



Glenthorne High School, Sutton

Client Glenthorne High School, Sutton

Architect Plan A

SWH provided structural engineering services for a single-storey extension to Glenthorne High School, using sustainable materials to reduce waste and improve thermal efficiency.

The Glenthorne High School project comprised of a single storey extension. The new structure was to be built next to an existing portal framed sports hall, with caps extending into the new structure's footprint.

There were complicated site conditions to cope with, including identification of existing services that were not discovered during initial ground surveys. This resulted in a repositioning of piles and the ground beam multiple times throughout the construction, in order to avoid live services.

This project stands out because of the use of sustainable materials for construction. This includes the use of Posi-joists and timber cladding. In addition, hempcrete blocks were used for the inner skin of the external cavity wall and internal partitions, in conjunction with a steel frame which supports the roof and provides stability to the structure. Hempcrete was used to improve the thermal efficiency of the building, but also as a zero waste alternative. Any material that breaks off from the blocks is collected and reused by mixing with lime to create the 'mortar' between the blocks. Any further waste can be sent back to the manufacturer to be reformed into new blocks.

In recognition of the success of this project, it was chosen as **Winner of the Medium Project at the Structural Engineering Awards 2022**, awarded by the Institution of Structural Engineering South Eastern Counties Regional Group.



