

# Pupil power

The extension and refurbishment of Falmouth School's existing 1960s design and technology studio was directed by a client made up of pupils from the school



**T**he project was borne out of the Sorrell Foundation's 'joinedupdesignforschool' programme where pupils are given control and responsibility as clients within design projects. From the inception of the project through to its completion, the architects, Urban Salon, and the rest of the project team, including Carrick Building Control, worked directly for a client group of 11 Design & Technology pupils drawn from Year 9 and 10 and selected by

the school. The project was completed in August 2008 and built for a budget of £500,000.

Previously the product design workshop was cramped and pupils had nowhere to carry out research and conceptual design work away from the noise and dust of the workshops. The pupils presented their brief to the team in the form of a play that they wrote themselves to communicate their frustrations with the existing block and their aspirations for the new building. They wanted a new open, light space where they

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could develop conceptual and design ideas away from the noise of the workshops.

They also wanted a new landmark for the school that would demonstrate best practice for environmental design. For the duration of the project every client meeting had the pupil client team present, along with the head teacher, design and technology teachers and school governors. Meetings between the design team and the client involved decisions on the design, budget and programme for the project. ▶



◀ The pupil client team were not just involved with the design decisions but also worked with the structural engineers to determine the type of structural system used, the quantity surveyor to determine budgetary priorities and the M&E engineer to determine the most effective and efficient sustainable interventions.

The completed scheme incorporates a 100sq m extension made out of solid prefabricated timber as well as the refurbishment of the existing block. Internally, the new D&T block has created a separate area for research and conceptual work that is away from the workshops.

Refurbishment rather than whole-scale removal has the added benefit of less waste, lower embodied energy in building materials required. Coupled with the use of the prefabricated elements this leads to less construction time and less disruption to students and their education. The existing 700m<sup>2</sup> building has also been double glazed, reinsulated with Paratex PlusKN and rendered to provide much better thermal performance.

Creating a low energy project was a key priority for the pupil client group. During the design process, the students worked with the M&E engineer to identify where they could make the most effective and efficient sustainable interventions. Through this process, the pupil client team determined that a key priority was to improve the insulation to the existing 700m<sup>2</sup> building before considering other initiatives.

"The improvements to the

existing classrooms go further than Part L demands; this was an important decision made by the students because the money invested is largely unseen, it's inside the walls and the roof," said David Pierce of Urban Salon.

Wood-fibre insulation was applied to the outside of the existing school building (so as not to disturb the interior) and rendered, and all the windows were replaced with double-glazing to prevent heat loss in winter. The roof of the building was also insulated and covered with a rubber membrane. The contractor carefully programmed all these works so that teaching could continue in the workshops throughout the works.

The extension has been orientated with large openings to the north to maximise even daylight (perfect for drawing and design work) and closed to the south to reduce heat gains. The ingress of natural light is encouraged at high level through a series of clerestory windows that run along each roof panel.

The structural engineer presented three structural systems to the pupils and discussed their relative environmental performance. A timber structure was chosen due to its ecological benefits. The extension is constructed from 56m of timber, saving approximately 56 tonnes of carbon dioxide compared with the equivalent construction in concrete certified and is sourced from sustainable forests. The laminated structural timber panels come with other benefits; their mass also contributes to the wall's

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insulation and overall Uvalue.

The new build element of the project, some 95m, is a solid construction of engineered timber panels from Austrian supplier KLH. These were delivered to site pre-cut, reducing the project timeframe. Although this is quite a common system in mainland Europe this was the first example of its use in the West Country.

The scheme initially incorporated a wind turbine, however, budget considerations meant that the pupils decided to exclude this from the final scheme. Instead they resolved to fundraise for this separately and take charge of consulting the school's neighbours, carrying out noise surveys and applying for planning permission. The pupils have successfully raised all the funding required, have successfully gained planning permission from the local council and now placed the order for the turbine.

Sandra Critchley, Headteacher at Falmouth School, said: "The building is absolutely fantastic; it looks striking and has become a landmark feature. The students have gained tremendous employability skills such as teamwork, presentation skills, problem-solving, decision-making, and understanding financial reports. They have gained confidence throughout the whole experience.

"The school has not only a beautiful building but an inspirational design studio which is very appropriate for the Design Technology Department."

