

University of Bradford Construction and Refurbishment The Green: A Large Scale Sustainable Student Village

Section 1 About the project

Summary

Built for the same cost as traditional student accommodation, The Green is our final piece of the jigsaw in the Ecoversity Programme. It is an environmentally sustainable student village at the heart of the University of Bradford. It scored a BREEAM rating of 95.05%, the highest "Outstanding" interim BREEAM assessment in the world*. It contains no "Eco Bling" and concentrates on good design, social engineering and outstanding building physics to deliver its final built BREEAM score of 94.11%, the highest scoring multi residential building in the world*, which truly makes this development one in a million.

The real joy of the development does not just lie in its sustainable credentials, or the remarkable way it has been delivered, but in allowing the buildings to be used by our students to experience, and be educated in, living a sustainable lifestyle. This, coupled with sustainable modules embedded throughout the curriculum, will truly make our students unique. We believe that this unique immersed combination of living and learning about sustainability will equip our students to influence change to the sustainable agenda in the future. **at the time of writing*

Project partners

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| Client | Hayaat Group Ltd and Welbeck Land Ltd |
| Architect | GWP Architecture Ltd |
| Project Manager | Spring & Company Ltd |
| Building Contractor | GB Building Solutions Ltd |
| M+E Consultant | Jackson Coulson Partnership |
| M+E Contractor | Balfour Beatty Engineering Services Ltd |
| Structural Engineer | Robinson Design Ltd |

Section 2 The results

The problem

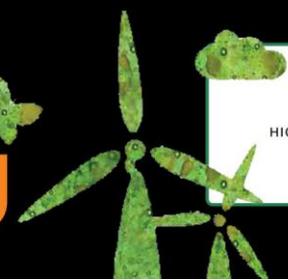
Halls of residences on campus were dated and were in need of serious modernisation. Further to this, these buildings were energy intensive and unfit for purpose. As part of the Ecoversity programme to embed sustainable development across everything the University does, the final stage was to create a sustainable living environment which gives students a suitable environment to practice sustainable living.



Profile

- HEI
- 13,000 students (includes full and part time students)
- 1600 staff
- Urban





The approach

Building towards the University's Ecoversity Sustainable Building Specification, The Green consists of 1,026 bedrooms and a student Hub in four storey townhouses and apartments built on a brownfield urban site. They are made from sustainably sourced timber to deliver a highly efficient building envelope to minimise the need for space heating. It was designed using a fabric-first approach that maximised the use of passive technologies to reduce the energy used in heating and cooling and mechanical intervention. SMART metering systems are installed in each student kitchen allowing students to monitor and act upon their energy consumption. Solar thermal panels, rainwater harvesting, a sustainable urban drainage system and low water flow bathroom fixtures and fittings all play a part in reducing the energy consumption of the buildings.

Other elements of sustainability have been incorporated into the grounds such as increasing wildlife habitats, implementing outdoor growing spaces, recycling facilities and providing bike storage for residents. Onsite composting provides an excellent closed loop educational tool.

Green ambassadors guide residents on how to make the most out of living in a sustainable environment. Residents are given information on how the buildings work and how to live "green". We actively survey residents on sustainability opinions and are working with academics to deliver further successful interventions.

Our goals

The goal was to build an exceptional, environmentally conscious student village where residents could experience sustainable living. The halls themselves have been built to the University's sustainable building specification, achieving a BREEAM rating of Outstanding- the first student accommodation in the world to achieve such accolade.

Obstacles and solutions

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| Building student accommodation with in partnership with several key stakeholders. | Collaboration between the University, landlords MI7 and the design and building teams enabled us to successfully deliver The Green on time and under budget. |
| Making the build as sustainable as it can be | Approaching the design with a fabric-first approach to ensure energy loads for heating and cooling were achieved through passive means at the outset. High levels of thermal performance and low air permeability reduced the need for space heating. Supplemented with a combination of CHP, solar thermal PVs, MVHR and energy efficient gas boilers to deliver heat, hot water and power from a significant proportion of renewable energy sources. |
| Engaging students on sustainable living and engender community cohesion | Implementing the Green Ambassador scheme to run inter-block events and competitions run by student volunteers living at The Green. In the second year, we are running an energy programme comparing energy usage per flat/townhouse and organizing competitions around energy awareness and usage. |

Performance and results

- On average water usage is 20% less than the design estimate for the development.
- Outperformed original design estimate based on best practice in the sector for electricity usage.
- 23.5% of onsite electricity usage generated on site via CHP. *Saving of over 130,000kg of CO₂ compared to electricity bought from the grid.*
- Electricity usage per student is down 44% against the 'old halls' despite the increase in facilities, student numbers and size of accommodation (kWh/p.a/student).

Section 3 The future

Lessons learned

The completion of The Green has been a momentous one since the idea was first coined back in 2007. We have learnt to ensure strong communication between the key stakeholders. We have incorporated efficient design and materials to meet the University's Sustainable building specification which has proved successful.

Sharing your project

There has been considerable media coverage over the opening of The Green, having achieved the highest ever BREEAM rating in the world at the time of its launch. This has boosted the profile of The University, as well as for the wider Bradford region as being a beacon for sustainable development and as a University which has sustainability at its core.

What has it meant to your institution to win a Green Gown Award?

To gain recognition from the sector for the hard work the University has done to embed sustainability is the highest accolade we have hoped to achieve. We hope to continue on our sustainable journey and hope others can learn and benefit from the work we do.

Further information

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<http://www.brad.ac.uk/accommodation/>