



# Wednesfield Technology Primary School

Completed 2023



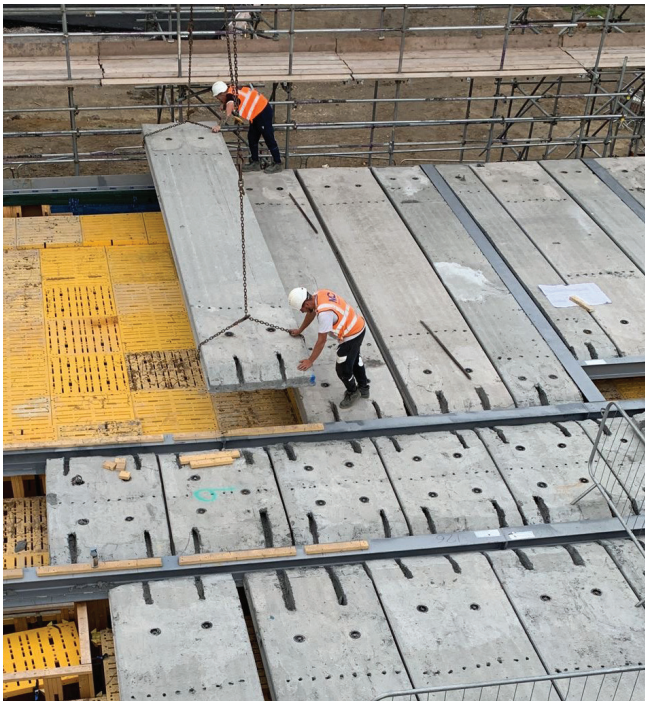
In partnership with Tilbury Douglas, we have recently completed the design, manufacture, and supply of a complete timber frame package for the construction of a new Passivhaus school. The project in Wednesfield was for Shireland Collegiate Multi Academy Trust (SCMAT) on behalf of the Department for Education (DfE).

The Timber Innovations Larsen System was chosen for both its' low energy credentials and importantly that it addressed the DfE requirement for non-combustible insulation and 3rd party fire testing. A further consideration was that it would be manufactured locally in Solihull just 25 miles from the site.

Located in Wolverhampton, the brownfield site was once home to Edward the Elder School but had stood derelict for several years, creating a void in this otherwise busy part of town. The new school, selected to be part of the highly successful SCMAT will be a new jewel in this town's urban landscape, accommodating nearly 450 new primary school places.

The 'Technology' status of this school brings a fresh approach to education, incorporating principles of 'flipped' learning, family supported learning, and technology-for-feedback.





### Meeting client expectations

Meeting the City of Wolverhampton Council's objectives to improve air-quality in schools and reduce energy usage were the primary drivers, the Passivhaus Classic design in conjunction with the SCMAT design principles ensured the specification of a range of sustainable, low embodied carbon materials and guaranteed building performance.

Following the demolition of the existing school, the design solution proposed a single block, two-storey new build, catering for two-form entry space requirements. The scope also included external refurbishment to the Grade II listed caretaker's lodge on the site.

The architectural design, led by local architects Corstorphine + Wright (C+W), referenced the local residential vernacular of red-brick and rendered facades whilst weaving in unification of the SCMAT common design language.

Retaining most of the trees on the site was of key importance to the brief, so the positioning of the school was dictated by this, as well as the requirement for a sports pitch and hard play area.

### Doing things differently

Passivhaus promotes a whole-building approach with measured targets, focused on high-quality construction, certified through an exacting quality assurance process.

Timber Innovations have extensive knowledge of designing Passivhaus junction details and monitoring the build process that requires both photographic and quality inspections of all elements of the building

programme, which is then shared with the Passivhaus consultants and independently inspected on site.

To meet the low carbon brief, we worked with Passivhaus consultants Delta Q to incorporate our award-winning Larsen System, a prefabricated twin-stud system for external walling, offering 360mm of non-combustible insulation, while supporting the cold bridging strategy. To ensure an airtight line, the timber panels have an adhesive vapour permeable membrane applied to the inside face for site taping.

### Timber Innovations - Works complete

Following our successful completion, Tilbury Douglas are well underway with follow on trades. The results of the first airtightness test in January 2024 exceeded the Passivhaus standard by over 100%! Air changes per hour are required to be 0.6ACH @50 pascals, with this project averaged 0.225ACH @50 pascals. Furthermore, the air permeability requirement of 0.93m<sup>3</sup>/hm<sup>2</sup> achieved 0.33m<sup>3</sup>/hm<sup>2</sup>.

Tilbury Douglas' first Considerate Constructors Scheme (CCS) visit provided the team with great feedback:

*"An excellent visit, with the team fully committed to the aims of the Scheme. Community concerns have been well addressed and responded to and promotion of the industry is exemplary. Environmental controls are robust, and the workforce informed of the measures taken. Tilbury Douglas is fully committed to NetZero and employees are aware of the part they must play, through training, data collection and KPI targets."*



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