The Computer Science Building

Building Description

The Computer Sciences Building (CSB) consists of two wings, a teaching wing and a research and development wing which are linked by an entrance atrium. The building has three storeys containing a variety of seminar, laboratory and teaching spaces.

Innovative Design and Low Impact Design Features

Cooling System

Natural ventilation will operate predominantly to keep the building at an acceptable temperature. This philosophy has been adopted to reduce carbon emissions from the building, when compared to a permanently mechanically ventilated and cooled space solutions.

To maintain tolerable conditions during times when internal and external heat gains are beyond the capability of the passive control strategies, mechanical ventilation and cooling is available.

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

- The contractor nominated a biodiversity champion to protect site biodiversity throughout the construction process.
- 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	58.04%	
Basic building cost (£/m²)[1]	2233	
Services Costs (£/m²)	554	
External Works (£/m²)	58	
Gross Floor Area (m²)	6,622	
Total Area of the Site - hectares	2.7	
Function areas and size (m2)	Reception	86.5
	Offices	1954.5
	Meeting Rooms	204.0
	Breakout/Milling	281.0
	Teaching Seminar	125.0
	Non-Teaching Seminar	195.0
	Library	32.0
	Laboratories	301.0
	Teaching Laboratories	945.0
	Workshops	159.5
	WC's and showers	196.5
Area of circulation (m²)	1592	
Area of storage (m²)	239	
% area of grounds to be used by the community	100%	
% area of buildings to be used by the community	0%	
Predicted fossil fuel consumption (kWh/m²)	65.9	
Predicted electrical consumption (kWh/m²)	97.7	
Predicted renewable energy generation(kWh/m²)	49[2]	
Predicted water use — m³/ year	3540	
Predicted water use to be provided by rainwater or grey water	None	

Socially/Economically Sustainable measures implemented

The building has been designed to encourage social interaction between users. A variety of breakout spaces are to be provided and the seminar pod is to contain a centralized common room. It is anticipated that these spaces will be able to 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.

The health and well being of building users has been considered in all aspects of the building design and external landscape spaces. Provision of designing 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.

[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.