

# ICENI Building BREEAM Case Study



Anglia Ruskin uses BRE Environmental Assessment Method (BREEAM) as a tool to assess the environmental impact of our new buildings and major refurbishments. This tool was developed by the Building Research Establishment and considers:

- Energy use
- Water
- Land use and ecology
- Health and wellbeing
- Transport
- Materials
- Waste
- Pollution
- Management

Buildings are awarded a score according to performance in these categories. The building is rated Outstanding, Excellent, Very Good, Good or Pass depending on the total score gained.

## **BREEAM results for ICENI centre in Colchester:**

- BREEAM Rating and Score - Very good 60.83%
- Key innovative and low impact design features of the building are:
  - an efficient under floor heating system
  - heat recovery system with air source heat pumps
  - natural ventilation with open-able windows and roof top wind catchers to benefit from stack extraction effect

- building management system with automated controls and thermostats in each room
- limited mechanical cooling
- recycling of demolition and construction waste
- lighting control sensors and high frequency, low energy lighting
- external aluminium sun shading and internal blinds to windows
- dual flush WC's in the toilets
- Basic building cost - £2,425/m<sup>2</sup>
- Service costs - £597.24/m<sup>2</sup>
- External Works - £63.88/m<sup>2</sup>
- Gross Floor Area – 470m<sup>2</sup>
- Total area of site – hectares 0.129
- Function areas and their size – Teaching 208m<sup>2</sup>, Office 37.5m<sup>2</sup>, Support 36.4m<sup>2</sup>
- Area of circulation –128.8 m<sup>2</sup>
- Area of storage – 32.25m<sup>2</sup>
- % Area of grounds to be used by community- none
- % Area of buildings to be used by community-none
- Predicted electricity consumption – 106 kWh/m<sup>2</sup> per year
- Predicted fossil fuel consumption – kWh/m<sup>2</sup> -none
- Predicted renewable energy generation – kWh/m<sup>2</sup>-none
- Predicted water use – m<sup>3</sup>/person/year – 40 litres per person equating to an estimate of 10.4m<sup>3</sup> /person/year
- % predicted water use to be provided by rainwater or grey water 0%
- Steps taken during the construction process to reduce environmental impacts, i.e.
- innovative construction management techniques
  - Site energy and water use were monitored monthly and displayed against the target as a graph.
  - Air and water pollution prevention measures were undertaken.
  - The contractor had an environmental materials policy used to source environmentally friendly materials and certified suppliers. Examples of its implementation include use of crushed aggregate and piling mat, and the retention of roofing tiles from the demolished building for maintenance purposes.
  - No timber was used for formwork, site hoardings or any other temporary site use.
  - The contractor was ISO14001 Certified
  - The existing trees and hedges were protected during construction in line with the Arboricultural recommendations. The protection measures were regularly inspected by the site manager, who was the nominated biodiversity champion with authority to influence site activities and ensure site biodiversity is protected.
  - Applicable works took place in February and November, outside the bird nesting season, to prevent any disturbance.
  - The Site Waste Management Plan was implemented to maximise recycling, with the result that approximately 80% by weight was recycled.
- A list of social or economically sustainable measures achieved / piloted –None

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