

The Hub Building

Building Description

The Hub building comprises a central foyer (atrium) around which is wrapped a three and four storey curved wing of flexible accommodation on the north and west sides, a lecture theatre to the east end, and a two storey demonstration space sitting within the main foyer/atrium. This accommodation sits beneath an all-enveloping curved roof. Outside of the main hub building, within the lake sit three study pods.

Innovative Design and Low Impact Design Features

Cooling System

For the majority of spaces passive cooling techniques are employed in order to limit carbon emissions, typically through manually openable windows, automated windows for night time purging of heat gains, or supplementary mechanical ventilation.

Exposed ceilings have been integrated into the Architectural design wherever possible. The exposed concrete of these ceilings is to be night cooled by allowing cool air to enter the space and reduce the temperature of the ceiling.

Where mechanical comfort cooling is provided, this utilises high efficiency heat rejection units and chillers which incorporate free cooling facilities.

Lighting

The light output is controlled based on the amount of daylight available and will dim automatically according to daylight in the space.

Sanitary Fittings

Dual flush toilets, sensor taps and low pressure showers have been installed to reduce the water use of the building.

Steps Taken During the Construction Process to Reduce Environmental Impact

Contractor's nominated biodiversity champion.

Site waste management plan produced by Contractor - Over 75% construction waste diverted from landfill.

Construction impacts including CO₂ production, water and dust pollution were minimised by setting targets and monitoring results.

Contractor's workforce trained in how to protect site ecology.

Key Statistics

BREEAM rating	Very Good	
BREEAM score	59.51%	
Basic building cost (£/m ²) ¹	2445	
Services Costs (£/m ²)	574	
External Works (£/m ²)	150	
Gross Floor Area (m ²)	5057	
Total Area of the Site - hectares	2.7	
Function areas and size (m ²)	Atrium	853
	Breakout/Milling	693
	Seminar	317
	Lecture Theatre	264
	Teaching Space	410
	Exhibition Space	182
	Offices	1045
	Meeting rooms	117
	Kitchen	62
	WCs	180
Area of circulation (m ²)	1027	
Area of storage (m ²)	619	
% area of grounds to be used by the community	100%	
% area of buildings to be used by the community	40%	
Predicted fossil fuel consumption (kWh/m ²)	44	
Predicted electrical consumption (kWh/m ²)	52	
Predicted renewable energy generation(kWh/m ²)	49 ²	
Predicted water use – m ³ / person/year	2450	
Predicted water use to be provided by rainwater or grey water	None	

Socially/Economically Sustainable measures implemented

One of the main functions of the building is to encourage social interaction between users and act as a focal point for students, staff and visitors. A central foyer provides meeting space and a café. It is anticipated that these spaces will accommodate a wide variety of users such as further and higher education bodies, schools and appropriate local interest groups, in addition to staff and students.

¹ Build cost/m² are net and include contractors prelims, design and fee but excludes external works/ancillary buildings where applicable.

² Based on electrical output of 12,500,000kwh/annum from CHP serving the university private utility networks.

The health and well being of building users has been considered in all aspects of building design and external landscape spaces. Provision of designed-in recycling and extensive cycle parking is included to promote responsible and sustainable work lifestyles. Secure by design principles have been adhered to throughout the design process.