



Exeter Energy Network

Decarbonising Exeter's heat

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What is the Exeter Energy Network?

- Is a heat network.... generates heat from a central source (Energy Centre) and delivers it to buildings via a series of insulated, underground pipes.
- A heat exchanger replaces the traditional gas boiler in each building.
- The technology is proven and common across Europe with an established UK supply chain



Heat networks are a proven method of decarbonising heat in towns and cities

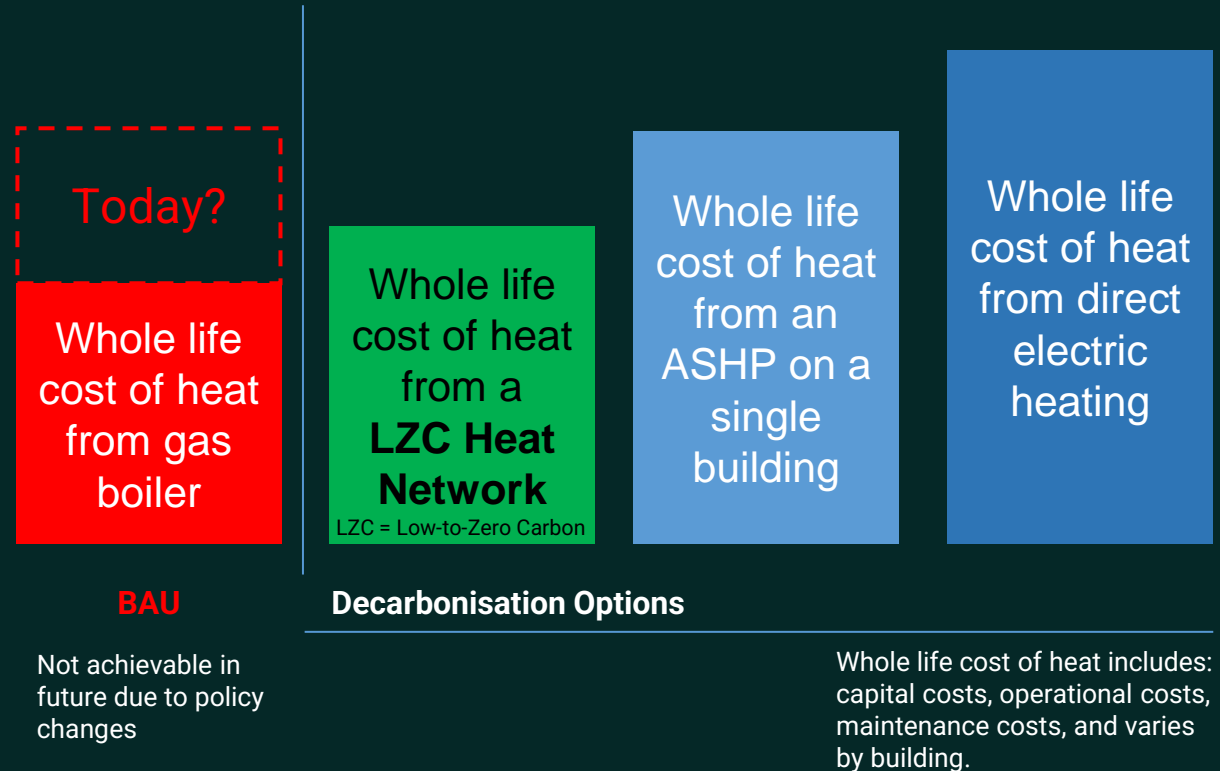
Why heat networks?

- The way we heat our properties today isn't aligned with a future liveable planet.
- 85% of our homes and offices are heated by burning natural gas, generating millions of tonnes of CO₂ each year
- Continuing to burn gas for heating will bust our carbon budget and contributes to poor air quality



Decarbonisation options

- Now – Gas is cheap
- Over the coming years it will become more expensive, or potentially even prohibited, to burn gas for heat
- In towns and cities **the expected heat network price of heat is cheaper than alternate methods of achieving zero carbon heat** in the vast majority of cases (but is not cheaper than current gas heating)



Who is TEnergy?

- Leading developer of heat networks in the UK
- Team has delivered over 50 heat networks
- Joint venture with ASPER, managing £1.4bn of 'Deep Green' funds for investing in long term, sustainable energy projects



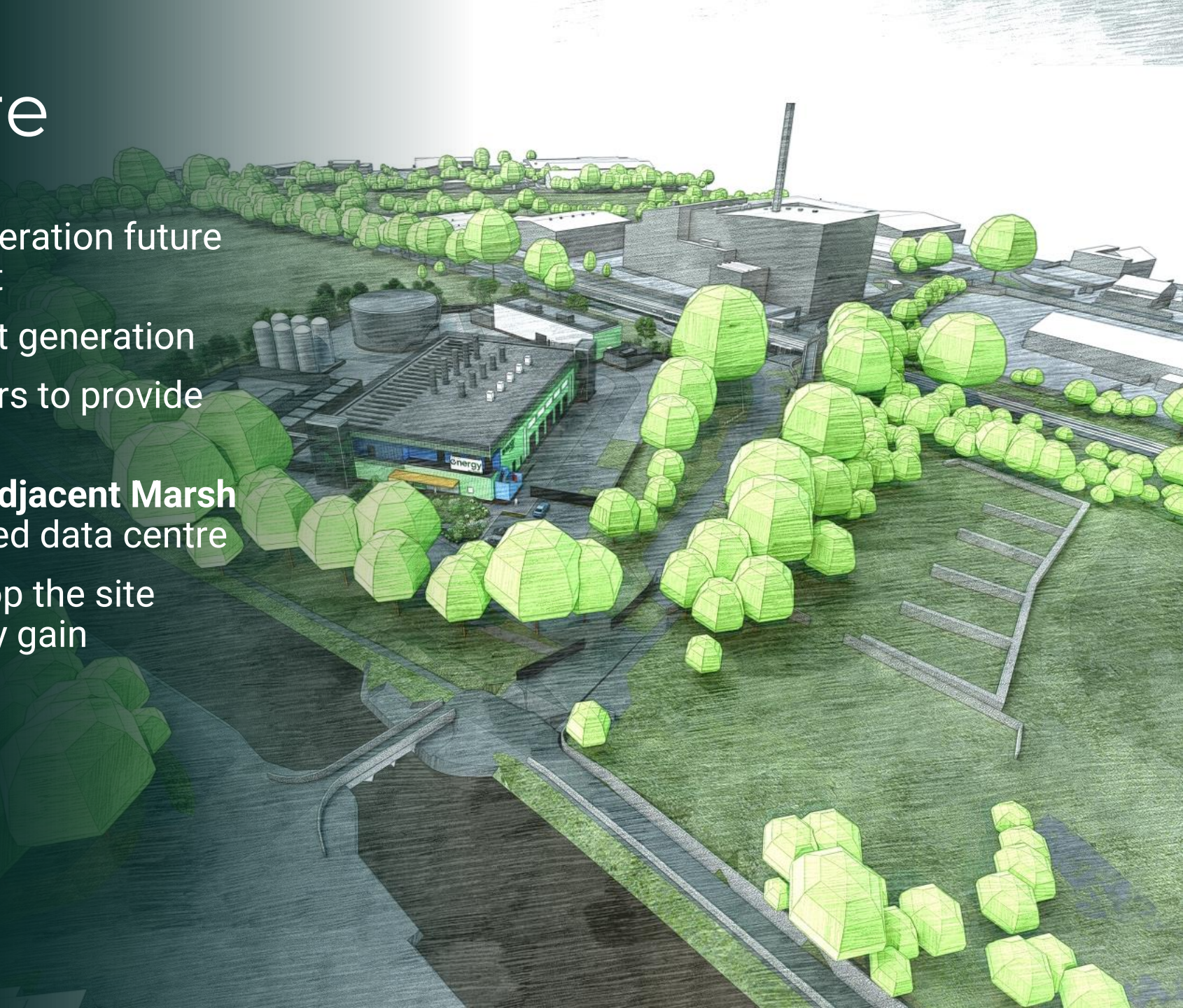
What is the Exeter Energy Network?

- £110m low-to-zero carbon heat network for the city of Exeter
- Of which £42m is from UK government's green heat network fund (GHNF)
- Proposed Energy Centre site adjacent to Marsh Barton railway station
- Network supplying existing and new build developments, public and private sector where decarbonisation is important



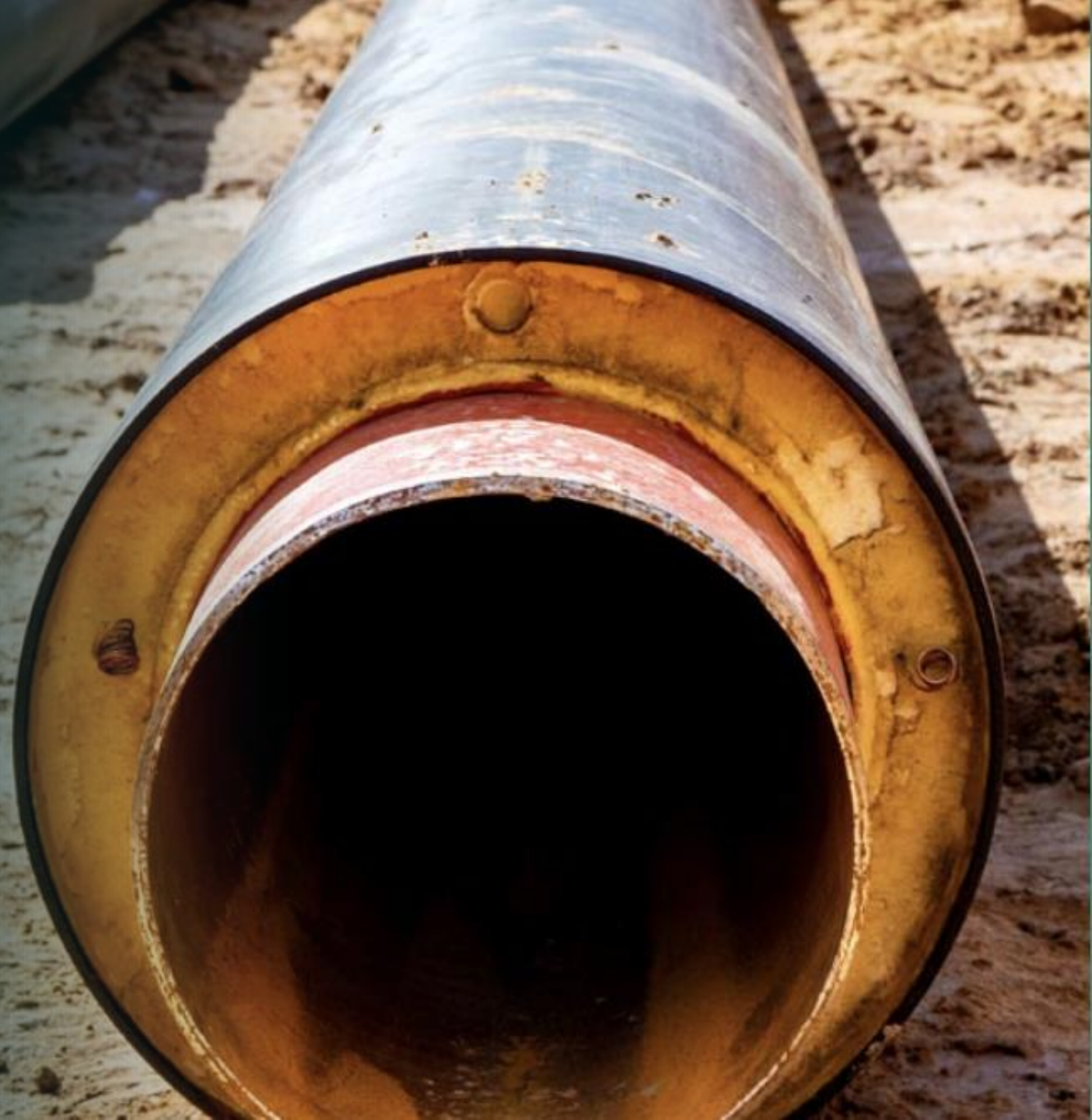
Energy Centre

- Providing Low carbon heat generation future proofed to enable net zero heat
- Up to 20MW of low carbon heat generation
- Full peak and reserve gas boilers to provide resilience only
- **Able to take waste heat from adjacent Marsh Barton EfW and from a proposed data centre**
- 1Energy commitment to develop the site sensitively, with net biodiversity gain



Network



- Working closely with Devon Highways to manage installation of the network
- Keeping disruption to a minimum
- Advance publicity and ongoing dialogue with the community and stakeholders to understand concerns





EXETER
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NETWORK

Base Case Configuration

-  Energy Centre
-  Heat Network Route

Exeter Energy Network Phase 1

Hele Road Campus

Exeter Prison

St Sidwells Point

Civic Centre

Victoria Yard Campus

Heavitree Hospital

Exeter Cathedral

St Luke's Campus

Wonford Main Hospital

St Leonards

County Hall

Luccombe House

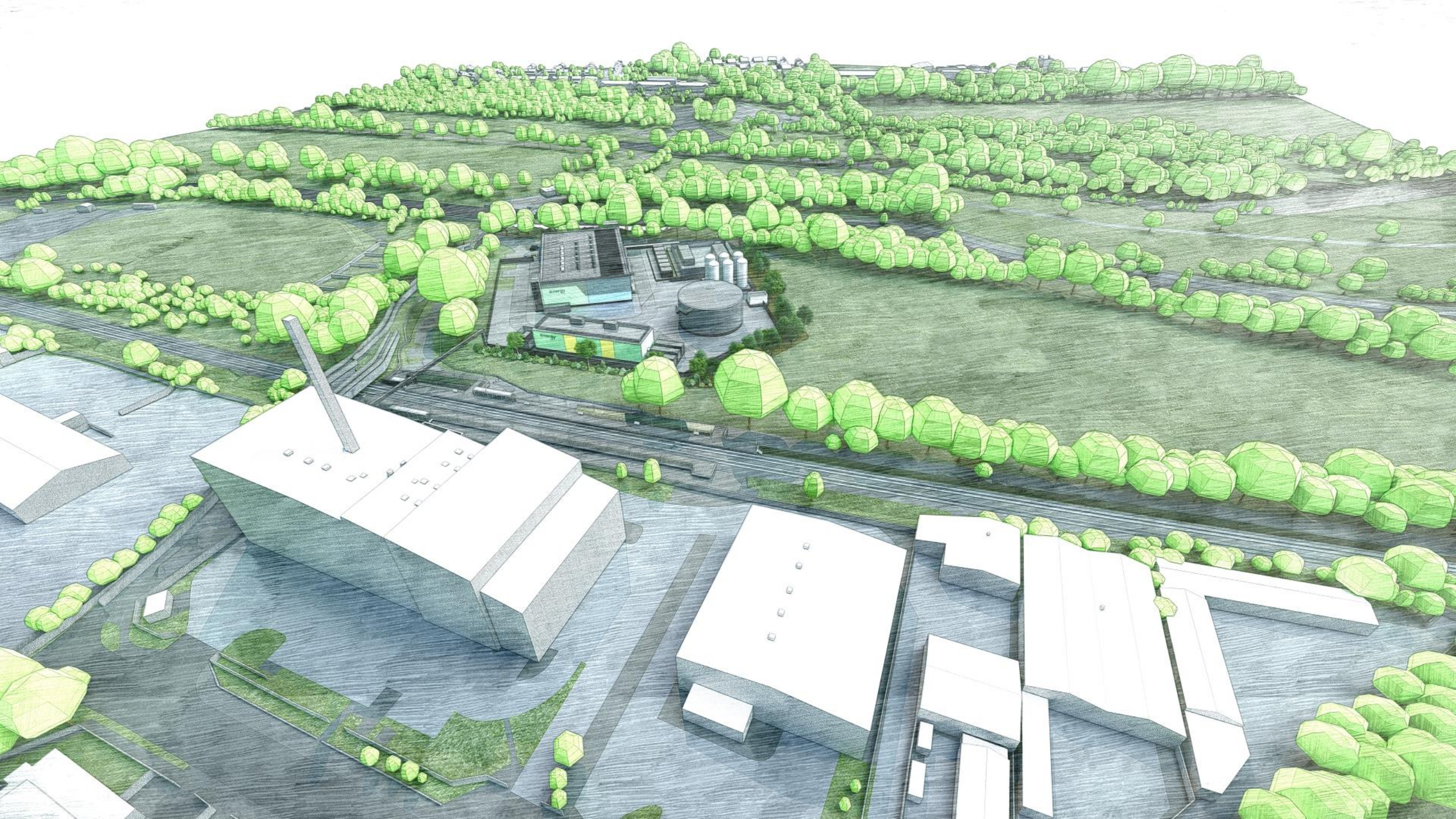
Water Lane Development

Number of customers: 34

Number of connections: 168

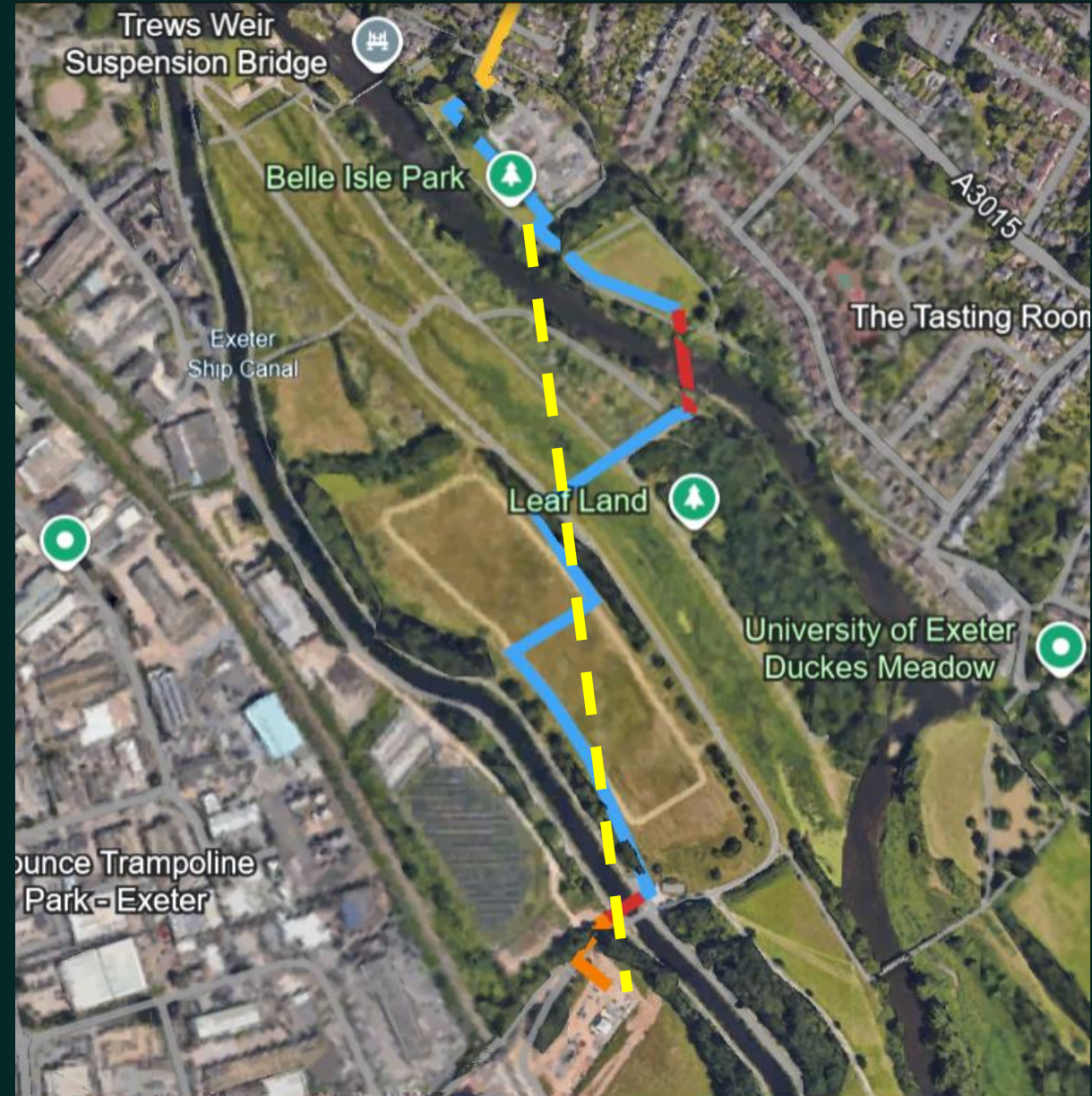
Total Demand: 100GWh





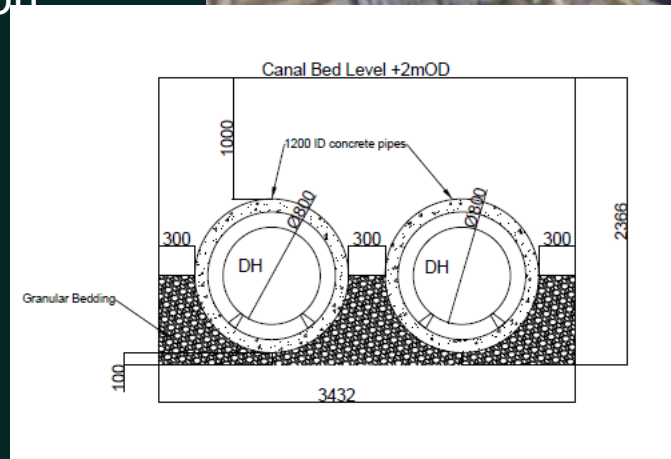
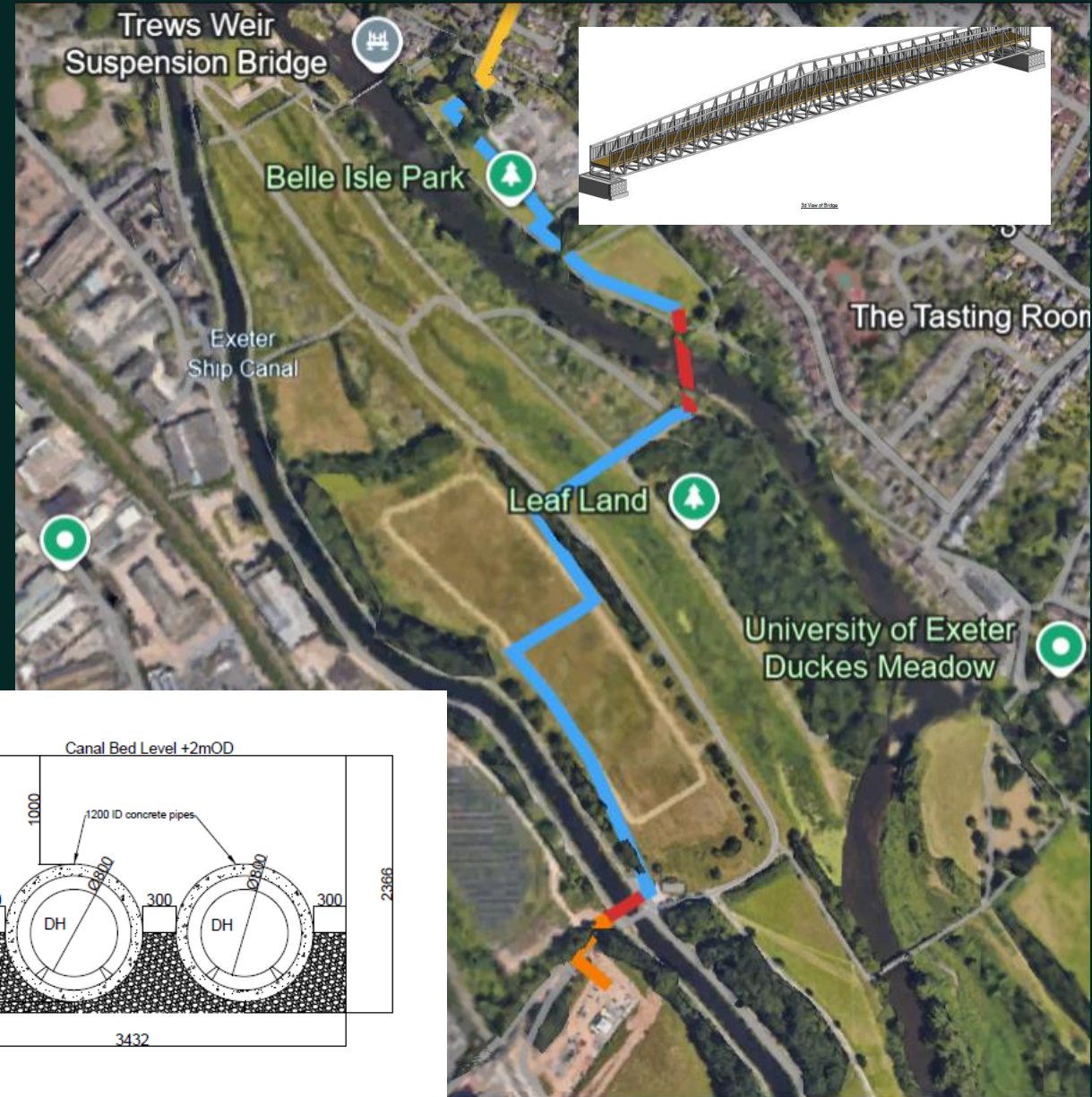


- 2 Options for crossing Canal, drainage channel and River Exe:
- Open Cut
 - Close Canal for install under
 - Open cut across drainage channel
 - Pipe/footbridge across River Exe
- Microtunnel
 - Drive shaft at both ends
 - Central reception pit



1. Open Cut

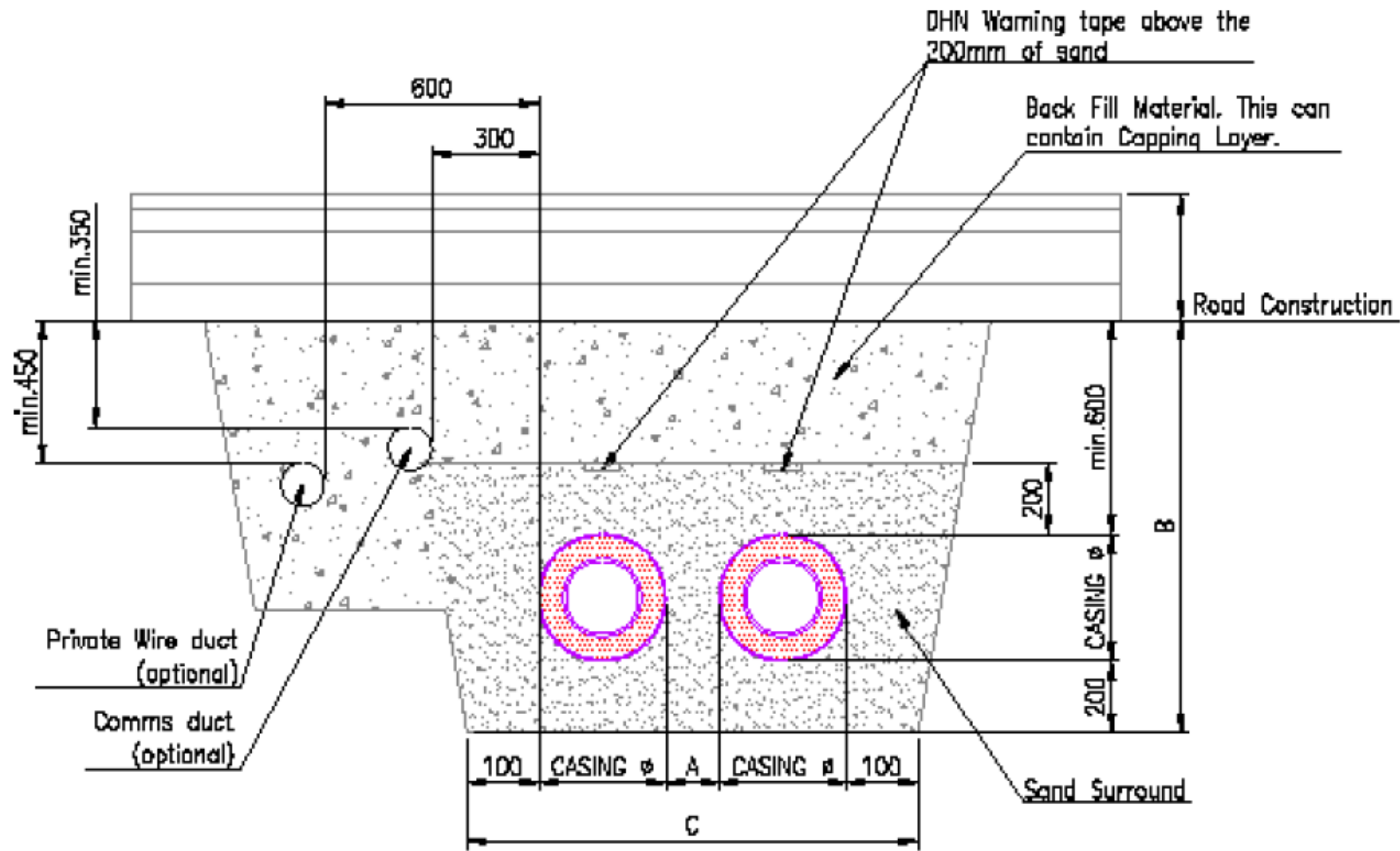
- Standard methodology so lowest risk
- Incorporating a footbridge over the River Exe increases pedestrian access in long term
- Additional environmental impact during temporary works
- Increased stakeholder engagement etc to ensure continued access to footpaths
- Difficult access to drainage channel
- Footbridge will require planning permission
- Works timing to be managed carefully
 - Canal closure – winter only
 - Drainage channel access – summer only



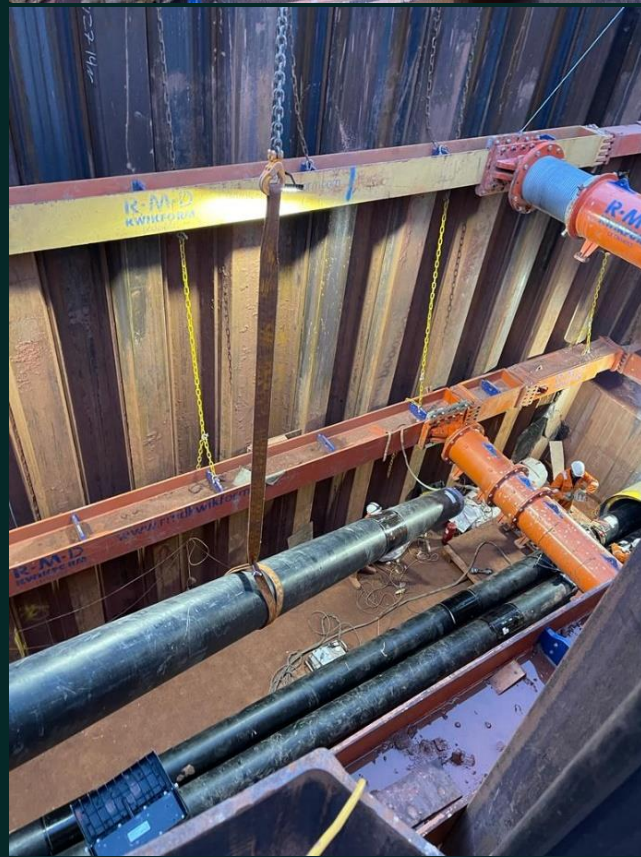
2. Microtunnel/trenchless solution

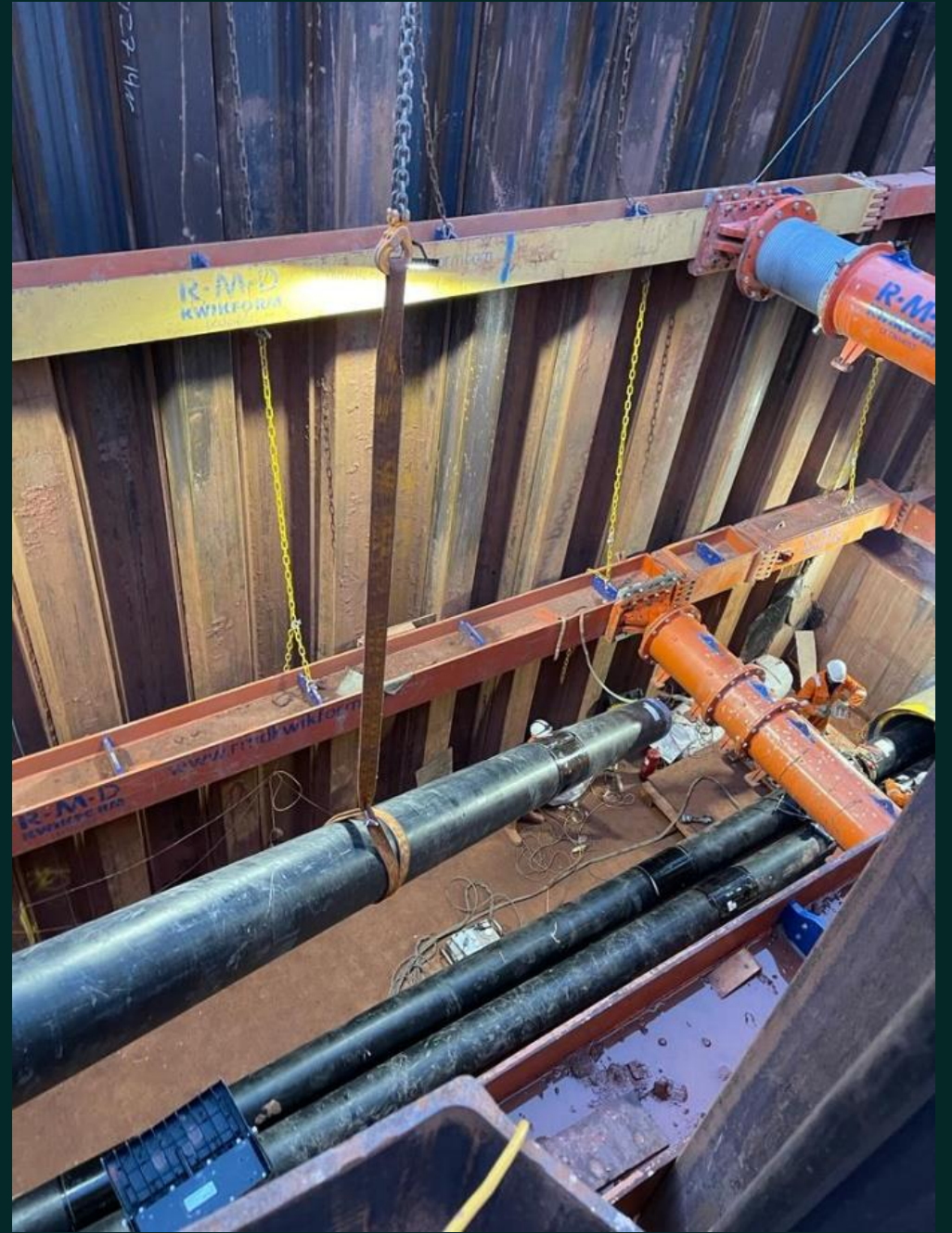
- Reduced impact on public access during works
- Large quantity of waste 'rock' will need to be removed from both drive shaft ends so increased HGV traffic during install
- Preferred option for Environment Agency – less works impact on biodiversity
- Works completed in one











in close proximity to work areas.

H02, Proposed DHN route crossing above

located within a tunnel crossing below the street.
available cover depth for pipework installation.
approval from Network Rail likely required for works.

No. VY01, Narrow Street. Potential excavation close to buildings/structures.
Risk of working within zone of influence of the building foundations. Risk of damage to wall.

HAZID No. LNS01, Narrow street. Potential excavation close to buildings/structures. Existing services within the road.
Danger of working within zone of influence of the building foundations. Risk of damage to wall. Traffic management considerations. Risk of insufficient space for pipework installation due to existing services.

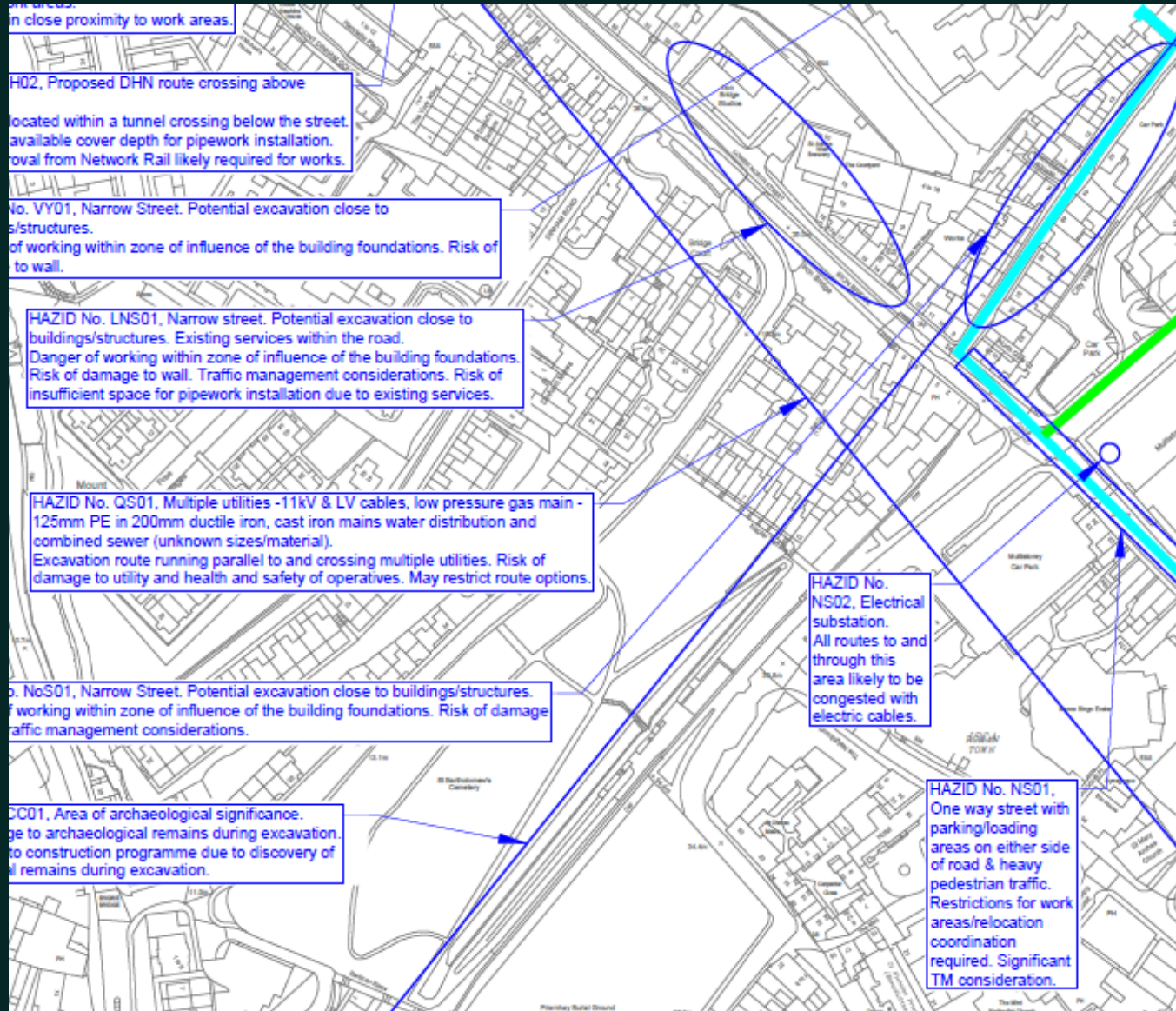
HAZID No. QS01, Multiple utilities -11kV & LV cables, low pressure gas main - 125mm PE in 200mm ductile iron, cast iron mains water distribution and combined sewer (unknown sizes/material).
Excavation route running parallel to and crossing multiple utilities. Risk of damage to utility and health and safety of operatives. May restrict route options.

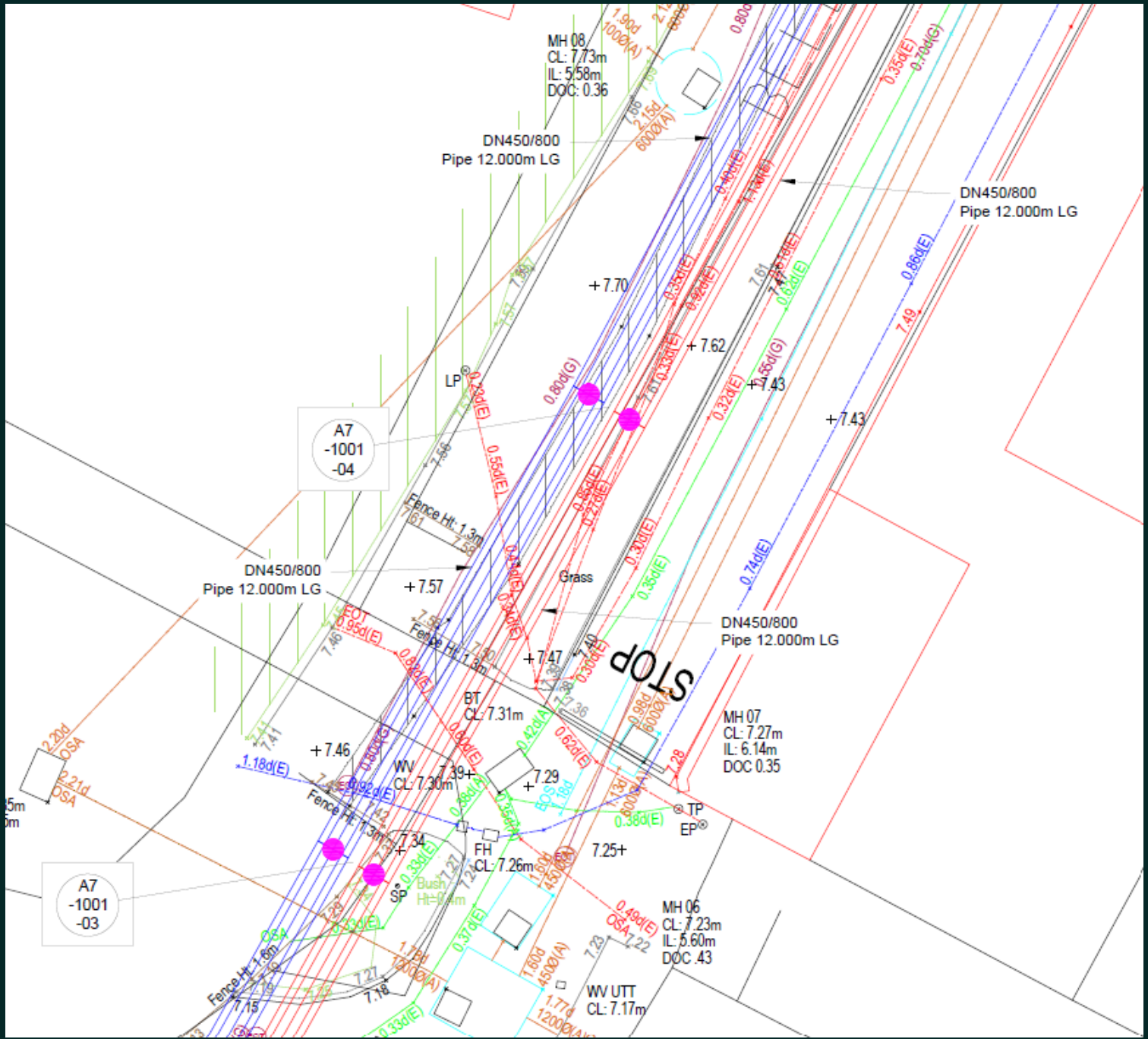
NoS01, Narrow Street. Potential excavation close to buildings/structures.
Risk of working within zone of influence of the building foundations. Risk of damage to wall. Traffic management considerations.

CC01, Area of archaeological significance.
Risk of damage to archaeological remains during excavation.
Restrictions for construction programme due to discovery of archaeological remains during excavation.

HAZID No. NS02, Electrical substation.
All routes to and through this area likely to be congested with electric cables.

HAZID No. NS01, One way street with parking/loading areas on either side of road & heavy pedestrian traffic.
Restrictions for work areas/relocation coordination required. Significant TM consideration.





Expected timeline



*It will be possible to install temporary local heat generation for customers who want heat earlier

Economic benefits

- £110m of investment in Exeter
- Boost to local economy maximizing the local supply chain
- Local apprenticeships and jobs
- Making Exeter more attractive to businesses

Environmental benefits

- 13,000 tonnes CO₂ saved per annum
- Cleaner air
- Helping Exeter deliver Net Zero by 2030
- Help Government's targets of Net Zero and heat network ambitions

Thankyou

Q&A

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