



Heat Networks for
Social Housing

Danish Embassy,
London

5th October 2017

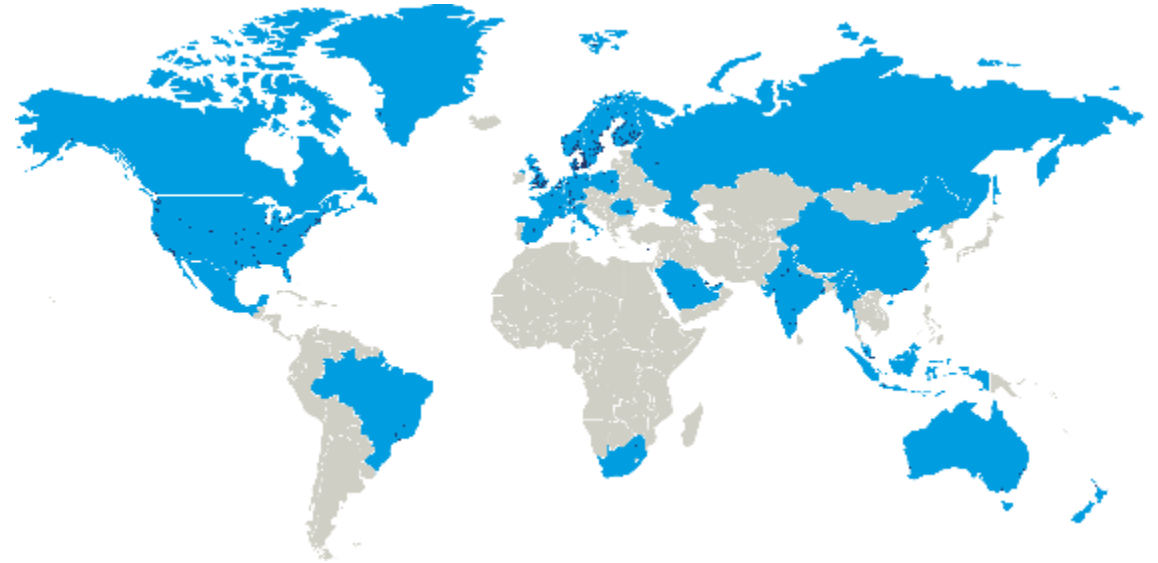
PDHU HEAT NETWORK

RAMBOLL ENG. SERVICES

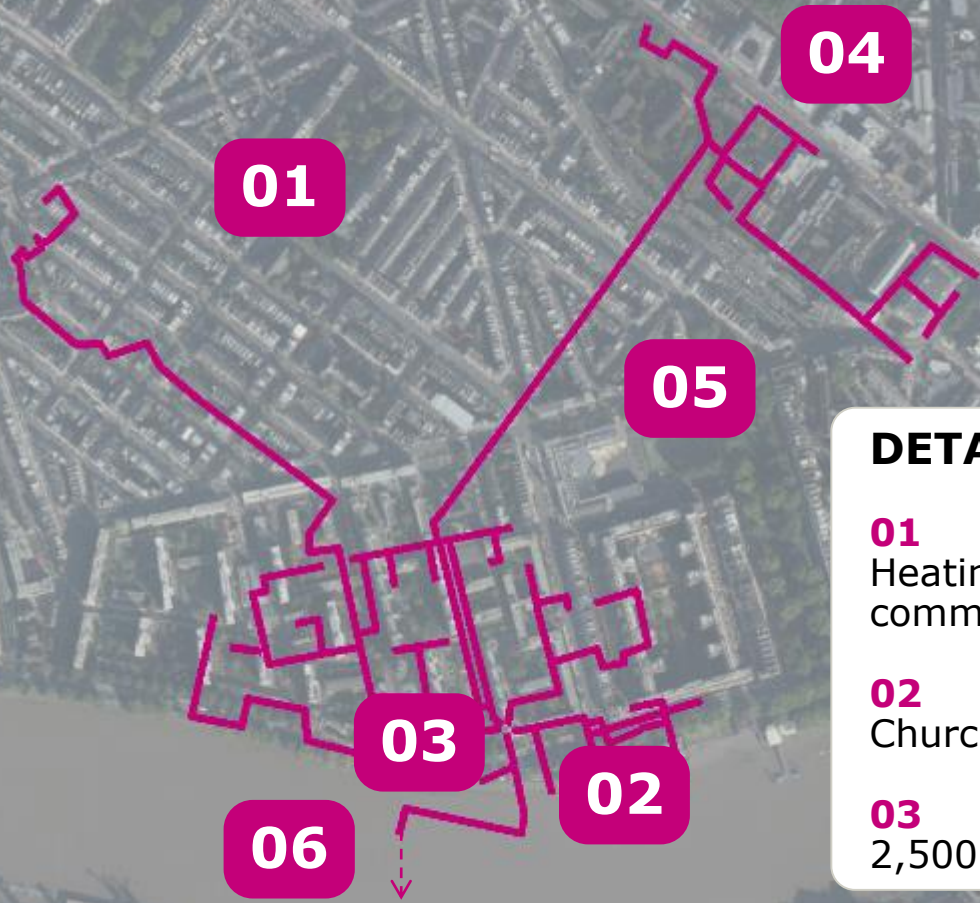
BY: ANGELOS CHATZIDIAKOS

WHO WE ARE

- Independent engineering and design consultancy and provider of management consultancy
- Founded 1945 in Denmark
- 13,000 experts
- Close to 300 offices in 35 countries
- Particularly strong presence in the Nordics, the UK, North America, Continental Europe, Middle East and Asia Pacific
- EUR 1.4 billion revenue
- Owned by Ramboll Foundation



PIMLICO DISTRICT HEATING UNDERTAKING (PDHU)

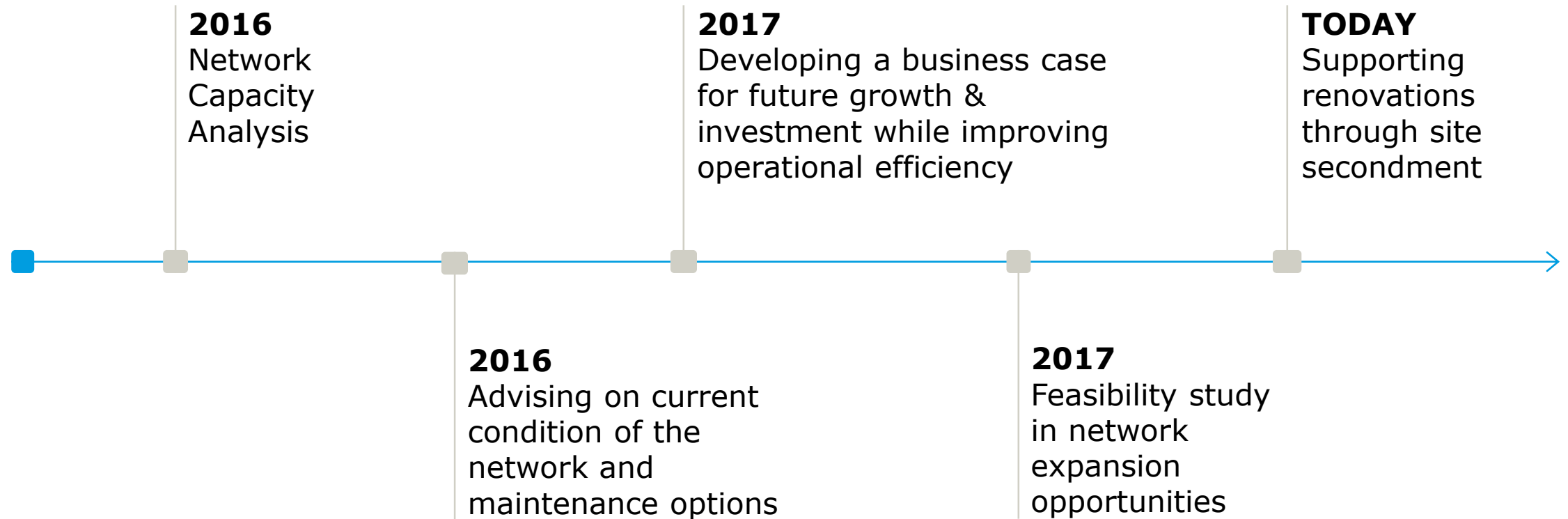


DETAILS

- 01**
Heating 3,256 homes, 50 commercial premises and 3 schools
- 02**
Churchill Gardens Energy Centre
- 03**
2,500 m³ thermal store

- 04**
Lillington Gardens Boiler House
- 05**
Main Feeder to Lillington
- 06**
Old connection to Battersea Power Station

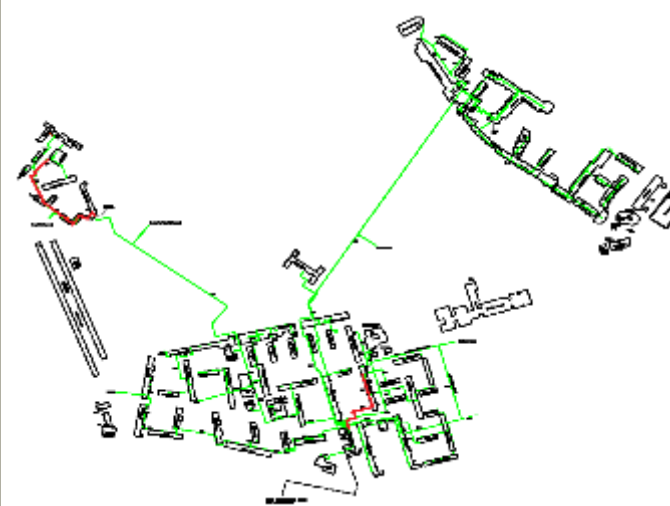
TIMELINE



NETWORK CAPACITY AND CONDITION ANALYSIS

capacity within the **network** for future expansion;

capacity of the existing or future **pumps** to accommodate additional loads;

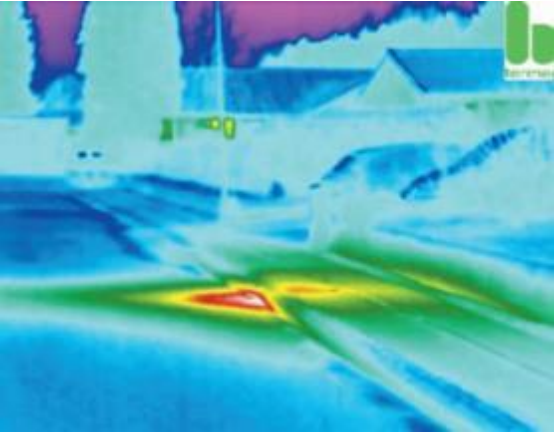


CAPACITY ANALYSIS



SITE INSPECTIONS

Good condition for its age



MAINTENANCE
Thermographic Imaging

IMPROVING OPERATIONAL EFFICIENCY

A photograph of an industrial facility, likely a power plant or refinery, showing a complex network of pipes, valves, and machinery. The scene is dimly lit, with some overhead lights visible. The pipes are mostly metallic and run vertically and horizontally. There are blue valves and some orange pipes. The overall atmosphere is industrial and technical.

REDUCING NETWORK TEMPERATURES

Reducing losses

IMPROVING CONTROLS

Allowing better utilization of the thermal store

VARIABLE VOLUME PUMPING

Upgrade of controls

SAVING COSTS AND CARBON

A large white arrow pointing to the right, indicating the flow of information or the result of the improvements listed above.

SUPPORT CWH DRIVERS

ELECTRICITY SERVICE REVENUES

National grid flexibility services

GLA License Lite

COSTUMER BILLING

Advise on tariff structure options

Compare to counterfactual case

IMPROVING & EXPANDING

Saving costs

Reducing carbon

Improving air quality

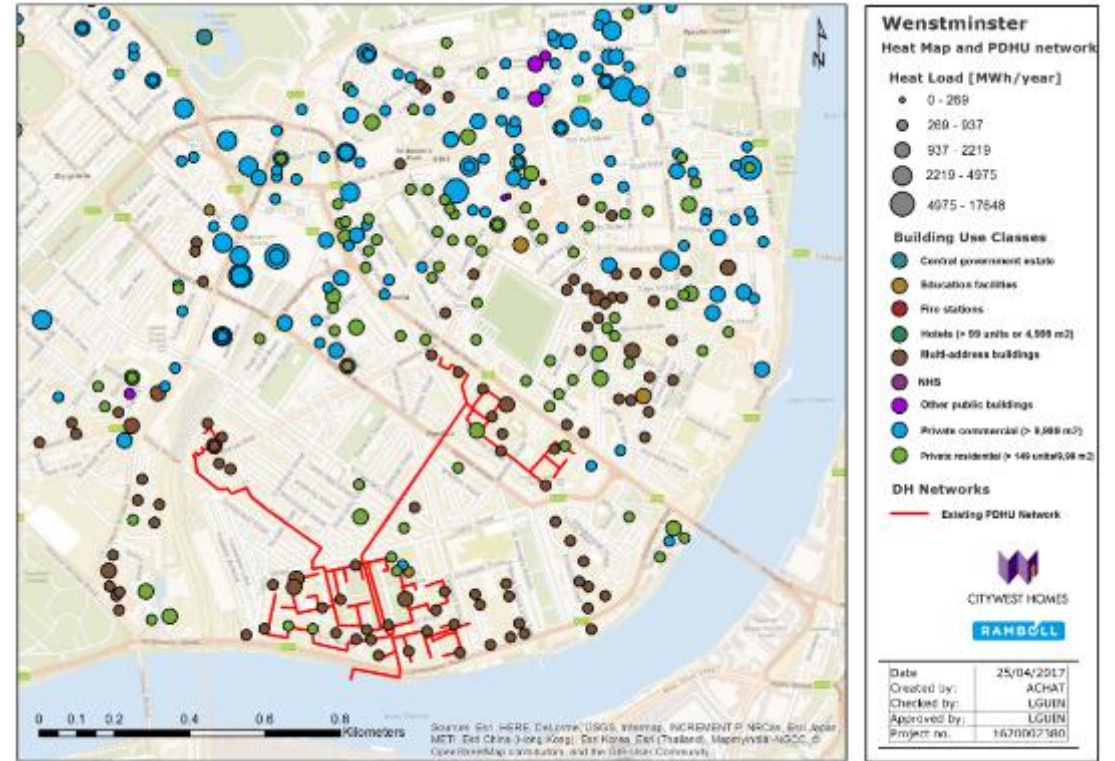
FUTURE EXTENSION OPPORTUNITIES

Anchor loads in the north

To be served from Lillington Gardens

Main Feeder Capacity Considerations

Water Source Heat Pump extracting heat from river Thames



**PDHU NORTH EXTENSION /
ANCHOR LOADS FROM LHP**

ENGINEERING DESIGN SERVICES

Support renovation
through site
secondment

Asset (boilers-CHP-Flue)
replacements

Main pumps
replacement according
to network capacity
analysis

Energy center electrical
system upgrade

Lillington
gardens/Longmoore
gardens – redesign of
main distribution
pipework

Glastonbury boiler
house upgrade options

SELECTED PROJECTS

CLAPHAM PARK HOMES

Providing due diligence, technical, commercial and financial advice to MHA in relation to the procurement of an ESCo through a competitive procurement process for the Clapham Park Development in south London.



Greenwich Peninsula

- Development consisting of over 10,000 new homes, 320,000m² of commercial space, and 18,000m² of retail space.
- Heat network and energy centre concepts were developed through a detailed phasing option analysis.



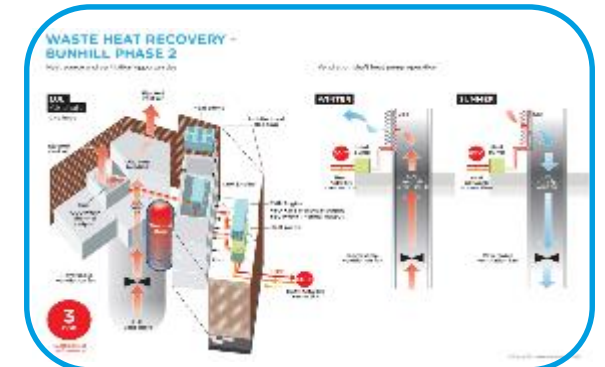
Royal free - Gospel Oak, Camden DH

- A district heating scheme using source waste heat rejected in the exhaust gases of the existing turbine in the royal free hospital
- 1,500kW of energy obtained from exhaust gases
- A network serving six blocks of residential dwellings



Bunhill Phase 2

- Initial concept design and project scope for phase 2 of a heat and power scheme in the London Borough of Islington.
- An ammonia heat pump will allow heat recovery from a London Underground ventilation shaft .
- Ramboll was subsequently retained as the Client's Engineer.



THANK YOU

READ MORE ON OUR WEBSITE:
ramboll.co.uk/energy