

Finalist's case study

Coleg Gwent Construction & Refurbishment BGLZ Campus

Section 1 About the project

Summary

The Bleanau Gwent Learning Zone (BGLZ) occupies an area of 14,139 m². The aim of the project was to embed sustainable development principles into the new development at the Bleanau Gwent Learning Zone (BGLZ). The design had to meet the future needs of the college by providing flexible teaching facilities, encourage the use of local supply chains during construction and ensure that the sustainability aspects were instrumental in the whole process.

Project partners

The project was a collaborative partnership project with the Bleanau Gwent Borough Council and a consortium. The building lies at the heart of the regeneration and redevelopment of the former steelworks site at Ebbw Vale, the largest regeneration project in Wales, known as the Works, which includes a leisure center, a school, a 500 space multi-story car park and an energy centre.

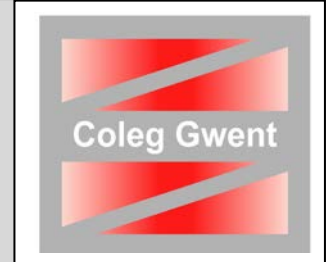
Section 2 The results

The problem

Bleanau Gwent Learning Zone (BGLZ) was designed to replace an existing Campus situated on the outskirts of Ebbw Vale. The existing building was in need of major investment and maintenance. More significantly the Campus was situated in an area with some of the most challenging environmental, social and economic issues in the UK with high levels of poverty and low educational achievement. By embedding sustainable development principles throughout the design the college could ensure that the local community would be provided with an excellent facility to provide learners with the education and skills needed to help with employment and thus contribute to the economic development of Bleanau Gwent and the surrounding communities.

The approach

The Masterplan for the site was developed through a series of key stakeholder workshops and public exhibitions, which considered a wide range of assessment criteria, including the protection and enhancement of wildlife, habitat connectivity within and outside of the site to benefit the ecology and landscape of the areas. During the initial designs stages the staff and learners of the old Ebbw Vale campus were consulted and included in working groups when developing the key aims of the design. The new campus is now home to some 350 members of staff and over 4000 learners. The project ensured the regeneration and redevelopment



Profile

- Further Education College
- 1600 staff
- 32000 students

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of an existing brown field site at the heart of a larger regeneration and redevelopment scheme of the former steelworks site at Ebbw Vale, the largest regeneration project in Wales.

Our goals

During the design process it was essential that the building would not only be energy efficient but also meet the future needs of the college by providing flexible teaching facilities, improved space utilization, encourage the use of local supply chains during construction and ensure that the sustainability aspects were instrumental in the whole process.

Performance and results

The design was awarded the BREEAM (Building Research Establishment Environmental Assessment Method) standard of 'Excellent'.

The building has an Intelligent Building Management System that sits on the college network, ensuring the Mechanical and Electrical Engineers can monitor the building's energy performance at their desk some 21 miles away reducing the need to travel to and from site.

By employing sustainable and energy efficient technologies into the design, i.e. LED lighting, natural ventilation has been utilized wherever possible, Heat is delivered via a district heating main from CH&P boilers through a partnership with Bleanau Gwent County Borough Council; pphotovoltaic cells for the supply of electricity and LED lighting and high efficiency control equipment, the performance of the building has proved to be substantially more efficient than the building it replaced.

Old Ebbw Vale Campus = 9884m²		kWh per m ² = 340	Kg CO _{2e} per m ² = 86.16
	kWh	CO _{2e}	
Gas	2719519	500391	
Electricity	645711	351267	
Total	3365230	851658	

New BGLZ = 14139m²		kWh per m ² = 101	Kg CO _{2e} per m ² = 36.5
	kWh	CO _{2e}	
Gas:	1,196,100	296241	
Electricity	544560	220082	
Total	1740660	516323	

Through the rain water harvesting system the building only utilised 6% of the water when compared to average annual water used in the old building, a direct result of waterless urinals and rain water harvesting tanks.

The travel survey indicated that more students are using public transport, an improvement of 15%.

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The four-story building provides educational opportunities in a series of key curriculum areas; it provides sixth form education for all secondary schools in the borough and includes specialist facilities for construction, science, hairdressing and beauty, performing arts and media.

As can be seen from the results above the energy efficiency of the building has been substantially improved when compared to the old campus it replaced.

There is also a performance area for public events, a learning resource center and wild flower roof top garden. The roof top garden has seen a substantial increase in the number of student engagement/biodiversity projects and collaboration work with local environmental groups

Section 3 The future

Sharing our project

By adopting the approaches taken by Coleg Gwent all sectors can learn from the techniques implemented and achieve the same energy efficiency and low carbon emissions by providing a modern sustainable building. It is also believed that organisations situated in areas with similar challenges to Bleanau Gwent who are faced with increased globalisation and the decline of traditional industrial sectors will understand the importance of providing a facility that can offer essential skills to the workforce. These skills are not only vital for improving productivity and efficiency but also in promoting social inclusion and stable employment. Better health and greater social stability flow from this and are therefore central to the economic and social wellbeing, which are key in building a sustainable community.

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

Recognition of the work that we have done in the area of sustainability would be immensely important to our institution. It would be external validation of the importance that we place on running our business as sustainably as we possibly can. We are a learning organisation and place great value on feedback and praise. Winning this award would be an honour and would rightly celebrate the commitment and high quality of the work of our staff.'

Further information

www.colegwent.ac.uk

www.facebook.com/ColegGwent