

# Project profile

**Euston Welfare Block HS2**





## A Hiperenergy solution was adopted for client HS2 at Euston station, the first time all elements of individual Hiperpile innovations had been showcased.

The site was located within a small retained plot overlying a heavily congested services corridor, including a live Victorian sewer and the Northern Line LUL tunnel. Impression piles were explored to shorten the piles and avoid exclusion zones.

### Conforming Foundation Scheme

- 189no 450mm dia mini piles, 20m deep
- Shallow pad foundations
- Connecting ground beams
- Suspended slab

### Hiperenergy solution (as adopted)

- Piled raft alternative
- 40Nr 900mm dia Hiperenergy piles
- 100% as Impression piles
- 35no in-situ hollow piles
- 5no precast hollow piles
- Average pile length of 21m

### Key Benefits

As compared against a standard alternative solid shafted pile of 900dia 25m long:

- Embodied carbon saving of 31%
- 43% saving in total volume of concrete used
- 57% saving on wet-concrete deliveries (grout for the precast annulus was batched on site)
- 25% saving on steel (including reinforcement and void formers)
- 40% increase in pile shaft capacity from impressions
- Piling arisings reduced by 20% from shorter Hiperpiles
- Reduction in vehicle movements by 30%
- Designed to meet 100% of peak and annual heating and cooling requirements, excluding domestic hot water (DHW)
- Reduction in air source system requirements and operational carbon emissions





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