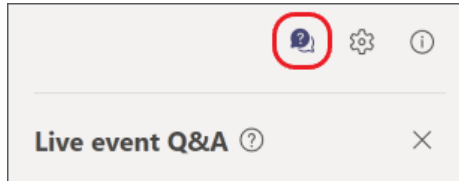

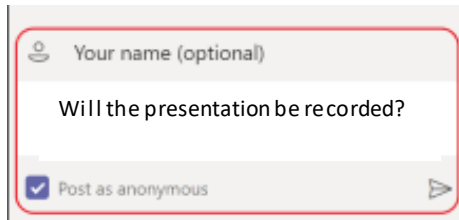


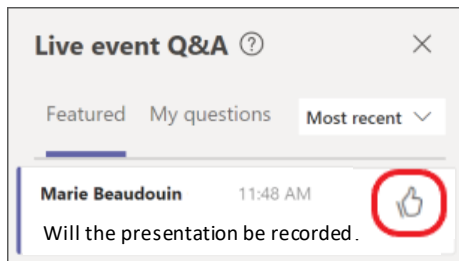
Welcome to the first GHNF *Meet the Projects* Webinar




Select the Q&A icon  at the top of the pane when the pane is open to close it.



You can select to post your question with your name or anonymously. We'll answer as many as we can.



To like someone else's question, select the thumbs up  icon next to it.

Session	Speaker
Welcome and Overview of Market Transformation Commitments	Ken Hunnisett, Triple Point
Old Oak and Park Royal Development Corporation (OPDC) – Heat network using waste heat from data centres	Liam Caulfield and Jason Robinson, OPDC
Cheshire East Council – Handforth Garden Village Heat Network	Dan Griffiths, Cheshire East Council
Equans - Queen Elizabeth Olympic Park and Stratford City District Energy Scheme	Amy Baker and William Greenwood, Equans
Live Q&A	Samantha Shea, Gemserv
Closing Remarks & Thank You	Ken Hunnisett, Triple Point



Ken Hunnisett

Triple Point Heat Networks

GHN Funded Projects

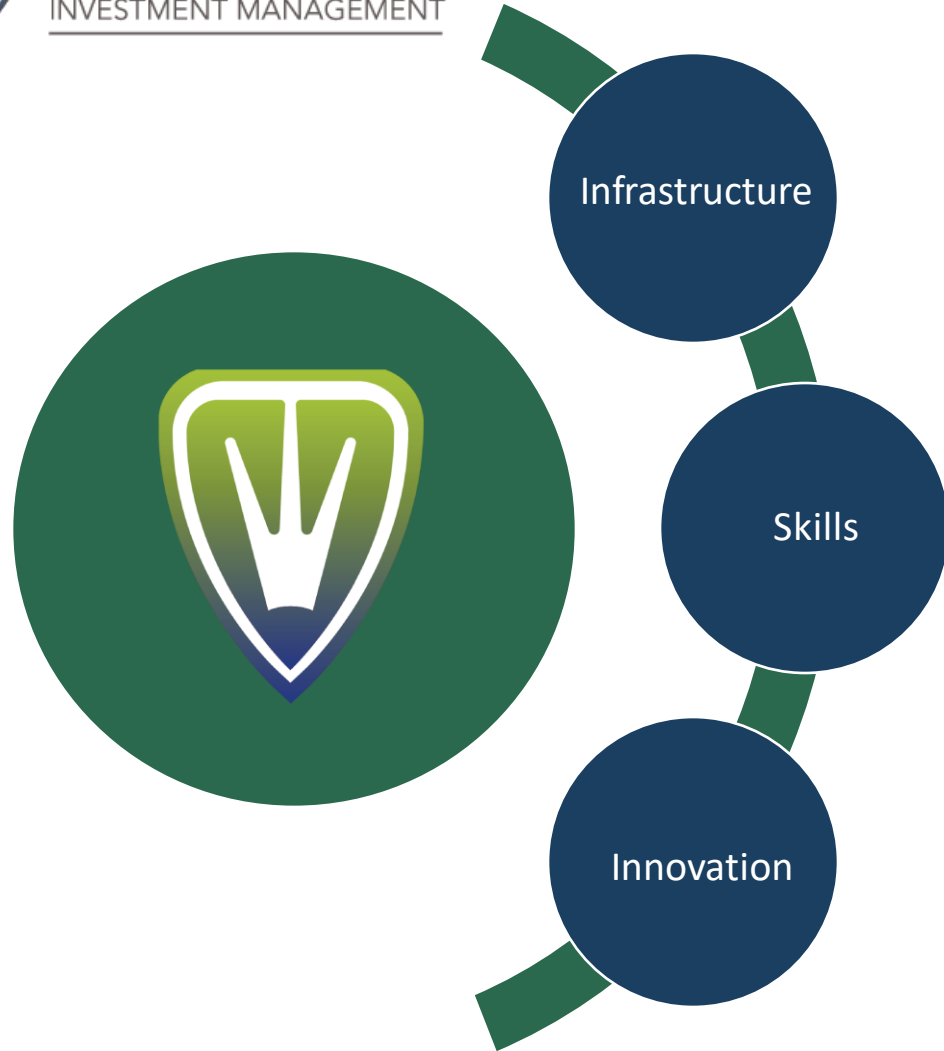
- 1 Hull District Heat Network**
Hull, East Riding of Yorkshire
- 2 Rotherham Energy Network**
Rotherham, South Yorkshire
- 3 Bradford Energy Network**
Bradford, West Yorkshire
- 4 Peterborough Integrated Renewables Infrastructure (PIRI)**
Peterborough, Cambridgeshire
- 5 Pudding Mill Lane**
Stratford, East London
- 6 Goole District Energy Network**
Goole, East Riding of Yorkshire
- 7 Huddersfield District Energy Network**
Huddersfield, West Yorkshire
- 8 Langarth Deep Geothermal Heat Network**
Cornwall
- 9 Civic District Energy Scheme**
Plymouth, Devon
- 10 Whiteknights Energy Centre Phase 1 Decarbonisation**
Reading, Berkshire
- 11 Handforth Garden Village Heat Network**
Cheshire
- 12 Old Oak and Park Royal Development Corporation (OPDC)**
West London
- 13 Chilton Woods**
Suffolk
- 14 Watford Community Housing**
Watford, South-West Hertfordshire
- 15 Lancaster University**
Lancaster, Lancashire



Over £175 million of GHN funding awards have been announced

We expect to announce further projects before the year end

Competition for funding has been incredibly high



Fair and open procurements

Engaging local communities and supply chains

Adding to a reliable and resilient energy system

Identify opportunities to address the sector skills gap

Fair and open recruitment

Stimulating new jobs in the UK and training opportunities

Identify ways for projects to enable investments in research and development

Sharing of learnings and innovations with the wider market

Rounds 1-5 funded projects



c.4,000 FTE "job years" will be created



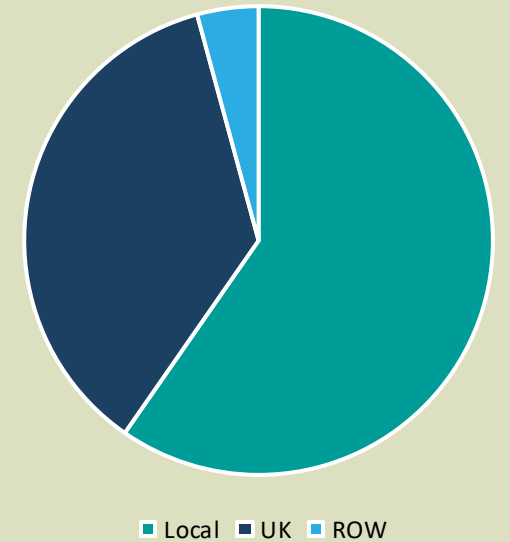
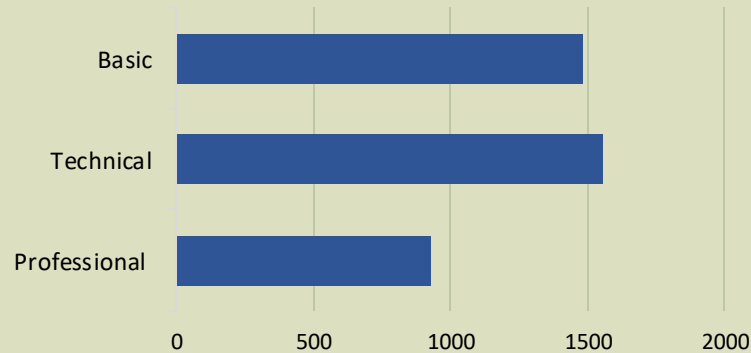
The majority of jobs will be local to the communities they serve



39% of jobs to be created are for technical roles



Over 300 apprenticeships will be created



Note these are aggregated across applications and will be refined as projects progress.



Small

CAPEX
less than £7.5m

Medium

CAPEX
c.£12.5m

Large

CAPEX
c.£113m (phase 1)

Old Oak and Park Royal Development Corporation (OPDC)



OPDC
OLD OAK AND
PARK ROYAL
DEVELOPMENT
CORPORATION

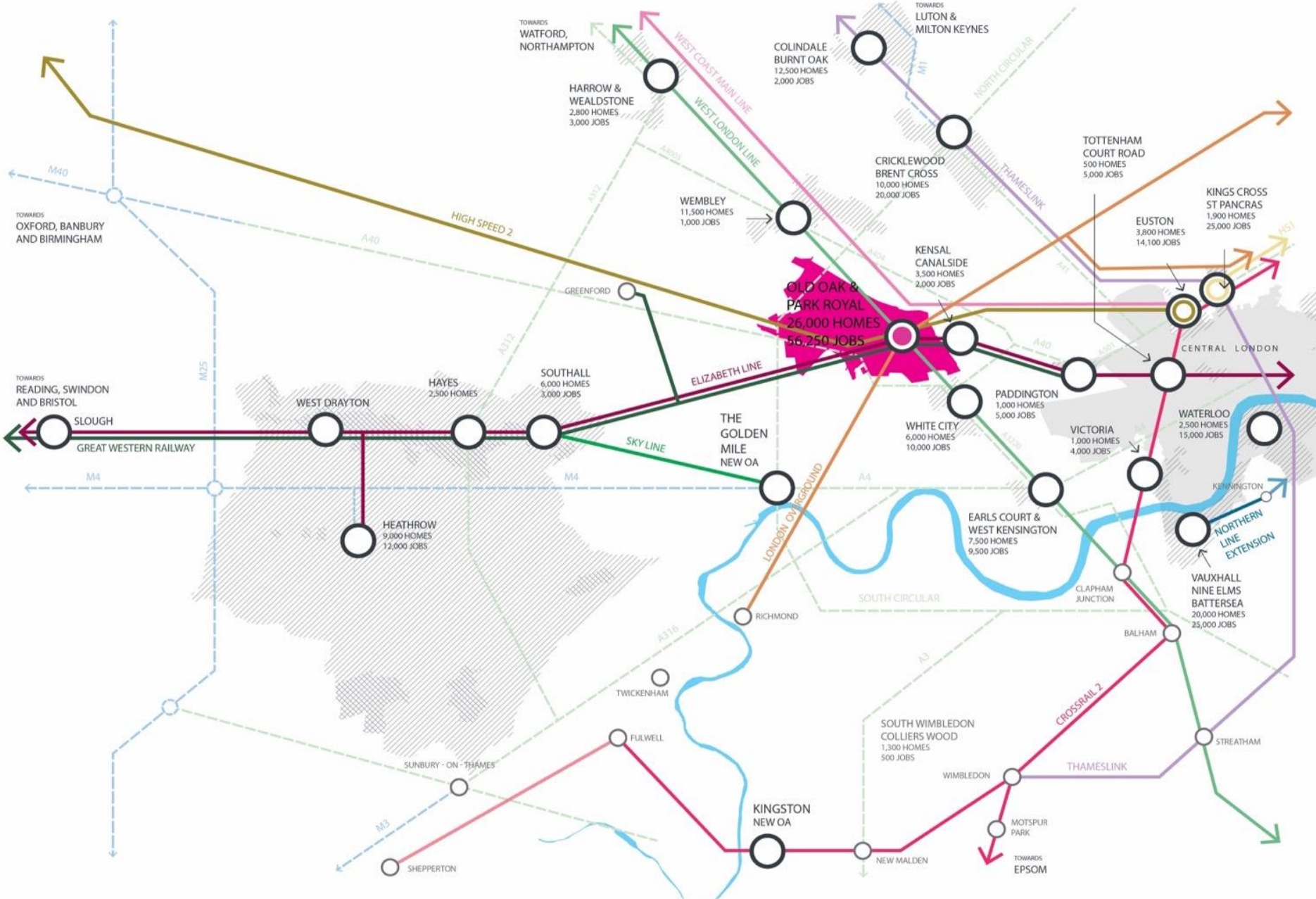
Old Oak and Park Royal Energy Network

OPEN

Old Oak & Park Royal Energy Network

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OPDC



26,000
new homes

56,250
new jobs

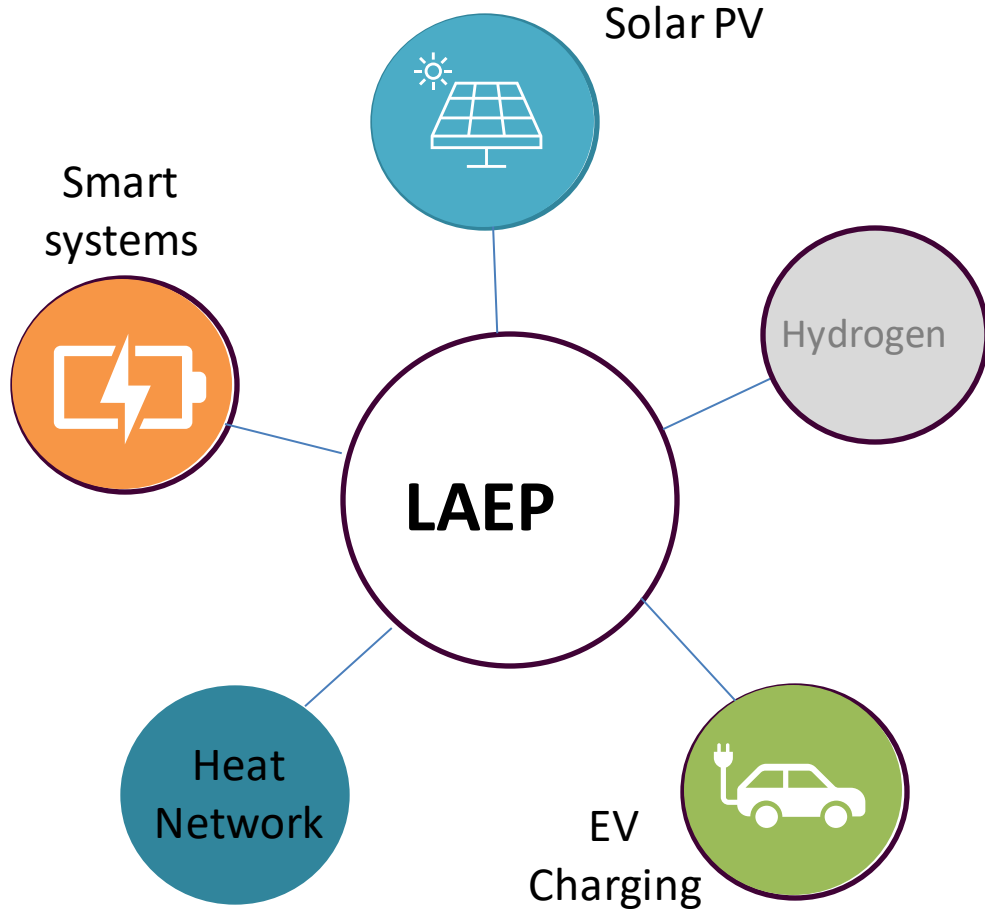
2.6m sq ft
new offices

2.8m sq ft
new industrial
floorspace

4.7 km
Grand Union Canal

New parks
and public spaces

Local Area Energy Plan

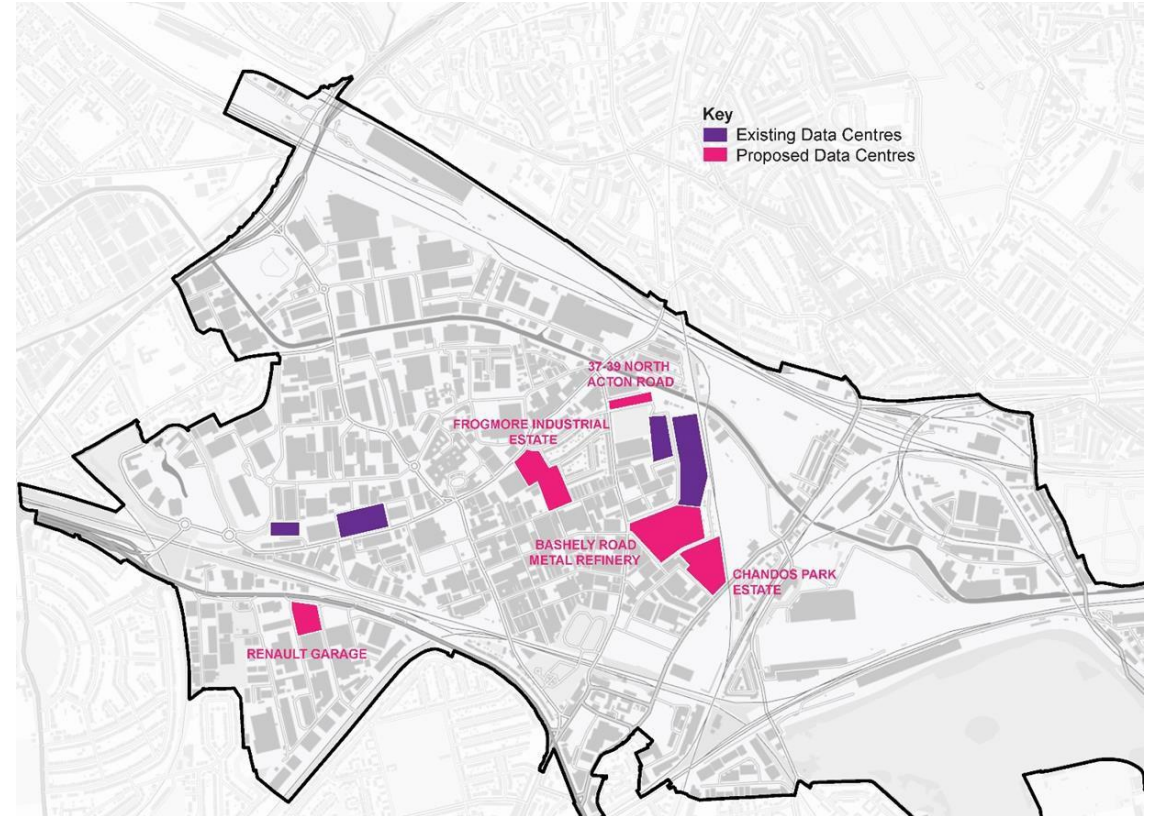


Project Objectives

- Deliver on our Local Plan
- Relieve capacity on local power networks
- Decarbonisation of energy, heat and transport systems

Why a Heat Network?

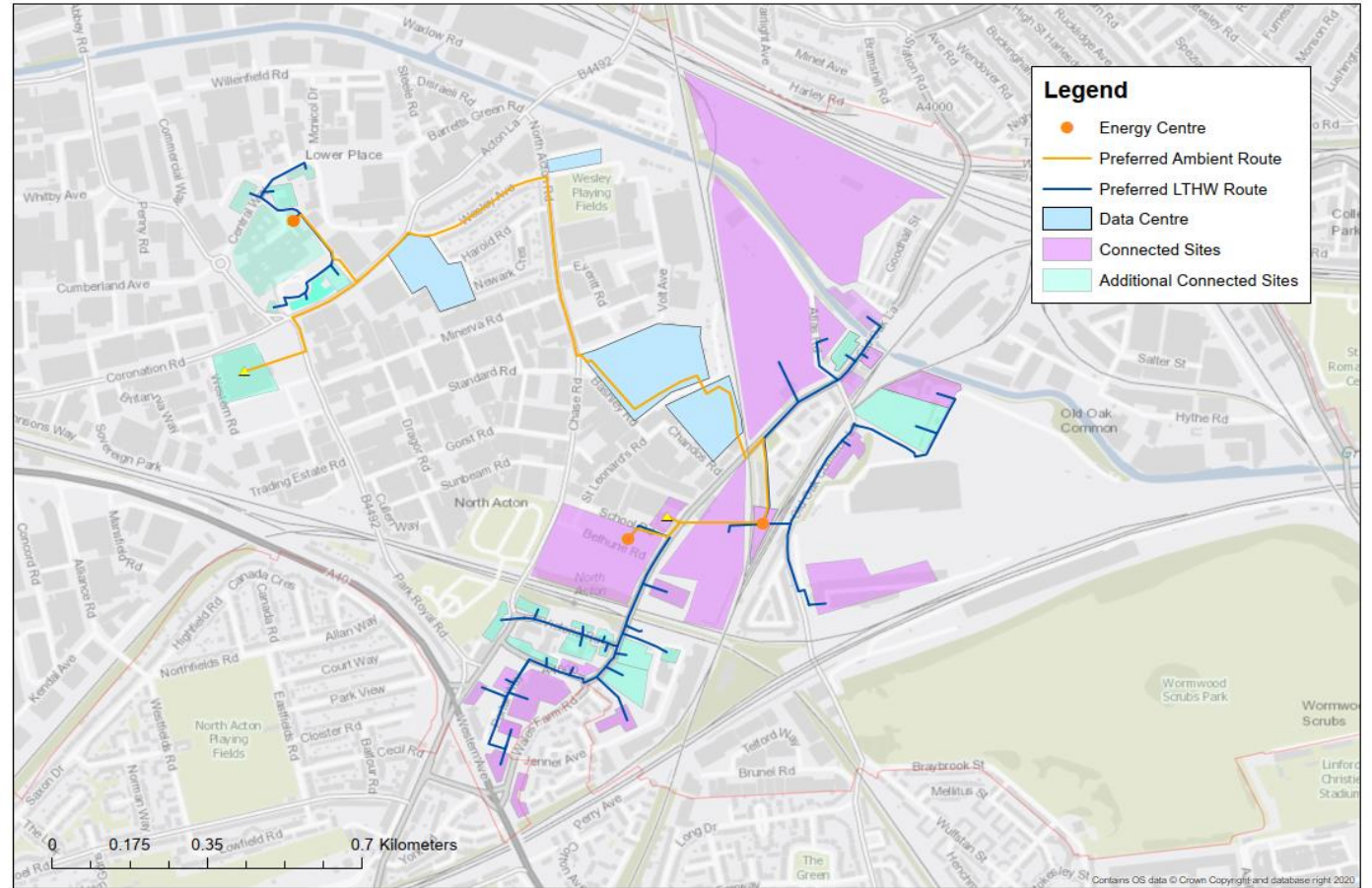
- Local Policy and Mayoral target for Carbon Zero
- Local Area Energy Plan strategy to decarbonise grid
- Lack of electrical capacity in West London
- Plethora of Data Centres in Industrial park
- Comprehensive development of Old Oak West allows for strategic network



OPEN Heat Network Project

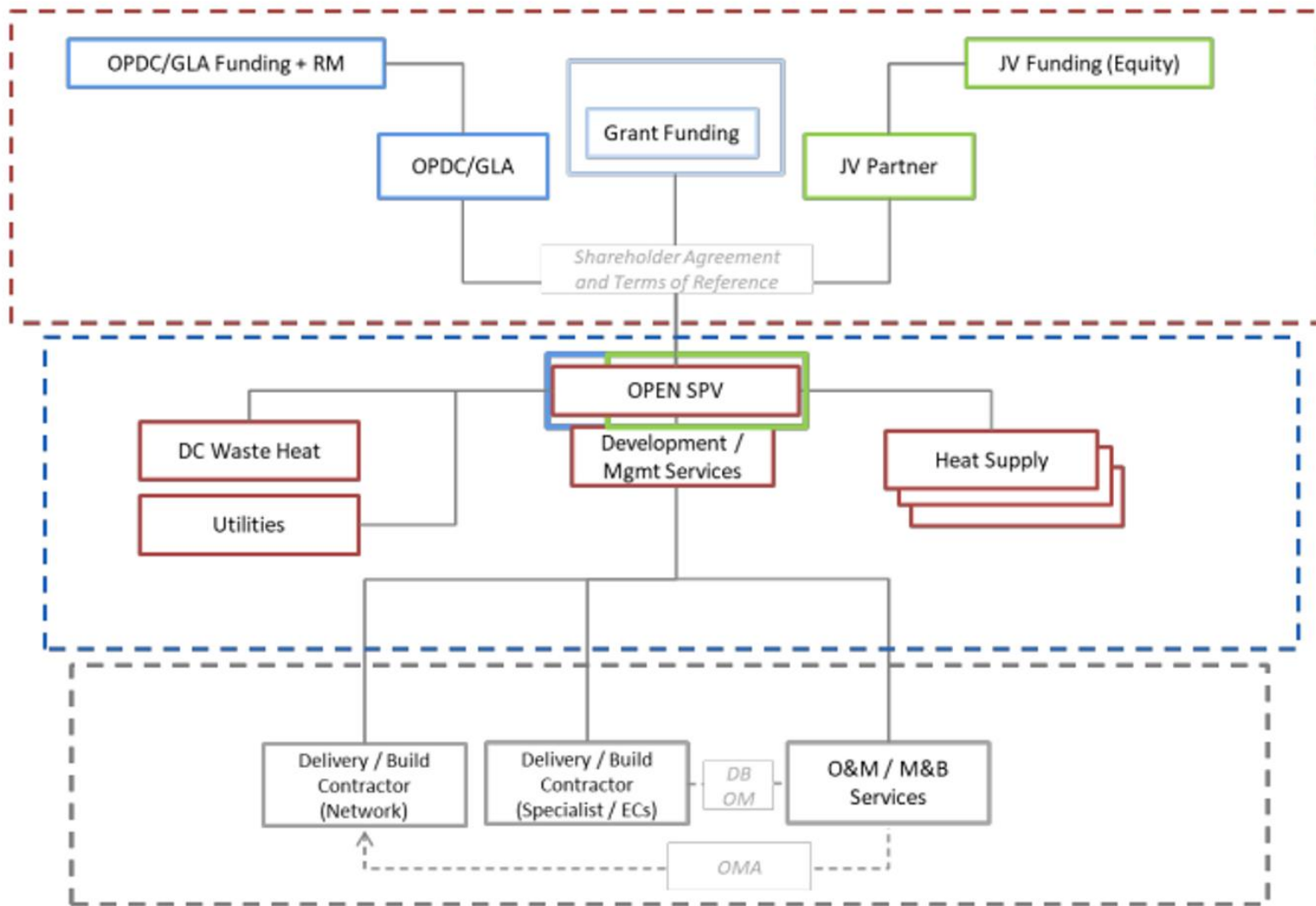
OPDC
OLD OAK AND
PARK ROYAL
DEVELOPMENT
CORPORATION

- Low carbon heating to Existing customers for Phase 1 and Phase 2 (Old Oak West)
- 90%+ carbon saving over the gas counterfactual & reducing redevelopment electrical impact on the grid
- Supply over 80GWh of heat to customers via 7km pipework network
- Creates opportunities for expansion and an area for Heat Network Zoning Policy (Currently in the House of Lords under the Energy Security Bill)



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Delivery Vehicle Assumptions



Stage 1

Procurement of a JV Partner

- JV Partner to be procured on the basis of a competitive process utilising funding partners with experience in the energy network market, or with experience in similar infrastructure or renewable projects.
- To be procured under a SHA, or PDA.
- The SHA / PDA details are to be established prior to the procurement process.

Stage 2

Establishment of JV SPV

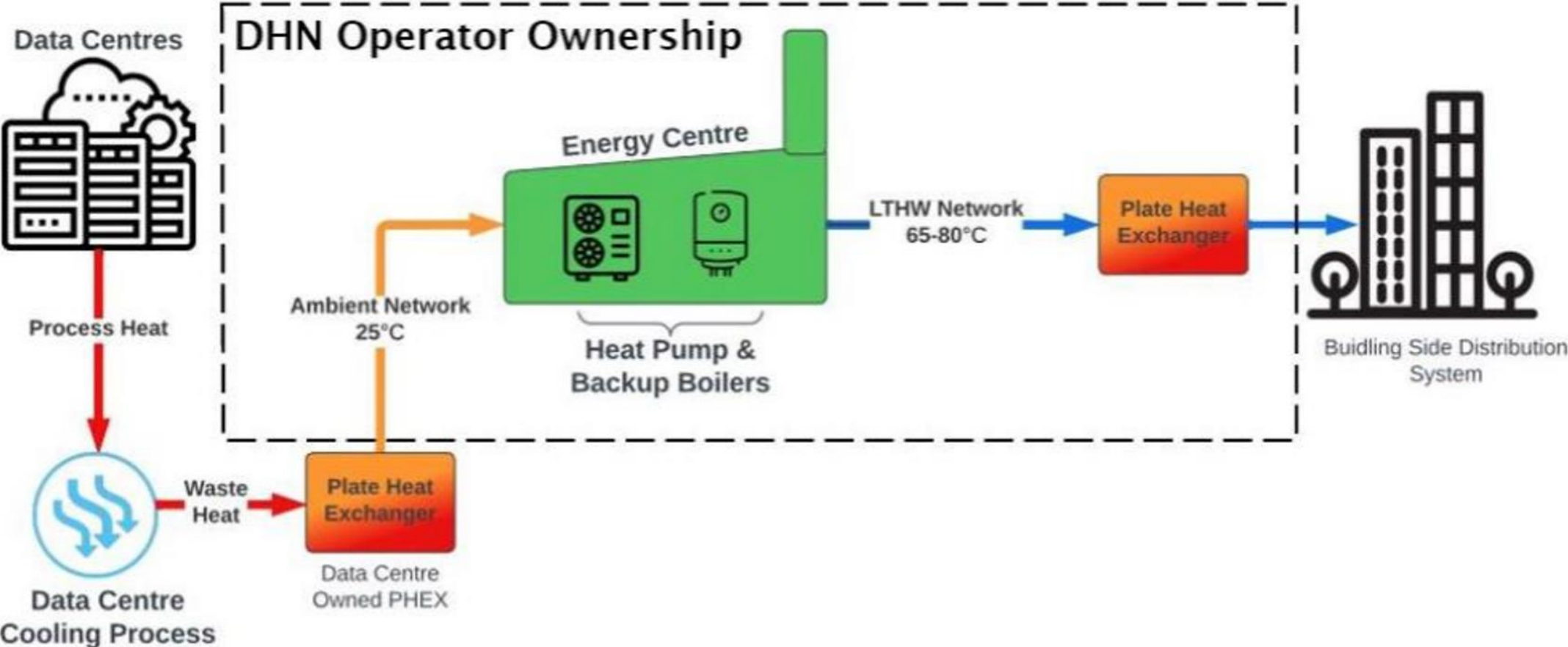
- Establish the JV SPV with the JV partner
- Known / bankable contracts can be entered into by the SPV for the 'OPEN' aspects
- Including continued development of the network, procurement strategy, and the contracts etc.

Stage 3

Procurement through SPV of Services

- Contractual arrangements required in order for the SPV to meet its delivery requirements.
- Two stage procurement process.
- Design and Build (D&B) contract to be procured, in separate packages for:
 - The data centre connections and ambient loop network
 - The energy centres and the LTHW network and customer connections.
- Operation and Maintenance (O&M) contract (potentially linked to the D&B of the Energy Centres)
- Customer Service & Billing (CSB)

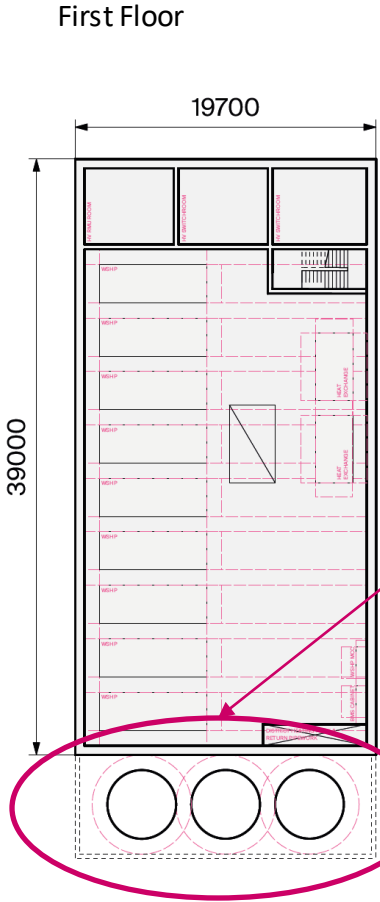
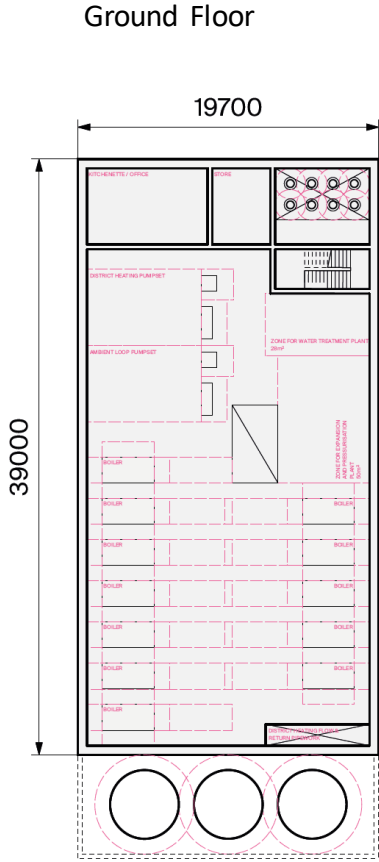
Network Strategy Overview



Energy Centre Requirements

Energy Centre footprint and technical requirements:

- Two-storey structure
- 800m² land
- 3 thermal stores with minimum 600m³ volume
- Site of EC to be available Q4 2025



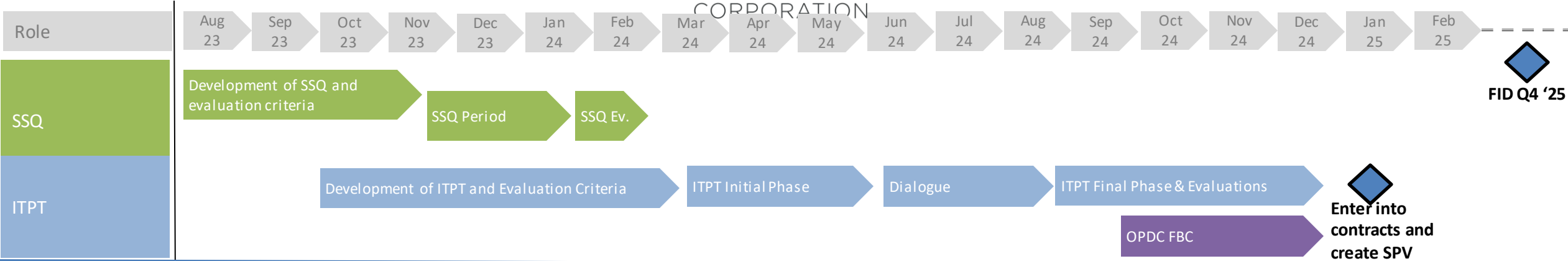
Key Challenges

- **Ability to secure heat** - data centres/assumptions around available heat
- **Achieving a viable rate of financial return** – sufficient to cover financing costs and make the proposition ‘attractive’ to the market
- **Ability to secure land, rights and/or infrastructure protections –for** pipework, which will cross multiple railway lines
- **Build out risk for new development** - will this generate sufficient demand?
- **Electrical infrastructure** and ability to power energy centres/support customer demand
- **Programme**

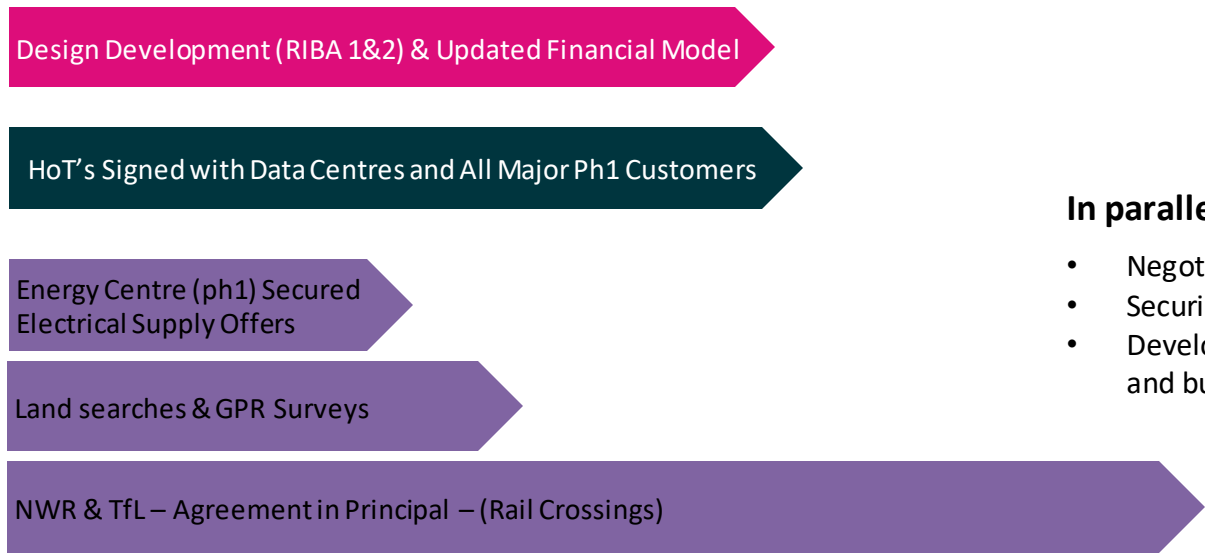
Programme

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 DEVELOPMENT
 CORPORATION



All Other Workstreams



In parallel to the procurement OPDC are:

- Negotiating HoT's with a data centres and customers
- Securing land and power for energy centres
- Developing RIBA 2 designs for a new EC, buried network and building connections

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Market Transformation

Infrastructure Commitments

- Developed a fully concessions contracts regulations compliant, open procurement process.

Skills Commitment

- Embedded into our strategy will be a commitment to work with ‘The Forge’ a partnership set up by OPDC, LB Brent, Ealing and H&F to support businesses, job seekers and local communities.

Innovation Commitment

- Our project seeks to be the first of its type in the UK to source its waste heat from data centres.

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Q&A

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Cheshire East Council – Handforth Garden Village Network



THE GARDEN VILLAGE
AT HANDFORTH

The Garden Village at Handforth Heat Network

Dan Griffiths, Cheshire East Council

GHNF Meet the Projects - November 2023

The Garden Village at Handforth

The vision

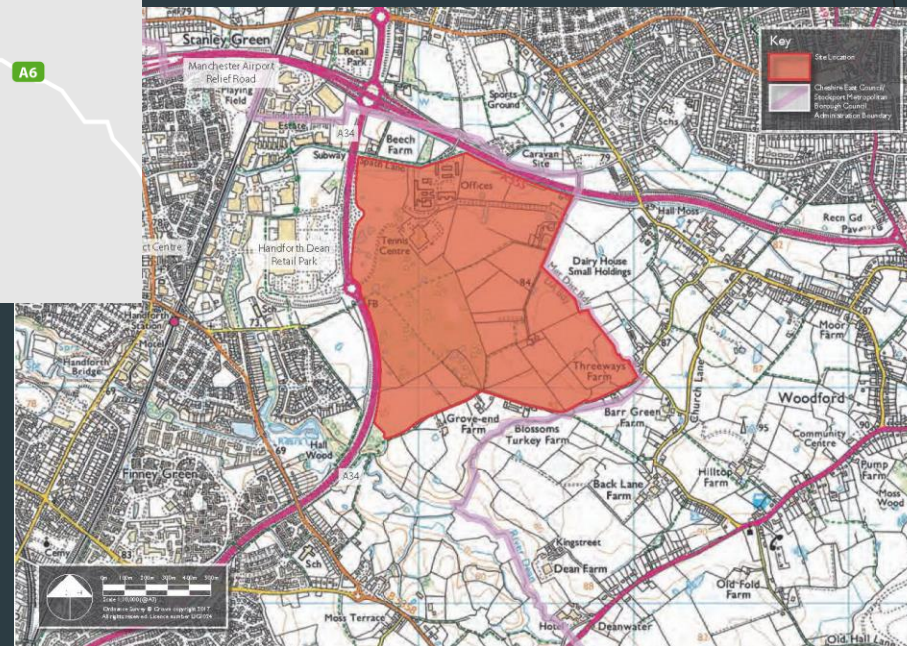
“To create a sustainable, integrated, inclusive, and vibrant community, where people of all ages and backgrounds can find a home that meets their needs through the different stages of their lives. A beautiful and characterful Cheshire Village in which to live, work and play. A place that is very well connected to its natural and urban surroundings. A distinct place with its own identity and a strong sense of community embedded within the highest quality environment.”

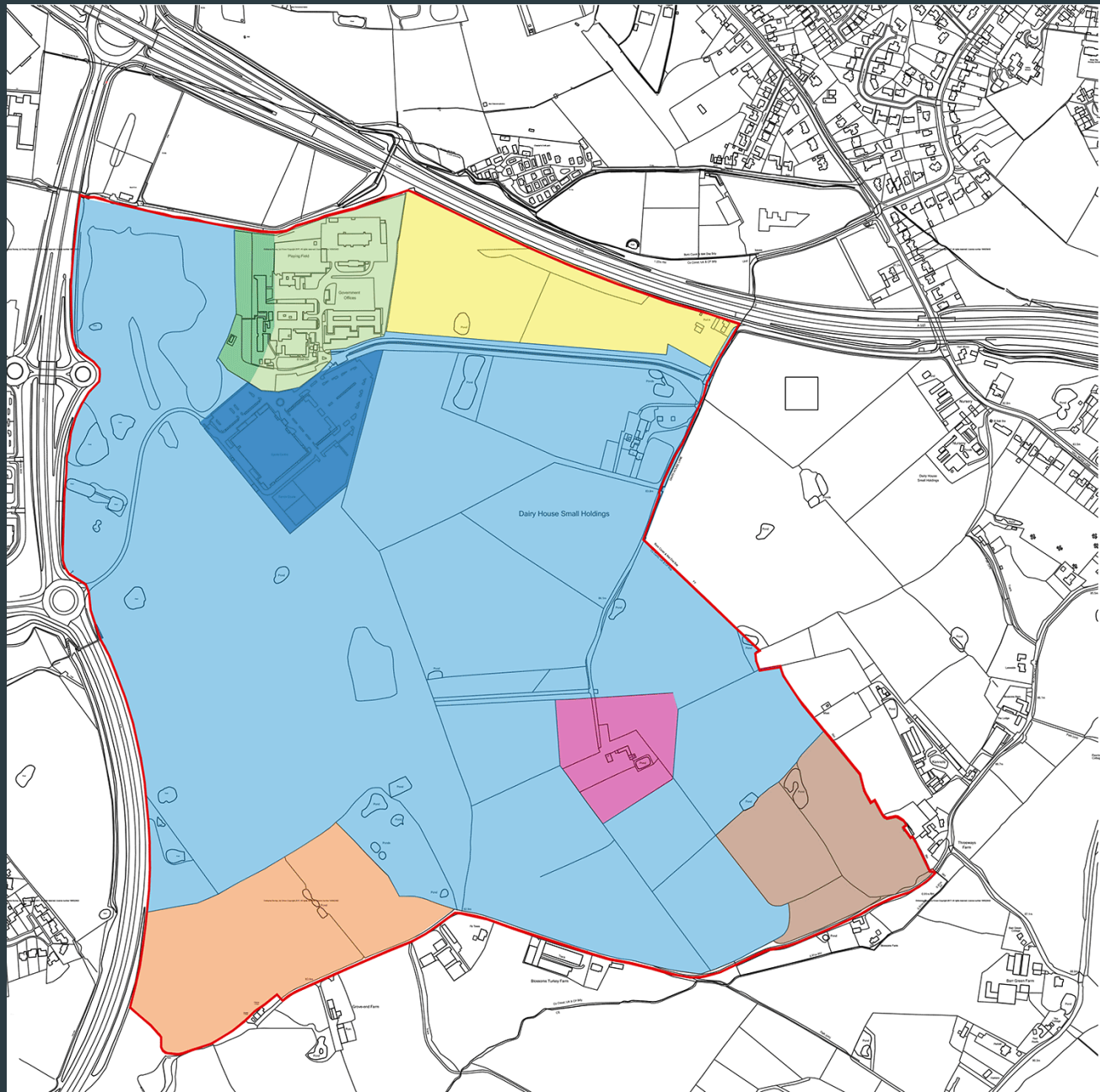
Village Location



- Strategic location
- North of the Borough
- Close to Greater Manchester
- Close to Manchester Airport

- East of Handforth
- Access from A34 Bypass
- South of A555 Airport Eastern Link Road
- Area of high housing demand





Key

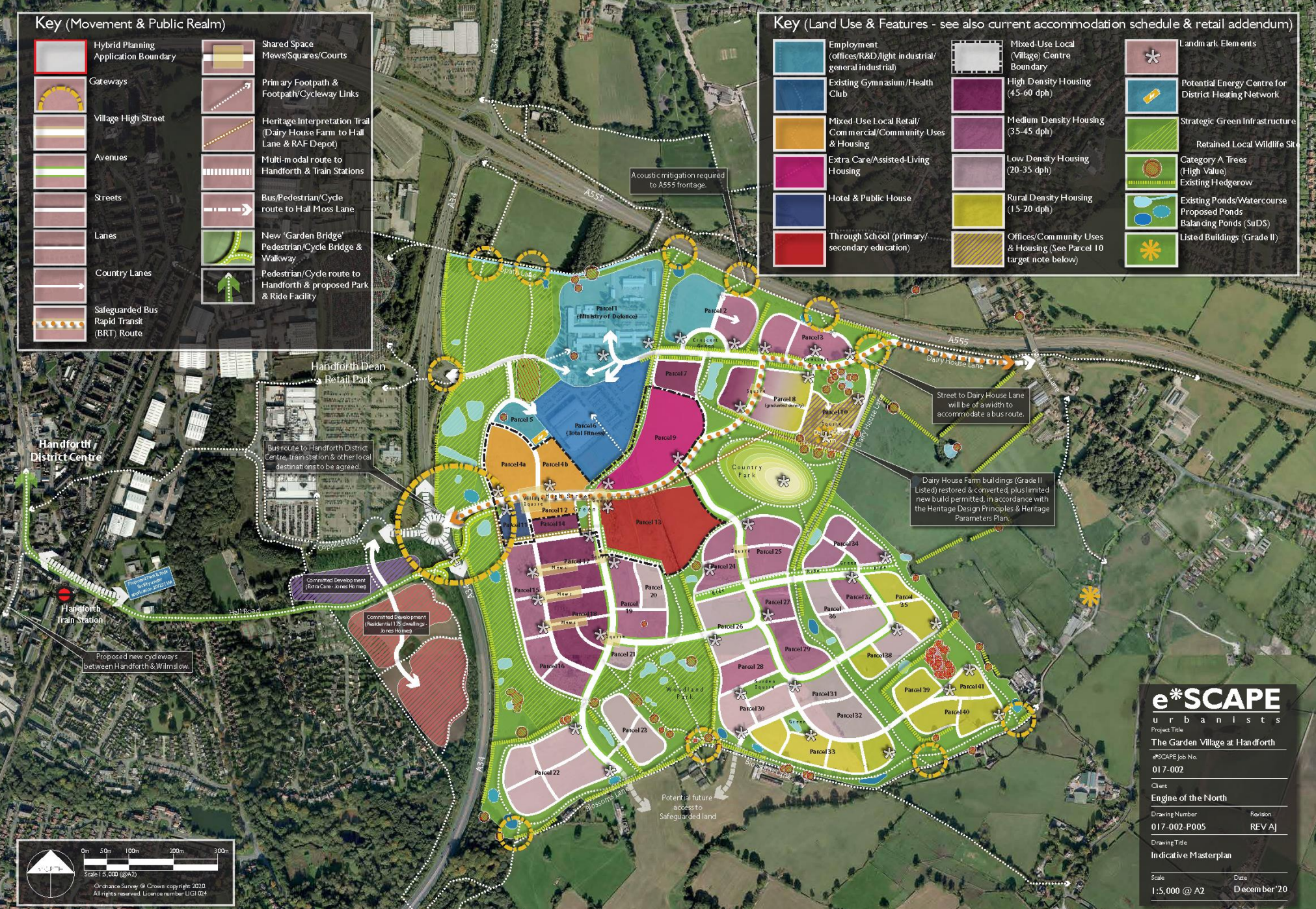
- Site Boundary
- Cheshire East Council (80.82ha)
- Leased to Cashtal from Cheshire East Council (4.1 ha)
- Ministry of Defence (4.34ha)
- Unregistered - Ministry of Defence (1.36ha)
- Third Party Land Owner (6.92ha)
- Third Party Land Owner (8.30ha)
- Third Party Land Owner (2.8ha)
- Unregistered (5.46ha)

Key (Movement & Public Realm)

- | | | | |
|--|---|--|---|
| | Hybrid Planning Application Boundary | | Shared Space Mews/Squares/Courts |
| | Gateways | | Primary Footpath & Footpath/Cycleway Links |
| | Village High Street | | Heritage Interpretation Trail (Dairy House Farm to Hall Lane & RAF Depot) |
| | Avenues | | Multi-modal route to Handforth & Train Stations |
| | Streets | | Bus/Pedestrian/Cycle route to Hall Moss Lane |
| | Lanes | | New 'Garden Bridge' Pedestrian/Cycle Bridge & Walkway |
| | Country Lanes | | Pedestrian/Cycle route to Handforth & proposed Park & Ride Facility |
| | Safeguarded Bus Rapid Transit (BRT) Route | | |

Key (Land Use & Features - see also current accommodation schedule & retail addendum)

- | | | | | | |
|--|--|--|--|--|--|
| | Employment (offices/R&D/light industrial/general industrial) | | Mixed-Use Local (Village) Centre Boundary | | Landmark Elements |
| | Existing Gymnasium/Health Club | | High Density Housing (45-60 dph) | | Potential Energy Centre for District Heating Network |
| | Mixed-Use Local Retail/Commercial/Community Uses & Housing | | Medium Density Housing (35-45 dph) | | Strategic Green Infrastructure Retained Local Wildlife Site |
| | Extra Care/Assisted-Living Housing | | Low Density Housing (20-35 dph) | | Category A Trees (High Value) Existing Hedgerow |
| | Hotel & Public House | | Rural Density Housing (15-20 dph) | | Existing Ponds/Watercourse Proposed Ponds Balancing Ponds (SuDS) |
| | Through School (primary/secondary education) | | Offices/Community Uses & Housing (See Parcel 10 target note below) | | Listed Buildings (Grade II) |



Handforth District Centre

Handforth Dean Retail Park

Handforth Train Station

Proposed new cycleways between Handforth & Wilmslow

Committed Development (Extra Care - Jones Homes)

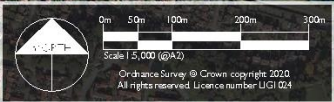
Committed Development (Residential 175 dwellings - Jones Homes)

Acoustic mitigation required to A555 frontage.

Street to Dairy House Lane will be of a width to accommodate a bus route.

Dairy House Farm buildings (Grade II Listed) restored & converted, plus limited new build permitted, in accordance with the Heritage Design Principles & Heritage Parameters Plan.

Potential future access to Safeguarded land



e*SCAPE
urbanists

Project Title
The Garden Village at Handforth

e*SCAPE Job No.
017-002

Client
Engine of the North

Drawing Number
017-002-P005

Revision
REV A/J

Drawing Title
Indicative Masterplan

Scale
1:5,000 @ A2

Date
December '20

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The Garden Village at Handforth

Main components of the Garden Village

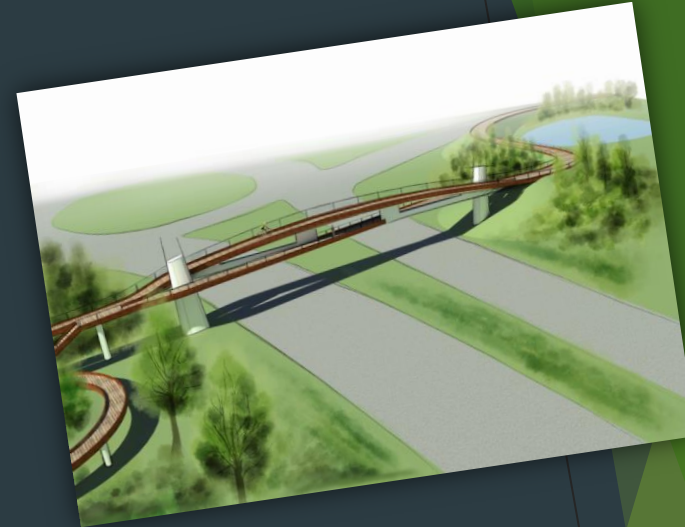
- 1,500 housing units
- 175 extra-care units
- Employment uses
- Local centre with shops & restaurants
- Hotel & village pub
- Through School
- Extensive green infrastructure with provision for play and ecology

Awarded national “Garden Village” status by central government.

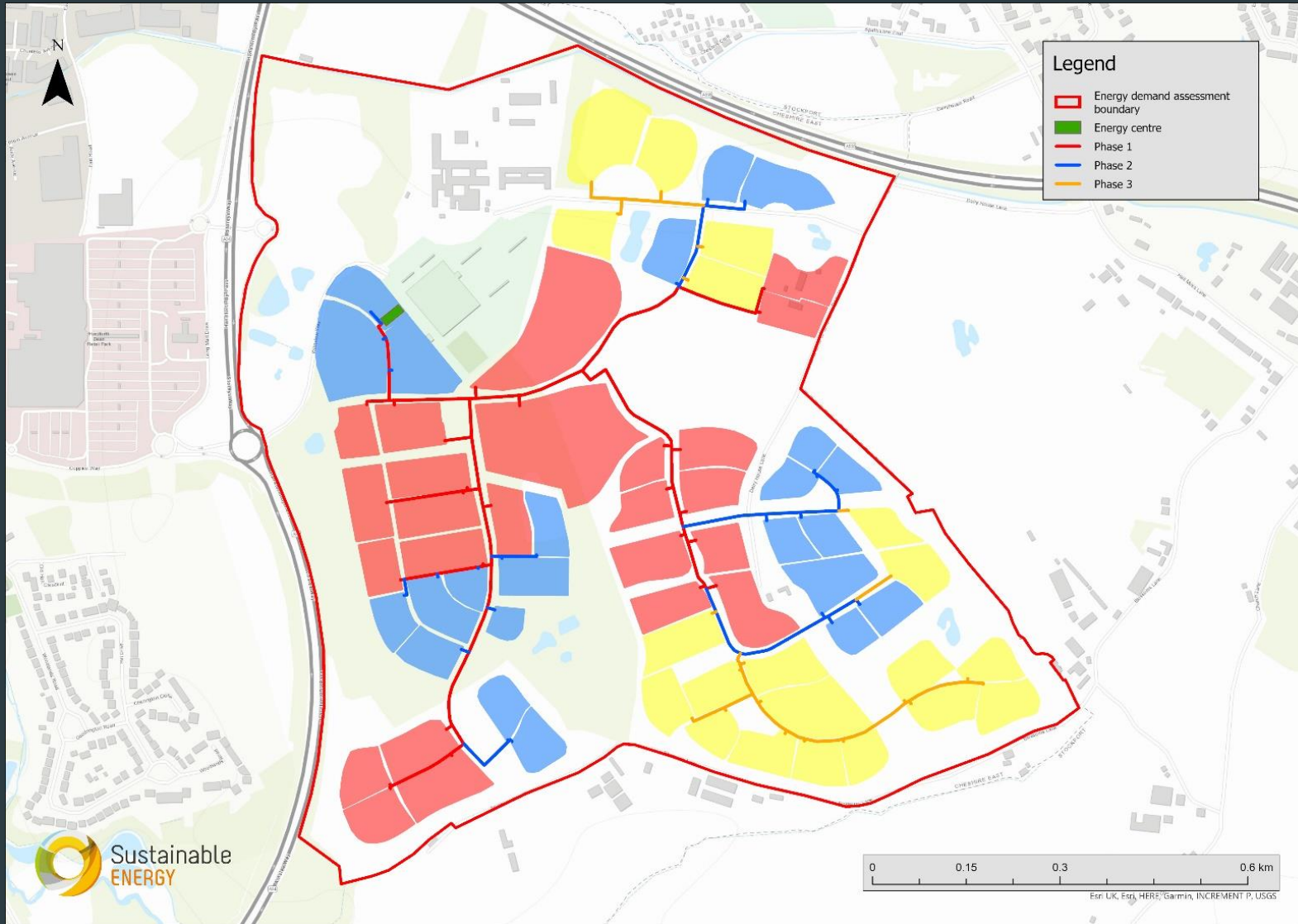
Selected as one of the first fourteen Garden Villages as part of Homes England’s Garden Village Programme

Sustainability at its heart.

- ▶ Design Guide – Supplementary Planning Document (SPD)
- ▶ Pedestrian/cycle links with new bridge over A34
- ▶ Reduced reliance on the car
- ▶ Smart Village initiatives
- ▶ Electric vehicle charging
- ▶ **District Heating/Sustainable Energy**



The Proposed Heat Network

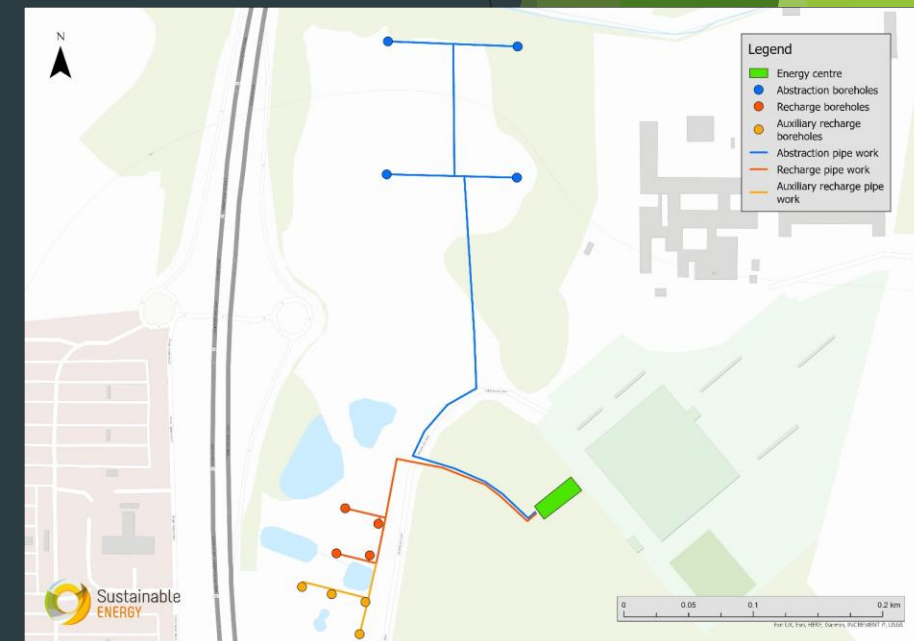
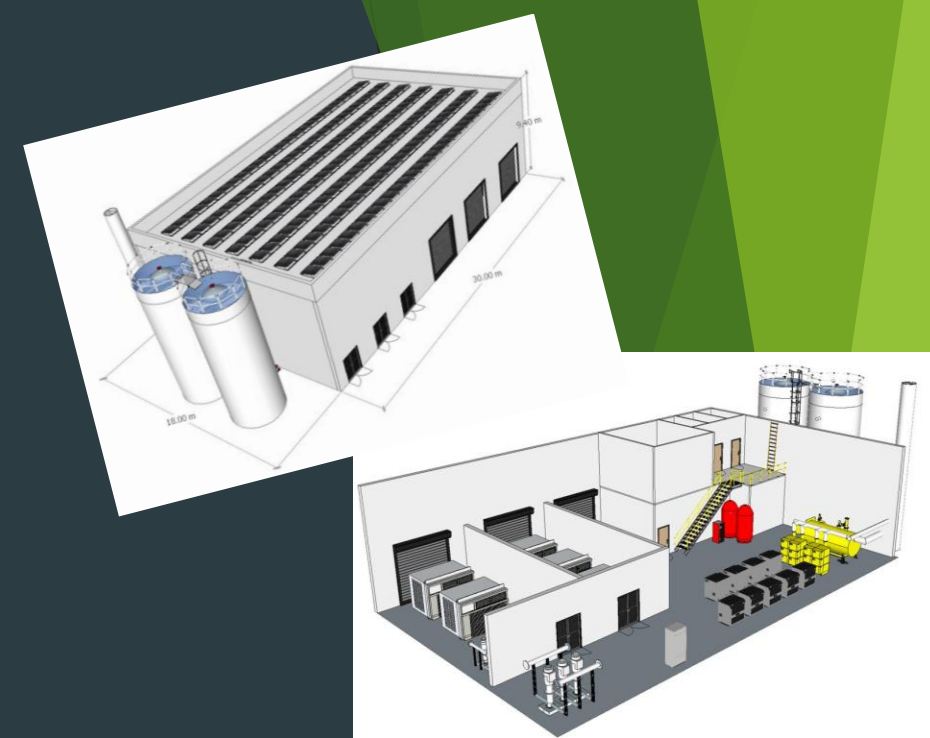


OFFICIAL



Project Characteristics

- ▶ Phase 1 only at present on Council owned land – connections embedded into development agreements.
- ▶ 665 dwellings, school, extra care, hotel, public house and light retail
- ▶ Open loop GHNF – with electric backup - total thermal demand (15 yrs) – 91.41 GWh.
- ▶ 1MW GSHP as the primary heat source
- ▶ Borehole field to the north – design and consenting strategy being agreed with Environment Agency.
- ▶ Heat demand for phase 1 – 6GWh/pa
- ▶ Distribution length 2.57km
- ▶ Energy Centre located on Council owned land and identified in the masterplan.
- ▶ Potential to expand into rest of the site.



Key Financials

- ▶ Phase 1 only at present
- ▶ Total Phase 1 value of £12.6m - £5.7m generation and £6.9 Distribution.
- ▶ £2.6m awarded by GHNF - £680 commercialisation.
- ▶ Projected post GHNF IRR of 5.91%
- ▶ Council led project – separate SPV to deliver.
- ▶ Financed through connection charges and heat sales.
- ▶ All being reviewed as part of commercialisation.

Key Benefits

- ▶ Critical Success Factors
 - ▶ Carbon reduction
 - ▶ Safeguarding customer heat costs
 - ▶ Futureproofing the development
 - ▶ Economic benefits
- ▶ Market Transformation
 - ▶ Open and fair procurement (PPR).
 - ▶ Social value – environmental improvements, carbon reduction, local economic benefit/job creation.
 - ▶ Engaging the community and key stakeholders on heat networks.
 - ▶ Encouraging innovation – University linkages.





THE GARDEN VILLAGE
AT HANDFORTH

Dan Griffiths, Cheshire East Council

dan.griffiths@cheshireeast.gov.uk

Equans - Queen Elizabeth Olympic Park and Stratford City District Energy Scheme

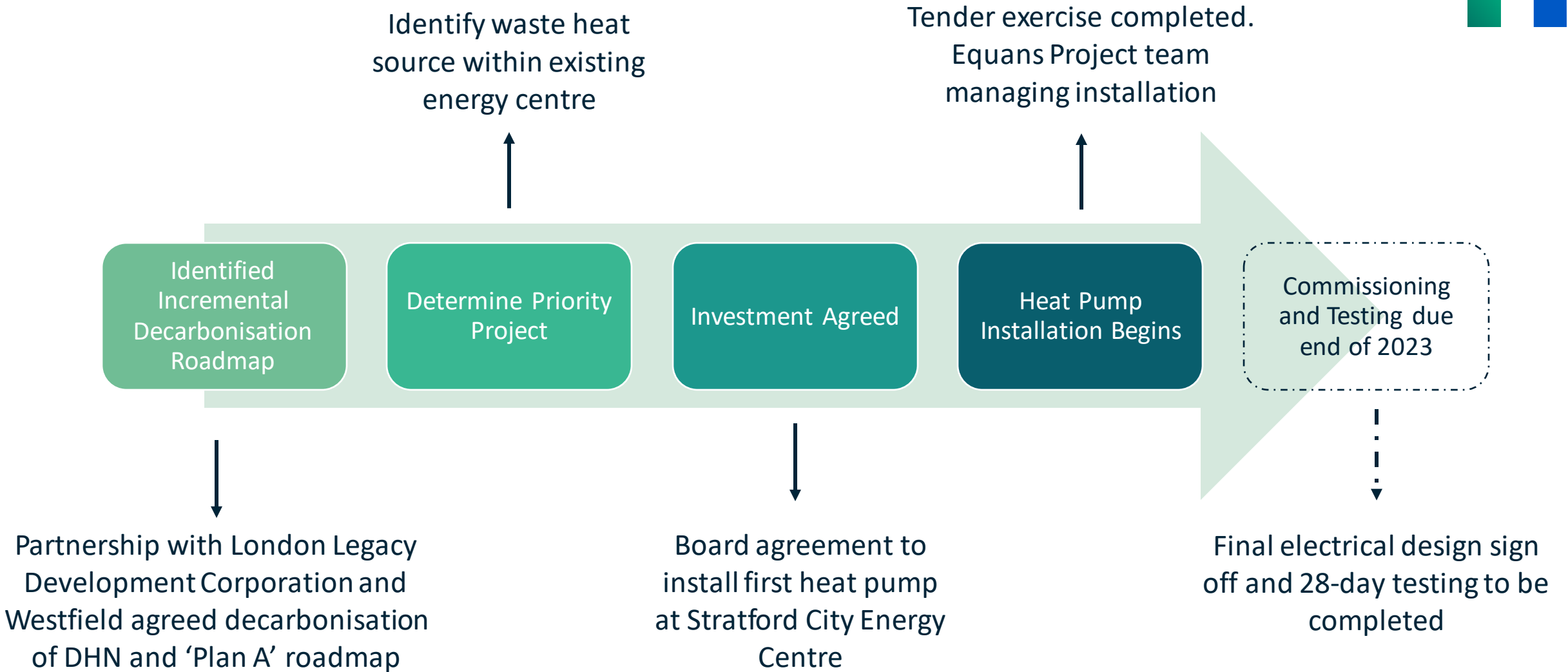


Pudding Mill Lane – East London Energy decarbonisation

Project Inception



Low Carbon Technology Assessment



Stratford City Heat Pump

- Heat pump + small chiller providing 3.2 MW of heating and 1.8 MW of cooling
- System will provide heating and cooling with flow temperatures in line with existing site demands
- Installed in the Chilled Water and the Low Temperature Hot Water system
- Located in the currently allocated space for boiler expansion (inc. mezzanine)
- Project will accommodate pipework and fittings to incorporate future connection/expansion



Market Transformation Commitments



Competitive tender exercise for Heat Pump delivery.



Supporting industry and continued investment into heat network decarbonisation.



Delivering tours of energy centre and overview of decarbonisation activities to University Students, Residents, Park Life Volunteers among many others.



2 x Work Experience learning about ELE and decarbonisation objectives.

Live Q&A

Closing Remarks & Thank You



Visit our website and fill in the contact form to receive updates from us: www.tp-heatnetworks.org



Email us with any questions or to be added to the mailing list enquiries@tp-heatnetworks.org



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