Woodberry Down

WDCO Board (Energy Matters)

21st May 2026

Introduction

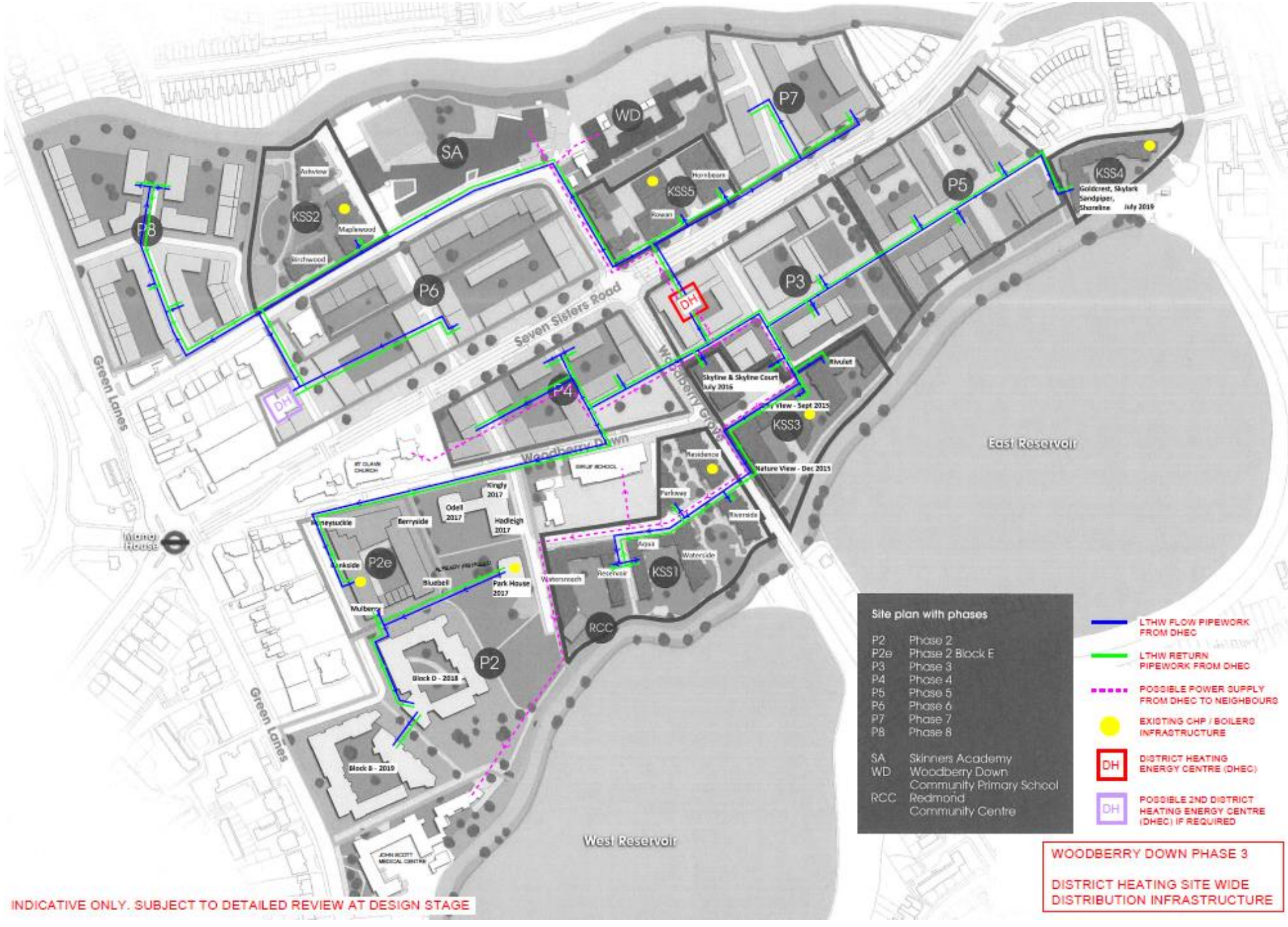
This is the first in a series of presentations on energy matters across Woodberry Down. The purpose of this presentation is to provide the Board with the following:

- Background to the District Heat Network (DHN);
- Background to the Low Carbon Transition Plan (LCTP);
- Updates from the DHN Working Group; and
- An introduction to alternative strategies that are being pursued.

Background & Current Position

Planning History (Energy Strategy)

- **Second Masterplan** (2014) – Sitewide DHN powered by Gas Combined Heat and Power (CHP) & gas boilers for backup and peak demand
- **Phase 3 Consent** (2020) – Energy Centre that has been designed to allow for external connections alongside various energy conditions
- **Phase 3 LCTP Condition** (2021) – Alters the heating strategy from CHP to Air Source Heat Pumps
- **Phase 4 Consent** (2024) – Consent to house larger ASHPs at roof level to connect back into Phase 3 and provide heat for Phase 4 and legacy phases
- **Third Masterplan** (2025) – Requirement for each RMA to submit a standalone Energy Strategy – providing flexibility for future innovation


P8
SA
WD
P7
P5
KSS4
Goldcrest, Skylark Sandpiper, Shoreline July 2019
KSS2
Ashview
Maplewood
Birchwood
KSS5
Hornbeam
Rowan
P6
P3
DH
Seven Sisters Road
Woodberry Grove
Green Lanes
P4
Skyline & Skyline Court July 2016
Rivulet
Nature View - Sept 2015
KSS3
East Reservoir
Woodberry Down
Residence
Nature View - Dec 2015
Parkway
Riverside
Manor House
Honeysuckle
Berryside
Odell 2017
Kingly 2017
Hadleigh 2017
Parkside
P2e
Bluebell
Park House 2017
Mulberry
Aqua
Waterside
Watermeadow
Reservoir
KSS1
RCC
P2
Block D - 2018
Block B - 2019
West Reservoir
Green Lanes
Site plan with phases
P2 Phase 2
P2e Phase 2 Block E
P3 Phase 3
P4 Phase 4
P5 Phase 5
P6 Phase 6
P7 Phase 7
P8 Phase 8
SA Skinners Academy
WD Woodberry Down Community Primary School
RCC Redmond Community Centre
LTHW FLOW PIPEWORK FROM DHEC
LTHW RETURN PIPEWORK FROM DHEC
POSSIBLE POWER SUPPLY FROM DHEC TO NEIGHBOURS
EXISTING CHP / BOILERS INFRASTRUCTURE
DISTRICT HEATING ENERGY CENTRE (DHEC)
POSSIBLE 2ND DISTRICT HEATING ENERGY CENTRE (DHEC) IF REQUIRED
WOODBERRY DOWN PHASE 3
DISTRICT HEATING SITE WIDE DISTRIBUTION INFRASTRUCTURE
INDICATIVE ONLY. SUBJECT TO DETAILED REVIEW AT DESIGN STAGE

Phase-by-Phase Energy Source

- Legacy Phases (KSS1-5 & Phase 2) operate on gas fired CHP
- Phase 3 operates on Low Temperature ASHP with backup gas boilers
- For those energy centres that remain within BH ownership the main boilers will need to be replaced on/before the following dates, in line with manufacturers guidance:
  - KSS1 – 2031
  - KSS3 – 2034
  - KSS4 – 2036
  - Ph2 – 2036

Phase 3 Boiler Update

- Temporary gas boilers are now in place, which will remain in situ until the Hoval units are replaced and working
- We are currently providing all required information for analysis so an independent report can be produced, which we expect to be completed in approx. 4 weeks
- This will give us the clarity needed to ensure the issue does not recur
- Currently the anticipated completion date for all works and for the system to be fully operational as intended is the first week of August

Alternative Strategies

Options Explored

Energy Networks

- Energetik Waste Heat
- TfL Waste Heat

New Technologies

- Exhaust Air Heat Pumps (EAHP)

Energetik Waste Heat (Process)

- The use of waste heat from an Energy Recovery Facility (ERF).
- The ERF burns rubbish in a high-temperature furnace.
- The heat is used to boil water and create steam. Some of that steam spins turbines to generate electricity, but a portion can also be reused directly.
- Rather than letting that heat escape up a chimney, the facility captures it using heat exchangers (like radiators working in reverse).
- These transfer the heat into clean water that circulates in a separate system.
- The hot water (often 80–120°C) is the pumped through a network of heavily insulated pipes running underground.

Energetik Waste Heat (Routing)

- Routing previously considered through LB Haringey, into LB Hackney and then along SSR to WD Phase 3.
- Haringey have decided not to continue with the Energetik proposals and without Haringey, a new route (along the River Lea) would be required to connect Hackney.
- Under review by Hackney Council but this may not be viable.
- Direct connection into WD may be more problematic and so may benefit connecting into a separate DHN within another AAP (such as Stamford Hill).

TfL Waste Heat

- TfL have been exploring how to capture and reuse waste heat from the Underground
- Heat could be harnessed through existing ventilation shafts (one is located on Netherton Road (Haringey)) and then transferred through pipework to a nearby Energy Centre.
- Limitations
  - TfL have not confirmed whether Manor House would form part of their design development
  - Any proposals would be subject to consultation
  - 5% of the year the underground is unavailable (maintenance/strike)
  - New underground carriages may not generate as much heat

Exhaust Air Heat Pumps

What is an EAHP?

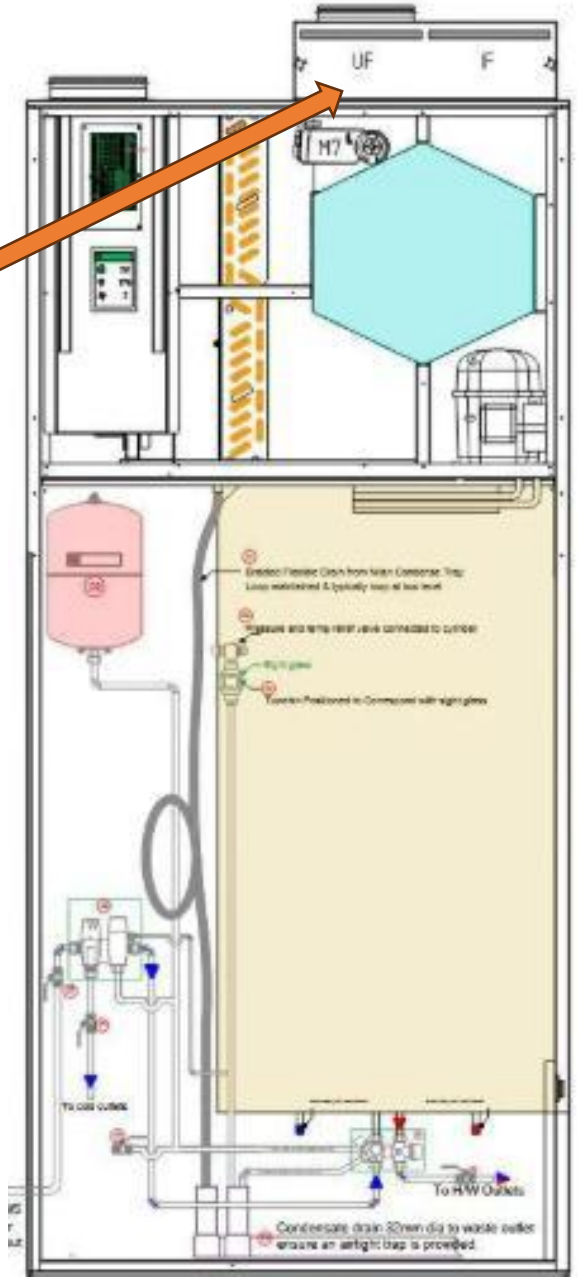
- An EAHP is a combined ventilation, heating and cooling system.
- EAHPs are designed to domestically replace gas boilers to produce an apartment's heating and hot water.
- Heat is recovered from extracted air and is reused within the home for heating and hot water production and reducing overall energy demand.
- It does not use significant energy in generating heat and is designed to work constantly, benefitting from the high fabric efficiency in new build dwellings.
- Provides summer cooling by reducing outdoor air temperature by up to ~10°C

Exhaust Air Heat Pumps

How do they work?

- The EAHP sits as a central unit in the utility cupboard.
- There will be an electric radiator in hallway (which will operate in extreme weather events (depths of winter) and as back-up heating).
- Ventilation ductwork throughout apartment.

Exhaust Air Heat Pumps



Maintenance & Operation?

- Taking care of it is easy
- Maintenance usually just requires a resident changing the filters and having a simple check once a year.
- Everything that needs fixing or checking can be done from the front of the unit.
- Looking after the system does not disturb neighbours or people nearby, access is just required to the property.
- No equipment needs to be fitted outside the building, so there is no external equipment to see or hear.

Exhaust Air Heat Pumps

Why are they being considered over a DHN?

- Fuel poverty is rising and we are exploring avenues to reduce costs.
- EAHPs use recovered heat, rather than purchased heat from a network operator. This means residents are less exposed to:
  - Heat tariffs set by a third party/commercial tariffs
  - Standing charges common in some networks
- Reduced service charges due to reduced pipework.
- Residents have freedom of choice of supplier.
- Lower heat losses:
  - Heat is generated and used within the same flat
  - No long pipe runs losing heat underground/through corridors
- EAHP systems provide both heat & cooling.

Exhaust Air Heat Pumps

Do we know the indicative Energy Usage?

- Berkeley Homes have installed these elsewhere (previously to a scheme called Westcote House, Poplar)
- Electricity usage was monitored over a period of one year.
- On average EAHP dwellings used circa 40 kWh/m² per annum.
- For comparison, the same home heated by a heat network would use circa 90-110 kWh/m² per annum and solely electrically heated home would also be between 90-110 kWh/m² per annum.

Future Approach

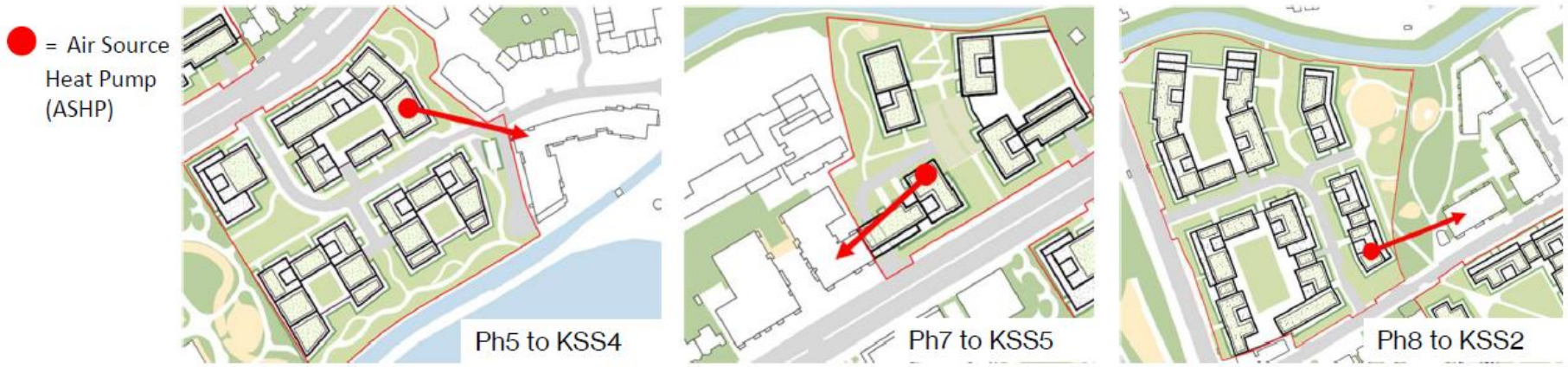
3 Feasibility Options

1. DHN (ASHP) Sitewide
2. EAHP Sitewide
3. Hybrid - EAHP for Future Phases & DHN for Legacy Phases

Each option is being fully assessed on upfront capital cost, practicality of implementation, carbon credentials and impact on existing and future residents (service charge, energy costs & useability)

Proposed Site Strategy (Hybrid)

- EAHPs are being considered for future phases (Phase 4 to 8)
- Legacy phases will either connect to the Energy Centre or localised ASHPs
- Localised ASHPs would sit on new Phases to feed existing legacy phases – (see indicative diagrams below).
- This would reduce carbon impact of digging long trenches and reduce travel distances of pipework; mitigating heat loss.



Phase 4 Strategy

- Phase 4 was to connect into the DHN
- We are now moving away from the consented planning position to respond to innovation and available evidence
  - PD & SO will proceed with EAHP, on the basis of buyer choice
  - SR will connect into the DHN, to maintain position given to existing P5 tenants
- NHG are seeking to protect residents from innovation risk until more evidence is available around the success of this product in the UK
- Whilst evidence is available for smaller homes, it was felt more evidence needed to be available on the efficiency and cost profile for larger family homes
- BH is gathering this evidence and is all in with EAHP across the business

Questions