three squares in Berlin (Bebel Platz, Breitscheid Platz and Potsdamer Platz), interpretation and explanation of the concept of civility and as result the share of people in urban landscape design of these squares is expressed. By comparison of these three squares in Berlin, which belonged to different urban periods and locations, this hypothesis is proved that the share of people in urban landscape design has a decreasing trend over time.

O27.5 WHICH FUTURE FOR METROPOLITAN AREAS? USING ICT TO INFORM, CONSULT, AND AID IN DECISION-MAKING

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With the ongoing sprawl of residential and work places, in addition to those of consumption and leisure, as well as an increasing autonomy of household members in car-dependent lifestyles, we are witnessing the generalized and customized use of large fractions of metropolitan areas. Our qualitative surveys conducted over the last ten years confirm that residents from central and peripheral areas have territorial representations of the metropolitan area that are diversified and partial with inconsistent and fuzzy boundaries. Identifying urban policies and planning strategies that protect ecosystems and cultural landscapes, reduce urban sprawl, lower car dependency, and maintain shops and services accessible to less mobile citizens has become a priority for governments. If implementing sustainable policies and projects on these extended territories is a significant challenge, elaborating them with the population is even more so. Can participatory processes be conducted with citizens of such large territories? This is the question the Interdisciplinary Research Group on the Suburbs (GIRBa) is attempting to answer.

How can the 750,000 inhabitants of the Quebec City metropolitan area, living in twenty-eight towns and villages spread over 3500 km2, be mobilized around a collective sustainable metropolitan project? The participatory process put forward calls for the use of web-based information and communication technologies to inform, consult, and aid in the decision-making

process. The three-step process relies on the Internet, using on-line consultation, participatory geographic information systems (PPGIS) and social media. The first step, completed in June 2011, consisted of an Internet survey opened to all Quebec metropolitan area residents to identify various citizen profiles with regard to personal and family characteristics, lifestyles, and understand their mobility patterns and residential behaviours. Over 2300 citizens answered the three-module questionnaire. These profiles will be used in Fall 2012 to inform the development of sustainable metropolitan scenarios with a limited group of local experts, decision makers and citizens in the context of an urban design studio. This studio will be a first opportunity to test on a limited group of actors the prototype of a web interface developed in geomatics. Participants will use an interface such as Google Map to tag their comments on the proposals and interact with the team through social media. The next step will consist of testing the scenarios through an internet consultation open to the 1000 Internet survey participants who volunteered, using improved versions of the PPGIS and social media procedures. The last step, planned for 2014, consists of a collaborative process bringing face-to-face key experts, decision makers and citizens to finalize the consensually defined Quebec sustainable metropolitan plan. This communication presents the entire process as well as its advancement as of June 2012.

O28. Relationship with outdoor space and impact on well-being

O28.1 The influence of the local neighbourhood environment on walking levels during the WWW pedometer-based community intervention

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This paper reports on the findings of a study which investigated the influence of the local neighbourhood physical environment on participant's walking levels during the Walking for Wellbeing in the West (WWW) pedometer-based community intervention, carried out in Glasgow, 2006-2009. As far as we are aware this is the first study to examine the influence of the environment on walking levels in the context of a walking intervention, and one of only a few studies to provide information on walking-physical environment relationships for a European city.

Walking activity was recorded at four stages of the intervention: baseline (n=76), and at 3 months (n=57), 6 months (n=54) and 12 months (n=45) post-intervention. Step counts were monitored using sealed Omron pedometers, and objective physical environmental data were obtained from (i) GIS datasets and (ii) street surveys carried out prior to the intervention using the Scottish Walkability Audit Tool (SWAT). Data were summarised for 400 m radius zones around each participant's home. A total of 69 environment variables were used, reduced to 8 environment factors using Principal Axis Factoring, prior to regression analyses. Hierarchical multiple linear regression was used to examine the relationship between the environment factors and (i) step counts, and (ii) the change in step counts relative to baseline. Demographic variables included in the analysis were age and gender.

Five of the environment factors were found to be significant predictors of step counts over and above age and gender, but none were significant predictors of the change in step counts relative to baseline. Environment factors that were significantly associated with step counts were: (i) Green space and recreation facilities (-ve association, $p<0.05$); (ii) Commercial and residential land use mix (+ve association, $p<0.05$); (iii) Dangerous and busy roads (-ve association, $p<0.05$); (iv) Indoor

fitness facilities and traffic calming features (+ve association, $p<0.05$); (v) Traffic signals and pedestrian signage (-ve association, $p<0.05$). Different factors were found to be significant at different stages of the study and the total variance in step counts which could be accounted for by environment factors varied over the length of the study, with lowest levels during the initial stages of the study (6% and 8% at baseline and 3 months, respectively, $p<0.05$), and higher levels as time passed (34% at 6 months, $p<0.01$).

The physical environment played a role in moderating walking levels during the WWW intervention, but was not a significant factor influencing the change in walking levels relative to baseline. Factors such as land use mix, traffic levels and traffic calming, and the quality and accessibility of recreational facilities and green space have been identified as elements of the environment that contribute to walkability, and thus are potential targets for better planning, design and management in urban environments.

O28.2 WALKS4WORK: THE USE OF WALKING IN NATURE IN A WORKPLACE TO BOOST HEALTH OUTCOMES

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Background: Physical inactivity is a leading risk factor for global mortality, accounting for the 6% of deaths. Incorporating physical activity into people's daily lives can be problematic mainly due to time pressures and family commitments. Increasing activity within the working day especially during lunchtime could help to increase overall activity levels. Incorporating walking into a working day is relatively easy as there are no requirements for specialist equipment or changing facilities. In previous studies, walking has been shown as a moderate physical activity that can improve health. Additionally, contact with nature has long been considered restorative and even suggested essential for long-term health.

Therefore the combination of walking and nature may have synergistic improvements in health. Indeed previous studies have shown improvements in mood and self-esteem (Barton et al. 2009). The current study explored whether a walking intervention at lunch time could increase general physical activity, and its effects on health and stress. Moreover, whether walking in different environments (natural or built) increased the benefits and increased adherence rates.

Methods:Following local NRES ethical approval a company was recruited. About 25% of employees took part including the senior management team. The study involved 8 weeks of walking in different environments (natural or built) with a 3 month follow-up. In the first 8 weeks participants were given routes to walk: group 1 built areas; group 2 non-built natural areas; group 3 acted as a control group. Groups 1 and 2 were asked to walk the 2 km routes twice per week at lunchtime. After 8 weeks, all groups were able to walk in any location. Participants were tested at three time points, baseline, 8 weeks and 3 month follow-up.

Assessments included height, weight, resting heart rate, resting blood pressure, response to a stressor and a fitness test. Questionnaires were also completed at the same time points using Survey Monkey and included questions relating to physical activity, mood, self-esteem, stress and job satisfaction. Stress was also assessed using two salivary cortisol samples taken on two

consecutive evenings at the same time points. During the whole study period physical activity was measured using a small acclerometric device (Actiped).

Results: Preliminary findings suggest some positive health gains in those participants walked twice per week. The number of walks per week were greater in those undertaking the nature walking route. Those we completed the majority of the walks gained the most benefits and anecdotally reported the most enjoyment.

Conclusion: Walking at lunch time appears to be beneficial and helps gain some positive mental benefits but a large proportion of participants struggled to find the time. Walking routes should be available that are “walkable” from the office and group walking should be encouraged to help improve adherence.

O28.3 Developing a bond with nature: how a summer camp affects children's emotional and cognitive experience of nature

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Spending time in nature during childhood appears to have a positive effect on adults' environmental orientations and pro-environmental behaviours (Chawla & Cushing, 2007; Thompson, Aspinall & Montarzino, 2008). Recently attention has been paid to the importance of emotional affinity or connection with the natural environment predicting pro-environmental behaviour (Kals, Schumacher & Montada, 1999; Müller, Kals & Pansa, 2009). This affective bond appears to be created during childhood (Hinds & Sparks, 2008) and it is a predictor of environmental friendly practices (Cheng & Monroe, 2010).

Several factors may influence children's environmental bond such as nature near home (Collado & Corraliza, 2011), parent's environmental values (Cheng & Monroe, 2010) or environmental education programs (Evans, Brauchle, Haq, Stecker, Wong & Shapiro, 2007). There is also some initial limited evidence that a summer camp spent in nature may strengthen this bond (Ernst & Theimer, 2011). We hypothesized that a stay in a summer camp in nature constitutes a package of factors that have been proven to be influential: most of all the long term direct exposure, usually combined with play and educational interaction with nature, approved of, if not explicitly stimulated by parent who sing up, and pay to send their children to a camp.

The present study intends to assess the possible effects that stays in different natural vs. urban summer camps have on children's environmental orientation variables such as Emotional Affinity toward Nature (EAN) or children's ecological worldviews and how these variables might affect different types of children's pro-environmental actions like intentions to visit natural environments and to carry out pro-environmental behaviours. A sample formed by 390 children (mean age = 10.88; SD = 2.17) who attended different sleep over summer camps in Spain was used. Data were collected on the first and last day of the camps. The first (C1), second (C2) and third (C3) camps were placed in natural settings and the fourth camp (C4) was set in an urban area. C1 and C2 were summer camps in nature without environmental education (EE) activities and C3 was a summer camp in nature with EE.

Our results show that spending time in natural camps increases children's EAN as well as children's ecological worldviews and willingness of carrying out different behaviours compared to children spending time in an urban camp. No differences were found between the natural camp with EE and those without them. Spending time in a natural camp was found to be a predictor of willingness to carry out pro-environmental behaviours, and this relation was mediated by EAN and ecological worldviews. These results can be useful for future interventions aimed at raising children's environmental attitudes and willingness of carrying out pro-environmental behaviours. And this may in the end lead to adults' improved attitudes, and more favourable environmental behaviour.

This research has been carried out supported by the Spanish Ministry of Sciences and Innovation (PSI 2009-13422).

O28.4 THE EFFECT OF THE OUTDOOR ENVIRONMENT ON OUTINGS BY MOTHERS WITH SMALL CHILDREN

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The increasing nuclearization of Japanese urban families has left young homemaking mothers often feeling isolated and vulnerable to the stresses of childrearing. Many of these parents welcome venturing from the house for some diversion and social interaction, making it doubly important for society to create outdoor environments that support going out with small children. The present study discusses a questionnaire survey comparing young mothers' habitual outings in four Tokyo neighbourhoods-one long-established and one newly developed residential area each from the largely white-collar yamanote district to the west and the traditionally more commercial shitamachi district to the east. Respondents set down destinations, purposes, time required, and means of travel on a time sequence chart and recorded routes on a map. In all areas, the most popular destinations were the supermarket and city park. Residents of the new neighbourhoods, however, headed to larger parks and shopping complexes, while in the older shitamachi neighbourhood, respondents frequently patronized small shopping streets where they could enjoy talking with shopkeepers. Routes were typically selected according to functional considerations such as traffic safety and smoothness of the paving, a concern particularly for stroller users. Wide sidewalks were preferred because the mothers could walk side by side with friends while chatting. At the same time, recreational criteria were also cited, including the presence of roadside greenery, running water, or objects and people stimulating to the children. The older neighborhoods had more routes satisfying recreational needs than the newly developed ones, which in turn were better at answering functional needs. The results highlight that attempts to design outdoor environments for parents with small children need to address not only safety and accessibility, but also the demand for stimulation and company.

O28.5 RISK PERCEPTION AND TRAVEL BEHAVIOUR IN NORWAY AND FRANCE

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It has been assumed that risk perception can be an important factor for the explanation of travel behaviour. However, the results to support this are few, outdated and from an American car

dependent travel culture. It has been suggested in a number of risk perception studies that affective assessments are a stronger predictor of behaviour than cognitions about probability. The current cross national study (N= 2650) aimed to study the influence of risk, either measured as perceived probability or as fear, on behaviour. The context of the study is a range of different modes of transport, hence risk is operationalised both as accident risk and as risk of crime/violations. The results show that perceived risk might influence our decisions about how and where to travel, and that fear is a better predictor of behaviour than perceived probability in both countries. Whether our general mobility is influenced by perceptions about accidents or other threats is still an open question. Differences and similarities between Norway and France are discussed.

O29. RESEARCH EVIDENCE: ISSUES FOR IMPLEMENTATION

O29.1 DOES RESEARCH EVIDENCE PRODUCE ACTION?

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Why is the evidence base being ignored? Despite there being a compelling body of evidence that demonstrates the world wide asthma pandemic (Howieson 2006) in temperate climates is being driven, in the main, by poor housing design (lower air change rates leading to high internal humidity and house dust mite infestation), as yet little or no action with regard to policy or legislation has been forthcoming. Developers in the UK are currently being encouraged, by revised codes, to build dwellings that will actually compound the problem. This paper will present evidence form 25 years of research into the relationship between housing and health. It will demonstrate that poor house conditions and fuel poverty produce up to 60 000 excess winter deaths (Howieson 2005) in the UK each year and that the drive for energy efficiency has caused the asthma pandemic. Despite there being many examples of how to remediate the existing stock (Howieson 2003)(Wright 2009) and build new 'healthy' dwellings the industry lobby continues to muddy the waters for short term financial gain. This has resulted in a confused and piecemeal approach by governments and policy makers that is failing to address the crucial issues. It will ask the big question, "Are governments actually interested in protecting their citizens or are they simply the elected representatives of commercial vested interest?"

O29.2 PRACTICE AND RESEARCH: COMMERCIAL AND PRACTICAL APPLICATIONS

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Private-sector urban design and architectural practice is a commercial activity. Most practices are relatively small. In 2010 it was estimated that 98% of architectural practices in Europe have less than 10 architectural staff. 76% of UK practices have less than ten staff. 80% of US practices have less than six staff. Private practice relies on the generation of new business and the profitability of activities, the smaller the practice the more time will be devoted to ensuring a continuous flow of work. Research creates no direct income. Practices depend, therefore, largely on published academic research, professional institutions, commerce and outcomes expressed in regulation. Private architectural practice is generally a passive receptor of intellectual enquiry.

Academic research is usually directed to academic objectives and internally relevant source-material referencing, peer-group review and institutional assessment. The language used is difficult to transfer to construction-industry conditions and outcomes are frequently only of peripheral use in practice. Social policy and quantitative survey research requires expert interpretation and analysis to transfer to practical and practice-based applications.

Evidence-based information is a powerful instrument in professional promotion and working practice. It would benefit private practitioners to use research projects to establish their industry credentials, create an enhanced position in attracting work and increase the effectiveness of practical outcomes. Sharing such material is not of necessity a surrender of assets but can enhance professional standing and practice. If networks of practice-generated research could be established, advances could be made in the professional knowledge base. If maximum benefit is to be gained, academic institutions would be well-placed to combine and synthesise material to create substantive results. To create such a condition a better academic understanding of practice constraints and a gearing of research outputs would be necessary.

Using examples from the research programme of Adam Urbanism, this paper will explore the benefits, costs and issues in practice-generated research. Examples include research into the appearance of housing, the impact of density on the perception of privacy undertaken with charitable foundations. Practice-generated research would include environmental performance of building envelopes, public responses to elevational treatments of commercial buildings, socio-anthropological assessment of public consultation techniques, and a typological analysis of new trends in urban design through. Examples will also include academic-practice partnership projects in a comparative assessment of available public consultation techniques and mathematical analysis of relative urban connectivity and proximity. Particular emphasis will be placed on the practicalities and cost-benefits of research and problems of commercial-academic cross-over.

O29.3 'OBJECTIVELY HEALTHY CITIES' – URBAN DESIGN FOR THE 21ST CENTURY

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"Healthy City" initiatives are all the rage, but what, in the 21st century, makes a healthy city? Pre-industrial cities were frequently ravaged by famine and disease; this was exacerbated by intense

overcrowding following the industrial revolution. At present, the biggest cause of preventable death in the developed world is heart disease, while rates of depression and mental illness have increased steadily since the 1970s (Frumkin et al, 2004). An oft-cited underlying reason for the recent changes is a lack of physical activity among a significant proportion of countries' populations. The predominant policy response has mostly taken the form of campaigns to raise awareness among the population and encourage behavioural change. At a national level, both the UK Chief Medical Officer and the US Surgeon General advise 30 minutes of physical exercise per day. This advice, and accompanying policy, is bolstered by very comprehensive research.

Such advices - and accompanying policies - have however met with limited success; sedentary activities have increased over the past decade. This is because many policies aim to deliver results by changing people's behaviour. This is very difficult to do successfully; behavioural initiatives have to be targeted across a population, addressing very wide ranges of underlying behavioural reasons for physical inactivity. They also rely on a high degree of general self-discipline.

Physical activity can be divided into two main types; recreational and utilitarian (Frank *et* al, 2003). Recreational activity is behavioural and is undertaken by virtue of its inherent pleasure - someone rarely goes rock climbing, for example, for reasons other than recreation. Utilitarian exercise, by contrast, is undertaken as part of some other task cycling to work, for example. Recreational activity is thus determined according to the preferences of the individual. Utilitarian activity is by contrast undertaken as a pragmatic response to the physical environment. This is of particular relevance to the design of the built environment with respect to public health and wellbeing.

In this paper, I will describe and analyse the extensive body of research that has been taking place into the relationship between the form of the built environment, levels of physical activity and health. I then examine ways in which the form of the built environment – particularly walkability – can be objectively measured and positively correlated with levels of physical activity and thus health, irrespective of expressed preferences for exercise. This in turn can be used to draw up identifying characteristics of the types of urban form that are the most conducive to physical activity. This has significant policy implications for urban design and its potential for contributing to improved public health, social cohesion and environmental benefits.

O29.4 ENGAGING OLDER PEOPLE WITH DEMENTIA IN ARCHITECTURAL DESIGN RESEARCH

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Long term institutional care for people with dementia is estimated to cost the UK economy £20 billion. Global ageing populations predict an increase in dementia. This has highlighted the need to focus on the design of dementia care environments as an alternative means to alleviate some of the common symptoms associated with dementia. Traditionally community care for dementia had been the focus until recently. However, there is now a demand for dementia specific long-term institutional care facilities to provide greater support for the person with dementia, their carers, visitors and relatives.

The perception of the physical environment alters with the onset of cognitive decline. Eyesight and hearing for instance are aspects which are often affected in older age and can further deplete

wayfinding processes, especially for those with cognitive impairments. Other symptoms of the disease which are aggravated by poor design include aggression, stress, anxiety, incontinence and incidences of trips and falls. These all impact negatively on the psychological wellbeing of the person with dementia and can therefore affect other residents and staff members.

The physical environment is widely recognised to influence the behaviour and wellbeing of people living with dementia. A well designed environment can improve the condition, alleviate carer burden and increase psychosocial interaction.

There has been a shift in attitude towards design research. It should include the lived experiences of people with dementia and engage with them to provide a better understanding of the role of the environment on their perception of space. This paper examines the efficacy of particular strategies when engaging people with dementia in design and how to address inevitable ethical considerations of the research. Actively engaging with dementia residents in architectural design can provide an insight which could transfer to practitioners, influence policy makers and benefit human-environment interaction.

Engaging with those under study in their environments can have a potential impact on professional practice and impact on policy. The formulation of policy comes with a caveat due to effect on professional practice and the potential for environmental determinism to become the norm. This study identifies the need to address issues of human dignity and non-discrimination when engaging in design research with older people. The paper also proposes that care should be taken when investigating the relationship between humans and their environment and that it should be reflective on the social environment also. The strategies suggested in this study aim to provide a richer outcome which may result by effectively working with designers, residents and their carers.

O29.5 POLSENIOR RESEARCH PROJECT – RESULTS OF STUDIES RUN BY ARCHITECTS-SOCIOLOGISTS TEAM; DATA CORRELATION AND FINAL CONCLUSIONS

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In the autumn of 2011 PBZ-MEIN-9/2/2006 research project financed by the Polish Ministry of Science was completed. The Project was run for four years by teams of researchers from several Polish universities on a random sample of 5695 respondents representing age sections of Polish seniors (Bledowski et al., 2011). The national survey focused on medical and health condition, socio-economic issues, financial status, the quality of the housing environment.

The questions on housing conditions and the social capital were devised by the researchers from the Silesian University of Technology (Bartoszek *et* al., 2009). The team conducted local case studies on a smaller number of respondents, including experts' and participative analyses of the housing conditions of different built environments - rural, urban and metropolitan and four social care units. They investigated the elderly people in their housing environment, the level of its adjustment to specific needs and to modern civilization requirements. The criteria of the experts' assessment included the current requirements of the law regulations and the principles of Universal Design, Built for All, Design Out Crime (Vestbro *et* al., 2005). The applied investigation techniques were based on surveys and in-depth interviews, the architectural studies utilized the

principles of post occupancy evaluation (POE). In total 166 surveys were carried out, 33 personal interviews in flats, 25 interviews with social care facilities inhabitants.

The architects-sociologists sub-project questions were partly convergent with the ones asked in the national level survey, which makes it possible to draw some comparisons with the replies received at the local level. In the study detailed experts' analyses were conducted in particular housing environments, advantages emphasized and existing drawbacks and maladjustments to the needs of seniors indicated. The experts' analyses revealed the incompliance of the flats and buildings with modern quality, technical and legal standards. Despite severe experts' assessment only 15% of respondents at the national level of the research confirmed the existence of architectural barriers that stop them from leaving their flats. Apart from objective obstacles seniors seem to be able to adjust to the inconveniencies of their living conditions and are not willing to change their place of habitation. Such conclusions may be drawn from both local and national samples of the respondents of who only 8% expressed the readiness to move. The main reason is the lack of finance and motivation to undertake decisions. The national study makes it possible to compare the obtained data with particular age levels and to correlate the responses with the state of health and economic and family condition, as the opinions depend on the presence or absence of support from the relatives. The correlation of the data from the local studies and the national study results enable some general conclusions and recommendations.

O30. ENVIRONMENTAL PERCEPTION

O30.1 ATTENTION, BEHAVIOUR, COGNITION – A NEW METHOD TO ASSESS DIRECTION SIGNS

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The creation, maintenance, and advancement of a complex signage system, as found, for example, in hospitals or airports, require a number of different decisions that affect both, a sign's legibility and intelligibility. After routes have been planned globally, for each individual sign board the designer must decide (1) which information should be displayed, (2) how the information should be arranged and (3) where in space the sign should be installed. In addition, before a sign is put up, it is advisable to assess whether an additional sign will effectively support a user's spatial decision making or if it simply adds to visual clutter.

In this process a number of methods are commonly used to identify the optimal signage for a particular location. These methods include, for example, the consideration of design guidelines, which are often based on knowledge of human perception and are sometimes regulated by law (fire codes). Additionally, knowledge from former projects is often transferred to the current one and over time best-practice solutions get established. In the majority of cases these methods lead to the desired results, although the effectiveness and efficiency are rarely evaluated with respect to the user's needs and the sign's utility for the spatial decision making process.

We developed a method that combines behavioural, self-assessment, and eyetracking data in order to assess the effect of direction signs on passengers' decision making in an airport context. Participants were presented either with the original or with a digitally edited photographic image of a scene that required them to make a spatial decision in order to reach a given target location. The combination of decision errors, decision time, self-assessed confidence and the allocation of

attention, measured through eye-movements, allowed us to assess different designs and the effectiveness of a newly placed sign with respect to user behaviour. Based on this we were able to recommend a particular design solution.

In a further study we tested different design options in a virtual model of a planned extension of the building. This scenario enabled us to give evidence-based recommendation, even before the site was actually built. We consider the method as a supplement rather than a replacement of existing methods for the development and advancement of wayfinding systems with special emphasis on cognitive adequacy for humans.

O30.2 COMPLEXITY AND ORDER IN COMMERCIAL STREETSCAPES: HOW TO MAINTAIN USER´S SATISFACTION WITH VISUAL QUALITY IN CONTEMPORARY CITIES

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The aim of this study is to develop and test a methodology to calculate complexity levels of commercial streetscapes and compare whether those levels correspond to the ones perceived by users.

An argument defended by the literature is that street facades are perceived as ordered when physical characteristics are structured according to some overall principle based on Gestalt Theory. In this study, complexity refers to a variety of elements and relationships in an aesthetic configuration, which is structured according to some overall principle based on this theory. This concept is related to the level of order of elements that form an aesthetic composition; places where order does not exist are perceived and evaluated as chaotic and irregular, and not as complex. The perceived quality of a city is very much dependent on the visual quality of its streets, which depends on formal factors such as lengths of blocks, cross sections, widths of roadbeds and sidewalks, building setbacks and heights, frequencies of entrances to buildings, presence or absence of shop windows and shopfronts, and so on. In this study, formal factors are actually physical characteristics of commercial signs and buildings, such as silhouettes, facade details, facade articulation and colours.

The method developed here to calculate the level of complexity in street facades was tested with samples from different cities and countries. Part of the sample was resident in Brazil and another part resident in England. The sample of 361 users comprised of different nationalities as the only pre-requisite to participate of the study was to be resident in the cities investigated – Pelotas and Gramado in Brazil and Oxford in England. Users from the following nationalities participated in the survey: Brazilian, British, Indian, Chinese, Mexican, Canadian, French, Italian, Portuguese, Thai, Brazilian/French, German, Greek, Iranian, Pakistani, Saudi, Taiwanese, Uruguayan, American, British/Brazilian, Danish, and Japanese. The results obtained from this sample reinforce the argument that even though user perception and evaluation of public spaces may be influenced by user background, user perception and evaluation of order is the result of an environment in which parts form the whole in such a way that redundancy, self-contradiction, and conflict are avoided.

This study hopes that this method can be applied as a tool by urban designers and planners to identify, before a new insertion is built on, whether a new street intervention will increase or decrease people´s perception of visual quality since there is a relationship between the affective

dimensions of “satisfaction” with complexity. In terms of the dimension of “satisfaction”, this relationship is directly proportional until an optimum is reached; when this limit is exceeded, the relationship becomes inversely proportional. Also, this method can be used to help reorganize street facades already perceived as negative by users.

O30.3 THE INFLUENCE OF URBAN AND NATURAL ENVIRONMENT ON USER’S EVALUATION OF VISUAL QUALITY IN COAST CITIES

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This study seeks to understand the relationship between urban form and natural environment in order to identify the level of influence of these both elements on user´s evaluation of visual quality of street scenes. The main objective is to identify the elements that interfere on visual quality of coastal cities in order to help urban designers and planners to develop and apply urban policies to promote streetscapes evaluated positively by the majority of users without damaging natural landscape. The case study methodology is applied in a Brazilian coastal city where the streetscape is composed by natural and built environment: São José do Norte is located in the south of Brazil, border with Uruguay and Argentina; the city is coasted by “Laguna dos Patos”, the world´s largest coastal lagoon of fresh water; a sand bar separates it from the Atlantic ocean. This is a city where the urban environment coincides with sand dunes creating a difficult problem to solve since the urban grown and urban planning are happening without taking into account the natural landscape. On the other hand, some of the most interesting scenes of this city are the ones composed by natural landscape according with a pilot study conducted by the researcher in the earlier stages of the survey. This study focuses on the analysis of differences and similarities between evaluation of residents and non residents in order to identify whether the attribute of familiarity with the environment will influence those evaluations, and whether these elements need to be taking into account in urban planning of coast cities when the objective is to create high visual quality without prejudice natural landscape. Overall 30 people from São José do Norte and 30 from other cities where invited to fill a questionnaire in situ; mental maps and physical survey are also applied to answer the following research question: Which is the influence of natural landscape on built form according to perception of residents and non residents? Qualitative and quantitative methods of data analysis are applied.

The main results indicated that the level of maintenance of buildings and street furniture interfere with users evaluation of visual quality; however for non-residents the presence of historic buildings (even when badly maintained) in street scenes composed by natural landscape is the main factor that increases visual quality. For residents the street life promoted by the lagoon and the views composed by it are the main factors that increase users’ evaluations with the appearance of the street scenes, independent of the presence of historic buildings. Other outcomes indicates several attributes of preferences and evaluations related with the visual quality of this coastal city which are intended to be generalized for places with similar characteristics in order to help the urban grown of coast cities in Brazil.

O30.4 ON ASSESSING ENVIRONMENTAL QUALITY: THE RE-APPROPRIATION OF LOCAL KNOW-HOW

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This paper's main argument is that environmental quality is a transversal concept which includes technical indicators of environmental protection as well as subjective criteria related to quality of life.

The concept of environmental quality therefore, takes into account not only the impact of social and political choices of a given society on its environment (economic and ecological), but also the impact on the population affected by these choices, and how this population lives and feels everyday.

Environmental quality would therefore be measured by a ratio of economic and social benefits of a society's social choice over the environmental consequences weighed by the ability to make that choice last over time.

Indicators, and other targets have become today's panacea for all environmental issues, the proposed paper begins by demonstrating the need to investigate the meaning of environmental quality according to each context "instead of assuming it" and generalizing the use of universal indicators.

It emphasizes on the subjective and latent dimensions of this concept and shows that the Environmental Quality (EQ) is not a simple addition of technical criteria.

Developing regions, particularly in Africa are recording the highest rate of urbanization. This urbanization usually develops in the peripheries in the middle of rising levels of poverty, increasing the proliferation of slums and the informal sector in general.

The recent emphasis on sustainability and the promotion of environmental quality should be seen as an opportunity to resolve some aspects of this crisis and the re-appropriation of local know-how as alternatives to the sustainable development of these vulnerable settlements.

O30.5 DISTANCE AND PERCEIVED ATTRACTIVENESS OF RECLAIMED LIMESTONE QUARRY LANDSCAPES: A NON-MONOTONIC RELATIONSHIP

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Because of their magnitude, quarries are usual visible from near to distant viewpoints (Ramos et al 2006). The extent of their visibility depends of the size of the quarry, its contrast with the surrounding landscape, and its location relative to other features in the landscape. All these are affected by the distance from which the quarries are viewed.

This study assessed the relationship between distance and the attractiveness of reclaimed limestone quarry landscapes. Empirical studies have been conducted to establish the type of relationships that occur between distance and perceived visual qualities of landscapes. Different

landscape dimensions have been used in these studies, eliciting different types of relationships (Buhyoff & Wellman 1980; Hull & Bishop 1988; Hull and Buhyoff 1983). However there has not been agreement on any single relationship function between distance and the different landscape dimensions studied.

In this study the landscape dimensions studied were reclaimed limestone quarries. Ten different scenarios of reclaimed quarries were simulated by applying different reclamation techniques and different land uses. From these simulations, fifty still images were captured at different distances along an established transect. Ten videos were also recorded along the same transect. These were used in a survey of seventy (n=70) students from the University of Sheffield. The images were presented through an overhead projector to each individual student at time. Students were asked to rate the quarry landscapes on their attractiveness. The results were divided into three groups based on the students' field of study. The groups were: Landscape students (twenty seven students from the Landscape Department); Built environment students (twenty three students from Engineering, Architecture and Town and Regional Planning departments) and Others (twenty students from all other disciplines). This was done in order to establish if there was any difference in how the groups perceived the landscapes.

It was found that distance had a non-monotonic, quadratic, concave down functional relationship with attractiveness of reclaimed limestone quarry landscapes. These results were significant at $p<0.05$. The relationship can best be explained by theories of arousal potential and visual complexity of landscapes (Hull & Buhyoff 1983). Arousal potential is related to the level of complexity of landscapes. Thus, as distance decreases, the complexity of a reclaimed quarry becomes more evident, which increases the arousal potential of the quarry. The results of the study will be discussed based on these theories.

It was also found that there was no significant difference in how participants from different academic backgrounds perceived the quarry landscapes. This is consistent with the findings by Daniel and Boster (1976) and Lange (2001).

O31. FROM THEORY TO METHODS

O31.1 RELATIONSHIPS WITH NATURE IN INDIVIDUALS TREATED FOR CANCER: EXPERIENCES FROM THE FIELD USING CONSTRUCTIVIST GROUNDED THEORY

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BACKGROUND: Individuals treated for cancer experience myriad disease– and treatment-related sequelae that contribute to psychological and symptom-related distress (Ahles & Saykin, 2001; Aktas et al., 2010; Carlson et al., 2011; Gilchrist et al., 2009). In the environmental psychology literature, fostering experiences with nature and the natural environment has contributed to directed attention restoration (e.g., Berto, 2005; Cimprich & Ronis, 2003; Hartig et al., 2003), recovery from stress (Heerwagen, 1990; Ulrich et al., 1991), reduced pain (Diette et al., 2003), and various other health-related benefits (Maas et al., 2006; Moore, 1981; Ulrich, 1984; van den Berg et al., 2010). There exists the potential that promoting human-nature relationships in individuals treated for cancer might contribute to lower experiences of distress, as well as promote improved experiences of health, quality of life, and well-being.

PURPOSE: The purpose of this presentation is to share with attendees our experience using the constructivist grounded theory methodology (ConGTM; Charmaz, 2006) relative to the study of human-nature-health relationships. The purpose of the study being presented was to explore how individuals treated for cancer relate to nature and the natural environment, and to develop a theoretical framework highlighting the underlying processes that manifest such relationships.

METHOD: The ConGTM is located within the interpretivist/constructivist paradigm, and espouses a relativist ontology and subjective-transactional epistemology. In ConGTM, the role of the researcher is explicitly acknowledged throughout data collection, interpretation, and analyses. Individuals diagnosed and treated for cancer were recruited and theoretically sampled from local cancer centres, support groups, and the broader community. Data were collected using in-depth, semi-structured interviews, and interview transcripts were transcribed verbatim. Data were interpreted and analysed following the constant comparative method, which iteratively compares base units of coded data to developed categories, themes, and the emerging theoretical framework (Charmaz, 1990, 2006, 2009).

DISCUSSION: At the time of abstract submission, data collection had just begun and, therefore, it was not then clear what exactly the nature of our experiences would be. In addition to discussing the resultant framework, we will share a candid discussion of this methodology, including our successes and drawbacks, as well as general strengths and weaknesses of ConGTM in human-environment studies. In the environmental psychology field, qualitative methods are not often adopted, and it is unclear if the ConGTM has been previously employed in this area. Thus, we believe this presentation will introduce researchers to novel methods that permit a deeper understanding of human-environment relationships.

O31.2 RESEARCH-BASED PLANNING FOR URBAN DISASTER RECOVERY: INTEGRATED THEORETICAL AND METHODOLOGICAL PERSPECTIVES

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This proposed contribution deals with integrated socio-spatial theoretical and methodological research frameworks for planning for urban disaster recovery and is aimed at conference theme 2. (Planning, Design and Evaluation in Human Environments) and sub-theme 2.4. (Methodological innovations in environment-behaviour studies). Natural disasters that impact cities represent a particularly critical example of human experience in the built environment, and rebuilding cities after disaster comprises complex tasks of policy and planning. However, there is a general lack of long-term research on urban disasters and disaster recovery, and a recent prominent example is Hurricane Katrina's impact on New Orleans in 2005, resulting in an ongoing and uneven recovery process. Yet, integrated socio-spatial approaches may not only facilitate innovative theoretical and methodological frameworks to research such cases, but also contribute to corresponding planning recommendations. The author intends to discuss his long-term research on social, spatial, and institutional aspects of planning for urban disaster recovery in New Orleans after Hurricane Katrina, which incorporates case study data of the city's Lower Ninth Ward area and formulates resulting planning recommendations. This research is based on an integrated socio-spatial framework that addresses knowledge gaps in both the urbanist and disaster research literature and employs a mixed-method case study methodology with theory-based triangulation of social, spatial, and institutional aspects of urban disaster recovery. It was conducted from 2007 to 2011

and features empirical data from two field visits in 2007 and 2009, while comprising a novel approach for comparative research of impacted and receptor communities. The research perspective is planning-oriented, and socio-spatial constellations of inequality/vulnerability emerge as significant influences on the effectiveness of applied and ongoing planning strategies. Such integrated approaches may benefit research-based policy and planning for urban disaster recovery in the future.

O31.3 TOWARDS A UNIFIED THEORY OF BUILDING USABILITY

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Despite its growing popularity among researchers, user-centric architectural design is still not a clearly defined concept. Buildings' usability characteristics vary significantly between publications (Leaman, 2000; Hölscher et al., 2006) and its quantifiable metrics remain an open challenge to those who seek comparable results. Therefore, it demands a unified theoretical model, which could help to establish a common understanding of usability's key concepts and reliable means of measuring it within the discipline. This paper offers such a clarification by referring to existing knowledge of related areas (mainly human-computer interaction - HCI). Numerous HCI research tools and methods (Cairns and Cox, 2008; Cooper and Reimann, 2003; Norman, 2008) are presented as a verified way of measuring usability, with their possible applications to architecture.

Furthermore, the difference between the concepts of 'usability' and 'user experience' is investigated. Again, deriving from rich bibliography of HCI (Hassenzahl, 2010), usability is proposed to be understood as a 'lack of user's frustration'. This definition is also in line with usability's ISO standard, describing it as 'the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use' (Abran, et al., 2003, p.326). In context of architecture, 'specified goals' must be achieved through: a) getting to a place of destination, and b) conduction of a desired action in its environment. Therefore usability can be understood as a sum of intuitional wayfinding (Mijksenaar, 2011) and the building's characteristics that facilitate the action itself - like users' comfort (Leaman, 2000; 2008). Such an approach, calls for considering 'user experience' as a further step in interaction design, where usability's 'lack of frustration' is merely a starting point in a consistent, desired, satisfying experience of being in a place. It also considers both concepts as a part of the same process rather than in opposition to each other, what inclines usability researchers to remain in a constant state of war with creative architects and designers, who tend to consciously avoid the simplest (yet, often the most usable) solutions. Just as much as in architecture, this problem occurs in HCI, and was once summarized by a computer game designer saying that 'if a usability engineer designs a game, it would be most likely a single button announcing 'To win press here' (Hassenzahl, 2010, p.43). Consequently it is not the most usable solution that is to be pursued in design process, but the one being the most satisfying for the user.

The aim of this paper is to propose clear definitions of related concepts and serve future debates pursuing user-centric design ideology fully pleasing all the parties.

O31.4 POST OCCUPANCY EVALUATION: REFLECTIONS ON ORIGIN, DEVELOPMENT AND FUTURE

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Evaluation activities have their origin in ideas of social reform in Victorian England and became an important feed-back procedure in support of organizational learning in public service organizations. They had a holistic responsibility and combined the roles of being clients, providers and administrators of public service, for example, in sectors of health, education and housing. In the 1960s routines for systematic evaluations of building performances were introduced and in the 1970s users' assessments were given more attention. Methods for post occupancy evaluations (POEs) of buildings in the phase of usage developed during the 1970s and 1980s.

In the 1990s a paradigmatic change took place, again originating from England. During Thatcher's reign became public service organizations divided and, to a large extent, transmitted to the private sector. New markets were created and the roles of clients, providers and managers divided between different actors. The building sector was de-regulated and the governance-by-rules model was replaced by a governance-by-goals model. As a consequence the main aim of evaluations changed from "learning from what had been done" to measurement of goal achievement. Holistic evaluations were replaced by goal-achievement analyses.

This development was paralleled in Sweden. The welfare state invested in professional knowledge and specialization — a competent bureaucracy was established. In the post-welfare state providers of public Service are to a great extent to be found in the private sector. Quality control has partly been left to the providers themselves and their own quality assurance systems, but there is also a need to follow up on the formulated goals from a governmental perspective. There is still a need for control and this calls for the development of an arsenal of instruments of control.

In the Swedish welfare state provision of housing was very much in the hands of the state and municipal housing companies. They were building, owning and managing their housing stock. In the post-welfare state private developers play a more dominant role and they provide dwellings for sale on a market. Their interest has shifted from POE's to stated preference investigations with the purpose to identify economically strong groups of buyers and provide what they want to buy. POE's does not play the same important role in organizational learning as before, instead we have different tools for verification based on the principles of economical auditing.

What architects and planners actually know is embedded in what they do. The environmental design professions could be expected to have an interest in developing the routines of conducting systematic POE's in order to develop a more evidence based practice. Maybe we will see a revival of POE's driven from within the professions.

O31.5 LESSONS LEARNED FROM SCENARIO-BASED THINKING IN WORKPLACE RESEARCH

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Risk management is a top priority for organizational management when making crucial decisions regarding the physical and organizational requirements of new workplace concepts. In evidence-based research and design the availability of valid and reliable data on the relationship between user-requirements, organizational goals and ambitions, and the translation thereof to conceptual choices, is an integral part of the ability to minimize risks when considering the future effects of new workplace solutions. In acknowledgement of this, the Center for People and Buildings (CfPB) has since 2009 applied the PACT-model – a model specifically developed to relate workplace activities and types of workplaces to one another in order to develop different case-specific scenario's based on organizational goals and ambitions, the work processes and the extent of flexibility and multifunctionality provided by/required from the new workplace environment. Outcomes of the scenarios provide insight in the physical and organizational consequences of change elements related to growth/downsizing of the organization, changing work processes and the adoption of more flexible work styles, including the possibility to work at home.

This methodology in which possible future developments in work and workplaces, are combined with knowledge of organizational goals and ambitions has proved extremely helpful in comparing the anticipated effects of various alternative workplace concepts in the early stages of the change process. Although effective in assisting the decision-making process in individual case studies, the combined longitudinal effects of this approach have not yet been reviewed. The purpose of this paper is therefore to provide a qualitative review of the effectiveness and added value of scenario-based thinking in effective decision-making on the long-term vitality of organizational accommodation. To provide the required insight, a cross-case analysis of all case studies undertaken by the CfPB with the use of the PACT-model is being undertaken. The central question to be answered relates to the identification and extraction of best and bad practice data regarding the decision-making process itself, the manner in which scenario-based alternatives are formulated and the effects associated with each of the developed scenarios.

The application of scenario-based techniques in selecting alternative workplace concepts is providing a means of assessing the anticipated organizational, physical and financial costs and benefits related to each of the scenario-based solutions prior to the implementation thereof. By creating insight in the similarities and differences between proposed scenarios (in the early stages of the change process) and the actual performance of implemented strategies (in the post-occupancy evaluation stages) the effectiveness of this methodology in environment-behaviour studies and the opportunities for continued research is emphasized.

O32. USERS' EXPERIENCE: RESEARCH AND DESIGN IMPLICATIONS (1)

O32.1 DO LANDSCAPE AESTHETICS GO BEYOND SCENE CONTENT? TESTING THE PREFERENCE MATRIX USING AN IMPROVED METHODOLOGY

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Introduction

The goal of this study was to investigate the extent to which the informational variables from the preference matrix (Kaplan and Kaplan, 1989) are predictive of landscape aesthetics. In a recent meta-analysis covering empirical research on the preference matrix, it was concluded that consistent support was lacking for each of its component variables (Stamps, 2004). Possible causes for the inconclusive findings in the past are outlined and addressed in the present study. Amongst the methodological improvements are the use of a statistical test which takes into account the ordinal distribution of the data, improved definitions of some of the preference matrix items based on participant comprehension scores, a substantially sized image database (n = 1600) with high quality images from natural, built and "mixed" scenes, and use of beauty rather than preference as target variable since the latter is deemed to be sensitive to the goals and intentions of people (Herzog & Leverich, 2003). In addition, any confounding effects of scene familiarity and both natural and built content on ratings of the variables from the preference matrix were taken into account and the frequently suggested interaction between complexity and coherence was investigated.

Method

Each of the 100 participants viewed 80 out of the in total 1600 images one by one on a computer screen. For each image, participants rated their agreement with statements regarding Natural and Built character, Complexity, Coherence, Mystery, Legibility, Familiarity and Beauty on a seven-point Likert scale. The data were analyzed using a Bayesian ordinal mixed model procedure since this takes into account both the use of ordinal scales and the fact that different participants rated different sets of images.

Results and Discussion

In contrast to findings reported previously (Stamps, 2004), this research shows that all variables from the preference are positively predictive of beauty. The lack of consistent findings in previous studies is therefore likely a consequence of methodological shortcomings. In addition, this study has been the first in which support for an interaction between coherence and complexity was found. Furthermore, both natural and built content of a scene, as well as its familiarity, were found to be related to reported beauty. This finding is interesting because it implies that natural and built content are concepts that are not directly opposite. It is concluded that the preference matrix should be regarded a valuable paradigm for informing future research that has a focus on human preference for specific kinds of spatial information.

O32.2 PROGRAMMING FOR BEHAVIOUR IN EDUCATIONAL ENVIRONMENTS

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To attain a quality built environment the design process needs structure, rigor and rich, varied data on the relation of human behaviour and architectural design elements. To this end, the architectural program, or brief, is an important instrument, considering the complexities with which an architect is faced when designing a building or urban space. During the 1950´s architects and engineers, aware of scientific theoretical developments, endeavoured to apply new methods to the building design process and the programming phase gained specific methods such as 'problem seeking' by Peña and Parshall, first used in 1973 by the National Council of Architectural Registration Boards of the USA and today in its 4th edition (2001). This paper discusses the architectural program as a part of the building design process, its content and recommended form of presentation. In most programs emphasis is given to primary functions of architectural spaces and their interrelations. There is a need however to introduce discussions on issues that support positive human behaviour in the built environment and prevent or avoid behaviour considered anti-social and non-productive. This paper presents further developments of a continuing study on the public school environment as found in the State of São Paulo, Brazil. The local school building design process was characterized and shown to lack a participatory briefing phase. A discussion on the importance of such a programming phase and specific methods to be employed during the design process to improve the local school environment is included here. In addition, the rich literature on human behaviour in relation to architectural elements is organized with results from observations of school environments. Various aspects of schools have been analysed over a long period especially in Europe and in North America, from learning styles to vandalism and transformed into design criteria. However, this data is rarely structured to produce documents to be efficiently and effectively used in the pre-design phases of the design process. Thus, a study is presented where behavioural issues, relating to specific settings, with emphasis on educational environments are structured according to the 'problem seeking' programming method. This material should enable participatory briefing to be introduced in the local public school building design process with a goal to support increased learning and productivity in schools. Improved educational spaces can then be evaluated according to benchmarks set in the architectural program itself.

O32.3 DESIGNHEALS PROJECT PART II: PRELIMINARY REPORT OF A FIELD-BASED SALUTOGENIC ASSESSMENT INSTRUMENT FOR ASSISTED LIVING FACILITIES

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Review of existing assessment instruments for assisted living settings revealed three important facts that first, most of these instruments were developed by using survey databases; second their underlying theoretical argument did not extend beyond congruence between assisted living settings and elderly; and third the findings of these instruments were not able to built a strong evidence based practice in long-term care environments. Design of assessment instruments for Alzheimer's Special Care Units were developed by including complex array of environmental variables and much rigorous (e.g. Zeisel et al. 2003).

Salutogenesis, a term that was first coined by Antonovsky (1979), highlighted the importance of multi-variables that contribute to well being and criticized the pathogenic approach that oversimplified “being healthy” as opposite of “being sick”. Stokols (1992) recognized the potential use of salutogenic model to make better understanding of relation between health and environment, especially in macro (e.g. urban) and mezzo (e.g. neighborhood) scale. Application of salutogenetic model to long-term care settings was discussed later (Wister 2005, Kepez 2006).

Focusing on objective measurement of positive features of assisted living environment that supports well-being and autonomy of elderly is the core of Salutogenic Assessment Instrument for Assisted Living Facilities, which has been developed under scope of DesignHEALS Project – a three year research project funded by European Union 7th Framework Program. The aim of this research is to study the link between environmental qualities of assisted living facilities and well being of cognitively intact elderly. Multiple case study methodology was followed by selecting 18 facilities varying in three size and plan layout configurations. The size of facility, plan layout configuration, walking distances between resident’s room and common areas, accessibility and presence of neighborhood amenities are the independent variables of this study. Well-being outcomes (dependent variables) were collected by structured observation of resident’s use of common spaces and their social interactions. Residents were surveyed and their non-medical records were taken from caregivers. Quality issues, such as inter-rater reliability of observers and interviewers, were taken into consideration. Spatial analysis methods such as Space Syntax and Geographical Information Systems were incorporated to maintain objectivity and analytic reasoning.

In second year of our research project, our main motivation is to share our discussion of existing assessment instruments on assisted living settings and share preliminary results of ongoing field data collection with IAPS community. Research findings will be transformed into design guidelines and an assessment tool for assisted living settings.

O32.4 THE DEVELOPMENT OF IMAGE GRID METHOD: PERSONAL CONSTRUCT ON HEALTH AND COMFORT

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In recent years, most people in Japan or other busy countries seem to feel some stress and distress in daily life. Therefore, the feeling of “being healthy” or “comforting (healing) oneself” in any way is demanded to maintain the psychological and physical balance to be healthy.

The aims of this study are to develop a new method of extracting the image construct about healthy or healing environments and to comprehend their image construct. One of the methods of extracting environmental evaluation structure formed through individual experience is the Evaluation Grid Method (EGM). EGM is based on the personal construct theory and Repertory Grid Method (RGM). The difference between EGM and the original RGM is that RGM asks only the similarity and the difference among elements while EGM asks the rank order of the elements and then asks the basis on which such ordering has been made in evaluating environments using word criteria. The object of EGM is to extract elements of preference for living environments from each individual, and make clear his/her construct of evaluation. Though EGM is very useful to

extract personal construct related to a specific space such as living rooms, it is quite tricky to find preferable environment for activities or psychological state that could be felt in various places.

After several trials of modifications on EGM, we proposed a new method called Image Grid Method (IGM) using the Evaluation Grid Method as a reference to explore Japanese people's personal construct image of health in daily life. This method is the combination of remembering behaviour settings and laddering them without presented elements comparing procedures.

From the previous research, Image Grid Questionnaire seems to be quite effective for extracting personal construct of feeling healthy in daily life. Following discussions lead to the conclusion that Image Grid Questionnaire is no longer a development of EGM as there is no procedure of comparing elements. In this research, Image Grid Method is applied on the feeling of “comforting (healing) oneself” and compared the result from other method. The result shows IGM extracted some factors that seem to have missed from other methods. This kind of knowledge will be useful for space design meeting the demands of health and comforting people.

O33. USERS' EXPERIENCE: RESEARCH AND DESIGN IMPLICATIONS (2)

O33.1 FROM KNOWLEDGE ABOUT USERS, TO PREMISES FOR PLANNING? UNIVERSAL DESIGN AS A METHOD FOR IMPROVING QUALITY!

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Universal design is a term used differently in various disciplines. In the book “Inclusive design”(Vavik 2009) the authors conclude that in spite of this we are dealing with a people – centred design approach.. However within the profession of architecture the term is primarily used to describe minimum demands on solutions and standards related to accessibility. This article discusses how universal design can be used as a method to increase quality and contribute to more user-driven innovation. The method is inspired from the methods used by product designers, but the article also discusses the differences and equality between this to different disciplines.

Several arguments are relevant to emphasize that a people oriented approach are necessary for Architects. Physical surroundings can expand or restrict the usability of physical surroundings. The physical environment can be considered as structural objects that influence everyday life. The article discusses how this methodological approach used by product designers can be further developed in the field of architecture, including existing theories and analytical tools developed by researchers in architecture. The article describes conditions for this type of quality development and what this approach entails. The article is based on existing theories (Latour 2005; Kirkeby 2006; Paulsson 2008) and empiric research of three cases. Studying the planning processes focusing on a specific user perspective.

If this kind of methodical approach is going to be implemented, it is assumed that a common recognition is that the environment does affects our everyday life. The method indicates that the environment has a different influence on different people, depending on age, culture, ability and their role in the building. Dealing with “all”, the method requires a more systematic collection of different people's experiences and use of physical solutions. This kind of insight must be obtained and disseminated in a form that can give designers the opportunity to innovate and develop new

kinds of solutions. In order to discuss the quality aspects, it is also required to express goals for what one wants the environment to "support". Finally, a common "language" to discuss and systematize the various dimensions of the interplay between people and environments is needed.

The architects' task is to convert series of visions of what the environment shall support, into physical spaces. It is a matter of transforming abstract relationships into material reality. To help this translation a more methodical approach can help improving this prosess.

O33.2 MULTI-METHOD APPLICATIONS IN EVIDENCE-BASED RESEARCH ON HEALTH AND ENVIRONMENT: APPLICATIONS IN MICRO AND MEZZO SCALE ENVIRONMENT

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Evidence-based research has been used in environment behaviour research and research results have been utilized in policy and practice since Ulrich's famous 1984 study of view from patients' rooms and its relation to their recovery time from surgery. Especially adopted by research in healthcare environments; recent literature reviews revealed that even though there are numerous studies employing evidence based research design, methodologies are mostly confined to a single method leaving multi-method applications in research designs scarce (see Devlin and Arneill, 2003; Ulrich et al. 2004). On the other hand, multi-method approaches allowing for validation and triangulation ensures that the "research results are valid and not a methodological artifact" (Campbell and Fiske, 1959). Therefore in evidence based research, use of multi-methods will not only allow us to examine the same phenomenon from different perspectives but it will also enrich our understanding of the issues under study and strengthen the possibility of implications for practice.

This paper argues the need for multi-method research designs in evidence-based research giving examples from completed research that studied the relations between health and the environment. To this end, two different research designs conducted at two different contexts, one at the building scale and the other at the neighborhood scale will be presented: (i) a study investigating the impact of group homes on the health and well being of their elderly residents and the other (ii) investigating the relations between the neighborhood design and the physical activity and social interaction of their residents. Both research studies have employed objective methods including behaviour mapping, geographic information systems mapping, space syntax analysis as well as objectively recorded subjective data including surveys and interviews. The process constructing the methodology in multi-method evidence based research and application of these methods during the study will be presented and the implications for further research and evidence based practice will be discussed from the viewpoint of practical considerations, challenges and recommendations. The significance of this research is that it underscores the importance of the use of multi-method and mixed-method research designs in evidence based research and transfers the experience from two comprehensive research studies and attempts to link these with design practice and policy.

O33.3 DO STAKEHOLDERS REALLY NEED (OR WANT) TRANSDISCIPLINARY RESEARCH? CONSIDERATIONS FROM AN ONGOING CLIMATE CHANGE PROJECT

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Climate change today represents a major societal topic in relation to which opinions are expressed by both so-called 'lay persons' and 'experts' – a distinction which, however, remains rather blurred. While daily-life assumptions about ever hotter summers and wetter winters, respectively, might easily become subject to mutual agreements, in professional spheres climate change is nothing unquestioned. Depending upon concrete fields of expertise, climate change might be an obvious problem to researchers but not to the stakeholders that are to be involved in the respective research project. How, then, to decide upon the relevance of a certain topic? Who defines the problem and whose representations are 'right' in such a case in the end?

In the paper we will discuss some considerations on this ambiguity based upon first insights from an ongoing research project that deals with interdependencies between land use and climate change in Germany (CC-LandStraD). The inter- and transdisciplinary project covers all relevant land use sectors (agriculture, forestry, settlements and transport as well as nature conservation) and, by way of interdisciplinary modelling, intends to develop future land use scenarios under conditions of climate change. By scientists, agrarian, forestal, settlement and transport land use and nature conservation are expected to contribute to climate change mitigation but at the same time also to adapt to the predicted impacts of climate change. In such an understanding, ongoing land use change will progress also in the future. In a transdisciplinary endeavour, the project tries to involve stakeholders from relevant national associations and interest groups repre-senting all of these land use sectors. One of the methodological tools applied are semi-structured interviews in which the stakeholders' perceptions of climate change impacts and potential or necessary mitigation and adaptation measures are explored. In future project workshops, the stakeholders are then expected to present their views on the meaningfulness of the developed scenarios, the indicators considered and the expected outcomes. The stakeholders are thus ascribed a major role not only in the process of the project but also for its progress and overall outcomes. While from the perspective of applied research (and research funding, respectively) this role is becoming desirable and almost fashionable, it is questionable whether all of the stakeholders really want to play it as it makes science (even) more uncertain to them.

Currently, the interviews are being carried out. Therefore, the 2012 IAPS conference is a good opportunity to reflect upon some expected and unexpected findings.

O33.4 "IT IS NICE TO STAY BY THE SHRUBBERY" - THE ROLE OF GREENERY AT THE SCHOOL GROUND AS REFLECTED IN CHILDREN´S USE, PREFERENCES AND EMOTIONAL STATE

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Research and practice on green school grounds are today guided by the assumption that greenery is important for children´s well-being during recess. Outdoor play in green settings among preschoolers support joyful vigorous outdoor play and attention functioning. Less is known about the role of greenery for the well-being of children during middle childhood. While the study of

the very young children relied on interpretation of video recordings, self-assessments and self-report could be expected useful in the study of school age children. We have investigated how children´s emotional state is related to their use and preferences at school grounds in year 4 (10 year-olds) and year 6 (12 year-olds).

The study included 234 children, that is 97% of all the 4th (10 years) and 6th graders (12 years) at two schools. Both schools are part of “Green school grounds” initiated 2010 by the council of Malmoe, a city of 300 000 inhabitants in southern Sweden. One school ground represented a ground with more greenery and the other a ground with less greenery. During one week, two times a day after recess, children´s use of their school ground and their emotional state after recess were documented through self-report. Mood icons were used to assess their emotional state in the dimensions of valence (unpleasantness-pleasantness) and arousal (deactivation-activation). The children also reported two favorite activities and two favorite places at the school ground as part of a survey during the last day of the field work.

Preliminary results show that a majority of children at the two schools evaluate their emotional state after recess as a mood of happiness and alertness, with 58 % of the 4th graders and 44% of the 6th graders reporting maximum points in both dimensions. Maps of school ground activity show that children reporting a more “neutral” emotional state differ from children in a more positive emotional state in what routes they take and what places they choose. Children´s school ground use is incongruent with what favorite places and favorite activities they report. The role of greenery for children´s use of the school ground and how this is related to their preferences and emotional state after recess will be described for girls and boys in the two age groups. Conclusions are drawn about what type of knowledge different types of self-report and assessments of school ground use during recess yield.

O33.5 WELL-BEING IN THE ARCHITECTURAL DESIGN STUDIO

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Architecture and Well-Being is a one year research led design studio which is offered as part of a suite of studio programmes within the Master of Architecture Part 2 degree at the University of Edinburgh School of Architecture and Landscape Architecture. Recent research has shown that environmental phenomena have powerful psychological and physiological effects on human beings. These include the impact of space and form, proportion and scale, natural and artificial light levels and qualities, texture, colour and materiality. Further issues for designers include opportunities for meaningful social engagement, integration of art, connections to nature, olfactory and aural phenomena and sensorial variation. In the Well-Being studio at ESALA students work both collectively and individually to interrogate concepts, issues and theories which underpin the relationship of buildings, places and people. Particular urban places and buildings are critically analysed in relation to this ‘Well-Being’ agenda. Issues elicited as fundamental to the people/ environment dialectic by the studio include:

• Environmental qualities and their impact upon physical experience and health.

Including an understanding of what constitutes 'qualities of environment' scientifically. Design for the senses encompassing the impact of sensory variation and connections to nature, (Pallasmaa, 2005).

- Architecture and its potential impact upon our psychological and emotional well-being.
- Meaning in architectural form and space, (Norberg-Schulz, 1980) self and community memory and identity, place identity and attachment, (Canter, 1977). Understanding primordial responses to the body in space. How can Architecture make meaning from our life experience?
- Body-Space. (Borden, 2001) Including the impact of landscape on bodily movement and posture, the impact of the body on architectural space and the performative nature of the body-space dialectic.
- Social space, including spatial politics. Knowledge of the different forms and scales of social space from the personal to the urban. If social behaviours are generally prescribed by the desired social ends of the owner, (Lefebvre, 1996), how might this be transformed by designers in ways which lead to creative production rather than consumption?
- Theories of perception. (Merleau-Ponty, 1945). Understanding how we perceive the world and its phenomena and how this may affect the way we think as designers.From this research students then create their own phenomenological manifesto and programme for an architectural project which responds in a structural way to the physical, historical, social, cultural and economic forces which exist in a particular place. Through this preparatory vehicle, experiential goals for the exploration are defined for the project at the outset. Completed projects are then critically analysed to ascertain their success in designing for the enhancement of the human experience.

O34. Application of technology in Environment-behaviour research

O34.1 The relationships between street, buildings and interactions of human behaviours for livable street: Using GIS and discrete choice model

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The street was a traditionally important environmental factor in urban spaces, and recently has been playing an important role in urban management and regeneration for livability. A well-designed street is, now, a key element of better urban planning. For several years, urban planners have been paying attention to the expectations of pedestrians who are more aware of the urban environment, resulting in more and more precise constraints on both urbanistic and architectural aspects (Mangin and Panerai, 1999). In contrast, suggestions based on urban development do not always agree with desires of citizens (Zacharias, 1999). In this respect, it is important to understand the relationship between the attributes of the physical environment and peoples' behaviours. However, this understanding has been illusive mainly because users of streets are unspecified individuals. Therefore, this study suggests novel methods to acquire behavioural data and analyse them to reveal the relationship between built environment factors and -behaviours.

Recent and emerging advances in the spatial information sciences enable us to perform such analysis. In particular Geographic Information System (GIS) has been recognized as a very useful

tool for accumulating and analyzing spatial data. As GIS data and analysis methods have already been developed so as to measure specific attributes of the built environment for selected spatial units of interest, we propose use of GIS in this study. In detail, we collected behavioural observations and field surveys in the form compatible with GIS. Discrete choice model (Train, 2003) was employed for data analysis. This analysis assumed that people selected specific behaviours based on the environmental condition. The use of discrete choice model was helpful to extract the relationships from complicated GIS and behavioural data.

Our methods were applied to the analysis of behaviours in the Guranmoru street area in the city of Yokohama (Japan), where a novel concept of "Activity Floor" has been applied and landscape elements inventoried. Data was collected with four behavioural observations and four field surveys. 403 behaviours were observed and classified into eight types. According to the precedent studies and field survey, three types of variables were distinguished – individual characteristics, environmental factors (building programs, characteristics of façade, public transportation, street furniture, etc.), and relationships with other behaviours. These variables were implemented in GIS. In addition, the closest distance between the behaviour and environmental factors was used as another independent variable in GIS-based analysis. The Multinomial Logit (MNL) among discrete choice models was particularly used to analyse data. The method proposed in this study will enable us to understand how the frequency and types of behaviours are related to built environmental factors, leading to better planning and managing of the street environment.

O34.2 A MULTI-METHOD PROPOSAL TO STUDY PUBLIC SPACE ON A NEIGHBORHOOD SCALE FROM A TRANSACTIONAL APPROACH

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The transactional perspective is very attractive in order to analyse and intervene in public space on neighborhood scale. However, language and methodological differences between the various disciplines involved make it quite complex. In this article we present a multi-method qualitative strategy of analysis, integrating various results graphically, in an attempt to bring together the graphic and textual languages that dominate single-discipline approaches of public space. Diverse techniques were triangulated and underwent the same analytical process (Grounded Theory), supported by Atlas / ti and Arcgis software. Using thistechnique it was possible to link graphic aspects (maps and images) with comments from researchers and biographical accounts of the participants. So, specific physical spaces were associated with the development and construction of spatial meanings and uses.

O34.3 LANDSCAPE PERCEPTION ANALYSIS OF BUILT AND NATURAL ENVIRONMENTS USING EYE TRACKING: COMPARISON BETWEEN EXPERTS AND NON-EXPERTS

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In the European Landscape Convention, landscape is seen as a key element in individual and social well-being and its protection, management and planning entail rights and responsibilities for everyone. Furthermore, the Convention states that landscape is an important public interest and

constitutes an important part of the quality of life for people everywhere, contributing to the formation of local cultures and Europe's natural and cultural heritage and identity. Consequently, it may be valuable to include people's perception of landscapes into landscape planning. Therefore, it is important to know how people observe landscapes and how different landscape features are perceived. Most landscape perception studies use landscape photographs as visual stimuli, usually in combination with a questionnaire. It is, however, difficult to objectively measure how people observe landscapes. An innovative tool for measuring people's landscape perception is provided by eye tracking. This technology enables us to measure the speed and direction of eye movements (saccades) and fixations while observing images. Consequently, the entire scan path, made by an observer on an image, can be reconstructed and visualised. The aim of this study is to examine the difference between built and natural environments, represented by a set of landscape photographs ranging from urban to rural landscapes in Flanders (Belgium). Additionally, the observation patterns of different groups of respondents are compared (experts versus non-experts). The methodology consists of three steps. First, landscape photographs were taken in different landscape types, using a fixed focal length and a tripod. Second, the experiment was executed using an iView X RED eye tracking system. In this study, around 40 observers (20 experts and 20 non-experts) participated to the test. The experts consisted of graduate geographers and master students of geography, while undergraduate geography students participated as non-experts. During the experiment, the respondents were instructed to observe the landscape photographs for a few seconds, without executing specific search tasks. After the eye tracking measurements, the respondents were asked to rank the pictures from rural to urban landscapes in an additional questionnaire. Finally, the output of the experiment was statistically analysed to identify significant differences in perception between the landscape types ranging from urban to rural environments on the one hand and between the experts and non-experts on the other hand. The results were then visualised in fixation and saccade maps. Based on these maps, two-coloured heat maps were created to represent on the photographs which elements in the landscape drew most attention. The technique of eye tracking and the results of this study may be helpful in transdisciplinary landscape planning and design as it offers insights into the observation patterns of rural landscapes and built environments.

O34.4 TOWARDS AN INTEGRATED RURAL-URBAN ENVIRONMENT: A METHODOLOGICAL APPROACH

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Abstract

This paper has been progressed in four parts. Part one, traces the transformational trends of socio-physical interaction between the rural-urban ecosystems during the transition of human civilization from agricultural to industrial and from industrial to the post-industrial phases. Part two attempts to identify the salient procedural planning and developmental constraints and conflicts forestalling a sustained integration of rural-urban ecosystems. Part three emphasizes the need for a research oriented methodological approach and utilization of innovative techniques and strategies in order to achieve the integration of rural-urban ecosystems on a sustained basis. Finally, part four highlights the conclusions and recommendations of the study.

The study of pertinent literature leads to the inference that all the nations of the world have been and are becoming transformed from traditional agriculture-based civilization to high technology

based tertiary civilization, albeit at different rates. It also manifests that the current era of industrialization is of a transitional nature and acts as a bridge between the primary and tertiary civilizations. Various countries of the world have been passing through the peak of the industrial phase with a temporal differential.

The journey to the tertiary civilization is successively bringing in its wake a morphological transformation from nodal to aggregative and from aggregative to diffusive pattern, which would finally result in the formation of the global city. However the journey towards the tertiary civilization and the global city would be different for different nations in terms of its timing, ways, means and sociophysical complexion. Different countries would be taxiing from different directions, at different speeds, with different types of technological equipment, in different state of preparedness to embark upon the the socio-physical band wagon of the global city of the twenty-first Century. This uncoordinated development is bringing about differentiated socio-physical changes in the rural-urban human ecosystems on a piecemeal basis.

The Global city will indeed be an outcome of the total urbanization - which can perhaps be termed as an era of "rurbanization" - representing an epoch of complete blending of rural-urban ecosystems - rather than rural-urban dichotomy. Nevertheless, a healthy birth of the global city is a highly complex matter and requires a dynamic rather than traditional methodological approach; an interdisciplinary, multi-level participation; and utilization of modern techniques and innovative strategies to deal with the seminal phases of the planning and development processes.

O35. PRO-ENVIRONMENTAL BEHAVIOUR (1)

USING SELF-OTHER SUBSTITUTION TO INDUCE PRO-ENVIRONMENTAL BEHAVIOUR: A NEW LINE IN BEHAVIOUR CHANGE RESEARCH

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Over the last years, humanity has realized the importance of protecting the environment. Awareness about environmental issues has risen, mainly due to growing media attention to the risks if people don't change their behaviour. Information and communication are deployed by the media, and have shown their efficiency in changing attitudes, inducing behavioural intentions and even provoking deep realizations. However, these techniques are limited when inducing effective behaviour.

Taking into account these limitations, our current research aims to develop a new behaviour change technique.

For around a decade following Guimelli's research (1998; Guimelli & Deschamps, 2000, 2004) on the "muted zone" of social representations, studies have observed a mask/unmask phenomenon of certain elements of social representations. This can be supported by the fact that negative elements (stereotypes, opinions…) are often masked by individuals when asked to express themselves in their own name, but unmasked when people are asked to express the opinion of the "French in general" (or self-other substitution).

These results have been interpreted in different ways (Flament & Milland, 2010). On the one hand, self-other substitution is considered to be a way in which normative pressure can be “released”, and on the other hand, it is seen from the viewpoint of social comparison theory, providing individuals with the possibility to positively value themselves (Chokier & Moliner, 2006; Chokier & Rateau, 2010). No matter what the interpretation of self-other substitution is, studies indicate that it drives individuals to adjust their behaviour to what is socially desirable (Rateau et al., 2010; Chesterman, 2011). If this is the case, then self-other substitution has potential in the field of pro-environmental behaviour change.

Our first study (Rateau et al., 2010) on a sample of 407 first year psychology students showed that individuals having answered the NEP scale (New Ecological Paradigm; Dunlap et al., 2000) in the third person (self-other substitution) generally declared themselves more respectful of the environment than those having answered in the first person.

Our next study attempted to observe this effect on behavioural intentions to use dry toilets (Chesterman, 2011). Following a group debate about dry toilets either in the first or the third person, participants (N=60) were significantly more favourable to dry toilets when having discussed them in the third person. Not only did group debate have an effect on behaviour change, self-other substitution further increased the intensity of this change.

It would seem that self-other substitution has potential in the field of behaviour change, and has already shown its promise concerning pro-environmental behaviour. We will discuss the studies mentioned above, in view of proposing a new, less complicated behaviour change technique.

O35.2 PEER ASSESSMENT AND SELF-PERCEPTION OF ADOLESCENTS' PRO-ECOLOGICAL COMMITMENT

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The social situation in which a person works, plays or lives is one of the situational determinants of his or her ecologically committed forms of behaviour. At the same time, we assumed that people in constant interaction with a given individual would be able to advance some sort of judgement about the ecological commitment of such person. This assumption would be particularly applicable to human groups whose activities involve paying attention to ecological matters. According to a research design clearly exploratory, with heuristic purposes, we applied a questionnaire to 205 students of an Environmental Control Technical Course (high school level), whose ages varied between 14 and 21 years old, 70% of which were female. Among other questions and scales, we asked them to list the names of five colleagues of the same class who they considered as pro-ecologically committed people. We attributed proportional values to these names in accordance with the order of indication: five points to the first one, four to the next, and so on. Additionally, we asked for a justification of such choices and inquired whether they practiced some sort of environmental care. Thus, from each respondent we obtained his or her own self-evaluation as environmental caregiver/non-caregiver, that could be compared to the ranking (mean punctuation and number of mentions) in the pro-ecological commitment evaluation performed by his or her classmates. Our findings indicate a clear association between the pro-ecological commitment socially perceived and the self-reported practice of environmental care, which was particularly evident for the higher levels of the ranking by the peers. However, the socially perceived

proecological commitment index (SPPEC) did not relate so well with scale scores. We could not find correlation with ecocentric and anthropocentric environmentalisms, as indicated by Thompson and Barton's Scale (1994), which raises important questionings about the features present in such social perception among peers. More than just endorsing the attitudebehaviour gap, it is important to consider that the two main reasons given by respondents for the choice of classmates as environmentally committed were "pro-environmental practices" and "participation in environmental movements or projects." The accumulation of ecological information, the environmental movement's success 'C or lack of C', personal attachment to sustainability ideals, the vulnerability to planetary and local climatic changes, and many other aspects of current days scenario may have imposed changes to lay people's positioning about ecological issues, what seems to require a verification of "how they are doing." If not for other reasons, at least in order to address them appropriately in research questionnaires, scales and interviews.

O35.3 VISUALISING CLIMATE CHANGE: THE ROLE OF MENTAL IMAGERY IN PRO-ENVIRONMENTAL MESSAGES

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When communicating climate change to the wider public visual images are frequently included. A recent example of this is the Act on CO2 campaign by the UK government. The use of visual images is supported by scientific research indicating the benefits of using visual images over verbal information (e.g. Kees, Burton, Andrews & Kozup, 2006). However, there is a lack of research on how visual images can motivate behaviour (Sheppard, 2005). We propose, based on the Elaborated Intrusion Theory (Kavanagh, Andrade & May, 2005), that visual images can be internalised as mental images which can act as a 'motivational bridge'. They can remind individuals of the benefits of behaving according to pro-environmental goals when no external cues are available. Mental images have been shown in previous research to have strong emotional and motivational links, mainly through their effect on goals (Holmes & Mathews, 2005; Kavanagh et al., 2005).

Three studies were conducted investigating the role of mental imagery in the effectiveness of pro-environmental messages. In the first two studies participants were exposed to a pro-environmental message on two different topics (energy saving and ocean pollution, respectively). One week after exposure to the message, thoughts and mental imagery related to the message were measured, as well as self-reported behaviour change and value orientation. Mental imagery was shown to be positively associated with behaviour change in both studies. More importantly, support was found for a mediation effect indicating that goal formation mediated the relationship between mental imagery and behaviour change. Also, in line with our expectations, vividness of mental imagery was shown to depend on underlying values. In addition to these correlational studies, a third study was conducted in which mental imagery was manipulated using techniques from working memory research. Again participants were exposed to an environmental message on ocean pollution; mental imagery was manipulated immediately after exposure to the message. Participants whose visual images were not interfered with were almost twice as likely to report performing pro-environmental behaviour, compared to participants whose visual imagery was reduced. This provides further support for the motivational role of mental imagery.

Based on the studies, we conclude that the effect of a visual image on behaviour depends, among others factors, on the extent to which it is able to trigger recurring mental imagery. Additional considerations (e.g. using positive vs. negative images) will also be discussed. Investigating how visual images can influence attitudes and behaviour has important policy implications. Insights will provide opportunities for designing evidence based visual pro-environmental messages. In turn this can maximise the impact visual messages can have on changing people's pro-environmental attitudes and behaviour.

O35.4 THE NORTH EAST SCOTLAND ENERGY MONITORING PROJECT: DO GADGETS HELP HOUSEHOLDS TO SAVE ENERGY?

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The North East Scotland Energy Monitoring Project (NESEMP) is an ongoing three year study of energy use in 400 households, most of who work for a large local authority in North East Scotland. This project recruited participants from Aberdeenshire County Council, and the geographical spread of the sample was found to well represent the geographical spread of the population in the study area. Participants in this study were each provided with an internet-connected energy usage monitor – a technology which provides households with real-time electricity consumption feedback as well as the ability to see time-series data when connected to the internet. The energy data streams from the sample have been used to draw a picture of household energy consumption. Participants were asked to fill in CO2-calculator questionnaires in the first phase of the study. Returned questionnaires were subsequently analysed using a standardised method to derive CO2 estimates. Participants were also asked about the frequency with which they undertook various pro-environmental behaviours, their beliefs about climate change, their beliefs about the efficacy of particular measures to mitigate climate change, measures of personal coping with climate change, attitudes to energy generation, life satisfaction and community connectedness. Household CO2 footprint estimates were fed back to all households in the second phase of the study, and an experimental condition was introduced for 50% of the sample. This experimental condition will allow the study to determine any additional effect of individual-appliance feedback over and above whole-house feedback. The study design including details of the experimental condition will be presented. Methodological challenges associated with the scale of data collection (400 houses each providing readings every 5-minutes for 3 years) will be discussed. Furthermore, household energy consumption will be discussed in relation to questionnaire-based measures, including CO2 footprint estimates.

O35.5 CHILDREN'S PERCEPTION OF NATURAL PROTECTED ENVIRONMENT IN THE RAIN FOREST

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This study aimed at exploring and describing children's perceptions in peotected natural settings, specifically, the Rain Forest in Brazil. Several studies point to the significance of perceptions for people's pro-environmental attitudes and actions. We try to understand the person-environment interaction from an ecological perspective (Gibson, 1969), and we present theoretical references for the understanding of how crucial nature is for psychological development and well-being

(Chawla, 2002; Kellert, 2002). In a multimethod approach (Gunther, Elali & Pinheiro, 2008), the children's drawings, individual interviews, discussion groups, photographies and informal and indirect sources, as teachers, brought material for the analysis. Participated in our study, carried on through a multi-method strategy, 209 children from six to eleven years old, living in the neighborhood of the Biological Reserve of Una, State of Bahia, created to protect Rain Forest fragments. The Rain Forest landscape is well portrayed in children's drawings, the vegetal elements prevailing over artificial and human elements. The figured plants and trees, however, are pointed with no precision as to their species. Most of the defined species are eatable. The children seem to be aware of the environment degradation, and of the importance of its conservation, but they describe episodes of hunting and feeding wild threatened animals. Our results indicate a utilitarian trend in the perception of living beings, in terms of their immediate usefulness for people. The multimethod approach seems to be appropriate to the complexity of the theme; the methodological strategies were well accepted by the children, offering them opportunities to express themselves. We observed how children, in different life phases, organize natural elements and processes in their drawings, and how these images relate to the local landscape. We discuss the results in the light of theoretical references of person-environment studies and from previous investigations about children's perceptions of natural environment.

O36. Environmental Management

O36.1 Impacts of renewable energies on landscape development in Germany - how to manage our environment?

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One important facet of contemporary landscape change in Germany is caused by political decisions in favour of renewable energies. In particular the increasing use of wind, solar and bio-energy has become a decisive part of energy and climate protection policies. It is foreseen to enhance the share of renewable energies in the total consumption of electricity on minimum by 30% until 2020. In the same time the proportion of renewable energies in heat supply shall rise on 14% in Germany (BMU 2010). This implies a radical change in energy policy and is only possible by strong investment in new facilities.

These developments have spurred a public debate on the impacts of renewable energies on landscape development. Rather traditional notions of landscape, basing on agricultural and silvicultural land use patterns often are articulated in contrast to concepts of "energy landscapes" in which technical elements (wind, solar and biogas power facilities) and biomass production are seen as an expression of innovation and modernisation. The most intensive discussion concerns wind power, focusing on visual and ecological impacts. Therefore, wind power use has become the most frequent trigger of landscape-related local debates in Germany (Leibenath & Otto 2010).

Considering the described situation the question arises who is responsible for the shape and the change of our landscape. One could get the impression that political decisions at European and national levels dictate framework conditions reducing the options of local and regional actors substantially. From this point of view it is no wonder that conflicts appear as mentioned above. But what can be done by local people to deal with landscape changes caused by higher decision-making levels? How can landscape development be managed? This refers to questions of actors,

actor constellations and modes of interaction (Scharpf 1997) in relationship to landscape development.

The research project LaGo (Landscape Governance) of the Leibniz Institute of Ecological Urban and Regional Development tries to reflect problems of the described type from different theoretical positions. This contribution highlights the relevance of networks of actors to influence landscape changes at a local/regional level using the example of renewable energies in Germany. It aims at a better understanding of landscape change in a multi-level governance system.

O36.2 TRACING THE CO-EVOLUTION OF DECENTRALISED URBAN ENERGY INITIATIVES

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Transitioning from a predominantly centralised system of energy generation and supply towards a more decentralised system - one in which communities play a more active role - has been argued to be critical in achieving a low-carbon, secure, and equitable energy system (Energy Policy, 2008; Greenpeace, 2005).

However, overcoming 'lock-in' represents a significant challenge that encompasses economic, technological, governance and psycho-social aspects, and suggests the value of an inter-disciplinary, co-evolutionary perspective (Guy, 2006). Moreover, since the application of concepts such as 'local' or 'community' to low carbon energy initiatives has proved both ambiguous and contested (Walker and Devine-Wright, 2008), it is necessary to critically scrutinise any claims regarding the 'success' or otherwise of such initiatives.

This paper is derived from research conducted as part of the EPSRC funded CLUES project (Challenging Lock-in through Urban Energy Systems) that aims to understand the drivers for, and outcomes of, decentralized urban energy initiatives, including their potential for 'scaling up' at urban, regional or national scales. Following extensive review and search activities, 9 diverse UK urban energy initiatives were selected for investigation, using a predominantly qualitative methodological approach involving in-depth interviews with key actors in each case. Data were analysed using thematic analysis, informed by a co-evolutionary framework (Guy, ibid).

Our findings problematize the labelling of decentralized energy initiatives as either exclusively 'local' or 'community-led'. While often assumed to be local, the governance of these projects were more often multi-scalar, yet not in any straightforward alignment of local to national scales as might be captured by discourses of 'bottom up' or 'top down'. We present an overview of the policy implications of the projects' diversity, particularly in light of the 'localism' agenda and discuss the patterns and assemblies of common conditions that led to the existence of these projects.

O36.3 MUNICIPAL POLICY REGARDING GATED COMMUNITIES – WARSAW CASE STUDY

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Phenomenon of gated communities (GC) seems to develop steadily in Warsaw (representative big city for Central Europe) since late 90's. Numerous scientists highlight negative consequences of

living in GC i.e.: decrease of frequency and quality of social interactions (Blakely, Snyder, 1997, Putnam, 2000; Lewicka, 2002, 2004; Atkinson, Blandy, 2006; Owczarek, 2011), decrease of social actions undertaken for the sake of local neighbourhood (Blandy, Lister, 2006) as well as decrease of civic engagement (Owczarek, 2011) and decrease of place attachment (Wilson-Doenges, 2000). Process of gating intensifies social polarization and segregation, which is reflected by residential location in cities. Moreover, gating means privatization of public space, lack or poor quality of public spaces behind fences, fragmentation of urban structure, urban sprawl and suburbanization, dullness of residential landscape (Blakely, Snyder, 1997, Zukin, 1995).

In spite of such dynamic and alarming transformations in Polish cities (esp. Warsaw) local governments do not seem to have any policy regarding the phenomenon. Lack of regulations and development strategies of GC is pointed out in public debate and in scientific literature (Glasze,2003) as one of the key factors that give the green light to proliferation of guarded housing estates. Weakness of local institutions and local law leaves factual power of shaping urban space in hands of developers. Presentation during IAPS Conference will show analysis of Warsaw City Hall's policy regarding GC. Such interdisciplinary and holistic elaboration (social, spatial and policy aspect) can be groundwork for improving local policy (evidence-based-policy paradigm).

Objectives: analysis of municipal policy on GC during last 15 years (main aims and directions, actions and decisions, consequences on development of GC in Warsaw), analysis of relations between municipal authorities, investors and inhabitants. Method and sample: The project is based on two methods: A. desk research on municipal documents: master plans, development strategies, decisions on land development conditions, etc.; B. IDI's with representatives of Warsaw authorities and developers constructing gated real estates in the city.

Results and discussion: Collected data and outcomes are to some extend representative for big cities in Central European countries. Thus they can be a starting point to larger discussion on practical actions which address policy-making regarding phenomenon of gating (not only to discussion on social and spatial consequences of gating). Moreover they can be base for participatory method of solving the problem of gating (i.e. co-solving method) and for development of urban structure and local communities.

O36.4 NEWSPAPER COVERAGE OF WATER RESTRICTIONS IN MELBOURNE, AUSTRALIA IN RELATION TO CLIMATE CHANGE ADAPTATION

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From 1997 to mid-2010, Melbourne has experienced a significant reduction in water supply reservoir inflow (Melbourne Water Corporation 2010). The 2009-10 La Niña brought welcome rains, but long term prospects remain uncertain in the face of climate change (Cai and Cowan 2008, Solomon et al. 2007). In response to the drought, water restrictions were enacted by the Victorian government to reduce water demand while infrastructure projects were commissioned to increase the water supply. These water restrictions limited the use of water outdoors, and have had negative impacts on the vegetation of the suburban landscape. Adaptations can be made to mitigate these negative impacts by reducing the need for the use of potable mains water in the landscape.

This paper presents the findings from a content analysis of articles relating to water restrictions in Melbourne newspapers to identify changes in the way the topic was discussed within the public discourse. The study found that, between 2007 and 2010, expressions of uncertainty and scepticism about climate change had increased over time in newspapers in Melbourne, consistent with the politization of the topic and its transition from a scientific debate into a political debate. The study also found that the acceptance of the responsibility of households to adapt to the immediate drought was especially high in the local newspapers, despite any difference of opinion there may be about the role of climate change in relation to the severity of the drought.

This study is a part of a larger research program looking at the relationship between the public discourse surrounding water restrictions and drought, people's personal attitudes towards climate change, and changes to the physical suburban landscape as a result of drought adaptation. A better understanding of how and why suburban dwellers make landscape adaptations to climate change will contribute towards more effective climate change adaptation in the future.

O36.5 RURAL RESIDENTS' PERCEPTION OF LOCAL ENVIRONMENTAL CHANGES

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The transformation towards a sustainable society brings large scale changes into the rural or semi-rural landscape, such as renewable energy stations and infrastructure for more sustainable travel; novelties where the locals' response cannot be foreseen. The present study aims at contributing to the on-going efforts to understand perception of environmental change per se (Devine-Wright, 2009) by proposing the Human-Environmental-Interaction model (the HEI-model, Küller, 1991) as a supporting theoretical framework. The HEI-model suggests that the individual's perception of these changes as beneficial or adverse would be the result of interaction between his/her perception of (i) the physical and (ii) the social environment with regard to activities (here living in the countryside) and (iii) individual resources.

Data from three studies about living in rural areas (A: Sweden 2000, n = 351; B: Sweden 2005, n = 750; C: The Netherlands, 2007, n = 725) that all contained the questions "Have there been any changes for the better/worse in your living environment/municipality during the last years?" were reanalysed. Positive changes were reported by 24%, 21% and 23% of the samples; mentioned were improvement of the physical environment (bike lanes, greenery), development of the infrastructure (roads, public transport, broadband) and expansions (housing, shops). Negative changes were reported by 40%, 26% and 35%, covering industrialization/urbanization (wind turbines, industries, biogas plant, housing), deterioration (cutbacks in public service, thefts) and infrastructure (increased traffic).

Perceived positive changes were associated with: (i) perception of the physical environment as restorative (Study B and C) and suitable for economic growth (A, B); (ii) perception of the social environment as providing possibilities for participation (A); and (iii) the individual factors young age (A, B) and not using passive coping strategies (B).

Perceived negative changes were associated with: (i) perception of the physical environment as providing closeness to nature (A) and suitable for economic growth (C); (ii) perception of the social

environment as receptive (A); and (iii) the individual factors sensitivity (A, C), impaired wellbeing (C) and not using passive coping strategies (B).

The individual's perception of changes for the worse and for the better in the local environment was partly governed by different factors. These will be discussed as indicators of how future work to integrate and test the models should proceed. The endpoint will serve as a guide for policymakers on when technologies, not yet experienced by rural residents, are implemented in sensitive environments.

O37. URBAN DEVELOPMENT AND POLICY GUIDANCE

O37.1 THE ROLE OF MASTER-PLANNING: SHIFTING THE PARADIGM AND MOTIVATING CHANGE

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Master planning has had a strong revival in recent years and the words place-making and master planning are frequently used in government planning guidance. However, the gap between guidance and practical application is wide and requires further consideration. Sustainable master planning is driven by legislative requirements for low carbon and high quality developments from the UK Government. Although the UK Government and other influential bodies have written many reports recently about the intimate relationship between master planning and sustainability, Conventional routines easily dominate in organisations of many different disciplines and much more needs to be done to demonstrate how, which actors and where sustainability is embedded in the process. The broader framing of the masterplanning processes within the sustainability debate is explored in the context of a paradigm shift that acknowledges the notion as a complex, dynamic system. There is merit in adopting a paradigm informed by, and therefore suitable for dealing with, master planning process, particularly as the paradigm is founded on holistic and flexible strategies. However when faced with the complexity, uncertainties and ambiguities of delivering on all these ambitions actors involved the lack of common framework and consistent language around which to consider and deliver sustainable development. There is also a need to understand who the decision makers are within this process and what influences their decisions. A more structured strategy of how the masterplanning process works from the first stage to the last one, and how sustainability is embedded within this process, can help to achieve the goal and objectives of the so-called urban renaissance that has been used as a political and symbolic saviour to late-industrial decline also draws on the vitality benefits that bring to urban living and working. Thus, this paper begins by defining masterplanning and describing the masterplanning process, highlighting the main stages and tasks involved at each stage.

This paper then will propose that master planning process can be more effectively and permanently deliverable through a shift in paradigm, and explores how such a shift could redefine key decision routes and stages for producing different spatial plans and strategies in achieving quality in the development of sustainable community; and approaches to stakeholder engagement.

O37.2 THE LANDSCAPE CHARACTER-BASED APPROACH AS AN ALTERNATIVE TO LOCAL LANDSCAPE DESIGNATIONS

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Landscape policy in the UK has a long tradition of conserving natural beauty which historically has mainly been focused on the scenic quality and amenity within designated areas. As a result of both the progressive development of landscape analysis techniques, of which the most recent is the use of Landscape Character Assessment, and contemporary environmental trends, landscape policy in the past twenty years has undergone a significant transition from this focus on the 'best' landscapes to the wider notion of the 'rest' ones, expressed in the idea that all landscapes matter. This change poses a particular challenge for the non-statutory local landscape designations, which are considered less important than their statutory national counterparts but still have played a significant role in development planning. Over time questions have arisen about whether these designations should be retained in Development Plans or replaced by criteria-based policies informed by Landscape Character Assessment and covering the countryside as a whole.

This research aims to explore how the landscape character approach has, in the last two decades, developed into an alternative tool to the traditional local landscape designation approach. The intertwined evolution of these two approaches has been examined at both the national (England) level and the local level by conducting policy document review, case study analysis and in-depth interviews. At the national level, the discourses concerning the shift from local landscape designations to the character-based approach have been extracted to scrutinise the chronological development of both approaches at three successive stages. At the local level, three sample local authorities have been identified to investigate how the character approach has been delivered through conducting county/district-wide landscape assessment, addressing landscape character in development plans and using landscape character-based arguments in development control.

Result shows that the evidence-based nature of Landscape Character Assessment makes it favourable to use in the current planning system. It is also possible to replace the traditional practice of local designations with more area-specific landscape strategies tailored to different planning purposes and the need to accommodate change under the heightened call for sustainable development. However, the complexity of this approach leaves a knowledge gap for non landscape professionals and local planning officers. Therefore the degree of the adoption of this approach differs depending on the weight attached to landscape in planning issues and the presence (or not) of landscape officers to advise on these matters. Applying the character approach in the current planning system is undoubtedly favourable, and likely to become more so given the current UK Government's emphasis on 'localism', but time is needed to evaluate the long term effectiveness of the approach in a wider context.

O37.3 PLANNING & DESIGN FUTURE SUSTAINABLE COMMUNITY: A NEW APPROACH & METHODOLOGY FOR DELIVERING BETTER MASTERPLANNING- SUBETOOL

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Although the words place making and master planning are frequently used in government planning guidance, masterplanning has had a strong revival in recent years. The demand for strategic thinking about the process of masterplanning change is growing rapidly, as local authorities and decision makers, urban regeneration companies, private developers and communities alike need to think about physical change at a large scale and moving beyond zero carbon and green buildings agenda. A successful masterplan will therefore set out how to create and sustain excellent places for living, prosper, work and enjoy quality of life now and in the future. Planning for places in a low carbon future is a key issue for planners, developers, designers and citizens. This enables us not just to reduce CO2 emissions but to enhance the overall sustainability (taking into account social, environmental factors) of the entire development.

A sustainability assessment framework to provide feed-forward and feed-back intelligence into the designing, planning and development activities is set out. The strategic management and operational processes through which, by a combination of corporate governance and professional team-working, the play of stakeholders can be directed are outlined.

The ultimate aim of this paper is to encourage high standards for the scope and content of sustainable masterplanning and place making. A new approach and methodology for creating successful masterplans be presented (SuBETool). The SuBETool system (framework) offers an integrated framework, designed to allow countries to design their own locally relevant priority levels and rating systems. The unique strength of SuBETool is that it demonstrates clearly, right from the start of masterplanning, exactly what can be achieved in terms of the actual performance of the proposed development (taking into account social, environmental factors). It highlights clearly to clients, developers, architects, planners and policy makers, the many different factors that affect the expected performance of the development - and how that performance could be improved. The framework considers how to approach the design and development of sustainable communities as an integrated process of assessment and planning

O37.4 SPATIAL INDICATORS AND EXPLORATIVE SCENARIOS AS A TOOL FOR LAND-USE MANAGEMENT. THE CASE OF SANTIAGO DE CHILE

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Urban dynamics entails negative social and economic impacts in urban agglomerations calling for adequate land-use management. Indicator-based explorative scenarios are considered as adequate information and decision support tools. An explorative scenario method was developed for 3 scenario types Business As Usual, Market Individualism, and Collective Responsibility exemplified for the Metropolitan Area of Santiago de Chile (MAS). Santiago de Chile tries to implement sustainable urban development. Considering the global variety of urban social, economic, and environmental conditions, it becomes obvious that sustainable development has to be transferred to these urban conditions. In order to encompass the complex interrelations

between processes of urban growth, different indicators have been selected: major driving forces like population density, built-up area and degree of imperviousness. Indicators of urban patterns refer to land use and its management. Green spaces provide twofold information on urban environmental quality, i.e. the amount and distribution of green spaces and the social dimension. The selected indicators portray a differentiated picture in place and time to understand the interactions between urban policies with no coordination among several institutions for land-use management, green spaces and housing policies.

The status analysis serves to conceptualise alternative development paths in the 3 explorative scenarios depicting possible futures of the MAS. Storylines were developed and discussed with stakeholders in transdisciplinary workshops. The time horizon for the study was from the past, i.e. 1992, to the present, and until the year 2030 for possible futures.

The elaborated explorative scenarios show different possible future development strands and options. Designed as a tool they can be used as an added value instrument in scenario- and long-term planning processes on the scale of entire MAS and of subdivisions to support decisions on land-use management. All scenarios show specific trends for the major driving factors (population density, built-up area and impervious areas), and for the two sustainability indicators (amount of green spaces and green spaces per inhabitant). The scenario Collective Responsibility raises more the environmental awareness and has the potential to increase the sustainability in the MAS by approaching or attaining target values and by integrating land-use aspects. The scenario Business As Usual tentatively is biased towards economic gain and less in favour of environmental protection. In the scenario Market Individualism the situation is more severe concerning sustainability than in the last named. The land market rules over environmental awareness and determines the intensity and direction of urban expansion. In most of the cases the target values will not be attained so that only marginal steps towards a sustainable development can be achieved.

O37.5 SOCIAL CONTEXT AND PARTICIPATION IN PUBLIC PLACES REGENERATION IN A COMPACT CITY PROJECT

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The sprawl oriented city ruling model of urban growth is clearly unsustainable due to overuse of natural resources and consequent damage to the environment. This had led to the discussion of urban regeneration projects with participative approaches to propose a compact city model as an alternative to the ruling model of sprawl oriented city. A compact city is defined as a denser, socially diverse city, with people living around neighborhoods and where social and economic activities are overcome. But this compact city perspective could be better defined, considering different problems derived from a contradiction between urban desirability and suburban habitability. As an example, a local study of a compact city based project is described focusing on the regeneration of a central park. I will describe a study that includes several of the aspects mentioned above. The Pan American Games in 2011 led the city of Guadalajara to define a housing project around the Park Morelos for 8 000 people coming to the Games as an opportunity to revitalize the historic center. The urban planning authorities defined it as a sustainable project seeking the re-densification of the center in terms of the compact city model. The City Council already had 70% ownership of the land planned and bought 54 properties located within the space

of what was known as the official project for the Sport Village. But the project was defined by the local government, sports authorities and interested investors before the economic crisis.

The project was unknown by the neighbours, the citizenship, and even by the professional associations, research centers and universities. The lack of social participation was the basis for the conflict and project failure.

The design was resolved through a unilateral definition of assigned buildings to internationally renowned architects, national and at local level there was a contest for 6 buildings of a total of 13. It was also assigned the project to renovate the Morelos Park and commissioned a master plan to a specialist. Unilaterally was believed that the neighbours would agree with the price above the current market that offered the City Council for their homes. Not so, in this place there are people who are neighbours for over three generations and feel satisfied and proud to live there. They are aware of their heritage, urban identity, close relationships with their neighbours and the center of the city. That is, they live their own version of the compact city model in the historic center. At the end the compact city project was abandoned due to the economic crisis and social conflict as well as the already demolished area. The new major just before the beginning of the games made a cleaning and decorative intervention on the park not considering the previous proposals and studies. We made also a follow up study of the post project intervention.

O38. CULTURE, PARTICIPATION AND SOCIAL INCLUSION

O38.1 CULTURE AND CONTEXT: PERCEPTION OF HEALTHCARE ART ACROSS THREE COUNTRIES

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Evidence on the impact of nature images has been found in research with hospital patients (Ulrich, 2008, Nanda, Hathorn & Neumann, 2007). The use of art in healthcare environments has become increasingly common (Nanda, Eisen & Baladandayuthapani, 2008). Art is viewed as a positive distraction from stress of the hospital among patients and possibly staff (Ulrich et. al. 1991; Ulrich, Zimring, Quan, & Joseph, 2006). In a previous study art preference study (Nanda, Eisen & Baladandayuthapani, 2008) showed significant difference in the ratings of design students and patients. Findings showed that there was a significant difference in the ratings of the two groups. Furthermore, the emotional rating scale (how does the art picture make you feel) was highly correlated to the selection scale (would you put this art picture in your room) for hospital patients- while this was not the case with the design students. What is the role of culture in the above questions and in how does it impact healthcare design?

A total of more than 600 design and non-design students from National University of Mexico, National University of Singapore and University of Texas San Antonio rated images of visual art included abstract, representational and nature images from Mexico, Singapore and Texas representative of the unique cultural contexts, in addition to images that strictly adhere to the evidence-based guidelines for healthcare art laid down by Ulrich & Gilpin (2003) and examples of classic high art.

At the end of the survey students re-rated the images again as if they were hospitalized and lying in a patient room. An analysis of preferences across cultures, design disciplines and emotion and selection was undertaken.

Results show a surprising amount of agreement across cultures on image rating for hospital rooms. Level of agreement for art selection for personal rooms is significantly lower. This is true in both design and non-design students. Landscapes with a high depth of field, bright colors and verdant foliage were rated consistently high across all cultures, regardless of indigenous elements, with few exceptions, that suggest that there is a certain universal appeal for restorative images of nature that go beyond cultural and educational boundaries. The study showed that empathy (how this art would make you feel) is a stronger determinant of selection than culture, or education, when it comes to art selection for hospitals.

O38.2 Pathways to inclusion, social cohesion and communication in informal settlement planning

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Action to build more sustainable and inclusive societies is linked to efforts to involve the public in planning and decision-making processes. Progressive urban planning and management approaches advocate more collaborative planning processes to encourage community voices to be heard and local knowledge to be incorporated. These new opportunities for participation in urban governance include the use of digital technologies such as Geographic Information Systems (GIS) to provide accurate data for planning and service delivery. Information regarding socio-economic and spatial attributes of settlements is useful for both communities and urban managers.

This paper is based on empirical work in 3 settlements in Nairobi where different GIS tools were used to support settlement upgrading. The integration of these tools helped to improve communication and empower the communities to engage with local and city level actors in addressing settlement challenges. These new tools enabled communities to participate in the planning and management of change within their settings. However, these approaches also led to the disempowerment of some groups as well as changing community power structures and relations. Existing socio-cultural and political barriers continue to hinder low-income communities from participating fully in settlement upgrading.

O38.3 Degree of optimism, and attribution of responsibility on the environmental conditions in Latin America

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This study explores personal assessment of the current and expected future state of the environment in Latin-American countries, and to whom participants attribute responsibility for the solution of environment problems. A total of nine hundred and sixty people in eight countries: México, Costa Rica, Colombia, Venezuela, Perú, Brasil, Chile and Argentina were investigated - 120 in each one- at the local, national, and global special levels. The study follows Gifford et al. study (2008) which explored people's perceptions on environmental problems in 18 nations.

The current study focuses in Latin-Americans nations including to the Environmental Future Scale of Gifford et al. some environmental items relevant for the region, and also the Responsibility Attribution Scale to the solution of the environmental problems of Barros, Pinheiro and Gunther (2010). Due to the complexity of the instrument and in order to avoid boredom, the questionnaire was assisted by researchers to facilitate the understanding of the questions and the correct way to answer the scales of the state of the environment and responsibility attribution at different levels in the present and the future. Considering that the study is in course we expect to have the final results by the time of the next IAPS conference in Glasgow.

O38.4 IMPORTANT PHYSICAL CHARACTERS FOR QUALITY TEACHER EDUCATION: THE DELPHI STUDY

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In order for prospective teachers to be effective professionals and for teacher educators to fulfill them with the notion of teaching profession, buildings where education takes place would create impact in relation to developing professional and/or occupational features of a teacher candidate. The main purposes of this study were to identify the essential characteristics of physical environment to access quality teacher education and to identify the importance and role of these physical characteristics for effective and efficient teacher education. The education building should be peculiar to the field of education. However, there is lack of knowledge concerning which physical characteristic the education faculty building should possess. Therefore, the main significance of this study was to provide the insight to professionals about which physical characteristics of faculty building are important. As a research methodology, a Delphi study, consisting of an open ended survey followed by 2 questionnaires, will be utilized in order to reach the purposes. Delphi is a method which enables structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem. To accomplish this "structured communication": some feedback of individual contributions of information and knowledge; some assessment of the group judgment or' view; some opportunity for individuals to revise views; and some degree of anonymity for the individual responses need to be provided (Linstone & Turoff, 2002). For first phase of Delphi Study, researcher asked the participants that "which physical characteristics the education building are important for effective and efficient teacher education and why are these characteristic important". In total 34 teacher candidates participated and send back the questionnaire via their personal e-mail until 26th of October, 2011.

So, the researcher is still to analyse the date using content analysis. After data analysis, the scale developed based on the findings of phase 1 will be applied two times to same participants to elicit consensus and divergence on categories. Then research findings will represent the most important physical characteristics of the education building for teacher education. From the first cluster of data obtained from phase 1, results are as follows: teacher candidates mentioned

technology, ambient environment of the building and classrooms, cleanliness of environment, size of the classrooms, furniture and materials, spaces for social and academic activity. As a conclusion, teaching profession is not just about transmitting knowledge. The responsibilities of teachers are uncountable. They are seen as artist, researcher, guide, facilitator, observer, clinician, diagnostician, and tactician. Therefore physical environment and physical setting of the faculty building must meet the needs of teacher candidate.

O39. PRO-ENVIRONMENTAL BEHAVIOUR (2)

O39.1 EVALUATION OF THE INTRODUCTION OF A CHARGE ON SINGLE-USE CARRIER BAGS IN WALES: ATTITUDE CHANGE AND BEHAVIOURAL SPILLOVER

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Wales is the first country in the UK to introduce a charge on single-use carrier bags in order to curb their use. From October 2011 onwards, shoppers will have to pay 5-pence for each single-use carrier bag at point of sale. This presentation will report preliminary results of a field experiment evaluating the attitudinal and behavioural impacts of the bag charge. Around five hundred telephone interviews were conducted in Wales before the introduction (September 2011). The same respondents were re-contacted six months after the introduction of the bag charge (April 2012). A similar survey was conducted in England as a control group. It is expected that the charge will substantially reduce the use of such bags in Wales, and that - due to cognitive dissonance/self-perception processes as well as experiences with the benefits of the policy - the policy will become more acceptable after its implementation. It is further explored whether the policy may lead to behavioural spillover in other waste-related behaviours as a result of the development of more positive waste-related attitudes and norms.

O39.2 WHY DO ELDERLY BEHAVE PRO-ENVIRONMENTAL? A COMPARISON BETWEEN AN ELDERLY AND GENERAL POPULATION IN SCOTLAND

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Many have stressed the importance of understanding pro-environmental behaviour. Most studies aim to understand determinants of pro-environmental behaviour of the general public. In this study, we compare underlying determinants of pro-environmental behaviour between the general public and a sample of elderly people, as the elderly differ in important determinants of pro-environmental behaviour. First, the elderly process moral information differently compared to younger people. Given that moral considerations are seen as a major determinant of pro-environmental behaviour, this could have important implications. Moreover, they differ in their cognitive-affect structures, which also underlie pro-environmental behaviour. The general aim of this study was to examine whether moral considerations (i.e. value-orientation) and cognitive-affect structures (i.e. social well-being) affect pro-environmental behaviour of old people differently compared to the general public. A survey was conducted amongst two samples in Aberdeen, Scotland. The first sample (N = 175) was a random sample of the Aberdonian population (average age: 45 years); the second sample consisted of 151 people that are part of a birth cohort in

Aberdeen (age: 74 years old). Results show that there is no difference in the extent to which older people behave pro-environmentally compared to the general public.

However, pro-environmental behaviour of older people was more strongly determined by moral considerations (biospheric value-orientation) and (satisfaction with environmental conditions) compared to the general public.

O39.3 THE RELATIONSHIPS BETWEEN DAILY THERMAL EXPERIENCE AND PRO-ENVIRONMENTAL ATTITUDES AND THERMAL ADAPTIVE BEHAVIOURS

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We are creating cooler environments within a warming world. In Thailand, changes in some national policies and building service standards have accelerated the use of air-conditioning. In the situation of climate change, it is questionable whether air-conditioning uptake might impair people's pro-environmental attitudes and behaviours in the long term.

In order to understand more the environmental-psychological aspect of air-conditioning, this study applied the psychological framework for investigating and comparing the pro-environmental attitudes and behaviours of students with different thermal backgrounds, i.e. fully air-conditioning (AC), mixed-mode (MM), and fully natural-ventilation (NV). A questionnaire developed by Department for Environment Food and Rural Affairs (Defra) for studying environmental attitudes and behaviours of people in the UK was slightly modified and used as a tool for measuring environmental attitudes of students in this study. A national questionnaire survey was conducted with 1,274 university students in six geographical zones of Thailand.

Regarding daily thermal experience of students, it was found that when students entered university their thermal experience noticeably shifted from NV to AC particularly in suburban area in which the percentage of students in AC group increased by 32%. The Kruskal-Wallis and Mann-Whitney U tests showed that people in fully NV or MM groups had significantly higher scores on pro-environmental attitudes, air-conditioning reduction policy acceptance in university, and self-reported thermal adaptive behaviours at home than those with fully AC background. There is no significant difference between the MM and the fully NV groups in all comparisons.

Furthermore, among all the participants' personal variables, the correlation between economic status and pro-environmental attitudes was the highest. The negative correlation indicates that students with higher incomes were likely to have lower environmental attitudes and policy support scores. Also, having more incomes certainly means a higher opportunity to afford air-conditioned home and vehicles, as shown in the correlation between daily thermal experience and monthly income. Consequently, the more they use air-conditioning, the less they connect themselves with natural environments and are unlikely to participate in energy reduction policy, especially the one that would reduce their comfort.

The implications of this study are that providing people a variety of thermal experiences, rather than increasing fully air-conditioned environments, could potentially have positive influence on people's pro-environmental attitudes and low-energy policy implementation. Most importantly, the

revelation of psychological consequences of long-term air-conditioning use should raise some environmental awareness among energy policy makers and design community.

O39.4 EXPERIMENTALLY MANIPULATING VALUES TO MOTIVATE PRO-ENVIRONMENTAL BEHAVIOURAL INTENTIONS

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Environmental problems are a result of maladaptive human behaviour. One way to tackle these problems is to foster values that underlie environmental attitudes and behaviours. Research has shown that certain values (e. g., self-transcendence values like social justice and world of peace) are positively correlated to environmental engagement, so fostering these values might foster environmental action. Values research has used the value self-confrontation technique (e.g., Maio, Pakizeh, Cheung, & Rees, 2009; Rokeach, 1973) to manipulate value change. In the typical use of this paradigm, individuals receive feedback emphasizing a "deficiency" in the extent to which they possess a specific set of values compared to a referent group. The perceived inconsistence between one's values and the values held by the referent group lead to an increase in importance attributed to the "deficient" values. That is, the self-confrontation technique lead to a change in values, and can be used to impact environmental behavioural intentions and actual behaviour. The present research aims to evaluate how values can be experimentally manipulated to change people's behavioural intentions towards the environment. Two experiments are planned. Experiment 1 aims to expand on a study by Maio et al. (2009, Study 1). These authors used the value self-confrontation technique to manipulate value change in a laboratory setting. For experiment 1 we replicated their study using a survey design with a sample of 138 participants from the general population (instead of undergraduate students) to check if a different method of data collection and different population will produce similar results, and whether the value manipulation will have the expected effect on environmental behavioural intentions. Because participants completed pre- and post-measures in a single assessment, a critic of Maio et al. (2009, Study 1) and our experiment 1 is that participants might become aware of the desired manipulation (i.e., the issue of experimental transparency). Experiment 2 overcomes this possible limitation by having the pre- and post-measures weeks apart. A total of 186 university students from Victoria University of Wellington took part in this experiment. For both experiments participants answered a set of critical measures: a modified version of the General Ecological Behaviour (GEB) scale, values list from the Schwartz Value Survey, a group identification measure, and three filler questionnaires. This talk will report the findings of these experiments for the first time. Studying changes on values and how it affects environmental behavioural intentions offers insights into more effective techniques that could be used to encourage people to live in a more sustainable manner. The findings from my research may offer a more effective solution to current behaviour change programmes that rely a

O39.5 MOVING TO THE RECYCLING WONDERLAND? CROSS-CULTURAL DISCUSSIONS ON OPPORTUNITIES FOR BETTER/WORSE ENVIRONMENTAL PRACTICES

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This paper investigated long-term changes of environmental consciousness and recycling behaviour considering different contextual factors in the USA and Germany. A mixed-method, qualitative inquiry was used to examine how relocation impacted people's ecological thinking and behaviour. 45 in-depth, semi-structured interviews in two groups: Americans who moved to Munich and Germans who moved to New York City. Most interviews were conducted in interviewees' homes. Photos were taken inside the apartment, common areas of the building, and recycling containers in public spaces to help determine recycling accessibility. Different from existing behavioural change studies which mostly focused on interventions and short-term effects, this research examined both spatial and temporal factors in wider spectra. When people move to another country, most of the individual characteristics do not change, which increase the explanation power of contextual factors on conceptual and behavioural change.

This research broadly defined and discussed "changes" in three different aspects: 1. Perceived changes: participants' self reports on behavioural and conceptual changes in the host country; 2. Reflected changes: people reflected on their changes when they visited their home countries after relocation; 3. Predicted changes: participants were asked to imagine their own changes after moving back to their home country. The author hypothesized people's recycling behaviour will change after relocating to another country, and the direction of changes will depend on the supportiveness of the host country.

Contextual factors in different domains were found to be important for people's behavioural change: immediate physical environment, available information, social support, economic incentives, and political environment. Results showed that different domains of contextual factors constantly penetrated each other: policy disparities between the two cities influenced the perceptions of accessible recycling resources. Different social milieus also affected people's awareness of existing policies. Even when recycling facilities are available, people's behaviours can be influenced by the larger context of cultures and sometimes stereotypes: Germans recycled less after moving to New York due to lack of social support, inconsistent recycling opportunities, and distrust in American government on implementing environmental policies. Moreover, Americans learned to recycle more and engaged in more pro-environmental activities because of the strong and consistent environmental-friendly practices in Germany. Finally, relocation stimulated people to re-examine and re-define their past experiences and to realize their environmental consciousness. This research confirmed the importance of contextual factors in people's recycling behavioural change and concluded that a comprehensive environmental-friendly culture is significant to modify people's attitudes and behaviour.

O40. PERCEPTION OF RISK

O40.1 THE SOCIAL CONSTRUCT OF COASTAL RISK : STUDY IN LITTORAL TOWNS DEFINED AS "RISK AREAS"

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In interdisciplinary research (ethnology, geography, geology, psychology…), this study explores the management of coastal risks in relation to the evolutions of the coastline and their consequences in terms of erosion and flood. A multitude of stakeholders are involved in the coastal risk, either by their role in the management of coastal areas (state, local authorities…), or by the use of these areas (inhabitants...). Even if risks can be localized and defined by experts (e.g., in preventive maps of risks), stakeholders can have a different perception of them because they have not necessary the same reference framework to construct their representation of the risk. We postulate that risk is a social construction based on social representations (SR), historically and culturally determined. Thus, it seems important to analyse the SR related to coastal risks, and more widely the relationship between these stakeholders and their environment, for understanding the norms, beliefs, values and actual practices of these groups, in the management and the use of the coast. These SR depend on a diversity of factors (contextual, cultural, temporal…) and they constitute a particular relation to environment which informs us on intergroup relationships.

To analyse these SR and the relationship between stakeholders and their environment, we are going to lead a survey (interviews and questionnaires) among managers and users concerned by the littoral (inhabitants, professionals, local authorities…). Our communication will introduce the results stemming from the first stage. Semi-structured interviews were led in Brittany (France) in littoral towns, on three main subjects: (1) the evaluation of their habitation/town and its surrounding, (2) the concept of risk in general, risks in the town, and the coastal risks, (3) events associated with storms (for the individual / for the town).

Furthermore, we made an analysis of articles published in the local media on the themes of erosion, floods and storms. The interviews and the articles were analysed by a computer-aided analysis, with the Alceste software. This exploratory analysis was supported by a manual analysis of thematic content.

In the media, the first results highlight a content based on a description of events and historical accounts related to sea and to storms. There are also a lot of articles in relation to climate change and global warming. Another category focuses on action and prevention plans linked to risks. This category also appears in interviewees' discourse, but it more focuses on actors responsible for risk management. Otherwise, events imbued with personal experiences (of storms, floods…) are recounted. Finally the impact on business activities, fishing for example, is also discussed. In all these analysis, the temporal dimension is particularly important. The importance of these different themes and their implication for the stakeholders will be discussed in the communication.

O40.2 How did environmental concern and social capital change after the great disaster?: Japan's case

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On March 11, the big earthquake and tsunami hit Japan creating massive destruction. Besides it, the explosion of nuclear plants forced many local residents to evacuate and escape from the effects of radiation. For those who decided to stay in the affected areas, this epic disaster brought them serious difficulties. For instance, most people were without water and electricity for more than two weeks; and almost all the gas tanks were destroyed by fire, meaning that people could not drive their cars for more than two weeks. In addition, people were forced to queue in long lines to buy daily necessities such as food, water, and clothing. People who remained in the disaster areas had no choice but to accept such difficulties.

On the other hand, however, there is a possibility that facing such trauma can alter one's behaviour toward the environment: living under such severe conditions, people are forced, out of sheer necessity, to behave more pro-environmentally. To survive, they must adopt a more pro-environmental behaviour. That is, people can not help experiencing saving life regardless of their intension for pro-environmental behaviour. Once they accept new behaviour for a saving life for a while, they can realize that current situation is not so inconvenient. Consequently, people could realize that their consumption levels before the disaster were conspicuous due to the big disaster. Considering that such experience could lead to a change of perceived behavioural control and activate subjective norms, there is the possibility that people will continue to live more simply for years after the disaster.

Hence, analyzing the attitude and behaviour changes after the big disaster can give us important insights into the following questions: Can a disaster lead our attitude and behaviour to a more pro-environmental outlook? What kind of experience will lead to pro-environmental attitude and behaviour? Analysis of the responses and suggestions to these questions would be critical to making informed public policy for sustainable development. Hence this research aims to clarify the impact of the recent natural disaster on one's environmental attitude and behaviour. In that analysis, I also analyse the psychological process in changing attitude and behaviour. Finally, public policy to enhance pro-environmental behaviour is discussed.

To collect the data, I first conducted an interview with people who lived in evacuation centers in twenty disaster areas. A questionnaire was designed and conducted, targeting people who live in temporary houses provided by the Japanese government or a local government. Finally, statistical analyses were conducted.

Results of the analyses suggest that activating subjective norm and change of perceived behavioural control contributed to attitude and behaviour change as expected. Furthermore, it is suggested that seriously traumatic situations would be needed to facilitate change in environmental attitude and behaviour.

O40.3 THE PERCEPTION OF JELLYFISH BLOOMS IN THE FRENCH MEDITERRANEAN LAGOONS

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Human pressures of overfishing and climate change threaten the coastal and lagoon ecosystems stability. They are promoting jellyfish (pelagic cnidarian and ctenophore) blooms to the detriment of other marine organisms, with lasting ecological, economic and social consequences. Economic actors of fisheries and tourism as well as local population and public authorities are wondering about the causes, the risks and the eradication of these more and more frequent invasions.

We have used different theories and concepts of social psychology to investigate and understand the perceptions and reactions of the population: social representations, anxiety, involvement and willingness to pay. A survey was carried out on a sample about 320 respondents: inhabitants and tourists interviewed during their summer holidays, two kinds of economic stakeholders, recreation and tourism and fisheries and shellfish-farming, and local elected representatives managing the areas around five lagoons on the French coast of the Mediterranean Sea: Banyuls, Thau, Bages-Sigean and Berre. The questionnaire was including qualitative and quantitative approaches of social representations of jellyfish, assessment of the increase of its swarms and (anthropogenic vs natural) explanations for it, qualitative and quantitative damage assessment, perceived economic and social risks and impact, state-anxiety measured by STAI Y, involvement, means for eradication, willingness to pay and institutional level of management.

Results are showing that, for all participants, the representation of jellyfish is very negative: dangerous (burning, stinging, irritating), frightening, and disgusting (viscous). It affects people's health while causing losses to fisheries and recreational activities. There are coherent relations between psychological variables in all groups: the assessment of the increase of outbreaks, perception of damages, anxiety, personal involvement, and willingness to pay.

But some aspects are linked to social positions. Fishermen and shellfish-farmers perceive a greater increase of jellyfish blooms and a greater threat on fishing incomes than other groups. They also perceive greater material consequences such as burst fishing nets or killing of shellfish and they consider themselves as the most threaten social category. Inhabitants and tourists recreating in the lagoons perceive a greater impact of jellyfish invasion on the images of the area and local products. They show a higher willingness to pay for eradication. Together with tourism stakeholders, they consider themselves as the most threaten social category. They foresee a greater increase of costs for prevention and care. Local elected representatives have a more managerial opinion, consistent with their role.

They are more numerous to perceive a danger for nuclear and hydroelectric plants cooling systems. They perceive economic stakeholders for tourism and fishery as the most threaten population and they show a higher willingness

O40.4 PERCEIVED INSECURITY IN THE PUBLIC SPACE: PRESS ANALYSIS STUDY

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This study explores the perception of insecurity in Barcelona's public space through the analysis of three newspapers. It analyses the social representation that the press disseminates about the concept of "insecurity". The study is based on three assumptions: (i) the news media communication actively constructs a representation of social insecurity; (ii) this media representation "locates" the insecurity in different micro-environments of public space and (iii) this process significantly influences the social representation of public space (re) produced and expressed by the public. We have carried out an analysis of two national newspapers –El País and La Vanguardia- in their Barcelona edition and one local newspaper –Avui-. As theoretical approaches we use the Agenda-Setting model and framing theory, i.e. the study of the newsworthy frames.

The analysis included a thematic categorization of contents in a sample of news published in the selected newspapers from October 1st, 2003 to June 14th, 2010. Sample selection was done with the keyword "insecurity" and the analysis was conducted with the support of ATLAS.ti software.

Our findings show that there are significant differences in the coverage carried out by each newspaper, with tendency toward sensationalism in one of them. It was detected a predominant use of the newsworthy frames of attribution of responsibility, human interest and conflict to re-construct the information of insecurity. In addition, it is verified how the mass media present a clear correlation that associates social insecurity to immigration.

The study provides guidelines for further analysis of the discourse on the arguments expressed by linking the perception of insecurity, fear of crime and control processes of social order in public space, thus how social behaviour is articulated in our cities.

This contribution belongs to a wider research program entitled "Uses, perceptions and conflict in urban public spaces: Identity, interaction, insecurity" (reference PSI2010-21214-C02-02), supported by the Spanish Ministry of Science and Innovation.

O40.5 PERCEIVED SEVERITY AND CONTROL OF UNCIVIL BEHAVIOUR IN URBAN PUBLIC SPACE

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The analysis of city from a perspective of safety is a significant characteristic of urban planning culture in contemporary society. Urban safety is becoming a managerial concept that has rooted itself into how private companies and public local governments operate. This communication presents the first results of a pilot study aimed to explore the perceived severity of uncivil behaviours contained in a local ordinance designed and approved in Barcelona in 2006. Hence, social perception about a total of 72 uncivil behaviours in public spaces was explored. Additionally, behavioural intention of control as well as attribution of responsibility about who has to control those behaviours was also explored.

The sample comprised 204 people (54.4% female and 44.6% male) aged between 20 and 36 years related to different areas of the judicial system (students of criminology, law enforcement, judicial workers and lawyers). The questionnaire includes the assessment of the 72 behaviours in terms of perceived severity (very serious, serious, slight and irrelevant), the perception of responsibility for control of uncivil behaviour (the security forces, citizenships, or both together), and behavioural intention to control uncivil person (complain to uncivil person, call the police, or never do anything).

The results shows that uncivil behaviours considered 'very serious' deal on offensive behaviours or aggressive towards vulnerable persons such as children and the elderly. As 'serious', are located diversity of behaviours related to the aesthetic deterioration, maintenance of public spaces, activities that impede traffic and road use or urban furniture and behaviours that have clearly been defined as prohibited in leisure spaces (as in parks or beaches). The category of 'mild' includes behaviours that are related to money transactions in public urban space. Lastly, activities such as play ball games or use skateboards in public space were considered as 'irrelevant'.

As the severity perception increases, the need for police intervention also increase and as the severity perception decrease, citizen involvement also decreases, except if the uncivil behaviour violates the own goods. Additionally, the results indicate a tendency to control those behaviours that violate the personal property and not to act against the behaviours that the observer considers irrelevant.

For future research seems desirable to investigate the degree of knowledge among the population regarding the Municipal Ordinance and the perception about the severity of the behaviours listed there. The aim would be to know how citizenships define 'uncivil behaviour' and identify what kind of criteria trigger the need to exercise control.

O41. Stakeholders Engagement in Delivering Change

O41.1 Worker perception of work environment characteristics and quality of life in the context of shift-work: the role of participation

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Environmental psychology has long been interested in the effect of different environments on the health of users (Lawrence, 2001). The work environment has also recently started to be studied as a promoter or hinderer of health. Shift work has been studied as one of the work contexts in which a lot of health problems occur. Characteristics of shift-work schedules have implications in three different areas of life: physical well-being, mental well-being and work-to-family conflict. More specifically rotating night shift work disrupts circadian rhythms and is associated with sleep disturbances (Akerstedt et al, 2002), coronary heart disease (Brown et al, 2009), gastrointestinal disturbance, reproductive dysfunction, as well as decreasement in psychological well being (Harrington, 2001). Moreover, social, family and marital relationships could be disrupted (Costa, 2003).

However, shift work is necessary in some institutions such as hospitals and arguments in favour of maintaining it refer to productivity and maximizing costs. With these considerations in mind, the present research aims to explore the perception of workers of the characteristics of the work environment that most affect their quality of life within the context of shift-work, in order to formulate recommendations for policy-making that would contribute to diminishing the negative effects.

As part of a larger study, this paper will present the results of focus groups done with shift-workers in the three most important cities of the province of A Coruña (Galicia-Spain). The information gathered was analysed with the qualitative software ATLAS.ti, which allowed for the identification of the main dimensions that are affected by characteristics of work environments. Results show the importance of organizational communication and participation of workers in the decision-making processes, especially related to schedules and spaces. Enhanced participation of workers, enablement and upward communication are key aspects of the improvement of work environments.

These results are useful for organizations, as they provide further evidence of the beneficial effects of listening to the voice and demands of shift workers, in order to improve their work conditions. The second part of this research will focus on determining the relative importance of the different predictors of the quality of life dimension. Finally, all the results will be used as a guide for the design and implementation of programs aiming at improving the quality of life and work conditions of shift workers.

O41.2 POWER, TRUST AND PARTICIPATION – DISSECTING AND IMPROVING EUROPEAN FOREST POLICY

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Globally, forest are becoming increasingly important for climate change, biodiversity and as a resource for rural development, resulting in a renewed interest in forest policy nationally, regionally and globally. With the development of new forest policies, there are questions being raised around stakeholder participation within these policy and decision-making processes. Research and practice have demonstrated that participation in policy and decision-making at a local (and in some cases national) level can be accomplished in a meaningful way. However, at the regional and international levels meaningful participation for all stakeholders is not always achieved. In order to achieve meaningful participation, stakeholders need access to certain variable resources in order to exercise their power to meaningfully participate. Other stakeholders, however, may mobilize resources and exercise power in order to prevent or limit access to resources by other stakeholders or they may privilege certain stakeholders' access over others. This selective or biased exercise of power by some stakeholders not only does not fit with the ideals of participation put forward by Habermas or Iris Marion Young, but also strongly determines whether trust is or can be built between stakeholders in the process or the process itself.

This paper looks at a selection of stakeholders involved in two European forest policy processes – the European Commission Green Paper on Forest Protection and Information and the Forest Europe Legally Binding Agreement process. An understanding of the discourses influencing stakeholders and their behaviour is presented to help with understanding how their power is

exercised, resources are allocated and mobilized by various stakeholders. Using the work of Iris Marion Young, this paper presentation presents an analysis of the participation, inclusion and exclusion of various stakeholders in these policy processes. An analysis of the implications of the outcomes for the stakeholders involved is also included. The paper goes further, drawing on previous work by Edwards (2009), to determine whether trust has been built between stakeholders in these processes and in the processes themselves. The question of whether the building of trust (or not) influenced outcomes of these processes will also be reflected upon. The outcomes, trust and the institutional framework of the processes are deconstructed to provide insight into improving meaningful participation and enablement of stakeholders at the regional and international scales in forest policy. Through improving meaningful participation and the building of trust at all scales of policy-making, the result is more robust and acceptable policies or plans that may be able to achieve the goals they set out to accomplish.

O41.3 PUBLIC CONSULTATION IN POLAND

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Public participation in young Polish democracy is currently one of the crucial issues especially in context of development of new forms of cooperation between citizens and public institutions. Effectiveness of communication between citizens and public institutions influences quality of decisions in all aspects of public goods management i.e.quality of environment and health institutions, urban development, security. Not only legal system and organisational culture but also competencies of both officials and citizens play key role in public decision-making.Thus extensive diagnosis of public consultation mechanisms is fundamental for understanding this aspect of civil society in Poland.

In the years 2010-2011 foundation the Unit for Research and Social Innovation ‘Shipyard’ in cooperation with research agency SMG/KRC carried out a research project ‘The Effectiveness of mechanisms for public consultation in Poland’ supported by Ministry of Labour and Social Policy.

The research objectives were as follows:

-Elaboration of model of public consultation’s effectiveness

-Detailed analysis of effectiveness of public consultation of several types of official acts at all levels of public administration i.e. Strategy of development, Master plan, Environmental Strategy, NGO’s Cooperation Programme, Social Policy Strategy, Education Strategy, Employment Strategy, Budget.

- Analysis of institutional and organisational context of public consultation in Poland
- Formulation of multifaceted set of recommendations for research, promotion and improvement of public consultation

Method and sample: The whole project consisted of number of research modules which gave comprehensive diagnosis of public consultation in Poland:

-Six desk researchers

- Inventory research on full sample of all units of public administration in Poland (n=1819)
- Inventory and qualitative research in all Polish ministries (17)
- Qualitative research on sample of representatives of public administration units and representatives of non-government organizations (NGOs) (n=157)
- Case studies of public consultation at all levels of public administration (35)
- Research on 13 consultative bodies
- Quantitative survey (CAPI) on officers and NGOs (n=1434)
- 'Good practices' of public consultation (7 Polish, 8 foreign)
- Omnibus survey on representative sample of Poles (CAPI, n=1005)
- IdeaBlog qualitative research on experts both officials and representatives of NGOs (n=60)

Results: As one of the main outcomes a three-dimensional model of public consultation has been constructed (Process, Practices and Perception) which can be applied for other researches, evaluations and practical purposes (conducting of public consultation). The research provided with massive database (qualitative and quantitative) at all levels (from governmental to local) which can be used in various ways. Selected results will be presented during the conference, especially those related to human-environment studies.

O41.4 A STUDY ON PUBLIC PROCUREMENT FOR ARCHITECTURE IN FRANCE

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The policy of the national budget of Japanese government had had a tendency to overinvest in social infrastructure to distribute social wealth widely; however, after a change of government 2009, these investments are hold down and new policy that softens social unrest by increasing social security allowance is being executed.On the other hand, for urban planning authorities it should be a pressing matter to improve the quality of living environment. But under the harsh financial conditions, there would be very few chance of success for drastic reforming of city itself. So we need efficient reorganization of cities by superb public buildings to create a competitive environment against rising nations of economics in East Asia.

According to other source, in Europe the amount of investment in public works is lower than that in Japan; however, they seem to adopt a smart procurement system for public building, which realizes attractive environment with saving total investment.There are various characters in each country. In UK, they have the well-organized supporting system of public procurement. In Germany, they focus on the sustainability.

On this study, I researched the public procurement in France which have a well-organized system of law in Latin countries and keep the quality of public building by design competition and strict brief. I would like to uncover an ideal method to achieve excellent public buildings for a competitive environment. In France, some architecture-related organizations and committees work on the project to advance it smoothly. MIQCP, government committee, works as a consultant for the architect and support the local government to review. The programist supports the local government to prepare the brief.

I researched some documents and interviewed these organizations and a local government to understand the system of public procurement and the social position of the professional. The target of the interview; 1)MIQCP, 2)SYPAA, 3)the local government in Argenteuil. I selected a couple of cases from recent works which won architectural awards. Through the cases, I researched some briefs about the competition and interviewed the architects to uncover the process and condition of the project, as followings;

a) Music Conservatory of clichy: before the review, technical committee which was organize by some architects worked on the project as a adviser. b) Lycee Robert Schuman a Charenton: the local government prepared the strict brief which included some technical solutions.c) The Jussieu Building, universite Pierre et marie curie: the university official prepared the program with the programist. And after the competition, they consulted with the architect to modify the brief.

Through the research, it was revealed that the quality of the brief influenced the success of the project and also the quality of the building was kept by the split of work, clarification of responsibility and supporting system.

O41.5 A CITIES IN TRANSITION: VISIONING AND PLANNING FOR A LOW-CARBON ENERGY FUTURE

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During the 20th century, the design and construction of cities was based on fossil fuels because oil was cheap over the last 150 years. Urban growth occurred in the form of car-oriented developments, increasing sprawl and greenhouse gas emissions thus contributing to global warming and climate change. We can no longer continue this unsustainable carbon-based development, particularly since we are approaching peak-oil production. Urban planning and design is crucial to achieve a sustainable and productive transition towards a low-carbon energy future. This study aimed to review the planning process by which different cities built visions and action plans to reduce fossil fuel dependence and greenhouse gas emissions in the next 20 to 50 years. We selected four cities/towns based on the use of diverse strategies and methods at different planning scales (e.g., regional, city and community levels), including: Helsinki (Finland), Portland (USA), the London Borough of Sutton (UK), and Kinsale Town (Ireland). We then examined the planning, development and implementation process of the visionaction plans using information obtained from official documents and interviews with local authorities from the cities selected. We discuss tools used to build the vision-action plans, role of stakeholders, importance of public policies and urban governance, use of external advisory groups and community participation in decision making processes among other methods. Overall, a city's vision-action plan is a roadmap for change that specifies what will be done, who will do it and how it will be done. These case studies present sustainable urban development practices concerning land use, housing and traffic, environmental conservation, renewable energy use, water and waste management, food production and community building. These visions-plans show how to align sustainable development and climate protection actions to reduce the energy burden and facilitate the transition to a lowcarbon energy future maintaining a high quality of life.

O42. METHODS IN STAKEHOLDERS ENGAGEMENT (1)

O42.1 AN EVALUATION OF ALTERNATIVE COLLABORATIVE APPROACHES TO THE MANAGEMENT OF INDUSTRIAL HERITAGE

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The Australian mining city of Broken Hill, along with many other industrial areas in the Developed World, has experienced a steady decline since the 1970s. Such sites do not conform to the stereotypical image of heritage as aesthetically pleasing or architecturally significant. Nor do they conform to the stereotypical image of communities empowered with a strong sense of collective identity and economic vitality. Despite this, industrial heritage is currently being utilised in government policy, both to combat the economic and social decline associated with de-industrialisation and to promote a broader understanding of national identity. This is particularly evident in Europe and the UK but also in Australia and parts of South America. However, industrial heritage faces a number of issues that impact on its perceived value and management as a sustainable resource. These include the scale, complexity and geographical remoteness of many industrial heritage sites as well as the finite nature of the resources and technologies that many industrial sites were originally dependent upon. The recent affirmation by UNESCO that heritage is 'an instrument for the sustainable development of all societies' offers an additional challenge, not only to industrial heritage but to heritage management practice generally.

This paper will, firstly, identify the unique issues facing the management of industrial heritage sites and, secondly, present a management model that responds to the requirements for their conservation and sustainable use. In doing so, the implications of the conventional practice of establishing the criteria for 'outstanding universal value' and managing so as to conserve that value, is examined in relation to the requirements for stakeholder collaboration as a key strategy for sustainable development. As World Heritage represents an important benchmark for heritage debate and practice, the paper starts with an analysis of how the concept of 'sustainable development' is understood and applied within the World Heritage system. This is followed with the results of original case study research that explores the integration of sustainable development principles, including stakeholder collaboration, into the decision making structures at six industrial World Heritage sites in the United Kingdom. The paper challenges the traditional emphasis placed on tangible heritage and argues that current management frameworks and collaboration processes potentially limit the development of sustainable local commercial activities and associative attachments. The paper then describes a model of sustainable heritage management that is relevant to industrial heritage sites such as Broken Hill, as well as to other complex heritage sites. The paper concludes that, no matter the model of stakeholder participation chosen, the longer-term economic and social viability of many complex heritage sites is questionable.

O42.2 PARTICIPATIVE MAPPING WITHIN LANDSCAPE ANALYSIS – INTERVENTION IN A REAL WORLD CASE

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The implementation of the European Landscape Convention calls for just and efficient methods for including the public's perceptions when analyzing their nearby landscapes. Our project aims to try out inclusive methods suitable within road- and railway planning and with a certain focus on identity. We chose an urban fringe landscape where there were many conflicting interests due to exploitations that impacted living areas as well as natural and cultural interests. The case was a proposed connection between three main roads with the aim to ease the burden on central parts of the city of Norrköping, Sweden. Two areas for permanent living and one for summer houses are situated in the area that might be affected by the new road – more or less depending on the choice of alternative. Our intervention was not part of the road project but can be viewed as an extension of the consultation process, with no formal power in reality.

We decided to construct and test a "participative mapping, light". This means that we aim for a method that is easy and quick to participate in and that is simple to administrate. The aim is not to reach the highest levels of participation but rather to create a structured and fair consultation. Though, we reasoned, a criterion must also be that it opens up for further participation that it brings on contacts for activities like walking tours, focus groups and interviews. According to the Convention of the Right of the Child, children should also be included.

We chose to perform the activity in a place where many people go for other reasons, outside the only food market in the largest living area. We put up a stand with two big maps (orthophotos) of the neighborhood. People were asked to mark their places of importance, as individuals and for the community, on the maps. There were nails with different colors according to the more specific kind of uses/reasons that we had categorized in advance. Children (up to 16 years) used specially marked nails. During the two occasions and in total five hours that the activity was ongoing 95 people participated. They were fairly evenly distributed concerning age and sex. We got information on places for activities like play and recreation, for more practical use, for viewpoints and on places for experiencing the landscape. The categories for the "common" places were about organized activities, places for special occasions and landmarks. All categories were further specified and exemplified. Upon that we also asked for important routes, which were categorized and drawn on separate maps.

Some people were well aware of the road project and wanted to discuss it. Others knew less and asked for information. In total people put 389 nails, and helped us to identify many "important areas". Four people wanted to be contacted for interview and further information. The analyse is ongoing concerning which (kind of) areas and routes people identify with or feel attached to and the reasons for this.

O42.3 POST-POLITICS AND PARTICIPATION: A CASE STUDY OF TWO APPROACHES TO PARTICIPATORY PROCESSES IN THE RENEWAL OF A DEPRIVED NEIGHBOURHOOD

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Over the last decade participatory approaches to urban planning have become mainstreamed particularly in the renewal of deprived neighbourhoods. Despite this increasing acceptance, there is the need for critical analysis of these practices without suggesting that they all represent successful examples of deliberative democracy. Consequently, this paper analyses two participatory processes aiming at the renewal of a deprived neighbourhood called “La Mina” located in Sant Adria del Besos, in Spain.

The first participatory process, which focused on the master plan for the area, created several arenas for involving the community. However, within this process discussions were limited by the scope of the plan which focused only on the physical improvements of the area. Even if a “consensus” was reached over the final proposal, the process did not give opportunity to discuss the main problems of the neighbourhood which were related to social issues rather than physical ones. This has resulted in critics from the community, limiting the outcomes of the project.

The second participatory process, which focused on a plan for the neighbourhood’s public spaces, illustrates a different approach to participatory process. In this process the community was able to discuss topics which they considered important, based not only on the physical problems of the neighbourhood’s public spaces but also on the multiple and diverse concerns and perceptions that people had of them. For doing so the process created a variety of participation arenas where methods and ways of communication were adaptable to the different actors of the neighbourhood and where issues that are commonly difficult to address in formal participatory settings could be discussed. The plan that resulted from this process included solutions that integrated physical interventions with social programs and activities in which the community had the opportunity to be highly involved.

The two participatory processes serve to illustrate some critical issues regarding participatory planning today. The process of the master plan shows what some theorists call a post-political stance of participatory process, in which discussions are guided towards topics that have been determined in advanced, where experts’ solutions can seldom be questioned and changed, and where complex and contested issues are rarely addressed. The process of the public spaces plan on the other hand serves to illustrate a possible way to deal with such postpolitical stance.

Both processes are used to highlight important questions regarding participatory planning today. Questions related to the way in which participatory processes cope with power structures present in planning practice, deal with conflicts present in planning processes and reach a true consensus. As such, the paper highlights the need of a better understanding this questions and aims at contributing with knowledge that helps cope with them.

O42.4 BUILDING SKILLS IN PARTICIPATION: THE SUSTAINABLE COMMUNITIES CHALLENGE

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The inclusion of local community voices alongside professionals in the creation of sustainable communities has been an important thrust of the UK Government over the past decade in its

urban planning policy. The consequent focus on addressing skills gaps among built environment professionals to enable and facilitate such policy was intended to break away from top-down envisioning and generate participative mechanisms to involve communities. However, this deficit model has often undermined the confidence of professionals and failed to address the needs of communities.

Derived from a recent ESRC Research Initiative, and designed to build cross-disciplinary skills by researchers in the fields of Geography and Architecture, the Sustainable Communities Challenge was conceived as a game or workshop exercise which allows participants to explore the components, relationships and trade-offs that shape sustainable communities. Based on UK guidelines on eco-towns and drawing on research into energy and waste, the scale of the playing area and symbols is largely grounded in present reality. The game requires team working, negotiation, and provides opportunities to rehearse active citizenship. There is no 'right' answer. The symbolic/conceptual nature of the game is designed to assist participants in focusing on values, relationships and consequences rather than individuals, their community and financial costs.

The game, played now by over 350 pupils aged 11-14, provides a lens through which to examine key issues that reflect many of those identified in the ESRC Research Initiative and elsewhere in the literature on social learning, planning, urban design and regeneration.

Language is important: minor modifications in instructions/presentation can generate quite different behaviours. Collaboration is difficult: team members find it difficult to shed the responsibilities initially allocated to them in favour of the community as a whole. Communities need access to knowledge and experience, without which they may simply repeat old mistakes. Hybrid brokers are important: teams draw on the strengths of individual members to address the challenge but work best with some leadership. There is no requirement for a definitive vision: participants happily work with unclear, even shifting rules.

As awareness of the unsustainability of our way of life has become more accepted, the call for engagement at all levels has increased. This paper identifies some of the implications of involving communities and explores how 'games' such as the sustainable communities challenge can be used to build skills to support participation at all levels.

O42.5 AWARENESS AND COMMUNITY PARTICIPATION FOR E-WASTE RECYCLING: DETERMINING FACTORS FOR SUSTAINABILITY

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For the past four decades, waste management posed a challenge to the government, business, industry and community especially in the Malaysian city. There are many critical issues that require specific attention to ensure sustainable waste management in the Malaysian cities. The critical issues which need attention were increasing volume of waste generation and the difficulties in obtaining suitable land for waste disposals. Malaysia has gazetted its Solid Waste Management Policy in 2007. In this policy many solutions have been identified, and one of the important solutions is to recycle the waste. However waste recycling is not a norm for Malaysian city

communities. The current rate of waste recycling in Malaysia is around 5% from the total amount of solid waste generated. Hence there is a gap in terms of knowledge, culture and commitment among the Malaysian cities communities in accepting waste recycling activities. To understand the problem a study has been conducted to determine the level of awareness and participation of communities for waste recycling. In this study, e-waste was analysed as the materials and the community chosen for assessment is a community in Shah Alam city and Universiti Kebangsaan Malaysia (UKM) campus community. The findings of the study showed that The UKM campus community awareness is high, around 80% while for Shah Alam City, the awareness level is lower around 42%. As expected participation in e-waste recycling for both communities are lower than their level of awareness, with the UKM campus community participation at 53% while Shah Alam city community, 23% participated. Analysis conducted also found important findings from this study, where there are three types of respondents who affect the efficiency of e-waste recycling. The first group of communities has the awareness but does not participate due to lack of knowledge on e-waste recycling. Hence the percentage of respondent in term of awareness is high for both communities. The second group has high awareness and participates but lack the knowledge. While the third group has high awareness, participates actively and is equipped with knowledge. The findings also shows that most of the individuals involved in the survey fall in the first category, followed by the second group and a small number falls into the third group. Hence in order to make efficient e-waste recycling program a success there is a need to address and to analyse important issues; these issues include knowledge, media for information dissemination, infrastructure, support system (collection services), financial system, guideline for valuation of e-waste, company for waste recovery, legislation for e-waste recycling.

O43. METHODS IN COMMUNITY ENGAGEMENT (2)

O43.1 THE EFFECTS OF SOCIAL NETWORK ON APPROPRIATE HOUSEHOLD WASTE-PROCESSING BEHAVIOUR: A SOCIAL SURVEY OF QUASI-EXPERIMENTAL DESIGN IN SAPPORO

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The goal of this study is to explore the effects of social networks on managing common spaces called waste stations for household waste disposal. Each waste station is usually shared by several households (about 10 to 20, but sometimes more in larger apartment buildings). The waste stations are usually managed by the residents who use them, which suggest that relationships among community members are crucial for their maintenance. In other words, social networks in the community play important roles. Therefore, this study focuses on the social networks. The general hypothesis is that social networks serve a function for maintaining the commons in communities. We hypothesized that the people who live in areas with clean waste stations would have broader networks (i.e. more social connections) both within and outside the community, relative to those in areas with dirty waste stations.

We conducted a social survey with a quasi-experimental design. In the pre-survey, typical clean and dirty waste stations were specified through observational research, in which we observed approximately one thousand stations. Finally, 11 clean and 12 dirty areas were chosen, with 4 to 6 waste stations per area. Researchers visited every household in these areas and distributed questionnaires, which the respondents sent back if they agreed to answer them. The acceptance rate in the areas with clean waste stations was 29.4 % (338 of 1,320) and the response rate of

accepting households was 86.6% (336 of 388), while in the areas with dirty waste stations, the corresponding figures were 12.3% (271 of 2,212) and 72.7% (197 of 271), respectively. These differences of rates showed the difficulties of conducting the survey particularly in such dirty areas.

The results showed significant differences between community networks in the two types of areas. In particular, people in clean areas had more social networks in the community than those in dirty areas. Most people in clean areas belonged to their local Resident's Associations and had served on the association's governing board. On the other hand, fewer people in dirty areas belonged to the Resident's Associations and had served on the governing board. Furthermore, those in clean areas participated in more activities even outside the community compared to those in dirty areas.

In conclusion, we discuss the importance of social networks in maintaining local commons. In particular, we claim that the maintenance of common spaces such as waste stations is indicative of the characteristics of local social networks, which in turn reflect underlying social capital.

O43.2 An architectural universal design charrette: With professional sensitivity in mind

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This paper describes a design charrette conducted with architects in a Universal Design (UD) graduate discipline. UD was discussed with emphasis on aspects of accessibility and wayfinding. Impacts of UD on the design process, aesthetics, professional ethics and participation of users with disabilities were assessed. The architects participating in the program developed a design project of a public service building. Such buildings are important introductions of local state governments to simplify bureaucratic needs of the population. The group charrette introduced potential users with various disabilities to evaluate the design proposal. Communication tools were employed, such as tactile maps. To prepare the design, the brief was developed through value priorities and the 'problem seeking' method. Wayfinding and legibility of specific services, offered in the new building, were considered of prime importance. The design process, the proposal and the participation of users with disabilities were evaluated. Results showed that architects, even with the specific importance given to UD in the process, were concerned with formal or aesthetic aspects of the design. Accessibility was translated through the introduction of ramps within the building complex and a route leading from the local bus station to the new service building. The documentation of the design process showed little differentiation to a traditional process based on analysis, synthesis and evaluation. Thus, although the professionals were, through pre-design activities, made more aware of UD necessities and more sensitive to user specific needs, the design process proceeded unchanged. New attitudes and procedures were restricted to the communication tools developed for the participatory phases. Thus professionals resist new ways of doing things and will give emphasis to aesthetics and the functional program, elements stressed in both formal education and in architectural critiques. Few new attitudes were observed. This may be due to the fact that the participatory phase was only introduced during design evaluation and potential users were not part of the pre-design and design development phases. Also, the designers of this charrette all came from schools were UD has only recently been introduced into architectural pedagogy, thus not yet an essential part of the professional studio. Analysis of the participatory phase showed that potential users with visual disabilities had difficulties understanding the design itself and the accessible route and wheelchair users criticised various

access elements. The charrette showed that to increase professional designers sensitivity towards UD issues, potential users with disabilities must participate from the start in the design process, giving inputs to the pre-design discussions, definitions of the program and direct design development beyond formal aesthetic issues, as well as impact new communication tools which facilitate design evaluation.

O43.3 HIA OF THE GLASGOW 2014 COMMONWEALTH GAMES

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Glasgow's bid for the 2014 Commonwealth Games include admirable aspirations regarding the Games' contribution to health improvement. However, lessons from previous events indicate that the event is not, in and of itself, sufficient to ensure improved health.

Aim:

To conduct a Health Impact Assessment (HIA) to assist in developing a legacy of health improvement for the Games.

Objectives:

- To take a partnership approach
- To engage key decision makers at an early stage
- To use a variety of techniques to engage stakeholders
- To identify and prioritise the elements of the Games with respect to major negative effects to be mitigated, those which provide realistic positive opportunities and those which are likeliest to add value
- To make recommendations and continue to engage with decision makers to influence strategies for health improvement

Methods:

A systematic literature review of the health impacts of previous mega-sporting events was conducted. The stakeholder involvement stage of the HIA involved a process of engagement comprising five parts:

- an event for key decision makers
- presentations to existing community groups
- an electronic and paper-based questionnaire
- interactive workshops and feedback sessions
- the Glasgow household survey.

Results:

Findings and recommendations are made under 13 key themes which have emerged from the HIA process. The 5 themes which represented the top priorities for Glasgow's people included 2014 infrastructure facilities, civic pride, image of Glasgow, regeneration and economy/employment. Decision-makers responsible for the Games Legacy Strategy have embraced the findings and recommendations of the HIA and are using it to inform their approach.

Conclusion:

The HIA of the 2014 Commonwealth Games has successfully laid the groundwork to assist in the development of a sustainable legacy of health improvement. Evaluation of the extent to which the HIA recommendations were incorporated will be conducted next year.

O43.4 Understanding and Tackling the 'Obesogenic Environment': The Healthy Towns Programme in England

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Obesity and overweight are an increasingly important problem in the developed world. It has been suggested that explanations for the rapid rise in obesity must reflect changes in the environment, as the distribution of genetic traits predisposing individuals to become overweight or obese remains unchanged over short biological time scales. This 'ecological' perspective has led to suggestions that modern societies are inherently 'obesogenic' and that weight gain is a response to an increasingly pathogenic environment. Tackling obesity based primarily on educational interventions has been largely unsuccessful, suggesting that system-wide, environmental and policy approaches are needed.

In this paper we present findings from National Evaluation of the Healthy Towns Programme. This programme represented a £30 million investment enabling nine local areas in England to develop and implement policies and interventions to tackle the obesogenic environment. We consider how the concepts of 'obesogenic environment' and 'environmental approach' to tackling obesity were interpreted, and how a system-wide, environmental approach to tackling obesity was translated into policy through the Healthy Towns programme.

Qualitative, semi-structured interviews with 20 key programme actors involved in the programme development and programme implementation (18 local key actors and 2 key policy actors) were conducted in 2010. Thematic analysis was used to allow for identifying both anticipated themes and emergent themes. Data analysis was guided by three broad questions: [1] definitions of 'obesogenic environment' by the programme key actors, [2] interpretations of 'environmental approach' to tackling obesity, and [3] implementation of environmental approach through the local programmes.

Findings showed that although system-wide definitions of the obesogenic environment were used by the majority of programme actors, there were varying interpretations of what was meant by the 'environmental approach' to tackling obesity. Thus, there was a tension between understanding the environmental approach to prevention as one that focused solely on the physical environment and physical activity, and a comprehensive whole-systems understanding. This tension was reflected in local programmes development and implementation, with a minority of towns using

comprehensive whole-systems approaches through their programmes. Other reasons for this discrepancy included a lack of policy guidance regarding how an environmental, system-wide approach to tackling obesity could be implemented, as well as practical difficulties in implementing this approach at a local level. Such insights have implications for the 'new localism' in government policy.

Acknowledgements: This is an independent report commissioned and funded by the Policy Research Programme in the UK Department of Health. The views expressed are not necessarily those of the Department.

O45. IDENTITY AND ATTACHMENT (3)

O45.1 URBAN ABORIGINAL PEOPLE'S PLACE ATTACHMENT AND IDENTIFICATION WITH REMOTE HOME COUNTRY IN QUEENSLAND, AUSTRALIA

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This paper draws on empirical research conducted with people in an urban-residing Aboriginal community in Brisbane, Australia from 2006-2011. The work explores the cultural and social attachments of a several related families from a Brisbane public housing suburb, who nevertheless have 'home country' attachment and identification with places in remote Cape York Peninsula, in north Queensland, some 2000km distant.

The paper discusses the ways in which these attachments and identifications to place have been formed, mostly in the past 25 years in the post-mission era. Prior to this, and for most of the 20th Century, Aboriginal people's movements, attachment and identification to place were severely restricted by governmental policies of missionisation and the removal of children from their parents and places of origin. I analyse how contemporary attachments to home countries, which pre-date these colonial and post-colonial interventions, fit into the context of an Indigenous tradition.

These topics of analysis are particularly relevant given recent writings that have highlighted the 'performance' of Aboriginal culture and white performances of reconciliation and guilt in suburban Sydney (Cowlishaw 2009). Additionally the Australian populist media seems to continue to require that Aboriginality originate from remote 'authentic' locations and an individual's physical features of 'blackness', rather than family, group and individual affiliations to particular place-based cultures.

I examine how urban Aboriginal residents maintain their attachment and identification with place-based groups, given the vast distances and differences in place that are involved, and how these lead to a maintenance of culture in the eyes of those undertaking these activities. In an era of increasingly urbanised Aboriginal populations, this paper provides an analysis of the sustaining attachments and reconnections and identification with places and traditional culture for urban-living Aboriginal people.

O45.2 BONDING WITH THE CITY WHILE MOVING AROUND – THE CASE OF PARKOUR

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People engage with place while moving around as part of everyday life, in ways that could have implications for their long term emotional relationship to the city. In this study peoples experience of the urban environment resulting from their recurrent use of it while moving around by feet, was explored among so called traceures active in parkour. The trend started out in the suburbs among young Parisians during the 1980's. Parkour means route and early influences came from military training on steeplechase courts which inspired them to think of obstacles in the physical environment as challenges. They use the urban environment with their body in complex and playful ways associated with gaining a heightened bodily and mental experience. The purpose of this presentation is to show how this type of recurring bodily use of everyday surroundings also can nurture emotional bonds between people and urban environments.

The results presented as part of this investigation draw on a six week field work among a group of traceures in Stockholm, Sweden. The transcripts of interviews with ten persons were analysed according to phenomenological procedure aimed to capture their use and experience of the urban environment. One phenomenon – friendship with the city - reflects how this way of moving around is associated with a concurrent emotional relationship evolving in transaction with the environment. The results are elaborated on in relation to theory on place attachment about multimodal sensuous experiences supporting the development of strong memories and emotions becoming associated to place. The complex and playful physical interaction with place carried out by a traceur should have implications for their emotional bonds to specific places, as well as to urban environments in general.

The results will be discussed in relation to common modes of use, transport and leisure in urban areas and a more sustainable urban mobility. Suggested is that an urban design that promote active and playful modes of moving about could be important to make cities more liveable - not only to youngsters - but to the population at large.

O45.3 DIGITAL MEDIA AND THE AUGMENTED SPACE: MOBILE PLACE ATTACHMENT AND IDENTITY

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Modern life is lived in the interstice between physical and mediated spaces (between physical local and virtual connection) the relationship to public space. Media theorist Marshall McLuhan observed, "All media work us over completely. They are so pervasive in their personal, political, economic, aesthetic, psychological, moral, ethical, and social consequences that they leave no part of us untouched, unaffected, unaltered." This paper investigates the impact of communication technology on place attachment and place identity. The traditional notions of place identity and place attachment confront the realities of a digital media environment in which the individual blocks, filters, monitors, scans, deletes and restricts while simultaneously constructing a controlled media environment. The ability to connect globally has the tendency of disconnecting from location. The ability to personalize creates feedback loops and media cocoons.

Prior research has posited that place attachment can be operationalized in terms of various dimensions including place dependence and social bonding which may be altered by media usage. Twigger-Ross and Uzzell (1996) stated, each and every aspect of identity has some elements related to the place yet as our relationship to physical place changes, identification (the cognitive component) is unlikely to remain untouched. An assortment of technologies enable

information from the digital world to be layered onto the physical world altering the person/environment relationship by creating spaces in which users interact with their physical surroundings through digital media.

In this investigation, we adapt identity theory to reassess place attachment, a multidimensional concept with cognitive and affective elements altered by "me media" use and augmented spaces. It is hypothesized that communicative and spatial choices that revolve around personal choice, impose new acoustical and visual dimensions on cognitive and affective dimensions of space. A "Mediated Spatial Interstice Theory" will be proposed in which the physical environment and the media environment co-exist, define each other and refine dimensions of place identity and attachment.

O45.4 BUILDING HOUSES AS A WAY OF CREATING PLACE ATTACHMENT

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This article discusses the factors making up place attachment and place identity based on analysis of statements by residents who were rehoused from stilt houses on the riverbank to verticalised apartments, the Abençoada por Deus Housing Project, and residents of houses in a self-managed self-built project, the Dom Helder Câmara Project. Physical, environmental, social and economic aspects were analysed. The focus for the first group was on the typology and building process of the housing itself. For cultural and other reasons, the general preference is for the house and not the apartment. In Brazil and other developing countries, a large proportion of residents in spontaneous low-income settlements participate actively in building their houses and the place where they live. Often through self-building or mutual assistance, this process directly involves residents in decisions about the type and layout of the house according to their wishes and resources. By taking part directly in such decisions, and even in actual building using savings from the household budget, strong objective and subjective links are created with the resulting property; this has a direct impact on place attachment and place identity, as seen in the Dom Helder Câmara project or among residents who built their own houses on stilts on the riverbank. Street layout was another important aspect. The layout of winding streets in the favela allows greater privacy and a feeling of safety, while at the same time promoting neighbourliness, in contrast to the verticalised apartment projects with their rectilinear layout and wide corridors which made residents feel vulnerable to strangers while impeding contact between neighbours. Leisure equipment and spaces to encourage sociability might help strengthen place attachment. Feeling safe is another commonly mentioned aspect.

Living in such housing projects tends to be associated with a real increase in violence and feelings of insecurity, generally associated with drug trafficking. In the favela they felt safer and even had a night watchman. Economically, many residents lost opportunities for odd jobs, as well as charitable assistance from churches (food and utensils), while they found they had electricity and water bills to pay. The feeling of rejection of the new housing is widespread; everything is further away, everything is harder. This pattern can be seen in housing projects in Brazil and other developing countries. Nonetheless, such projects continue to be implemented under the national scheme Minha Casa, MinhaVida. Little attention is paid to place attachment and place identity. A deeper knowledge of the basis of these feelings may offer alternatives that incorporate them within housing policy.

O46. RESIDENTIAL CONGRUENCE AND ENGAGEMENT

O46.1 PARTICIPATIVE URBAN REGENERATION: THE IMPLICATIONS OF CO-PRODUCTION FOR RESIDENT WELL-BEING

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The public space regeneration projects in public housing neighbourhoods in the North of France were first studied in terms of their effectiveness in addressing the French policy for urban and social development (Politique de la Ville) and are now re-assessed in terms of their impact on the perception of the sustained effect in improving the local quality of place from a combined approach integrating the physical – urban and architectural – and the socio-psychological aspects. This paper presents both the evolution and the long-term effectiveness of these sustainable regeneration projects in terms of the redevelopment of local public spaces in housing neighbourhoods and implications for neighbourhood perceptions and the psychological wellbeing of residents.

The methodology required an analysis of a continuous process over two periods occurring 10 years apart. The original study used mainly participant observation in local projects with inhabitants, elected officials, and regional experts, as well as assessments of architectural aspects of the redesign (Michialino, 2006). The current study builds on this with the addition of quantitative psychological wellbeing data (e.g. place identity, overall life satisfaction) and additional interviews with key stakeholders. The interdisciplinary approach provides a balance between the perception of the residents (through the analysis of quantitative data) and views of public servants (through semi-directed interviews and qualitative data) in terms of the evolution of participative regeneration, the perception of the space today, and the role these have on resident well-being.

The initial study concluded authentic participation and real co-production were the principal elements for assessing the successfulness of the regeneration projects in relation to the objectives of the Politique de la Ville that supported the projects. Results of the current study will be used to illustrate in what ways the effective participation and engagement of residents and other stakeholders facilitated the development of a sense of identity, pride and ownership of the place, and therefore the original objectives produced long term effect for social and urban development. They will also be used to as the basis for theoretical discussion regarding the state of authentic co-production in current person-environment studies and recommendations for the future development of the co-productive process to maximize long-term sustainability and resident well-being.

O46.2 "WE ARE NO DIFFERENT FROM THOSE IN AFFLUENT AREAS: WE JUST SWIM IN A ROUGHER PART OF THE RIVER"

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Have you heard about our Healthy Sustainable Neighbourhoods Model and the “Equally Well” test sitesthat are part of the Scottish Government’s tackling Health Inequalities Initiative?

Our projects are about the community being the experts about their neighbourhood and know the issues that exist where they live. Our Approach is based on a series of discussions and stories. Getting young people to explore their feelings and the attitudes and perceptions of them by others. Our work focuses on alcohol, gang culture and violence and seeks to involve them in designing spatial changes. Exploring interactive engagement methods and 'Everyone is a Positive Asset'.

We are developing a community version of our Healthy Sustainable Neighbourhoods (HSN) Model establishing key spatial planning themes relevant to local people. One of the key elements of our project is HSme (healthy sustainable me). Being part of “Equally Well” allows us to work this way as the Scottish Government have asked us to try new things in a different way, using a flexible approach.

O46.3 EVOLVING THE DEFINITION OF HOME – ADAPTATION OF A CONCEPT IN A GLOBAL RESOURCE PERSPECTIVE

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How we design, build and maintain our homes and most of all perceive them holds an important part in the discourse on global resource distribution. Home as a concept is vague and basic, yet influential, ranging from the physical manifestation to the social constructs or theoretical platforms surrounding it. The way home is commonly portrayed in a commercial and political context emphasizes individualistic consumption and ownership. Relating to a cultural communality based in a post-industrial supposed consensus on what the “good home” is, natural or social resources compete with perceived value in short-term financial capital gain. The issue of developing sustainable living environments is especially urgent in emerging urban regions, although depopulating areas are similarly facing large challenges, particularly on how to manage a sustainable de-growth. These situations are directly connected to the discourse on how we are to build for current and future extremes of environmental and/or economic turbulence. In the context of global constraints and their impact on how we are to [re]build living environments in the future, this paper addresses the adaptability of the concept of home and the factors that influence this adaptability. The potential of introducing new ways of residing is dependent on the design of systems where a redefinition of home is of particular interest.

The overall aim of my research is to explore how the concept of home is applicable in architectural academia and practice with focus on the sustainable development of current and future living environment. This pilot study creates the conceptual framework and the foundation for further collection of essential data. A theoretical model is illustrated by two precedent dialectics: the motivational justification of need/desire (Maslow, 1947) and the cultural influence of identity/communality (Altman, 1987). The study is based on literature, accessible databases and previous work at the institution including semi-structured interviews and key informant interviews with residents, realtors, housing authorities, residents’ associations, developers and designers. By creating an analytical tool for the concept of home, the role of the architect in defining home becomes more apparent. Challenging the architectural profession, this entails creating attractive environments that facilitate a balance of resources in the context of rapid global changes whether

climatic, societal or financial. The analysis contains multi-level factors concerning among others; legal, architectural, political, commercial and behavioural prerequisites of the concept of home. Case studies of selected residential areas of varying building typology, socio-economic and cultural composition are placed in the defined dialectic contexts. The study shows the relevance of evolution of the concept of home in the adaptation to new, sustainable living environments.

O46.4 ECO-COMMUNITY EMPOWERMENT STRATEGIES: CASE STUDY OF TAIPEI, TAIWAN

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Recently, the concept of sustainable development has prompted reflection on how industrialization has damaged the relationship between humans and nature. Particularly, discussions on urbanization and urban resource centralization have coined numerous concepts, such as eco-state, eco-city etc., that incorporate sustainability into spatial planning. Among these concepts, eco-community is a community-based sustainable strategy for proactively fixing the relationship between humans and nature. The government of Taipei, Taiwan launched a series of eco-community development plans in 2008 and 2009, focused on community participation. In this case, the implementation process can be considered a community empowerment mechanism for achieving sustainable development. The establishment of eco-communities will bring Taipei closer to sustainability, while community identity, consensus and capacity accumulation derived from building eco-communities can provide a foundation for future environmental governance. This study examines strategies and mechanisms for eco-community development in Taipei, including a core value of public participation, a selection mechanism based on community-based proposals, and principles based on cultivating sustainable methods of community management. Seven communities were chosen as demonstration of eco-communities, and spatial features, issues and planning strategies are explored for each community. The final section of this study presents general statements on the role of community initiatives in creating eco-communities.

O46.5 A PHENOMENOLOGICAL STUDY OF SOCIAL HOUSING DESIGN AND TENANTS NEEDS

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Social housing provision is not merely the case of providing sufficient numbers of dwellings but involves the understanding of the complex and symbolic interaction of tenants throughout their life cycle with this environment. There are inbuilt design affordances that allow the tenant an element of control and ability to create their personal version of an environment that reflects their personality. Matching tenants' needs to the structure is therefore particularly important in creating feelings of satisfaction, well-being and attachment(Vestbro, Hürol & Wilkinson, 2005).The research question that evolves from this notion is "Does current social housing design in Scotland meet the needs of tenants?" Environmental Psychology is deeply entwined in trying to understand the mechanics of everyday life, from using the spaces we inhabit to interpreting the objects we observe, handle, sit upon and generally use (Brebner, 1982). Examining how tenants judge the built spaces they inhabit and whether their needs are being met can be based on a number of variables, such as:preferences of room size and shape, affordances that radiator, door and window position provide for personalizing rooms, aesthetic judgments of style, colour and materials, emotional links, identity and place attachment and feelings of control.

The Parker Morris Report (1961),‘ Homes for Today and Tomorrow’, suggests the way to design rooms within social dwellings is dependent on the architect having some form of knowledge relating to, the pattern of room use, the activities that go on in them and the furniture which will be kept in it. Edwards (1974) and Darke (1984a,b&c)found architects expressed difficulty in designing for people living in social housing and suggested the only way to design was to design from their own experiences and to their own preferences as the primary guide to user needs. There has been little research exploring how housing associations (HA) (the main provider of social housing in Scotland) determine the needs of end users. As non-profit making organisations, HAs are the primary structure for devolving control of housing decisions down to a local level.

This study uses a qualitative approach to triangulate grounded data via focus groups and individual interviews to compare tenants, architects, and HA professional’s perceptions on social housing designs. Preliminary results suggested that architects in general expressed a keenness to interact with tenants but did not show any clear practical application of it. In contrast tenants viewed any interaction they had with architects as superfluous as architects tended, in their view to “do what they wanted anyway”. HAs seemed not to engage tenants in design issues and had rigid views on how much design involvement architects should have. This paper will further discuss common areas and indeed gaps that exist between each of these key stakeholders and the implications for social housing provision, design and use.

CASE STUDIES

CASE STUDIES

CS1.

CS1.1 CLIMATE CHANGE AND CONFLICTS: SOME SALIENT PERSPECTIVES ON NIGERIA`S VULNERABILITY

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Climate Change has been considered a reality for over a decade now. This has been evident as a result of rising CO2 levels, coupled with rising earth`s temperatures, melting of glaciers, etc. The consequences of such trends are observable all over the world today in more frequent or stronger flooding of rivers, increased storms and snowfall, cloudbursts, as well as droughts and desertification. The aim of this paper is to assess the role of Nigerian government and its citizens in climate change adaptation and mitigation with a view to resolving endemic conflicts associated with such. The paper asserts that global climate change is already impacting Nigeria as manifested by increased flooding, delayed rains, enhanced desertification, increasing bush fires, all of which have grievous consequences for the country`s food security, thus posing a further threat to national security. Indeed, the poor depend on elements of climate like rainfall, temperature and humidity for their livelihoods, and when changes occur as a result of global warming, resources are often depleted, and large populations are often forced to move towards greener pastures. Such mass movements have resulted in large numbers of internally displaced people and/or refugees. Where national borders are crossed, conflicts become inevitable. So far, the Nigerian government has made significant progress in addressing the problem of climate change by preparing, demonstrating, negotiating and developing various policies and plans at national, regional and international levels, although some of these lack full implementation. The paper therefore x-rays the level and consequences of Nigeria`s vulnerability to climate change, and suggests plausible mitigative and adaptive measures aimed at minimizing conflicts.

CS1.2 SPACE APPROPRIATION BY ADULTS WITH VISUAL IMPAIRMENT IN THE CITY OF SÃO PAULO, BRAZIL: CASE STUDY

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This research had the objective to comprehend how space appropriation occurs on the most significant environmental scales selected by adults with visual impairment. We used the concept of space appropriation (Pol 2002) which implies in a circular and dual model composed by the action-transformation dimension and symbolic identification. It consists of a case study (Stake 2001) and its comprehension is of systemic reference.

Three people with visual impairment, in both genders, with ages between 28 and 45 years old, participated. We did a partial replication of the methodological proposition (Bassani 2003, 2004)

and utilized the methods: thematic interviews (and clinical), observations (direct and photographic registration) and drawings.

The data was collected on locations chosen by the participants and the presented results indicate some of the constitutive aspects of the appropriation process of these spaces and will be presented case by case: (1) Participant A, 28 years old, female, married, one son (5 years old), visual impairment: blindness, chosen scales: (a) rehab institution; (b) São Paulo city park; (c) her house. (2) Participant B, 45 years old, female, married, visual impairment: profound low vision. (3) Participant C, 41 years old, male, married, visual impairment: severe low vision. Participants B and C are a couple, so their data was jointly collected and both chose the following scales: (a) their house; (b) a square from the city of São Paulo; (c) their sister/sister in-law's house.

From the results analysis, we identified three styles of space appropriation: 1) by re-signification: it implies in the union of several aspects such as acceptance and re-signification of the visual impairment, rehabilitation process, the activation of other senses and the cognitive processes. Such aspects were essential on the spaces appropriation, at different spatial levels. 2) by familiarity: the interrelations person-environment are significantly marked by social interactions. The appropriation occur mainly in places with which they relate affectively. 3) by property: the action-transformation and symbolical identification are marked by territoriality.

The present study suggests that, due to the importance given to public spaces, the appropriate space has played a fundamental role on cognitive, affective and symbolic processes of the visually impaired. Therefore, public policies that aspire to promote life quality to the visually impaired, must firstly make sure they know their needs and longings, so that only then, they can propose and implement alternatives.

CS1.3 LANDSCAPE AS AN EXPRESSION OF PEOPLE-ENVIRONMENT RELATIONS. FROM JOURNEY TO PLANNING, MOVING ALONG A PILGRIMAGE ROUTE IN ITALY

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The Cultural Routes Programme of the Council of Europe (1987, 2010) leads to think about how European cultural values are expressed by the diversity of European landscapes experienced along historical trails (Thomas-Penette, 2000). These form a web of cross-cultural interconnections along which the discovering of local configurations of human-environment relations and landscape perception is driven by the practice of journeying and walking (De Seta, 1982; Turri, 1998) The research explores the topic of European Cultural Routes in order to figure out their capability in acting as means of local development that takes into account the role of Landscape Planning underlined by the European Landscape Convention (2000).

Such objectives are investigated within the case study of the Lauretana pilgrimage route in Italy that allows us to explore the issue of human-environment relations at both extra-local and local scales, through the investigation of the role of terms such as pilgrimage and pathway. The former defines a framework of significance in which we can organize historically and spatially the pilgrimage's traces spread out over the landscape (Tosco, 2009); the latter is seen as the first step toward a place-oriented landscape planning (Gambino, 1994), thanks to its connection with local

landscapes and people. Here the fieldwork begins, along the pathways and with local people living the landscapes they cross (Lee and Ingold, 2006; Ingold and Lee Vergunst, 2008).

The research project started with the idea of recovering the ancient Lauretana Pilgrimage Route (LPR) that local civil and religious Authorities of Marche Region (Italy) have been carrying on for about three years. It aims to give Lauretana the label of European Cultural Route according to the European Council's Programme on Cultural Routes (CM/Res(2010)52).

LPR is a network of medieval Christian ways of pilgrimage toward the Marian Sanctuary of Loreto (Avarucci, 1998), whose main axis is the 16th century postal road crossing Central Italy, following part of the older Flaminia roman road of west-east connection. It became after the 16th century one of the most important itineraries of the Italian Grand Tour (Brilli, 1996).

Into the local and European institutional framework, about two years ago a research group from the University of Florence began to explore the connection between the Lauretana recovery project and Landscape Planning (Falqui et al., 2011), focusing on the pilgrimage route as means of landscape perception and knowledge for planning and design, through the historical practice of journey and its current reconfiguration, and looking at sustainable development according to the European Landscape Convention (ELC, 2000).

CS1.4 A CASE STUDY ON PLANNING, DESIGN AND MANAGEMENT OF WELFARE RESIDENTIAL FACILITIES IN SINGAPORE

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Abstract

Singapore's social problems arising from an aging society are fast becoming serious to the Nation. Singapore's senior citizens form 8.7% of the current population and will reach 19% by 2030.

Singapore's Ministry of Health has projected that long-term residential care will grow rapidly. Its strategy to enhance the mental ecosystem is to provide more facilities and services to cater to the needs especially to the lower and medium income groups of aging people with mental illness, their care-providers and caregivers. The effective planning, design and management of welfare residential facilities and support services are necessary, essential and urgent to meet rising need to move elderly into institutional home due to the lack of necessary family and extended family support and not necessarily for lack of Asian filial piety.

The report on this study and the Post Occupancy Evaluation (POE) on the issues will provide beneficial feedbacks from behavioural issues and other related matters that can help in developing effective programs and meaningful built environments of welfare facilities maintenance in land-limited Singapore. The study also provides the understanding of the common features of facilities composition, room layouts and the constraint aspects of the selected welfare residence facilities under examination

CS2.

CS2.1 REALL ECO-VILLAGE

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The £10m REALL Eco-village is a multi phase development that seeks to become a standard test facility for the study of construction, technology and occupant behaviour. The first phase of the village is 10 eco-homes that are designed to match industry requirements and future building regulations of 2013 and net zero regulated carbon emissions of 2016. The research aims of the frist phase is to understand energy use and behaviour related to homes with varying thermal mass, ventilation strategy and advanced renewable and low carbon technologies. The second and third phases of 50 homes will be developed with an industry development partner. The homes will be occupied by post graduate students with a population of 20 students for first phase and a total for all phases of 140 students. Students will be screened in collaboration with Social Science department of HWU and Dr Eddie Edgerton of UWS to create a controlled population measured against the Scottish Energy Attitude Survey.

The project is therefore considered relevant to all three sub-thems of the conference: geographic scale-Neighbourhood; Design-Eco-homes and place making; Implementation-Objective and Subjective Post Occupancy Evaluation of occupants and eco-homes at 3 year cycles. The eco-village will be designed to standard industry life span of 60 years, and therefore this project is set become Scotlands main test facility for the study of domestic occupant behaviour, construction, technology, energy use and carbon emissions, and low carbon design and construction skills for the 21st Century.

Early project supporters/partners include: Scottish Government, Scottish Enterprise, Scottish Buildings Standards, Edinburgh Climate Change centre, UK Green Building Council, Scottish Water, Mitsubishi Electric, IES VE, ISLI, Alba Sciences, and 7 other Scottish Universities outlined below. However, we are targeting a number of other partners across UK house building and construction industry including: Skanska, Wates, Keir, Stewart Milne, Himin Solar, Dakin, Siemens to name a few and including a number of Scottish SMEs.

The REALL high level project aims address 1, 2, 3,4 workstreams:

- Undertake first class scientific research in a unique demonstration project that incorporates a) building construction; b) technologies and c) behaviours in system optimisation research.
- Provide evidence on which investment decisions on building form, construction and technologies combinations can be made for low carbon housing for a wide range of stakeholders including policy and decision makers, architects, developers, house owners and product retailers.
- Validate theoretical performance assumptions and models in a living laboratory, providing behavioural bandwidths for building / technology combinations.
- Build and model REALL as a climate change adaptation test bed investigating comfort and health implications of different constructions and technologies in extreme current and future climates Research Partners
- Strathclyde University- Stirling Howieson, Indoor Air Quality

- University of West of Scotland- Dr Eddie Edgerton, Occupant Behaviour
- Macintosh School of Architecture- Dr Tim Sharpe, Energy Use and Occupant Behaviour
- Glasgow Caledonian University- Dr Keith Baker, Energy use and occupant behaviour
- University of Dundee- Low Carbon Domestic Buildings
- Abertay University-Dr David Blackwood, Virtual Modelling of occupant behaviour
- Edinburgh University- Dr John Lee, Behavioural Modelling, ESALA and School of Infomatics

CS2.2 'CONTEMPORARY VERNACULAR': IN SEARCH OF A CONTEXT BASED ARCHITECTURE

KHAN, H
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The advent of 'internationalism' in post independent India resulted in, like elsewhere in the world, a systematic erasure of the local aesthetics, craftsmanship, breaking of the link to the rich traditions & cultural heritage. This link resulted in an architecture that respected its people, culture, climate, craftsmanship & had vernacular continuity.

This alarming situation coupled with an irrelevant imported western academic curriculum resulted in present day architecture which thrives mostly around pastiche western imagery & iconography. There is an urgent need for evolution of a language that is based on the rich traditions of the past and assimilation of traditional Indian architectural principles which encompassed within itself freedom & responsibility, creativity & common sense, continuity & growth, problem solving with creativity, aesthetic aspirations & construction technology, crafts, craftsmanship & continuity.

Our architectural practice is an attempt at devising & implementing an architectural language assimilating the above within a contemporary framework. This we call "contemporary vernacular" which hopefully shall result in restoring the broken link.

As practicing architects, we feel a huge vacuum in terms of research in this area. Extensive research of this broken link, its subsequent dissemination to architects, designers, workers & society at large and the predominantly western based existing building regulations & byelaws to facilitate "contemporary vernacular" resulting in synthesis of research, policy & practice.

CS2.3 VIRTUAL PLANNING … TO BOLDLY GO…

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Glasgow City Council, United Kingdom

An electronic toolkit of our Healthy Sustainable Neighbourhoods (HSN) Model. Worked with Collective Architecture and Screen Media on HSN Placemaker. Using nine spatial planning themes, creating a series of neighbourhood scenarios from Test Sites across Scotland. HSN Placemaker Toolkit lets you think about neighbourhoods however large or small, how you use your 'outdoors' and how you move around, etc. Working through our toolkit, it asks you to explore links between placemaking decisions and wellbeing, by making changes to various examples of 'Place Scenarios', addressing whether the changes you choose improve wellbeing, and the challenges of making change happen.

CS3.

CS3.1 Implementation of saluto-synergetic land use for outdoor preschool environment in local government

Boldemann, C[1]; Dal, H[1]; Mårtensson, F[2]; Raustorp, A[3]; Cosco, N[4]; Moore, R[4]; Bieber, B[4]; Blennow, M[5]; Blennow, M[5]; Pagels, P[6]; Söderström, M[7]; Wester, U[8]; Wejdmark, M[9]; Lättman, R[9]; Kvist Lindholm, S[10]

[1]Karolinska Institutet, Sweden; [2]Swedish University of Agricultural Sciences, Sweden; [3]Gothenburgh University, Linnaeus University, Sweden; [4]North Carolina State University, United States; [5]Stockholm County Council, Sweden; [6]Linnaeus University, Sweden; [7]University of Copenhagen, Denmark; [8]Swedish Radiation Safety Authority, Sweden; [9]Municipality of Nynäshamn, Sweden; [10]University of Linköping, Sweden

Health programs compete for resources and attention, e.g. community-based intervention programs for physical activity vs. skin cancer control. Children's physical outdoor environments may favorably impact both and several other factors relevant to the health of an increasing number of young children who spend the lion's share of their waking hours at preschool. The impact of the outdoor environment on physical activity and sun exposure was studied in various landscapes at different latitudes to explore whether outdoor environments with high play potential due to space, vegetation and topography would promote health by stimulating play, increased physical activity, and sun-protective behaviour irrespective of location. Based on the findings, criteria were formulated to be applied in local government. In Swedish municipalities land use policies and administrative management of outdoor land use have been adapted to monitoring the quality of preschool outdoor environments (upgrading and planning). New guidelines have been implemented and integrated. Inexpensive methods for assessing, selecting, and upgrading preschool land could be adapted to latitude, climate, and varying outdoor play policies (including gender aspects). Criteria could be explored worldwide. Their aptitude compiled in a database for monitoring and evaluation should further discussed.

CS3.2 Who are the experts?

Simkins, I[1]; Paget, S[2]; Mathers, A[3]; Mathers, A[3]; Thwaites, K[3]

[1]Experiemics Ltd, United Kingdom; [2]SLU, Sweden; [3]University of Sheffield, United Kingdom

The case study refined and developed an inclusive process of participation exploring the application and development of child/person centric multi-route facilitation in the context of a practical application. It developed in collaboration with the school community and a practitioner a concept for the re-design of part of the grounds.

It demonstrated the value of practicing research in a reciprocal route of experiential learning between children and adults. It showed the children are experts of their own experiences and wishes for change, and their inclusion in a process of participation can be a route to empowerment and positively inform environmental changes. The inclusion of children in the design process is often not recognised as part of a meaningful process and can result in solutions that lack social relevance and human value (Thwaites and Simkins, 2007; Hillier and Hanson, 1984; Alexander, 1977; Norberg-Schulz, 1971).

Participation can be tokenistic, “Sometimes the primary aim is to be seen to do the appropriate consultation so that one can get on with the real job of providing the services.” (Freeman et al, 2003, p.66). In mitigation of the difficulties encountered in practice, Karaftl (et al) (2007) stated “… there remain significant methodological difficulties in presenting research in such a way that it can be effectively and efficiently used by built environment professionals to improve the places inhabited (or not) by young people.” (p.401). Kraftl (et al) also suggested to “… consider new methodologies for encouraging young people’s participation.” (ibid). Other studies value involving children to understand their thoughts, but also in the analysis of their own experiences (Veale, 2005). Methodologies in the case study were developed to facilitate this.

In order to address issues regarding meaningful and practical participation, the case study explored previous research (Simkins, 2008) which recognised the significance of multi-route methods of engagement. Aspects were informed by Kolb’s experiential learning model where: “Learning is the process whereby knowledge is created through the transformation of experience” (cited in Riding and Rayner, 1998, p.54). Knowledge in itself is not independent as an entity to be received or passed on, it is in a constant state of flux and transformation between being created and recreated. Learning transforms experience both objectively and subjectively through a reciprocal relationship to understanding learning and the nature of knowledge (Kolb, 1984).

Accommodating and embracing difference is crucial in recognition of individual needs and preferences rather than a single approach which precludes or obstructs an individual’s contribution. This case study sought to demonstrate this as being significant in a practice based context, as well as developing and refining methods and approaches suitable for application by practitioners, the impact of which will be discussed.

CS3.3 ‘DYING’ SETTLEMENTS AND RESIDENTS ‘LEFT BEHIND’: SOME REFLECTIONS ON DEMOGRAPHIC FATALISM

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Demographic change and its impacts on settlement structures currently represent a major topic of public concern and scientific debate not only in Germany. Yet, it is not a new one. Already in the 1970s one could read about “dying” villages in the areas close to the (then) Inner German Border. These settlements exist still today. But, once again, villages in peripheral regions across the country are subject to widespread assumptions about left-behind residents and the limited futures of the settlements in which they live. Many local and regional practitioners order demographic prognoses (or carry them out themselves) in order to become more certain about the future of their town or city. Local demographic change is, as a rule, understood as a univocal, unambiguous process that will determine the world in which we will live. In the case study presentation I would like to reflect upon science-policy interactions on issues of demographic change and, particularly, on the role that scientists should, in my mind, play with regard to per se uncertain futures. The presentation is based upon on different research studies in the past years that were and are dealing with the local impacts of population decline and demographic ageing in Germany.

CS3.4 FROM OPEN AND GREEN SPACE AT HOSPITALS TO 'HEALING GARDENS'? TRANSDISCIPLINARY ASSESSMENT **and recommendations for (re)design**

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[1]Medical University of Vienna, Austria; [2]Lebensorte, Austria; [3]Landeskliniken-Holding, Austria

Open and green spaces in hospital serve manifold purposes (e.g. transportation or storage. Furthermore, they are prized places for building activities rather than used for therapeutical or preventive issues. In accordance with Hartig and Cooper Marcus (2006), outdoor space at health care facilities should support well-being and health, such space should be designed as 'healing garden' also. The project was aimed to assess the physical structure and the accumulated subjective experience of such spaces situated at three hospitals in Lower Austria. We applied a transdisciplinary approach, combining landscape planning, environmental psychology and management.

Methods were: (1) assessment of physical structure, (2) internal rating of experience using questionnaire and rating scales, (3) external online-rating of photos, (4) co-operation with managers and planners, (5) presentation and discussion of outcome with decision makers and politicians.

Results show distinct differences in the physical structure as well as different effects on experience. Findings provided evidence (1) for redesign at site, (2) impacted improvement of construction work, (3) set the basis for post-occupancy evaluation, and (4) delivered an approach for evidence-based design recommendations with respect to fostering well-being and health in open and green spaces of hospitals.

CS3.5 PLAYING GAMES WITH SUSTAINABILITY IN GLASGOW

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Getting out of school and playing games is an 'easy sell' to pupils aged 11-14, if less so to their teachers. This case study describes an ESRC Festival of Social Science project undertaken by researchers in the fields of Geography and Architecture which aimed to get participants to see beyond the mere technical fix of erecting new 'sustainable' buildings and to see the local built environment as part of a sustainable community.

A walking tour encouraged pupils to critically assess the current cityscape and a 'sustainable communities game' provided a means to 'imagine' a new start. Literature from planning, regeneration and education all emphasise the need for community members to engage in local visioning. This activity, harnessing the momentum of the Decade of Education for Sustainable Development and the new Curriculum for Excellence in Scotland, stimulated thinking about community, energy and waste. With the potential to challenge existing preconceptions of sustainable communities, bring existing knowledge to practical decision making and improve communication skills, this approach is well placed to better prepare pupils (and ourselves) for addressing the grand challenges of sustainability and uncertainty.

CS4.

CS4.1 EMOTION IN MOTION: A METHODOLOGY FOR INVESTIGATING EMOTIONAL RESPONSE TO THE STREETS AND URBAN SPACES IN HANLEY, STOKE-ON-TRENT

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In recent years, architects, urban designers and planners have been criticised for pursuing an ocular-centric approach prioritising the look or style of a street, building or site above other sensory components including the sound, smell and overall 'feel' or emotional response it provokes. Emotional theorists frequently consider a positive-negative valence when attempting to unpack people's emotional response to 'objects' including people, situations and the world around them and similarly, many sensory modes have been considered as contributing only negative aspects to urban life e.g. unwanted noise. The investigation and measurement of emotional response to the built environment and its sensory components, and specifically with respect to incorporation into design practice, remains limited. This case study outlines a recent project undertaken in Hanley, Stoke-on-Trent by 5th and 6th year students at the Manchester School of Architecture. The project sought to devise and test a methodology for investigating emotional response to the built environment, through the measurement of heart rate, sight, sound and light level, and developed an installation to represent the study findings. In doing so, the project identified different profiles of emotional and sensory stimulation according to urban typology and relationships between varying sensory stimulation and emotional response.

CS4.2 "ODART" (ONE-DAY REAL TIME) CONSULTATIONS THROUGH 3D SPATIAL MODELS: SHARING URBAN DESIGN AND DEVELOPMENT ISSUES WITH LOCAL COMMUNITIES OF INTERESTS

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Normally urban designers and planners interact with the communities involved in urban transformations by the means of traditional media such as sketches, plans, sometimes only by discourses, focus groups or brainstorming. By this way driving concepts and key words are focused with the help of a facilitator. Urban designers and planners have then to make an interpretative effort in the successive technical phase. Some literature recognized and criticized a big gap between the spatial effective results of the transformations discussed during such kinds of local communities' consultations.

ODART (One-DAy Real Time) consultations through 3D spatial models is a method the authors experienced and decided to propose in order to set up differently the process shortly described above.

The strategy is to reduce the distance between experts and people exercising their own capability of interaction. The amelioration of the understanding of the urban/neighbourhood different scenarios is twofold: on one hand the experts can collect a multifaceted variety of proposals and check their design assumptions and criteria; on the other hand people increase the awareness of the different aspects of the project such as potentials, strengthens, risks etc. In the experiences of the authors both profane participants and experts acquire the way to better interact in a very short time.

The paper aims to test the ODART approach within the debate on innovative tools of urban and spatial design. Basically it consists in selecting 3 to 5 communities of interest involved in the

urban/neighbourhood future transformation (i.e. traders, students, members of local associations, artists interested to the renewal of a central square). Each community of interest is represented by 10 to 20 people with homogenous characteristics. They are all invited from the City Council to a 2-hour consultation organized as facilitated interaction among them and the urban planners and designers in charge who have to work in real-time on a 3D virtual model.

This event is possible at two precise conditions: ability in the using of modelling programs in order to visualize what participants suggest during the session and preparatory work consisting in "sketching-up" the context and the layers of different alternatives.

The experiences of urban planning on which ODART is based are two and both have been carried out in 2011 in two small cities (25.000 and 11.000 inhabitants) in North-West Italy. There is a difference between these two case studies not just related to the scales of the two transformations but also in terms of different care and different timing of the planning processes.

Authors would like to orient the conference discussion to morphologic and immaterial results, trying to answer to the following question: "To what extent this method of consultation can support urban planning and design in environmental, social, economic and institutional terms?".

CS4.3 EMERGING DEMAND OF OIL AND GAS WORKFORCE HOUSING IN SOUTH TEXAS: LESSONS FROM LOCAL AND STATE POLICIES AND PRACTICES

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From 2000 to 2010, Texas grew from 20,851,820 to 25,145,561, reflecting a 20.6 percent growth, however, the Middle Rio Grande [MRG], a region located in south Texas comprised of nine counties, had a slight increase of 0.8 percent. In 2008, most MRG counties coincided with the Hawkville Field discovery, known as Eagle Ford Shale wherein the MRG is located. The shale is one of the major US Oil and gas discoveries, created numerous new jobs, and is estimated to have 20 to 30 years lifespan causing a significant economic contribution to the MRG region. Despite this slight regional change from 2000-2010, oil and gas companies are desperately recruiting out-of-region's workers for their new construction and development contracts (Eagle Pass Business Journal, 2011). In Dimmit County, located both in Eagle Ford Shale area and in MRG, there are over 50 oil and gas companies opened offices and operations to service the booming oil and gas plays. In the city of Eagle Pass, motels and hotels occupancy rates have skyrocketed, providing housing for oil and gas workers. The newly recruited workers have also been accommodated in manufactured homes, placed in vacant lots, resulting in undesired communities. This provoked an exploration of case studies of workforce housing to be incorporated and adopted in MRG region, during and after the oil and gas peak.

This paper explores workforce housing policies in the US through utilizing a qualitative approach comparing four case studies of workforce housing projects in Oregon, Vermont, Pennsylvania, and North Dakota. It highlights the challenges and programs incorporated in the local, city, and state policies of housing. This analysis is part of an extensive funded study on housing assessment in MRG region that we're currently undertaking, which also analyses the population forecasts in the region.

In this phase, we looked into the policies and partnerships of different agencies, local and state governments, and developers to establish a rapport that was based on understanding the assessment parameters driven from the review of relevant scholarly work. Those parameters were identified as: the scope of the project, location, demand, capacity, tenure, housing types, employer's share, employer's type, funding and financing sources, and policy-related issues. Through a qualitative method of comparing different literature on the identified case studies, we found the following premises: housing tenure is often dominated by rental properties; employers contribute 0-8% of the development cost; the projects are comprised of more than 200 units; and lack of affordable housing in most of the cities and states wherein these housing projects were built is a primary concern. Though this is an outcome of a limited comparison of four case studies, this paper stresses that the current housing policies lacks a mechanism for collaboration between the local/state programs on one hand and the developers and employers in the other hand.

CS4.4 Perceived everyday sustainable practices at work of employees on different levels of decision-making within a Romanian firm

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Specialists in the organizational field agree on the fact that the activities in organizations and environmental conditions are related and consider that companies are responsible for making changes in their behaviour in order to promote environmental sustainability in their activities. Although behaviour at the workplace is a type of behaviour highly relevant for the sustainability issues, few studies have addressed it. The 7PF LOCAW is one of the first research studies that explicitly examine sustainable practices and behaviours in the workplace in different EU countries and in several types of large scale organizations. This study was conducted as a part of Work Package 2 within the project LOCAW, in order to make an analysis of the daily practices in the workplace in a company which is the regional operating company of public water and waste-water services for Timis County (in the west of Romania). 119 employees at different levels of decision making within the organization completed a questionnaire which was structured in the analysis of three categories of practices: consumption of materials and energy, generation and management of waste and organization-related mobility. These three categories were measured through three kind of perceptions: the perception of the respondent about the observed practices in the organization, about the importance s/he thinks the organization gives to those categories and, respectively, about the importance s/he thinks the other workers give to those categories. The results showed that the respondents consider that the practices most often observed in the organization are also the most valued. The prior assumption stays valid for the waste related practices, too. Thus, the most frequently observed practices in the organization are those considered most important, both by the organization in general and by each employee, individually. In the case of travel related practices, the employees' answers are much more heterogeneous compared with consumption related practices, on one part, and waste related practices, on the other part. There was a lack of convergence within the three areas - observed practices, importance attributed by the organization and that attributed by the organization's employees.

POSTERS

POSTERS

P1. EVALUATION OF KITCHEN SPACE IN HOMES FROM THE VIEWPOINT OF CREATING A BARRIER-FREE ENVIRONMENT FOR THE ELDERLY IN JAPAN

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The purpose of this study is to clarify the evaluation of kitchen space in homes for the elderly in order to create a barrier-free (B.F.) environment. Physical B.F is a traditional element of B.F.. We add a sensory B.F.. and environmental B.F.. (Environmental B.F=Physical B.F. + Sensory B.F.) Our previous research had found the following results:

1. Physical environmental barriers were found in most respondent's houses.
2. For a B.F. kitchen space, the satisfaction rates with the thermal environment were the worst of the several sensory factors for the elderly. Moreover, satisfaction with the thermal environment is lower in summer than in winter.

These findings suggest that to achieve a B.F. kitchen environment for the elderly, it is necessary to seriously consider measures to prevent heat disorders in summer. Thus, additional research was needed to clarify the actual condition and satisfaction evaluation of kitchen space for the elderly from the viewpoint of B.F. design.

All these aspects are important in this study of kitchen space, because creating a B.F. environment for preparing meals is important to improve the elderly's quality of life.

1. We conducted a questionnaire survey of elderly and middle-aged subjects. The results can be summarized as follows:
2. The elderly have experienced accidents or incidents in the kitchen. The percentage of respondents who experienced incidents was as follows: burn (46.8%), fall (30.5%), struck head on the shelf (22.5%).
3. Installation of B.F. facilities. The installed B.F. facilities (safety goods) in the kitchen were Worktop for wheelchair users (3.3%), cooking chair (5.6%), Heating (42.5%) and Cooler (40.6%). Specifically, for those living alone, the percentages were as follows: Worktops for wheelchair users (5.1%), cooking chair (2.6%), Heating (38.5%) and Cooler (33.3%).
4. Satisfaction rates with the thermal environment were the worst among several sensory factors. Moreover, satisfaction rates with the thermal environment in summer were lower than that in winter. Therefore, it is necessary to seriously consider prevention of heat disorders in summer.
5. The satisfaction rates of respondents living alone were lower than those living with an offspring's family.

From the social perspective, it is necessary to establish support systems to support older people living alone. Neighbourhood or parent-children communications can be considered as important support mechanisms. To achieve a barrier-free kitchen design for the elderly relates to the elderly's quality of life.

P2. GLOBAL CLIMATE CHANGES AND HUMAN BEHAVIOUR: EXPLORING ADOLESCENT´S ENVIRONMENTAL CARE AND THEIR VIEWS ABOUT "GLOBAL WARMING"

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In recent years, much has been discussed about global climate changes (GCCs). The scientific evidences point out to the influence of human actions for its drastic intensification. Therefore, studies on the psychological aspects involved in it become relevant, particularly considering that GCCs offer potential risks to human quality of life and environmental sustainability. There are few studies dedicated to understand teenagers' pro-ecological commitment, and yet fewer dedicated to investigate their perception of GCCs.

This study aimed at the investigation of adolescents' views of GCCs, and the possible relation between those views and their practices of environmental care, measured by their report about own engagement in pro-ecological behaviours. Participants were 323 adolescents (202 female and 121 male, aged 12 to 19 years old), from Brazilian private and public schools. They answered a questionnaire with two open questions: the first about the practice of environmental care, and the other one about their view of GCCs, whose answers were submitted to thematic content analysis.
We observed that 54% of teenagers said that they did not engage in actions of environmental care (non-caregivers), and 46% of them reported some kind of engagement (caregivers). We also noticed that their views on GCCs were superficial and unclear as previously reported in the literature. The adolescents perceived it as another environmental problem, describing it as pollution or ozone layer depletion. Their reports pointed out only few characteristics of GCCs, and poorly perceived local implications of this global predicament. They mentioned aspects directly related to the problem, such as: cause and consequences of GCCs, persons or agencies responsible for it and its possible solutions. They also indicated concern for the future in face of global warming, and the need of conservation of the environment - in general, not necessarily related to GCCs. We found no significant association between GCCs' views and the practice of environmental care, perhaps due to the abovementioned conceptual confusion about the subject. Such confusion seems to be greater among non-caregivers, considering the fact that they mentioned more messages related to regular conservation than caregivers, who, in turn, mentioned the responsible for the problem more frequently than non-caregivers. This corroborates similar findings of the literature, in the sense that considering himself/herself as responsible for an environmental problem may be a first step for engagement in actions concerning that problem.

A better understanding of the representation of GCCs may enable us to reduce those doubts and confusion, helping to clarify GCCs implications to the public life, in their temporal and spatial dimensions. More studies in that direction are needed in order to understand adaptation and mitigation actions, considering global and local scales, and immediate and future outcomes.

P3. RELATION TO THE SKY IN BUILT ENVIRONMENT; INVESTIGATING RESTORATIVE POTENTIAL OF A WINDOW VIEW TO THE SKY (WVS) IN DENSE CITIES

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Tehran, capital of Iran, is a dense city where many people are enclosed within built environments and they are unable to access the natural views even to the sky. Studies indicate that these consequences of densification have potential negative implications on people's health, which designers and planners share responsibilities. Based on Iranian culture, traditional architecture, and behavioural science theories, present research aims to find a design policy for this problem. It assumes that having a Window View to the Sky (WVS) can be a restorative resource and compensate the poor living conditions in Tehran.

Iranian culture is evidence that the sky has had a noticeable role in Iranians' minds, beliefs, behaviours, and behaviour settings. But in modern architecture this matter has been neglected and it seems that there is a great conflict between what people actually need and what behaviour settings are offered to them. Moreover, recent architectural studies about windows and sky views are limited to the field of conservation concerning natural light.

On the other hand, studies in environmental psychology imply that limitation of view within built elements is not preferable from habitants (Purcell et al, 2001) and can lead to sensory deprivation and so, to sever psychological anomalies (Parr, 1966; Bell et al, 2001).

Increasing studies show that the psychophysiological problems of urban living arouse restoration needs (van den Berg et al, 2007: 92). Regarding to the modern life style which keeps people indoors, a restorative resource should be easily accessible during everyday life. Windows can satisfy this demand and provide a micro-restorative experience (Kaplan, 2001). Also, natural elements in views can increase the effectiveness of windows (Kaplan, 1983, 2001; Tennessen & Cimprich, 1995; Ulrich et al., 1991; Talbot & Kaplan, 1991). But, these studies are usually focused on greenery and there are limited studies about human relation to the sky. To find a solution for the research problem and to bridge aforesaid gaps in architecture and behavioural science, the research purposes to examine the importance of a WVS for people living in dense urban circumstances. Therefore, the research questions are: is a WVS significant for urban people; does a WVS have a restorative potential to affect human wellbeing; what are attributes of a beneficial WVS?

Research methodology includes an in-depth interview with Iranian habitants to explore how they experience the sky. Interview results show that this relation is important for most of participants; dominant features for the sky are infinity, depth, color, and changing; and dominant effects of viewing the sky are calming and release. Also to find out the restorative potential of WVS, the research measures fascination and being away factors via PRS (Hartig et al) in a survey. This step of the research is ongoing, which will be followed by a study to find out properties and dimensions of a beneficial WVS.

P4. THE INFLUENCE OF PRELIMINARY KNOWLEDGE TO COGNIZE URBAN ENVIRONMENT

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Introduction

The person takes the behaviour corresponding to the impression that formed beforehand (Asch, S.E., 1946; Kelley, H.H., 1950). This suggests that preliminary knowledge to the person influences the behaviour. The suggestion would be able to replace process to constitute the image of the urban environment. Kevin Lynch shows that "Meaning" is one of the components constituting the image of the city, and that the public image in common to the urban environment exists (Lynch, K., 1960). However, it is not clear that preliminary knowledge could be influenced to cognize urban environment.

Purpose

The purpose of this study is to clarify the influence of preliminary knowledge to cognize urban environment.

Method

This is an experiment through wayfinding behaviours. The proving ground is one block constructed on grid network of streets. The experiment is conducted twice with the same proving ground. The subjects are twenty persons, and they do not have the direct or indirect knowledge about the proving ground. The first time is investigated by ten subjects who are not given preliminary knowledge, and the second time is investigated by another ten subjects who are given preliminary knowledge. The preliminary knowledge is the five concepts including the history emphasized than the reality. These concepts are "General form", "Constitution of the street", "Physical element", "Transition of time" and "Atmosphere". The procedure of the experiment is as follows. The subjects walk around the proving ground. The subjects walk freely from the center of the proving ground, and finish wayfinding behaviours when the subjects can cognize the proving ground. During wayfinding behaviours, the walk trace recorded. After the end of experiment, the subjects are classified by Cluster Analysis based on the walk trace. The subjects are interviewed about process to cognize urban environment. The contents of verbal communications and the number of persons based on verbal communications are extracted to clarify the tendency to the concept through the interview.

Results and Discussions

The number of persons based on verbal communications to "Atmosphere" has more the subjects who are given preliminary knowledge than the subjects who are not given it. In addition, most of the subjects who are given preliminary knowledge walk a long distance. On the other hand, the number of persons based on verbal communications to "General form" and "Constitution of the street" has more the subjects who are not given preliminary knowledge than the subjects who are given it. In addition, most of the subjects who are not given preliminary knowledge walk a short distance. Therefore, according to the influence of preliminary knowledge to cognize urban

environment, "Atmosphere" such as feeling the history is emphasized, and forms and constitution such as "General form" and "Constitution of the street" are not emphasized.

P5. WHAT CAN RESTORATIVE ENVIRONMENT RESEARCH TELL US ABOUT LIBRARY STUDY SPACE?

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Germaine Greer, in Daddy We Hardly Knew You, says that libraries are “lakes of mental energy” and that “in any library in the world, I am at home, unselfconscious, still and absorbed.” Greer's remarks touch on an important aspect of academic libraries, the library as a place to stimulate and recoup “mental energy” in support of learning. As libraries move away from being storehouses of information and concentrate more on being centers for academic activities and study, it is important that study spaces are designed to answer the needs of a diversity of students. However, current literature about the design of academic library spaces concentrates on the development of technologically rich “learning commons” with atmospheres similar to coffee shops. While this space is conducive to a particular type of student accomplishing certain tasks, the diversity of study requirements and the diversity of students on our campuses demand a more diversified approach to the design of study spaces. Study spaces that are designed for quiet contemplation and relaxation and recovery from mental fatigue and stress could have a positive impact on student learning by providing places that enhance the learning process for many students. This, in turn, would enable the library to understand how its space contributes to one of the key outcomes of the larger educational institution.

Research that has been done thus far in the library field on the use of library spaces centers on questions like “what are the most popular spaces” and “what is needed to support collaborative work”. Very few post-occupancy studies have been done in libraries and none have been used to assess the impact of study spaces on the students using that space. Based on an examination of research from environmental psychology, particularly that done with restorative environments, this researcher believes that providing green spaces in libraries will have a positive impact on the ability of many students to successfully study. Drawing on Weinstein’s (1981) research from educational psychology about the impact of classroom design on learning and on Herrmann’s (2002) collection of research on the development of successful learning strategies, this researcher proposes to investigate the question of the impact of green space on the quality of study within certain library spaces. Applying a theoretical framework developed by the Kaplans (1989, 1998, 2009) and others who research restorative environments, the researcher will use both quantitative and qualitative approaches to test for the immediate impact of green space on stress and mental fatigue. Han’s (2003, 2009) Restorative Scale and Laumann’s (2001) Restorative Components Scale will be the quantitative instruments used and the researcher will develop her own qualitative method for interviewing or surveying library patrons. This poster will detail the researcher's theoretical framework, hypothesis and proposed research design.

P6. RELOCATION EXPERIENCE AND PSYCHOLOGICAL WELL-BEING IN THE ELDERLY: A FIELD STUDY IN SARDINIA (ITALY)

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The progressive and rapid aging of the world population can be considered today one of the most global and epoch-making processes especially in industrialized countries, and it has profound implications for many facets of human life. According to a recent report by United Nations, today Italy is one of the countries with the highest levels of longevity and, considering European Union countries, with the highest percentage of over-sixty-five, but Italian residential facilities for older adults need to be developed yet, despite their considerable frailty and needs for services and care (Ageing Society-Osservatorio Terza Età, 2007). The present contribution concerns a field study focusing on the topic of residential change in the elderly. The aim of the study is to analyse and compare the effects of different spatial-physical and social-functional features of settings in influencing psycho-social-environmental responses of elderly users. The study participants (n=114) were elderly residents (i.e., above 65 years old without cognitive impairments) of several sheltered houses, which differ for their degree of spatial-physical humanization. A set of measures covering the various aspects of the humanization construct (such as humanization referred to external spaces, to internal spaces and to social-functional aspects of the examined residential setting, see Fornara et al., 2006) and other psycho-environmental and intra-psychological dimensions were inserted in a questionnaire filled in by the participants. Validated tools or ad hoc adaptation of pre-existing scales were used for measuring the investigated dimensions. Significant relationships were found among objective degree of spatial-physical humanization, perceived residential environment qualities, and other individual responses, such as psychological wellbeing, residential satisfaction, perceived control and feeling of broken home attachment. A key finding of this study is the prominent role of psycho-environmental dimensions (such as perceived residential environment qualities, residential satisfaction and feeling of broken home attachment) in positively influencing the experience of elderly people who have faced relocation into a sheltered house, while individual and intra-psychological dimensions seem to have less weight. Perceived residential environment qualities and affective dimension of feelings of broken home attachment seem to influence also residents' perceived control on the environment, that is, as underlined by literature, one of the most important component for the achievement of a "successful aging". These outcomes provide empirical support for the importance of design features of health-care environments for fostering health and wellbeing of the users, especially when they are elderly people.

P7. FOPEX.ORG - A WEBSITE TO EDUCATE TO COMMUNITY PLANNING AND TO SHARE EXPERIENCES IN THE WORLD

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Politecnico di Torino, Italy

Fopex means Formation et Partage d'EXperience. This website is positively inspired to ted.com "a nonprofit platform devoted to Ideas Worth Spreading". Following the same approach Fopex would select and collect best Community Planning concepts and practical implementations. We wish to

take the opportunity of this important event to share our challange to a larger community of schoolars amd practictioners in the field of inclusive urban planning.

Fopex offers three different kinds of media:

- short videos the speakers focus their very core ideas by which;
- traditional power point presentations;
- scientific papers and related technical materials.

The website accepts contributions in the original languages and always toghether an English/French version.

The poster will be presented toghether with a working prototype to be tested by the participants together with the authors.

P8. VALUE FOR THE SPACE: DEVELOPING AN EFFECTIVE ECOSYSTEM SERVICES TYPOLOGY FOR URBAN GREEN SPACES

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Following a detailed assessment commissioned by the United Nations in 2000 on the state and health of the World's natural resources the World Health Organisation, in 2005, tasked scientists with the job of providing evidence for the value and importance of biodiversity and ecosystems to human health and well-being. The outcome of the initial assessment and subsequent research findings culminated in new global initiatives for ecosystem services and sustainable development. Recent trends in land use change and population patterns, in particular, the growth of urban development, has provided a new context and setting for valuing ecosystem services. Existing natural and rural ecosystem typologies may not capture the full complexity of urban landscapes. For instance, relictual semi-natural patches together with more modified green infrastructure are difficult to classify and yet offer both social and environmental goods and services that can also have economic benefits at both local and regional scales of reference. Current scientific literature typically adopts a linear line of enquiry that focuses mainly on the detailed analyses of a specific service for a dedicated green typology. This paper reveals a deficit in knowledge and understanding of the ecosystem goods and services for complex integrated urban green spaces including less conventional typologies such as green links and public spaces. Together, with the absence of an (economic) integral valuation framework to assess these services, strategies built on current evidence fall short of the necessary holistic approach required to build sustainability into urban landscapes.

This research uses case studies to devise both a comprehensive theoretical and practical design valuation methodology for assessing the ecosystem services for all green spaces that make up the diversity of city landscapes. It includes a full spectrum of typologies from semi natural green spaces, agricultural land types and wetlands to brownfield sites, community greens and residential gardens. A matrix of ecosystem typologies is constructed for urban landscapes using a combination of both qualitative and quantitative evaluation measures that go beyond simple scoring systems. This data will eventually contribute to the development of prediction performance

models for urban design. The hierarchy of the ecosystem services in these spaces and the effects on citizens is revealed and visualized through the use of pyramid models. Provisional findings indicate that the supporting group of services such as nutrient cycling, soil formation and primary production are the fundaments of ecosystems whilst the other services are 'stacked' on top with cultural services at the apex of the pyramid. A more fine-grained analysis of results for the ecosystem services typologies indicate that the various services are interconnected. Furthermore, negative impacts and feedback loops have been incorporated into the network analysis and the result

P9. CONNECTEDNESS, WELLBEING, AND NATURE

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Authors have suggested that connectedness with nature participates in the positive relationship between contact with nature and psychological wellbeing (Mayer et al., 2009). However, there are two dimensions of wellbeing, "hedonic" (eg Diener & Seligman, 2004) which is a subjective dimension related to satisfaction and positive or negative mental states, and another call "eudaimonic", characterized by a sense of optimism, confidence and satisfaction, to provide meaning and significance of life (eg Waterman, Schwartz & Conti, 2008). The main objective of this study is to observe the relation between cConnectedness and both types of wellbeing, and with the experience of contact with natural environments.

This is the first phase of a larger study. Attended by 207 students, 76% women and 20% male, mean age 22.08 years old (SD = 5.23). 13.5% said often practice activities in nature during their leisure time, 45.4% do it occasionally and 41.1% never. We used a questionnaire composed by: the CNS (α = .801; Olivos, Amérigo & Aragonés, 2011), the EID (α = .912; Olivos & Aragonés, 2011), and MHC- SF (Keyes, 2009) consists of a hedonic (α = .780) and eudaimonic (α = .816) subscales.

The EID scale is articulated around four dimensions, including an "identity" component strongest correlated with CNS ($r = .758$, $p < .01$). Following the hypothesis of relationship between connectedness and wellbeing (Mayer et al., 2009), both the "identity" component of EID and CNS correlated positively only with eudaimonic wellbeing ($r = .204$, $p < .01$, $r = .229$, $p < .01$, respectively). The other three dimensions of the EID, environmentalism, enjoying and appreciation of nature, did not correlate with the two types of wellbeing. Also observed significant differences in levels of connectedness by self- reported frequency of activities in nature, showing that the higher the contact frequency the greater the connectedness.

These results confirm that the environmental identity is a complex construct that includes connectedness to the nature and other dimensions as well as mentioned before (Olivos & Aragonés, 2011). And connectedness correlates with wellbeing, as has been proposed in the literature, although this study has been specific in the type of wellbeing.

Some issues remain outstanding and which must be addressed in a second phase. In particular, it must be to consider to what extent does direct contact with natural environments have an effect

not only increasing levels of connectedness, but on levels of eudaimonic and hedonic wellbeing also.

P10. ATTRACTIVENESS AND ATTACHMENT, TWO DIFFERENT CONCEPTS? STUDY IN A POPULAR NEIGHBORHOOD OF THE PARIS REGION

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The attractiveness of a neighbourhood is a recurrent theme, mostly referring to all of the residential, objective (Vogt and Marans, 2004) or perceived characteristics (Chhetri, Stimson and Western, 2006) which influence the decision to live in a neighbourhood. However, in our knowledge, there is little research which focuses on the attractiveness of the neighbourhood, such as perceived by its inhabitants. Resulting from a strong rootedness, from an "identity of territory " (Payet, 2000), the attractiveness is translated by a movement of aspiration aroused by the neighbourhood for those who live but also for those who lived there and feel the need to come back living there in a more or less temporary way (Bordet, 1998).

Mokounkolo (2005) suggests that we must clearly differentiate this concept from the attachment in the neighbourhood which Bonnes and Secchiaroli (1995) define as the emotional constituent of the link which unites a person with a given place. Our research is set in the continuation of this previous study and tries to understand the links between the attachment to the neighborhood and the attractiveness of the neighbourhood among the population from the Maghreb living in "Paris suburb".

In total 143 participants, from 19 to 73 years old ($\dot{x}$ = 34.61 ; S.D.=18.24) living in buildings of popular neighbourhoods of the Paris region (France) answered a questionnaire including

- a descriptive part (age, sex and perceived culture of origin)
- the French adaptation (Rioux et Mokounkolo, 2005) of the neighbourhood Attachment Scale de Bonnes et al. (1997).
- the questionnaire of perceived attractiveness created by Rioux and Rouag (2009). It includes twenty seven items distributed in three dimensions: "Services and arrangement of the neighbourhood" (12 items), "Atmosphere of the neighborhood" (9 items) and "connections with peers and the neighbours" (6 items).

The results very clearly show the necessity of differentiating attachment to the neighbourhood and perceived attractiveness. Indeed, these measures both appear not correlated for the participants considering themselves of Moroccan or Tunisian culture. Also, among the Algerian, a single factor structuring the perceived attractiveness correlates to the attachment in the neighborhood ($r = .67$, $p < 0,01$), so testifying of a very partial interdependence between both concepts. This factor entitled "Services and arrangement of the neighbourhood" refers to the implemented actions of valuation of the neighbourhood by public authorities in terms of services and activities proposed to the community and concerning ? internal and external arrangement of the neighbourhood. This result probably translates the situation of expectation from the institutions in which these inhabitants are towards their neighbourhood of membership.

P11. KALINA MAIA SQUARE SOCIO-ENVIRONMENTAL EVALUATION AND SUBSIDIES FOR INTERVENTIONS IN THE BUILT ENVIRONMENT

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In a study that intends to understand the use of squares as leisure environment, we sought to identify the main activities, the people who develop them and the spatial and temporal configuration of this occupation, taking as case study the Kalina Maia Square located in Natal RN - Brazil. This research employed several research methods that contributed to the environmental evaluation, resulting in subsidies for urban designers, whether in new projects or renovations, by assisting in the maintenance of these spaces and/or enhancing the transformation of these spaces in places. As research methods were used behavioural mapping (place-centered and people-centered), behaviour trace analysis, field diary records and interviews with the users. The results show that the square is used by people from different ages and social classes, which can be subdivided into groups with specific days and times to attend the place. The relationship between spatial configuration and behaviour shows that there is a compartmentalization of uses, being possible to identify the environmental characteristics that most favor some of the observed activities. Among many results, some deficiencies were identified in Kalina Maia Square, which can be adjusted to further improve the environment and to be avoided in new gender designs. One of these is the limited investment in afforestation, that difficult the use of the space at times in which the temperature is too high, causing discomfort to potential users. Another one is the use of some weak and unsafe building materials. Moreover, the concrete equipment (playground and conventional gym) were not properly planned in ergonomics and safety terms for children, which increase the possibility of minor accidents. There are also no ludic equipment, which would attract more people to the place, in addition to differentiate a square from others, facilitating the processes of place identity and place attachment. One last point would be a greater concern with interventions with community participation in its planning and execution. Although the square was a kind of response to a community demand (especially the girl Kalina Maia), in its design, implementation and maintenance, there is no direct neighbourhood participation. This research is important for future interventions both in the studied square, as in the maintenance of others that are similar or in future projects, by highlighting the importance of designers to appreciate human affairs, and not only construction techniques, costs or prototypes previously determined for squares. In this sense, the contact with users is a significant contribution to proposed public spaces whose use is effective and thus to promote the development of relationships with the place.

P12. DIAGNOSIS OF THE USES AND COMFORT FLEXIBILITY POTENTIAL IN THE SMART GRIDS

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The research of energy gains begins with the study of the amounts of energy that are not consumed. In this sense, any savings from demand response (which consists of curtailing power used or starting on site generation which may or may not be connected in parallel with the grid)

represent a major track for energy recovery and storage. Furthermore, the inclusion of energy produced from renewable energy in the grid, which are subject to fluctuations in production are very important (i.e. solar radiation and wind force are uncontrollable), requires adaptation from energy suppliers.

The concept of smart grids is then presented as a solution with establishing, at a regional scale, an intelligent grid that interconnects “conventional” and renewable energy to a set of instrumented buildings whose energy management is driven by an aggregator. Within this concept, final users must necessarily be considered, given the fact that they are the core of a system that is intended with the ability to predict the effectiveness of the changes it induces, such as the introduction of demand responses (thereby reducing the peak demand for electricity).

This study aims to develop a standardized diagnostic methodology in order to assess the potential flexibility of energy consuming infrastructures of the smart grid demonstrator of Veolia Environment (Reflexe project, co-financed by ADEME). We considered the flexibility in terms of comfort of the user.

This study was carried out in three phases. First, we visited diversified buildings (hostels, office buildings...) located in the south of France. Those visits allowed us to evaluate flexibility and relevance of the diagnosis. Second, we conducted semi-structured interviews with eleven final users in order to identify standards of comfort and enrich the questionnaire that will be implemented in the last phase. Then, final users from two buildings were asked to complete an online survey. The questionnaire was based on a literature review on the models of behaviour predictions (Ajzen, 1991, Kaiser et al. 1999; Bamberg & Moser, 2007), and also on theories of comfort (Amphoux, 1989; Le Goff, 1994). Several energy-related behaviours were measured: reducing the use of air conditioning / heating, turning off the computer/using the sleep mode; switching off the lights.

If the perceptual evaluation of the physical environment (temperature, air and sound quality...) seems to predict the global comfort level, the semi-structured interviews leads us to think that other criteria may influence it, such as the feeling of control or social norms. More generally, this study shows that the assessments of levels of comfort may affect the predictive power of their intentions to perform pro-environmental behaviours in their workplaces. We will discuss the results of the study in terms of energy demand response potential and intervention to implement to foster the behaviour change.

P13. CLIMATE CHANGE ACCORDING CITIZENS: PSYCHOSOCIAL INDICATORS, EVOLUTION AND MITIGATION RESPONSES IN ANDALUSIA, SPAIN

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Climate change poses risks to Andalusia, Spain and to the rest of the world. Andalusia’s policy makers have recognized these risks and have become important actors in addressing this global issue. But to reach the ambitious goals for emission reduction set by the autonomic government, further policy action and public support is needed. Understanding public perceptions of climate change risks is a critical component for motivating public support for future policy action. For this

reason, we present results of an annual survey conducted continuously since 2001 to a sample of over 1500 residents in Andalusia over 18 years. The design of the survey contains psychosocial indicators of climate change in the affective dimension (awareness, interest, perceived effects, etc.), in the cognitive dimension (information on the causes, consequences and ways of acting, etc.), in the dispositional dimension (self-efficacy and responsibility, acceptance of personal and community changes, etc.) and in the behavioural dimension (transportation and mobility, energy saving at home and responsible consumption), which allows us to build the social images or representations of the phenomenon over the past eleven years for both the general population and for different demographic groups. The main results show that there have been positive developments in terms of identifying climate change as a concern, interest and current environmental problem, while also there has been a significant advance in the degree of information and knowledge available, the need to accept personal and community changes and the display of certain behaviours that mitigate the effects of climate change. However, despite this positive development, the data presented has not yet allowed us to consider that among Andalusians there is a solid and mature environmental concern when taking into account the most demanding elements and requirements of current models of sustainable development.

P14. BEHAVIOURAL ERRORS IN RESIDENTIAL FACILITIES FOR THE ELDERLY WITH DEMENTIA

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In this research, the authors focus on frequently reported inappropriate behaviours conducted by the elderly with dementia in the environment of residential facilities. These inappropriate behaviours tend to be taken as problem behaviours by others and often trigger restriction of certain kinds of residents' behaviours by the caring staff. In this research, we intend to take as many of these behaviours as possible as behavioural errors brought by the residents' misunderstanding of the information embedded in surrounding environment.

In a previous presentation (Yokoyama et al., 2008), the authors surveyed these behavioural errors in the 2 main types of the residential facilities in Japan, i.e. nursing homes and group homes, and suggested that the environmental differences between the 2 facility types might bring differences in numerical distribution of the categories of behavioural errors.

Here, in this presentation, 167 cases of the residents' behavioural errors were collected by interviewing the trained care staff of nursing homes. The authors carefully observed the environment where each of the reported behavioural errors was found, and by showing photographs of it, they further argue in which situation and how the behaviour happens. Finally, the argument suggests that some behavioural errors should be caused by misleading or absence of the information embedded in the environment.

In the main part, the behaviours of spatial disorientation and wandering about, and those accompany urinary or excretory problems and/or sanitary troubles are discussed. These are included in the most problematic behaviours that burden the caring staff and the findings would support designing better residential environment, from the aspect of enabling environment and from the aspect of better environment also for the caring staff.

P15. STRESS AND PERCEPTION OF A CAMPUS AS A RESTORATIVE PLACE

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Several researchers suggest that too much artificial stimulation and little, or no exposure to natural environments can cause loss of vitality and affect health. One of the indicators for the deterioration of people in urban settings is mental fatigue, where the behavioural impact such as stress (Kaplan, 1995).

Other studies (Van den Berg, Staats & Hartig 2007) have found that nature can help people to cope to stress and to improve the function in cognitive and emotional areas.

These responses come from the psychological restoration, which is understood as the renewal of the physical, psychological and social resources to the adaptive demands coming from the socio-physic stages (Hartig, 2004).

Some definitions of what a restorative environment is suggest that a place, whether it is natural or constructed, is capable of renewing individual attentional resources because it has no harmful environmental characteristics, and it may encourage reflection. This helps to reduce stress and fosters mental fatigue recovery.

The aim of this study was to test the relationship between stress and the evaluation of the environmental characteristics that leads to its perception as a restorative place.

Based on the Environmental Restoration Scale which comprises: Being away, Fascination, Coherence and Compatibility factors (Korpela and Harting, 1996), it was made through the semantic modified networks technique (Reyes-Lagunes, 1993), an exploration of the concepts that mexicans relate to each one of them. This resulted in a valid and reliable scale formed by 25 reagents with a reliability of .965, and a variance explained of 68%.

To measure stress, it was used the Stress and Arousal Adjective Checklist developed by King, Burrows and Stanley in 1983, which was adapted for Mexican population by Ortega et al (2005).

The sites evaluated were two green areas of a campus. Participants were 180 people from 16 to 47 years old. Data was collected during the seven days of the week.

To test the relationship between the stress and environmental restoration, an analysis of structural equations was applied.

The model fits the data satisfactorily in accordance with the indicators of goodness of fit: x2=6.37 P=0.27 CFI=1.00 RMSA=0.04. With the estimated model results, we analyse the overall effects obtained for Restoration in the next estimated equation: Restoration=.319*(arousal)+.282*(days)-.340*(Stress)+3.14error+.760error. This equation indicates that the higher arousal site is perceived as more restorative, the weekend is perceived as a more restorative time, and finally, to lower levels of stress better its perception as a restorative place.

Therefore, this study proved the relationship between stress and the evaluation of restorative places, as well as the relationship of environmental restoration to the goals of the visitors, this way a space can be evaluated differently according to the day of the week.

P16. METHODOLOGICAL CHALLENGES IN STUDYING THE PERCEPTION OF PUBLIC ART

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The quality of life in the cities may be a result of urban planning, design, and the use of places and meanings attributed by their citizens. Public art is anchored in this triad and brings to urban space aesthetic values, historic landmarks, and symbolic aspects of its society. The main challenge in studying the perception of public art in Barcelona was to create a dialogue between psychology, fine arts, and urbanism. The transactional approach of psychology (Proshansky, 1976; Altman & Rogoff, 1991) was used as the theoretical basis. The concept of public art was considered in a holistic way, which included the object, the context and the meanings attributed by the subject. Thus, at the same time, public art demands concreteness, spatiality, and sense. Studies of landscape preferences (Ulrich, 1983; Kaplan, 1983; Galindo & Corraliza, 1999) also set up the theoretical framework in addition to studies focused on aesthetics appreciation (Temme, 1992) and aesthetic judgment of art works (Leder et al., 2004). The general purpose of this paper is to analyse the affective and cognitive processes that result in perception of citizens about public art in Barcelona, so it was essential to identify objective and subjective variables which influence these preferences and collaborate in the construction of symbolic meanings. A research instrument, including graphic and verbal qualities, was designed to be used on the Internet. It was necessary to ensure aesthetic quality, when working with images of public art, especially sculptures. Furthermore, the verbal precision was important in formulating evaluation questions of pieces of art in their specific context in urban public space. The implementation strategy was based on building a social network by sending e-mails to a small group of contacts, to whom the research was presented with invitation to participate in it. This initial group was asked to collaborate, while also acting as intermediary to send the survey link to their own contacts. The positive aspects can be highlighted by the short-term data return and the quality of data obtained. In 60 days it exceeded the number of 350 respondents defined as a goal. This strategy facilitated the collection of data and its organization. In addition, it confirmed that electronic media can be used in scientific studies to ensure quality, safety, and reliability. At first, data analysis was performed in a quantitative perspective, identifying the main preferences regarding the investigated pieces of public art. After that, content analysis was used to evaluate the reasons of choice and the symbolic meanings attributed to the art works, which focused on the qualitative aspect of this study.

P17. GREEN UNIONS, GREEN WORKPLACES: UNIONS AND THEIR MEMBERS MAKING SENSE OF THE TRANSITION TOWARDS A 'LOW CARBON' ECONOMY IN THE UK

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With policies to tackle climate change becoming increasingly central in social and economic policy making at all levels, from the global to the local, labour is a dimension which cannot be overlooked and there is growing recognition, both from within the labour movement and from the wider policy making community that trade unions have an important, perhaps unique, role to play as stakeholders in the development and implementation of environmental policy due to their high levels of membership, global presence and central position in both consumption and production.

National carbon reduction policies will undoubtedly have far-reaching consequences for the nature of work and the modern workplace and while the labour movement nationally and internationally supports action to reduce carbon emissions, it is at the same time campaigning to ensure that workers' interests are protected in the shift to a green economy. This concept of a 'just transition, in which green jobs are decent jobs and workers have a right to a voice in the workplace, is a central theme in much of the trade union literature on green issues at both the national and international level. While the concept of 'just transition' would appear to offer a way forward for the labour movement, for many, the partnership between labour and the environment, is not straightforward.

Moreover, research on trade unions and environmental policies remains scarce (Räthzel & Uzzell, 2011). Little is known and understood about how, and to what extent, the involvement of trade unions as stakeholders in the policy process, as well as principles of 'just transition', are embraced and understood by union members at the shop-floor level. Through field studies involving in-depth interviews with union officials and the administration of a questionnaire amongst union members, the present study therefore aims to elicit key psychological constructs such as fear, pride, uncertainty and confidence which underpin the knowledge, experience and attitudes of workers whose jobs and places of work are being affected by measures which are being implemented to meet the requirements of a low carbon economy. Breakwell's identity process model (Breakwell, 1986) with its four key principles of identity: continuity, self-esteem, self-efficacy and distinctiveness, may provide a useful theoretical framework for exploring whether, and if so, how and to what extent, identity processes are affected by the greening of the workplace and the demand for new green skills.

The present study represents research being undertaken at master's level which is due for completion in September 2012. The poster will therefore present preliminary findings and should be regarded as work in progress.

P18. PSYCHOLOGICAL ENVIRONMENTAL RESTORATION: AN EVALUATION OF SOME NEURAL CORRELATES

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Psychological environmental restoration (PER) is a process related with a previous deficit condition (i.e. environment stress), by which subjects search for their recovery of cognitive resources and psychophysiological response (Van den Berg, Hartig & Staats, 2007). In recent years the specialized literature cite few articles that consider some physiological variables (i.e. cardiac frequency, galvanic response, among others) and subjective measurements related to the PER. Evidence of the psychophysiological correlates of such restorative effect is well established; nevertheless no neural correlates of this process have been described using functional neuroimaging.

In this study we document the neural correlates of one possible PER mechanism, related to the exposition of different imaged scenarios with various restorative capacities and show the different cerebral structures activated during the restorative experience.

Objectives

To document the neural correlates of the PER mechanism using an event related fMRI paradigm, localizing the cerebral structures activated during restoration process.

Estimate the comparison of the different restorative effects (cognitive, emotive and neural) related to three scenario classifications with different restorative potential.

Methods

Twenty one healthy volunteers (10 males) participated in this study after signing an informed consent letter, were divided in three groups. All the neuroimaging was done using a G.E. MR750 3.0T scanner and the 32 channel head coil. Once positioned in the scanner and using the MR compatible presentation system (NordicNeuroLab, Bergen, Norway) all subjects answered the 'Stress List' (King, Burrows & Stanley, 1993) to establish their initial state, then they were exposed to a 6 minutes of stress inducting video (Faces of Death No.1; Brand, Versput, & Oving, 1997) and the ST was applied again to determine their state. Then each group was imaged using an EPI-BOLD sequence projecting the restorative valence grouped images followed by other session solving the Stroop paradigm (Stroop, 1935). Once the scanner was silent the subjects answered the ST for last time. All the functional images were the transferred to off line workstations and analysed using SPM 8 (Statistical Parametric Mapping; Wellcome Trust Center for Neuroimaging, UCL).

We will present the analysis of the results form the neurobiological relevance in PER.

P19. THE PSYCHOLOGICAL STRUCTURE OF "KANDO" THAT THE HEART IS GREATLY MOVED BY THE SPACE

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Introduction

"...He to whom this emotion is a stranger, who can no longer pause to wonder and stand rapt in awe, is as good as dead: his eyes are closed." , this is the famous words of Albert Einstein which is German theoretical physicist. Everyone has such feeling clearly. The feeling is expressed by the words such as "move, touch, impress, inspire and electrify". Moreover, these words are comprehensively shown with the Japanese language "Kando". Generally, Kando means that the heart is moved greatly. However, Kando is passive feelings, and is not defined clearly. In other words, it is thought that Kando is variously influenced by the spatial and organic characteristic.

Purpose

The purpose of this study is to clarify the psychological structure of Kando that what the organism feels through the spatial experience.

Method

This study conducts the psychological experiment based on Semantic Differential Method to clarify the psychological structure of Kando. The procedure of experiment is as follows. 1) In order to develop the rating scale on Kando, the words with near meaning to express Kando are extracted by several thesauruses. 2) The spaces used for the experiment are the spatial pictures which are mainly concerned with Cultural and Mixed Properties except Natural Properties among World Heritages. And, the spatial pictures have the stronger degree that the heart is moved on the interview to subjects. 3) Those spatial pictures are projected on the large-sized screen in the dark room. Other subjects watch the spatial pictures, and describe the rating questionnaire items for Semantic Differential Method. 4) The result were analysed based on Factor analysis.

Results and Conclusions

(1) Psychological structure of Kando

As a result of Factor analysis, several factors such as charmed and healed factors were extracted as the psychological structure of Kando. Moreover, each of factors has the degree that influences Kando. In other words, Kando is classified into several types through influence of the spatial and organic characteristic.

(2) Transaction between Kando and spatial characteristic

Kando is influenced by difference in the spatial characteristic such as the composition and the time. In other words, each Kando appears when the conditions gather, like the daytime or night, the position and the angle at the time the space is watched.

(3) Transaction between Kando and organic characteristic

Kando is influenced by the degree of knowledge about the spatial meaning which organism has. It is thought that the degree of knowledge is influenced by the spatial meanings such as the historic context and the personal experience and the knowledge given as information.

P20. A STUDY ON THE COLOUR DESIGN OF SIGN SYSTEM IN INJE UNIVERSITY HAEUNDAE PAIK HOSPITAL

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Together with the growing attention in well-being and health, the scope of hospital is expanding to a place for health care from the place to treat patients. Knowing that the interior environment of a hospital has a significant impact on treatment of patients, the sign system of general hospital is not only effective in delivery of information and wayfinding but also is an important visual element that determines the interior environment of hospital. This study discusses the colour design of Inje University Haeundae Paik Hospital which is a large general hospital with 1004 sickbeds opened in March 2010.

Haeundae is a famous tourist attraction with the largest bathing resort in Korea. The agenda of Haeundae Paik hospital, with their keywords, environmental conservation and provision of advanced medical care, is in building the medical tour hub that can accommodate not only domestic patients but also foreign patients from over 40 countries. Therefore, the sign system in the hospital should be able to convey a such hospital image, and as well it should have a sustainability and be responsible with changes of information. The color use in interior space of the hospital focuses on minimum irritation to patients who need mental stability, and point colors that can maximize colour effects were chosen.

As for reference, this study compared the colour design of sign system in the Inje University Haeundae Paik Hospital with the colors of sign system in other hospitals analysed in former studies (Paik 2004, Kwon 2007 and Hong 2010). The study on the effectiveness of sign system in general hospital in 2009 conducted an on-the-spot survey on the informational, directional and orientational signs in 8 general hospitals that were newly built or had a newly designed sign system after 2008 in Busan and Seoul. In the former studies (Paik 2004 and Kwon 2007), there observed was frequent use of bluish green colour. Unlikely, increased use of grey and warm colour tone in recent trend is noticeable. This changing trend in color use well explains the intention to construct comfortable and patient-oriented environment by giving warm and comfortable feeling.

The interior finish material used in Haeundae Paik Hospital are mainly of delicate colours such as beige colour marble, white painted glass and maple colour. To be in harmony with noble feeling from marble and glass, this study suggest the colour of main sign system as follows: plate colour (M:20, Y:20, K:80) for the colour of sign, white for letters, and bright yellow orange (M:30, Y:100) for arrow and point colour (referring to the Standard Colour Sample in the Colour Standard Guide for Public Design). Also the study worked out a colour plan for proper use of point colour in right place.

The colour design of sign system in Inje University Haeundae Paik Hospital is not only practical but reflecting recent trend.

P21. RESTORATIVE ENVIRONMENTS AND SUBJECTIVE WELL-BEING OF DAYCARE TEACHERS

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Many restorative environment studies have examined restoration in daily lives. The objective of this study was to explore the relationship between places people choose to restore and their subjective well-being. For participants, daycare teachers were selected. Due to national policy changes, duties of the daycare teachers in Japan are increasing. The stresses of the daycare teachers are known to influence the quality of childcare children receive. Therefore, the need to restore from stressed conditions is important not only for daycare teachers themselves but also for children and parents attending that daycare.

This study was conducted as a pilot study and the participants were all teachers (n=27, 19 valid responses) in one certain authorized daycare in Kanagawa prefecture, Japan. The participants were asked to indicate their stressors, their place of restoration, and their psychological well-being using a questionnaire. The stressors were measured by asking participants to indicate how much of their stressors are of ' capacity', 'time constraint', 'interpersonal relationship' and 'others' in percentage (total of 100%). The average percentages indicated were 39%, 32%, 21% and 8%, respectively. Places participants usually go when they feel stressed out (restorative environments) were asked using open-ended questions. The places mentioned included their residences, neighborhoods, and teachers' lounge. In sum, 10 teachers' restorative environments were inside their residences and 9 teachers' restorative environments were out of their residences. Logistic regression analyses were adopted where location of the restorative environment (1 as 'in the residence' and 0 as 'out of the residence') was a dependent variable and stressors were an independent variables. The result showed that only 'time constraint' was statistically significant, and when 'time constraint' stressor exceeds 30%, the probability of restorative environment being inside of the residence exceeds 50% (i.e. the chance level). Subjective well-being was measured by Psychological Lively Scale - Revised (Tanaka et al., 2006) that has four subscales :'life satisfaction' 'negative mood' 'spirit of challenge' and 'emotional refreshment'. T-tests were conducted to test differences in subjective well-being between those whose restorative environment is inside of their residences and those whose restorative environment is out of their residences. The average for 'negative mood' was significantly higher for those whose restorative environment is inside of their residences. The average for 'emotional refreshment' was significantly higher for those whose restorative environment is out of their residences. An importance of improving nearby environments (e.g. teachers' lounge and residences) as restorative environments for daycare teachers was discussed.

P22. IMPROVING LIVING ENVIRONMENT FOR ELDERLY PERSONS ON VISUAL IMAGE THROUGH REPRESENTATIVE WELL-BEING

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Background: Everyone feels a little well-being in everyday life, and the people are keeping well-being in a heart little by little. Especially for elderly persons, their well-being is woven into their "life". The reminiscence method, one of the psychological treatments, has patient recall his past well-being and cures his mental trouble. Recently, the quality of life came to be made much of in the living environment of the elderly persons. The conventional living environment is important the "equipment" and "functional" and "assistance of ability for the elderly". However, planning based on well-being of the elderly is a reality that did not take place.

Purpose: The purpose of this study is to clarify the improvement of the living environment for elderly persons on visual image through representative well-being.

Method: The subjects are twenty elderly men and women over seventy years old. The study was performed as follows.

(1) Subjects person image the happiest everyday scene in the conventional life and interview it.
(2) All remarks based on interviews will be recorded in the IC recorder.
(3) The expert of drawing draws a picture of the visual image based on interviews.
(4) In every step of drawing, conformity between the drawing and the subject's image has to be confirmed.

Accuracy of the drawing shall be heightened with retouching and amendments until its accord with the image is approved by the subject. This study uses qualitative analysis. The obtained remarks shall be translated word for word, be formed in a concept and be categorized. Analysis of visual image clarifies the process of drawing and derives the relation between the story and the drawing.

Results and Conclusions

(1) Many representative well-being are the scenes in the living room or the dining room, and it is imaged that people are meal scenery or doing something in peace. It is identical with the representative well-being of 40s and 50s generations. The visual images vary by gender.
(2) In the case of male subjects, they talk about many memories. However, visual image is often his present life now, and the characters are two people of him and his wife. Men in these generations have been working in the midst of the economic growth era of Japan without looking well after his family. Therefore, it is observed that the present time after retirement can be recollected as the happiest family life.
(3) On the other hand, representative well-being of elderly women is different from that. In the case of women, scene of the period of child care is drawn. In addition, the whole family including a child and the husband tends to be drawn. It is identical with the representative well-being of women in the 40s and 50s generations, and falls under the most enriched

period of childcare. This is thought that the women are involved with a child closely unlike men.

P23. THE PSYCHOLOGICAL STRUCTURE OF DISORIENTATION THROUGH WAYFINDING BEHAVIOURS IN URBAN ENVIRONMENT

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Introduction

We often walk in urban environment after obtaining information such as a map. However, when actually walking, we often have the experience that cannot discover the cues learned on the map. In case of losing sight of the cues for the destination, we are confused and feel uneasiness. And the disorientation appears by feeling confusion and uneasiness through wayfinding behaviours. Recently, the study based on the disorientation mainly focus on physical factors to environment, and psychological factors to environment do not focus on very much. Therefore, though the disorientation is the sense that anyone feels, it is the vague concept that is not defined clearly.

Purpose

The purpose of this study is to clarify the psychological structure to the disorientation based on the degree of uneasiness through wayfinding behaviours.

Method

This is the experimental study through wayfinding behaviours. The subjects do not have the direct or indirect knowledge about the proving ground. The checkpoints are installed sequentially for the destination in the proving ground. After tracing all the checkpoints, the subjects must arrive at the destination. During wayfinding behaviours, the subjects call "disorientation" and "uneasiness" in the point which the psychological change appeared at any time. And, the subjects put on eye-fixation camera during wayfinding behaviours to extract the physical environment that they eye-fixed. After the end of experiment, the subjects are interviewed about strategy for the destination and the degree and reason of uneasiness in the psychological change point.

Results and Conclusions

(1) Transaction of the disorientation and uneasiness:

When the subjects are not able to discover the cues for the destination, the degree of uneasiness increases. The disorientation appears when the degree of uneasiness became the highest. And, the highest degree of uneasiness continues until a discovery of the cues for the destination.

(2) Visual search while the disorientation continues:

While the disorientation continues, characteristics of visual search differ from the usual ones. After the disorientation appeared, the subjects especially try to eye-fix many cues than the usual case. Therefore, the average time of eye-fixation tend to decrease.

(3) The strategy after the disorientation appeared:

After the disorientation appeared, the strategy of wayfinding behaviours shows two tendencies. When the subjects could not discovered the cues through wayfinding behaviours, They are divided into the group going and coming back to the route where they have walked and the group walking various routes.

P24. A RESEARCH ON SUPERGRAPHIC DESIGN USED IN HOSPITAL FOR CHILDREN

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Nowadays parents care for their children more than before, and children with incurable disease increase for environmental pollution. This increases the demand on hospital for children. Also, they show more interest in supergraphics which can richen such environment for children further. In Korea, however, it is urgent to establish measures because children's hospitals lack and hardly reflect child patients' emotion or characteristics.

Thereupon, this study conducted a case research on the signs and supergraphics in two representative hospitals for children in Seoul(Seoul National University Childrens Hospital) and Pusan(Pusan National University Childrens Hospital), the first and second cities of Korea, based on literature research on two foreign hospitals for children (Philadelphia Childrens Hospital, U.S.A., Kyushu University Hospital, Japan).

According to the result of literature research on foreign spaces, Philadelphia Childrens Hospital in the US uses design with the sun, moon, and stars and also various colours to divide space to intrigue children. Kyushu University Hospital in Japan uses various animal images, so its overall atmosphere is dynamic and calm at the same time. Using the medium chroma and medium brightness of colors gives emotional stability. Also, it is the case that utilizes exemplary supergraphics actively using environmental elements such as walls, floors, or windows.

According to the result of case study, Seoul National University Childrens Hospital, the largest childrens hospital in Korea, uses blue as its main color and draws characters developed on the walls, floors, ceilings, and signs to intrigue children and make them feel intimacy. About orientational and directional signs, letters are in Gothic style, and two languages of Korean and English are written. And characters are put in the marginal area. However, for the distracting use of characters on the walls and signs, it creates no harmony as a whole and gives a feel of complexity and confusion.

Pusan National University Childrens Hospital, the first childrens hospital in Pusan, uses warm colors to give genial feelings and also uses green and blue for highlighting, too. It uses the walls, floors, and ceilings with the themes of the sea world and universe for child's imagination. For orientational and directional signs, letters are in Blurred style (which is not suitable for children), and three languages of Korean, English, and Chinese are written. Although the whole building and

facilities apply supergraphics and a plane divisional method, too many bright colors are used that it creates distraction.

This study has found that hospitals for children are beginning to considerchild patients in the design of spaces. However, the use of distracting characters and too many bright colors leads to fatigue in children, so it should be changed.

P25. A Field Study on Visual Elements of Sign in Exhibition Convention Centers in Korea, Japan, and U.S.A. from the Aspect of Universal Design

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As exhibition convention centers are built on a large scale and visitors are continually increasing. And visitors often face difficulty in wayfinding. This study conducts field study and evaluation on the directional & orientational signs of exhibition convention centers from the aspect of universal design.

Regarding the selection of study subjects, this study selects two Koreas exhibition convention centers, COEX in Seoul and KINTEX in Gyeonggi-do whose exhibitions are over 30 per year from 2008 till 2010 and whose area of use for exhibition is over 10,000m.. And also in the outside of Korea, it selects the U.S.A. biggest exhibition convention center, McComick Place, Chicago, and the Japans biggest convention center, Big Sight, Tokyo.

According to the result of evaluating the current status of the sign systems in field study, in terms of colors, COEX and Big Sight conducts colour arrangement avoiding complementary contrast or subtle color difference for the people with color blindness or low vision; however, KINTEX uses cold colours rather than warm colours in colour arrangement, which can be hardly recognized by the elderly with low visibility to the series of blue colours. McComick Place (A type) uses bright gray letters on the brown background, which is evaluated as a colour arrangement with rather low visibility. And McComick Place (B type) uses similar colours like the orange and dark reddish brown, which is thought to cause difficulty in recognition to the elderly. In terms of brightness of colour, all of the four places provide easily recognizable composition with the brightness difference between the background and letter colours of over 4 levels.

In the use of arrows and pictograms, KINTEX uses standard pictograms, but there is no great problem found. However, COEX uses thin arrows that they can hardly be recognized by those with low vision while McComick Place uses the ISOs international standard forms of arrows which are highly recognizable. Big Sight arranges the JISs industrial standard pictograms and arrows with high color contrast that they are recognized effectively.

About multi language use, COEX and KINTEX use only two languages which are quite insufficient for exhibition convention center. But Big Sight uses four languages which is the most recommendable. In the selection of fonts, most of them use the sans serif style that there is no such difficulty in recognition; however, McComick Place uses the serif style which has rather low recognition. According to the result of synthetic analysis, Big Sight is the case that applies the universal design most recommendable. It uses great brightness difference in colour arrangement

so as to enhance recognition and uses achromatic colours effectively. Also, it is evaluated as excellent in that it actively uses standard pictograms and uses four multi languages for international visitors.

P26. PHYSICAL ATTRIBUTES OF HOSPITAL ROOMS FACILITATING RESTORATIVENESS: A METHOD OF INVESTIGATION

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The increasing urbanization coincides with bigger concern for how the environment influences health by changing stress levels. Complementary to the study of the stress through environmental influence, research about environmental capacity for health restoration — the recovery of resources affected by the daily demands — has grown rapidly in recent years (Hartig, 2011). The so-called restorativeness process is especially important in hospitals, areas in which patients often experience stress caused by traumatic situations. Considering the assertion of Velarde, Fry and Tveit (2007), for which identifying specific qualities of a restorative environment — in order to apply them to an architectural project — is one of the main challenges for the future, we present a method of investigation for a doctoral research aiming identifying physical characteristics of patient rooms that promote restoration. The study will adopt a mixed-method design, a quantitative and qualitative research strategy, assuming an explicative profile. It will take place in patient rooms of hospitals in Italy. It will investigate patients in hospitalization for the same disease. The research will be held in three phases: 1. Survey with the Perceived Restorativeness Scale (Hartig, Korpela, Evans and Gärling, 1996), to assess the restorativeness level in the patient rooms; and record of the physical characteristics of the patient rooms through direct observation and analysis of architectural plans. From the relation between the variables of the physical environment and the perceived restorativeness, it is intended to construct preliminary considerations about the specific characteristics of the physical environment that promote restoration. The data of this phase will not allow causal inferences, for this reason, it will be conducted a second experimental phase; 2. An experiment to evaluate restorativeness from the presentation of groups of slides with computational images of patient rooms. Each slide group will be composed of images that differ only in one aspect of the physical environment, in order to evaluate the effect of the change of this variable on the restorativeness level. For each slide, the patient will fill out a questionnaire with the reduced version of the Perceived Restorativeness Scale, as used in Berto (2005), and his/her stress physiological measures will be carried out (electromyogram and skin conductance measurement). The results of the first phase will delimit the number of physical variables examined; 3. Semi-structured interviews to generate qualitative information about the environmental restorative effect. The processing data will involve relational and descriptive statistical analysis in Phases 1 and 2, and thematic categorical content analysis in Phase 3. The practical objective of this research is the development of a manual with recommendations for planning hospital space.

P27. ON-SITE AND PHOTO-BASED EVALUATIONS OF AN INDOOR OFFICE ENVIRONMENT WITH NATURE ELEMENTS

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Psychological benefits from nature elements in the built environment find support in a growing number of empirical studies. Office workers who spend most of their day indoors lack direct contact with nature surroundings, and we question whether indoor plants in the office may work as psychologically restorative agents in the work environment. The study investigated what qualities the introduction of living plants into an office setting adds to the perception of and emotional response to the indoor environment. Assessments of both a real office and a photographic representation of the same office were conducted. Using two complementary methods of environment evaluation offering different experimental advantages, opens for better understanding of effects of living plants in our immediate surroundings. Study 1: On-site assessments of an office setting with flowering and foliage plants were compared to assessments conducted by two other groups exposed to a decorated, and a control condition (N =56). Instruments from Human Interaction Model (Küller, 1991) were utilised. The Semantic Environmental Description (SED) was followed by a scenario task introducing a self-report measure of emotional response to the environment (Basic Emotional Process). Study 2: Photos of the three environmental conditions were presented in a virtual reality theatre with a curved screen (7 meters width x 3 meters height, curving 160 degrees). Three groups of participants (N =51) evaluated all three pictures in different orders with the same instruments as in study 1, opening up for within-subject comparisons. Sense of presence was measured after the session. In study 1 the plant condition was described with more positive adjectives than the other conditions. When plants were present in the office, the room was evaluated as more pleasant and complex than being in the control condition, but not different from the decorated condition. Positive emotional response to the setting was predicted by perceived pleasantness, complexity, and percentage of positive adjectives. Due to the lack of difference between the plant and the decorated condition we could not conclude whether there was the plants' quality as natural elements, or the added stimuli that altered the perception of the environment. The results from the on-site evaluation, providing ecological validity, will be combined with results from the photo-based evaluation (under analysis), offering both better experimental control and within-subject analysis. The complementary use of methods may contribute to the knowledge of effects of living plants in the built environment, and answer the question whether such modest interventions with plants can have a positive impact on well-being.

P28. NEIGHBOURHOOD AND PLACE ATTACHMENT IN BRAZIL: THE ROLE OF SOCIAL, ENVIRONMENTAL AND CULTURAL ASPECTS ON LOCAL AFFECTIVE BONDS

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We investigated the place attachment to neighbourhoods in the city of Natal, the state capital of Rio Grande do Norte, in Brazil. Neighbourhoods are the proximate spaces to places and its components, and vary in their physical, social and cultural aspects (Guest & Wierzbicki, 1999). They may involve more or less contact among residents, local participation, institutions, symbols and individuals or groups who identify and qualify the local context. Place attachment, on its turn,

is a positive affective bond between persons and environments, whose principal characteristic is people's need to stay closer to the object of attachment (Hidalgo & Hernández, 2001; Lewicka, 2010).

In face of the contemporaneous declining of neighbourhood ties and their importance to the understanding of the social-environmental context of cities, we decided to investigate, in neighbourhoods in which such affective relations are still preserved, how they develop, their dimensions, and the factors responsible for their maintenance.

We employed a panel of experts to jointly discuss the theme and to select two neighbourhoods in the district of Alecrim. Eleven residents of these neighbourhoods, acknowledged by local population as knowledgeable of local reality, were interviewed about the relations among the locals.

The results clearly indicated three main dimensions related to the development of place attachment in the investigated neighbourhoods: (1) the social dimension, particularly due to the cooperation among residents; (2) the physical, related to both the daily basis services offered in the vicinity and the geographic position of the district, central to the city; and (3) the symbolic dimension, associated to the many local traditions of festivities, religious events, songs, football clubs and the greatest "feira" (outdoor market) of the city, all carrying and reinforcing the name of the district.

The social support network among residents was indicated as the main component of attachment to the place, and strongly connected to the intention of socializing at the neighbourhood level. Such support is strengthened by the meaning residents attribute to the place as a fundamental element for their social network establishment.

The physical surroundings act as mediator to many activities in the neighbourhoods, as in the case of socialization practices on the sidewalks, or frequent "street events" involving the population.

The cultural characteristics were pointed out as pride-producers for the residents, besides creating a clear image of the district for outsiders. In addition, it is important to mention that such aspects of the local culture are part of the abovementioned intention of socialization at the neighbourhood level based on values transmitted within family generations or brought from cities of smaller scale.

P29. THE PRACTICE OF ENVIRONMENTAL CARE IN ASSOCIATION WITH PRO-ECOLOGICAL COMMITMENT AND CONSIDERATION OF FUTURE CONSEQUENCES

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Among the determinants of ecologically sustainable lifestyles there are several types of psychological predispositions. In this study we analyse the practice of environmental care in association with two of these predispositions: the pro-ecological commitment and the orientation towards the future. A questionnaire was applied to 380 university students of the city of Natal (Brazil), most of whom were female (77%) and the overall mean age was 22 (SD = 3.66). The first

part of the questionnaire contained socio-demographic items and a dichotomous question (yes/no) related to the practice of environmental care. In case of an affirmative answer, the respondent had to describe such practice(s). The second part included the Scale of Ecocentric and Anthropocentric Environmentalisms (EAE; Thompson & Barton, 1994) and the Scale of Consideration of Future Consequences (CCF; Strathman et al., 1994). Responses to the two scales were submitted to factor analysis, in order to obtain factor scores particularly suitable to the characteristics of the group of participants. The majority of participants (78%) were considered caregivers, i.e., reported practices of environmental care. The ecocentric environmentalism was characterized by items related to the well-being of contact with nature (Alpha = 0.839); the anthropocentric environmentalism was composed by items concerning the maintenance of natural resources for the welfare and quality of human life (Alpha = 0.701); and the environmental apathy by items related to the indifference and lack of involvement in pro-environmental issues (Alpha = 0.660). The analysis of orientation towards the future (CCF Scale) resulted in two factors: Immediate, composed by items that indicate a high concern with immediate consequences of current actions (Alpha = 0.756); and Future, made up by items related to a high degree of importance given to the future consequences of behaviour (Alpha = 0.580), confirming the two-factor solution proposed by recent studies. The final analysis involved the predispositional variables as predictors of the Environmental Care. A matrix of correlations among the predictor variables showed coefficients and significance values in the expected directions; for example, Future Orientation was negatively correlated with Environmental Apathy, while well correlated with Ecocentric Environmentalism. All the differences of means between caregivers and non-caregivers were also consistent with our theoretical expectations, and some of them reached statistical significance. A multivariate analysis of the model (logistic regression) indicated Environmental Apathy and Anthropocentric Environmentalism as the two best predictors for the absence of Environmental Care practices. Our results show the importance and feasibility of relating variables conceptually distinct (pro-ecological and temporal predispositions with actual behaviour) under the overall notion of sustainability.

P30. The Effect of Aquarium as Restorative Element

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It is believed that natural setting contributed to reduce stress. Kaplan and Kaplan (1989) proposed attention restorative theory (ART) to explain this effect and they concluded that natural setting has restorative component. In this study, we investigated whether the aquarium has restorative component and whether it is effective to reduce stress.

30 students participated in the experiment. They engaged in 15 minutes typing work, and then took the rest for 10 minutes in either of two kinds of rooms; the room with an aquarium and without it. Aquarium composed of some kinds of tropical fish and plants. We measured subject's heart rate variability, eye movement, salivary alpha-amylase and their feelings during the experiment. We also measured their images of aquarium and the room which they stayed.

The results of the experiment showed that 1) aquarium has restorative component and it influenced the images of the room which it was placed 2) LF/HF ratio significantly correlated to the

time which subjects gazed at the aquarium 3) salivary alpha-amylase activity significantly correlated to subject's feeling of relaxation in the room with aquarium.

P31. CONSTRUCTION PROCESS OF A WIND FARM IN SOUTH OF BRAZIL: ITS IMPLICATIONS FOR THIS NEIGHBORHOOD

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In many countries a growing promotion of renewable energies is observed, mainly because their quality to be clean energies that contribute to the sustainable life in the planet. In South America the reality of the renewable energy implementation is a novelty. Environmental psychology research has pointed that in the development of these projects, many times, the concern is more economic and environmental than social, when this is so; different degrees of rejection are observed among the neighbors (Devine-Wright, 2010; Pol, et al., 2011). In relation to the wind farms, aspects related to physical construction characteristics, like visual impact and noise (Wolsink, 2007), could influence on wind farm acceptance. Thus, there are other aspects like the degree of inhabitants` participation in the process of wind farm construction (Devine-Wright, 2005; Schweizer-Ries, 2008) and others that can influence the symbolic, affective and socially constructed aspects (Devine-Wright, 2005). Besides, research conducted in the North of Brazil (Improta & Pinheiro, 2011) has found that factors like: wind farms as a symbol of progress, and the scholar level of residents, can influence the wind farm acceptance. Having in mind this novel reality of South American, this present study aims to longitudinally establish positive and negative factors that influence the acceptance of a wind farm by the population that lives nearby, during the construction and operation phases. For this, place identity, social representation and lifestyle concepts will be used. This research is ongoing. In this conference the preliminary data obtained in the wind farm construction phase will be reported. The wind farm affected area named Cerro Chato, is located in the south of Brazil. It is an agricultural area occupied by farms, where 45 wind turbines will be located in 24 properties of this area. The research procedure has been carried out with semi-structured interviews of 26 inhabitants, divided into four groups: 1. farmers that will have aerogenerators in their properties, 2. farmers that will not have wind turbines, 3. farms that did not want to have aerogenerators in their property, and 4. farmers employees who live in the properties interviewed. The interviews have been recorded and they are being transcribed to subsequently perform a discourse analysis. The preliminary results show that there is a positive perception of this wind farm. The people interviewed know about the project, about renewable energies and the importance of it as a clean energy production, and visually they consider them a positive asset. Meanwhile, a close interrelation has been evidenced between the company and the group of land owners who will have wind turbines, in comparison to other groups. Finally, it can be thought that if there is frequent interrelation between the company and the inhabitants, the latter seems to develop a positive perception towards the wind farm, as stated on previous researches.

P32. AIR POLLUTION IN MEXICO CITY: A STUDY OF THE PSYCHOLOGICAL AND CONTEXTUAL FACTORS

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The Metropolitan Area of Mexico City (MAMC) is a mega city which houses a population of more than 20 million inhabitants and is considered one of the 10 most populated cities in the world. The increase in the growth rate of the population and the growth of the urban zone have promoted the use of motor vehicles and also increased the energy demand; this has had a direct impact in the air quality. On the other hand, one of the most disturbing effects of air pollution is the deterioration of physical and psychological health of people (Gutierrez et al., 1997). Taking into account the role of personal factors regarding air pollution, such as health and behaviour, the need for psychology involvement has become evident. From the perspective of environmental psychology, 4 psychological aspects are considered to understand air pollution. The perceptions (Rodrígues, 1991), the attributional model associated to behaviour (Kelley, 1980), the subjective norm (Schwartz, 1981) and the behavioural intention as predecessors of sustainable behaviour (Corral-Verdugo, 2010). The cultural and social characteristics of the MAMC have worsened the air pollution problem; because of this a study to understand psychological aspects of the inhabitants of MAMC is necessary.

Method

First, an exploratory study was performed to understand and define concepts that were culturally relevant. Afterwards, a descriptive study with quasi-experimental design was conducted in order to find the relation among the psychological variables and the differences between groups. The participants were selected by a random quota sampling, including men and women who lived in the MAMC. Three age groups were considered: 15-18, 25-45 and 45-65 years old. A poll was elaborated including 4 scales: perception, attributional model, subjective norm and behavioural intention. Several parametric statistical analysis, including t-test for independent samples, one-way ANOVA and Pearson´s correlations, as well as Analysis of Principal Component were applied for the psychometric and data analysis.

Results and discussion

About the perception, air pollution is an important problem, the control is in the hands of scientist and government, and psychological effects are perceived. The attributional model is different for each conduct: responsible use of energy and car maintenance is attributed to personal factors, the use of car or public transportation is associated to their particular characteristics (safety, speed, cost) and buying a new car depends on opportunity. In the subjective norm, personal norm seems to be higher than social norm. In order to create a communication program that promotes actions that help improve air quality in the MAMC, we need to understand how those psychological aspects participate as predecessors of pro-environmental behaviour. This knowledge would allow generating a more efficient and specific information campaign that promotes environmentally friendly behaviours.

P33. EFFECTS OF HOUSING QUALITY ON WELL-BEING: EVALUATION OF SLUM REHABILITATION POLICY IN INDIA

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The city of Ahmedabad in India contains 137,815 slums characterized by a compact area with poorly built tenements, usually with inadequate sanitary and unhygienic drinking water facilities. The government of India has introduced various rehabilitation policies to ameliorate living conditions in low-income neighborhoods. However, the presumption of positive impacts on families of such policies warrants careful investigation. Millions of dollars are spent and large number of people uprooted. Yet little evaluation of the benefits of housing improvements has been conducted.

Previous studies have shown that people in poor housing are more likely to suffer from health consequences and psychological distress (Wilner et. al, 1962; Evans et. al, 2000). But there is a dearth of research in developing countries like India, where the issue of sub-standard housing is even more critical. Also, most research on effects of housing quality has looked at either physical or mental health to evaluate well-being. But well-being is affected by various domains like physical health, psychological state, social relationships, and personal beliefs (Diener, 1994).

This study examines the relation between housing quality and overall well-being of people in low-income neighbourhoods. It answers two key questions: does housing quality improve from slum housing to public housing provided under rehabilitation policies?; does housing quality influence aspects of well-being such as health-mental and physical, perceived stress, self-mastery, hope and social ties?

There are two groups with 75 women residents of identified housing in each group. One group currently lives in slum housing but will be slated to move into public housing in the future. A second group has already moved to public housing from slum housing. The move of slum-dwelling families into public housing provides a set of circumstances where similar populations may be subjected to a differential change in housing environment alone and can be tested for subsequent change in quality of life. These groups are compared on aforementioned variables using standardized validated scales. For the first wave of the study data is collected while one group is still living in the slums. Second wave will start post rehabilitation of this group into public housing providing longitudinal data on the same sample. This data will be analysed using statistical analyses such as t-tests and regression.

I hope to find indications of improved housing quality in public housing from slum housing and people in public housing reporting better well-being. The results from this study may provide preliminary evidence that housing quality is important to slum dwellers and suggest that improvement in housing quality from slum-neighborhoods to public housing matters. Cross-sectional data will also lay the groundwork for a longitudinal study. This study can help to evaluate and thus inform future housing policy in India from a psycho-social perspective.

P34. THE RESTORATIVE ROLE OF GREEN SPACE AT KNOWLEDGE-SECTOR WORKPLACES

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Recent years have seen a proliferation of research into the role of greenspace in human health. A significant amount of this has focused on the psychological 'restorative' benefits of contact with natural environments (including viewing nature from indoors and green exercise). Relatively few studies have addressed the role of these greenspace functions in the context of the workplace environment. This is perhaps surprising given that it is at work that many of us experience the greatest stress and mental demands – and where many people spend a significant amount of their time. The few studies that have taken place suggest links between contact with nature and measures of physical and mental health, job satisfaction, task performance, moods and social interactions, and have pointed to the role of greenspace in buffering the negative effects of work stress in general (Kaplan, 1993; Leather et al., 1998, Stigsdotter, 2003; Hartig et al., 2006; Kweon et al., 2008). These studies of the restorative benefits of workplace greenspace have for the most part focused on effects of viewing nature through office windows: there has been little attention directed towards the potential benefits of spending time in green environments during the workday.

This paper presents results from an ongoing PhD project investigating the potential benefits to knowledge-sector workers from exposure to green space in Science Park workplaces in Scotland. A significant proportion of new commercial property development now occurs at urban-fringe business sites like Science Parks, where low density development and a high quality green environment are prioritised. There is clearly a great deal of scope in these workplaces for employees to benefit from the restorative effects of nature by both taking breaks outdoors and through access to window views of green space from inside buildings. Furthermore, employees in Science Parks may be a population which experiences especially high drains on their cognitive resources, so opportunities to regain focus and boost mental functioning through these types of restorative experiences may be of particular value here.

The results to be presented are drawn from a survey of 366 employees across five Scottish Science Parks. Both discrete restorative experiences and cumulative effects of exposure to green space at the workplace are addressed. Discrete restorative outcomes experienced by employees were measured using the Restoration Outcomes Scale (ROS) formulated by Korpela et al. (2008). Potential cumulative benefits of both nature in window views and spending time in the open space on or around the Science Parks are explored using regression analysis. Outcome variables include job satisfaction, sick days taken, and levels of positive wellbeing measured using the 7-item version of the WEMWBS scale. As this analysis is still at an early stage it is not possible to include a discussion of the findings in this abstract.

P35. MY SCHOOL AND ME: EXPLORING HOW URBAN SCHOOL ENVIRONMENTS RELATE TO STUDENT IDENTITY

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Children who attend schools in high poverty, urban areas are already receiving certain messages about "their future place", based on stereotyped beliefs of race, class, socio-economic status or other factors. While there have been numerous investigations into how these factors affect a student's educational identity and success, the built environment has been largely absent from the discussion. The school environment serves as the context for a child's learning, social interactions, and critical stages of identity development yet little is known about the active role it may play in shaping the child. This study seeks to explore the varying ways by which an interior school environment informs the identity definition of the child, specifically within the context of a high poverty urban neighborhood. The study is encompassed within IAPS's (2.1) Person-Environment Congruence in Urban and Natural Environments.

While concepts of place-identity have been investigated since the 1970's, current calls for how to go about exploring the relationship between environment and identity ask for a focus on the 'process' by which identity is constructed (Lewicka, 2011). To address this need, the study will use Erikson's identity model as a foundation to inform the process of identity construction and apply it to the ways in which identity and physical interactions are related. In order to explore the possible degree to which place and identity may interact at a point in time, the concept of "insidedness"(Relph,1976), developed with place literature, will be employed.

This will be a phenomenological, qualitative study, using interviews and auto-photography to explore the relationship between interior environment and identity. Participants of the study will be 10 freshman students from a Minneapolis high school, located in a high poverty area and data collection will be carried out in two stages. First, participants will take photographs of self-selected interior elements and simultaneously record their thoughts, feelings and attitudes. This data will inform semi-structured, open interviews that will elicit a greater understanding of the relationship between selected interior elements and individual students. Analysis will follow procedures typical with this type of research.

The expectation is that this study will provide a greater understanding as to how elements of the interior school environment may effect students' identity. The results will have implications for the design of spatial characteristics, such as layout, finishes or daylight access and provide insight into environmental factors that support a child's educational success. A greater understanding of this relationship will contribute to the development of place-identity theory and help construct a solid foundation for the teaching and practice of holistic design.

P36. PLACE APPROPRIATION : ELABORATION AND VALIDATION OF A NEW RATING SCALE FOR AN OLD CONCEPT

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Place appropriation, which used to arouse a great interest for environmental psychology researchers, is a concept whose definition did not found an operational consensus (Morval and Corbiere, 2000). It is a process often defined in terms of functions (Moles, 1976) or visible manifestations (Fisher 1980, 1997), but the fact remains that there is no recognized direct methodological access to it, and that its nature and intrinsic dimensions are widely varying from an author to another.

Feldman and Stall (1994) describe it as a double process, made of empowerment and resistance to territory invasion. Serfaty (2003), define appropriation as it is interpreted by individuals in terms of attachment and possession (legal but also moral, psychological, and affective possession). This point of view is particularly interesting, first, because it adds cognitive and affective dimensions to this concept often reduced to behaviours (control, marking, personalization), and second because we consider legal possession as a particular case of people-environment relation whereas the place appropriation process would be always present as a possible interpretive lens in the background of people-environment relations. Indeed, any situation could by evaluated and set on the appropriation continuum. Lastly, Morval and Corbieres (2000) proposed a three dimensions place appropriation scale which would be composed of knowledge of the place, environmental stimulation, and free circulation (Sivadon, 1983). This scale is, to our knowledge, the first to try to measure place appropriation with a questionnaire, despite the important place of this process in environment psychology theories. This initiative is quite courageous and opens the door for other building scale works to go beyond the limits of this try. The main limit is that the theoretical background of Morval and Corbieres' work (2000) deals more with criteria which can lead to place appropriation than with place appropriation's dimensions. In our study we did not want to add complexity in this widely studied concept but operationalize dimensions described in the literature, and look beyond observable behaviours, including affective and cognitive aspects. Then, we noted that the common denominator in the literature about appropriation was place and the relation to others. According to this point and analysing interviews, we built items that we transformed thanks to the results of each stage of the validation process to get our final scale. Two fieldworks and one study with students, followed by exploratory factorial and confirmatory analysis has shown a three dimensions structure with : the rights over the place, others presence tolerance, and the emotional reactions. Furthermore, the internal validity index (Cronbach alpha = .89) and correlations with sense of place (Jorgensen and Stedman, 2001) are acceptable to satisfy scientific validation criteria.

P37. ENVIRONMENTAL STEWARSHIP AND NATURE

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This presentation outlines the results of an empirical study of a municipal government initiative designed to foster urban residents' environmental stewardship of natural areas. This training initiative, titled the Master Naturalist program, involved 30 classroom hours of knowledge provision about natural systems as well as how local authorities and civil society environmental management and planning programs worked. Once completed the Master Naturalists trainees were expected to complete 30 hours of volunteerism aimed at enhancing environmental conservation and protection in Edmonton, Canada. These trainees could initiative their own projects or contribute to a pre-existing government or NGO environmental programs focused on Edmonton's natural areas.

Projects included public education programs linked with the UN's Biodiversity Day, pulling of invasive weeds and planting native plant species in Edmonton's river valleys, and launching a neighbourhood-based advocacy group focused on the conservation of nature in a particular river valley ravine. Once their volunteer hours were completed, the participants' were granted the Master Naturalist designation and encouraged to continue similar volunteer campaigns in subsequent years.

Program evaluation research was conducted in 2009; the study examined the effectiveness of the program through the viewpoint of participants (n=25). Pre-, in-situ and post-program data collection was conducted utilizing self-completed questionnaires, focus groups, and in-depth interviews. In addition to collecting participant's observations on the utility and efficiency of the training program, participants' views on "nature" and "stewardship" were explored and examined for changes during the participants' engagement in the Master Naturalists training program.

In keeping with the IAPS 2012 focus on attitudes, trust and environmental concern, this presentation reports on the impacts of this training program on participant's perceptions of nature and stewardship, and explores the implications of these changes for the participant's future engagement in stewardship of Edmonton's natural areas and their influence on other members of their community. Theories of social learning (Bandurra, 1970; Schusler et al., 2003), social networks (Boden et al., 2005; Moody & Paxton, 2009), volunteer motivations (Measham & Barnette, 2008; Ryan et al., 2001) and social capital (Glanville & Brikenstock, 2009; Peterson et al., 2006; Pretty & Smith, 2005; Putnam, 2000) were used to explain some of these observations. Transformation of participants' perceptions of their role in advocacy and adoption of sustainable lifestyles were identified by Master Naturalists participants. Their adoption of modelling or leadership roles within the community will be discussed in the presentation. Operational and policy implications are outlined for the City organizers of the program.

P38. INFRAHUMANIZATION AND ENVIRONMENTAL CONTEXT

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Infrahumanization studies have verified that people attribute uniquely human characteristics to their ingroup and restrict this possibility to the out-group. The aim of this study is to determine whether pleasant or unpleasant physical contexts change the norms of the outgroup infrahumanization. Therefore, participants were presented a task of visual recognition of words preceded by images that were manipulated on the physical context on which ingroup and outgroup pictures appeared. The results show that there is a greater association between ingroup and secondary emotions than between outgroup and secondary emotions when the background is a pleasant context. This difference disappears when are presented in an unpleasant physical context. These results show the importance of physical contexts in the group identity.

P39. TEACHING ARCHITECTURAL PROGRAMMING IN THE DESIGN STUDIO

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Although a number of books were published about architectural programming in the 1970s (e.g. White 1972, Pena 1977 & Sanoff 1977) and then again in the 1990's, (Duerk 1993, Kumlin 1995, Hershberger 1999, & Cherry 1999), in recent years, with the exception of a text by Franck and Howard (2010), the architectural program has been largely ignored in the United States. Nevertheless, the architectural program (or brief as it is known in the UK), plays a significant role in architectural design. This paper discusses how an approach to the instruction of architectural programming developed in the 1980's for a lecture course (Robinson & Weeks, 1984) is being revisited and applied in the design studio today. The paper explores what is similar and what is changed due to contemporary teaching methods, access to the internet and digital representation. Many of the underlying ideas remain relevant although the approach to instruction and modes of exploration of ideas have changed considerably in the intervening years.

P40. FEAR OF CRIME IN NATURAL ENVIRONMENTS: A REVIEW

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This article reviews the literature on fear, and particularly on fear of crime occurring in natural environments in urban areas. Applying theories related to fear of crime, namely indirect victimization model , disorder model & community concern model) and prospect and refuge theory this review paper aims to analyse the findings of past studies on fear of crime in these environments, for example in terms of what factors evoke feelings of fear or fear of crime in a natural environment. In addition, the authors also examine literatures on perceived danger (cognitive appraisal) in natural environments because fear (emotional reaction) must always be accompanied by a cognitive element (Gabriel & Greve, 2003). The results of the review include an overview of the regions which have conducted studies on fear of crime in natural environment, types of natural environment studied, the most common types of environmental stimulus used, the methods applied, types of respondents, and main study findings. Finally based on a synthesis of

the literature a conceptual framework is presented. The proposed conceptual framework highlights the factors which evokes fear of crime in natural environment and its interactions, and argues for including the prospect-refuge theory. The paper concludes with identifying research and offers suggestions for future research

P41. TOWARDS A LOW CARBON RURAL SOCIETY: A STUDY OF RURAL INDIVIDUALS AND HOUSEHOLDS IN SCOTLAND

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The Climate Change (Scotland) Act 2009 illustrates a commitment by the Scottish Government to reduce greenhouse gas (GHG) emissions and highlights the need to ensure Scotland makes an effective transition to a low carbon economy. Climate change will affect Scotland's people, community and its environment which is why ambitious targets to reduce GHG emissions have been set. However, barriers exist to achieving these targets including individuals' attitudes to adopting environmentally friendly behaviours. Individual and household demand is an important aspect in achieving the Scottish Government's targets and behavioural change will be key in ensuring a successful transition to a low carbon society. Therefore, it is important to gain an in-depth understanding of what factors may affect behaviour and attitudes and how the attitudes, behaviours, and motivations of rural households and individuals may aid or hinder progress towards a low carbon rural society.

The Scottish Government funded PhD 'Towards a Low Carbon Rural Society' will contribute to a larger Scottish Government funded programme researching the feasibility of moving to a low carbon rural economy. The PhD will investigate the barriers and motivations that may prevent or encourage Scottish residents living in rural areas to implement carbon reduction behaviours in their own homes and lifestyles using a mixed method approach. A number of issues will be explored regarding behavioural barriers and motivations including environmental attitudes, concern, identity and knowledge in addition to individual's trust in organisations and information sources.

Over the coming months an in-depth literature review will be undertaken to investigate and evaluate data on carbon emissions, community initiatives and policy and targets implemented by the Scottish Government to reduce carbon emissions. Behavioural change theories will be explored, including, for example, Social Cognitive Theory, Theory of Reasoned action, Theory of Planned Behaviour and the Transtheoretical Model. It is hoped that by applying these theories, a greater understanding into individual and community behaviours and attitudes towards moving to a low carbon society will be gained.

Prior to the conference an exploratory Q methodology study will be undertaken to uncover peoples' attitudes towards carbon reduction behaviours. As the PhD will still be in the early stages at the time of the Conference, the poster will present early findings from the literature review and describe the attitudinal groups that emerge from the Q study. The findings will be utilised to inform the design of a large scale questionnaire which will form the core piece of empirical work for the PhD and some initial thoughts on the questionnaire design will be presented. It is hoped that the

findings from the PhD will aid in developing effective policy to reduce carbon emissions at the individual and household level.

P42. Psychometric parameters of a modified version of the General Ecological Behavioural (GEB) Scale

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This study is an attempt to adapt a measure to assess environmental behavioural intentions. The original version of the General Ecological Behavioural (GEB) scale is a composite of 50 performances proposed by Kaiser and Wilson (2004) to assess self-reported past conduct. Considering that researchers often assess intention rather than past conduct, we propose a modified version of the GEB scale composed of items that are written as 'intention' items which describe ecological actions that the participants intend to engage in or not, with a 6-point Likert-type scale ranging from 0 (not at all willing) to 5 (extremely willing). A total of 206 undergraduate students from Victoria University of Wellington took part in an exploratory study where they answered the proposed modified version of GEB. The participants were 62% female and 38% male, with mean age of 19 (DP = 3.47). Analyses first examined whether the items could discriminate participants in terms of their scores, with results suggesting that nine items did not. Exploratory factor analysis was then conducted with the remaining 41 items. Nine components emerged, but the first component explained most of the variance (27.5%), and the majority of the items loaded onto the first unrotated factor. Using the criteria of factor loadings > .30 and corrected item-total > .40, a total of 28 items remained which yielded Cronbach's alpha of .94. To create two equally reliable measures of environmental intentions, the 28 items were split into two halves of 14 items each based on the behavioural difficulty of the items (Kaiser, Byrka, & Hartig, 2010). Both versions were shown to provide similar psychometric parameters, with alphas of .89 and .87, respectively. In sum, the modified version of the GEB scale is a psychometrically sound instrument that can be used for research aiming to measure behavioural intention. Additionally, the two psychometrically equal halves of the measure can be useful on experimental designs using pre-test and post-test. We discuss the several statistical steps taken into consideration to decide on a reliable measure.

P43. Transcultural adaptation of a residential satisfaction scale, the IQURP (Fornara, Bonaiuto & Bonnes, 2010) from Italian to French

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I Introduction

The residential satisfaction can be defined as the experience of pleasure or gratification deriving from living in a specific place (Bonauito,2004). Just as global satisfaction, it includes elements that are affective and cognitive (Fleury-Bahi,1997) but also physical, social and human (Bonnes and al, 1997).Thus, residential satisfaction would be based on a global evaluation of various aspects of the housing.

The IQURP is a questionnaire of 144 items grouped into 20 scales, each of them measuring a dimension of the psychological construct of residential satisfaction (eg. quality of the sociocultural activities in the neighborhood). The degree of agreement or disagreement is indicated by a Likert scale of 7 points.

Hypothesis

The main aim of our study is the adaptation of an italian psychometric assesment tool to the french culture.

Because of the statistical method we will use, we expect:

- to obtain less dimensions in the french 'IQURP' than the original.
- that some explanatory dimensions of the residential satisfaction on the IQURP will be different from their equivalent in French.

II.The adaptation of an assessment instrument

a) Issue

Assessment tools by means of questionnaires and others are taking an important place in the research field of social psychology. However the variety of languages for communication in Europe may restrict the applicability of psychological measures because such tools need to take the cultural specificity in account.

b) Methodology

The transcultural adaptation must guarantee the sensibility and specificity of the original instrument and integrate the cultural singularities of the targeted culture.The transcultural adaptation follows 3 consecutive steps (Vallerand, 1989):

i. Create and test a previous translation of the assesment tool

ii. Control the validity of the translation

iii. Adapt the scores obtained with the translated tool to the french context and if necessary develop new standards.

We first create an experimental version of the IQURP using the method of the reversed translation. Then we try to compare the Italian factorial model of the IQURP to the french mode. To this purpose, we use the software STATISTICA to perform a principal components analysis to detect meaningful underlying dimensions.

The data are collected on a general population of 400 subjects.

III. Outcomes

We are able to observe that the two factorial structures are quite similar. Yet we can see some differences between these two models of the residential satisfaction. Indeed these results show a reduction of the number of dimensions in the french version (17 "french" factors versus 20 "italian" factors). Four dimensions from the original IQURP are explained by the two global factors in the french version and one disappears.This dimensional reduction seems to come from the cultural and urban differences between these two countries but also from the particularities of the IQURP itself.

P44. IMPLICIT AND EXPLICIT PREFERENCE OF NATURAL, BUILT AND ARTISTIC ENVIRONMENTS

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In environmental psychology, the majority of studies on preference made use of direct measures which rely on participants' explicit cognition. At an explicit level, the research in the social psychology of the environment show consistently that 1) people prefer natural environment vs. built ones; 2) people receive major psychological benefits from the connectedness with natural environment vs. built ones (e.g. Hartig & Staats 2006; Kaplan & Kaplan, 1989; Ulrich, 1983). At an implicit level only few studies suggest a preference toward natural instead of built environment (Korpela, Klemettila & Hietanen, 2002; Schultz & Tabanico, 2004). The aim of the present research is to study the implicit preference toward natural and built environment, using a standard version of the Implicit Association Test (IAT), with environmental pictures stimuli.

In the present experiment, the two categories are 5 natural and 5 built pictures and the two attributes are 5 positive words and 5 negative words. The logic of IAT is that this association task should be easier when the two concepts that share a response are strongly associated as compared to when they are weakly associated.

In first study (n = 22) , results show that participants were much faster in automatically associating natural pictures with positive words than associating natural pictures with negative words.

In a second study (n = 48) the same natural environmental pictures of the previous study were compared with pictures of built environments having a particularly high artistic valence (Italian Renaissance squares), and which can therefore be assumed as fairly comparable to natural settings in terms of their perceived restorativeness. Results show again that the strength of association between "nature" and "positive" is still reflected in fast reaction times. In a third study (n = 55), we used the same picture stimuli of study 2 (natural vs. built/artistic settings), but this time the built pictures were identified with the label "artistic". Results show that in this last case latency times decreases when built/artistic environments are labelled "artistic". Natural pictures are always associated to positive words with faster latency times, but this time the reaction times are quite faster also in the association between built/artistic and positive words, so that we can assume that they are automatically evaluated in a way that is more similar to natural settings (although still not equal).

Taken together, these findings seem to confirm that people prefer natural over built environments also at an automatic level. However, when built environments that present artistic features are

labelled as “artistic” the difference in reaction times and therefore the preference between natural and built/artistic is attenuated. This might also suggest the role of cultural and social construction processes also in the psychological mechanisms involved in the formation of environmental preference.

P45. PRO-ENVIRONMENTAL BEHAVIOURS AT THE CITY LEVEL: THE INFLUENCE OF LOCAL IDENTITY, LOCAL NORMS, ENVIRONMENTAL STRESS, AND SELF-EFFICACY

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The present research concerns the determinants of place-specific pro-environmental behaviour, with particular focus on dimensions such as place identity, injunctive and descriptive local social norms, environmental stress, and self efficacy.

The relationship between pro-environmental attitudes (and/or behaviours), identity processes (e.g., see Carrus, Bonaiuto, & Bonnes, 2005), and social cohesion (Uzzell, Pol, & Badenas, 2002) has been addressed by previous empirical studies. Also social norms can play an important role in orienting people’s behavioural decisions in everyday life (Schultz et al, 2007). In particular, we argue that those pro-environmental behaviours which have a place-specific basis could be related to place identity processes and to our perceptions about to what the neighbours do or think about it. Recent empirical findings (see Fornara et al, 2011) suggest indeed that social norms of descriptive nature (both subjective, i.e. what significant others do, and local, i.e. what neighbours do) seem to play a key role for promoting a place-related pro-environmental behaviour (i.e. waste recycling). Studies focusing on the link between local identity and negative environmental conditions, have also shown that those who score high on local identity often do not perceive pollution in their environment (i.e., they deny that their environment is polluted as a way to protect their self esteem). Thus, this condition could lead to a biased assessment of environmental conditions/problems reflecting an attempt to maintain a positive vision of one’s own social identity (see Bonaiuto, Breakwell, & Cano, 1996). Other studies suggest that the perception of a negative environmental condition (environmental stress) can drive individuals toward the performance of pro-environmental behaviours (Homburg & Stolberg, 2006; Homburg, Stolberg, & Wagner, 2007). Environmental ‘stressors’ caused by pollution, when mediated by demand-resource appraisal, can trigger the “focus-on-the-problem” of the environment. In particular, this pattern can positively influence individual pro-environmental behaviour (Homburg & Stolberg, 2006). In this research, we assessed the relative impact of psychosocial dimensions such as local identity, perception of local environmental stress, local norms, and self-efficacy on a set of pro-environmental behaviours at the city level. A correlational field study was carried out with residents of three Italian cities (N=200), using standardized self-report measures.

Results show that pro-environmental behaviour scores are positively predicted by perceptions of environmental stress and by self efficacy effects.

Concerning local norms, results show a significant weight of descriptive norms. Finally, local identity did not show a direct relation to pro-environmental behaviour. The theoretical and practical implications of these results will be discussed in the light of the research literature.

YOUNG RESEARCHERS WORKSHOP

YOUNG RESEARCHERS' WORKSHOP

REPLENISHING RESOURCES BY VIEWING NATURE AND EXPOSURE TO DAYLIGHT: ONE OF A KIND OR DISTINCT PATHWAYS?

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Introduction

Restoration literature teaches us that natural environments contain restorative potential for humans. Lighting research has revealed similarly positive effects of exposure to daylight on human functioning as well. Both have been found to improve mood, mental and physical health, and cognitive performance, and to reduce stress (Beute & de Kort, in preparation). The overlap in findings as well as the fact that both are natural phenomena and often co-occur inspired us to investigate both phenomena simultaneously. More specifically, we are interested in the exact common effects of exposure to daylight and nature as well as whether there is an overlap in the underlying mechanisms. In this contribution, I would like to discuss our method for investigating these two main research questions.

We want to investigate the beneficial effects as well as the underlying mechanisms by employing a selection of research paradigms. Furthermore, we will study both the combined and the separate effects of these two phenomena, in both lab and field settings. Our main focus will be on psychological underlying mechanisms. Whereas theories have been developed for the underlying psychological benefits of viewing nature, to date no such theories exist for effects of lighting. Most effects of light are now attributed to biological processes, while psychological mechanisms cannot be ruled out.

Method

In a number of studies, effects of nature and daylight are tested and compared.

Preferences: We started by investigating effects of environment type and derivatives of light captured in pictures (weather type and lightness) on both explicit and implicit preference.

Restoration from stress and ego-depletion: The second step tested restoration after two types of antecedents: stress and resource depletion (ego-depletion). Slideshows were used to test effects of natural versus built environments. For light, two studies are planned; the first study tests effects of suggested similarity to daylight of an artificial light source by providing different descriptions given for the same light source, the second directly compares effects of daylight and artificial light (matched on intensity).

Field study I: In real-life work settings we measured both daylight contribution and view type and investigated their effects on several indicators of human functioning (e.g, sustained attention; mood; self-control; health).

Field study II: Experience sampling studies are planned investigating effects on mood, stress, and self-control.

Lastly, intervention studies are planned in which repeated exposure to either natural environments or daylight will be investigated. The aim of the field studies not only lies in obtaining higher ecological validity but also on studying combined effects as well as long-term effects.

Results

To date, we have found clear indications of an explicit preference for light, sunny, and natural environments as opposed to dark, overcast, and urban environments. In a field study among office workers, we have found effects of naturalness of the view and distance of the desk to the window on several indicators of wellbeing. Lastly, we have found that showing pictures of natural environments can help overcome ego-depletion. Further studies are planned.

Discussion

By investigating effects of viewing natural environments and exposure to natural light we not only hope to find out more about the overlap in effects, but also want to gain more insights in underlying mechanisms for light as well as for viewing nature.

THE USERS´ CONTROLLABILITY AND ITS INFLUENCE ON SATISFACTION WITH ROOM CLIMATE

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Introduction

Overall research problem: An increasing number of technologies concerning the room climate are installed for reasons of comfort (e.g. cooling in summer) or, at the opposite, to save energy (e.g. ventilation systems with recovered heating). The determination of comfort and its possibilities for regulation has often been treated as a technical decision, while in fact technologies are applied by human beings who decide how to use them and how satisfied they are with their use (Schweizer-Ries, 2008). But how much is satisfaction with room climate influenced by physical conditions and how much by psychological factors?

Specific research question: Which possibilities do people perceive to influence the climatical situation at their workplaces? How does this perception influence their satisfaction with the room climate? Are there causalities between the installed room technology, the satisfaction with the room climate and the energy consumption of the building?

Theoretical background: It has been demonstrated that people favour controlling their environment and that a high degree of control results in a higher satisfaction with the users' thermal comfort in comparison to a low degree of control (Bluyssen et al., 2011, Walden, 2008). Steemers and Machanda (2010) showed that there is no correlation between energy consumption and the users´ satisfaction with the room climate, although high energy consuming technology was created to regulate the climate to improve thermal comfort Method

Context: In advance, a study was conducted to collect energy consumptions in school and office buildings. Reason to chose these types of buildings is the variance of installed technology concerning the room climate. This pool of analysed buildings is the basis for the current study.

Participants: teachers from ca. 24 schools in Luxembourg, employees of the University of Luxembourg from 2 buildings, employees from 5-7 office buildings in Luxembourg

Instruments: standardized questionnaire and a semi-standardized check list for buildings

Procedure: All questionnaires will be hand delivered by me. Additionally all buildings will be checked for their installed technology and analysed on basis of a semistandard check list.

Data analysis strategies: descriptive and inference statistics like Multiple Regressions and Variance analyses, done by SPSS; additionally a mediator model done by MPlus.

Results

The survey will start at the 16th of November and will be finished probably mid December. No results can be given before. A preliminary study was done with employees which proved the importance of perceived controllability, at least in rooms with full air conditioning. It is expected to reveal a strong correlation between the perceived controllability and the satisfaction with the room climate as well as the lack of a correlation between energy consumption and satisfaction with the room climate. All relations will be put in order by a mediator model, where other important causalities will be shown additionally.

Discussion

This study aims at avoiding dissatisfaction for the employees as well as it can help saving money, material and energy (heating/ electricity) for building owners. Money and Material would be saved because expensive retrofitting modifications of the installed technology to fit the users´ needs would no longer be necessary. Energy would be saved because building concepts would be adopted to personal needs which could increase the people´s acceptance of the installed energy saving technology and help counteracting energy consuming "overtechnification".

BEYOND GAMIFICATION: ENGAGING INDIVIDUALS TOWARDS ENERGY EFFICIENT BEHAVIOUR THROUGH COLABORATIVE ONLINE GAMES

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Introduction

Overall research problem: It is commonly acknowledged that we have entered a global energy and climate crisis. For example, in the Provence-Alpes-Côte d'Azur Region, in France, we only produce 50% of our electricity needs. To start addressing this issue, we could lower our electricity consumption for domestic uses. However, although ecological challenges are well-known by most individuals, we often observe that this does not have a consequence in their everyday decisions and actions.

Specific research question: Could the use of an online cooperative video game foster the commitment of its participants into effective energy-saving behaviours? In a broader sense, how would this play experience influence their perception of environmental challenges?

Theoretical background: Our study is conducted within the framework of commitment theories (Kiesler, 1971; Joule & Beauvois, 1998). Our video game, using commitment techniques, allows an autonomous and collective learning process to happen. Therefore, it helps re-establish a positive emotional link between individuals and their energy consumption, no longer seen as an abstract side of reality.

Method

Context: Our sample will be invited to play regularly to Kwaan, a cooperative online video game developed on purpose for this study, in partnership with the Ankama company. In this game, players are collectively in charge of the life of an imaginary tree, while being immersed in a rich online community experience. Our goal is to test how efficient Kwaan is at modifying each player's behaviours and representations regarding energy in particular, and the environment in general.

Participants: Our sample is made of 150 adult subjects, dispatched in 5 experimental groups. *Procedure:* We follow a 2x2 experimental plan (a control condition, plus 4 experimental conditions, with a minimum of 30 participants per group). All participants, except the control group, will sign an eco-gamer declaration before starting the game, in order to provide a freewill commitment testimony.

- Aside from this, we use the two following independent variables: Supplementary game quest (with or without), in order to operationalise the consequences of the act of commitment.
- "Booster shot" (with or without), in order to remind regularly to the player its commitment (for example, with an email reminder every week).

To check the efficiency of these techniques, our main dependent variable will be the voluntarily reported energy consumption, thanks to a report website developed on purpose for this study, where players must open an account before starting the game. Otherwise, we will study the evolution of several psychological variables, measured by a questionnaire filled in at several stages of the experiment. We will consider the evolution of the following variables: social representations of energy saving representations (Moscovici, 1961), consideration of future consequences (Strathman et al., 1994), personal involvement (Rouquette, 1997). We will also analyse the content of instant messages sent by players to one another during the online game.

Data analysis strategies: Verbal associations of the questionnaire will be studied following a thematic analysis and a correspondence factor analysis (CFA), including several independent variables of the experiment. Q. Sort part of the questionnaire will allow to comparisons of means of the variables used in each experimental group.

We will also compare the means of our other measurements at various stages of the experiment. We will finally analyse the text data obtained from instant messaging using the Alceste text analysis software.

Results

Final results will be obtained in a few months. We forecast that the game, as commitment instance, will allow players to identify their actions at a high level (Vallacher & Wegner, 1985). On the one hand, we think that the interactive play environment will have an effect on domestic energy consumption behaviour, leading to a diminution of the global domestic energy consumption. On the other hand, we expect an evolution at both the attitude and representation levels, towards a stronger awareness of environmental challenges. Finally, we can anticipate for each player a preservation of the normative dimension and a strengthening of the functional dimension of his behaviours.

Discussion

We could wonder about the effectiveness of bringing commitment techniques into an online cooperative game. At first sight, it could seem obvious that acting in a virtual world without direct consequences on reality could undermine the effectiveness of a commitment process. However, this game, as a source of repeated acts of commitment, will allow players to identify their actions at a high level. As a result, if a player makes an eco-conscious effort, it is not for earning game points or money (therefore for an external explanation), but because its participation to the game and its in-game behaviour are driven by a genuine desire to create and share solutions with others in order to address together the energy and climate crisis.

THE RESTORATIVE POTENTIAL OF SUB-AQUATIC BIODIVERSITY

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Introduction

Despite anecdotal evidence that people find watching fish in aquariums relaxing there has been surprisingly little systematic research. The present study investigates this issue by monitoring people's psychological and physiological reactions to watching a large (650,000 litre) exhibit at the National Marine Aquarium, Plymouth. The tank is currently undergoing complete refurbishment enabling us to monitor people's reactions to the growing biodiversity introduced to the tank over a twelve month period and to compare this to a control condition before any fish were introduced. Data are presented from the first three conditions: a) "No Fish", b) "Low" biodiversity, c) "Medium" biodiversity.

Method

Participants were shown to a curtained booth in front of the exhibit and baseline measures of heart rate, blood pressure and mood were taken. The curtain was then drawn back to reveal the tank in one of three conditions: a) No Fish, n = 29, b) Low, n = 27 or c) Medium, n = 30. Fish in the Low condition included 34 Thick-lipped grey mullet (*Chelon labrosus*) and 14 dogfish (*Scyliorhinus* spp.); additional fish in the Medium condition included 19 Ballan wrasse (*Labrus bergylta*) and 5 Thornback rays (*Raja clavata*). Participants watched the tank for 10 minutes before the baseline measures were repeated along with some additional evaluation questions. Data analysis was carried out using SPSS software.

Results

Heart rate dropped in all three conditions over 10 minutes but was significantly moderated by tank: (No Fish: -2.57, Low: -5.40, Medium: -5.88, p = .023). Further analysis showed that both tanks with fish showed significantly greater drops than the No Fish tank but were not significantly different from each other. While patterns for blood pressure were broadly similar none of the effects were significant (*ps* > .05): Systolic (-1.81, -4.21, -3.96), Diastolic (1.24, -3.92, -5.43).

Heart rate data were reflected in self-reported mood, with mood at the end of the 10 minutes most positive (controlling for baseline) in the Medium condition: (2.54, 3.06, 3.37, p = .023). This effect was also revealed in people's post-study experience evaluations: 'Enjoyment' (3.14, 4.58, 4.73, p < .001); 'Interest' (4.14, 5.38, 5.63, p < .001); 'Positive Mood' (3.34, 4.19, 4.20, p < .05). Follow-up tests suggested, though, that Low and Medium conditions were more positive than No Fish but not significant from each other.

Conclusions

As far as we are aware**,** these data are the first to systematically monitor the added benefit of populating an environment with different levels of biodiversity. Results so far suggest that even watching an empty tank may be physiologically and emotionally restorative but that the presence

of fish improves these effects further. For all of our dependent variables the Medium biodiversity tank produced the most restorative effects but the differences from Low biodiversity were not significant. Nevertheless, given the pattern of data, we predict significant improvements during the next phase of restocking (Spring 2012) when biodiversity will increase yet further.

RELATIONSHIPS WITH NATURE IN INDIVIDUALS TREATED FOR CANCER: A GROUNDED THEORY

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Introduction

Overall research problem: There exists a growing knowledge base outlining numerous health-related benefits in humans following experiences with nature. Specific outcomes, such aspositive psychophysiologic responses and general recovery from stress, improved affect, anddirected attention restoration, as well more generalized positive health and well-being outcomeshave been discussed. In the majority of this work, however, research settings and participantsoften reflect ideal or controlled contexts, and generally younger, healthier subjects. As a result, empirical evidence continues to be gathered and strengthened, yet important knowledgegrounded in healthcare contexts and in individuals experiencing ill-health and disability is notadvancing at the same rate. Given the potential implications of fostering connections with natureand the natural environment to improving health and well-being, it is pertinent to investigatehuman-nature-health connections in healthcare contexts, and with individuals whom arguablystand to experience the greatest benefit from such connections.*Specific research question:* How do individuals treated for cancer relate to nature and the natural environment?

Theoretical background: This work will adopt a constructivist grounded theory methodology (ConGTM; Charmaz, 2006) to explore the underlying processes that manifest relationships with nature and the natural environment in individuals treated for cancer. The analyses will be informed by Blumer's symbolic interactionism (1969), and associated theoretical perspectives in pragmatism (Hookway, 2008) and abductive reasoning (Charmaz, 2009; Richardson & Kramer, 2006; Shank, 1998). Overall, this work is informed by the World Health Organization's "International Classification of Functioning, Disability and Health" (WHO, 2001), and current perspectives in restorative environments (e.g., Joye & van den Berg, 2011; Kaplan & Kaplan, 1989; Kaplan, 1995; Ulrich, 1983; 1993)

Method

Participants: Approximately 12 adults diagnosed with cancer will be invited to participate. As the data analyses and interpretation processes continue, additional individuals will be theoretically sampled (Charmaz, 1990; 2006; 2009) to further explore gaps in the emerging theory.

Procedure: Individuals will be interviewed at least twice. All interviews will be audio recorded and transcribed verbatim, and observational notes will be collected during each interview. When possible, interviews will be conducted *in* a natural setting or while completing a nature-related

activity.

Data analysis strategies: Data will be managed and coded with the assistance of computer software. Analyses will be an on-going and iterative process, which will include the use of memos to provide an outlet for theorizing about the emerging framework.

Results

It is presently not clear what will emerge from this study. The resulting grounded theory will be an inductive and iteratively generated product that is grounded in the data–a theory describing how individuals treated for cancer relate to nature.

Discussion

Experiences using ConGTM, as well as the resultant theory will be shared with colleagues attending the YRW. The implications of this work will be discussed relative to current knowledge about restorative environments, health and well-being in cancer treatment and rehabilitation, and the meaning of relationships with nature and the natural environment.

IMPLICIT ATTITUDES AND THE SPATIAL COMPLEXITY OF URBAN BUILT ENVIRONMENT

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Introduction

Overall research problem: investigate interrelations between spatial complexity of urban built environments and both spatial cognition and attitudes.

Specific research question: define how spatial complexity of urban built environments affect implicit attitudes (in particular tendency in stereotyping) of people navigating it.

Theoretical background: Stapel and Lindenberg (2011)[1] analyze the relationship between disordered contexts and stereotyping. The authors claim that a disordered context increases personal need for structure and promote in people the goal to create order; this goal can be temporary reached by stereotyping.

We want to extend the concept of disorder beyond the incivilities (e.g Sampson & Raudenbush, 1999), investigating if specific environments, characterized by different forms and levels of complexity regarding their spatial configurations, are perceived as disordered and if this perception

[1] On 31 October 2011, Tilburg University held a press conference to announce interim findings of its investigation into possible data fraud in the body of work published by Stapel "Coping with chaos: How disordered contexts promote stereotyping and discrimination" by D. A. Stapel and S. Lindenberg. More information: http://www.sciencemag.org/content/early/2011/11/01/science.1216027.full.pdf)

lead people to an increased tendency in stereotyping; moreover, we want to study the role that cognitive need for closure (Webster & Kruglanski, 1994) assumes in that phenomenon.

Method

Context: In the first stage of this research, virtual environment setups will be used to explore how alterations in complexity of spatial configuration of urban environments affect tendency in stereotyping of people navigating them.

Participants: 160 subjects aged from 18 to 30, balanced for gender.

Instruments: 1) Virtual reality experimental setup: 4 different urban environments. 2) Perceived order/structure questionnaire: to build on purpose. 3) IAT (Implicit Association Test) (Greenwald, McGhee, & Schwartz, 1998): stereotyping tendency assessment. 4) State Cognitive Need for Closure Scale (to build and validate on purpose).

Procedure

Random distribution of the 160 subjects in the 4 experimental groups: each subject is assigned to one of the 4 virtual environments, 3 characterized by different forms and levels of complexity of their spatial configurations and 1 characterized by a simple spatial configuration (control group).

Hp1: the level of perceived disorder is directly proportional to the level of complexity of the spatial configuration.

Hp2: navigate environments whose spatial configuration is perceived as disordered leads people to a proportionally increasing of cognitive need for closure.

First navigation task. All participants have 5 minutes to move freely inside the virtual environment and explore it all. At the end of the task: perceived order/structure questionnaire administration. Cognitive need for closure assessment.

Hp3: navigate environments whose spatial configuration is perceived as disordered leads people to a proportionally increasing of tendency in stereotyping.

Second navigation task. All participants have 5 minutes to move freely inside the virtual environment. At the end of the task: IAT administration.

Discussion and Results

Work in progress

WHAT CAN RESTORATIVE ENVIRONMENT RESEARCH TELL US ABOUT LIBRARY STUDY SPACE?

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Introduction

Overall research problem: Current literature about the design of academic library spaces concentrates on the development of technologically rich "learning commons" with atmospheres similar to coffee shops. While this space is conducive to a particular type of student accomplishing certain tasks, the diversity of study requirements and of students on our campuses demand a more diversified approach to the design of study spaces. Study spaces that are designed for quiet contemplation and relaxation and recovery from mental fatigue and stress could have a positive impact on student learning by providing places that enhance the learning process for many students. This, in turn, would enable the library to understand how its space contributes to one of the key outcomes of the larger educational institution.

Specific research question: Does studying in "greenery-enhanced" spaces in the library have a positive impact on student learning?

H1: Students will report that being in green study space reduces mental fatigue and stress

H2: Students will report that green space study areas are more conducive to their ability to study effectively.

(Null hypotheses omitted for brevity.)

Theoretical Background: Research into learning and memory has resulted in the development of strategies for improved learning while studying. Educational researchers have recognized the impact of the physical classroom on learning in k-12 schools. Two paradigms, Adaptation and Opportunity-Structure, developed in environmental psychology for examining person environment behavior, provide an overall framework for my study. The Reasonable Person Model, a framework for environmental psychology defined by Stephen and Rachel Kaplan, describes three major domains of human informational needs. The last of these is "the need to be effective". In their words, this last domain studies "ways in which the environment can support the competence and clear-headedness that makes it [being effective] possible." (Kaplans, 2009, p. 331)

Method

Context: The mental fatigue and stress levels of students studying in "greenery-enhanced" study areas will be compared to the fatigue and stress levels of students studying in non-greenery-enhanced areas. In addition, students will be interviewed or surveyed about how greenery may impact their ability to study in a particular place.

Participants: H1 - convenience sample of students found studying in "greenery-enhanced" study areas; H2- representative sample of current students at WSU Vancouver.

Instruments: H1 - Han's Restorative Scale and Laumann's Restorative Components Scale; H2 – Qualitative survey or interviews – instrument to be developed by researcher.

Data analysis strategies: Quantitative analysis on the two Likert Scales will be done by Excel. SPSS will be considered if it can add value. Atlas.ti will be used to assist in the analysis of qualitative results.

Results and Discussion

Even if the results do not support the main hypotheses, this study will contribute to the Library and Information Science (LIS) field through its novel approach of bringing theoretical frameworks and methodologies from the environmental psychology field to bear on a library space and student learning question. If the results do support the main hypotheses, then space planning for academic libraries will be more informed about what types of spaces can be conducive to successful study.

EXPERIMENTALLY MANIPULATING VALUES TO MOTIVATE ENVIRONMENTAL BEHAVIOURAL INTENTIONS AND ACTUAL ENVIRONMENTAL BEHAVIOUR

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Introduction

Overall research problem:

Environmental problems are a result of maladaptive human behaviour. One way to tackle these problems is by fostering values that underlie environmental attitudes and behaviours. For example, research has shown that certain values (e. g., self-transcendence values such as social justice and world of peace) are positively correlated to environmental attitudes and behaviours.

Specific research question:

This project aims to advance past research by systematically assessing the role of values in motivating individuals' attitudes and behaviours toward the environment. Study 1 is a meta-analysis to provide a quantitative summary of research on the link between values and both environmental attitudes and behaviours. In Study 2 and 3 I evaluated how values can be experimentally manipulated to change people's behavioural intentions towards the environment; and in Study 4 I will evaluate how changes in values can predict actual environmental behaviour.

Theoretical background: Specifically, research has shown that changes in values can be experimentally manipulated to change behavioural intentions (e.g., Maio & Olson, 1995; Maio, Pakizeh, Cheung, & Rees, 2009; Rokeach, 1973). I will follow this research tradition by using the

value self-confrontation technique (Maio et al., 2009) to manipulate value change and examine the impact of this change on environmental behavioural intentions and actual behaviour. In the typical use of this paradigm, individuals receive feedback emphasising a “deficiency” in the extent to which they possess a specific set of values compared to a referent group. The perceived inconsistence between one's values and the values held by a referent group lead to an increase in importance attributed to the “deficient” values; that is, the self-confrontation technique lead to a change in values (Maio et al., 2009).

Method

Context: Besides the meta-analysis, three experiments were planned. For each experiment there were two experimental conditions manipulating self-transcendence and self-enhancement values and a control group.

Participants: For Experiment 1, participants were members of the general public. For Experiment 2, participants were university students from Victoria University of Wellington, New Zealand. To guarantee an acceptable effect size, a minimum of 30 participants per experimental and control conditions was required for each one of the experiments.

Instruments: Participants answered a set of measures including three critical ones: a modified version of the General Ecological Behaviour (GEB) scale (original scale proposed by Kaiser and Wilson, 2004), two lists of values from the Schwartz Value Survey (Schwartz, 1992), and a group identification measure (e.g., Aron, Aron, & Smollan, 1992; Luhtanen & Crocker, 1992).

Procedure: For Experiment 1 participants were approached at random, and consequently varied on a number of dimensions. Experiment 2 participants were tested in a group setting with a maximum group size of 6. For experiment 3 participants will be tested individually.

Data analysis strategies: Mixed model ANOVAs and Linear Regressions.

Results

Initial results from Experiment 1 and 2 suggest that values change from pre-test and post-test. However only in Experiment 2 was an effect found in the manipulation of changing of values. In this case only self-transcendence values seem to be susceptible to a greater change. Change in values predicted environmental behavioural intentions. Additionally, it was found that National Identity moderated the effect.

Discussion

The results partially supported our hypotheses. It is important to evaluate and understand why only self-transcendence values lead to greater change. I hope, with the workshop, to critically discuss possibilities of new analyses, different interpretations, and different ways to explore the results. Also, a critical look at these results will be important to guide me in refining the experimental design for Experiment 3.

HOUSEHOLD ELECTRICITY USE IN SOUTH AFRICA: A SYSTEMIC STUDY OF AN INDIVIDUAL INTERVENTION

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Introduction

Overall research problem: The environmental impact of human behaviour has increasingly been researched. Household electricity use, as one example of human impact on the environment, has been extensively researched in both North America and Europe with many practicable outcomes to reduce residential electricity use. In South Africa, however, lack of literature on this topic, a high GINI coefficient, great cultural diversity, unhealthy dependence on coal, and the ability to lead Africa in industrialization of a different kind, necessitates research specifically focussed on South Africa. In this research, some of the best strategies have been combined to develop an intervention in a mixed methodology approach to research actual kWh use alongside the exploration of the participants' reasoning behind their energy efficiency behaviour.

Specific research question: The primary research question is: What is the effect of this intervention with an individual in a household, on the households' electricity usage? Other questions that were explored are: What energy conservation strategies (if any) are employed by households as perceived by the individual (participant) and why? and How do participants in the different areas of Pretoria strategise about saving electricity?

Theoretical background: Attitudes, subjective norms and perception of behavioural control form the basis of an attitude and behaviour (Ajzen, 1991). However, the individual does not operate in a vacuum and the ecological perspective (Bronfenbrenner, 1971) is used to expand the focus of this research beyond the individual focus. Systems theory (Bateson, 1979) is used to explore and come to understand the systemic social influences on the implementation of household energy efficiency measures. The qualitative interviews and focus groups broaden the scope and allow the researcher to describe the behaviour and thought patterns in more depth than simply reporting on usage data.

Method

Context: This study focussed on residential use of electricity, with specific attention on households from three different socioeconomic areas.

Participants: These areas included Mamelodi, a large township close to the city of Pretoria, where houses are sometimes only temporary structures, access to water and other services are not yet available to everyone and security is low. Garsfontein, a middle class residential area with brick houses, where amenities are available and security is high, and Woodhill/Menlopark, are very affluent areas with large houses, all the necessary amenities and extremely high security measures. Volunteers were recruited through community centres or churches in each geographical area. Volunteers were randomly assigned to experimental group 1 and 2.

Instruments: Data was collected with e2efergy electricity meters and were used to measure actual household use in kWh, a living standards measurement (LSM) questionnaire and an inventory list of the appliances and lights in the house. An interview and focus group guideline was developed (following a pilot study) and used to gather qualitative data about the individual's perception of global warming, the interaction in the household focussed around electricity, some of the family dynamics and constraints on a community, municipal, and governmental level.

Procedure: Volunteers from each community were randomly assigned to either experimental group one (ex1) or experimental group 2 (ex2). In both groups, the e2 electricity monitor was installed and a blind baseline measurement during the first week was compiled. After at least 7 days, the energy auditor returned and opened the monitor. In ex1, the energy auditor instructed the homeowner in detail how the monitor works and provided a written information pack on how to save electricity, along with a sheet for noting daily readings. In the ex2 group, the energy auditor conducted an interview about the household's reason for participation, thoughts on global warming and possible energy efficiency measures that have been considered. The e2efergy monitor was explained in detail (exactly the same as ex1), however in ex2 the energy auditor walked through the house with the homeowner, using the e2 monitor to illustrate the electricity use of devices such as the kettle and geyser. Specific energy efficiency advice was provided based on the walk-through; the home owner was provided an information package (exactly the same as ex1), but was consequently requested to sign a commitment to save at least 10% of electricity during the following two weeks of measurement. After at least 2 weeks of measurements, the monitors were removed from all households. Participants were provided with a report of their use within two months of removing the monitors. The reports contained their actual kWh over the measurement period, graphs and recommendations for improvement within two months of removing the monitors. Focus groups were held three to six months after the monitors were removed, exploring the way in which routines, equipment and thoughts in the households have changed after the measurement period. In total 41 households were audited, 20 interviews and six focus groups were held.

Data analysis strategies: Three sets of data have been collected: a) Physical measurements from 41 households, in kWh for at least three weeks; b) interviews with 20 homeowners in ex2; and c) focus group data involving participants from both ex1 and ex2 in each community, 6 groups in total. Data collection concluded at the end of October 2011, and data analysis is not complete. However, it is envisaged that demographics and appliance inventories would be done in order to determine predictors for high use, and verifying whether this is in line with international research findings. Usage data from geographical areas, along with the demographic predictors will be analysed and placed in the context of each household suing the qualitative data gathered. The qualitative data will be used to explore any relation between actual savings and environmental intent. Themes from the interviews and focus groups will be generated and case studies would be used to illustrate findings. Changing and cultural specific perceptions will be highlighted.

Results

The results are envisaged to provide a better understanding of the effect of an individual intervention in a household, describing strategies employed for saving electricity and cultural differences in addressing efficiency in the home. It is envisaged that findings would concur with the predictor variables identified in international research. Also, it is envisaged that the intervention did not have a significant effect on the savings achieved in a household and that the largest

contributor of significant residential savings is dispelling 'myths' within the household. The identification of these myths (through the qualitative study) is very important in the view of their significance in saving electricity.

The issue of dealing with an individual in a household and its methodological implications will be discussed specifically within the cultural context of the household. This will include the strategies employed in the household in communicating new routines (as reported by the household representative).

Discussion

This study, although quite extensive in terms of measurement and cost, did not include enough households to draw statistical inferences. Further critique against the research methodology and approach will be addressed and suggestions to improve future studies will be made. In this section, gaps will also be identified. Methods to improve the intervention (or an entirely different approach) will be made taking the systemic influences in each community into consideration. Suggestions for expansion, including a questionnaire survey amongst a representative group of people in South Africa testing the findings from this study, would be made.

THE USE OF EYE TRACKING IN LANDSCAPE PERCEPTION AND PREFERENCE RESEARCH

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Introduction

Overall research problem: The general aim of this PhD-research is to assess the possibilities and applications of eye tracking systems in landscape science

Specific research question:

1. What is the effect of different landscape stimuli (panoramic and standard photographs) on eye tracking studies?
2. What is the influence of the visual landscape composition on the observation pattern? (effect of horizontal and vertical view angle, skyline, depth, fore- and background, presence of land marks and visual disturbances)
3. Do the landscape characteristics and landscape types influence people's observation of those landscapes? (urban versus rural, cultural versus natural, open versus enclosed, homogeneous versus heterogeneous landscapes)
4. Do different groups of respondents observe landscapes differently?
5. Is the visual interpretation of a landscape in the field and on a screen similar?

Theoretical background: According to the European Landscape Convention (2000) landscape is an important public interest that influences individual and social well-being and constitutes a considerable part of the quality of life. Therefore, its management, planning and protection entail rights and responsibilities for everyone. Furthermore, the Convention states the need for public

participation in landscape management and design. From this point of view, it is useful to analyse people's perception of landscapes to include this knowledge in landscape planning.

Method

Context: Most landscape perception studies use landscape photographs combined with questionnaires. However, it is difficult to objectively measure how people observe landscapes. To resolve this issue, eye tracking is a valuable and innovative solution as it offers a tool to measure the speed and direction of eye movements and the position and duration of fixations while observing images. The first experiment assesses the effect of the horizontal and vertical view angles of landscape photographs on the perception of landscape and the influence of the degree of openness and heterogeneity of rural landscapes. The second experiment examines people's observation of built and natural environments for different groups of respondents (currently running).

Participants: 23 graduate geographers participated in the first experiment.

Instruments: iView X RED eye tracking system + camera

Procedure: After sampling the photographic material the participants are asked to observe 90 landscape photographs (first experiment), representing 18 different rural landscapes in Flanders and differing in degree of openness and heterogeneity. From each landscape, five photographs are shown: a panoramic photograph, a standard photograph, two detail photographs and a wide angle photograph.

Data analysis strategies: Statistical analysis (difference between groups)

Results

The results indicate that panoramic and detail photographs are observed differently from the other photograph types. On average, people make more but shorter fixations in panoramic photographs. In addition, this photograph type is observed in a more horizontal direction while detail photographs are scanned in a vertical sense. The degree of openness of a landscape also seems to exert an influence on the observation pattern. People make, for example, less but longer fixations in open landscapes. Finally, the degree of heterogeneity also clearly affects the speed, length and direction of eye movements. Homogeneous landscapes are characterised by longer and faster eye movements and are perceived in a more vertical sense. The results are visualised by two-coloured heat maps, indicating which parts of the landscape drew most attention.

The second experiment is currently running and should be finished by June 2012.

Discussion

The results of this study can be useful in transdisciplinary landscape planning and design as it offers insight into people's perception of different types of landscape, ranging from rural to urban environments. In addition, the possible difference in perception between experts and non-experts can be considered as valuable information to improve the communication between different groups of stakeholders.

INDOOR PLANTS AS RESTORATIVE AGENTS IN THE OFFICE

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Introduction

Overall research problem: Does the presence of plants and window view to nature in an office setting affect cognitive performance?

Specific research question: Does the perception of the environment, such as perceived *fascination*, experience of *being away* and/or perceived *pleasantness* work as mediating factors on cognitive performance?

Theoretical background: The study builds on environmental psychological theories on how the physical environment can affect people's well-being. The Russel and Mehrebian's (1974) theory on the impact of the environment on our affective state, which in turn has an effect on performance, makes up the platform for the study. The impact of natural environments in particular, have been extensively studied, and there are empirical support for psychological benefits from passive contact with nature (e.g. Parsons, 2007). Stress-recovery (Ulrich, 1993) and restoration of attention capacity (Attention Restoration Theory; Kaplan & Kaplan, 1989) have been claimed to be beneficial processes at work from viewing nature scenes. Bringing elements of nature into the built environment such as the office setting, may hence have an impact on people's well-being. The aim of the study is to further explore psychological benefits from contact with nature by looking into how perception of the environment with and without elements of nature affects cognitive performance.

Method

Context: An experimental study with a mixed design was utilized. The participants were randomly located to sit in a realistic office setting with or without window winter view to nature for a one-hour session. The setting was either decorated with 1) living foliage and flowering plants, 2) inanimate objects (lamps and bookshelves) or 3) had no extra decoration (six groups in total).

Participants: The participants (N = 86) were recruited from the student population at Norwegian University of Life Sciences.

Instruments: Reading Span Test (Daneman & Carpenter, 1980) was used as a measure of cognitive performance. The session was evaluated with a questionnaire on perception of *fascination* (Perceived Restorativeness Scale; Hartig, Korpela, Evans, & Garling, 1997) and questions based on the concept *being away* (ART), and the experience of pleasantness.

Procedure: The participants were given cognitively demanding tasks taxing attention capacity for one hour. The reading span test (lasting ten minutes) was run three times; immediately after entering the room, after fifteen minutes of proof reading and after a five minutes break. Afterwards the participants evaluated the session and the office environment through a questionnaire.

Data analysis strategies: Mediation analysis using multiple regression will be conducted with reference to the steps recommended by Baron and Kenny (1986). Data is analysed with SPSS version 19.

Results/Discussion

Data is under analysis and will be presented and discussed in relation to earlier empirical studies on nature environments and cognitive performance. The study may contribute with insights into whether and how nature elements indoors can have beneficial psychological effects, as well as further knowledge on the people-nature relationship. The results will be discussed within the restorative perspective with the purpose of finding solutions to alleviate people's everyday stress by designing favorable working environments.

DEFINING AN SOCIO-CULTURAL FRAMEWORK FOR MEASURING THE CONTRIBUTION OF NATURAL ELEMENTS TO THE SOCIAL QUALITY OF PUBLIC SPACE

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Introduction

Problem: People do not use of public space for social activity if design elements do not afforded enough meaning for them. In Theory of place, activity, physical setting and meaning mentioned as most component of place. (Relph, 1960, Cantre, 1977; Agnew). Empirical studies also shows link between these three but problem is that the process of this interaction have not discussed clearly in both. Designer focused on tangible property of space and relationship between design and activity (GehL, 1996; Whyte, 1980) while in Theory they looked at intangible property of spaces deeply, discussed about meaning of space for individual and experiences of space. Weak link between these three could be a consequence of dualism between object/subject, nature/urban, people/environment and subject / behaviour.

Background: Theory of affordance shaped based on ecological perception disagree with these dualism. In this view the person – environment relationship is immediate and based on practical activity rather than on being analytical. Affordances emerge only when different characteristics of individual, are matched with the features of environment (helft, 1989).Each object can afford four meaning for people: cognitive, affective, functional and social.

On the other hand Study of preference indicate natural element are design elements which because longstanding interaction with people afford different meaning for people and could draw people to space for different kind of activity. In spite of this ability most studies in urban space looked at their sensory affordance and less attention have paid to their role for enhancing social life in open space.

Key questions: Is it possible to identify the affordance of public spaces that lead to an increased level of social activity? Which, if any, of them are related to natural elements?

Methods:

This study divided to three steps:

Pilot study: for testing method one or two spaces choose, result of this stage may help to redefine questioner or methods for observation and collecting data.

First study:

This study tries to control people uses in space through the following steps

1. Choosing case study:
2. Identify number of public spaces in one area of a city
3. Analysing and categorizing spaces in terms of their physical accessibility to transit network, integration of space to the city as a whole. (Using space syntax), land use and density of their surrounding area (GIS data information).
4. Choose spaces in different situation and study each of them to find out similarity and differences in behavioural setting in space and peoples interaction with natural elements.

All chosen spaces have hard and soft space and investigated within it self.

Test the hypothesis:

- Site inventory: physical/ climetical and visual effect of natural elements and their influence on perception of space will be investigated by observation, photography and visual graphic analyse.
- behavioural mapping: Types of activity in spaces will be observed for one month. During weekdays and weekend in season that weather is appropriate for use of outdoor space. (Time-laps filming will be used for observation and its data transformed to GIS).
- Questionnaire: Divided to several part with appropriate question to find out function/affective, cognitive and social affordance of place. (with Randomize sampling)
- Data analyse and identify the most sociable spaces.

Second study: The most sociable space is chosen for depth study, focus group with different group of user will be done to find class specific or society common idea about space which might result to defining guide line for design sociable public space.

Result:

For now there is no clear result because testing these frameworks has not yet started. As a result of these steps I hope to complete my framework and find the indicators which influence the use of public spaces.

Discussion:

I hope as a result of my studies I can prove that use of natural elements will affect the social and physical aspects of public spaces as part of their cultural context.

INFLUENCE OF CAREGIVER RELATIONSHIPS IN ECLS-B 2-YEAR WAVE

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Introduction

Overall research problem: In this era of accountability in education, the influence of social-emotional health for young children's developmental progress has been examined in relation to child, familial, and teacher perspectives. The focus of the current research is to examine salient factors in the child-teacher relationship that facilitate optimal social-emotional health.

Specific research question: What caregiver factors are most important to consider, and what is the best methodological approach for analyses?

Theoretical background: Research findings in the areas of attachment, student-teacher relationships, and quality early care environments will be examined, to highlight caregiver factors that have been found to have an influence on child social-emotional health.

Method

Context: Together with other young researchers, I hope to exchange experiences, ideas and approaches to dealing with global concerns for the social-emotional health of young children.

Participants: Small groups of approximately four to six young researchers. Depending on the availability, there will be 8 to 10 small groups.

Instruments: Both audio and video recording equipment.

Procedure: Group dynamic techniques aimed at getting a lively discussion going may be used.

Data analysis strategies: Given the nature of research discussions, I expect to use qualitative data analysis software such as MaxQDA to process the protocols of the sessions.

Results

I hope to find common themes in the education of young children that are salient for improving the student-teacher relationship and the social-emotional health of the children, as well as research designs for this topic of study.

Discussion

As a result of interactions with international researchers, I hope to gain a broader perspective on issues related to social-emotional health on a global scale, as well as to learn additional research techniques to examine this issue.

STUDY OF VIEWS AND VISUAL RELATIONSHIPS OF SACRED MONUMENTS, SETTINGS AND PEOPLE

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Introduction

Overall research problem:

The unique significance and social value of heritage monuments across the world prompted many governments to work out strategies to protect their viewscapes. In India many such heritage monuments are surrounded by disturbing urban development in its immediate setting. In south Indian cities like Madurai, Trichy, Srirangam, Thanjavur, etc. the sacred monument dominates the city plan at the centre. These sacred monuments were constructed in such a position that they would dominate the surrounding area, providing a focal point for the town or city. The view of such sacred monuments has significance for various stakeholders like the local residents and tourist etc. Today there is a threat to this viewscape, the urban development which is happening in the immediate setting of these monuments is obscuring the visual dominance, importance or its aesthetic contribution once these monuments had to the townscape.

These sacred monuments have been built to be viewed and worshipped from far as well as near. The sacred monuments which once stood in isolation and dominated their surrounding are now in danger of being lost to views. They no longer have their visual relationships in the wider setting and many cases they are likely to lose in the immediate setting. This problem is caused mainly by the increase in the density and height of the surrounding development which is also not coherent with the historic structures. The existing legislation provides a buffer zone around the monuments as prohibited and regulated areas, but they do not guide the development around the monuments or protect the visual relationship. Several visual preference studies have been done in the areas of landscape planning, architecture, and urban design, But there is a lack of tools / guidelines to assess the views and visual relationships of sacred historic monument and the stakeholders perceptual, affective and cognitive responses to such environments. There is strong need to investigate the visual relationship of monuments and their settings and the associated public value they inherit.

Specific research question:

What is the existing public value of views of sacred monuments?

What type of environmental features is perceived to contribute to the view scape?

(Both positive and negative features)

What type of meanings do stakeholders associate with view of the sacred monuments?

Theoretical background:

Landscape visual preference, Place attachment research, Sense of Place, Place and Placelessness , will be the literature background for this study.

Method

Context: :This research will use a case study method by analyzing the physical aspects of viewscape and also the perceptions of view towards sacred monuments held by various stakeholders of two south Indian cities.

Participants: local residents, Pilgrims, and tourists

Instruments: Questionnaire survey, Expert group survey

Procedure: Mapping the important views, obtaining the perceptions through questionnaire, recording the environmental features within the view cone

Data analysis strategies: Statistical package SPSS will be used for analysis

Results

It is expected that the outcome of the study will explore the underlying structure in the perception pattern of stake holders which will help to determine the value of views which ones are significant and which views needs to be protected.

WHAT KIND OF NATURE MAKES THE DIFFERENCE AND WHAT IS THE DIFFERENCE THAT NATURE MAKES?

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Introduction

Different knowledge areas investigate the relationship between man and nature. Some explanations suggest that the preference for human nature is related to biological factors. Other approaches suggest that the preference for natural environments is related to sociocultural factors such as values and beliefs. For Hartig (1993), the biological and cultural factors act as different mechanisms in the adaptation and reflect our gradual transition of conditions of natural life for the conditions of life made by man (van den Berg, 1999). Two main theoretical frameworks, emphasize that the nature can present a therapeutic purpose with physical, mental and social benefits. According to *Stress Recovery Theory* (SRT) natural environments are restorative by their ability to moderate psychological and physiological arousal in stressed individuals. *Attention Restoration Theory* (ART), on the other hand, claims that nature's restorativeness lies in the fact that it is able to replenish an individual's capacity to direct attention.

Overall research problem: Most of the studies related to this framework are carried out in North America, Europe and in some Asian countries. Awareness of possible differences related to

culture, biodiversity and climate in Brazil, the present research aims to investigate the factors involved in the choices for different restorative environments and/or activities. A preliminary study about the home environment has indicated that there was concordance between dwellers when reporting the desire to connect with nature. However, the comparative study carried out by Gressler (2006) in the cities of Dourados-MS (Brazil) and Columbia-MO (USA) suggests differences in behavior in relation to natural environments, between the two groups sampled. For the respondents of Dourados, the backyard, with its porch, as well as the large open windows of the home, were the items which met with this request, even if limited between enclose high walls. For the owners consulted in Columbia, have grown up trees in their backyards, even being those located in public places such as trails or parks were the most valued option. In Dourados, neighboring vacant lots, as well as public parks, were seen as points of insecurity.

Specific research question: Based on the premise that human beings want to be in contact with nature and that environments and/or natural elements are restorative, this research seek for the factors that influence the choices related to different forms of contact with nature.

Theoretical background: Special emphasis is given to studies of Kaplan and Kaplan (1982, 1989) with the Attention Restoration Theory and studies of Ulrich (1983, 1984, 1986) with the Stress Recovery Theory.

Method

Context: Three cities with different characteristics of Brazil (Manaus, close to the Amazon forest; Aracajú, a beach city; and Brasília, located in the middle of Brazil)

Participants: Ten random assigned participants from two different age ranges (20 to 25 and 40 to 45) from three different cities of Brazil (n=60).

Instruments: Semi structured interview.

Procedure: Participants are invited to a thirty minutes tape recorded interview.

INTENTION TO BUY ORGANIC PRODUCTS WITH ADDITIONAL ETHICAL VALUES

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Introduction

Overall research problem: Organic farmers implementing more and more ethical activities in their production methods that go beyond the EU regulation for organic agriculture. But little is known how consumers respond to these ethical oriented activities.

Specific research question: What kind of OrganicPlus attributes are most preferred by consumers and which factors influence the intention to buy OrganicPlus products?

Theoretical background: Current debate on organic agriculture is dominated by the fact that organic becomes "conventionalized" in some extend, expressed e.g. by industrialization processes in production. Other organic farmers follow more and more an ethical approach, which is defined through the IFOAM principles. Therefore their activities go beyond the EU regulations for organic agriculture. In the following these activities are summarized under the term OrganicPlus. They are individually defined and are related to highest animal welfare, regional production, protection of biodiversity, preservation of cultural features, fair prices for farmer´s, protection of natural resources, social aspects of production or any social activity in the region. To understand consumers decision making process towards OrganicPlus products we applied the theory of planned behavior of Ajzen (1991).

Method

Participants: The participants (n = 197, 67% female, mean age = 34 years) were over 18 years old, live in Austria, do more than 1/3 of the household shopping and bought at least one organic product in the last month.

Instruments: Data were collected with an online-questionnaire. Questions concerned intention to buy OrganicPlus products and self reported buying behavior of OrganicPlus products, attitudes and social norms towards eight OrganicPlus attributes (those mentioned above), self-efficacy towards sustainability, shopping frequency of organic products, perceived effort buying OrganicPlus products, willingness to pay for OrganicPlus and socio demographics.

Procedure: The online questionnaire was distributed over e-mail per snow-ball-system and placed at several homepages during two weeks in June 2011.

Data analysis strategies: Data were analysed by quantitative methods, such as regression analysis, variance analysis and correlations.

Results

Participants have the highest intention to buy towards the attributes regional production (M = 4.94, SD = 1.04, range = 1 to 6), animal welfare (M = 4.84, SD = 1.08) and preservation of natural resources (M = 4.73, SD = 1.04) and show a high willingness to pay for those attributes. A regression analysis showed that 56% of the variance of the intention to buy OrganicPlus products can be explained by attitudes towards OrganicPlus, self-efficacy towards sustainability, social norms and the shopping frequency of organic products. Intentions to buy OrganicPlus products depend on age, but not on education, household income or gender.

Discussion and conclusions

Production of products with additional ethical values has a negative impact on competitiveness because of the increase of production costs. The results show that consumers particularly have high intentions to buy and a high willingness to pay towards the attributes regional production, animal welfare and preservation of natural resources. Communication of these values can be a promising strategy to strengthen market position and differentiate one´s products in the organic market. To examine how the values should be communicated further research is necessary.

COGNITIVE BENEFITS OF NATURAL ENVIRONMENTS

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Introduction

There is increasing evidence that natural environments have beneficial effects on people's mental and physical health, however debate continues as to the precise mechanisms underlying these effects. Explanation in the literature is dominated by two influential theories. Ulrich's (1983) 'psycho-evolutionary' framework posits that natural environments have properties that can support psychophysiological stress recovery, whereas Kaplan and Kaplan's (1989) Attention Restoration Theory (ART) is a cognitive framework which suggests natural environments have special properties that allow recovery from mental fatigue. What is not clear is whether these theories are independent.

Method

The research for my MSc simultaneously compared physiological, affective, and attentional reactions to a video of a natural or urban environment using a between-participants design. Seventy individuals (39 female; *M* = 24) participated. Baseline measures of heart rate, emotion, and attention (measured by cognitive task performance) were taken before participants completed a three-minute stressful anagram task. They then watched a large (2.3 X 1.4 metre) video projection of either a natural or urban environment for 10 minutes. Repeated measures of heart rate, mood (Feeling Scale & Felt Arousal Scale), and attention (Sustained Attention to Response Task – SART) were taken pre/post and during the video.

Results

Participants in the natural environment condition: (1) made significantly fewer errors on the cognitive task (SART) after the video compared to baseline performance. (2) Had significantly lower heart rates following the stress manipulation and compared to baseline. (3) Reported significantly more positive mood following the stressor than participants in the urban condition. In contrast, participants in the urban environment condition finished the study with significantly less positive mood than baseline. No significant correlations were found between any of the main dependent variable indicating no links between mood, physiology, and SART performance for the measures used

Discussion

This study supports the existing literature that natural environments are beneficial for psychological and physiological well-being and also found a negative influence of the urban environment video. As no significant correlations were found between any of the dependent variables this research adds to the evidence (e.g. Hartig et al, 2003) that Attention Restoration and Stress Recovery theories represent different processes underlying the beneficial effects of natural environments. I intend to extend the results of my MSc thesis through my PhD. I am specifically

interested in exploring the underlying reasons why natural environments facilitate increased attention, particularly as exampled by improved performance on a cognitive task.

TURBINES IN MY BACKYARD: SOCIAL ENVIRONMENTAL IMPLICATIONS OF WIND FARMS IN SOUTH AMERICA

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Introduction

Overall research problem: The implementation of wind farms is constantly growing mainly because of the situation of climate change and its role as a substitute to fossil fuel. In Latin America the wind farms are a novelty, and as they are being developed populations start coexisting with their construction.

Specific research question: How do wind farms interfere with the everyday life of the people living near to them and which is the interrelation between these people and these kinds of projects.

Theoretical background: In general, the wind farms have a positive social evaluation. Thus, in the places where wind farms are sitting, usually there is no easy acceptation (Devine-Wright, 2010; Wolsink, 2011). Controversy and oppositions happens because economic implications or interference in symbolic, identity or emotional aspects between population and area that the wind farm was being (Devine-Wright, 2005, Pol, *et al*., 2011, Schweizer-Ries, 2008). The fact that exist conflicts or other problems of acceptation, sing the importance that psychosocial aspects considerations involved on implementation that renewable energy projects, many times forgotten for environmental management. Almost all of wind farms acceptation literature is from developed countries. The only one study about this theme in South America that we are knowledge (Improta & Pinheiro, 2011) shows that even there are not any benefit for the habitants and any relation between them and wind farm, the project have a positive evaluation and there are not found sign opposition of this wind farm.

Method

Context:

The main objective is to map different South American realities in regard to the acceptance of wind farms in three countries: Brazil, Argentina and Uruguay; in three different phases: planning, construction and operation.

Participants: populations that live near the wind farms or in the area where the wind farms will be developed.

Instruments: The research is based on the *Social Impact Detection/Barcelona (DIS/BCN)* tool and in the concepts of place identity, social representations and lifestyles. Individual semi-structured interviews are made which are then taped and transcribed.

Procedure:

The inhabitants are individually interviewed. When necessary, to get closer to the reality of each population, the choice of the participants is done according to the composition of the existing social groups.

In the first phase, the area near the Cerro Chato Wind Farm (CCWF) is being studied. It is located in the south of Brazil and it is under the construction process. The 26 inhabitants interviewed were divided into four groups: 1. farmers that will have aerogenerators in their properties, 2. farmers that will not have wind turbines, 3. farms that did not want to have aerogenerators in their property, and 4. farmers employees who live in the properties interviewed. Subsequently, new interviews will be made to the same people when the wind farm is operating.

On the following months, the second phase of the field will be carried out with a population living near an operating wind farm in Argentina. In the third phase, a population located next to an unimplemented project in Uruguay will be studied.

Data analysis strategies: discourse analysis.

Results

At the moment the interviews of the population living near the CCWF are being transcribed. Accordingly, there are no conclusive results yet. On the symposium we will display the available data of this phase.

Discussion

Up to now there are no conclusive results for discussion based on the data that has been transcribed.

FROM SPEED OF LANDSCAPE IDENTIFICATION TO RESTORATION: THE RELATIONSHIP BETWEEN AN ADAPTED PERCEPTUAL SYSTEM AND MODERN DAY LANDSCAPE EXPERIENCE

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Introduction

Overall research problem: The preference matrix (Kaplan & Kaplan, 1989) and the psycho-evolutionary model (Ulrich, 1983), both key theories in the field of landscape aesthetics, have in common the prediction that the initial aesthetic appraisal of a landscape is rapid and subconscious. Furthermore, in both theories it is presumed that such rapid affective responding occurs in response to particular spatial landscape information and was adaptive for our ancestors.

Direct evidence for rapid affective responding to natural landscapes as opposed to more modern built landscapes with fundamentally different spatial information, is however lacking.

Specific research question: Is the perceptual system adapted to process spatial information from natural landscapes and to what extent could such sensitivity account for experienced affect and/or restoration?

Theoretical background: Research in the field of visual cognition is consistent with some of the claims put forward by the key theories in the field of scene aesthetics. It has been found that humans perceive the "gist" of a landscape, i.e. its spatial information, before awareness of more detailed scene information kicks in (Greene & Oliva, 2009). As the human perceptual system evolved during habitation of predominantly natural environments it is likely that it is adapted to process the spatial information characteristic of the natural world with maximum efficiency.

Method

Context: Three experiments have been conducted to investigate whether the speed of processing spatial scene information is different between natural and built landscapes.

Participants: Participants were students from the University of Aberdeen (Exp1: N = 40, Exp 2: N = 24, Exp. 3: N =40).

Instruments: A keypad to make responses

Procedure: Participants viewed a high number (~1000) briefly flashed images on a computer screen for either 13,27,40,53 or 67 ms. The task was to identify the image as either natural or built by making a button response.

Data analysis strategies: The correct hits of image targets and correct rejections of image distracters were converted into an accuracy percentage for each participant, separately for each exposure time and scene category. Accuracy and response times were then compared across scene categories for each of the exposure times using paired Wilcoxon tests.

Results

Across all three studies it was found that natural scene identification was more accurate than built scene identification at exposures of 13 ms. At longer exposure times identification accuracy between both categories was comparable. However, when scenes contained an object from the opposing scene category, built scene identification was superior at exposure times above 40 ms. Surprisingly, participants tended to be faster at making correct identifications of built scenes, regardless of exposure time or scene consistency.

Discussion

The results are in line with the hypothesis that spatial information typical of the natural environment is processed more effectively than that characteristic of built settings. The fact that natural landscapes with built artefacts were identified with relatively low accuracy at longer exposure times seems suggestive of stronger attentional capture by built scene information.

Attentional capture might also account for the high speed of built scene identification. Future research is needed to investigate how the present results can be explained and to assess the extent to which the speed and accuracy of scene identification can account for the effects of nature on affect and restoration. If such links are established, it would be relevant to initiate research to the kind of spatial information that rapid landscape identification performance relies on.

RESULTS OF THE RESEARCHES ON THE SOCIAL SPACE IN HOSPITALS, OBTAINED IN THE REHABILITATION CHILDREN HOSPITAL IN RADZISZÓW IN POLAND

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Introduction

Overall research problem:

Treatment facilities such as children's hospitals should be balanced between strict medicine treatment and the healing space, which has a positive influence on the patient's mind and body. Attention focusing so far on the medical diagnosis needs to be expanded to encompass sociological, psychological, aesthetical factors.

Specific research question:

What are the spatial preferences of the smallest users of the hospital? What are the shortcomings in the social space? In what direction design of the children's hospitals social space should follow?

Theoretical background:

In the awareness of the patients and the hospitals medical staff the hospitals cease to be treated like a "healing machine". However in the hospitals buildings there is no balance between medicine and the social space which perform a healing environment function, impacting on humans health. The researches on this subject in Poland in the area of the place of the residence of the children are implement very rearly.The attention is focused on the diagnosis and the functional object.

Method

Context:

The paper presents the research's results on the social space in hospitals, obtained in the Rehabilitation Children Hospital in Radziszów in Poland. The social space in the present research was defined as a readily available place for patients, their parents or guardians and staff in the time when no treatment procedures are taking place.

Participants:

In the project took part the third year students from the Faculty of Architecture at the Silesian University of Technology in Gliwice.

Instruments:

During this research there were used several research tools appropriate for each target group:art classes; drawing classes; projects; inquiry; interviews; notes; photographic analysis etc.

Procedure:

In the research there were used following methods:

- workshop with children 1 – 12 years;
- workshop with teenagers under 18 years;
- interviews with patient's parents and teachers;
- inquiries with doctors, nurses and medical staff.

Data analysis strategies:

Results

The study shows children's likes, needs and dreams. Realization of these impotant things can help to cure small patients much faster than without it.

During the study in the Rehabilitation Children Hospital in Radziszów the researches indicated lack of space designed for leisure, recreation, playing and learning. There also claimed needs for change the rooms arrangement. These arrangements will be a chance for use these rooms by children, parents and hospital staff in easy and comfortable way.

The undertaken analysis has shown that social spaces are required. Studies showed how the variety of social spaces could satisfy users' needs and indicated the time when the patients could use it.

The conducted analysis and observations of the social spaces during different times showed the necessity and the multifunctionality of these spaces. The analysis also allowed to specify the time within the patients and other users are staying in these spaces.

Discussion

The obtained facts inspire to a deeper reflection on the creation of the places which are comfortable for users of the hospital in terms of the size and mobility of these spaces.

CAN THE MORPHOLOGY OF SCHOOLS/LEARNING/SOCIAL SPACES BE EXTRAPOLATED FROM THEORIES OF CHILD DEVELOPMENT AND RELATED RESEARCH FROM EDUCATIONALISTS/ SOCIAL SCIENCES?

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Introduction

Overall research problem:

Can theories from psychology, education and social science, which lead to a greater understanding of human needs at an individual level, contribute to the design of schools and learning spaces that will be more enriching for children, particularly at an emotional level?

Specific research question: Can the morphology of schools/learning/social spaces be extrapolated from theories of child development, education and the social sciences?

Theoretical background: There are theories and research available on the "human" needs of children and adolescents, but how do I link this to the built environment and the bricks and mortar of a design? How can a handbook be developed to recommend clearly to architects and designers how these ideas can be applied to their designs?

Method

Context: Together with other researchers, we will exchange experiences, ideas and approaches to dealing with the overall research problem mentioned above and apply these ideas using marked up plans and models.

Participants: Small groups of approximately four to six researchers. Depending on the availability, there will be 8 to 10 small groups. *Instruments*: Both audio and video recording equipment, cameras, flip charts, pens, model making, analysis of site plans and a brief for the design of a school/learning space

Procedure: Participants will have circulated their extended research proposal before the workshop. Therefore, not much time will have to be spent with introductions and presentations. Group dynamic techniques aimed at getting a lively discussion going may be used. We will look at the design of a particular school environment or learning space and how a more human centred approach could improve this.

Data analysis strategies: I will photograph the models, and type up information from the flipcharts. We will have a peer review at the end of the session. After networking at the conference, I will invite feedback from attendees/speakers with experience and interest in this area.

Results

I hope to expand my network of people who are interested and studying, researching or working in this field. I hope to find out new ideas, and new approaches to research and how outcomes can be applied to design in the built environment.

Discussion

I will use the results of the workshop to help towards developing a theory or a set of guidelines for human centred design for architects, designers and clients and contractors.

"EVALUATION OF URBAN INDIAN SCHOOLS AS LEARNING ENVIRONS USING POST OCCUPANCY EVALUATION FOR BUILDING PERFORMANCE"

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Introduction

Overall research problem: School environs, wherein the young imbibe basic education, have an additional responsibility of nurturing humanistic & positivistic attitudes in the growing minds. Given the physical & spatial circumstances of majority of Indian schools, much reflection is deemed essential. This immensely potent study is lacking in the Indian context.

Specific research question: To evaluate through POE, building performance of urban Indian schools WRT environmental quality & conduciveness to learning aspects & identify current situation from point of view of major users; the students.

Theoretical background: Research proves the strong link between built environment & behaviour. School environs have to be sensitive to the needs of children; yet most decisions are arrived at without serious or due consideration to the needs of children making them 'marginalized' users. POE can help identify the technical, functional & behavioural issues of learning environments.

Method

Context: Study focus on the urban schools of Nagpur city, affiliated to the Central Board of Secondary Education & following standards laid down by Government of India.

Participants: The study encompasses 25 schools. Sample size is approximately 135 students per school. Total participants are 3375 students belonging to IX/X standards (14-17 years)

Instruments: Following data collection tools are in use:

1. Questionnaire for students
2. Creative sketch task sheet for students
3. Environmental perception task for teachers
4. Walk thru' evaluation by researcher
5. Architectural design analysis thru' architect's drawings

6. Photo documentation of school environs
7. Occupancy & relevant data from schools

Procedure: Encompasses: 1-to investigate the level of satisfaction of users of the school WRT the built environment of the school 2-to correlate dis-satisfactory/ satisfactory aspects of school with their spatial pattern & architectural development 3-to identify aspects not featured in the standard codes that need emphasis during the design process 4-to identify the lacunae in the educational frameworks

Data analysis strategies: The questionnaires would yield statistical data for comparative analysis across schools. Architectural design critique, walk through evaluation & creative tasks shall add perceptional depth to POE

Results: At the current stage, there is speculation. A concrete direction is yet to emerge

Discussion: 1-In a populated nation like India, influence of school environs affects a vast number. 2-With evidence based design gaining ground, inclusion of the student's needs as a major user of the school environs needs serious study & intervention. Can a user encompassing design process be formulated? 3-Majority of schools under study are designed by registered architects, raising a question regarding the response of the profession to vital issues & their application in the actual design process. 4-Design pedagogy being followed in the schools of architecture also needs investigation. Incorporation of ground research into the studio processes is the need of the hour. 5-The gap between the vision, mission & goal set up by the educational frameworks & the ground realities needs to be bridged by proposal of recommendations for the design of a conducive environment for an urban Indian school

AIR POLLUTION IN THE METROPOLITAN AREA OF MEXICO CITY (MAMC): A PSYCHOLOGICAL MODEL

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Introduction

Overall research problem: The MAMC is a mega city that has grown in an accelerated way; this has had an impact in the air quality. There have been efforts to implement environmental laws and to establish sanctions but only arising from the technical studies of the natural science. However aspects like perception, attribution, subjective norm and intentional behavior that should be consider in the study of air pollution, since human behavior is one of the principal causes.

Specific research question: How to prepare a model with some psychological dimensions associated with air pollution? I hope that I receive some new ideas to analyze my results and use them in an information campaign.

Theoretical background: Variables like perception and behavioral intention have been associated with the study of air pollution. To enrich the study we have considered than the subjective norm

and model of attribution, as psychological factors, are also important to predict behavior. The social and cultural context should be taken into account in the study of environmental problems.

Method

Context: Once we have knowledge of the particular characteristics and relation of the psychological variables for the inhabitants of MAMC, a more specific and effective information campaign could be designed.

Participants: Adults inhabitants of MAMC with ages between 25 and 65 years old and a group of adolescents with ages between 15 and 18 years old.

Instruments: A psychometrically validated instrument was generated for the specific population. It has several scales for perception, attribution model, subjective norm and behavioral intention

Procedure: The survey was applied to inhabitants of MAMC who were willing to participate in the study. More than 1000 participants were polled.

Data analysis strategies: For the psychometrical validation and results analysis, several parametric statistical analysis were applied including t-test for independent samples, one-way ANOVA, Pearson´s correlations and Analyses of Principal Component (APC).

Results

The results show that the perception, attributional model, subjective norm and behavioral intention have a relation. Also, the results show differences associated with age and the area of the MAMC where they live. The attributional model is different for each behavior (use of car, energy use, etc).

Discussion

Once we know if there is a specific psychological model for air pollution in the inhabitants of the MAMC and the difference within the subgroups of the population, we can propose an information campaign whose characteristics respond to the needs of the population. Thereby, this campaign will have contextual relevance and could be more effective.

THE DEVELOPMENT OF NEW DESIGN GUIDELINES FOR SOCIALLY BENEFICIAL URBAN PUBLIC SQUARES IN A CHINESE METROPOLIS - THE CASE OF GUANGZHOU

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Introduction

In contemporary China, a phenomenon exists relating to the use of urban public space that has emerged since the end of the 20th Century: many existing and newly established squares in China are not used by people as frequently as designers or developers had expected. A number of them

seem to be used by citizens more as corridors rather than as a positive public place to enjoy their urban public social life. This problem indicates that although the 'Public Square' in China has been recognized and designed as an important part of urban open public space, it appears to neither encourage nor support a diversity of urban social life, especially when compared to the social value of precedents found in western countries. Therefore the key objectives of this research are, to seek the causes of these problems and to find a way of handling design to enhance the social value of urban public squares in modern China.

Specific research question:

- What is the current situation as regards to the human use of urban public open space in Guangzhou in modern times?
- What desires are emerging from people in terms of their use of public open space, especially urban squares in the 21st Century, and how can these desires be determined?
- Once these desires are determined, how can they be translated into a conceptual framwork for urban squares, which could then be applied in urban design practice?

Method

The methodology framework is made up of four phases to achieve the research objectives.

The first and second phases of the methodology are literature reviews. The objectives of the first phase are to: firstly gain an understanding of the social value issues associated with urban public space and to recognize the socially beneficial principles of urban public space in western societies; secondly indentify the evolving pattern of use of urban squares in China; and finally to find a way to further develop the definition and classification of urban squares in contemporary China. The second phase is a literature review in carrying out successful fieldwork which provides the foundation for the third phase of work.

The third phase is to undertake the fieldwork. This includes conducting questionnaires and field observations of users in selected urban squares, and then conducting semi-structured interviews with a range of the users identified from the questionnaires and observations. Qualitative methods will then be adopted for data analysis to obtain current usage patterns and people's desires in terms of their use of public squares in modern China.

The forth phase of the work is to determine the desires obtained from the three previous phases. Furthermore, this will be used as a foundation to set up a conceptual framework for socially beneficial urban public squares.

Results

The research is currently in phase two and the field work to collect empirical data will be carried out by April 2012. The data will be collected through fieldwork including; questionaires, obversations and semi-structured interviews. Qualitative data analysis methods such as behaviour GIS mapping and MAXQDA software will be used for data analysis in order to set a conceptual framework for socially responsive urban squares.

Discussion

This research will produce a valuable conceptual framework, which will include conceptual models for establishing 'socially benifical urban squares' in the Chinese metropolis-Guangzhou. This will identify a way to increase the social value of urban open public space through appropriate design in morden China. This work will be not only a valuable contribution to the theoretical structure of Chinese urban public realm but also a positive and applicable reference to be used by practitioners in practical projects.

THE INTERACTION BETWEEN THE PHYSICAL AND SOCIAL ENVIRONMENT IN SUPPORTED HOUSING FOR PEOPLE WITH SEVERE MENTAL ILLNESS (SMI)

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Introduction

Overall research problem: This study is part of a larger research project on supported housing for people with SMI. It is widely acknowledge that the physical environment influences people's health (Evans, 2003). Moreover findings from the psychiatric literature suggest that homeliness in the social environment, also defined as social climate, represents the most important single factor in psychiatric treatments that positively affect users' well-being (Brunt & Hansson, 2002). Nevertheless there is a paucity of knowledge regarding the impact of physical and social environmental aspects on people with SMI. Previous results, from this project, showed that there are environmental quality differences between supported housing facilities. The aim of the following study is to assess to what extent these physical environmental quality differences influence the users' perception of the social environment. Thus we seek to discover if variations in terms of social relationships could be explained by physical environmental qualities.

Specific research question: Are there any differences between staff and residents' perception of the social environment? To what extent is the users' perception of the social environment predicted by the quality of the physical environment? Physical environmental qualities that support social interaction such as; furniture arrangement, are expected to be predictors of social environmental perception.

Theoretical background: The study is based upon the Human Environment Interaction model (Küller, 1991), which describes how people get affected by the transaction with the physical and social environment. The social climate concept, which refers to the atmosphere of the place, has also been integrated in the theoretical background.

Method

Context: Supported housing facilities for people with SMI, located in the southern part of Sweden, have been investigated. Their assessment has been made at three units of environmental analysis; outdoor, common indoor and private environment.

Participants: (N=20) supported housing facilities have been assessed by residents (N=72), staff (N=117), environmental psychologists (N=5) and supported housing experts (N=3).

Instruments: The study uses a multi-method approach. The physical environment has been assessed with the following instruments; expert check-list (Johansson & Brunt, submitted), semantic environmental description (Küller, 1991), post occupancy evaluation scale (Johansson & Brunt, submitted) and walk-through evaluation (de Laval, 1998). The social environment has been assessed with the Community Oriented Program Environmental Scale (COPES, Moos, 1972).

Procedure: Staff and residents, responded to a questionnaire. The environmental psychologists and supported housing experts' assessments were made on site.

Data analysis strategies: T-test statistics have been used to compare staff and residents' social environmental perception. Regression analysis will be use to assess the extent to which the physical environment predicts the social environment of supported housing facilities.

Results

Differences between staff and residents social climate perceptions have been found. Staff expressed a higher social climate index than residents did. This result will be integrated with the analysis of the interaction between physical environmental qualities and the perception of the social environment.

Discussion

Implication of the findings for users' well-being and for further investigations will be discussed.

EXPLORING THE RELATIONS BETWEEN FEAR OF CRIME AND VEGETATION IN URBAN PARKS

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Introduction

Overall research problem: Fear of crime is an emotional response to crime or symbols that a person associates with crime. Fear of crime is also regarded as a bigger problem than the crime itself. People who are afraid of being victimised in fact often change their habits in terms of tending to stay at home, avoiding dangerous activities (e.g. walking down some streets) or rather not travelling on public transportation. Natural environments in urban settings are of particular importance, as these are among the most frequently used natural settings. In relation to this, crime is often cited as a reason to avoid densely wooded areas. Even in more managed natural environments such as country parks, parks and managed woodland, sources of natural and social danger may be present. It is often not so much fear of physical danger such as darkness or supernatural sprits, but rather social dangers such as those for rapist and muggers that dominate. The threat of being attacked by a stranger is still a prominent threat in natural environments particularly amongst women and the elderly.

Specific research question: How and what type of vegetation structures evoke fear of crime among park users and to determine how socio-demographic (e.g. age, gender, income and ethnicity) affect the level of fear.

Theoretical background: Environments which offer prospect (open view) and refuge (protection) are preferred by humans as from the human evolutionary point of view such environments offers a clear view, to react or to defend if exposed to any forms of threats and at the same time provide shelter from being harmed. This has been explained further in Prospect and Refuge Theory.

Method

Context: The first stage of the study includes literature review on the relationship between fear of crime with vegetation. Critical literature review will be conducted on theories such as Defensible Space Theory and Prospect and Refuge Theory. This would further proceeds with communication with the local authorities and academicians on the issue. Through communication the researcher hopes to gather some comments or issues related on landscape treatment through environmental design in Malaysia. *Participants*: Park users and focus group approach with the experts.

Instruments: Questionnaires with photographs of different level of vegetation in urban parks.

Procedure: Data will be gathered through interviews, using scaled and open-ended questionnaires. The survey comprises interviews with park users and focus group approach with the experts (academicians, government officers, criminologists and policemen, sociologists, environmental local authorities, psychologists and landscape architects) based on a semi-structured questionnaire.

Data analysis strategies: Data will be entered cleaned and analysed using SPSS statistical software.

Results

I do hope to find different fear level among urban park users based on different in levels of prospect-refuge in urban parks of Kuala Lumpur, Malaysia. In addition I hope to construct a “fear index” that provides a prediction for perceived safety levels within the selected urban parks in Kuala Lumpur city and differences in the socio-demographic factors does affect the level of fear.

Discussion

Based on analysis of the findings a guideline on landscape treatment will be developed for urban parks in Malaysia in order to reduce the level of fear. This guideline will fulfil the last objective. This guideline would also be an output from this study.

WORKSPACE DESIGN IN INDIAN CONTEXT ON OCCUPANT'S BEHAVIOR, TO ENHANCE EFFICIENCY AND COMFORT

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Introduction

Overall research problem: Built environment / enclosed spaces and its impact on human behaviour, focus on the category 'workspace design'.

Specific research question: To inquire how people experience environmental psychology of the workspace as the determinants are efficiency and comfort.

Theoretical background: As suggested by Jon Lang in his substantive theory that different patterns of built environment afford different behaviour settings. One set is concerned with specific actions, body posture and movement pattern of the individual and one is concerned with the psychological needs involved such as privacy, personal space and interaction. The study establishes a correlation between workspace design and its positive and negative impact on the user.

Method

Context: Post occupancy evaluation study was done of a selected workspace of Nagpur, 2nd capital of state of Maharashtra, India. The purpose of the study was to find the relationship between physiological, psychological and sociological factors of employees and the workspace design, leading to efficiency and comfort.

Participants: Personalized approach for a group of 10 to 15 occupants in the workspace.

Instruments: LM-8000; Anemometer for Ambient temperature, air velocity relative humidity and lux levels. IR Non contact Thermometer was used for surface temperatures. Anthropometrics for spatial planning.

Procedure: The data collection was done through survey, categorized as Quantitative, Qualitative, Observations and Interviews of the employees. In quantitative (objective) data, actual physical measurements of indoor and outdoor climatic conditions were taken. Qualitative aspects related to the parameters were collected through five pointer questionnaire as how the occupants perceive the space.

Data analysis strategies: Quantitative and qualitative data analysis using Excel format.

Results

An individualized approach was adopted to understand the correlation between physical measurements of the space occupied by users and behavioral parameters on the basis of

questionnaire answered by the occupants about how they perceived various physical and behavioral parameters in their respective occupied spaces.

Discussion

The paper has investigated the physical and behavioral parameters through a five point questionnaire, supported by actual physical measurements which have shown considerable correlation in the ratings given by the occupants. It has dealt a quantitative (objective) and qualitative (subjective) analysis at a personal level systematically and efficiently. The linking of behavioral parameters as satisfaction, motivation, sense of belonging and functional parameters as efficiency and comfort through ambient environmental conditions.

HOUSING PRODUCTION, GENDER RELATIONS AND LIVELIHOOD STRATEGIES: THE INFORMAL PERIURBANIZATION OF DAKAR, SENEGAL

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Introduction

Overall research problem: Recent literature on African cities calls for a better understanding of how dwellers develop their own building strategies and contribute to creating particular built forms in order to understand and address urban complexity. These practices are the result of a strong trend toward informalization, which is observable in the growth of informal settlements and in the informalization of formal settlements and urban regulations. This research focuses specifically on exurban Dakar, which is undergoing a transformation that impacts both the built environment and social relationships. Literature looking at changing family structure through urbanization identifies a significant increase of women-headed households, which now account for one fourth of all households in the region.

Specific research question: How and an in what ways do female heads of household and their families envision and adapt their residential environment and how does the residential environment become a means to generate social and economic opportunities?

Theoretical background: This project seeks to understand the complex ways in which economic and political processes as well as spatial, architectural and socio-cultural aspects of housing are related and tied to housing practices. It draws from three approaches: social logic of space, feminist political ecology (gender rights and responsibilities to procure and manage resources for the household), and the capacity of social networks to provide a flexible framework for informal housing.

Method

Context: The methodological approach stems from a grounded conception of urban development, described as both a product of global processes and locally situated social practices. It comprises

two scales of observation: the study of the actors and processes at work in housing production in Dakar and the use of case studies, mobilizing families and individuals, on the neighborhood scale.

Participants: The project combines interviews with key actors involved in the production of housing with surveys of the residences of several women-headed households and interviews conducted with three or four household members.

Instruments: Audio recording of interviews and architectural survey equipment.

Procedure: At the macro level, the project will refer to existing cartographic data supplemented by interviews with key actors on their role in and understanding of legal norms and effective development processes and municipal practices. At the micro level, the project will combine in-depth interviews to elicit life and residential trajectories with architectural surveys in order to investigate the imaginary and active practices of women heads of household and their families in the acquisition, construction and transformation of their houses.

Data analysis strategies: This project will use qualitative data analysis software and typo-morphological methods used in analyzing the built environment (analysis of plans and photos showing historical progression).

Results

This project seeks to attain a better understanding of how local housing practices underpin the transformation of social relations and the development of exurban Dakar, and identify the different realities of women-headed households and modes of housing production.

Discussion

As the analysis of both the built environment and the social-cultural values instilled in them is often absent in studies of informal settlements, the workshop will be an opportunity to discuss possible strategies for combining the analysis of interviews with architectural surveys.

LUDIC AND ARTISTIC URBAN INTERVENTIONS AS FACILITATORS FOR SOCIABILITY AMONGST STRANGERS

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Introduction

Overall research problem: In street art it is common to see a challenge to the validity of consensual reality, consumer culture and private property (Seno, 2010), the transgression of psychological spaces (Nguyen & Mackenzie, 2010) and an incentive for the general public to reclaim the streets, questioning values and restoring identity status to the individual.

In order to study the social role of street art and interventions and their possible application as instruments to foster civility and sociability this research intends to center on urban interventions

that have a ludic and artistic quality, not only traditional graffiti but others that use different techniques and materials such as installations, yarn bombing, posters, stickers, LED art, art with explosives and videos to name a few.

Specific research question: Do street art and ludic spatial urban interventions promote sociability amongst strangers?

Theoretical background: At this point I'm drawing from a lot of scattered literature: the concept of triangulation by Whyte (1980) whereby an external stimulus provokes strangers to interact; the *esthetique relationelle* by Bourriaud (1998) which brings to debate the interactive, experimental and contesting possibilities in art and the public; the idea of emotional design by Donald Norman (2004) which accentuates that objects communicate in at least three levels of design: visceral, behavioral and reflexive; the idea of *nudge* by Thaler and Sunstein (2008) advocating a thoughtful use of environmental dispositions to foster desired behaviours and ultimately the whole concept behind positive psychology in the sense that values, virtues, skills and accomplishments that enable communities to thrive can be the focus of research.

Method

Context: I'm considering the feasibility of multiple data collection sites, but for the moment data collection is constrained to urban intervention sites in the city of Brasília.

Participants: all the passer-bys of a chosen street intervention during a set amount of time, small number of key informants.

Instruments: Both audio and video recording equipment, diaries and possibly questionnaires.

Procedure: I'm considering an adaptation of Rapid Ethnographic Assessment Procedures in search of adopting a multi-method approach centered on direct observation, mapping, key informant interviews and possibly surveys. At this point I'm still considering a quasi-experimental design as well, where I would observe the possible reactions to new street art and interventions done with the collaboration of local artists. The feasibility of this approach is in question.

Data analysis strategies: Really depends on the methods adopted, which are not defined yet.

Results

This is a fairly explorative research and there are no clear expectations about the results. However I hope to find indications that regular individuals 1) do notice street art and interventions and that 2) they portray an understandable shared message. It would be a definite plus should these interventions 3) prove to be useful as a means to promote civility and sociability amongst strangers.

Discussion

I hope to be able to shed some light on a part of the Brazilian street art scene as a possibility of reclaiming public space by the general public and in doing so to call this theme to debate and influence the way that these art forms are perceived, including the possibility of using them as a

means of fostering sociability and civility behaviors, being an alternative to and differentiating themselves from traditional means such as signs, rules, regulations and fines.

DISENTANGLING COMPLEX RELATIONSHIPS: THE ROLE OF TIME SPENT IN NATURE

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Introduction

Overall research problem: The construct connectedness with nature is seen in close relationship with well-being and subjective health. Research indicates that people with a high level of connectedness with nature spent more time in nature than people low on connectedness with nature. However, the detailed structure of the relationship between connectedness with nature and well-being remains unclear.

Specific research question: Is time in nature an intervening variable in the relationship between connectedness with nature and well-being?

Theoretical background: The beneficial effects of nature on well-being and health are well documented. However, spending time in nature is a pre-condition for experiencing those restorative effects.

Method

Participants: 547 participants took part in 5 consecutive studies.

Instruments: We administered pencil and paper questionnaires consisting of the connectedness to nature scale, a connectedness with nature-single item, several measures on well-being (MDBF, SWLS, WHO QOL-BREF, TPI, SF 36) and several operationalizations of time spent in nature.

Procedure: In each of the five studies, different well-being measures were administered in combination with the same two connectedness with nature-measures and time spent in nature-measures.

Data analysis strategies: Given the hypothesis, that time spent in nature is an intervening variable between connectedness with nature and well-being, path analyses are calculated.

Results

The relationship between connectedness with nature and well-being as well as the relationship between connectedness with nature and time spent in nature were found to be statistically significant (correlational analyses). Path analyses are currently ongoing, findings will be presented at the workshop.

Discussion

In line with prior research, the links between connectedness with nature and well-being as well as time spent in nature were replicated. Further results will be unravel the complex relationships between the constructs involved and will be discussed at the workshop. Limitations to the study lie in the study design as no experimental approach, nut only questionnaire studies were performed. Moreover, the study sample was of high education and consisted mainly of residents of the urban region of Vienna.

LIGHT EFFECTS ON MENTAL WELLBEING AND PERFORMANCE DURING OFFICE HOURS

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Introduction

Chronobiology research has shown that light is important for our mental wellbeing, health and performance. These studies, however, were mainly performed during nighttime of under unnatural conditions (e.g. sleep and/or light deprivation). In contrast, current research assesses the effects of light on mental wellbeing and performance under usual office work conditions. More specifically, we investigate whether exposure to light can improve people's feelings of alertness, vitality and mood, restore their attention and replenish their resources, and enhance cognitive performance during daytime.

Study 1

In the first experiment, the effect of the amount of white light, i.e. illuminance, on alertness, vitality and performance was assessed. In a mixed-group design (N=32), we explored effects of two illuminance levels (200 vs. 1000 lux at eye level) for morning versus afternoon exposure. On two to four separate visits to the lab, participants first experienced baseline settings (200 lux at work plane) for 30 minutes. They were then exposed to the experimental illuminance levels with a wall-mounted luminaire for one hour. Self-report, performance tasks and physiological measures (EEG, heart rate and skin conductance) were employed to assess alertness, vitality, performance and arousal.

Results on both subjective measures and task performance showed effects of illuminance on alertness, vitality and attention. Participants felt less sleepy and more energetic in the high versus the low lighting condition, and had shorter reaction times on a sustained attention task. Effects of illuminance on the subjective measures of alertness and vitality were not dependent on time of day or duration of exposure. Performance effects, on the other hand, were most pronounced in the morning sessions and after prolonged exposure.

Study 2

The second study was designed to get insights in the underlying mechanisms of the alerting and vitalizing effect of a higher light level during daytime as we don't know whether the effect is due to biological processes (photoreceptors activating the central nervous system) or via psychological processess (e.g. people believe that they will perform better in more intense light).

A within-subjects design was applied and 38 students participated in this second lab study. Light exposure prior to a high light level (i.e. 1000 lux at eye level) was manipulated to explore whether the increase in illuminance level or exposure to high illuminance levels can explain the alerting effect of light during daytime. On two separate visits to the lab, participants first experienced baseline settings in which they were exposed to 200 lux or 1000 lux at eye level for 15 minutes. Subsequently, the lighting either increased or did not change, respectively, and participants were exposure to 1000 lux for 30 minutes. Subjective reports and objective performance measures were employed to assess alertness and vitality. In addition, heart rate and skin conductance were measured continuously during the experiment.

Data collection of the second study is currently in progress. The results will be presented at the conference.

Discussion

The results of the first study demonstrate that even under normal conditions, i.e. non sleep or light deprived conditions, more intense light can improve not only employees' subjective feelings of alertness and vitality, but also objectively measured cognitive performance.

Results of the second study will provide insights into whether the effects of light during daytime are more biological or more psychological in nature.

ADAPTING TO CLIMATE CHANGE HOW AND WHY? THE LOCAL FRAMING OF CLIMATE ADAPTATION IN GERMAN CITIES

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Introduction

Overall research problem: Urban areas are highly affected by the impacts of climate change given their concentrations of population and infrastructure. Although national and provincial governments have recently spent a lot of effort on the development of top-down adaptation strategies and (mainly technical) measurements in cities, adaptation has gained only little attention in urban policy and development. This is due to specific challenges for local decision makers that arise from different sensibilities, adaptive capacities and therefore vulnerabilities of cities regarding climate impacts.

Specific research question: My PhD thesis addresses these challenges by exploring the framings of climate adaptation in cities. It focuses on the question how and why cities adapt.

Theoretical background: Against the theoretical background of knowledge sociology and theory of action it analyses how local decision makers interpret climate adaptation, how they deal with trade-offs between adaptation and other goals (e.g. climate protection, demographic change), what strategies for action they develop and how they deal with uncertain knowledge.

Method

Context: The research is based on a review of action plans of cities as well as qualitative expert interviews with decision makers who work in urban policy development and administration.

Participants: Four German cities will serve as case studies: Dresden, Bonn, Essen and Berlin. These cities differ concerning the availability of knowledge (participation in research program), the sensitivity to extreme events (e.g. floods) and the experiences with other integrative strategy processes (e.g. climate protection, Local Agenda 21).

Instruments: Audio recording equipment.

Procedure: I will conduct the interviews by applying a problem-centered approach. This method is based on grounded theory but involves the theoretical knowledge of the interviewer which serves as a heuristic framework (Witzel 2000).

Data analysis strategies: I will analyse the interviews by employing the qualitative data analysis software MaxQDA. I will generate theoretical knowledge with the help of "sensitizing concepts" (Blumer 1954).

Results

With this work I want to improve understandings about how decision makers and planners deal with uncertain and complex, so called "wicked" problems. Furthermore, the aim of the work is to develop a framework for urban adaptive capacity which considers social aspects of adaptation. Within this framework, adaptation will be seen as a product of interactions between physical (changes in weather, urban infrastructure) and social phenomena (interpretation and behavior of decision makers).

Discussion

I will discuss the results against the background of social resilience and robustness approaches (amongst others Wildavsky 1988; Lorenz 2010; Gross 2010).

REBOUND AND SPILLOVER EFFECTS: OCCUPANT BEHAVIOUR AFTER ENERGY EFFICIENCY IMPROVEMENTS ARE CARRIED OUT IN LOW-INCOME HOUSING.

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Introduction

Overall research problem:

The government has set targets to reduce carbon emissions by 80% (from the 1990 baseline) by 2050 (Defra, 2008). Buildings contribute around 50% of the energy used in the world and of the

buildings that will be standing in 2050, 87% already exist. Domestic dwellings account for between 25 and 27% of CO2 emissions (Boardman, 2007) and it is suggested that improvements in energy efficiency will reduce CO2 emissions in existing buildings.

Theoretical background:

Before the recession, although the energy intensity of industrial economies fell, the absolute energy use attributed to UK households (and associated CO2 emissions) continued to increase (Druckman et al. 2010). An explanation for the failure to reduce energy consumption is that occupants 'take-back' some of the potential energy savings. This 'rebound effect' for energy efficiency improvements can occur both directly or indirectly (Druckman et al. 2010).

Reducing the consumption of particular goods or services is known as an abatement action and abatement actions lead only to indirect rebound effects. These indirect rebound effects remain largely unexplored (Druckman et al. 2010).

Research also suggests that taking part in 'simple and painless' behaviours will lead to increases in motivation for the individual to adopt other (possibly, more ambitious) related behaviours (Thøgerson and Crompton, 2009).

Specific research question:

To investigate the spillover and rebound effects of occupant behaviour after energy efficiency improvements have been carried out in their homes.

Method

Context: It is proposed that a longitudinal study will be conducted to examine the behaviour of occupants in existing properties in Wales which are due to have energy efficiency improvements carried out by the Welsh Government (Arbed Phase 2).

Participants: All of the participants will be social housing tenants and their properties will be having energy efficiency improvements. The control group will be due to have the energy efficiency improvements carried out at a later date. The sample sizes are yet to be determined (waiting for feedback from the Welsh Government).

Procedure: The participants will be asked to complete a questionnaire before and after the energy efficiency improvements. A sub-sample will also have physical monitoring (indoor air temperature recorded and gas and electricity meter readings) carried out in the heating season of 2012/2013 and 2013/2014

Data analysis strategies:

I expect to use quantitative data analysis software, SPSS.

Results

The first wave of data collection is due to be carried out in February 2012.

Discussion

The findings from this research should help to contribute to understanding how people respond to energy efficiency improvements and whether they 'take-back' some (or all) of the energy savings made and/or whether their behaviours spill over to other related behaviours. In the workshop it is hoped that new ideas and suggestions about the methodology and the 'context' of behaviours that effect spill over and rebound will be explored.

WHAT IS THE EFFECT OF STREET LIGHTING ON PEDESTRIAN REASSURANCE?

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Introduction

Overall research problem: Is Britain over lit? Many other countries, for example Japan and Australia, recommend lower illuminance levels for the night time lighting of residential streets. As energy wastage becomes an increasingly pressing political issue, the question of whether there is any scientific basis for the higher UK requirements should be asked. The overall aim of this study is to find a basis for recommending street lighting. Does it really make us feel safer and if so, does more light make us feel safer still?

Specific research question: What is the effect of road lighting on pedestrian

reassurance? *Theoretical background*: One of the reasons why road lighting may be installed in residential areas is to increase pedestrian reassurance, which in past studies has been addressed under the label of perceived safety or fear of crime. While several studies have suggested that lighting affects reassurance it is possible that fear of crime is exaggerated by the procedure with which it is measured. Placing lighting in the overall context of reassurance at night time, by the consideration of other attributes such as spatial features, familiarity and the presence of other people, gives a holistic picture of the pedestrian experience. This paper will present an alternative method for determination of whether lighting can aid reassurance in residential roads, with the aims of understanding firstly what is important for pedestrian reassurance, and then assessing whether these factors are affected by light.

Method

Context: Streets of Sheffield of the participants and researcher's choosing. Interviews

in the university or in the participant's home. *Participants*: 50 participants. 2 groups (over 65 and under 45) of 25 mixed male and female.

Instruments: Interview recording equipment; illuminance meter; lumiance meter.

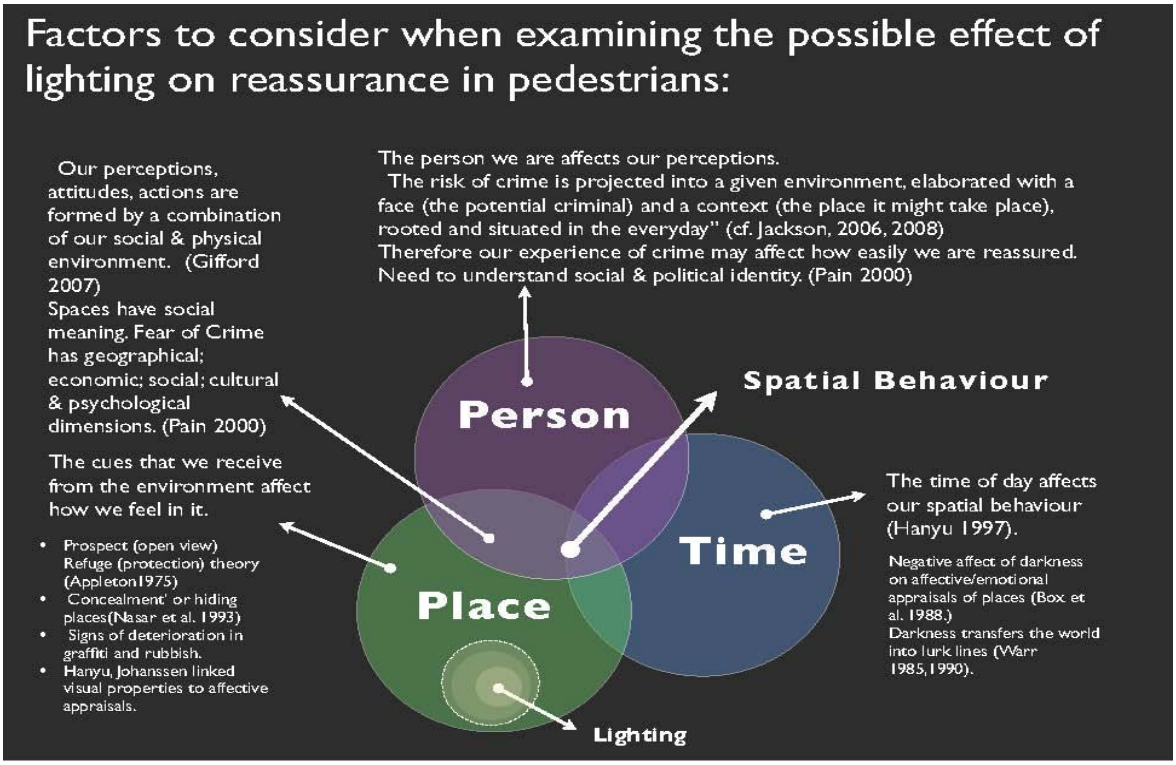

Figure 1: Placing lighting in context.

Procedure: Part 1: Participants are asked to take photographs of roads where they would, or would not, feel confident walking alone at night-time. These photographs are then used as discussion aids during a three stage follow-up interview.

Stage 1: Participants are asked to give general reasons regarding their confidence when walking alone at night. *Stage 2:* Participants are asked to give reason relating to their own photographs (familiar areas). *Stage 3:* Participants to state whether or not they would walk down unfamiliar streets preselected and photographed by the researcher.

The sites are then visited, photographed, observed and measurements taken using

an illuminance and luminance meter. Part 2: Computer simulations will be used to model different types of lighting distribution in which the critical variables identified in Part 1 can be controlled. Participants are asked whether or not they would walk down the simulated streets.

Part 3: Areas of Sheffield where increased lighting may make a difference will be identified. Sheffield's street lighting is due to be changed in the next 2 years and a method of surveying residents will be developed to see if the findings can be verified.

Data analysis strategies: For the interviews: Grounded theory and hierarchical cluster analysis. SPSS will be used to analyse results of the simulations.

Results

The results (Part 1 to be collected during winter of 2011/2012, Part 2 to be collected during

spring 2012) will inform us whether or not the presence of light contributes to reassurance, and if so, which characteristics might matter.

Discussion

The relative importance of the various factors influencing spatial behaviour. (See figure 1).

Note: This PhD is funded by EPSRC (EP/H050817) as part of the MERLIN project, a collaboration with UCL and City University London.

ENVIRONMENTAL QUALITY OF LIFE (QOL) IN SUSTAINABLE HOUSING: A STUDY FROM SOUTHEAST QUEENSLAND, AUSTRALIA

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Introduction

Overall research problem:

Most often sustainable development is evaluated based on its impact on the environment. People's satisfaction with residential qualities in sustainable housing still remains an area largely unexplored. This study uses case-study based research on understanding peoples' satisfaction in sustainable housing in south-east Queensland, Australia.

Specific research question: The research hypothesises that high quality residential environment with congruent people-environment relationships offers quality of life for the residents. Research questions to help answer the hypothesis are:

1. What are the attributes and characteristics of environmentally intentional community?
2. How do people perceive and respond to the environmental issues?
3. How satisfied are people with their residential environmental quality?

Theoretical background: Sustainable development aims to achieve environmental and human well-being. 'Quality of life' (QoL) is a term often associated with human well-being. However, QoL metrics do not include environmental features, although QoL and sustainable development share common components to access well-being. By including environmental factors, we have defined a new QoL approach in terms of sustainability. Environmental QoL (QoLe) examines people–environment congruity. Sustainable communities often aim for a high QoL by providing physical infrastructure necessary for improved living standards, and also through better developed relationships with their environment, neighbours.

Method

Context: A comparative case study is designed to investigate whether the environmental attributes and the ethos of the intentional community contribute to perceived satisfaction and well-being

among residents. The method proposes to compare a group of people from the Ecovillage at Currumbin, with a 'control' group of more conventional suburban dwellers from the Observatory at Reedy Creek.

Participants: All households from both the estates, Ecovillage (54 valid houses) and Observatory (427 valid houses), were requested to participate in the research. 35 households from the Ecovillage and 40 households from the Observatory responded the request.

Instruments: 36 items Environmental Attitudes Inventory (EAI), and 64 items Perceived Residential Environmental Quality (PREQ) and Neighbourhood attachment related questionnaire are used. There are 8 open ended questions related to specific environmental qualities.

Procedure: Self-reported questionnaire is used for the survey

Data analysis strategies: Quantitative data are analysed using SPSS. Factorial analysis, regression, correlations and Mann-Whitney U test are used for statistical tests. Qualitative data are analysed separately using key-words and intentions.

Environmental attitudes: A single generalised environmental attitudes score and two higher order factors (Preservation and Utilization) scores are calculated separately. Residential Satisfaction: Both direct and indirect questions related to building quality, internal functionality within the neighbourhood, external connection, availability of Infrastructure and services, social relations, environmental consideration, neighbourhood upkeep, and neighbourhood qualities and attachment are used to explore housing satisfaction.

Results

Preliminary data analysis suggested a significant difference in environmental attitudes among the Ecovillage and the Observatory residents. Residential satisfaction has mixed results. Direct questions did not reveal significant difference in residential satisfaction. Analysis of indirect questions helped to understand each item in detail and demonstrated remarkable difference in some residential qualities which include neighbourhood attachment, social relationships.

A further analysis will be carried out to understand relationship between environmental attitudes in housing satisfaction.

Discussion

The Ecovillage has various sustainable features. These features are intentionally integrated in design and in operational stages to practice alternative lifestyle within sustainable paradigm. Residents reported high preservation attitudes and low utilization attitudes; and high level of satisfaction with residential environment. The initial findings support the hypothesis that environmental quality of life is actually enhanced living in the Ecovillage.

PARTICIPATION: THE FIRST RESEARCH EXPERIENCE

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Introduction

Overall research problem: Determining the optimal working conditions for academics in Poland is the main research problem of this abstract. The author conducted a participatory workshop to solve this problem. Workshop helped to learn about present attitudes towards the existing situation and promoted world proposals.

Specific research question: Is it natural that when I asked users to model the ideal workplace they modelled workspace similar to that in which they currently worked? How to systematize the results to get accurate conclusions? Another important issue is how to put into practice the conclusions of the research? The study was not ordered, but it is the basis for a PhD thesis. To what extent can I generalize the results to other departments / colleges?

Theoretical background: The main theoretical background for participation were modified proposals contained in the thesis of Harrison A., Cairns, A. '*The changing academic workplace'.* Apart from this, there was used knowledge enclosed in the book '*Inquiry by Design: Tools for Environment-behavior research'* and '*Integrating programming, evaluation and participation in design. A Theory Z approach'.*

Harrison A., Cairns A.; *The changing academic workplace*, DEGW UK Ltd. 2008 (downloaded from http://www.degw.com/knowledge_studies.aspx)

Zeisel J.; '*Inquiry by Design: Tools for Environment-behavior research'*, Cambridge University Press, New York, 1995

Sanoff H.; '*Integrating programming, evaluation and participation in design. A Theory Z approach',* Ed. Scientific Psychology and Architecture Association, Poznan 1999.

Method

Context: Workshops were conducted by the abstract's author and students during the course of Design Strategies. The conclusions of the workshop will be used in the author's doctorate.

Participants: PhD students of the Faculty of Biomedical Engineering. This department was in the process of organizing and it soon had to move to new premises.

Instruments: Laptop, camera

Procedure: Workshop consisted of several stages:

- A brief introduction to the topic - a presentation about innovative offices in Higher

Education Institutions (HEIs) (listing of the participants comments on the presentation);
- Interview based on questionnaire. The task dealt with some aspects affecting the shape of offices e.g. the dominant nature of work, nature of interaction, etc.;
- Work on model in 1:10 scale. It was made of grey cardboard. There were prepared thumbnails of the chairs, desks, cupboards, printers, walls etc. The participants had several tasks. The first task was to build a mock-up room which presented their own academic office and to answer the question: Which elements do you consider as positive/negative in your academic office? The second one was to build a mock-up room which presented perfect place for office work.
- Respondents were shown cards with innovative proposals for university office space. Then they were asked to select the optimal one and to justify the choice they had made.

Data analysis strategies: Collecting data in tables allowing to simplify the results, making it easier to infer and synthesize.

Results

So far only a doctorate, unfortunately. I would like this knowledge to become useful for some Higher Education institutions.

THE MUD MONSTER – CHILDREN'S NARRATIVE USAGE WHILE PLAYING IN NATURAL ENVIRONMENTS

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Introduction

Research suggests that nature experiences have a positive impact on children's health and well-being. It has been shown to motivate exercise and increase physical activity levels, which then combats obesity, and there is evidence that it enhances personal and social skills, which can then increase a child's social capital and help that child connect to their community. Furthermore, regular contact with nature during childhood can lead to ecological attitudes and pro-environmental behaviours in adulthood.

What is less known, is children's own agency on their experiences of nature. Moreover, to what degree do children narrate their own experiences when left to play freely in natural environments, and what aspects of those narratives could be used as tools for place-based education programmes?

For the past three years, Eden Project's MUD programme has developed a pedagogic method, *Narrative Journey*, in response to children's declining interest in and exposure to the natural world. It employs themed adult-narrated stories that deliberately introduce key concepts (narrative cues) during nature experiences. However, despite multiple reported benefits, little is known about how children themselves narrate nature experiences, or how themed narrative might encourage children's physical activity or attachment to nature with concomitant beneficial outcomes for

health, society and the environment. This study is therefore interested in the interaction between use of the environment and the narratives that shape children's perceptions of it.

Method

Narrative-based research has acknowledged children as active agents in voicing their thoughts, imaginings and feelings; moreover, it has proved useful in researching children's nature-experiences and as a bridge to community. However, children's narrative within the context of their actions in natural environments has been little explored. The purpose of this study is to develop and test methods which will form the basis for subsequent studies, and to provide a baseline of 'free play' for comparison with later studies involving the practitioner delivering *Narrative Journey* sessions.

Two methods will be used:

Behaviour Mapping will record children's physical actions during a play session (facial expressions, body language, physical movements), and contextual environmental data, including place location (e.g. playing in mud), play props (e.g. twigs, water), play partners (siblings, friends, parents), weather, time of day/week, seasonal differences and geographical markers.

Dialogic Mapping will record children's dialogues and monologues as an overlay of the behaviour mapping above, using discourse analysis to analyse textual data and map this onto place-based descriptions of objects and the environment.

In later intervention studies, analysis will include the practitioner's narrative interventions in order to critically examine the role of narrative cues (key concepts, invitations or prompts for action).

Children, aged between 5-8 years, mixed gender, ethnicity and socio-economic status, will be equipped with helmet-worn cameras and microphones, Noldus Observer XT software will be used to code and analyse data.

Results

It is anticipated that children's play narratives will be influenced by the spaces in which they play, and by the affordances of objects found within those spaces. It is also anticipated that children's narratives will be framed by the intent of their play, which might largely be imaginative and fantastical in nature ("here's the Mud Monster!"), and that analysis of this content will require as much care as one would dealing with scientific descriptions ("here's a clump of soil!").

Discussion

Children's behaviour is shaped by the environments in which they play. In these environments natural objects and their functional, playful properties are given credence by language; by the way children narrate their experiences and then incorporate those narratives into further expressions of play behaviour.

From this initial study, narrative cues will be used to form a pedagogic method through which adults can use narrative as a means to guide children's pro-environmental attitudes and behaviours.

SECONDARY SCHOOL TEACHERS' PERCEPTIONS AND USE OF CLASSROOM ENVIRONMENTS

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Introduction

Overall research problem: The learning environment can be an influential resource for teachers. The behaviour of teachers within the classroom can be influenced by the physical characteristics of a setting as can the educational programme. Research has shown that it is essential for teachers to understand how to effectively organise instructional space for successful classroom practice. However, understanding how the physical environment of the classroom can affect the behaviour of teachers and the degree to which teachers consciously and deliberately plan classroom environments is a challenging prospect. Learning more about these relationships may enhance teachers' awareness of their environment and enable teachers to take control and deliberately design the classroom space. Teachers who perceive classroom space in informed ways can use deliberately organised space to facilitate and support physical activity for learning.

Specific research question: How do secondary school teachers perceive and use the classroom environment?

Theoretical background: Environmental awareness is the ability to analyse space critically and to function intelligently within spaces. Steele (1973) defines environmental competence as "*a person's ability to be aware of the surrounding environment and its impact and the ability to use or change the settings to help achieve goals without inappropriately destroying the setting. This involves a process which: (a) makes people more aware of the settings around them; (b) inspires them to ask themselves what they are trying to do there; (c) stimulates them to assess the appropriateness of their settings for what they want to experience or accomplish; and (d) leads them to make appropriate changes (in either the setting or their own location, or by leaving it for a better one) to provide a better fit between themselves and the setting."* (p. 8).

Method

Context: The first stage of the research involves conducting semi-structured to investigate how secondary school teachers perceive and use their classroom environments. *Participants*: The participants are 4-8 secondary school teachers from an old school building. An old school building can be defined as one which has not yet undergone reconstruction in line with The Scottish Government's current schools programme to transform Scottish school buildings.

Instruments: Audio recording equipment, semi-structured interview schedule.

Procedure: Participants will be interviewed by the researcher. Participants will be given information about the research itself. Consent will then be obtained from the participant and the interview will commence. The researcher will conduct a semi-structured interview which has been developed based on themes that the researcher has identified during an exploratory data collection stage.

Data analysis strategies: Interviews will be transcribed and will undergo thematic analysis whereby the researcher will identify codes and themes in the data.

Results

It is anticipated that the data collected from the interviews will inform the future direction of the research which may include conducting more interviews or devising a questionnaire based on the analysis carried out.

Discussion

There has been much research carried out in relation to school environments and student perceptions, however relatively little research has been carried out with respect to how teachers perceive and use the classroom space. The Scottish Government along with local governments are committed to transforming schools in Scotland and have invested heavily into the schools programme. This provides an excellent opportunity to investigate teachers' perceptions and use of classrooms within both old and new school buildings.

WHAT'S THE TRUE COST: ARE OUR DETRIMENTAL EFFECTS ON THE ENVIRONMENT ALSO DETRIMENTAL TO US?

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Introduction

Overall research problem: Environmental psychology, especially when looking at the restorative properties of nature, often focuses too narrowly in one domain (e.g. the benefits nature has on us). Consequently, the overall relationship is in need of investigation, whereby both the impacts nature has on its visitors and the impacts the visitors have on the environment need to be understood together in order to preserve the environment for the future.

Specific research question: Visiting the coast has been shown to be beneficial to the visitors, but it has also been noted that during these visits, individuals often litter. This behaviour is detrimental to the environment but is it also disadvantageous to the visitors?

Theoretical background: Natural environments have been shown to have restorative qualities on their visitors, especially marine environments (White, Smith, Humphryes, Pahl, Snelling & Depledge, 2010). However, it is important to understand the consequences of these visits on both the environment and the individual. Previous studies contributing to my PhD thesis have shown that littering is a key visitor-related behaviour that has negative impacts on the environment but

also on the visitors. Consequently, this study examines whether littered marine environments have a direct impact on individuals' wellbeing and preferences. In contrast, natural debris such as washed up seaweed was also examined as this is a natural environmentally healthy scene can have negative connotations for the visitor, such as smelling, sticking to their legs and attracting flies.

Method

Participants: A sample of students (n = 50) were used.

Procedure: In order for participants to experience different environments, a controlled laboratory study was used. Participants were shown a series of coastal scenes, where they were asked to rate their current mood, willingness to stay in a hotel with that view, how attractive they found the scene and rate the level of restorative potential that environment has. There were four types of scenes: clean coastal environments, coastal environments with visitor-related litter, coastal environments with industry-sourced litter and coastal environments with seaweed debris. The stimuli were systematically controlled so that the content is identical except for the additional debris; however filler stimuli and a variety of sites were used to make the systematic differences less obvious.

Data analysis: Using statistical analysis such as analysis of variance, the four environments will be compared to see whether there is a difference on the dependent variables.

Results & Discussion

Data collection is on-going; however it is predicted that mood, aesthetic and behavioural preferences will be reasonably positive for all scenes as previous studies have shown that coastal environments are often associated with positive outcomes. Specifically, it is expected that the clean coastal environment will be associated with more positive moods, aesthetic and behavioural ratings and with the highest restorative potential. The scenes with seaweed may have less positive ratings, as previous studies have found occasional negative connotations. In regards to the two types of litter scenes, these have been negatively mentioned in previous studies thus would be expected to have a less positive effect on participants. If these findings occur, further, more ecologically valid, studies will be carried out. Leading from this, potential solutions to this problematic behaviour can then be examined, such as examining community efforts (such as beach cleans) or governmental facilities (such as introducing more litter bins).

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