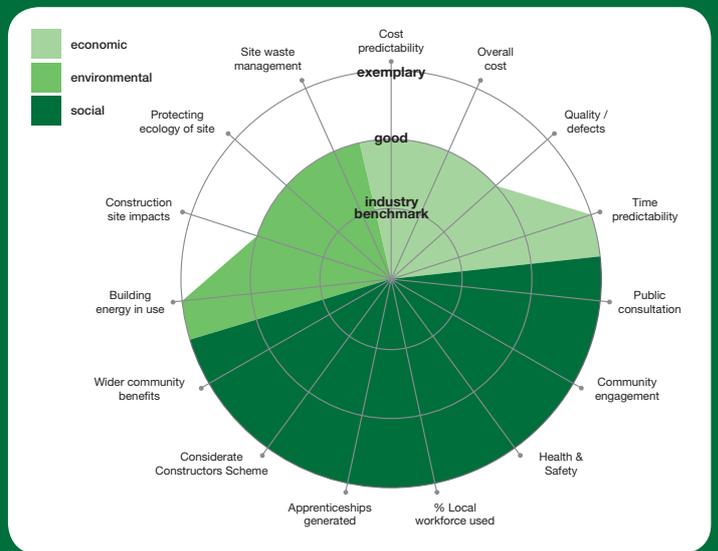


# newport high school



This new secondary school building was developed to replace the existing Bettws High School, which was underachieving. In addition to improving the school, a key aim was to promote the development and regeneration of the area by providing better leisure facilities at the school that could be accessed by local people.

Crucial to the success of the project was the active involvement of the client, the willingness and ability of the project team to work together, and the support of the local community. Widespread consultation among all interested parties ensured that the facilities provided were appropriate and attractive. The new school building achieved an Excellent BREEAM rating for sustainability, exceeding the original target, and in its first year in the new building, the school has reported improved performance in several areas, including increased pupil intake and higher grades at GCSE.



## project details

client:	Newport City Council
architect:	HLM Architects
contractor:	Leadbitter
value:	£25 million
project size:	10,500m <sup>2</sup>
contract method:	2 stage tender, collaborative contract

## what is an exemplar project?

An Exemplar is defined as 'something worthy of being copied'. The purpose of the Exemplar programme is to identify what actions have taken place at key stages of a project that has led to a successful outcome, so that this learning can be adopted on other projects. The Exemplar programme has been developed to help identify the reasons why certain projects are successful in a standardised, quantifiable way, and to share with the industry what enabled these successes. An Exemplar considers all aspects of sustainability, including economic, social and environmental factors. Projects must demonstrate that they have been innovative in one or more of these aspects in a way that exceeds normal industry practices, while achieving at least minimum standards in all other areas of the project. This is to demonstrate that the scheme is well rounded and has not sacrificed one aspect to be successful in another, while also incorporating best practice measures that can advance the state of the industry. An Exemplar project therefore reflects the ideal industry goal of achieving a scheme's primary aims in a sustainable way, at acceptable costs.

## what made the project successful

- Sustainability was built into the design philosophy from the start of the project
- The client was proactive and involved throughout, ensuring that early opportunities were not missed and championing high levels of quality and sustainability
- The team's collaborative approach towards all major issues ensured that everyone worked together to find feasible solutions and the best way forward
- Engagement with local supply chains to achieve a high level of buy-in led to high levels of quality throughout construction
- Interaction and consultation with the local community ensured that the scheme met their needs and was embraced as a key part of the community

## notable achievements

- The project was delivered on time and budget, despite issues that could have caused delays and increased costs
- A BREEAM 2008 Excellent rating was achieved even though only Very Good was originally required
- CO2 emissions were reduced by 20% compared to Building Regulations Part L 2006 minimum standards, with an airtightness of 5 m<sup>3</sup>/m<sup>2</sup>.h @ 50Pa
- 99% of waste was diverted from landfill
- The local community has made increased extracurricular use of the new sports facilities
- 50% local labour was employed and three new directly employed apprenticeships were generated, with 14 in total across the supply chain
- Attainment statistics for the new school in the first year were significantly improved, including increased intake, improved pupil grades and higher income from leisure facilities

## economic considerations

The project was completed within time and budget and well within the top quartile for economic performance. This was despite issues that could otherwise have caused a delay and/or increased costs.

A collaborative approach to all major issues with the project team working together to find solutions produced several benefits:

- A thorough procurement process with a major emphasis on quality ensured that the right team was in place from day 1 and that cost certainty was achieved at a very early stage
- Clear client leadership coupled with early input from the contractor and other key stakeholders ensured that an integrated and committed team was in place which enabled 'value engineering' decisions to be made quickly and communications to be clear and effective
- BREEAM Excellent was delivered at relatively low uplift cost (1.5%)
- The budget was managed to keep the overall programme on target whilst accommodating variations on individual items
- The project programme was adapted to allow work to continue despite lobbyists trying to get original building listed, thus keeping the project on schedule
- Waste aspirations were met by collaborating to design out wastage upfront

The contract was set up as an NEC Option C with a 50/50 gain/pain share, which encouraged everyone to focus jointly on risks and opportunities for improvement. It also promoted ownership of the project.

The upfront consultations organised by the client prior to the appointment of the project team meant a lot of background work was already done and a detailed design brief developed early, allowing the project to go to planning very quickly (within four months of team appointment). This saved two to three months of potential design time and helped to meet a relatively short time turnaround.

## environmental considerations

**A BREEAM 2008 Excellent rating was achieved even though only Very Good was originally required**

The design team examined the budget and identified that the uplift to achieve the higher rating was affordable (only 1.5%). The BREEAM assessor was brought on board early to help achieve credits in the most appropriate and cost-effective way, rather than having to spend more money to achieve them. Continued client ownership of the project helped to drive the BREEAM aspirations forward.

**CO2 emissions were reduced by 20% compared to Building Regulations Part L 2006 minimum standards, with an airtightness of 5 m<sup>3</sup>/m<sup>2</sup>.h @ 50Pa**

The contractor worked closely with the architect on detailing to ensure the energy efficiency targets were met. Although biomass is often considered a relatively easy way to reduce anticipated CO2 emissions in a development due to its low carbon emission factor, the team chose not to use biomass as they felt it would not be practical from a maintenance point of view and fuel deliveries might have been an issue. Instead, they achieved a high level of energy efficiency with a traditional heating system by improving the thermal performance of the fabric and the airtightness of the building. The contractor brought in a specialist to work with the architect on the detailing to ensure it met the airtightness requirements. Workmanship on site was monitored closely by the Clerk of Works to ensure the aspirations were achieved in practice.

**99% of waste was diverted from landfill**

The contractor worked with the architect to design out waste where possible. This included designing to a grid of modular product sizes to minimise offcut waste and the use of a modular framing system that was prefabricated off site. The steel frame system also allowed the building to be made watertight relatively quickly, preventing the risk of weather damage to components. A Site Waste Management Plan (SWMP) was developed using the contractor's in-house methodology. This was linked with initiatives on site to segregate waste streams for recycling. A waste/environmental champion was nominated to promote efficient waste management on site and to make sure the site was kept tidy.

## social considerations

### The local community has made increased extracurricular use of the new sports facilities

The consultation process attracted feedback from many quarters at a very early stage in the development of the brief, so ideas could be incorporated into the design. Neighbourhood committee meetings were set up in various venues to encourage engagement from different groups of people in different areas, for example the local rugby club, the existing school and the community centre. The project team continued to engage with teachers, pupils and the community throughout the design and construction process to retain buy in. This involved site visits and presentations within the existing school, and a Community Room was set up on the site where people could drop in at any time to find out about the project. Local clubs and associations were included in the consultation to make sure the new facilities provided were appropriate and cutting edge. Additionally, the new school was moved closer to the main road and given a welcoming frontage so it was more visible and accessible to the community. The new sports facilities are now managed by the local authority's leisure section to ensure they remain well maintained and appropriate to both the school and the community.

### 50% local labour was employed and three new directly employed apprenticeships were generated, with 14 in total across the supply chain

The design team held a supply chain event at the existing school to raise awareness of the new development and to encourage local suppliers to tender for works. Over 100 companies attended and a large number won work. This early workshop was seen to be a huge success and the contractor is now taking this approach on other projects.

Local suppliers were given preference over others where the quality was suitable and costs were reasonable. The use of local suppliers and workforce meant that those on the project

had a particular interest in the success and quality of the scheme, because it was contributing to their own community. This led to an excellent level of buy-in and high quality delivery. The project team also worked with the Newport Construction Initiative to identify placements for apprentices within the development.

### Attainment statistics for the new school in the first year were significantly improved, including increased intake, improved pupil grades and higher income from leisure facilities

Some of the positive statistics resulting from the development include:

- 147% increase in intake (now at full capacity)
- GCSE C-A\* grade attainment, previously 28%, up to 75% in first year in new building
- 200% increase in uptake of school meals; children now happy to stay in school for lunch
- Daily 'learn to swim' programme attended by 500 participants per week, up from 50 previously
- Leisure income from community usage exceeded previous 12 months in the old facilities within the first six months of the new facilities being made available

There was a smooth handover process within a two-week school holiday period, during which a programme of training was given to teachers on how the new building worked. A bespoke post occupancy evaluation (POE) study was developed using a website to obtain feedback from three key user groups: senior staff, teaching and administration staff, and pupils.

The project team designed the study so the feedback would specifically reference the original aims of the project. It was observed during the evaluation that those who had been involved in the consultation process seemed to be more satisfied than those who had not, seemingly because they had a better understanding of what to expect. All comments from the POE workshops will be built into the second upcoming school project, to ensure continual improvement.