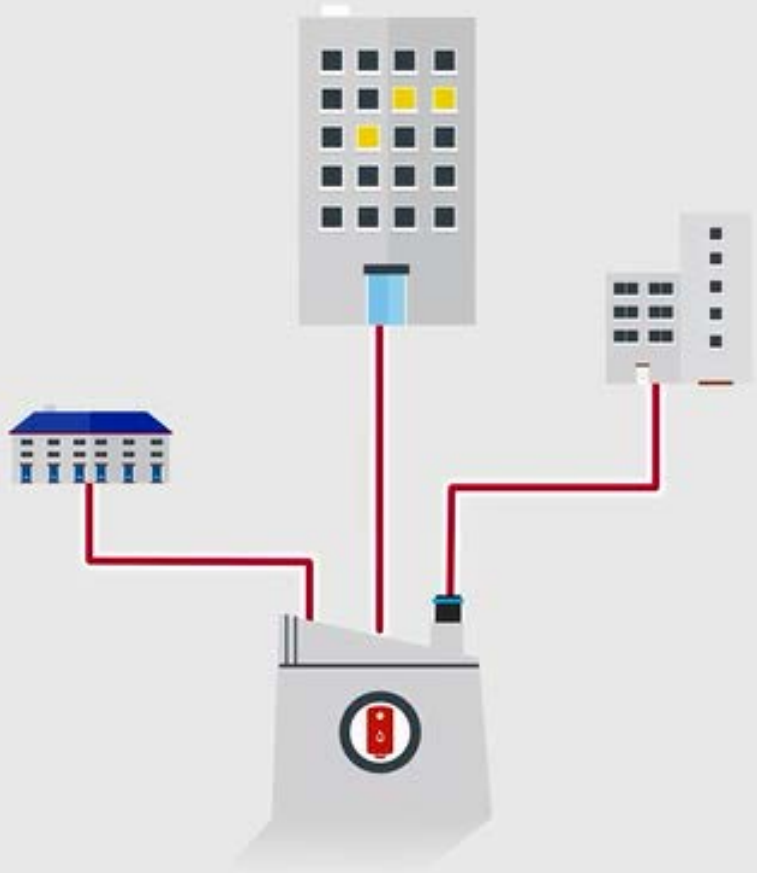
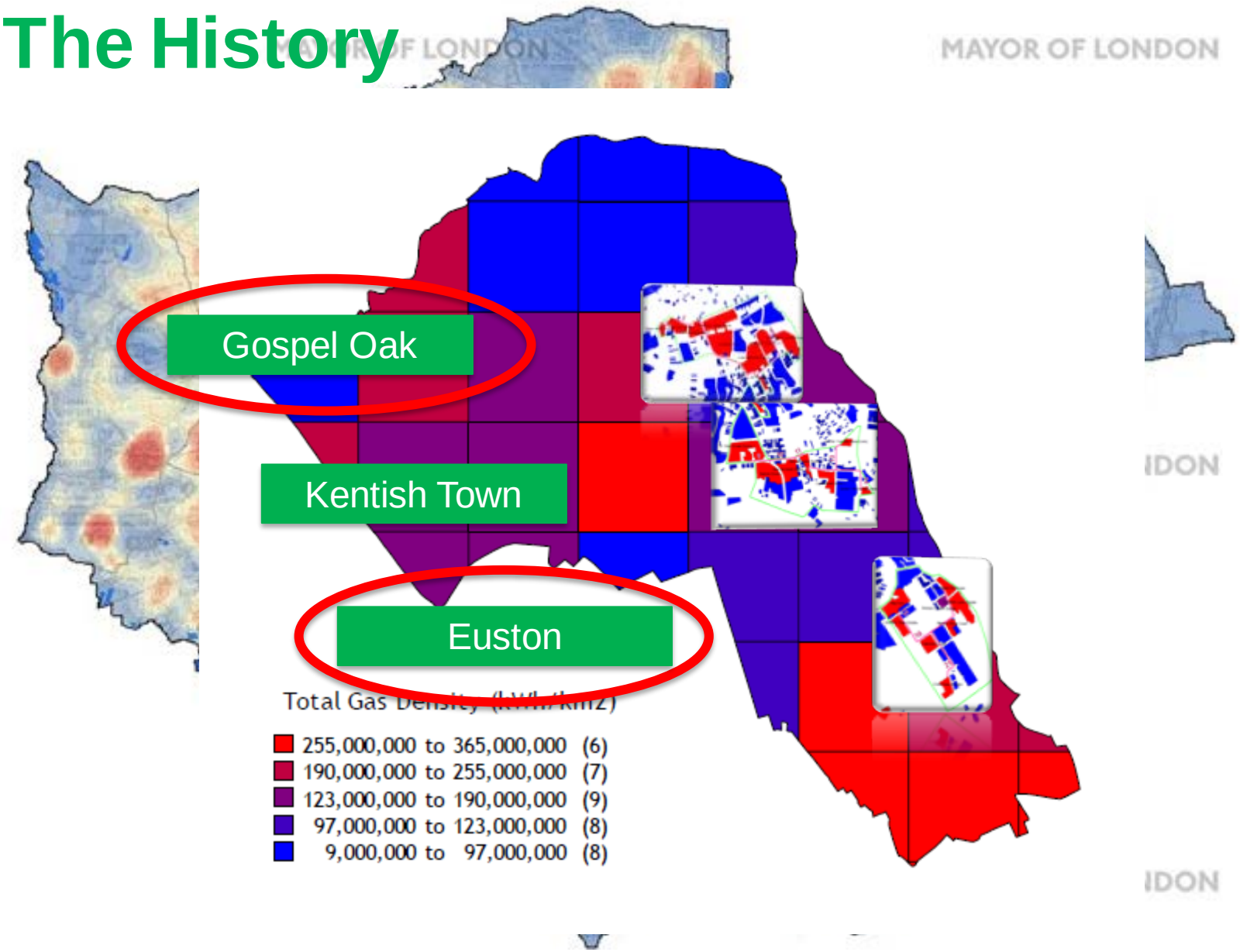
Decentralised Energy

District heat networks in the London Borough of Camden

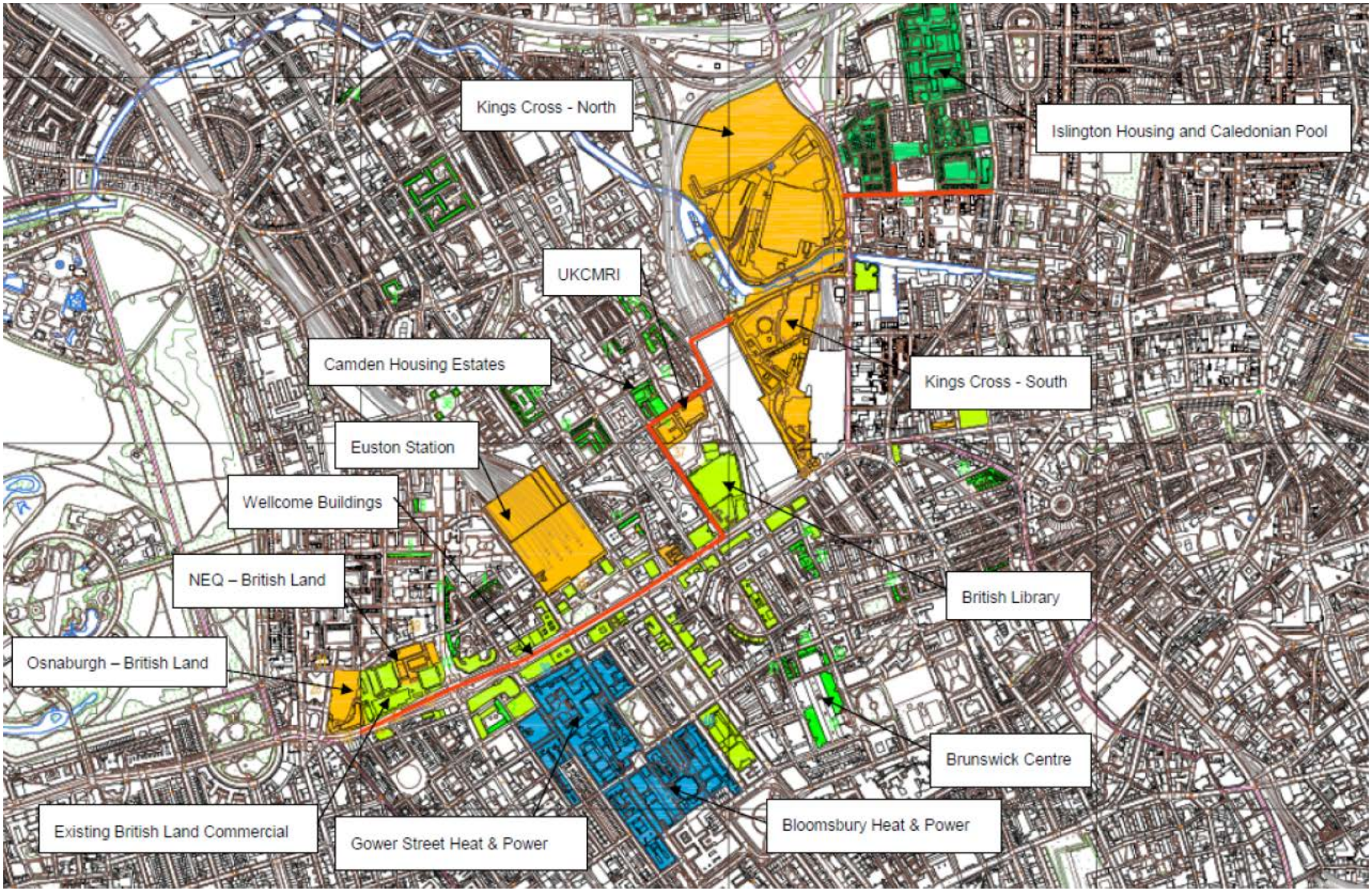


Jennifer Belk
Senior Sustainability Officer
(Low Carbon Energy)

The History


Gospel Oak
Kentish Town
Euston
255,000,000 to 365,000,000 (6)
190,000,000 to 255,000,000 (7)
123,000,000 to 190,000,000 (9)
97,000,000 to 123,000,000 (8)
9,000,000 to 97,000,000 (8)

How was Euston developed?



Somers Town Energy

We’ve made a video!

Points To Share

Financial Benefits	VS.	Non-financial Benefits
Savings over Business As Usual expenditure on plant replacement		Carbon reduction
Fixed plant replacement costs tied into maintenance charge		Ability to track emerging low carbon technology knowing that infrastructure is in place.
Long term (15 years) maintenance contract		Opportunity to provide new heating solutions to residents that will last.
Carbon reduction cost		Ability to retain control of heat pricing in order to protect residents.

Points To Share

The ability to retrofit

Making the most of the Council's traditional assets with little visual impact

Points To Share

Phasing

Reacting to replacement schedules and completion dates

Gospel Oak

Tripartite agreement

Royal Free London NHS Foundation Trust

mitie

Camden

- 1,449 homes
- 2,800 t of CO2 saved pa
- 51% of heat supplied by the waste from the CHP
- Launch 2015, heat since 2013

Royal Free's spare heat to warm up housing estates

SURPLUS heat generated from the Royal Free Hospital is set to be used to warm 1,500 homes in Gospel Oak.

The project, due to begin at the end of the year, will see heat, which would otherwise have gone to waste, captured and recycled for use on local housing estates.

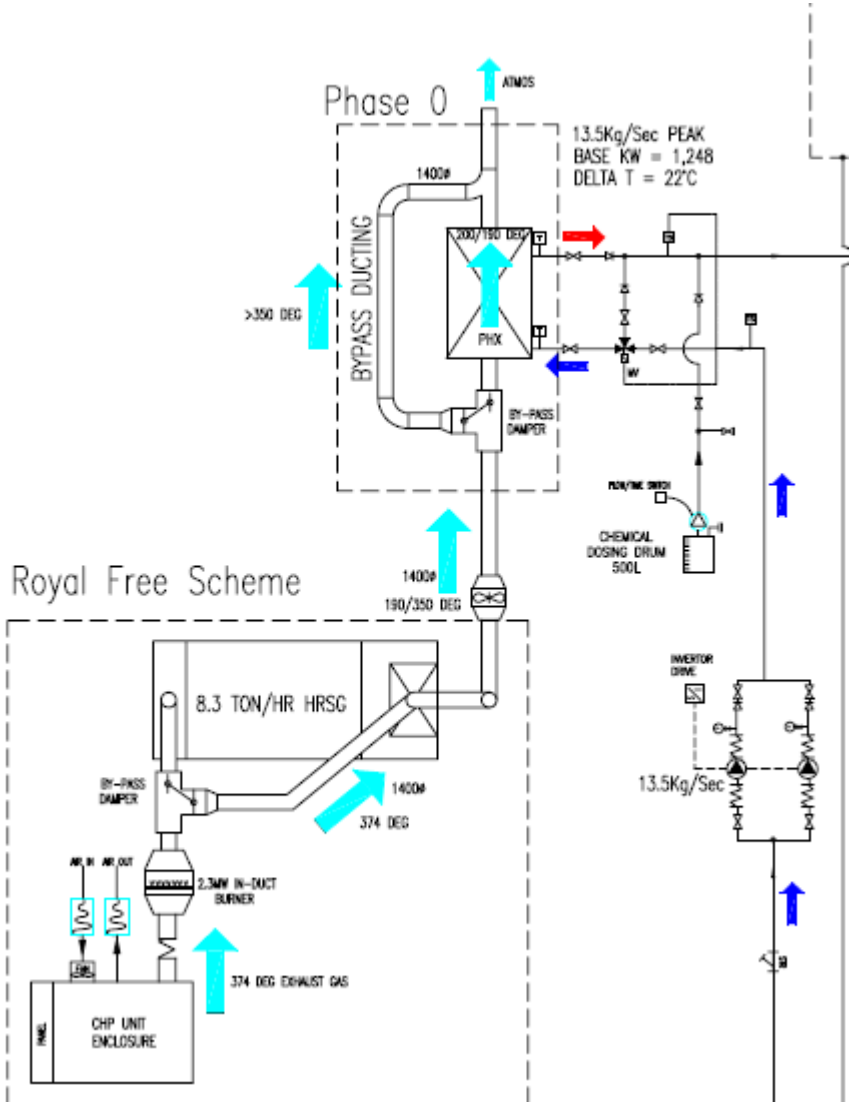
planned repairs. Estimates indicate that at least 2,800 tonnes of CO2 will be saved annually. This is equivalent to the same savings from insulating the lofts of around 4,000 typical semi-detached houses.

Work will also be done to look at the possibility of

- **Part funded by the GLA and CESP**
- **Savings realised from lower fuel costs will be used to set lower heating charges for residents**

Gospel Oak

- The gas turbine at the Royal Free hospital delivers electricity and heat to the hospital.
- The heat for the hospital is in the form of steam at circa 175 deg C
- Once this heat has been delivered there is still residual heat which can be recovered to generate hot water
- This is achieved by the addition of a heat exchanger which cools the exhaust from the Royal Free turbine down to 120 degrees C
- The heat exchanger delivers up to 1.5MW of heat to the pipe network. This is the “Camden” heat exchanger



Gospel Oak

- The Camden heat exchanger is located on the roof of the Royal Free and is connected by pipe work to the pump house at Fleet Road
- From here a circa 1 km network delivers heat to the six blocks of flats on the network
- Whatever heat cannot be delivered by the Camden heat exchanger is supplied by gas fired boilers

Further Opportunities

The scheme has been installed from day one with a peak capacity capability of 3.5 MW

The Camden heat exchanger at the Royal Free supplies 1.5 MW so 2.0 MW of capacity can be added

The additional capacity can be provided by a choice of energy sources such as;

- Sewer energy recovery heat pump
- 2 Mwe combined heat and power unit
- Medical waste to energy plant

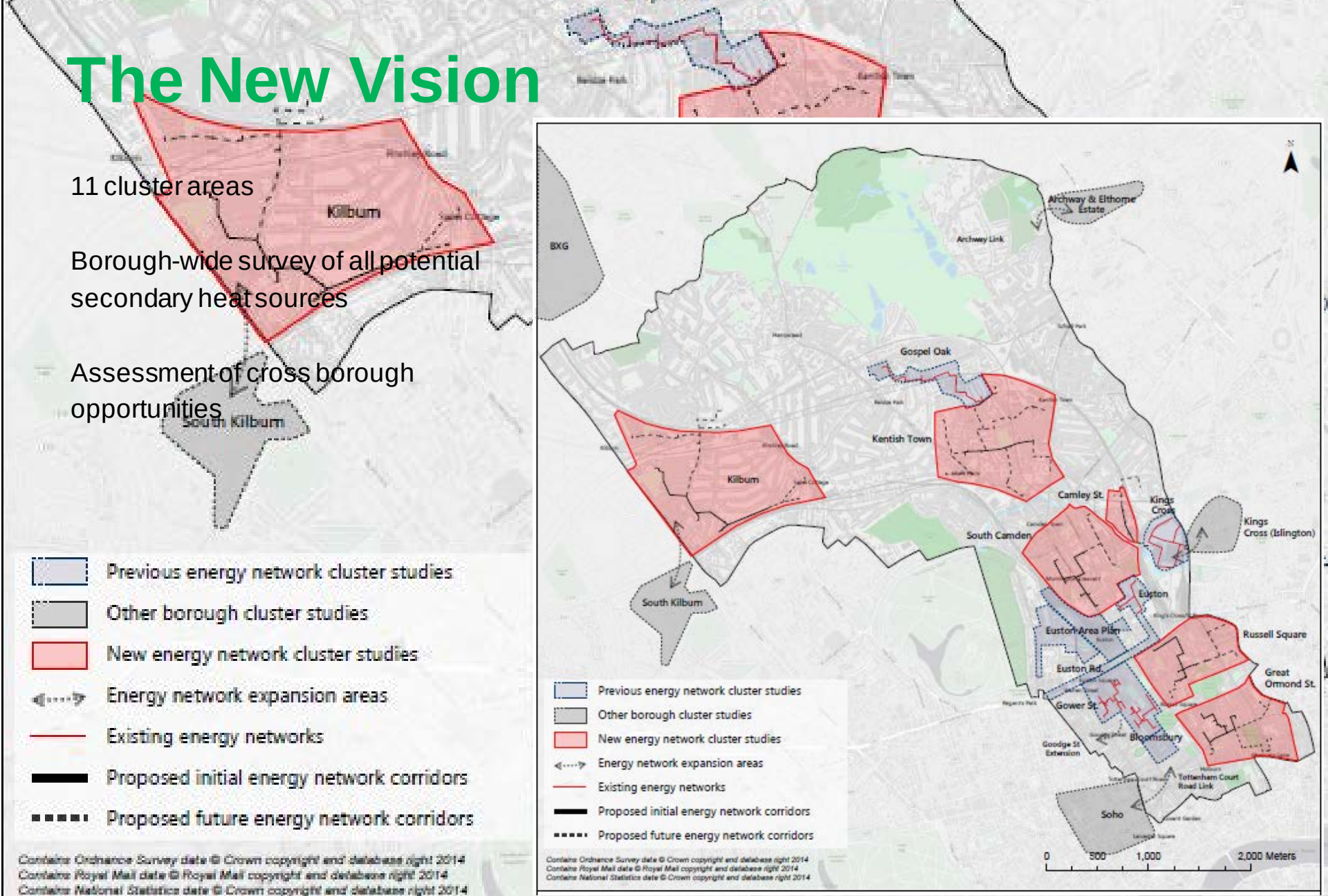
Whichever solution is chosen will maintain the ethos of joint benefits that have been delivered by this initial scheme whilst further maximising the efficiency of utilisation of every kWh of primary energy

The New Vision

11 cluster areas

Borough-wide survey of all potential secondary heat sources

Assessment of cross borough opportunities



Example Cluster

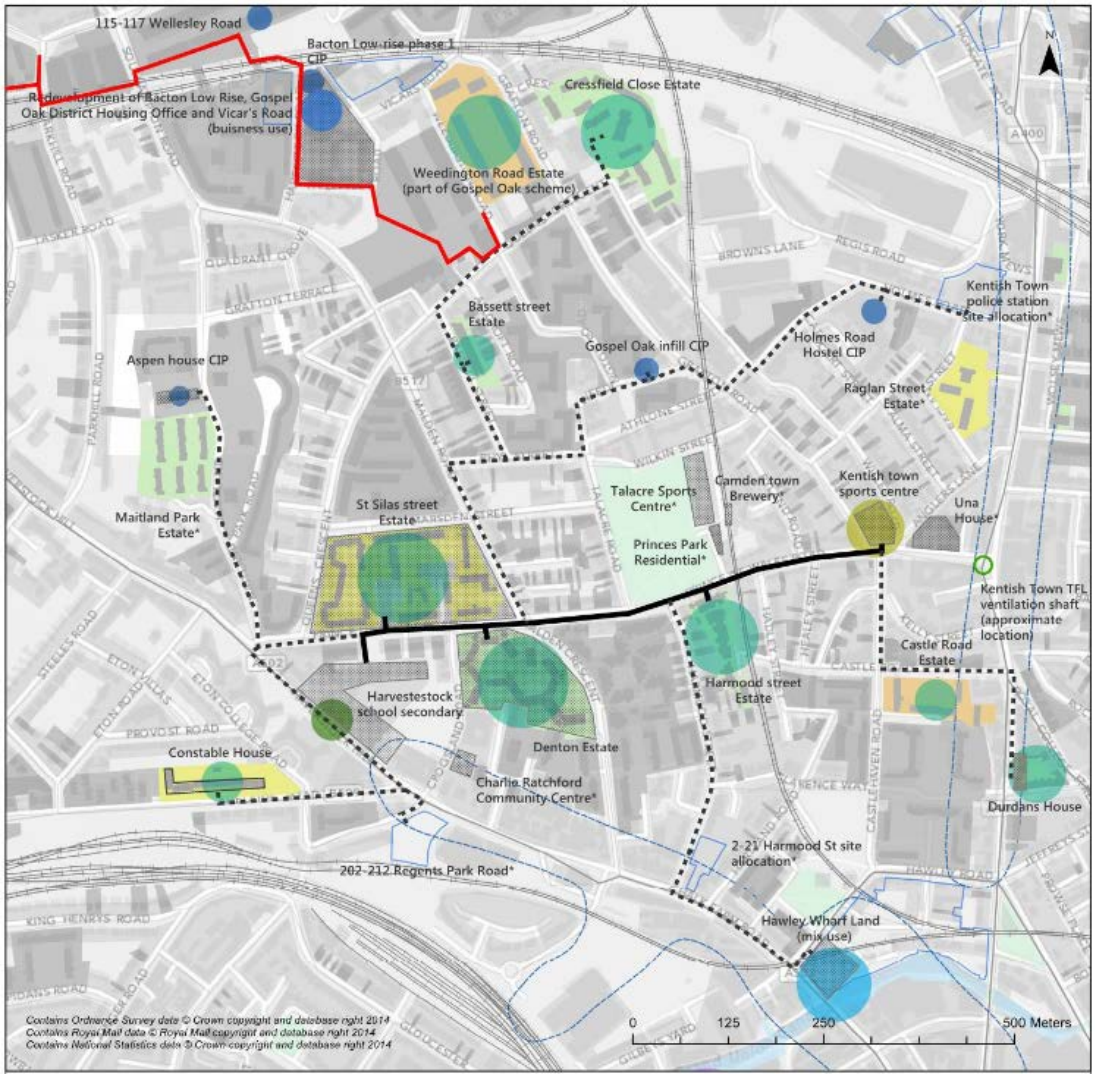
Kentish Town

Many of the loads Council owned

Mix of development including housing, sports centres and schools

Potential to link into our existing Gospel Oak network

Planning framework area to the south of the cluster in Chalk Farm



How have we progressed this cluster?

Applied for funding from HNDU to deliver a detailed feasibility study for this area.

£70,000 study instructed to provide a 'governance ready' project.

Study now in progress with objective to:

- Look beyond gas CHP and assess a wide range of different technologies
- Provide a long term strategy for various opportunities e.g. existing assets, the existing network and the development areas.
- Deliver an outline business case proposal for the preferred project

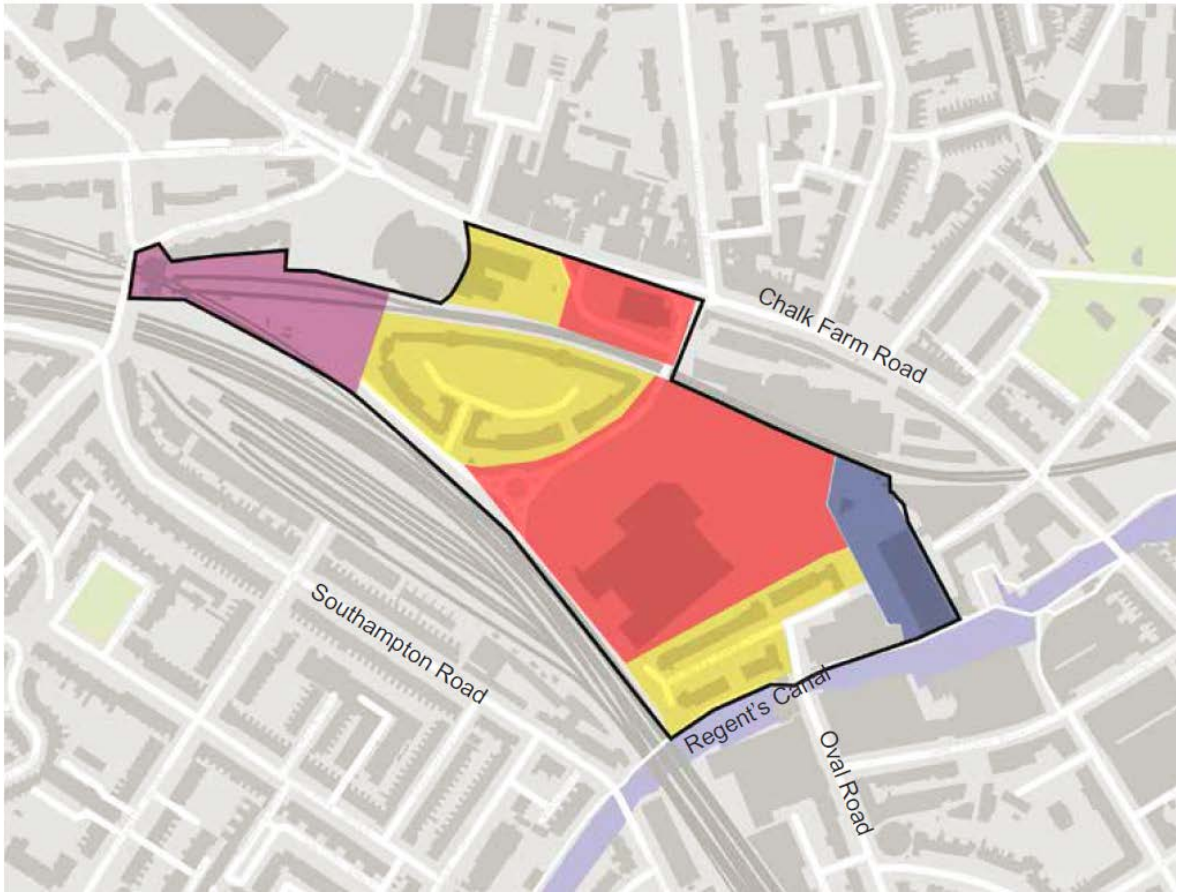
***A much greater emphasis placed on discussion and engagement has helped move things forward.**

Shaping new development

The Chalk Farm planning framework

To be used as Supplementary Planning Guidance for all developments in the area.

Since the Kentish Town study is still being completed, Camden has allowed for the study findings to ‘taken account of’ by new developments and that they should ‘support the realisation of its conclusions’.



What does the future look like?

Our ultimate objective is to have an in-depth evidence base for all of our 11 cluster areas so that the Council is prepared for opportunities arising from building refurbishments and planning applications.

In the short to medium term:

- Finish the Kentish Town feasibility study concluding a progressive and deliverable project option
- Contribute to the research and development of future technologies for this sector
- Start work on another cluster area to provide further opportunities for the borough

But, most importantly…

We have recently received £1.05m HNIP funding for the extension of our Somers Town Energy network!

So, 2017 -2018 will be spent delivering Phase 2 of the scheme. This will involve:

- The installation of a CHP to generate electricity as well as heat from the scheme

- The extension of the scheme to a further 230 residents, a school, a nursery and community facilities.

We were able to apply for the funding as a result of the feasibility work supported by HNDU.

What do you want to discuss?

To find out more, visit: www.camden.gov.uk/de

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