

NEW LOW CARBON WALL PANEL

Time 2 Innovate is a pilot scheme within the Institute for Innovation in Sustainable Engineering which aims to support SME's in the D2N2 area. The Institute, which is part of the University of Derby, works closely with businesses in the D2N2 area to stimulate them to innovate by providing access to some of the latest technologies and technical support for them to scope out new ideas and possibilities for their business in a *risk free* environment.

Sym-Wall Building Technology Ltd (SBT) is a pioneering company, developing a new low carbon wall panel technology known as Sym-Wall[®], produced from a synthetic form of waste gypsum (the result of de-sulphurization of emissions from coal-fired power stations). The technology helps to improve energy efficiency by its thermal insulation properties and has the potential to transform construction methods around the world.

SBT engaged with the Institute (IISE) via the Time 2 Innovate scheme to access the latest 3D Printing, Vacuum Casting, and Virtual Reality capabilities as part of a value-engineering activity to enhance the performance and cost of its proprietary injection moulding plant.

The experience day at IISE resulted in the manufacture of specific plant components by a combination of 3D printing and vacuum casting processes in order to evaluate the most cost-effective method of developing component parts for the Sym-Wall[®] machine.

A follow-on activity is now underway to develop bespoke animation and virtual reality techniques to develop and assist in the training of installation methods for its new state-of-the-art eco technology. This activity will feed directly into the new "Sym-Wall[®] Training Academy" to be established as an intrinsic component of the planned global expansion of the SBT operations.

SBT currently employs a team of 8 people engaged with development and production activities. The company has firm near-term plans to increase the UK production base to three plants and to expand its operations into the EU and further afield.

Expertise or technology accessed via Time 2 Innovate

- Virtual Reality system and expertise
- Feasibility of applying Virtual Reality to a particular installation methodology
- 3D printing and vacuum casting processes

Anticipated company benefits of the Innovation Credit

- Application of animation and virtual reality to enhance the training model.
- Enhanced manufacturing cost for the machinery



Expected outputs from the Time 2 Innovate Experience Day

- Contribute an understanding of the technologies and how these technologies can support the development of Sym-Wall manufacturing capability

About IISE

IISE is an Institute at the University of Derby, established to support advanced manufacturing within the region with a focus on innovation, research and development, knowledge transfer and commercialisation activity.

Areas of specialisms include:

- Advanced manufacturing strategy and systems
- Sustainable design and innovation in products and manufacturing processes
- Sustainable rail transport infrastructure
- Energy and the environment
- Embedded systems to optimise process reliability and performance
- Control and instrumentation for products and processes.

IISE is based in Lonsdale House, Derby and provides specialist facilities, including:

- Advanced Manufacturing
- Rapid Product Development and CAD facilities
- Reverse Engineering Lab
- Innovation and Active Learning Lab
- Control and instrumentation facilities
- Specialist measurement, materials analysis and testing

<http://www.derby.ac.uk/research/iise/>

About Sym-Wall Building Technology Ltd

SBT is a private company established to certify and commercialize the new Sym-Wall® eco-friendly modular wall panel technology. The product and its unique production machinery are set to have a big impact as part of the new wave of modular off-site construction methods entering the UK and overseas markets. The product is applicable not only for new build but is also expected to attract interest for refurbishment and retrospective enhancement projects in the public and social housing sectors.

