Girton College, University of Cambridge, planned to construct a student accommodation building that would be in keeping with the aspirations of their founder Emily Davies - to provide ‘everything that is good for body, soul and spirit’.

The project sought to provide the most energy efficient student accommodation in the UK, with a contemporary design that would extend and reinforce Girton College’s unique architectural heritage.

**THE MEASURES**

The fabric of the building reduces heat loss through the high-performance external envelope. This includes a low air leakage rate which alongside the high levels of thermal insulation and ventilation with heat recovery throughout, ensures that energy use is kept to a minimum.

Overheating control is entirely passive: Bedrooms face north thus solar gain is low and the exposed concrete soffits absorb unwanted heat gains during the day which is then dissipated over night. Sensors on the opening windows automatically disable the heating when air quality is satisfactory. Thus on cold days, students will be encouraged to close their windows to maintain comfortable temperatures, minimising energy consumption.

**THE RESULTS**

- BREEAM ‘Excellent’ rating
- 50% of energy from renewable sources
- 40% reduction in CO₂ beyond Part L2A(2006)
- Remarkably low air leakage rate achieved - 1.87m³/m²/hr @ 50 Pa
- 190m² of photovoltaics, integrated into the zinc roof design, generating approx. 40% of electricity on-site
- 37kW ground source heat pump
- A super-insulated envelope using triple glazing
- Brise soleil and deep reveals to mitigate solar gain
- Exposed thermal mass to provide passive cooling
- Future-proofing against climate change
- The building will provide primary data for a number of academic research papers into building performance

The development is a model of best practice in sustainable building design. In recognition of this exemplary achievement we received the RIBA East Special Sustainability Award 2014 along with the RIBA Regional Award 2014 and a Gold Green Apple Award for Environmental Best Practice.

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