



Case Study

Integrated Structural & Energy Solutions

Residential Towers -
London



London Residential Tower

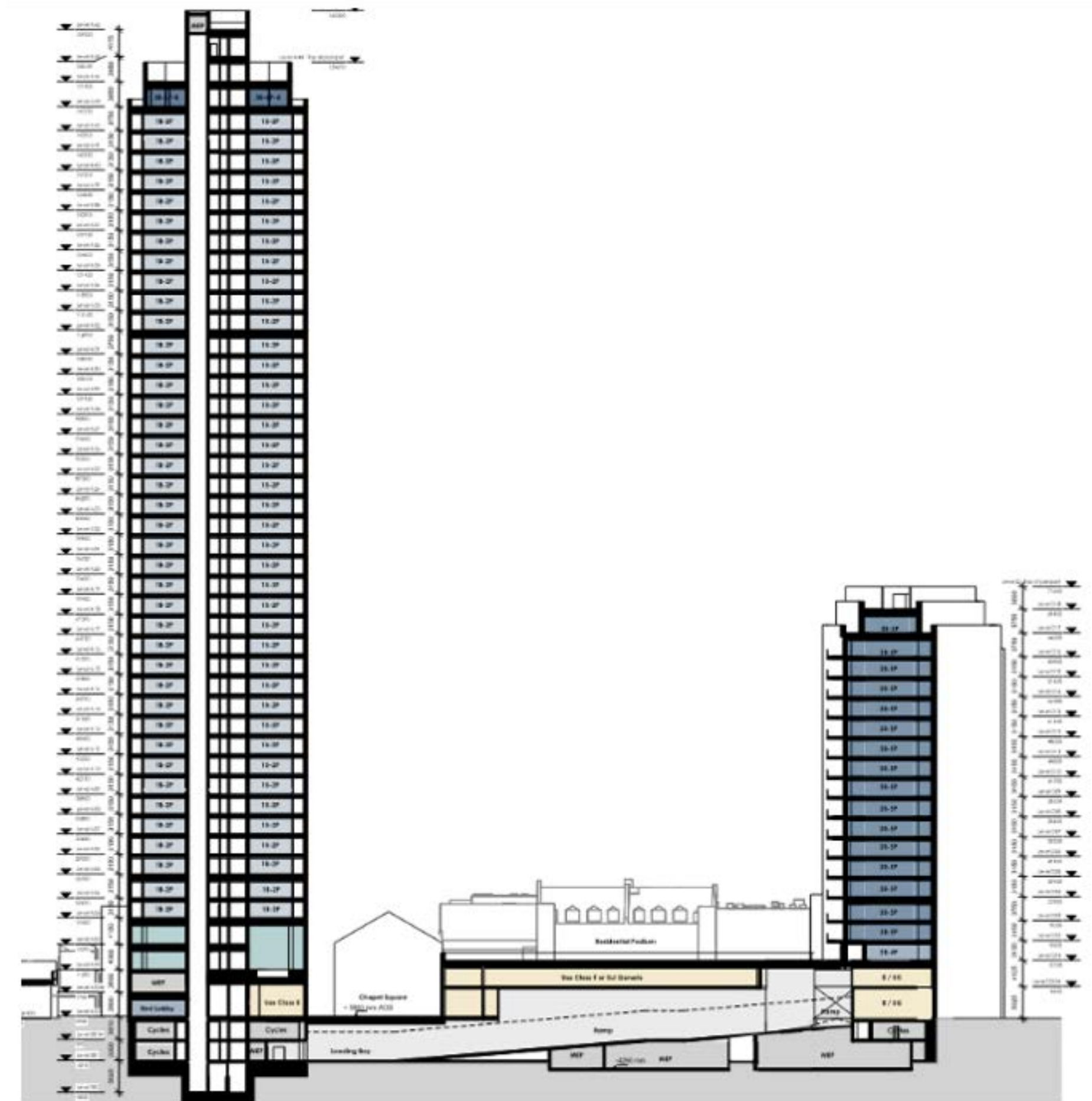
Hiperenergy Ltd were contacted by a leading UK residential developer to produce an alternative Hiper solution for a multi-phase residential tower development (up to 44 storeys) in London. The Hipersolution enables almost 400m² of additional prime GSA (~£4.0M), a higher utilities adopter payment as well as reducing whole-life carbon by 30%.

Project Challenges:

- Nearby overground trainline with listed building adjacent to the site
- Phased construction sequence working around live businesses

Conforming Scheme – Technical solution:

- The conforming piling solution was based on traditional CFA piles under the smaller buildings with large diameter (1200mm & 1500mm) solid bored piles supporting the tallest 2 structures.
- The conforming MEP scheme was based on a cascade, centralised heating/cooling system with a 1.5MW capacity dual stage MEP air source to water uplift solution. The air source heat pumps are located on the roofs of the tallest buildings.



Alternative: Hiper Solution

Conversion of Large Diameter Piles (LDP) into Hiperpiles

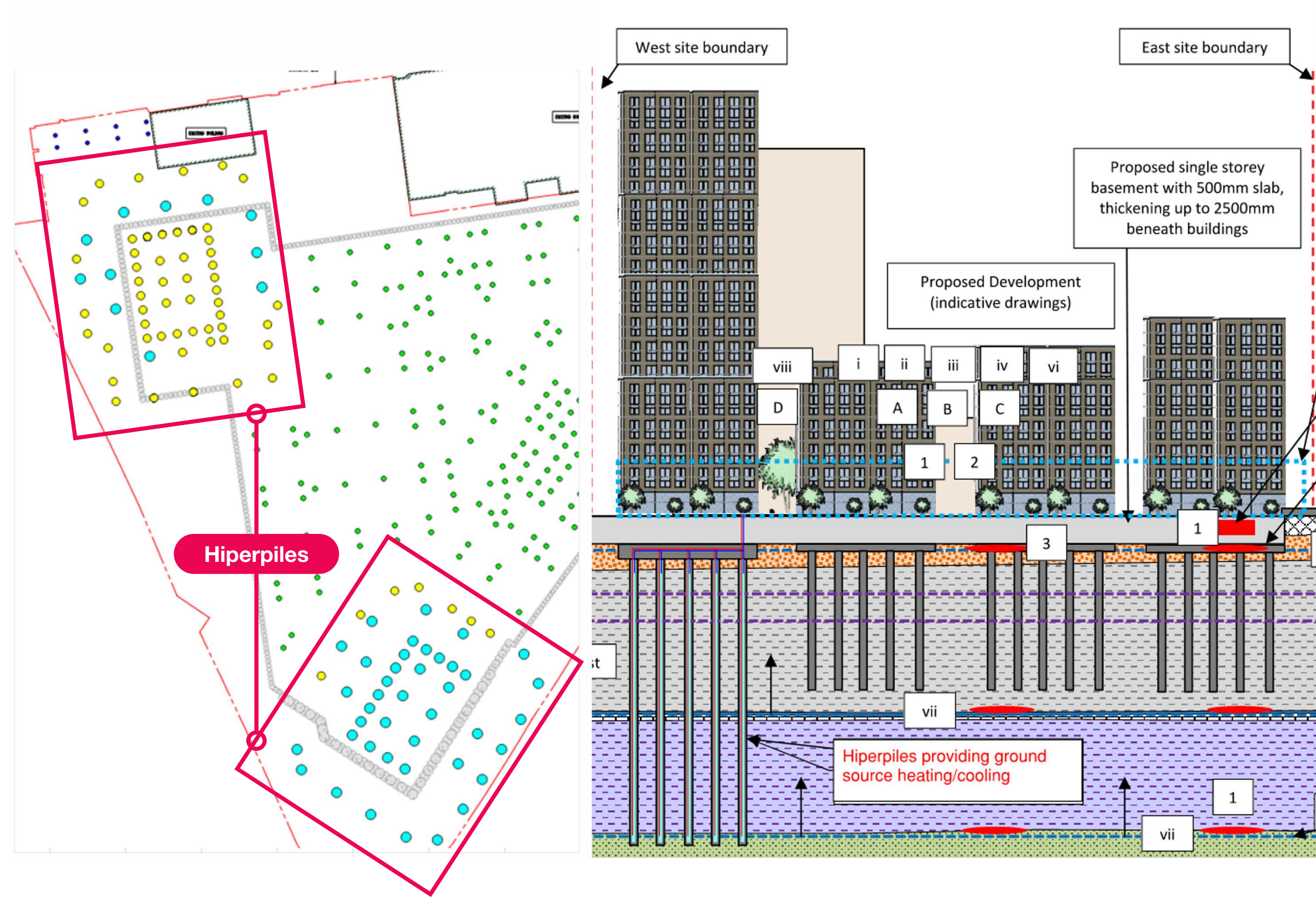
The Hiper solution maintains the same structural layout and pile diameter with piles founding into Thanet Sand.

The following benefits were realised:

- 112Nr solid piles converted to Hiperpiles
- A 20% saving in embodied carbon
- A 30% saving in material quantity
- No impact on the piling programme
- ~400m² additional prime GLA released
- 60no 1200mm Hiperpiles (yellow)
- 52no 1500mm Hiperpiles (blue)
- Wet piles toeing into Thanet sand, no change to piling layout

MEP System Solution

- Change to single stage WSHP solution with Hiperpiles as the primary energy source
- Utilisation of Hiperpiles as cold-water storage
- A 30% saving in operational carbon



Commercial analysis

Hiper Solution cost analysis vs Conforming Scheme

- Same overall CAPEX
- Electricity incomer size & OPEX reduced by 30%
- Main M&E plant REPEX reduced by 30% over 30 years
- Client value enhanced by ~£4.0M
- Annual maintenance costs reduced by 30%

“The Hiper Solution out-performs the client’s conforming scheme in almost every metric”

**Hiper solutions.
Today’s Foundations.
Tomorrows Assets.**

Contact us

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