

**Project Name:** Level 5 Redevelopment for Business School

**Location:** Levels 3, 4 and 5

**Building:** ACE Extension

**Project Number:** ACEx1004

**BREEAM Target Rating:** GOOD



### Project Description

The original Ace Extension Building was built in 1964 with a roof extension on Level 5 added in 1972. That roof extension was a lightweight construction and was built on to the original roof on Level 4.

The redevelopment on Level 5 of the ACE Extension Building incorporated the demolition of the existing roof extension, rebuilding a new extension with adequate floor to ceiling heights to accommodate two computer based Teaching Lecture Theatres to hold 80 students each for the Business School. The project also included the infill of an existing light well on Levels 3 and 4 to provide two PhD student suites for the Business School, each capable of accommodating 20 students. A new external fire escape staircase was also constructed on the North/West Corner of the building linking with the new Lecture Theatres and all other floors of the building.

The new accommodation will allow the Business School to deliver the following:

- a new MSc Strategic Marketing programme (70 students in 2011/12 rising to 140 students by 2012/13)
- 64 extra students on its proven MSc Finance programme by 2011/12
- 50 extra students on its proven MSc Risk Management & Financial Engineering programme by 2014/15 (with 30 additional students in 2012/13)

The new accommodation provided for the Business School by this project is as listed below:

Level 3	Level 4	Level 5
<ul style="list-style-type: none"> <li>• PhD Student Suite</li> <li>• Kitchen Area</li> <li>• Meeting Room</li> <li>• Entrance Lobby</li> </ul>	<ul style="list-style-type: none"> <li>• PhD Student Suite</li> <li>• Kitchen Area</li> <li>• Meeting Room</li> <li>• Entrance Lobby</li> </ul>	<ul style="list-style-type: none"> <li>• Day lit Lecture Theatre 1 with raked seating / desking fully fitted out with PC's for each desk position</li> <li>• Day lit Lecture Theatre 2 with raked seating / desking fitted out for laptop use</li> <li>• Student Breakout Area with tables, chairs and vending equipment</li> <li>• Male and Female Toilets</li> </ul>

In order to create the space for the new facilities for the Business School it was necessary to relocate an existing general laboratory used by the Department of Chemical Engineering. The provision of the new replacement laboratory was included in the project brief and has been provided on Level 5 close to the lift lobby in the ACE Extension Building.

The cladding system selected for the external finish on the extensions is naturally finished grey / silver Zinc Shingles which provides a low maintenance aesthetically pleasing finish which is designed not to produce any glare to adjacent buildings. The installation of this has been coordinated with a separate College project to re-clad the remaining external façade of the ACE Extension Building.

### Facts & Figures

<b>Basic Building Cost £/m sq</b>	£2,416.08 (Construction Cost)	<b>External Works costs £/m sq</b>	n/a
<b>Services Cost £/m sq</b>	£1,439.09 (Construction Cost)		
<b>Total area of works Levels 1 to 5</b>	1013 m <sup>2</sup>	<b>Area of Circulation in m sq</b>	Circulation: 186m <sup>2</sup> Stairs: 118m <sup>2</sup> WCs: 32m <sup>2</sup> Lobbies: 65m <sup>2</sup>
<b>Function areas and size in m sq</b>	Lecture Theatres: 309m <sup>2</sup> Break Out: 90m <sup>2</sup> PHD Suites: 216m <sup>2</sup>	<b>Area of Storage in m sq</b>	Lecture Theatres: 5m <sup>2</sup> PHD Suites: nil
<b>Predicted Electricity Consumption in kWh/m sq</b>	265.86 kWh/m <sup>2</sup> /Yr	<b>Predicted Water Use in m cubed/person/year</b>	3.92m <sup>3</sup> /person/yr
<b>Predicted Fossil Fuel Consumption in kWh/m sq</b>	69.49 kWh/m <sup>2</sup> /Yr	<b>% Predicted Water Use provided by rainwater harvesting</b>	nil
<b>Predicted Renewable Energy Consumption in kWh/m sq</b>	nil		

### Key Innovative and Low Impact Design Features

A key driver for the new lecture theatres on Level 5 was to provide an innovative and functional learning space and therefore the raked seating has been designed to provide efficient sight lines. The selection of 'RIBA' timber ribbed wall finishes has delivered excellent acoustic performance and the A/V installations provide latest technology systems to provide a high quality and flexible learning environment for Business School students. With innovative design good floor to ceiling heights have been achieved in the Lecture Theatres given the constraints of the existing building. The use of roof lights creates very light teaching and learning spaces. Windows in the breakout space are controlled by the BMS to open automatically and provide natural ventilation to assist with temperature control in the summer.

### Construction Stage Environmental Impact Reduction

The steps taken by the contractor were to implement responsible sourcing of materials wherever possible and implementation of a construction waste management plan incorporating logging and separation of all recyclable materials.