

Re-use of materials from site demolition in the UK

The re-use of inert materials from site demolition, largely concrete, is one of the most beneficial actions in both environmental and financial terms.

Two cases of special interest are:

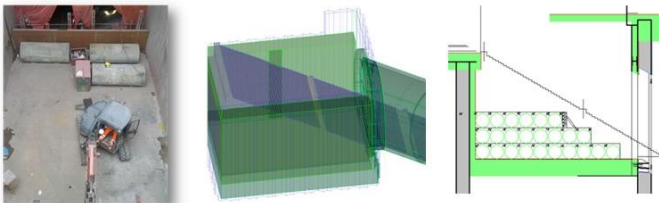
Farringdon Main Station (London)

At one of the sites, 74 absorbent piles had to be eliminated off-site (landfill). At another, there was a need for concrete filling en masse to form the escalator ramp. It was decided to study using piles due to be demolished as filler.

If we cut absorbent piles instead of breaking them up, we reduce noise and dust, and the process is also quicker than the standard break-up methods.

- The volume of waste generated and concrete brought in was reduced by **170 m³**.
- Lorries were driven for **290 miles** less (16 lorries x 16 miles and 23 concrete mixers x 5 miles)
- Our carbon footprint was reduced by **550 Kg of CO₂**.

The WTH team identified an opportunity to re-use pile sections from the pile breakdown activity for the larger square shaft in the escalator shaft mass fill stepped ramp.



The top of the piles were cut using a wire saw, reducing noise, and 64no. pile sections were lifted and stacked in the escalator shaft.

This reduced the volume of concrete required for the mass fill by over 170m³ and avoided 23 concrete wagons to site. It also saved 16 journeys otherwise required for waste disposal.

This reduced the embedded CO₂ of the West Ticket Hall by over 25 tonnes.



Environmental benefits:

- ✓ Reduction of material transported to landfill
- ✓ Reduction in emissions, due to there being less road transport
- ✓ An important cost reduction (less transport, less quarry material bought in)
- ✓ An improvement to on and off-site logistics (very central local, traffic congestion and lack of space)



Nine Elms Station (NLE, London)

The project features demolition of existing structures:

- Demolition of existing site buildings (3 in total).
- Demolition of flagstone of 50 cm thickness making up the existing pavement (**2,000 m²**).
- Demolition of buried foundations.
- **Dust (hosing) and noise (noise screens)** mitigation measures were used to reduce the impact of the process.

The resulting demolition materials are crushed and classified on-site.

They were used as follows:

- For a drilling platform of a thickness of 600 mm in three layers. Material classified as 6F2 and 6F5 in accordance with the British Standards.
- Rockfill for cleaning areas.
- Filler for inner trench of guide wall for protection purposes during pile digging and to improve site safety by eliminating a risk of collapse.

