

Cambridge
City-Centre
Heat Network

Market Square Liaison Group
14 November 2022



Sustainability Co.



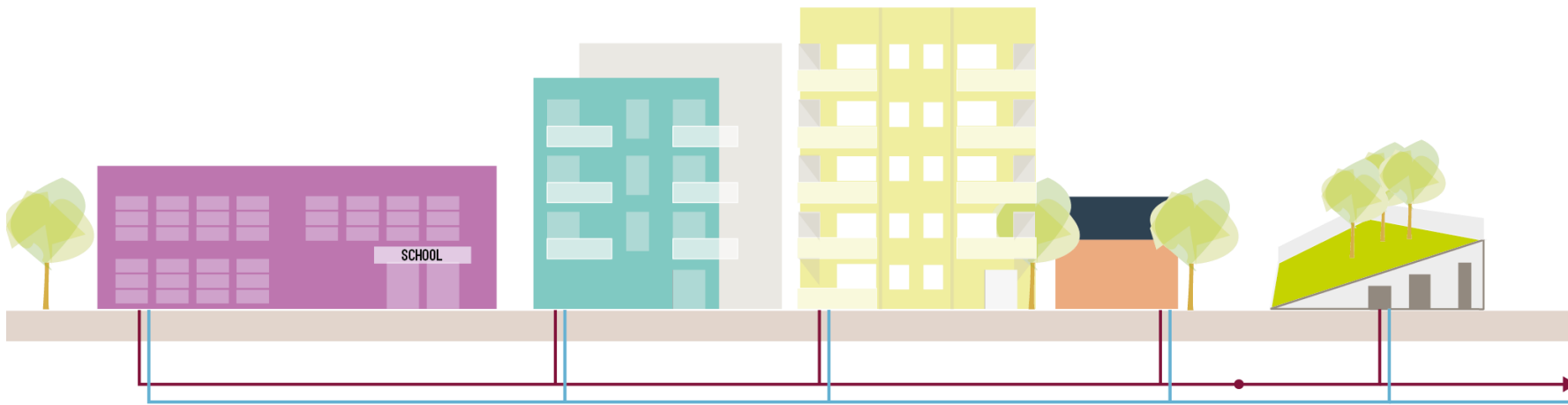
2. Introductions

- Sustainability Co. helps local authorities & businesses respond to the climate emergency.
- We've been appointed to help Cambridge City Council develop the 'Cambridge City Centre Heat Network.'
- Jeff Laidler is the Founder and Managing Director of Sustainability Co.



3. What is a heat network?

Heat networks use water pipes and local energy source(s) to supply heat to buildings across cities.



Heat networks are not new: they have been around for over 100 years:

- 98% of Copenhagen is connected to a heat network
- 1 in 3 people in Berlin are connected to a heat network
- 1 in 8 people in Amsterdam are connected to a heat network

Heat networks are perfectly suited to densely populated urban areas: residents, businesses and public buildings can benefit from 100% renewable heat and/or industrial waste heat.

4. Cambridge City-Centre Heat Network

What's the story so far?

- Sustainability Co: employed as heat network consultants, Dec 2021.
- Developed funding bid to UK government: for Feasibility Study
- Letters of support:
 - CEO & Leader Cambridge City Council
 - Vice-Chancellor University of Cambridge
 - 18 University Colleges.
- Successful funding bid, September 2022: £97k grant, with £16.5k match funding from both the Council & University.
- Scope of works developed, October & November 2022
- Procurement of Feasibility Study consultants: to start in January 2022 & report by summer 2023
- If feasibility study is successful: proceed to Business Case development, procurement and Final Investment Decision
- Construction starts: potentially 2027
- First 'Heat On:' around 2028

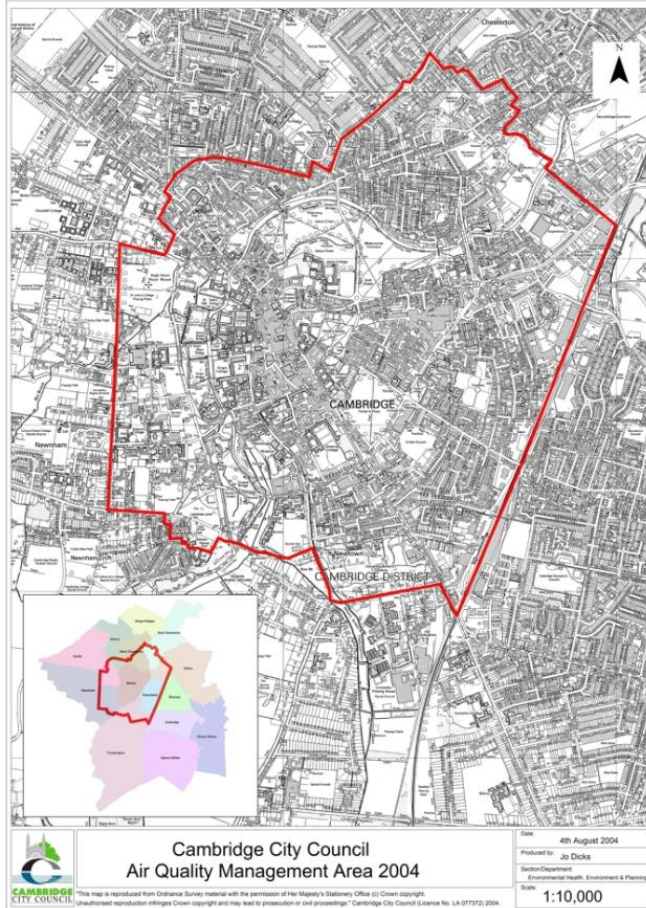




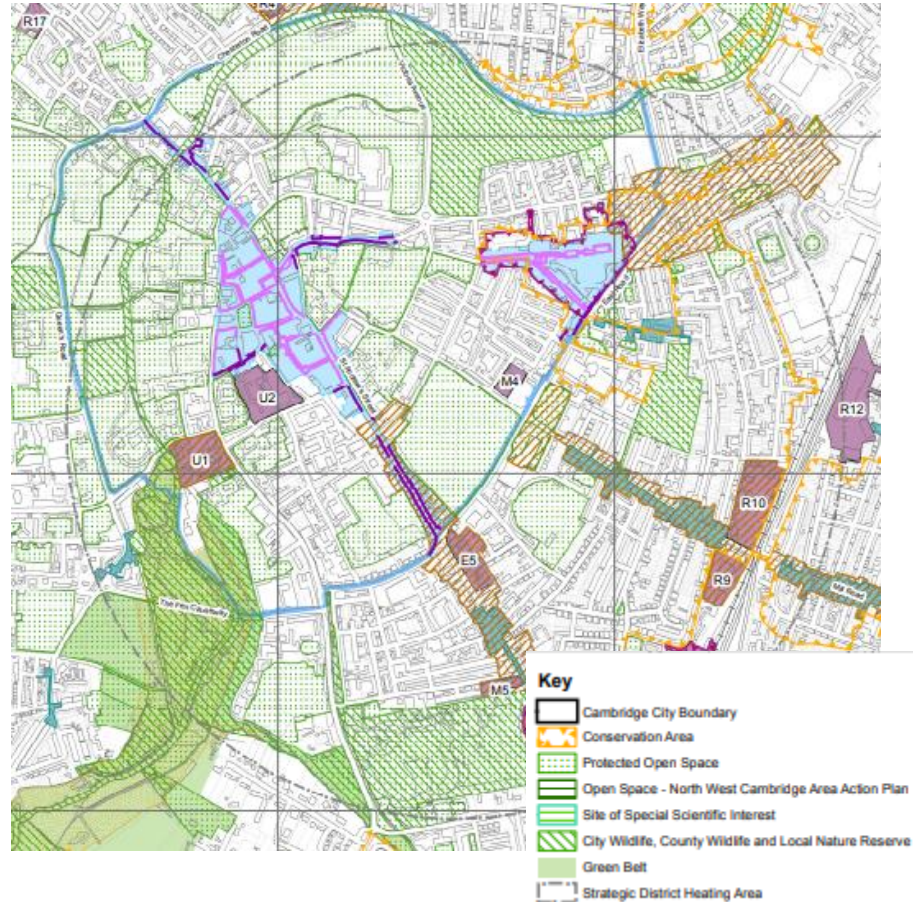
5. Cambridge City-Centre Heat Network

What is the opportunity?

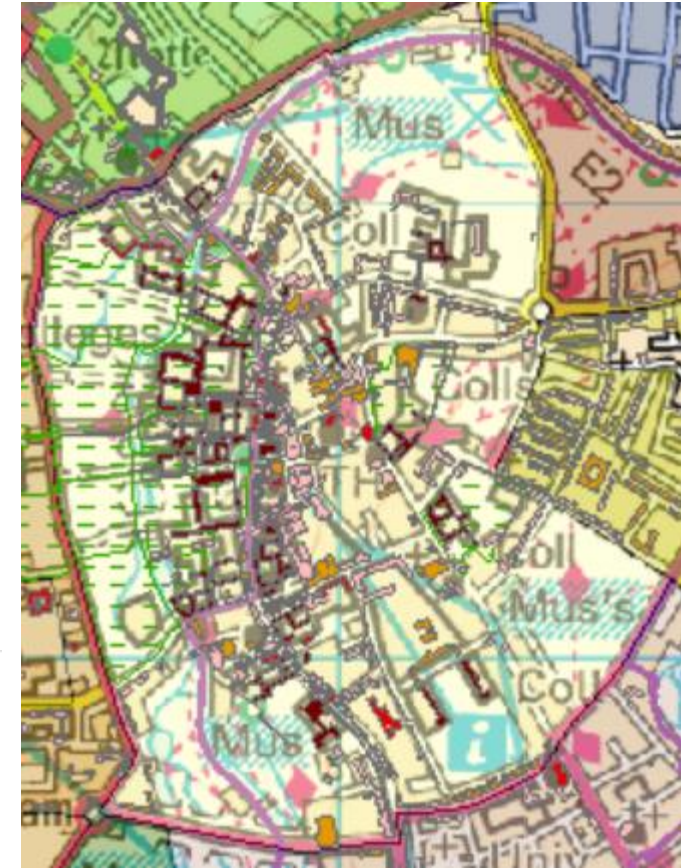
1. City-Centre AQMA



2. City-Centre 'Strategic District Heating Area'



3. City-Centre Conservation Area



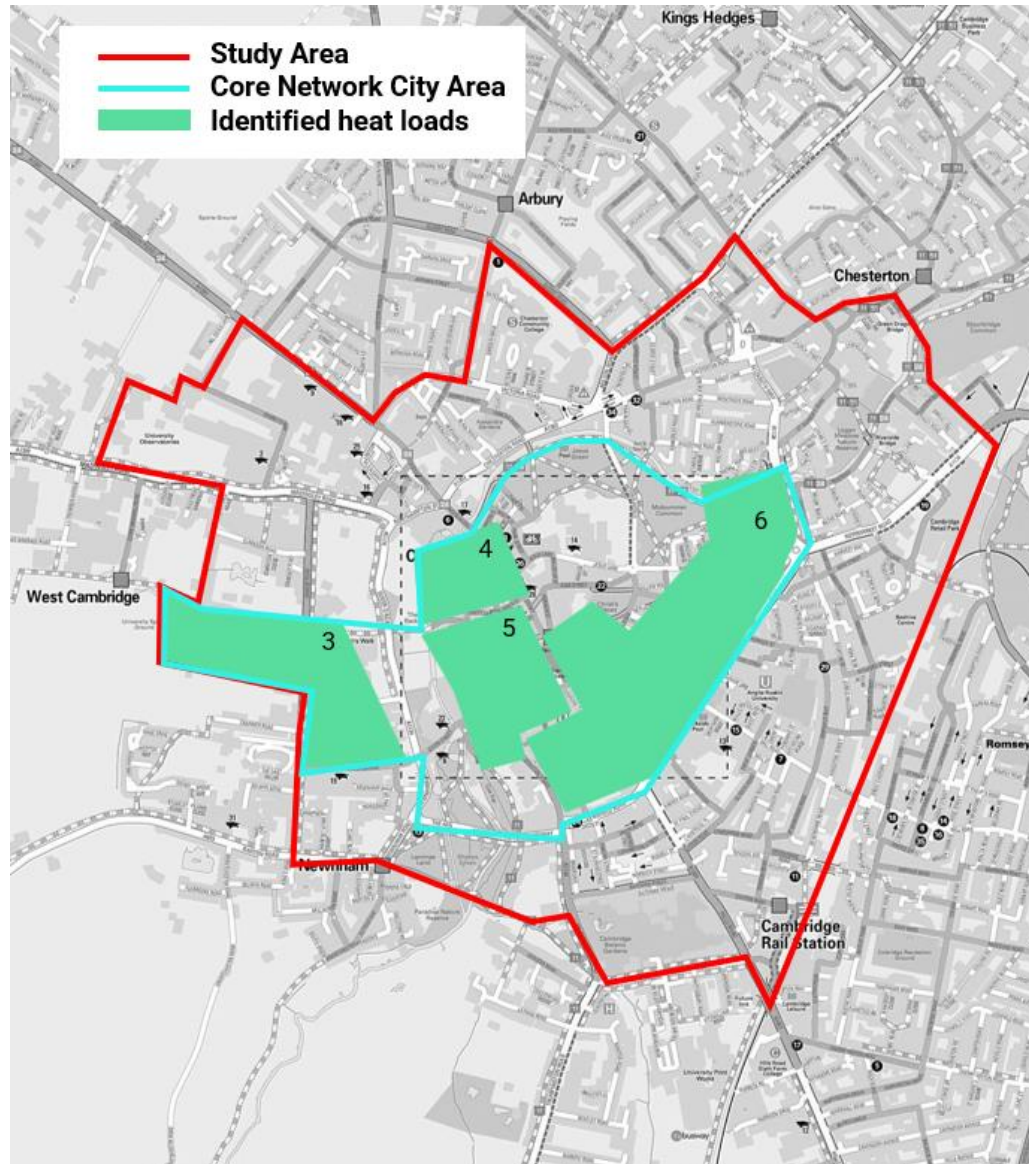
6. Cambridge City-Centre Heat Network

What is the opportunity?


1. Zero-carbon heating and hot water for Cambridge's historic city-centre: it's the only way to help create a carbon neutral city.
2. Scale: large city-centre core scheme balances ambition & practical delivery.
3. Heat pump-led heat networks: the new normal.
4. City Council & University of Cambridge: enablers of change.
5. Significant heat demand & expansion opportunity.
6. Listed buildings in historic Conservation Area: no visual impact.
7. Clean air: helps reduce NO_x in 'Clean Air Zone.'
8. Planning Policy requires connection: 'Strategic District Heating Area.'
9. Gap funding is available from UK government: Heat Network Delivery Unit (HNDU) & Green Heat Network Fund.
10. City's track record in heat network development: King's College, Jesus College, Homerton College and Emmanuel College and Eddington.




7. Feasibility Study Area




8. City Map: the bigger picture

 Identified City Centre heat loads (Clusters 3,4,5,6)

 Existing heat network

 University of Cambridge

 Council leases/land

 New / proposed development

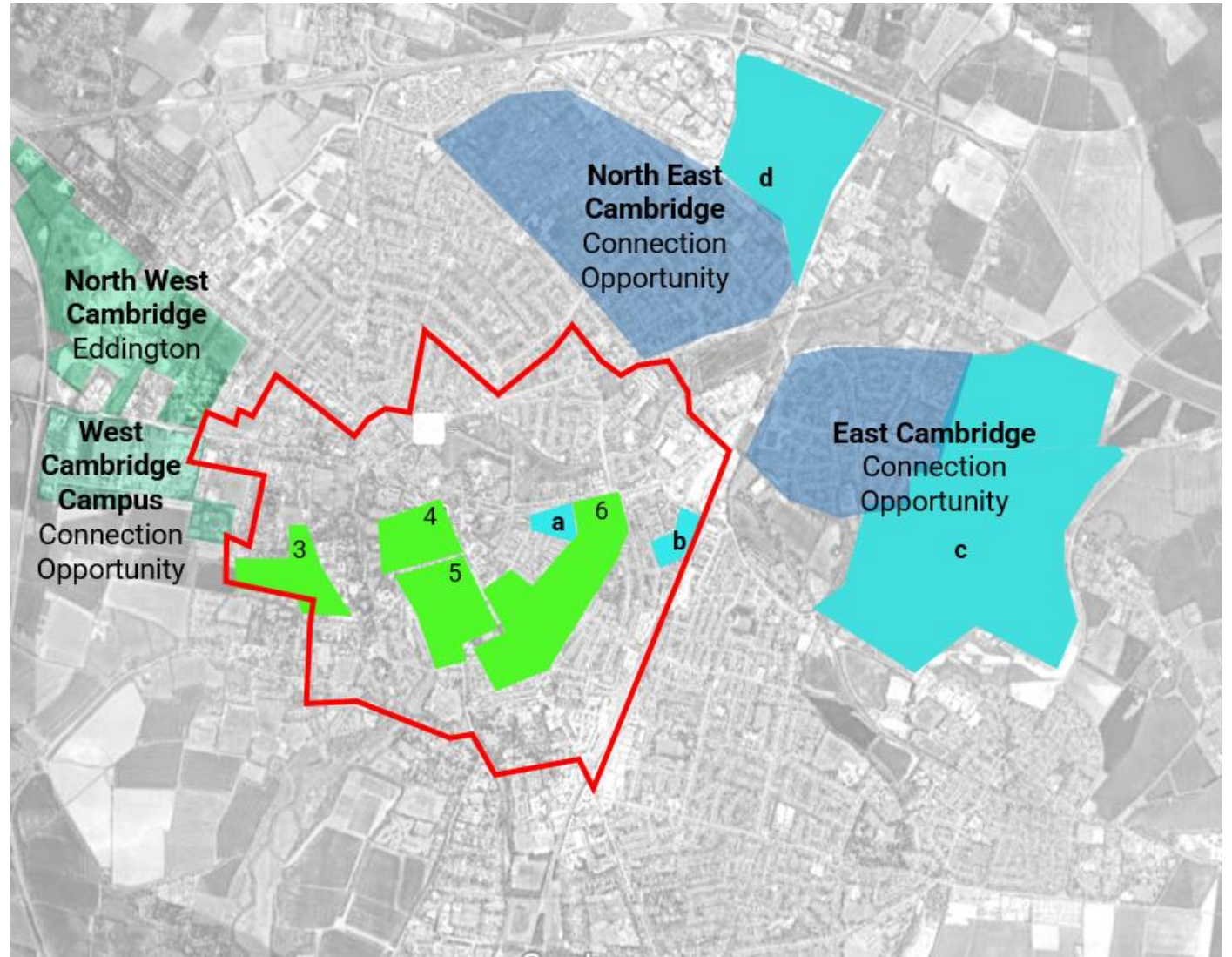
a. Grafton Centre

b. Beehive

c. Marshalls

d. North East Cambridge

Connection Opportunity	Planning Status
East Cambridge	Pre-planning
North East Cambridge	AAP developed Phase 1 delivery underway
Eddington	Live heat network



9. Cambridge City-Centre Heat Network

What will the Feasibility Study do?

Study Aims

1. **Decarbonisation:** the project vision aims to help achieve the Council's and University's carbon reduction targets.
2. **Feasibility:** the study aims to develop a clear set of recommendations, based on detailed technical and economic analysis. It will consider
 - *Heat sources:* environmental heat (air, ground and/or water source heat pumps) and/or industrial waste heat e.g. data centres
 - *Energy centre locations:* including the location of heat pumps and boreholes if using ground source heat pumps
 - *Pipe routes*
 - *Potential customers*
3. **Heat Network Expansion:** to determine if the Cambridge City-Centre Heat Network has the potential to expand and adapt over time, physically expanding to provide a pathway to decarbonise as much of the city as possible.



10. Cambridge City-Centre Heat Network

What are we investigating at the Market Square?

- Desktop study: there is no digging at this stage.
- Location of one or more renewable energy centres to support this part of the city-centre heat network? e.g. under The Guildhall, the Corn Exchange, St Edwards Church, Market Square and the road around Market Square (which isn't listed).
- Minimum & maximum energy centre space requirements?
- Reliability of energy centre sites? e.g. the Guildhall basement has previously been subject to surface water flooding.
- Ballpark cost & any opportunity to add value to Market Square? e.g. by improving the road surface around the square.
- Does the Market Square form part of preferred energy solution? Interim report, April 2023. Final report, summer 2023.
- Impact and disruption at surface level? Especially for any energy solution under the Market Square. Aim to limit the amount of disturbance to the inset granite cobble stones, which are listed, noting that only some will be reset.
- Recommendations for any technical survey(s)?

