Triple Point
HEAT NETWORKS
INVESTMENT MANAGEMENT

Heat Networks Investment Project Look Back
- The North of England

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Welcome

The session will be recorded. The video and slides will be available.

Turn off your camera unless you are speaking.

Please feel free to comment in the chat.

Type your question into the Q&A. We will answer these in the live Q&A session of the webinar.

Raise your hand if you have a question during a discussion.

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Agenda

Session	Speaker
A look back on HNIP – what did we achieve?	Amy Fry, Triple Point
Gateshead District Energy Scheme	Jim Gillon, Gateshead Council
Leeds PIPES	George Munson, Leeds City Council
Mersey Heat (Liverpool)	Jo Longdon, Ener-Vate
Live Q&A	Samantha Shea, Gemserv
Closing Remarks	Amy Fry, Triple Point

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What was HNIP?

The Heat Networks Investment Project (HNIP) was a major Government project which has helped invest up to £320m of capital funding into heat network projects across England and Wales.

The scheme has now been succeeded by the Green Heat Network Fund (GHNF).

The aim of HNIP was to create the conditions for a **self-sustaining heat network market** that contributes to the decarbonisation of the UK energy system at the lowest cost to the economy by 2050 by:

- Increasing the volume of strategic, optimised and low-carbon heat networks built through provision of central Government funding which will draw in significant additional investment;
- Improving the quality of heat networks that meet local infrastructure and consumer needs; and
- Building the capability of project sponsors and the supply chain to develop heat networks of the right type and quality.

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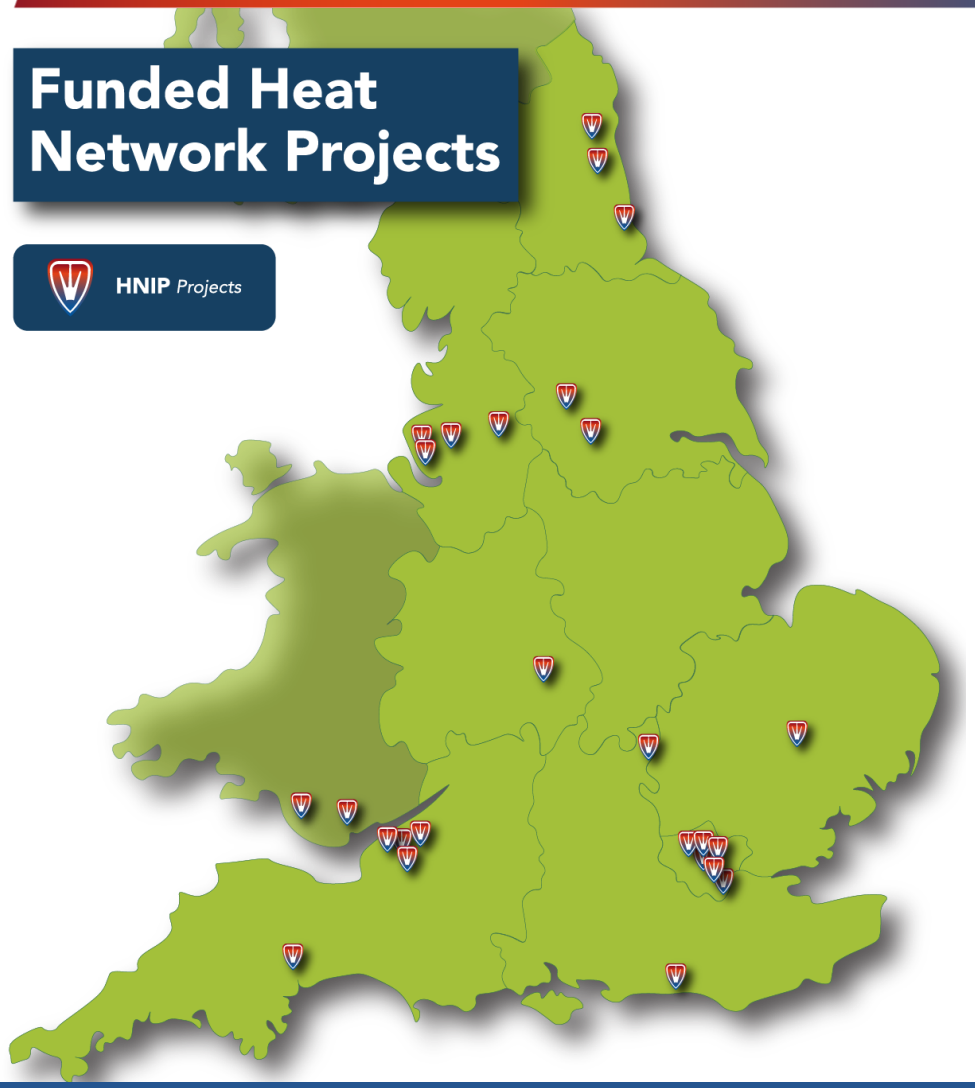
HNIP Successes

- HNIP was launched prior to the UK's commitment to net zero, since then the political imperative has changed and the ambition to decarbonise even greater
- C£270 million was deployed to eligible projects under HNIP main scheme*
- Total CAPEX of schemes with HNIP support exceeds £700m across public and private sector projects
- More than 75,000 residential connections to be made

**subject to conditions being met*



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Professionalising the Market

1

2

STANDARDISED DUE DILIGENCE SET (SDDS) FOR HEAT NETWORKS

3

HEAT CONTRACT TEMPLATES: "SALES, OPERATIONS AND MAINTENANCE SET (SOMS)"

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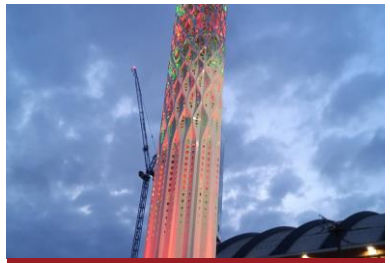
Case Studies

Energy from Waste - Enfield

Mine Energy – South Seaham

Energy from Waste - Leeds



Gas CHP – Manchester

Ground Source Heat Pumps – Cambridgeshire

Air Source Heat Pumps – Solihull

Water Source Heat Pump - Liverpool

Mine Energy – Gateshead

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Gateshead District Energy Scheme

Jim Gillon, Gateshead Council

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HNIP projects and beyond in Gateshead

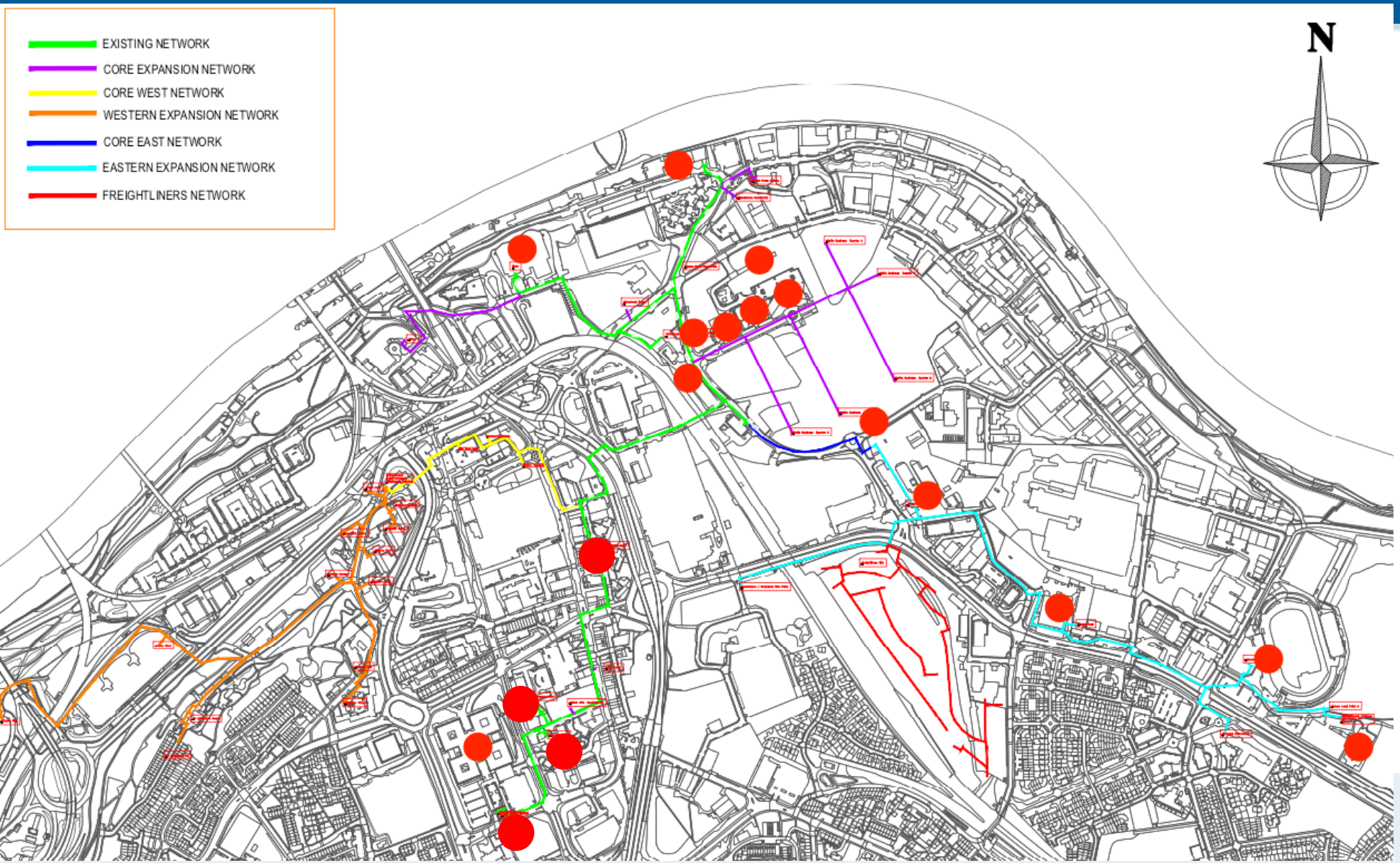
Jim Gillon

Service Director, Energy and Design, Gateshead Council

- CEO, Gateshead Energy Company

Gateshead Council

Current network



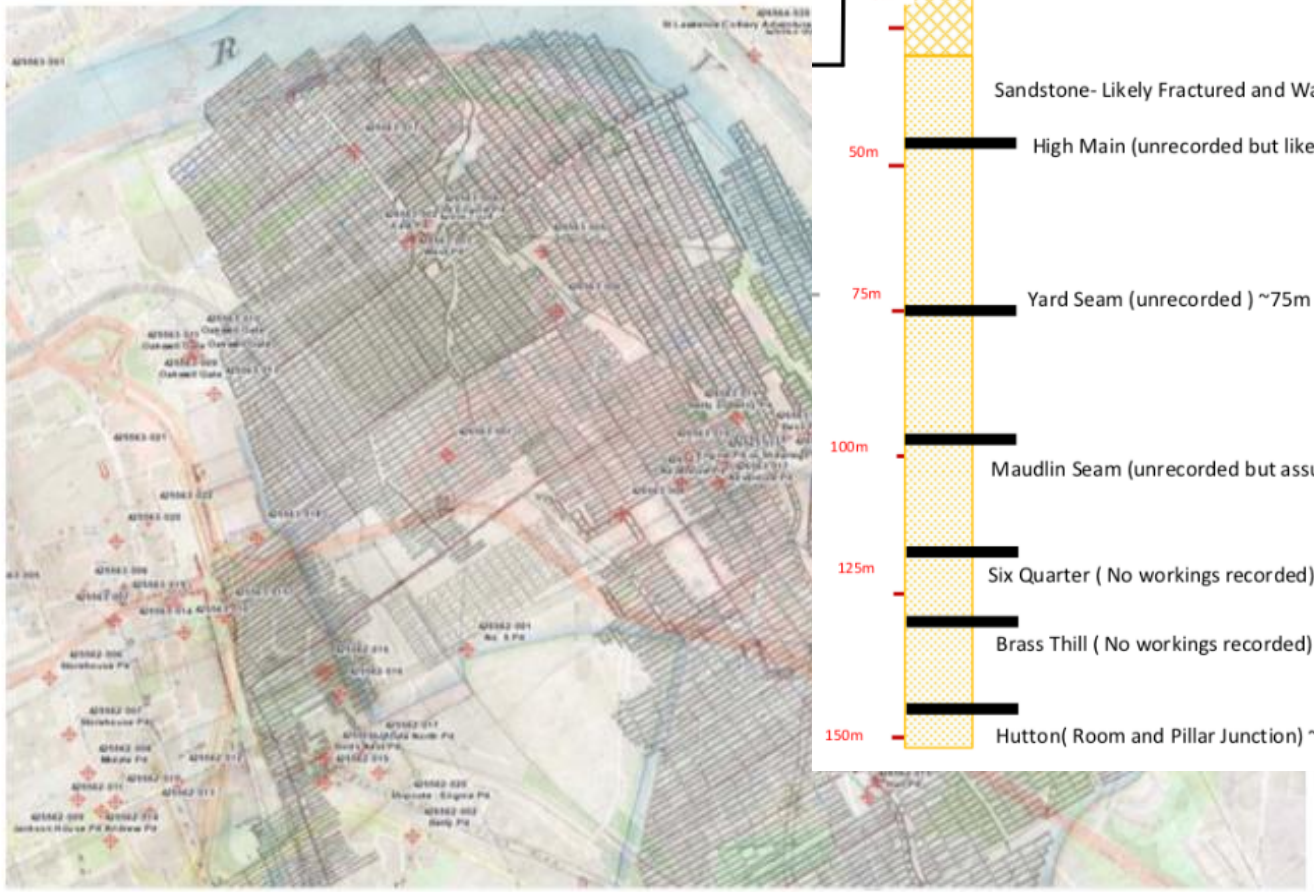
Gateshead Council
www.gateshead.gov.uk

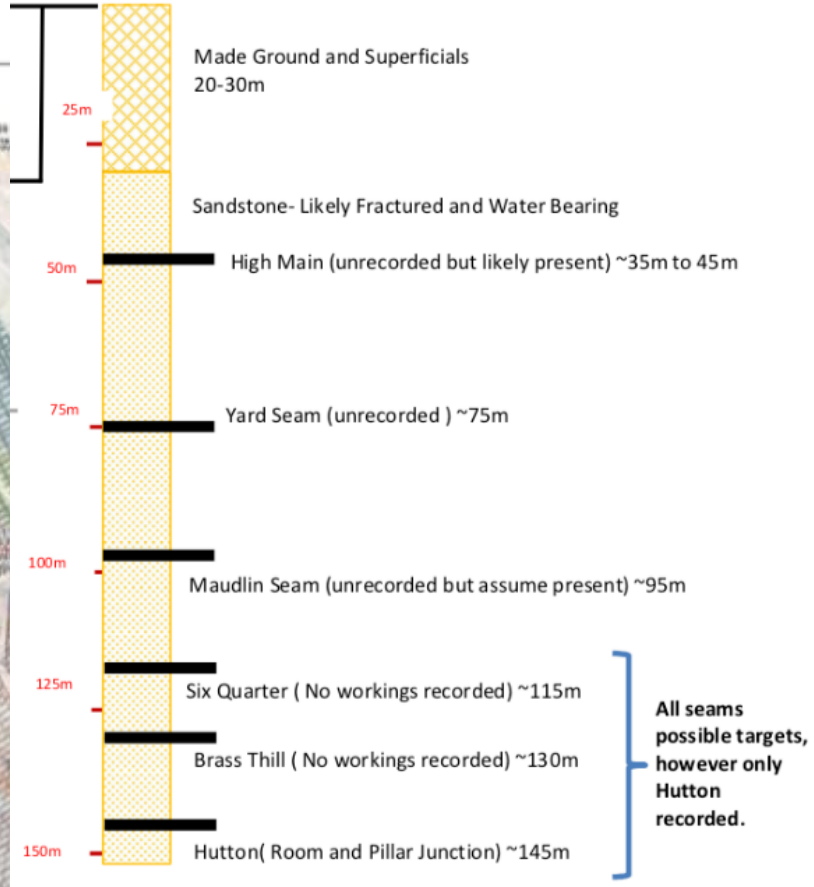
GEC Customer Buildings

Town Centre	Quays	East Extension	Leisure Centre Cluster	Baltic Quarter
Civic Centre	Gateshead College	Shearlegs Rd	Gateshead Leisure Centre	Baltimore House
Warwick Court (80 homes)	The Glasshouse	Park Rd	Gateshead Library	PROTO
Park, Peareth and Priory Courts (120 homes)	The Baltic	Freight Depot (270 homes)	Gibside School	RIGA
Regent's Court (159 homes)	GB Lubricants	Gateshead Stadium	Shipley Art Galley	Multi-Storey Car Park
St Josephs RC Primary School	*Future – Sage International Conference Centre*	Gateshead Academy of Sport	Sunderland Talmudical College	Baltic Solar Park
Future – Australia Flats (200 homes)	*Future – Quays Hotel*	Stadium Solar Park	Prince Consort Road	Northern Design Centre
Future - Exemplar Neighbourhood (393 homes)	*Future – Sage Arena*	Old Fold Estate (16 homes pilot – *550 homes future*)		

HNIP 1 – Minewater Heat Pump (£5.9m)

Gateshead Town Heat – Mine water study





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Heat sources….

2No x 150m deep abstraction
1No x 40m deep reinjection
Stable 15degC source
Max flow = 140 l/s

2x3MW ammonia heat pump
80/65 degC operation
COP = 2.9

Gateshead Council

6MW Minewater Heat Pump

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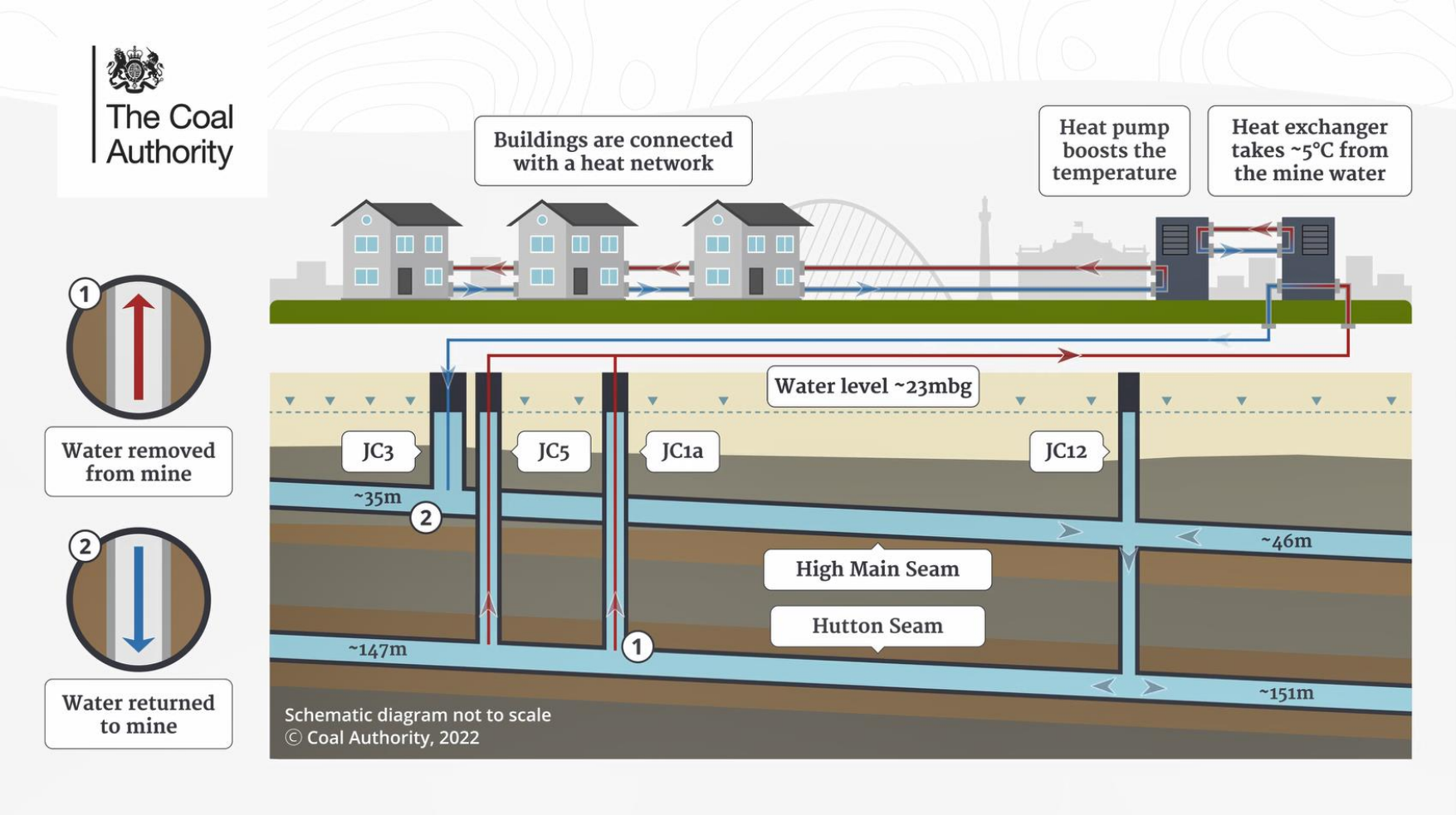
Gateshead Council

How the minewater heat pump works



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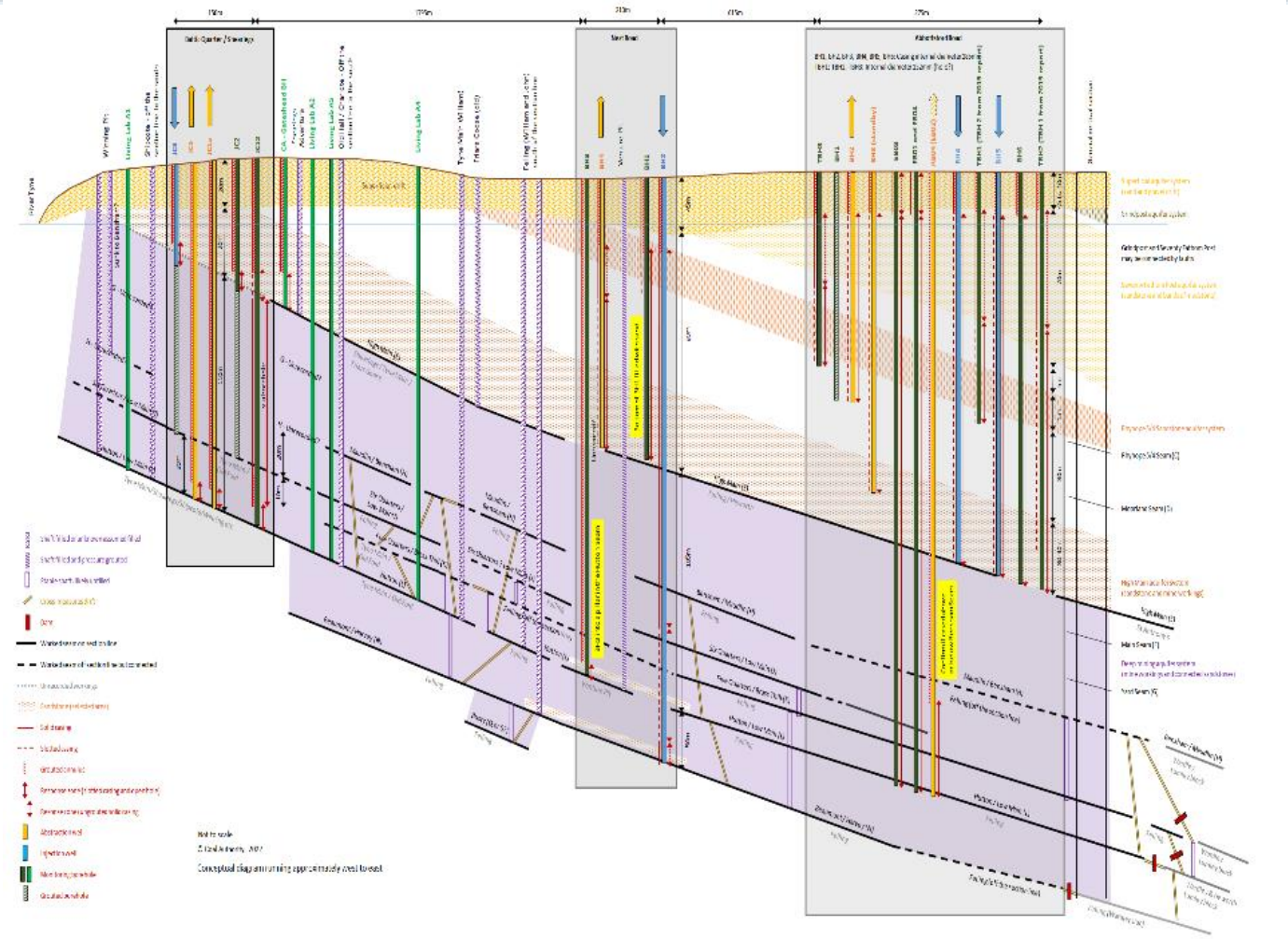
Gateshead Council …a “Living Lab” for mine energy

The Coal Authority

Gateshead Council

www.gateshead.gov.uk

…a “Living Lab” for mine energy



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HNIP customer 1 – Freight Depot…

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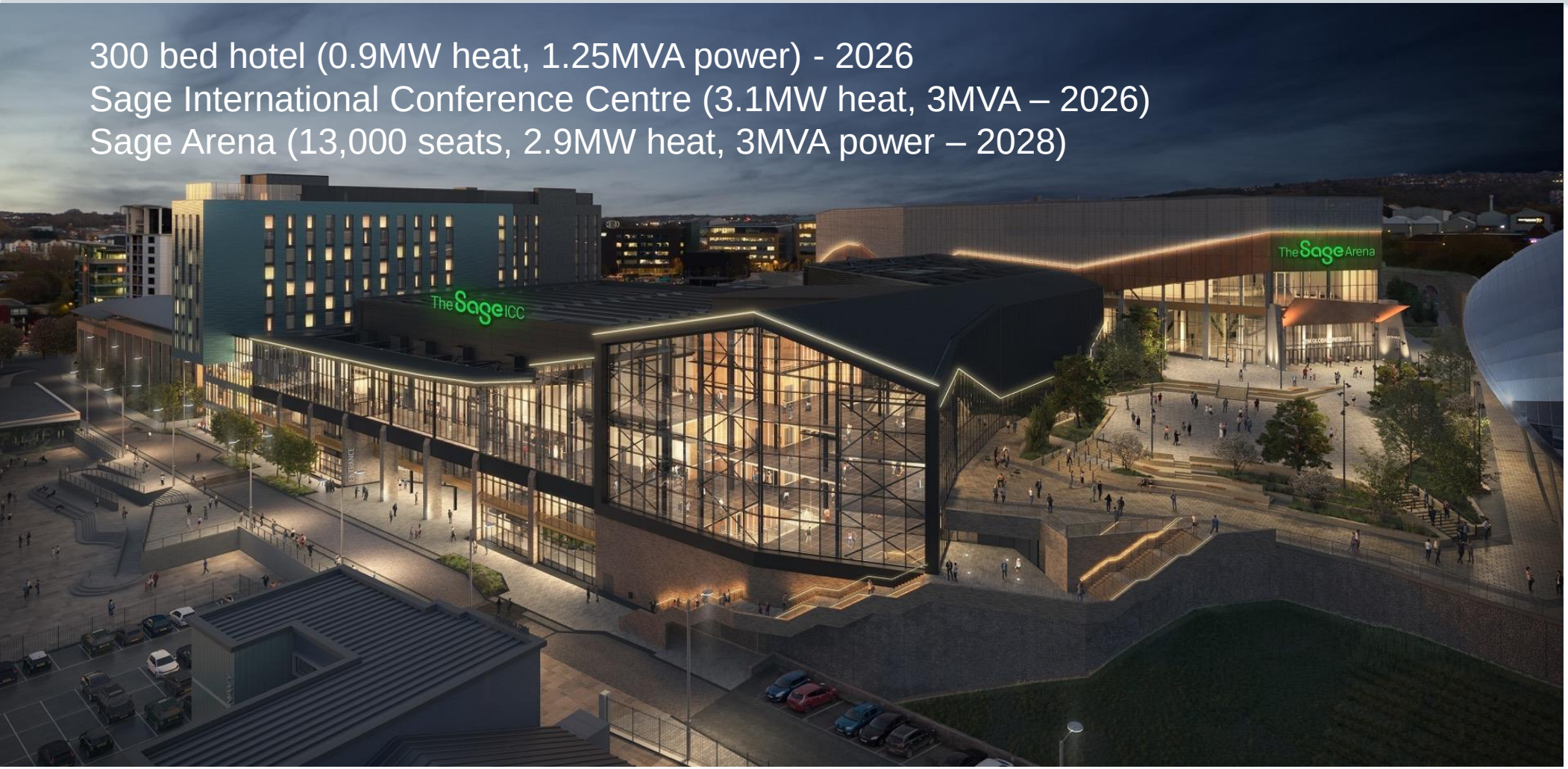
HNIP Customer 2 – The Sage

300 bed hotel (0.9MW heat, 1.25MVA power) - 2026
Sage International Conference Centre (3.1MW heat, 3MVA – 2026)
Sage Arena (13,000 seats, 2.9MW heat, 3MVA power – 2028)



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Integration into regeneration

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Baltic Solar Park – 2.7MW (PSDS)

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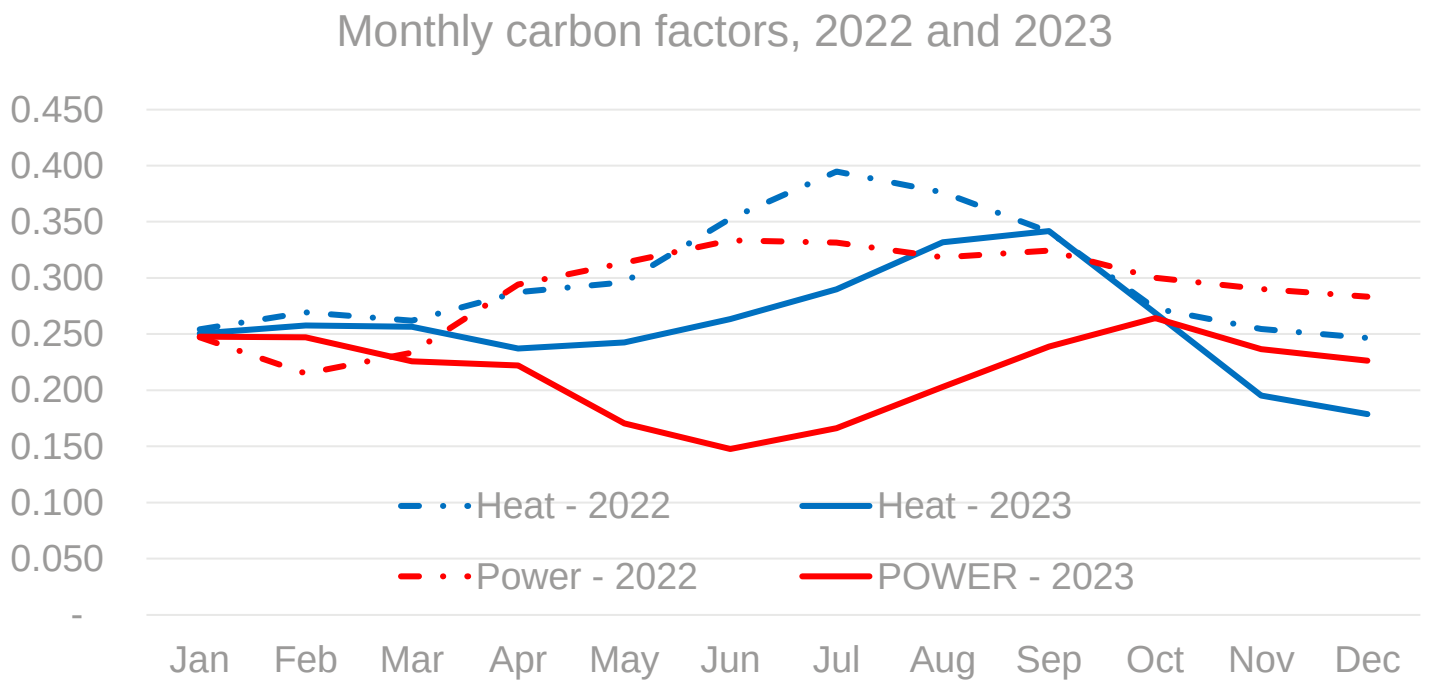
2023 – reducing network carbon emissions

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
% renewables - power	4%	9%	17%	31%	46%	50%	42%	42%
% renewables - heat	3%	3%	7%	8%	16%	20%	7%	0%



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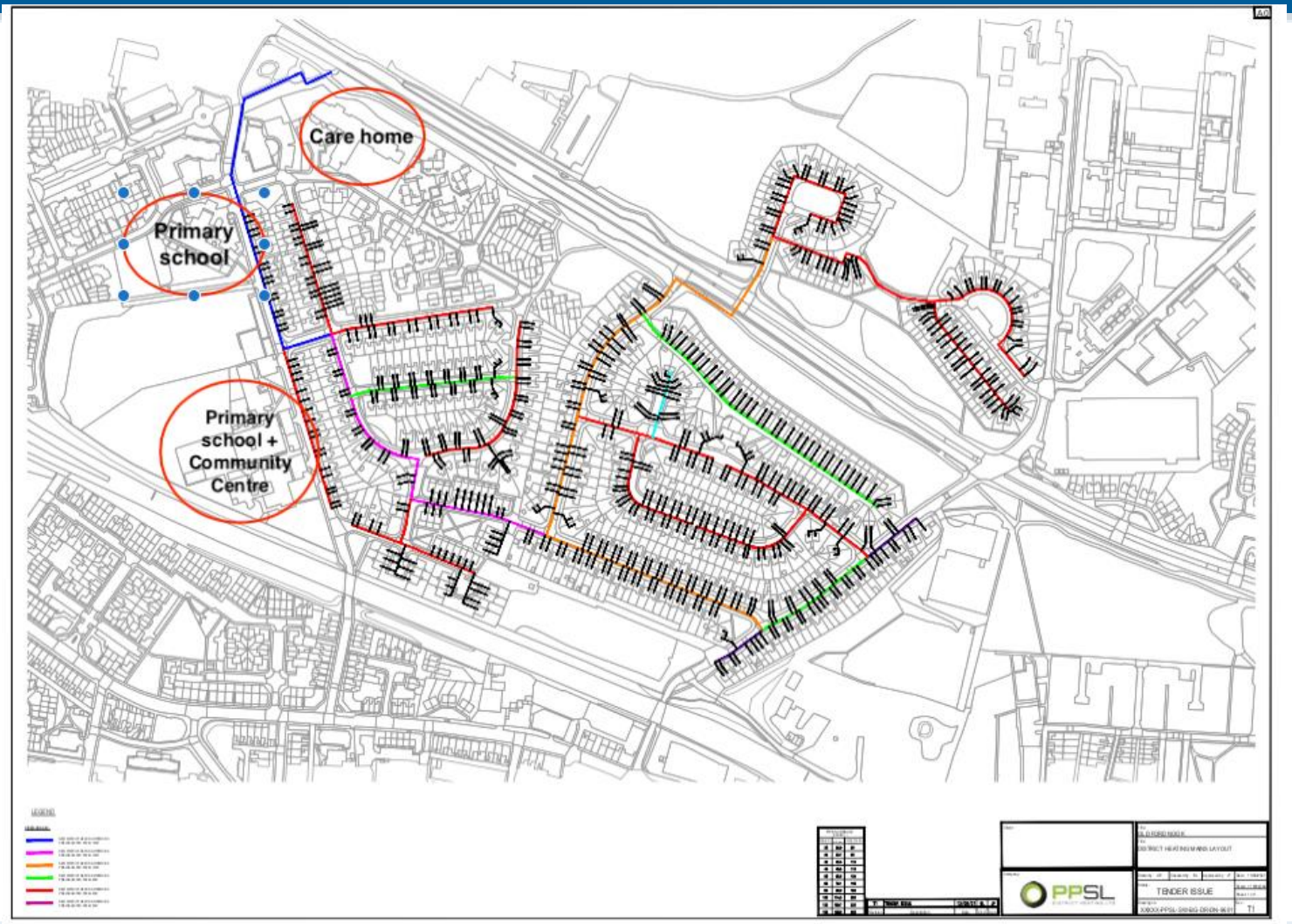
HNIP 2 - low-rise social housing (£2.85m)



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Optimising Heat Networks – Danish Style!

Shared spurs… to 2 or 4 homes

Steel mains, with flexi-plastic spurs

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External HIUs - SAV prototype…

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Maybe even shared HIUs..??

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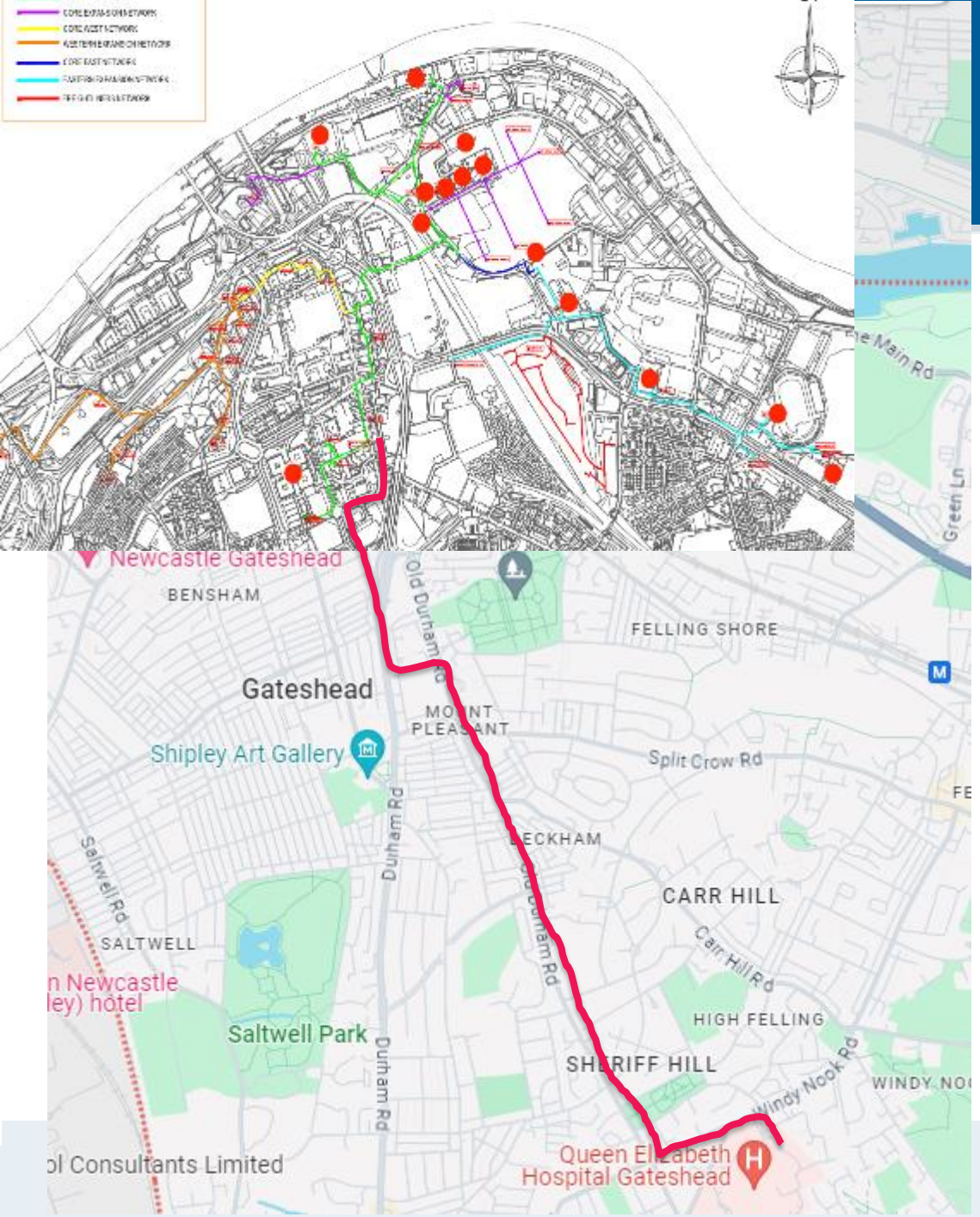

… Beyond HNIP

- **Capacity allowing more expansion**
- **QE Hospital scheme**
  - 5MW load
  - 17 GWH/yr
- **£20m PSDS 3c submitted**
- **Interconnector?**

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… East Gateshead Heat Network – in prep

- QE Hospital – Phase 1 anchor load
  - 7,500 Council homes
  - 2 Sec Schools
  - 12 Primaries
  - 1 pool
- 60 – 70 GWh/yr
- 6km spine
- 50km secondary networks (10 -12No.)

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ZERO CARBON GATESHEAD

Fast Followers – Net Zero Innovation for Heat networks

£300k, over 2years

Three strands

- DH-ready communities
- DH-ready supply chains
- Legal / financial to increase scale

Innovate UK

Ambition

- Create £250m, 5yr programme
- Increase jobs, reduce install costs, bring communities with us

Gateshead Council
www.gateshead.gov.uk

Thank you – and contacts…

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Leeds PIPES

George Munson, Leeds City Council

Leeds PIPES: A citywide heat network

LEEDS PIPES VITAL ENERGI Ener-Vate Leeds CITY COUNCIL

Contents

- What is Leeds PIPES?
  - Why did Leeds invest?
  - Overview of phases 1-3
- Lessons learnt
- Future growth

Political driver: using spare heat to keep vulnerable people warm

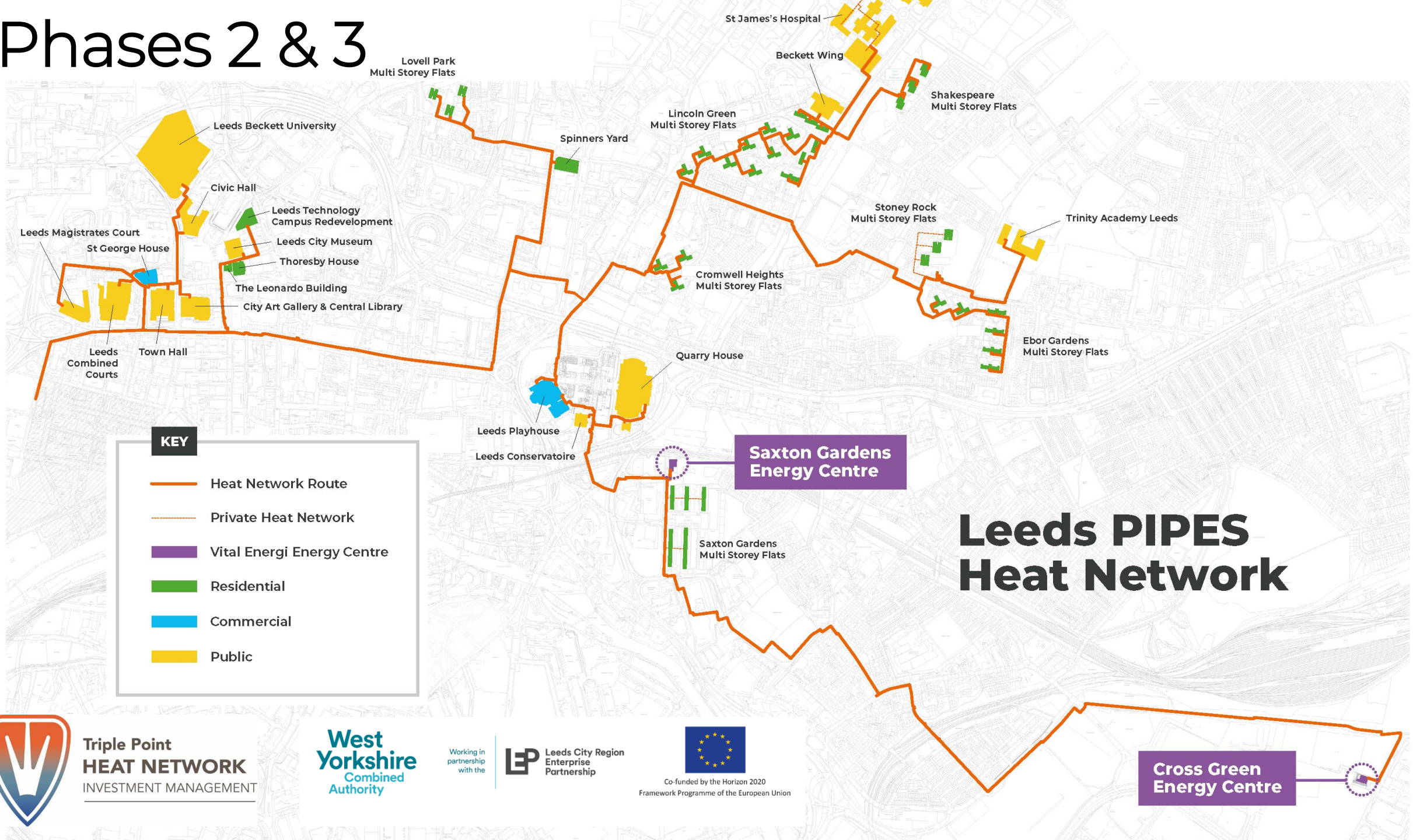
- Fuel poverty
- Economic growth
- Air quality
- CO_2 reductions
- Circular economy


Installing 16.5km of pre-insulated pipe to deliver heat & hot water to 1,983 properties across the City of Leeds
Lincoln Green
Stoney Rock
West Yorkshire Playhouse
Leeds College of Music
Saxton Gardens
CROSS GREEN ENERGY CENTRE
SAXTON GARDENS ENERGY CENTRE
Recycling & Energy Recovery Facility (RERF) Aire Valley, Leeds
#LeedsPIPES
VITAL ENERGI
Leeds CITY COUNCIL
European Union
European Regional Development Fund
West Yorkshire Combined Authority

Lessons Learned?!

- Council can lead DH but essential to have a strong partner
- Critical to prepare: LDO, planning policy, senior support, customer engagement, funding applications…
- Procurement stage is powerful:
  - Secure a long-term O&M contract to create incentive to optimise
  - Include social value targets: can generate local jobs, training, added value
- Construction phase is *hard,* have a good team, be prepared to compromise and get senior support
- Land! The single biggest risk.

Phases 2 & 3


St James's Hospital
Beckett Wing
Lovell Park
Multi Storey Flats
Shakespeare
Multi Storey Flats
Lincoln Green
Multi Storey Flats
Leeds Beckett University
Spinners Yard
Civic Hall
Leeds Technology
Campus Redevelopment
Stoney Rock
Multi Storey Flats
Trinity Academy Leeds
Leeds Magistrates Court
St George House
Leeds City Museum
Thoresby House
The Leonardo Building
City Art Gallery & Central Library
Cromwell Heights
Multi Storey Flats
Leeds
Combined
Courts
Town Hall
Ebor Gardens
Multi Storey Flats
Quarry House
Leeds Playhouse
Leeds Conservatoire
Saxton Gardens
Energy Centre
Saxton Gardens
Multi Storey Flats
KEY
Heat Network Route
Private Heat Network
Vital Energi Energy Centre
Residential
Commercial
Public
Leeds PIPES
Heat Network
Cross Green
Energy Centre
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West
Yorkshire
Combined
Authority
Working in
partnership
with the
Leeds City Region
Enterprise
Partnership
Co-funded by the Horizon 2020
Framework Programme of the European Union

Customers

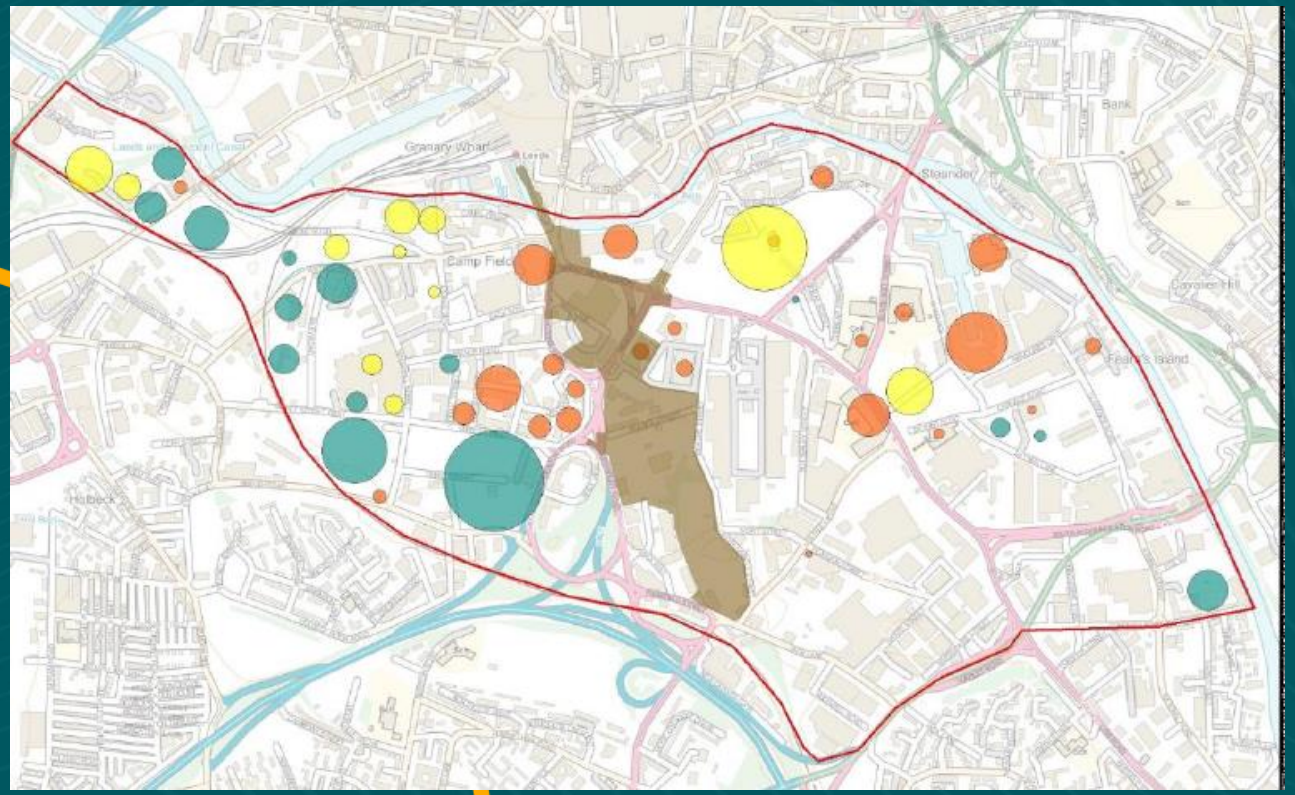
- Healthcare
- Offices
- Education
- Government
- Housing
- Developers

Lessons four years on

- DH from EfW (or waste industrial heat) is cheap and decoupled from utility shocks
- Developers and building owners now value carbon extremely highly
- Government policy is consistent in supporting DH to develop
- Zoning provides a potential game changing opportunity
- LA does not have to lead – could offer concession/JV
- DH has created a very positive story: we have built, and they have come!
- Would we do it again?

Phase 4 and beyond…

Southbank



HNDU funding > GHNF funding

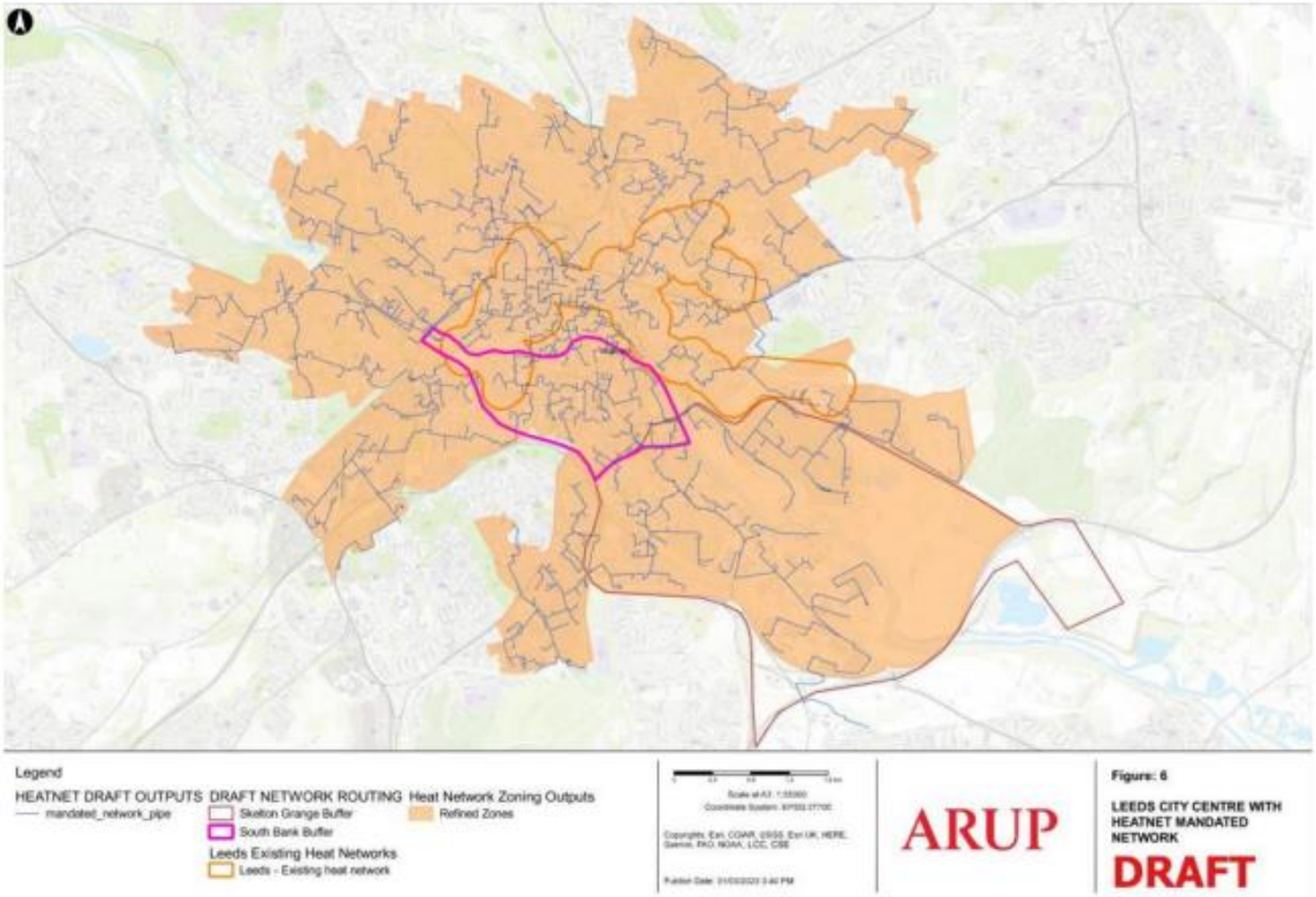
East and West clusters of demand

Glass factory heat source

Indicative Zoning Extent

Leeds

- Mandatable building heat loads = 650 (GWh/yr) 45% of total
- Estimated Network length = 175km
- Estimated capex = £650m
- Total zone demand = 1,439 (GWh/yr)



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Mersey Heat (Liverpool)

Jo Longdon, Ener-Vate

Peel NRE
RE-ENERGISING NATURAL RESOURCES

Ener-Vate

Mersey Heat

The story so far

Jo Longdon

Commercial Director Ener-Vate Consultancy

The Scheme

- Mersey Heat is a dedicated ESCO set up by Peel NRE to provide heating and hot water to Peel Water's development 'Liverpool Waters' and other existing or planned buildings in the surrounding Liverpool area.

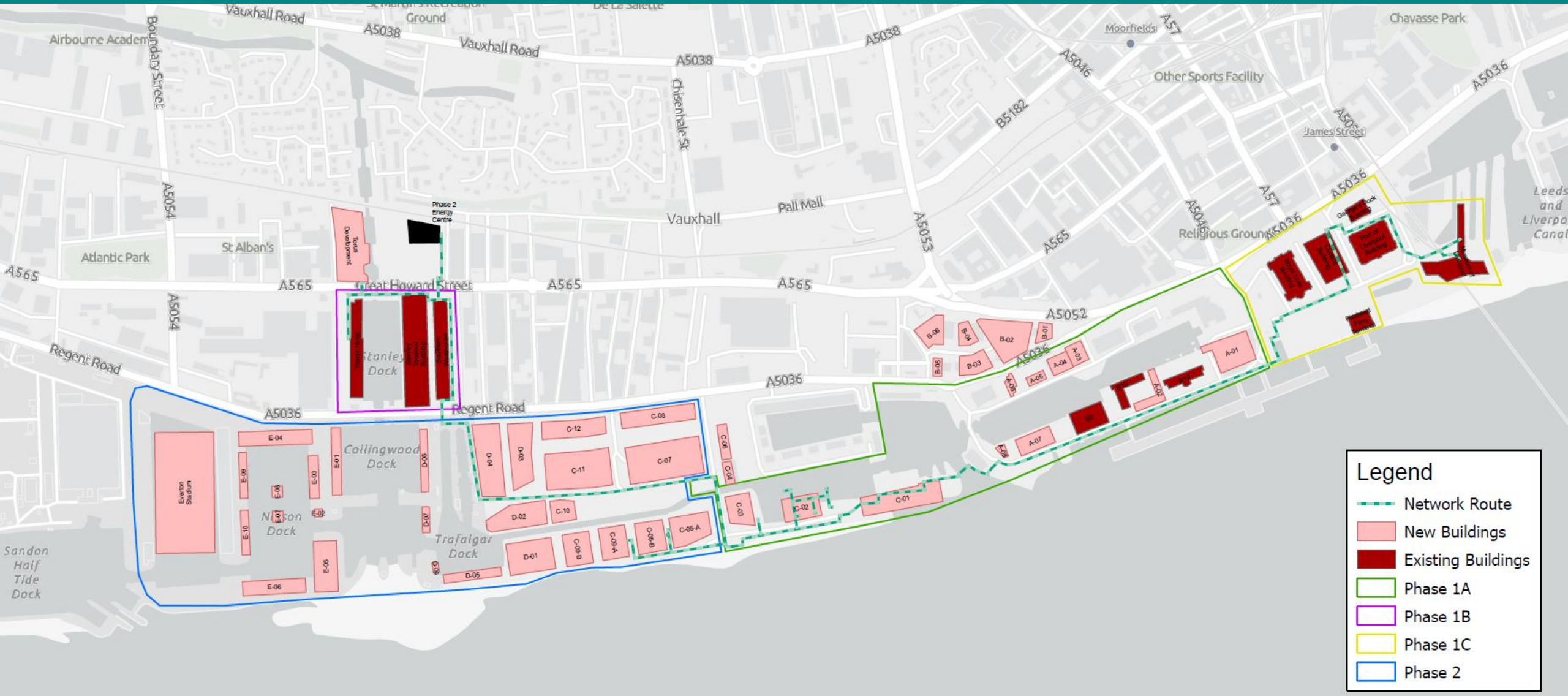
- Mersey Heat district heat network will provide low carbon heat and hot water to more than 9,000 homes and 4 million sq ft of commercial space at Liverpool Waters and other nearby buildings

Liverpool Waters, CGI showing Central Docks neighbourhood

Peel NRE
RE-ENERGISING NATURAL RESOURCES

Ener-Vate

Scheme Overview



The award

HNIP 1

- £1.3 million
- Enabling early extension of the network across 2 challenging road crossings and linking of 2 disconnected Phases of the network (1A & 1B)

HNIP 2

- £6.26 million
- Early installation of our first 3MW WSHP and extension of the network south to serve Phase 1C

HNIP 1: Progress

- Installation of the DN400 spine network through Harcourt (Phase 1B) future proofing the scheme

- Construction of the Regent Road and Great Howard Street crossings ahead of a 5-year embargo

- 1.3km of pre-insulated pipework procured for the Link pipe connecting phases 1A & 1B. Construction works to commence February 2024

Great Howard Street Road crossing Drive Pit and DN400 pipework being lowered beneath the road

HNIP 2: Progress

- WSHP design progressed to Riba Stage 5
- Extensive intrusive & non-intrusive Site Investigation completed across the network
- Planning permission secured for full network and Energy Centre
- Energy Centre and WSHP construction commenced – **Heat on November 2024**
- Phase 1C extension designed to Riba Stage 3
- Positive engagement with potential Phase 1C customers

3MW Water Source Heat Pump - Star Refrigeration

Wider Benefits

Future proofing of the scheme

Early installation of the main spine network, oversizing of the pipework and low carbon heat source ready for connection

4,200 tonnes of carbon saved per annum at full build

40+ apprentices through our Design Build Operate and Maintain (DBOM) partner Vital Energi

Opportunities for wider heat network zone expansion

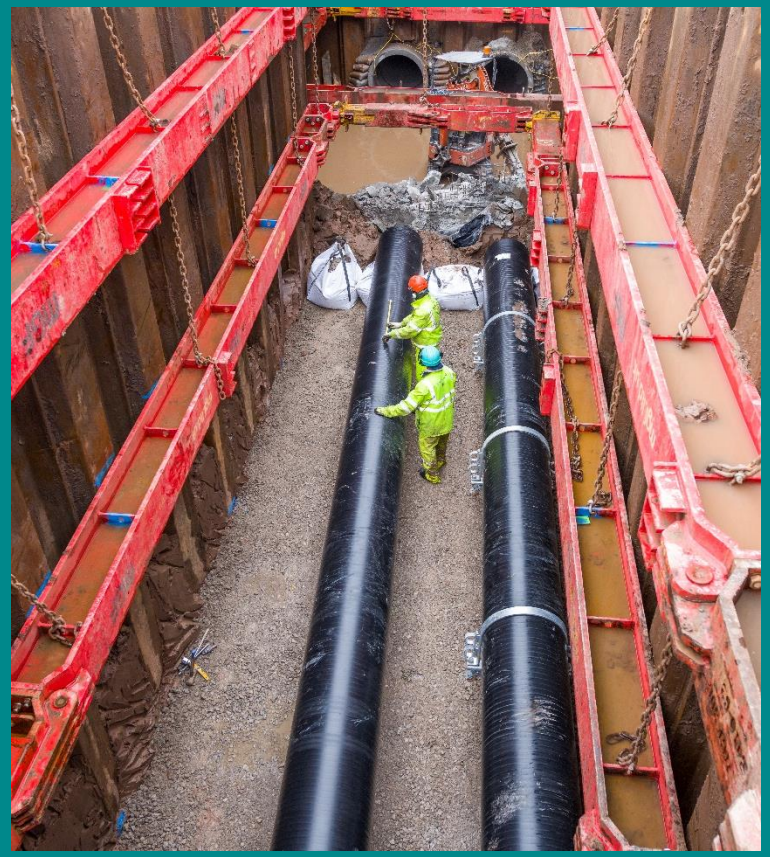
Liverpool Waters Construction Hub onsite

Created by the city of Liverpool college, the hub aims to bridge the gap between training and employment in the construction industry.

Further waste heat opportunities within the vicinity to decarbonise the network further

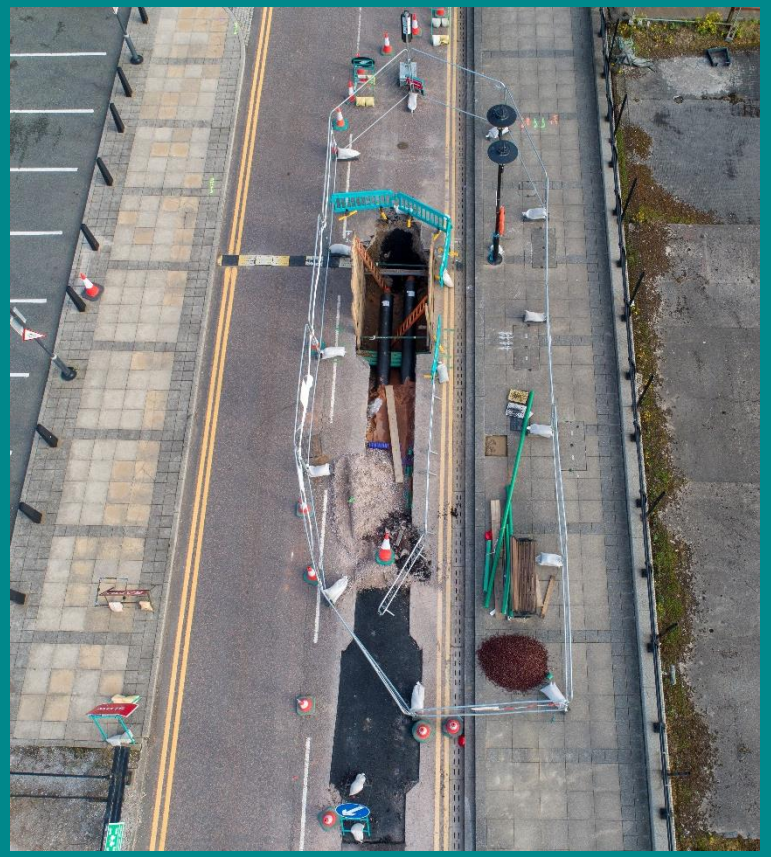
Lessons learnt

Ground Risk



Engagement

Time…



MERSEY HEAT

IN ASSOCIATION WITH VITAL ENERGI

Peel NRE

RE-ENERGISING NATURAL RESOURCES

Ener-Vate

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Q&A

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Thank you

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

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