

West Buckland School

Art, Design and Theatre Building

Location: Devon

Completion Date: April 2010

Construction Value: £3.5 million

Client: West Buckland School

Structural Engineer: Atelier One

Services Engineer: E3 Consulting Engineers

Quantity Surveyor: Gardiner & Theobald

Contractor: Pearce Construction Barnstaple Ltd.

West Buckland School is one of the premier schools in the South West of England with an enrolment of 700 students ranging in age from five to seventeen. The brief was to create the best educational facilities for Art and Design & Technology in the South West of England, replacing the poor existing buildings with new high-quality contemporary structures.

The new Art, Design & Theatre building presents visitors with a bold, modern extension to the impressive Victorian elevation of the existing schoolhouse. A courtyard at the centre of the development provides a social gathering space linking the old and new buildings, with terraced seating offering a sheltered meeting place in which students can sit and socialise. The building creates a number of covered and internal routes across the site, reinforcing the connection between the prep school and the upper school. It provides new art studios with sweeping views over the Devon countryside, state-of-the-art Design & Technology workshops and a well-appointed black-box theatre, placing Art and Design at the heart of the West Buckland campus.



The building has a prefabricated structural frame, consisting of cross-laminated spruce panels and solid glulam beams and is clad in locally-sourced, natural stone and Siberian Larch boards. The larch will quickly weather to a silver-grey colour, echoing the stonework of the existing school house. Internally the structural timber soffits and beams are exposed, lending the classrooms a natural warmth and integrity. The classrooms are finished with bespoke plywood fitted furniture, natural rubber floors and composite cork pinboards.

The use of a prefabricated timber building system has many environmental benefits, including a low carbon footprint and reduced whole life-cycle costs. The monolithic nature of KLH panels considerably reduced the number of construction joints and simplified the delivery of an airtight building. A Building Management System or BMS is installed in the new building, which controls, monitors and records all aspects of the buildings energy use. The BMS ensures that the building is always running at optimal efficiency, maximising the use of the passive systems and a roof top sunlight sensor modulates the internal fluorescent lighting levels to maintain the required luminance levels for each room whilst minimising energy use. All of these factors have contributed to the building's energy-efficiency and thanks to the wood pellet fired boiler and PV array on the roof the building has a tiny estimated annual CO₂ emission of 8.1kgCO₂/m².

All of the sustainable technologies and systems used in the new building contribute to its excellent energy performance. The building achieved an 'A' rating on its energy performance certificate, with an overall points score of 20. This is a very creditable achievement considering that this score is 60% better than the average score for new buildings of a similar size.



