

University of Brighton Built Environment University of Brighton Waste House



About the project

Summary

The Waste House is an innovative and original yet logical approach to construction and design. Whilst utilising waste that would have otherwise ended up in landfill, incinerated or even unnecessarily recycled, the Waste House brought together students, professionals, academics and the community to create Europe's first building built entirely of waste. The building has now become an outstanding example of best practice for both the waste and the construction industry. This 'new approach' in construction promotes resource efficiency and cooperation. The Waste House is a lesson on sustainability, economic feasibility, communication and cooperation. We hope it will inspire more people to work together for a sustainable future.

Profile

- Multi-site urban HEI
- 25,000 students (includes full and part time students)
- 3,500 staff
- 5 campuses over 3 cities/towns

Project partners

University of Brighton, City College Brighton & Hove, Brighton & Hove Council, Freegle, Mears, Elliotts, Rationel Windows & Doors, South Downs Solar, Travis Perkins, Kingspan, CEF, Vent-Axia, AAC Waterproofing Ltd, Wolseley, AM Fire Security Group, HSS Hire Group, Austins Cradles Ltd, Velux, CNC, Sovereign Alarms Ltd, Chamers & Co, Schion, Ejot, Linder Group, The Wood Store Brighton, Willmott Dixon, Jewson, Buildbase, Spedy, Harley Quinn Wilson, Baymedia, Chandlers Building Supplies, DuPont, The Brighton Design Workshop, Light Foot LED, BHESCo, Newlife Paints, BBM Sustainable Design, BBP, Robinson Associates, SCDF, Signs express, Dulux, Bre.

The results

The problem

The biggest problem for the Waste House was convincing designers, contractors, politicians and trainees of the potential that exists within material usually identified as waste. In a sense we were trying to convince our 'would be' helpers that the Waste House was not only feasible but worth it.

The approach

The University of Brighton and City College Brighton & Hove were the academic partners of the project that lead the way. For us 'waste' was simply another resource stream. Communication and collaboration was at the heart of our strategy to get people on board. We had an efficient communication campaign aimed to raise awareness and create understanding about the wealth hidden in waste. Our motto 'there is no such thing as waste just stuff in the wrong place' eventually convinced suppliers, contractors, the council, politicians and hundreds of volunteers to join us in our mission.

Finalist's case study

Our goals

- To build a house out of what others consider waste.
- To increase awareness & knowledge of what sustainable design truly is.
- To encourage collaborative learning across different institutions.
- To work with educational establishments of all levels and people of all backgrounds.
- To prove that waste is a resource.

Obstacles and solutions

Obstacle	Solution
<ul style="list-style-type: none"> • Intercepting waste • Convincing people that waste is a resource. • Designing structural beams and columns using second-hand, waste and surplus material – Not knowing the stress grade. • Using young people with as little as two months experience in beam and column manufacture. • Natural elements, 2012 was a wet year which affected the sourcing of 'waste' timber and ply. • Storing material for several months before we could use them. 	<ul style="list-style-type: none"> • Cat Fletcher led sourcing the waste and used online networks such as freegle, as well as her personal contacts and those of others involved. • Running a communication campaign to raise awareness on the wealth that is hidden in waste. • Designing larger structural beams and columns than normal and adjusting the design as the project progressed. • A structural engineer oversaw the manufacture of structural elements and approved items before usage. • We had to adjust the project timeline and the design process to incorporate the materials that has been sourced. • Brighton & Hove City council dedicated a nearby building for us to use as a temporary resource store.

Performance and results

The Waste House is a lesson on sustainability, economic feasibility, communication and cooperation, and has now become an outstanding example of best practice for both the waste and the construction industry. The building received an A rated Energy Performance Certificate. University of Brighton MEng students have used the Waste House as a case study for low energy credentials of the building via IES data modelling and PhD and MSc students are currently processing data from building fabric sensors.

The future

Lessons learned

If properly briefed and supported, young people from different backgrounds, with little experience in the construction industry and with different skill sets, can learn from each other and construct a highly efficient building using unusual materials. It is possible for a 'live' construction site to run effectively while shutting down for an hour every week to allow visiting tours from over 750 school children interested in the project. Ultimately 'there is no such thing as waste, just stuff in the wrong place'.

Sharing your project

The Waste House started as a research project aiming to raise awareness locally and even nationally. It has now surpassed the national borders and we often receive visitors from both national and international educational institutions interested in sustainability projects. Over 400 articles have been published about the project around the world to date via TV, radio, websites, magazines and newspapers. The Waste House can be relevant not only for learning providers, but for all organisations interested in utilising waste, exploring alternatives to mainstream construction methods and being part of the circular economy. The Waste House has its own dedicated website with many films, photographs and blog entries that communicate the issues and stories behind the project.

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

The Waste House brought together people from a range of disciplines and backgrounds in an effort to change everyone's perceptions about waste. This award recognises the innovative ideas and forward-thinking of the people and organisations involved; and rewards the environmental and community-centred approach that is inherent through all our projects.

Further information

Architect: Duncan Baker Brown, Resource expert: Cat Fletcher Website: <http://arts.brighton.ac.uk/business-and-community/wastehouse> Twitter: [@WasteHouse](https://twitter.com/WasteHouse) Facebook: www.facebook.com/BrightonWasteHouse