

CEW AWARDS 2012

Llanwern High School Project Team – WASTE MINIMISATION

INTRODUCTION/OVERVIEW

The waste minimisation award was introduced in 2009 in recognition of the importance of this aspect of sustainability to Wales and the construction industry. In that year it was won by the Newport High School project, an excellent example of collaboration between the local authority client, the contractor Leadbitter, end users and the community. When Newport council commissioned Leadbitter to build a second new facility, Llanwern High School, the contractor was determined to use the lessons learned on the earlier project to deliver significant improvements. One of its key objectives was to send a lower amount of waste to landfill.

As before, the Llanwern project was characterised by collaborative working, an actively involved client, a shared approach to problem-solving and local community engagement. Many members of the Llanwern project team had been involved in the Newport High development, and it was hoped that this continuity, coupled with excellent supply chain management and strict adherence to a waste hierarchy, would help achieve the ambitious waste minimisation goals.

PROCESS

Leadbitter uses a state-of-the-art waste management plan that allows it to accurately forecast, monitor, track and report on waste. The plan tracks every waste movement, along with its cost, weight and CO₂ impact. It is the culmination of many years of developing waste practices to try and ensure that standards and targets are improved on each successive project.

But having a plan is only part of the story. At the heart of the successful management of waste during construction of the Llanwern school was the whole team's creative and committed approach to waste minimisation, and willingness to share information and ideas.

The first and most crucial decision was the establishment of a waste hierarchy (reduce, reuse, recycle). From the start, designers and supply chain partners worked together to eliminate waste from the design wherever possible. No opportunity was missed to shave waste and costs, for example by specifying products that avoided off-cuts. An 18-month delay to the programme caused by funding issues, gave the team more time to identify further improvements in waste management. For instance, following consultation with designers and local ground workers, the main contractor

modelled the groundwork profiles and adjusted the design to allow vast amounts of soil, due to be removed, to be reused instead.

Waste management was well organised on site, where close liaison with the waste contractors led to the establishment of 15 segregated waste streams. Numerous innovative approaches to reducing and reusing waste were employed; during demolition of the old existing school buildings, for example, Leadbitter used its Schools Resource Network to find a new home for leftover equipment. The contractor's community liaison manager worked to ensure that spare building materials were donated to local community groups and schools. New recycling techniques were trialled with materials suppliers to make best use of waste such as old carpet tiles and insulation.

Waste was also diverted to local initiatives such as timber reuse companies and Children's Scrapstore (an initiative that uses clean non-hazardous waste items such as plastic piping and surplus PPE for arts and crafts).

To ensure that everyone involved understood the importance of waste minimisation, the council's buildings and capital project manager liaised with the school, and the weekly design team meetings included representatives from teaching staff and students. Induction training for over 1700 project workers included awareness of waste management and sustainability.

RESULTS

Up to the point of handover in March 2012, over 99.9% of construction waste had been diverted from landfill. Just 37.3 tonnes of waste had gone to landfill, representing 1.17 tonnes for every 100m² of floor area. Nearly 80,000 tonnes of soil that would otherwise have been carted away was reused on site.

Effective waste segregation halved the expected cost of the skips. The success in working with the waste contractors on maximising waste recovery encouraged Leadbitter to develop a zero non-hazardous waste to landfill target, which has since been implemented across many of Leadbitter's sites.

The practice of targeting zero waste to landfill has already had a positive impact on other schools in Wales. For example, the waste management methodology has been implemented at two schools in Bridgend.