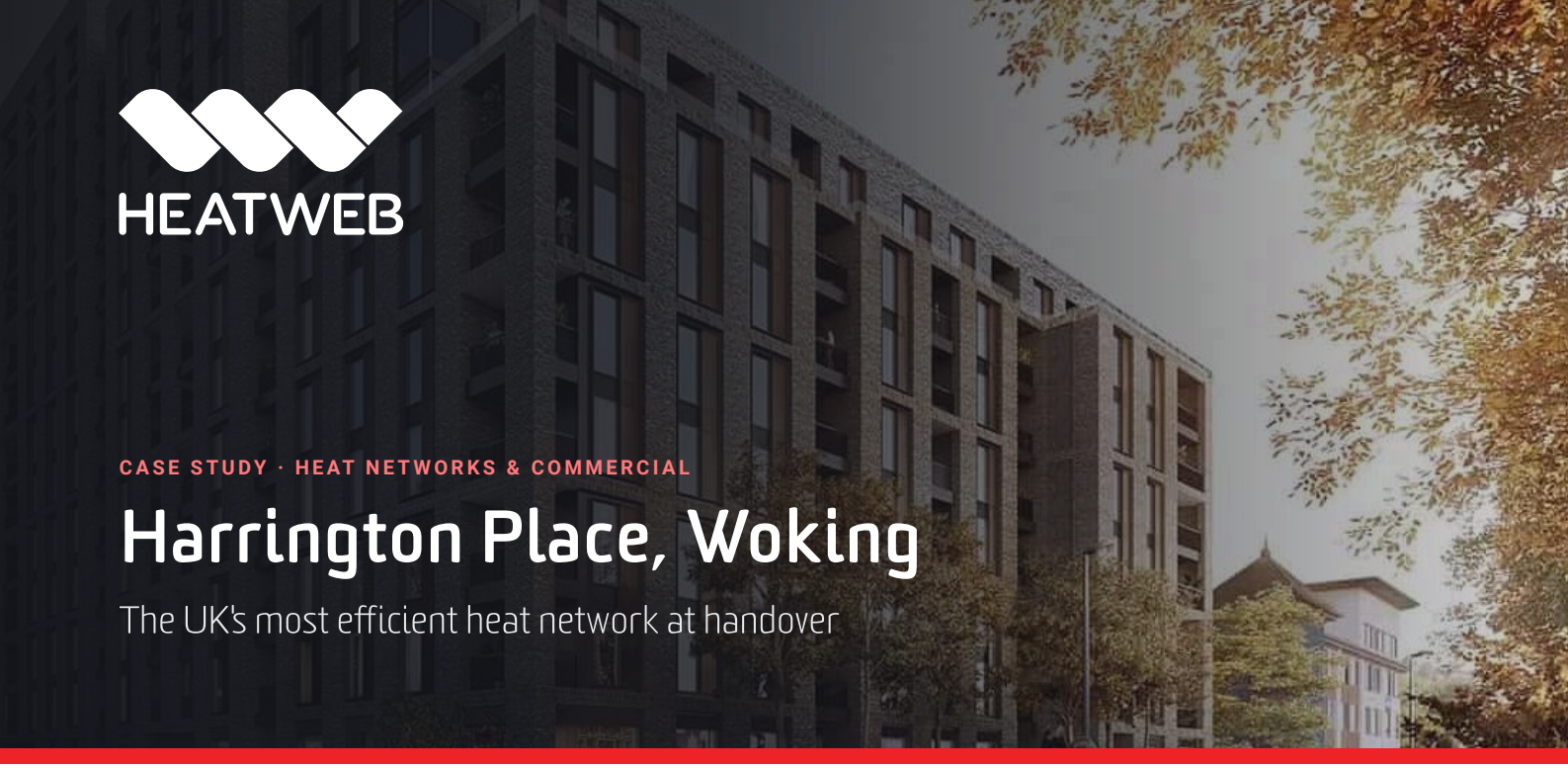


HEATWEB

CASE STUDY · HEAT NETWORKS & COMMERCIAL

Harrington Place, Woking

The UK's most efficient heat network at handover

AT A GLANCE

CLIENT
Thameswey Housing

SITE
Harrington Place (St Dunstan's), Woking

HOMES
147, plus a commercial load and common areas

HEAT SOURCE
Gas-fired energy centre, 4 × 250 kW boilers, ready for a wider network

HIUS
Heatweb DATA and DATA Plus, one per home

HEATWEB ROLE
HIU design and supply, design and commissioning support, monitoring and alarms, HIU servicing

147 new homes near the centre of Woking, every HIU reporting every second, network return temperatures of 28 °C, and the first load shedding ever to operate on a UK heat network.

The challenge

Every home takes its hot water and heating from an HIU on the building's network, fed by a central energy centre that can later connect to a wider network.

The network was to meet the latest guidance (CP1.2 and the CIBSE Guide B changes on pipe sizing and velocities) and run with the lowest return temperatures achievable.

What we did

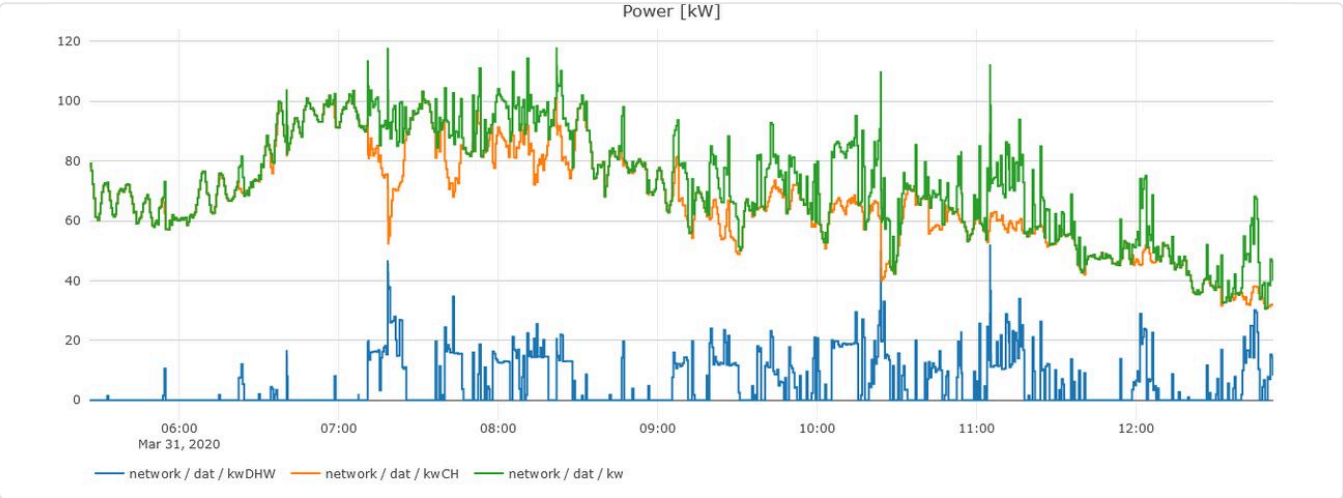
- Designed and supplied the HIUs, selected and set up for the lowest return temperatures in the industry.
- Supported the design and build contractors with the network design and commissioning.
- Connected every HIU to an open-source management system, reporting every second, with remote alarms and adjustment.
- Monitored and alarmed the network after handover; we still service the HIUs.



The status of every home's HIU on one screen.

What we found

- Network return temperatures of 28 °C at handover, close enough to ambient for the network to run from heat pumps in future.
- Load shedding in operation for the first time in the UK: pausing central heating for five minutes, three times a day, gave the equivalent of 1,500 litres of extra storage, and a 100 kW limit held the peak to about 118 kW instead of an estimated 160 kW.
- A year of one-second data from all 147 homes fed PhD research at UCL and a journal paper on heat network sizing, which found the network would be oversized by 51% to 135% under widely used sizing methods.



A 100 kW load limit in operation: central heating is paused in the homes already up to temperature to hold the peak.

28 °C
network return temperature at handover

1 s
reporting interval for every HIU in all 147 homes

118 kW
peak with load limiting, against an estimated 160 kW

The outcome

- The most efficient heat network in the UK at handover, with load shedding operating for the first time.
- The most accurate record of real hot water and heating use captured on a UK heat network, now informing design research and the evidence base for sizing future networks.
- Load shedding also protects residents' hot water when a boiler fails, by holding off heating so stored heat goes to the taps.

About Heatweb. Heatweb Solutions is a UK provider of engineering support for heat networks and commercial HVAC: monitoring, fault diagnostics, technical compliance, optimisation, commissioning and maintenance.

Talk to an engineer

The full case study: www.heatweb.co.uk/blog/case-study/harrington-place-woking/

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