

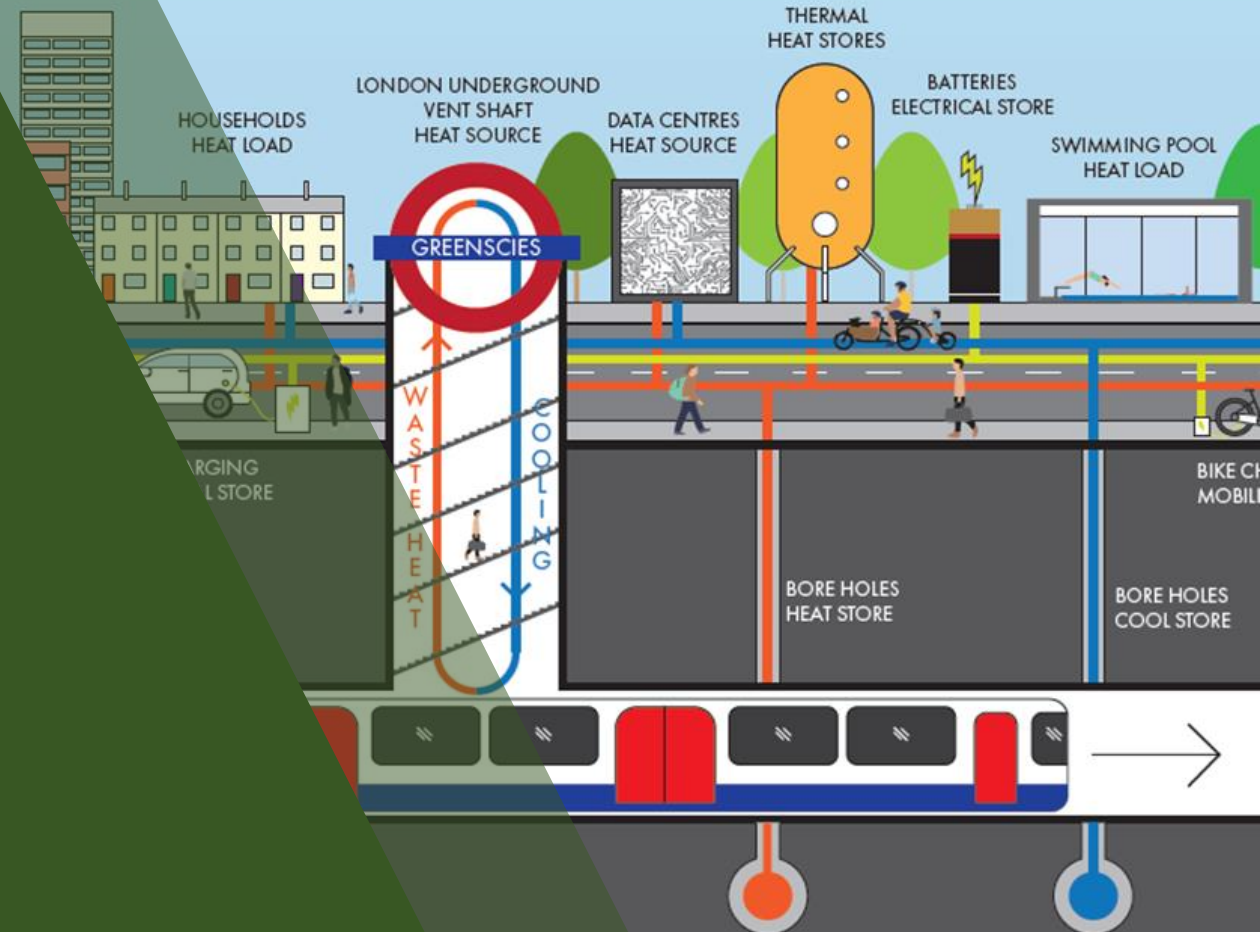
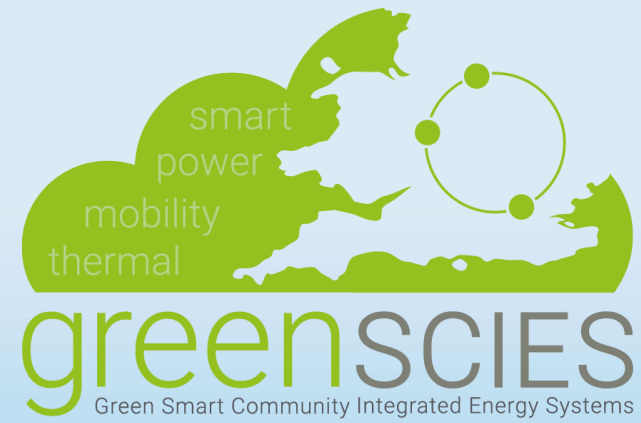
ISLINGTON CASE STUDY

GREENSCIENCES

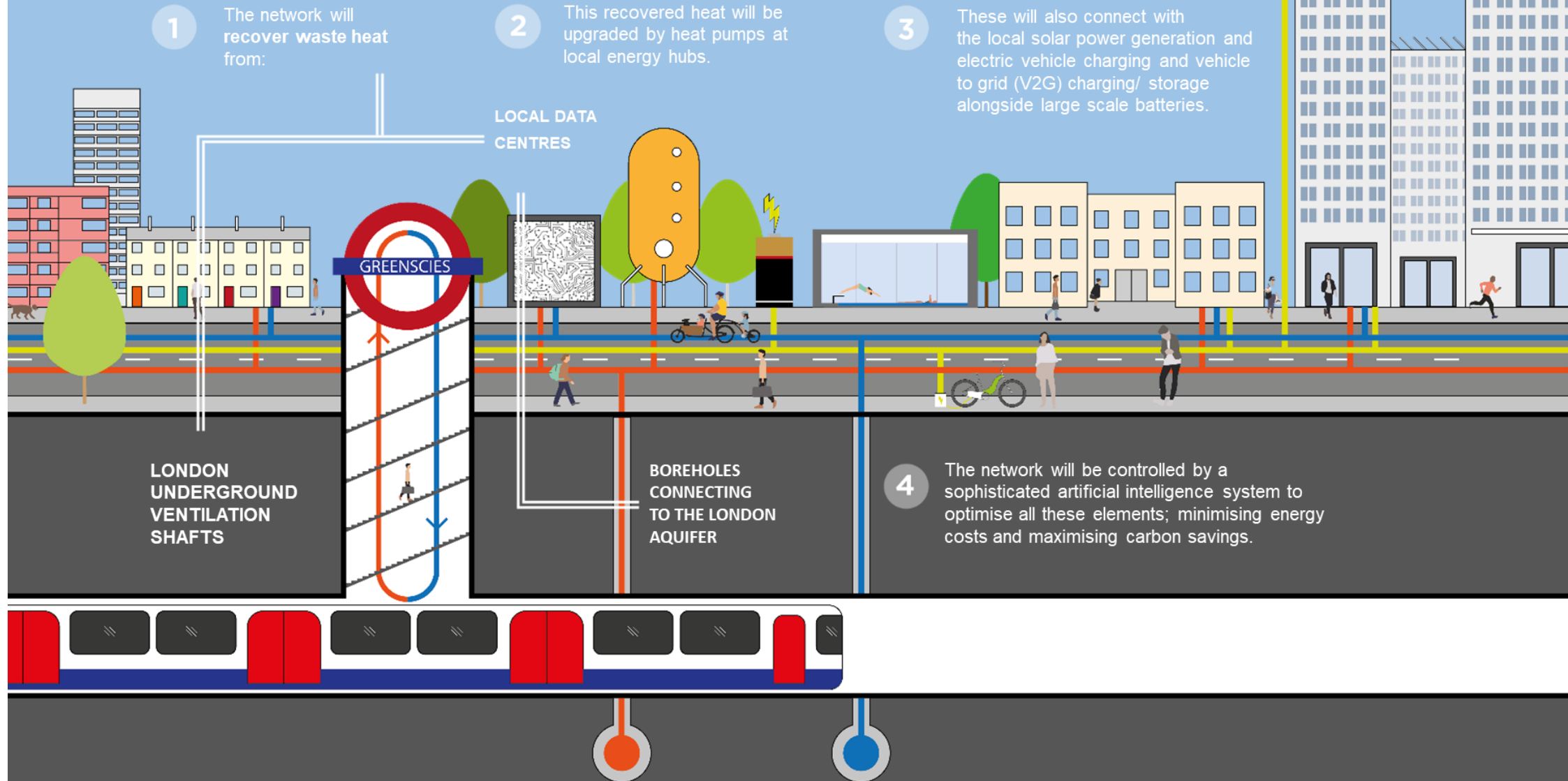
THE URBAN CASE

Graeme Maidment and Akos Revesz
London South Bank University

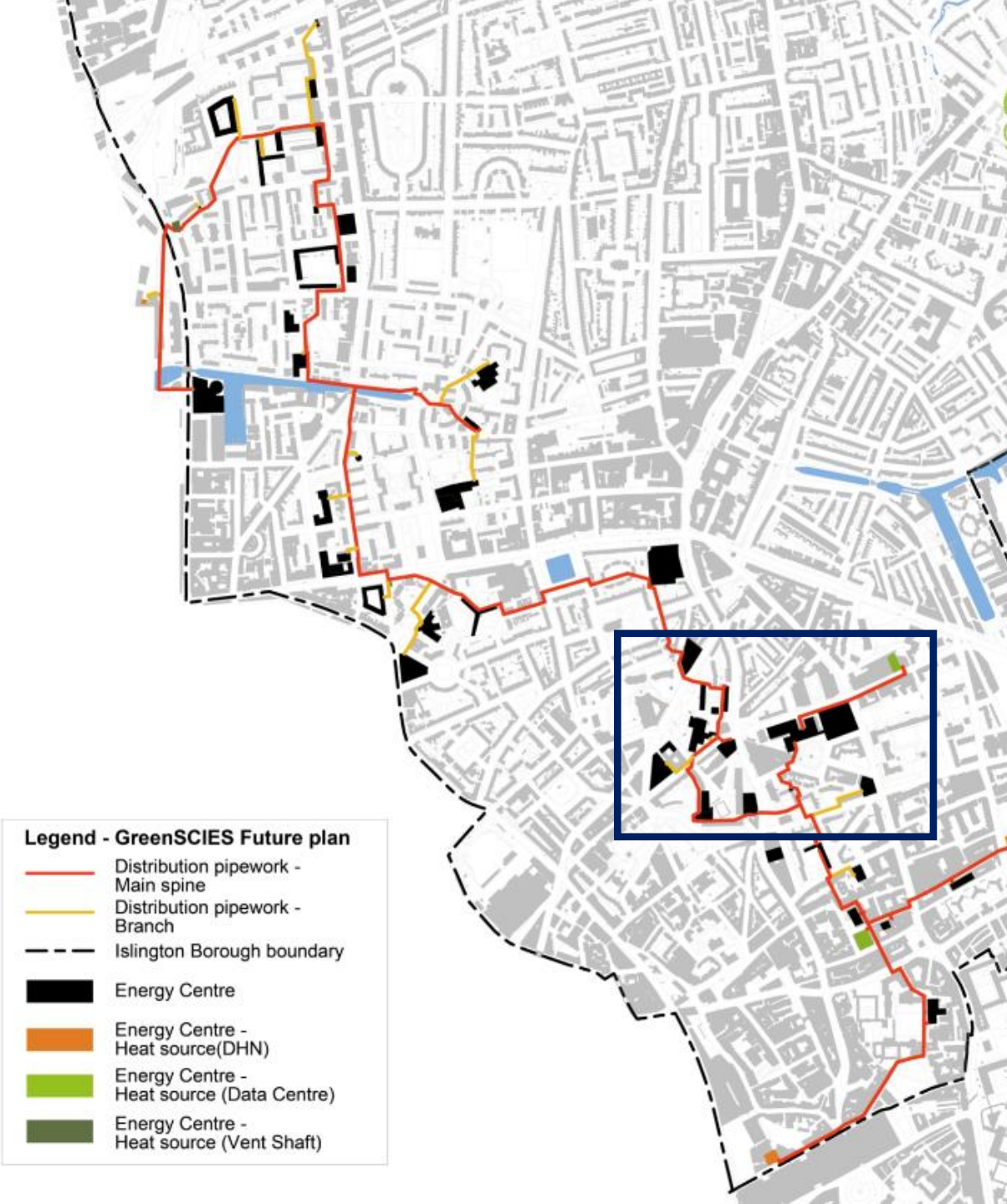
EST 1892
LSBU



How will GreenSCIES work?

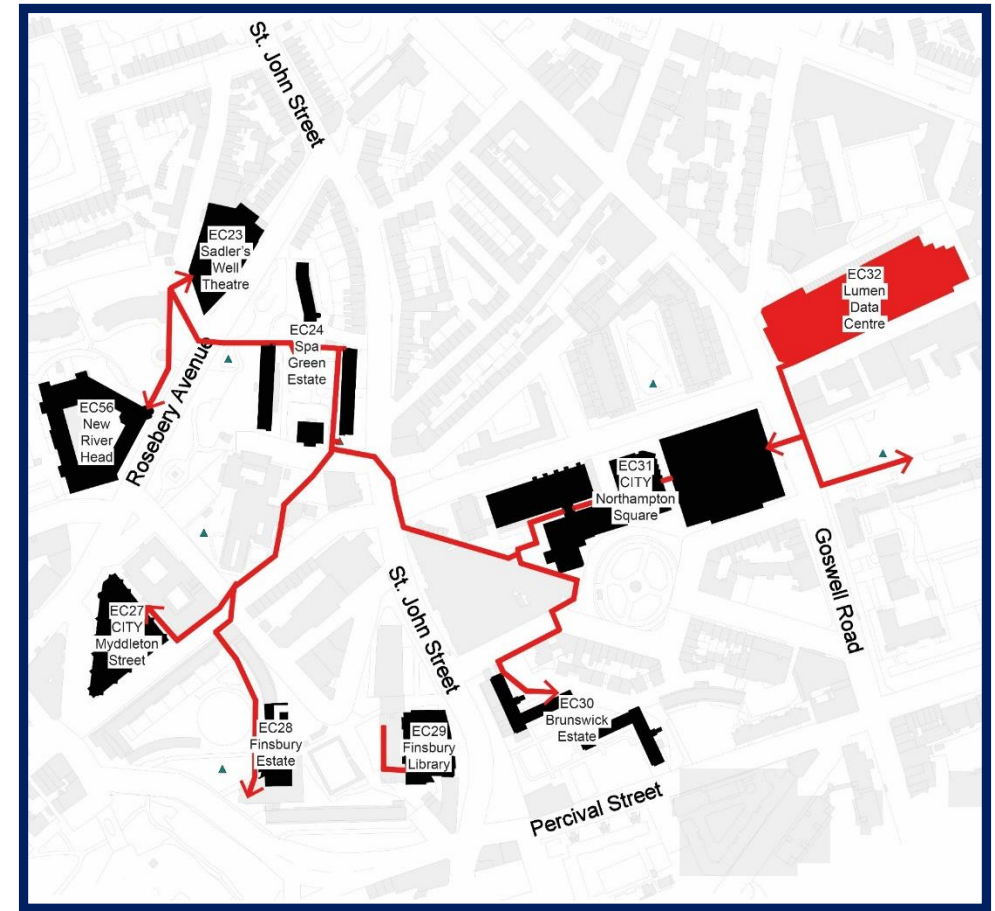


New River Scheme

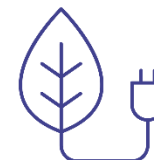


Legend - GreenSCIES Future plan

- Distribution pipework - Main spine
- Distribution pipework - Branch
- - - Islington Borough boundary
- Energy Centre
- Energy Centre - Heat source(DHN)
- Energy Centre - Heat source (Data Centre)
- Energy Centre - Heat source (Vent Shaft)



>2000 households



>44,000 MWh/yr
Low carbon
energy supply

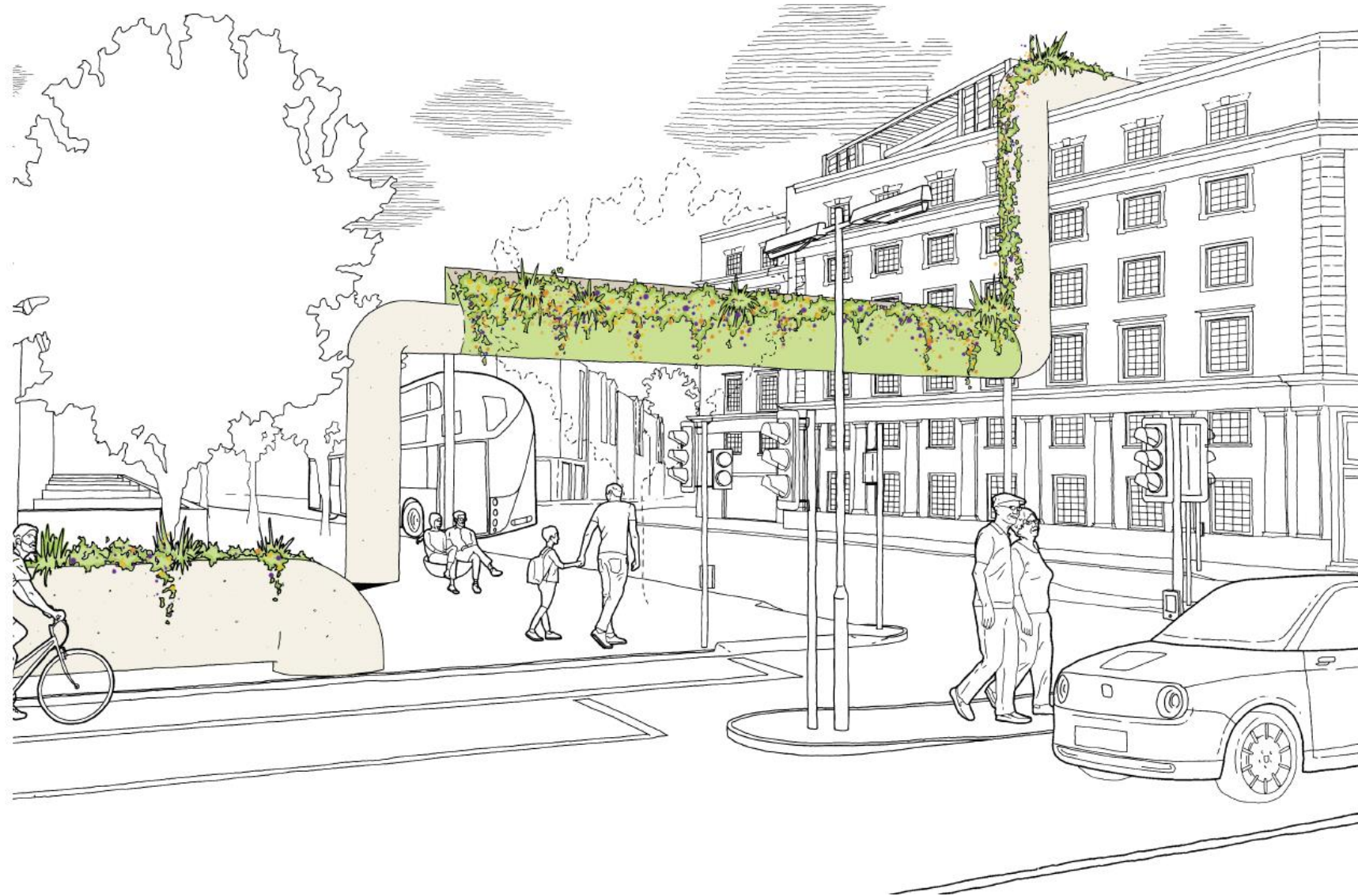
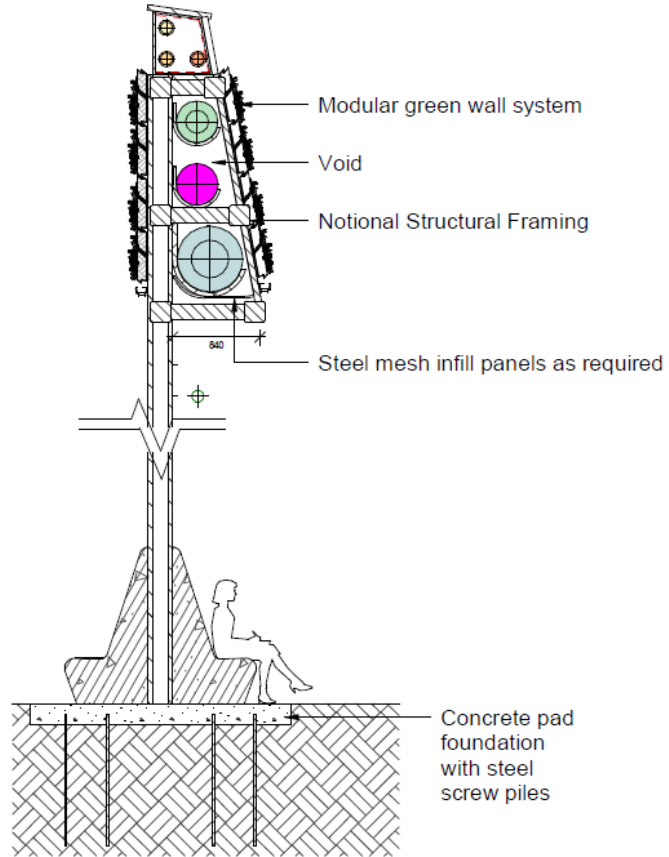


49 EV charge points



>5000 t/yr

NOVEL AMBIENT LOOP PIPEWORK DESIGN



NEW RIVER VALUE STREAMS OVERVIEW

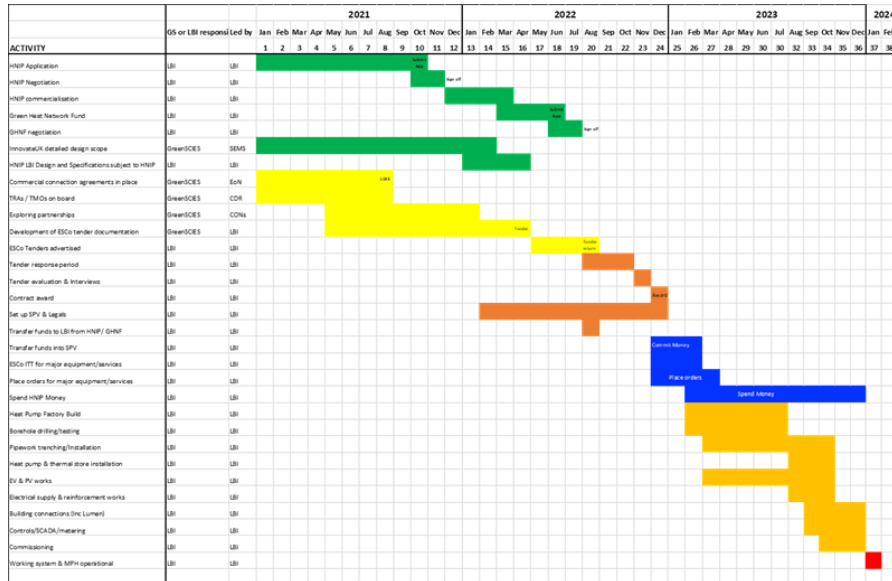
CHAMP (Cooling, Heating, and Mobility and Power) Integration

- Cooling produced as a bi-product of Heating
- Mobility – shared capex but also V2G
- Power – PV earns higher value or EV/HPs receive lower cost electricity but also with Flexibility by:
 - Picking the cheapest price periods reduces elec cost for HPs/Evs
 - Benefits include carbon savings
 - Additional flex services: Capacity Market, Balancing Mechanism, FFR
 - Heat/coolth/power storage important to maximise this

Control system will optimise CHAMP integration



CONSTRUCTION OF THE LBI TRIAL SCHEME



- Submitted to GHNF for commercialisation funding August
- Provide a pipeline for capital funding
- Strong likelihood of funding



Department for Business, Energy & Industrial Strategy



Green Heat Network Fund

Transition Scheme Overview

Supporting the commercialisation of low carbon heat network projects

Version 1.2

THE BIGGER PICTURE IN LBI



Technical analysis



Cost analysis



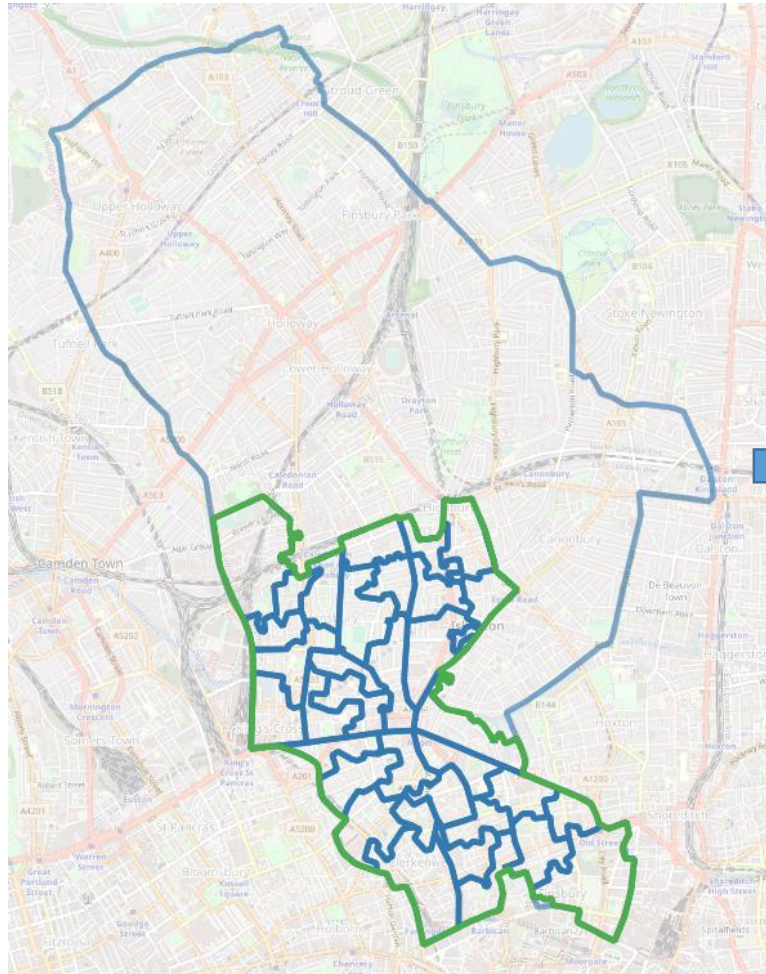
Carbon



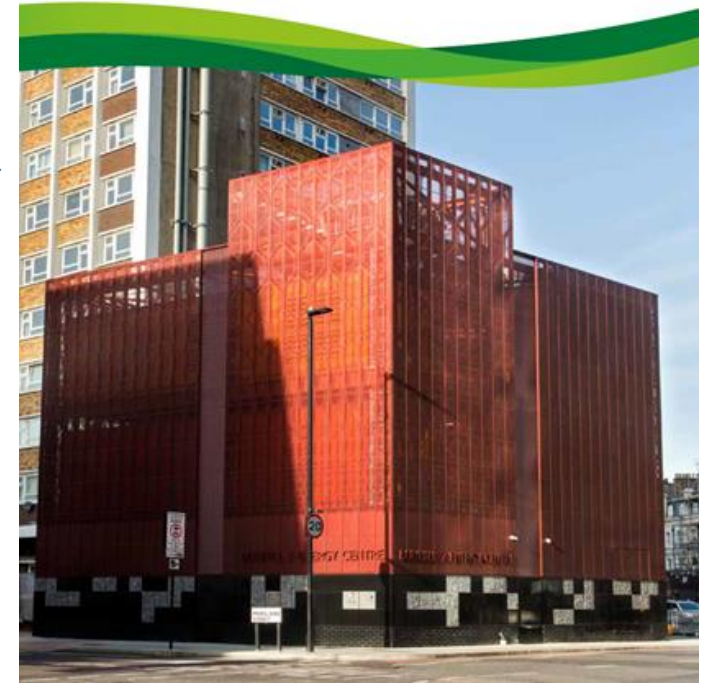
Skills



Social value



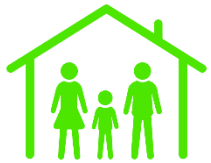
Vision 2030:
Building a Net Zero Carbon
Islington by 2030



WEST MIDLANDS

Proposed heat network in **Sandwell, West Midlands:**

- Connecting new residential developments & existing domestic and non-domestic buildings
- Heat recovery from a foundry, hospital and supermarket
- Energy storage in the aquifer



3,168 households/
12,672 people
connected locally



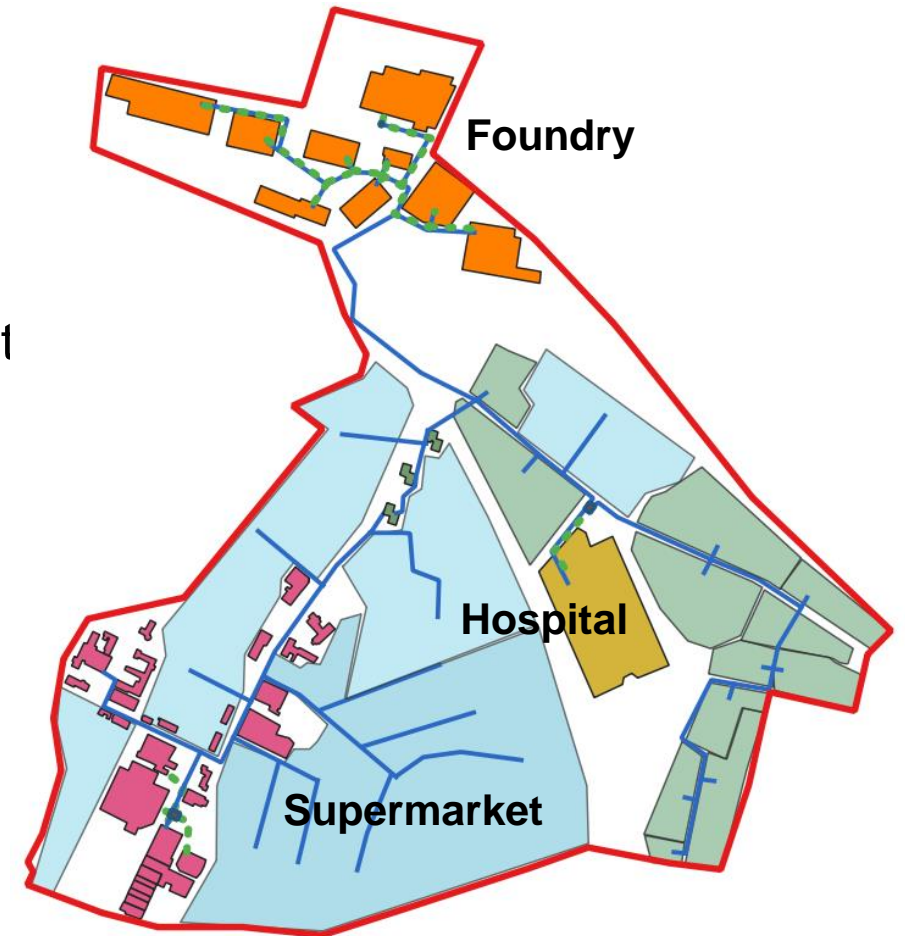
£64m
investment



56,923 MWh
Low carbon energy
supply



25,643 Direct tCO₂
reduction after 10-yr

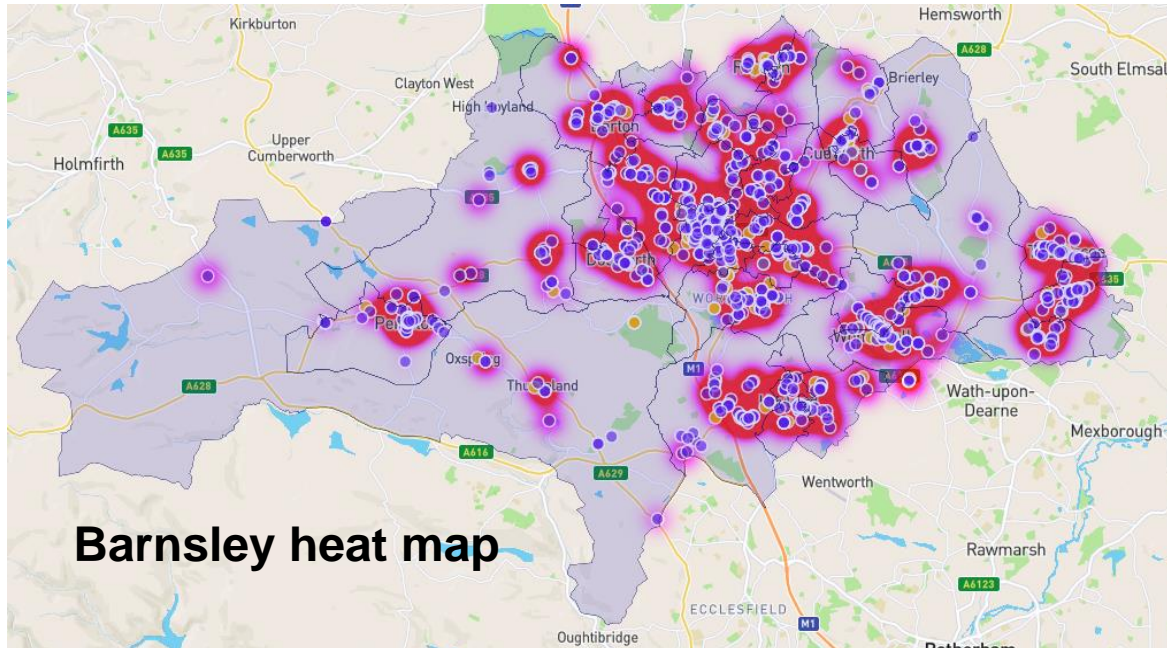


A pathway to Net Zero carbon emissions by 2041
(West Midlands Combined Authority target)

SHEFFIELD

Proposed SLES network in **Barnsley, Sheffield City Region:**

- Connecting new residential developments & existing domestic and non-domestic buildings
- Heat recovery from glass manufacturing
- Energy storage in mine water



WIDER REPLICATION

- 83% of Councils have declared a Climate Emergency to date.
- Around 131 are urban or suburban similar to LBI and have set Net Zero by 2030 or earlier.



GREENSCIENCES 2 - WIDER REPLICATION - INVESTIGATION OF CLIMATE PLANS FOR LOCAL AUTHORITIES IN THE UK

Local Authority	DEFRA Classification	Population 2018	Area	Estimated Emissions 2018 (ktCO ₂)	Fuel Poverty 2018 (%)	Declared a Climate Emergency	Net Zero Target Year	Mentions district scheme	Heat decarbonisation plans	Reference
Barking and Dagenham	Urban with Major Con	211,998	37.80	552.75	12.3%	Yes	2030	Yes	The council has its own EScO that has delivered...	https://www.lbbd.gov.uk/
Barnet	Urban with Major Con	392,140	86.75	1,203.95	11.8%	No	N/A	N/A	Although a climate emergency was not declared...	https://www.barnet.gov.uk/
Bexley	Urban with Major Con	247,258	64.29	791.46	9.0%	No	N/A	N/A	No climate emergency plan, but an environmental...	https://www.bexley.gov.uk/
Brent	Urban with Major Con	330,795	43.23	917.83	13.7%	Yes	2030	Yes	The climate emergency plan states the intention...	https://www.brent.gov.uk/
Bromley	Urban with Major Con	331,096	150.13	971.19	8.6%	Yes	2029	No	There is no mention to district heating or heat...	https://www.bromley.gov.uk/
Camden	Urban with Major Con	262,226	21.79	1,037.07	11.9%	Yes	2030	Yes	The council has experience with heat network...	https://www.camden.gov.uk/
City of London	Urban with Major Con	8,706	3.15	716.53	5.5%	Yes	2027	Yes	The plan has a slight mention to district scheme...	https://www.cityoflondon.gov.uk/
Croydon	Urban with Major Con	385,346	86.49	1,047.04	11.2%	Yes	2030	Yes	With the climate emergency declaration (link to...	https://www.croydon.gov.uk/
Ealing	Urban with Major Con	341,982	55.54	1,122.75	12.6%	Yes	2030	Yes	The plan includes objectives to actively...	https://www.ealing.gov.uk/

<https://www.climateemergency.uk/blog/list-of-councils/>