

An outstanding building and facilities

Environment and Sustainability Institute



www.exeter.ac.uk/esi

The University of Exeter's Environment and Sustainability Institute (ESI) is leading cutting-edge, interdisciplinary research into solutions to problems of environmental change; in so doing we are enhancing people's lives by improving their relationships with the environment.

Such work requires an exceptional building.

In the heart of the ESI, triple glazed windows encasing the Interactive Space not only provide a clear outlook and natural ventilation but also deliver ultra high levels of insulation and low air permeability. Their environmental credentials may not be immediately obvious, but they are significant, and demonstrate the values underpinning the creation of one of the most environmentally sustainable buildings in the UK.



Consistency in a changing world

The eight Controlled Temperature (CT) rooms on the ground floor of the ESI are an essential part of the building's facilities, each providing reliable temperature and humidity control in a virtually airtight environment.

To deliver the energy required to run the rooms, an innovative system incorporating Combined Heat and Power (CHP), water-cooled heat rejection and a 'coolth tank' have been installed within the ESI and the ground adjacent to it. This bespoke solution ensures that electrical demand is reduced by over 90% and carbon dioxide emissions by 94% in comparison to traditional energy systems.



Head space for big ideas

Six metre high bi-folding doors provide direct and convenient access into the Research Hall. A gantry hoist mounted to the ceiling makes light work of moving heavy items safely around the space, while compressed air equipment ensures that the Hall can support a wide range of projects spanning natural environment to renewable energy.

Radiant panels with integral lighting, and a translucent Kalwall, maximise and harness the available light falling on the north face of the building. Additionally, a north light, located on the roof above, funnels natural light into the space beneath, substantially reducing the need for artificial illumination.



Cutting-edge solutions

Conveniently located above the Research Hall, a compact laboratory provides the space and equipment for a wide range of interdisciplinary research work into clean technologies, one of three research themes within the ESI. Other research is focused on the natural environment, and social science and sustainability.

The pictured fume extraction unit ensures the safe removal of fumes from soldering work.



Enhancing lives by improving people's relationships with the environment.

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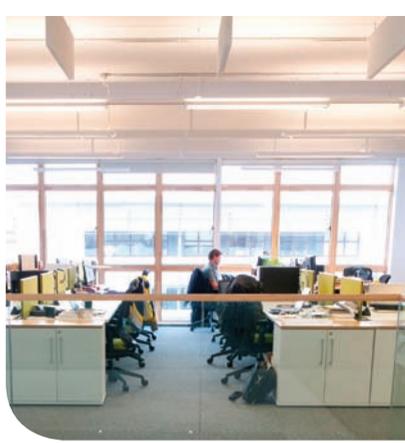
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Working (and thinking) differently

A combination of shared working spaces, offices, meeting rooms and nooks clustered around the atrium and near the laboratories over two floors provides opportunities for researchers from a wide range of disciplines to interact and work together on a daily basis.

Acoustic baffles overhead reduce sound reverberation throughout the open plan areas of the building and large windows maximise natural light, actively contributing to a healthy workspace.

Out of view, a 35,000ltr buried rainwater harvesting tank combined with low water use sanitary ware and automatic shut-off valves, stores rainwater for the building's toilets.



Developing tomorrow's researchers

The ESI's postgraduate students and post-doctoral researchers are at the core of our research community and enjoy some of the best views from their dedicated work spaces on the first and second floors of the building.

The spaces are conveniently positioned for easy access to the laboratories on each floor; academic and research leads, the Interactive Space on the ground floor and the building's key facilities. Mirroring the approach used throughout the building, they are shared by individuals from a range of disciplines.



Flexible laboratory space

Two large laboratories, one each on the first and second floors, are fitted with top quality fixtures and equipment for a wide range of research. Specialist facilities include a dark room and wildlife pathology laboratory. A bespoke chilled water pipe work system removes excess heat generated by fridges and freezers for use elsewhere in the building.



From seeds to solar panels

In addition to the stunning view, a visit to the roof of the ESI puts a new perspective on the building's environmental credentials.

Nearly a quarter of the building's energy needs are met through on-site generation, which includes 250m² of solar panels. These cover the roof of the adjacent Plant Room and are visible immediately beneath the ESI.

In the courtyard area, nectar-rich wild flower seeds have been sown. On flowering, these will provide a valuable resource to local pollinators. Looking across the courtyard to the south wing, three small slots provide access to bat boxes installed high in the wall.



Creative collaborations

Creative practitioners from the local community are working with researchers in the ESI and Falmouth University's Research in Art, Nature and the Environment (RANE) research group, to explore new ways to view and understand human relationships with the environment. A dedicated area, adjacent to the Interactive Space in the ESI, provides an opportunity for work in residency.

The X-ray images below are by wildlife artist and inaugural ESI Creative Exchange Affiliate, Chris Thorn.



An outstanding building

The ESI has been designed to the BREEAM 'Outstanding' criteria and scored an impressive 91.57% at the Design Stage assessment.

Sustainable procurement was a key concern during construction, with the majority of building elements specified achieving Green Guide A or A+ ratings. During the build, the use of recycled products was maximised, in particular, recycled water was used in the mixing of concrete, and recycled plastic void formers were set into the floors to reduce the overall volume of concrete required.

* BREEAM (BRE Environmental Assessment Method) is the leading and most widely used environmental assessment method for buildings. 'Outstanding' is the highest classification.

Photography: Malcolm Anderson (courtesy of The Leadbitter Group), Andrew Asbury (courtesy of Falmouth Exeter Plus), Matt Jessop, Delphine Jones, Chris Thorn and Stuart Townley.