
100 PROJECTS
UK CLT

EDUCATION

Education has remained one of the most popular sectors for CLT structural solutions, with some of the first CLT buildings in the UK being schools. Most school refurbishments, extensions and expansions require that schools remain open during the construction. Such building projects require minimal distractions and maximum safety, and tend to need to be completed within an academic year. The primary benefits of a reduced construction program and a cleaner, safer, quieter site offered by CLT can therefore provide the ideal solution.

Education buildings are typically low rise and include a mix of large open span spaces for assembly areas, halls and auditoriums alongside smaller cellular classrooms. This combination tends to result in the use of hybrid structures, where pure CLT is used for the classrooms and glulam or steel additions are only necessary for the wide span spaces.

In addition to these practical benefits, research has shown that exposed timber interiors have a calming effect on children which promotes better learning. Additionally, exposing the structure allows its use as an educational tool helping the children to learn about construction within their curriculum. Exposing the timber in educational buildings is generally quite straightforward due to the pre-existing requirement for a thorough fire safety strategy that ensures very quick and easy evacuation from these typically low-rise buildings. CLT continues to be widely used in education buildings and is increasingly popular with councils and the Education Funding Agency who continue to champion the use of CLT in construction.

Image: Graveney Sixth Form, Urban Projects Bureau © Killian O'Sullivan

© Killian O'Sullivan

2014

Education

GRAVENEY SIXTH FORM

Graveney School

LOCATION
London Borough of Wandsworth

HEIGHT / STOREYS
33 ft (10 m) / 2 storeys

CONSTRUCTION COST
£ 976,000

ARCHITECT
Urban Projects Bureau

STRUCTURAL ENGINEER
Furness Partnership

TIMBER ENGINEER
G-Frame

TIMBER CONTRACTOR
G-Frame

TIMBER MANUFACTURER
Stora Enso

MAIN CONTRACTOR
Ashe Construction

TIMBER VOLUME
8,200 ft³ (232 m³)

TIMBER ASSEMBLY
6 weeks

OVERALL CONSTRUCTION
52 weeks

STRUCTURE TYPE
Pure Timber

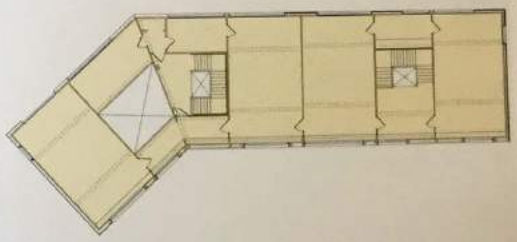
EMBODIED CARBON WITHIN TIMBER*
-144 tons (-131 tonnes) CO_2e

CLT FACT
Exposing the CLT reduced the cost of expensive linings

With a budget of £1 million and a 12-month program to create a new senior school block, the architect reviewed the various prefabricated, modular and bespoke construction options for delivery within these constraints. CLT was selected for its rapid on-site construction, sustainability, feel and appearance. Through achieving maximum architectural output using minimal means, UPB have, through their design, set a realizable template for new school buildings in the current climate of short-termism and austerity.

The 8,600ft² building minimizes unnecessary floor area and maximizes daylight penetration and airflow. All the ground floor classrooms open directly onto sheltered external porches rather than corridors, and the first floor classrooms are all accessed directly via the two staircases. A double-skin polycarbonate front façade opens to frame views across the surrounding campus and also regulates solar gain.

Designed to be naturally ventilated all classrooms, staircases and double-height spaces are double or triple aspect, with cross ventilation and stack ventilation through high-level rooflights. The spaces are naturally lit throughout the day, reducing the need for electric lighting. Exposed CLT omits the need for internal linings, reducing material use and cost. The CLT frame, with translucent panels, cladding and openings, shapes the building and gives it character.



First Floor Plan