Carbon Saving Case Study

John F Hunt Ltd

Overview - 1 Liverpool Street, London

Part of the process for the demolition of the Liverpool Street building, involved the erection of a hoarding around the perimeter to protect the public from the site works.

John F Hunt utilised the existing concrete Kentledge blocks inherited from Crossrail's Elizabeth Line hoarding and re-used them at the Liverpool Street site. This avoided the need to fabricate new blocks and provided an opportunity for carbon saving, contributing to the ICE zero carbon emissions goal.

Quantifying the Carbon Saving

To be able to quantify the amount of carbon saved from reusing the blocks, three different scenarios are used for comparison purposes:

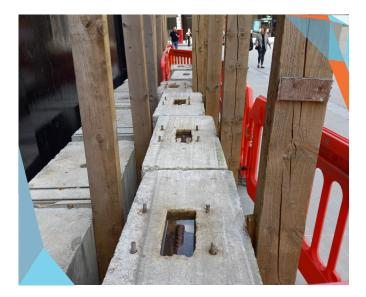
Scenario 1: New Concrete Blocks, Timber Frame and Plywood Sheeting - complete fabrication with raw materials obtained directly from the suppliers and delivered to site. Concrete mix - 100% Portland cement.

Scenario 2: Concrete Blocks with 70% GGBS, Reused Timber Frame and Plywood Sheeting - blocks made on site using Ground Granulated Blast-furnace Slag (GGBS), a by-product from iron ore blast furnaces, replacing 70% of cement needed to make the blocks. Frame and sheeting re-purposed from an unsafe site hoarding.



Scenario 3: Earth Friendly Concrete, Reused Timber Frame and Plywood Sheeting - Green method -

alternative components and chemicals to replace the Portland cement option, with an Earth Friendly Concrete. EFC uses a geopolymer binder system made from by-products of blast furnace slag and fly ash - a reduction of up to 63% of embodied energy compared with standard concrete mixes.



Estimated Carbon Saving by Equivalent

By reusing the concrete blocks, the Liverpool Street project produced a significant sustainable benefit.

40 tonnes of concrete saved 1.1 tonnes of wood saved equalling 11,000 kgC0₂e

The equivalent of:



12 one way flights from London to New York

6 people's meat, dairy & beer consumption in 1 year

3 average family cars running for a year

- No virgin materials are required
- No carbon is emitted from any transportation
- No heavy lifting plant required, just use of a pallet truck
- No waste products generated
- No allocated site area for fabrication

