

UKSPA CASE STUDY

STRATHCLYDE TIC: DEVELOPED WITH INDUSTRY...FOR INDUSTRY

The University of Strathclyde's new Technology & Innovation Centre in Glasgow is transforming the way academics, business, industry and the public sector work in partnership to address global challenges.

Malcolm Tait of KJ Tait explains more about the concept and BDP's Architect Directors Christoph Ackermann and Scott Mackenzie describe the transformational results.



A world-class environment for open innovation

The concept for the Centre

The concept for the Technology & Innovation Centre (TIC) was developed in 2010 as a partnership between business, industry, government and academia in response to global challenges. It now provides a world-class environment for open innovation aimed at developing multi-disciplinary solutions in the following fields:

- Low carbon power and energy
- Medicines and pharmaceuticals manufacturing
- Future Cities
- Health technologies

The building represents the University's largest investment in research to date, and is part of a wider £350 million investment in the development of a dynamic, digital campus over 10 years.

The TIC houses specialist, shared and flexible laboratory facilities and will support leading academics in bridging the gap between research, technology and commercialisation.

A milestone in regeneration

At 26,000 square metres, the nine-storey building has transformed the landscape east of Glasgow's George Square and is a major milestone in the continuing regeneration of the City.

The building has been constructed to exacting BREEAM standards – a mark of Excellence that recognises the Centre's strong sustainability credentials.

The Centre has attracted support from a wide range of partners and companies including the Scottish Funding Council, Scottish Enterprise, the European Regional Development Fund, SSE, ScottishPower, the Weir Group, GSK, Novartis, AstraZeneca, and Fraunhofer UK.

Current partners

Some of the partners who are co-located at TIC – alongside the 690 researchers from Strathclyde University }– include:

- The laboratories of the Institute for Energy and Environment – one of the largest university-based electrical power engineering and energy technology research groups in Europe, with a £35 million portfolio of activities in power grids and low carbon energy systems.
- The Weir Advanced Research Centre, where senior Weir engineers work side-by-side with leading engineering academics to develop product solutions and core technologies.
- The Centre for Continuous Manufacturing and Crystallisation, a leading UK national facility delivering international impact in the manufacture of pharmaceuticals.
- The Institute of Future Cities' City Observatory – an innovative information system which collects, manages and interprets diverse data related to the urban environment, in order to aid the sustainability of cities nationally and internationally.
- The Fraunhofer Centre for Applied Photonics – a world-leading research centre in the field of solid state lasers. This is its UK headquarters and they have extensive laser laboratories within the TIC.

The Centre is also home to world-class conference facilities with a state-of-the-art, tiered auditorium for up to 450 people in various formats; a smaller auditorium with seating for 150; plus eight seminar or break-out rooms with floor-to-ceiling windows.

Since its official opening in 2015, more than 23,000 visitors have used the conference facilities, a clear demonstration of the TIC's ability to engage with its partners.



Transforming Glasgow's landscape

The University's view

Professor Sir Jim McDonald, Principal of Strathclyde University, said at the official opening: "Our new Centre represents our commitment to undertaking world-class research and translating its outcomes for maximum benefit to society and the economy.

"The Centre further establishes Strathclyde's position as the partner of choice for business, industry and the public sector. Our collaborations are opening up exceptional opportunities for students too, with sponsorships, internships and vocational projects to equip them with essential and relevant skills to develop their careers.

"Through the Centre's deep collaborations, Strathclyde is driving business innovation and growth, creating jobs, and attracting millions of pounds of inward investment to Scotland and the UK. In the spirit of our founding mission as the place of useful learning, work-streams in the Centre are delivering high-impact innovation and shaping technologies to improve human health, transform the energy landscape, set new standards in manufacturing and contribute to the development of future cities.

"Our partners, students and the global community we serve have responded with overwhelming positivity to the incredible opportunities that the TIC will open up – both and for future generations."

The Architect's view

The TIC building is highly ambitious and the results are truly transformational, say BDP's Architect Directors Christoph Ackermann and Scott Mackenzie...

With a project value of £89 million, the TIC was the single largest project in the Scottish higher education sector at the time, and is unique in that it is not directed at undergraduate teaching. Instead the TIC bridges the gap between academia and industry and in so doing strengthens collaboration and encourages true innovation in practical research.

The TIC project promotes knowledge exchange with business and public sector organisations in a way that will improve university-business entrepreneurship, industry engagement and research commercialisation through strategic industry focussed partnerships, networks, mutual leverage and value.

The TIC building form is relatively simple. It is triangular in plan to exploit the available site area, resulting in a building that is a unique urban intervention, whilst respecting its surroundings. The TIC has a deliberately expressive form which is a direct result of the brief and the site context.

The triangular ring of accommodation is highly flexible and efficient in terms of circulation and servicing. Natural daylight is afforded to the great majority of spaces, either via the external façade or by the central atrium space.

Elevation treatments reflect the need for flexibility within the internal layouts. East and West elevations house open-plan office accommodation, whilst the northern elevation is expressed differently to emphasise the more specialist nature of the labs within, the civic importance of the George Street frontage and the main entrance. Through collaboration and consultation between the client group and the design team a highly sustainable, iconic, landmark building has been created befitting the civic status of the facility.

Case Study: Weir Group

The University of Strathclyde and the Weir Group plc, a Glasgow-based company with a highly successful record of innovation in the oil and gas industry.

Strathclyde and the Weir Group work closely on a range of joint projects, including an advanced design methodology and the recent formation of the Weir Advanced Research Centre (WARC) at Strathclyde's Technology and Innovation Centre, brings academia, research and industry together in state-of-the-art facilities in the heart of Glasgow.

In light of recent acquisitions in the US, the Weir Group recognised the need to differentiate itself from competitors through structured investment in research and development and knowledge exchange. The company also understood that 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 that was significantly beyond current industry practice. The Weir Group has worked in partnership with Strathclyde for a number of years on a range of consultancy and research projects. R&D activities include:

- Mechanical design reviews
- Manufacturing process reviews
- Material testing and assessment programmes
- New product design projects
- Product life optimization

The Weir Group is 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.

The knowledge transfer works in two directions: there is the transfer of advanced research outcomes and staff skills from Strathclyde into industry design and manufacture. In return, University staff gain invaluable insight into industry best practice.

About KJ Tait Engineers

KJ Tait Engineers provides professional consultancy for the design and management of engineering services for buildings and associated infrastructure throughout the UK.

About ADP

ADP was founded in 1965 and has grown to become one of the most respected and stable practices in the United Kingdom. The practice is currently ranked in the top 30 of the Architects' Journal AJ120 Survey of UK practices.

About UKSPA

UKSPA is a membership based Association providing opportunities for Science Parks, Innovation Centre's and Incubators to network, share good practice and pool knowledge and experience to accelerate business growth.

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