

# Weir Group has designs on competitive advantage

The University of Strathclyde is working closely with the Weir Group on a range of collaborative projects, including the design of new and improved products for competitive global markets.

## The company's objective

The oil and gas industry is one of the most exacting in terms of equipment durability and service response times. The Weir Group plc has a highly successful history of innovation in this competitive market. The company, based in Glasgow and employing 13,000 personnel around the world, recognises the need to differentiate itself from competitors through structured investment in research and development (R&D) and knowledge exchange (KE).



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Strathclyde is a leading technological university and Weir is delighted to be strengthening the long-standing partnership we have enjoyed with Strathclyde.”

Keith Cochrane, Chief Executive, Weir Group PLC

Recent acquisitions in the US have created opportunities to supply production equipment for extremely challenging geological conditions. The required operating pressures for well service pumps, for example, have increased significantly, bringing new challenges to equipment design and manufacture.

Traditional design methodologies have reached their limits of applicability. The Weir Group determined that to maintain safe and efficient operations, and extend their competitive advantage, they needed an advanced design methodology which was significantly beyond current industry practice.

## Working together

The Weir Group has worked with Strathclyde for many years on a range of consultancy and research projects, so it was natural for them to seek the advice of recognised experts at the University. This partnership has resulted in attracting significant levels of research funding and the recent formation of the Weir Advanced Research Centre (WARC). The WARC will be an integral part of the Technology and Innovation Centre (TIC) at Strathclyde which revolutionises the way researchers in academia and industry collaborate and innovate together.

The collaborative research projects undertaken by the University and the Weir Group include the development of a Research Exploitation Partnership (REP). REPs are a prime mechanism of Strathclyde's Company Escalator Programme, which is backed by a £2.6 million award under the EPSRC's Knowledge Transfer Account (KTA) competition, EPSRC's Pathways to Impact programme and the Scottish Funding Council's Knowledge Transfer Grant. REPs enable company staff and University staff to be cross-seconded for research-based, knowledge exchange (KE) projects.

## Creating competitive advantage

Strathclyde academics have been working in partnership with the Weir Group on a number of R&D activities, including: mechanical design reviews, manufacture process reviews, material testing and assessment programmes, new product mechanical/strength design projects, structural integrity assessment, product life

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optimisation and computational fluid dynamics investigation of existing and new design concepts.

Competitive advantage is also created by investing in personnel through continuing professional development (CPD) programmes. A key part of the REP was to provide education and training support to up-skill Weir Group staff in advanced analysis methods through on-line CPD.

The CPD developed by the University for the Weir Group is centred on a 12-session, on-line module which is accessible to staff around the world. Additional modules are being planned to provide enhanced access for Weir Group employees to the latest, and most relevant, engineering know-how.

### Successful outcomes

Existing research and development provided by the REP and CPD have made a significant contribution to

new product design and development. This has created technical and economic advantage in a highly competitive, international market.

The Weir Group are funding the WARC with an initial investment of £1.9 million over three years and continuing investment thereafter. This funding will also create four PhD studentships per year, underscoring the Weir Group's commitment to education and advancing engineering skills in the UK.

The WARC broadens and extends the University's relationship with the Weir Group by developing parallel knowledge exchange activities that are beyond the scope of our initial research agreements, further enhancing this company relationship.

The knowledge transfer on which our partnership is based, works in both directions. There is the transfer of advanced research outcomes and staff skills from Strathclyde into industry design and manufacture. In return, Strathclyde staff gain invaluable insight into industry best practice.

### How we can help your organisation

Strathclyde's Research and Knowledge Exchange Services (RKES) team support the University's knowledge exchange (KE) activities. RKES is responsible for operating the Company Escalator Programme, a structured approach to intensifying the mutual benefits of KE between the University and its industrial partners. If you would like to take advantage of the University's research and knowledge, please contact:

Research & Knowledge Exchange Services  
University of Strathclyde  
Level 3, Graham Hills Building  
50 George Street  
Glasgow G1 1QE

Telephone 0141 548 3707  
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Website [www.strath.ac.uk/businessorganisations](http://www.strath.ac.uk/businessorganisations)

If you are an engineering company looking to develop your competitive advantage, please contact:

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The Weir Advanced Research Centre is a result of our long-standing partnership with the Weir Group and will be an integral part of the Technology and Innovation Centre (TIC) at Strathclyde.”

Professor Donald Mackenzie,  
Department of Mechanical and  
Aerospace Engineering, University of  
Strathclyde

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