

Intended for  
**London Borough of Ealing**

Document type  
**Report**

Date  
**May 2010**

# **LONDON HEAT MAP STUDY FOR LONDON BOROUGH OF EALING**

## **LONDON HEAT MAP STUDY FOR LONDON BOROUGH OF EALING**

Revision **Final V2**  
Date **2010/05/26**  
Made by **Gregory Zdaniuk / Peter Mildenstein / Pernille M. Overbye**  
Checked by **Peter Mildenstein / Pernille M. Overbye**  
Approved by **Pernille M. Overbye**  
Description **Heat map study gathering data for mapping, analysis of data and maps together with outlining a implementation plan**

Ref 719-100398

## CONTENTS

<b>1.</b>	<b>Introduction</b>	<b>1</b>
<b>2.</b>	<b>Data Collection</b>	<b>1</b>
2.1	Methodology	1
2.2	Methodology considerations	4
<b>3.</b>	<b>Heat Map Analysis</b>	<b>5</b>
3.1	Larger district heating regions	6
3.2	Criteria for creating clusters (Focus Areas)	7
3.3	Focus areas	7
<b>4.</b>	<b>Implementation plan</b>	<b>10</b>
4.1	Focus areas	10
4.2	Further data gathering	10
4.3	Cross Borough opportunities	10
<b>5.</b>	<b>Complete District Heating System</b>	<b>11</b>
5.1	District heating network outline	13
5.1.1	Pre-conditions	13
5.1.2	Heat loads and Diversity	13
5.1.3	Network layout	14
5.1.4	Heat Loss from the Network	15
5.1.5	District heating main network cost estimate	16
5.1.6	Comments on network	16
<b>6.</b>	<b>District Heating Viability</b>	<b>16</b>
<b>7.</b>	<b>Other District Heating Network Issues</b>	<b>18</b>
7.1	Local Authority and stakeholder engagement	18
7.2	Marketing	18
7.3	Local Authority involvement	18
7.4	Operating company	19
7.4.1	Structure	19
7.4.2	Delivery Vehicle	21
7.4.3	Financing	21
7.4.4	Contract arrangements	22
7.5	Building surveying/Optimisation	22
7.6	Planning	23
7.7	Licensing and Legislation	23
<b>8.</b>	<b>Recommendations &amp; Way forward</b>	<b>24</b>

# 1. INTRODUCTION

In February 2010, Ramboll were appointed by the London Borough of Ealing to carry a heat mapping study as part of the LDA's Decentralised Energy Masterplanning Programme (DEMaP). Our work was structured to meet the aims of the study as defined in the brief, which were as follows:

1. Produce a heat map of the Borough.
2. Provide advice and support to the Borough in interpreting and acting upon results of the heat mapping.
3. Identify potential areas for the development of further district heating networks in the Borough.

The course of the study was broken down into 3 stages:

1. Assemble heat load data for priority buildings in the Borough, using as much actual energy consumption data as possible. Mapping of all priority buildings using Ordnance Survey coordinates. All data was recorded on an excel spreadsheet template, with fixed fields for completion and issued to the LDA for conversion to a GIS heat map.
2. Upon receipt of the heat map from the LDA, the map was analysed and clusters of buildings and development areas were identified as having the best potential for delivering future district heating networks.
3. A high level implementation plan was then produced for the Borough, on a tabular format template, highlighting each individual DH network opportunity associated barriers, next steps, key dates and key personnel within the Council for moving it forward.

The broader objective of this exercise was to enable the results to be fed directly into the emerging Local Development Framework documents. In particular, based on the findings of the current study, the Strategy and Sites Development Plan Documents can identify areas/sites with specific District Energy Network (DEN) opportunities in the Borough.

This will also be supplemented by the Infrastructure Delivery Plan, which will establish the delivery mechanisms (including ongoing funding/maintenance) for DEN proposals within the Borough over the London Development Framework (LDF) plan period (i.e. up to 2026). Moreover the Development Management DPD will establish policies for the assessment of DEN proposals, and set criteria to ensure that new development links into established networks. It is expected that clear guidance from the Council will provide the certainty needed to attract investment in DEN proposals within the Borough.

## 2. DATA COLLECTION

The main objective of the project was to collect actual heat demand data for a list of priority buildings for later illustration on the London heat map website.

### 2.1 Methodology

The methodology for collecting data for the heat map study was set out by Ealing Borough in collaboration with the LDA.

The data gathering methodology adopted was guided by the list of 'priority buildings' identified in the project scope and entered into the excel spreadsheet template.

Most of the data was collected by Ramboll and this can be found, in spreadsheet format, in Appendix A.

During the data collection exercise, the LDA provided additional information on buildings in the Borough. This information was gathered in previous studies and did not necessarily include buildings classified in this study as being "priority buildings". Where appropriate the LDA consolidated the data provided to them by Ramboll, with that they already had. A spreadsheet of the LDA data is shown in Appendix B.

In reality the data gathering is an ongoing process which needs to be continued by the Borough, as some contacts have not been able to return data within the timeframe.

The methodology for data gathering was to target heat loads by the priority building type as listed here.

- Multi-address buildings – predominantly public residential
  - Gas consumption data for council-owned estates was provided to us by Ealing Council. Premises were mapped using the Local Land and Property Gazetteer (LLPG) database and using [streetmap.co.uk](http://streetmap.co.uk) website.
- Sport & leisure facilities
  - Data for council-owned premises has been recorded from the NI185 database.
- Prisons: There are no prisons in the Borough.
- Hotels
  - Large hotels (> 149 bedrooms) were identified using an internet search. CIBSE Guide F benchmarks were used to estimate the energy consumption.
- Education facilities
  - Gas consumption for schools and nurseries was recorded from the NI185 database.
  - Thames Valley University data sent to us by Ealing council was recorded.
- Police stations
  - Police stations were identified via an internet search. LDA to pursue consumption data.
- Fire stations
  - Fire stations data was made available to us by Ealing Council.
- Hospitals
  - Gas consumption data for the hospitals was obtained from the NHS website.
  - Data for the Ealing PCT sites was made available to us by Ealing Council.
- Museums & art galleries
  - This typology was identified through the NI185 database.
- Central government estate
  - We have contacted JobCentre Plus but were told that JobCentre Plus do not own or manage the premises they occupy and that no data was available.
- Local government estate
  - Gas consumption data was recorded from the NI185 database. Energy for electrically-heated buildings and premises with no data was approximated with CIBSE Guide F benchmarks.
- Religious institutions
  - Due to the low impact on the heat map, no consumption data for religious premises were pursued.
- Private residential units (>149 units or 9,999m<sup>2</sup>)
  - Private residential units were identified based on the planning application data and area development plans sent to us by the Council and identified on the Council's website. Proposed developments were benchmarked based on a 20% or 50% reduction of Part L value depending on the predicted construction date.

- Private commercial units (>9,999m<sup>2</sup>)
  - Private commercial units were identified based on the planning application data and area development plans sent to us by the Council and identified on the Council's website. Where possible, data for mixed use developments was split into multiple entries according to the typology. Proposed developments were benchmarked based on a 20% or 50% reduction of Part L value depending on the predicted construction date.
  - **Supermarkets** were identified via an internet search. Contact was made with the following company headquarters to determine a level of interest in connecting to a heat network; Sainsbury, TESCO, ASDA, Waitrose, Morrisons, Marks & Spencer and Iceland. Only Morrisons responded with data but unfortunately this arrived too late to be able to be included in the analysis, however the loads that were indicated would appear to offer potential to a network. Lidl and Aldi were not able to be contacted.
  - During the study we also contacted **Park Royal Partnership**. Park Royal Partnership is an organisation that represents the interests of the occupants of the Park Royal Industrial Estate. We engaged in several conversations with the Partnership but we understand that they do not hold individual energy data for their members. We understand that the Partnership has approximately 1500 members and that they may buy their energy as a group. This policy would be advantageous in any future discussions regarding a potential heat network in this area.
- Other public buildings
  - A couple of unique buildings were identified in the NI185 database and planning applications.

### Heat Demand

A building's heat demand depends on the heat loss of the building fabric, the ventilation rate, and domestic hot water usage.

Typical existing houses and buildings in the UK are fairly inefficient in terms of heat usage when compared to similar European examples. New policies have affected and considerably improved the new building stock in terms of energy demand; an average existing home requires four times more energy to heat as the average new home.

It can be seen, therefore, that it is existing homes and buildings that benefit most from being connected to an efficient district heating network.

In this project, we have collected and estimated the annual heat demand (measured in MWh) for potential district heating networks in the London Borough of Ealing. The heat demand represents the sum of all the estimated heat consumptions of consumers. The heat demand is used to determine the heat load to the proposed network(s) (measured in MW), which is then used to establish the capacity required of the system as a whole.

Where actual consumption data could not be obtained within the timescales available, estimated consumption data was calculated for existing buildings by using floor areas and benchmark figures taken from CIBSE Guide F (2004). Proposed developments were benchmarked based on a 20%, 50% or 80% reduction of Part L value depending on the predicted construction date. Benchmarks used are as follows:

- Assuming 210 kWh/m<sup>2</sup>/annum (CIBSE F table 20.1 Offices, Air conditioned, prestige)
- Assuming 67 kWh/m<sup>2</sup>/annum (80% of 2006 Part L Benchmark for Office)
- Assuming 80 m<sup>2</sup>/unit (80% of 2006 Part L Benchmark for Residential)

- Assuming 47 kWh/m<sup>2</sup>/annum (80% of 2006 Part L Benchmark for Residential)
- Assuming 58 m<sup>2</sup>/unit and 47 kWh/m<sup>2</sup>/annum (80% of 2006 Part L Benchmark for Hotel)

Where floor area data was not available within the timescales available to produce estimated heat consumption figures for existing buildings that were expected to have a high heat load, the buildings were included in the heat map with a zero heat load but with a view to adding in a heat load should the data become available in the future.

### **Major Heat plants and district heating networks**

The study brief asked to identify major existing and proposed heat supply plants. The brief also called for identifying existing decentralised energy systems, communal heating systems or heat networks.

A major heat supply plant is considered to be a larger plant such as Energy from Waste (EfW) plant, a power station of several MW that doesn't currently export heat either partly or fully, or large industrial sites where there are processes that produce heat that is not utilised.

Energy or heat networks are existing or proposed networks that will have an accompanying energy centre (that may be CHP enabled). The energy centre would not be repeated in the major heat supply plant section, as it is not likely to have excess capacity to feed any new network. Having said that this network and its energy centre has a potential for being a good starting point for further development and expansion of networks.

To identify sources of useful heat, the following resources were consulted:

- Industrial Heat Map website
- Planning Applications
- LEP database
- Eionet LCP (Large Combustion Plant) Database
- DECC CHP Database
- OFGEM CHP database

The LEP database was consulted and no existing district heating networks were identified for inclusion.

## **2.2 Methodology considerations**

With the relatively limited time scale of data gathering, it was important to prioritise the buildings and effort in line with the potential heat load and connection opportunity. Accordingly, a heavier focus was placed on gathering the data for hospitals, council-owned premises, proposed developments and hotels.

Remaining building types were also pursued by identifying the relevant premises in the LLPG database and sending standard letters to the concerned parties. Least focus was placed on the building types which were going to be investigated by the LDA, i.e. fire stations, police stations, TfL premises, commercial floor space listed in the VOA database.

The Borough's LLPG database was extensively used to identify potential buildings and consumers to be pursued. The LLPG database was then interrogated to obtain OS coordinate points for a specific address.

Where data was not found in the database, internet searches and mapping websites (Google, Streetmap, NHS, Expedia) were used to find and map additional premises.

Special consideration was given to proposed developments, which were identified through planning applications and data sent to us by the Borough. Proposed developments were recorded by clustering all the buildings to a point in the centre of the development. Floor areas were split between residential and commercial typology and benchmarks based on Part L energy reduction were used accordingly. Updated planning policies now provide greater incentive for new developments to become good candidates to start a district energy network.

Additional issues should be considered when analysing the data.

- 'Double counting' – future developments with estimated heat demand may overlap existing sites where heat demand is already counted. Data collected from various sources may overlap data which was already on the London heat map.
- Estimated data, as noted in the spreadsheet, may differ from actual consumption depending on, e.g. building fabric, occupancy patterns and actual building performance.
- Existing networks and major heat supply plants – existing networks that will have an existing energy centre that may be CHP, should not automatically be considered as a major heat supply plant, as they are not likely to have excess capacity to feed a new network. A major heat supply plant should be considered to be a power station that doesn't currently export heat, or a large industrial site where there are processes that produce waste heat. No heat supply plants were identified within the Borough by Ramboll, however the data already on the LHM website lists a number of smaller CHP units within the Borough as 'Major Heat Supply Plants'.
- Information was sought from the VOA by the LDA but at the time of completing the report this data had not been made available.
- The LDA provided data was from a previous study, so some of the buildings, by definition, would not be considered as "priority buildings".
- A proportion of the information gathered was partially incomplete, as information could not be returned within the timescale of the study.

### 3. HEAT MAP ANALYSIS

The heat demand of over 600 buildings (including those buildings identified by the LDA) was included in the assessment

The original maps received from the LDA mapped types of buildings but no heat data was illustrated. These maps can be seen in Appendices 1 and 2. Whilst these maps highlight clusters of buildings they do not necessarily help exploit opportunities with respect to clusters of heat. Ramboll therefore produced the heat demand map which can be seen in Appendix 3.

Due to the relatively large number of priority buildings and building categories it was found necessary to group the data differently to enable the illustration of the heat demand data.

Appendix 3 shows five building categories each illustrated by a different coloured dot or square. To further clarify the size of the dot or square indicates the magnitude of energy consumption, i.e. the larger the dot or square the larger the heat demand. The dot representing existing buildings while the square represents proposed.

The building categories are listed below with an indication of the building type:

- Private: Private residential, private commercial, hotels, education, museums, multi-address buildings (businesses)
- Local Government: Local Government Estate, education, sports & leisure, museums
- Central Government: Central Government Estates
- Other public: NHS, Fire, Police, other public, multi address (public with central boilers)
- Unidentified: This data consists primarily of data received from the LDA.

On the heat demand maps (Appendices 3, 4 and 5) the major supply plants will be identified by a triangle (△) and a potential new network or development with CHP will be, proposed and be identified by a square (□).

The heat map appendices produced for this report is for support and overall illustration only. For any detailed assessment of building data and their location the London Heat Map website has to be explored.

### 3.1 Larger district heating regions

The borough can be grouped into smaller more manageable geographical regions that can later be used as a method of phasing the introduction of the district heating network and this can be seen in Appendix 4.

As much as possible the grouping has been based on dividing the Borough by major road, rail and water course. This decision is based upon practical reasons. Crossing major road infrastructure can be quite difficult especially when the road is a major artery for an area. Restrictions such as maintaining bus and ambulance movements can reduce the available working space and time. Rail and water offer similar restrictions which tend to be overcome by either bridges or tunnels but these come at a significant additional cost.

The quantitative heat demand assessment results are presented in Table 1.

<b>Larger Regions</b>	<b>Estimated heat consumption (MWh/yr)</b>
1. South Central Ealing	87,000
2. Acton	40,000
3. Park Royal	9,000
4. Southall	39,000
5. Central Ealing	24,000
6. North Central Ealing	3,000
7. Northolt	10,000
8. Greenford	15,000
<b>TOTAL HEAT DEMAND</b>	<b>227,000</b>

**Table 1: Regional heat demands for potential district heating network(s)**

The above figures are an underestimation of the amount of heat available within the Borough. The number of buildings, that it within the time scale of the project has been possible to identify the heat demand for, is only a fraction of the actual number of buildings in the Borough.

Also it has not been possible to obtain data for all the buildings identified. Appendix C has the more detailed list of the buildings within each region and their heat demand. From this the priority buildings with no heat data identified and which could be targeted for obtaining heat demand data can be seen.

### **3.2 Criteria for creating clusters (Focus Areas)**

Clusters need to be developed around the existence of one or more of the following factors;

#### Large heat user(s)

- Large heat users are the most crucial element of any cluster development. Ideally a number of large energy users or a number of energy users concentrated into a small area creates an ideal environment. Often (one or more) anchor loads are sought as these can provide either a secure and sizeable income stream or be seen as a landmark building that influences the thinking of others in the vicinity.

#### Large heat producer

- The provision of a primary energy source is also a requirement. Any successful network should seek out a local source of energy, preferably a source of waste heat. Waste heat would normally be assumed to come from a source which would normally have to 'dump' heat as part of its process. Waste heat can often be secured at a price less than conventional energy sources from fossil fuel, for example. Where no such waste heat can be found, conventional sources of fossil or biomass should be sought.

#### Existing networks and/or new development(s)

- In some instances small heat networks may already have been developed and could form part of a new wider network; they may also contain a heat source that can be used either directly as a primary energy source or as future back-up. In most instances, however, they will have been sized to accommodate the intended load and have little capacity for expansion.
- Larger networks may also have been developed and the extent to which new networks and buildings can interlink would be subject to discussion with the operator of such a network.
- New developments can provide an ideal platform for creating a new heat network that is able to connect to a wider area. The new development can act as the anchor load and as the site of any primary energy source. This often makes the development of a wider network more viable as the initial asset provisions can be accommodated by the new development.

#### Public buildings(s)

- Connecting public buildings not only provides a series of potential anchor loads but also sends a very positive message to other building owners in the area. This action often provides assurance from prospective connectors, who may harbour concerns over that suitability and connectivity to a heat network.

#### Building Diversity

- In an ideal scenario a heat network should strive to secure a variety of buildings with differing demand profiles and heat loads. This variation helps to optimise the sizing and selection of heat network equipment. It should be noted that whilst this is desirable, it is by no means essential that this should always apply.

### **3.3 Focus areas**

Whilst a number of buildings have been identified throughout the Borough and grouped into regional areas, it was decided to identify a number of smaller areas that could be focused upon to provide potential for heat network development.

With the criterion listed above in mind the process by which a focus area is determined is by trying to group as many large heat users together as possible and at the same time corral as many of the smaller heat users as possible. The focus areas are also determined by areas where an energy strategy is already in process or where planning permission is being sought or given to a larger residential and/or mixed use development.

This process may result in a focus area crossing across the regional areas identified and it may cross larger roads, railways and rivers just as it could be excluding some buildings that appear to be within reach, but it would be expected that a detailed feasibility study would determine the scope for a heat network within the areas.

1. A network can be initiated by the **South Acton Estate** (16 phases), which is a substantial development with a possible total of 3,200 residential dwellings. Other developments in the vicinity which can act as catalysts are the Oaks Shopping Centre, Bollo Lane and Acton Town Hall Complex.

Within this Focus Area 55 buildings/connections have been identified.

2. **Ealing Metropolitan Centre**. A network in this area could be initiated by two new developments: Arcadia and Dickens Yard. Those are large mixed-use development with a proposed community heating schemes. Arcadia is to have a 90 kWe CHP system. In the future, this network can encompass the Ealing Council building and other premises in the vicinity as identified on the heat map.

**Green Man Lane Development** – a community heating scheme is proposed for this development. As far as is known, the developer has appointed an ESCO operator. This network could be linked to the Ealing Metropolitan Centre network described above and then extend west to connect Cambridge Yard and further to Ealing Hospital.

Within this combined Focus Area 53 buildings/connections have been identified.

3. **Copley Estate**. These residential buildings currently operate on community heating schemes. These schemes can be linked to form an initial network that could be expanded out.

Within this Focus Area 53 buildings/connections have been identified.

4. (4c) **Southall Gas Works**. This is an opportunity for an initial district energy system in Southall. Even more important is the fact that this network could be supplied with waste heat from the proposed Blue-NG power station, immediately in the vicinity of the development. Southall Gas Works network could extend south and east to Suterwalla site which is earmarked as a large mixed-use development area (including Dominion House and Phoenix House), the White Hart and a number of smaller development areas.

Within this Focus Area 6 buildings/connections have been identified for 4c (33 having been connected for the whole of Area 4).

5. **Ealing Hospital** Area. There major hospital site is adjacent to an extensive development of residential properties, with a light industrial estate further to the west. The hospital would form an ideal anchor load for any development in this area.

Within this Focus Area 8 buildings/connections have been identified.

6. Linking of communal boiler systems. A number of council-owned estates are densely located in this area. A closer investigation of potential consumer heat loads and profiles is

worthwhile in this area. The housing units in the **Ferrier Road/Union Road** area are believed to benefit from communal boiler systems. This presents an ideal opportunity to link these together. Properties nearby including the local school could also be drawn into a small network.

Within this Focus Area 7 buildings/connections have been identified.

7. **Greenford Road**. There are a number of buildings in this area but they are not large heat users and are not in close proximity with each other in sufficient number to gain the critical mass needed for a network.

Within this Focus Area 25 buildings have been identified.

8. **North Acton** - Southern Park Way – Park Royal – EfW. This area may be of interest because of a proposed EfW facility declared cooperation between Ealing and Brent Councils, and a high level of interest from the Park Royal Partnership. However, the heat demand in this area is anticipated to be low potentially affecting the commercial viability of a network

Within this Focus Area 8 buildings have been identified.

In total over 220 buildings/connections have been identified as being within the 8 Focus Areas.

Table 2 summarises the estimated heat loads for each of the Focus Areas.

<b>Focus Area</b>	<b>Estimated heat consumption (MWh/yr)</b>
1. South Acton Estate	29,233
2. Ealing Metropolitan Centre / Green Man Lane	28,992
3. Copley Estate	21,705
4. (4c) Southall Gas Works.	23,907
5. Ealing Hospital	35,477
6. Ferrier Road / Union Road	1,071
7. Greenford Road	7,221
8. North Acton	8,169
<b>TOTAL HEAT DEMAND</b>	<b>155,775</b>

**Table 2: Focus Area heat demands for potential district heating network(s)**

These Focus Areas are indicated in Appendix 5. The buildings for each focus area are listed in Appendix D.

## 4. IMPLEMENTATION PLAN

### 4.1 Focus areas

Having identified Focus Areas where a heat network may be able to be created, we have tried to ring fence heat loads within. We have then extracted the building data within each Focus Area and tabulated the summary data. The data tables, for each Focus Area, can be found in Appendix D.

The data in the Focus Area tables are set out in order of greatest magnitude of annual energy consumption. It should be noted that we consider some of the information regarding the energy consumption not consistent with the type and use of the building, so it is possible that the original data provision may include errors. Some buildings have no heat data but have been included for information as they may have the potential of contributing to the development of a heat network.

The ranking of the Focus Areas has been generally set out on a High/Medium/Low basis. This ranking is to allow the Borough to concentrate their efforts in areas of greatest potential. A Low ranking does not mean to convey the impression that the area has no potential for a heat network; merely that it is comparably less likely than another.

Ranking also takes into consideration local impacts such as major road, rail and water course that may impede the development and/or expansion of a heat network and these are set out in the 'Barriers' column of the Implementation Plan in Appendix E.

At this stage we have not determined the viability of each building connection as this is an activity that would occur during a more detailed feasibility study. Appendix E contains the tabulated Implementation Plan with respect to each Focus Area and the Focus Areas are illustrated in Appendix 5.

The implementation plan needs to be read and utilised in conjunction with the information conveyed in Section 6, 7 and 8 below.

### 4.2 Further data gathering

In order for the Borough to maximise the opportunity of each Focus Area, consideration should be given to gathering data on the buildings that this study was unable to retrieve due to time constraints. This work could be considered as part of the detailed study of individual Focus Areas or as a separate study.

### 4.3 Cross Borough opportunities

Ealing is bordered by a number of neighbouring Boroughs. In the process of analysing the data we have identified that there are two areas where cross-border cooperation should be considered.

In the area near North Acton close to the Park Royal site there is a cluster of 3 or 4 heat loads that may be worthy of being connected to a heat network. The remainder of the area close by within Ealing Borough, does not appear to provide sufficient heat load. It is possible that should Brent Borough Council be developing a network close to this area that this small cluster may benefit better by connecting to this network.

In the South Acton area close to Chiswick High Road, a small cluster of buildings exist but it is considered that these lie within the Borough of Hounslow. Should the South Acton cluster extend sufficiently south enough, via Bollo Lane for example, to make such a connection viable this should be considered as a suitable site to connect to.

## 5. COMPLETE DISTRICT HEATING SYSTEM

District heating (DH) is a method of delivering heat from a variation of heat producing sources to a variation of heat customers. Heat produced from sources such as natural gas, oil or renewables burned directly in boilers or through combined heat and power (CHP), or a combination of both, can be delivered to residential dwellings, commercial & public offices, schools, warehouse and factory, hospitals plus industrial process heating.

Conventionally the heat demand in a DH system is met by waste heat from power stations and EfW plants utilising a heat generation which would otherwise be wasted and subsequently it comes at a very low cost. In smaller schemes it is common to look at installing the heat production, which often unfortunately adds cost to the scheme.

The advantage of a district heating system is the flexibility and the ability to utilise a variety of heat sources, including what can be called low-grade heat.

While CHP and district heating enable the delivery of low-carbon energy on a large scale, it is the renewable fuel used in the process that makes all the difference. For this reason, the use of biomass, biogas, or biofuel is becoming more widespread though the sourcing of such fuels must be analysed with care.

When considering implementing DH, Ramboll's experience shows that two of the key principles are to avoid advanced technologies during the early stages and to avoid overspending on the district heating network. A phasing of the build-out would be part of the suggested approach.

A number of options are likely to emerge when the objectives of a district heating project are considered. We will briefly outline a couple of the principles that we would suggest to be followed in a project.

First we think it important to avoid advanced technologies at the early stage of a project. Simple or proven technologies are cheaper to install, they carry less risk in terms of operation and maintenance and once the project is running and creating revenue, there will be a more solid base for further investments.

The second principle is to avoid overspending on the network and therefore a phasing of the build-out would be part of the suggested approach. District heating networks require considerable investments and it is necessary to optimise dimensions both in the initial situation and with a view to future proofing. The crucial part of the establishing of a district heating system is to ensure that enough customers connect at an early stage.

The complete district heating system includes everything between the heat exchanger at the heat production facility to the consumer's heat exchanger.

A complete district heating system includes as main components:

- Heat Production
- Pumps
- Pressurisation system
- Controls
- Pipes
- Heat exchangers and End-user installations

In addition a thermal store could be part of a system as well.

The network links up the heat production and the end users.

Often a feasibility study is carried out in broad terms to assess the viability of a district heating scheme. A feasibility study can be carried out to different levels of detail and can look more closely at technical and/or financial issues. Planning and implementation is also often focused early on. Not until a preliminary or detailed design would we generally look in detail at identifying all the equipment necessary for a specific district heating system.

The heat production facility is generally considered to include heat only boilers (HOB) and/or the production of both electricity and heat i.e. CHP.

CHP is, as a rule of thumb, only operated as a base load as, depending on the technology, it may be difficult and/or inefficient to operate according to daily variations in demand. In a well designed district heating network heat from CHP will provide between 60% and 80% of the annual heat requirement with heat-only boiler plants providing the peak load and back-up.

Larger solar thermal arrays are also sometimes included in a district heating system. There are a number of examples in Europe where large-scale solar thermal arrays have been integrated with district heating networks. District heating schemes offer maximum energy utilisation from solar energy as a heat sink for the low temperature water.

There are technical and hydraulic components of a district heating scheme that are important to the design and operation of a system and there are considerations to be made in respect to temperatures, pressure, base and peak heat load and reserve or back-up requirements.

In general a district heating network can be divided into three main parts:

- The transmission network
- The distribution network
- The internal heating system at the consumer.

The transmission network operates at high temperatures and pressures and carries large amounts of heat from larger heat producing units such as central power plants, waste incineration plants, to strategically placed heat exchanger stations where the heat is transferred to the distribution network.

The distribution network, operating at lower temperatures and pressures than the transmission network, supplies heat to each individual consumer. Normally, the transmission and distribution network interact only through heat exchangers meaning that they are hydraulically separated. In many cases this also applies for the interface between the distribution network and the internal heating system at the consumers.

The cost of installing the heating network depends in summary on four factors:

- The design operating temperature and pressure
- The complexity of existing services
- The length of the network
- The peak heat demand

Although not considered for this study it might be an option to use the heat distribution network for district cooling purposes in the summer. For example, the network can be used to transmit hot water to decentralised absorption chillers producing chilled water for a group of consumers. In this way it is possible to utilise any the surplus heat from the heat production plant e.g. the CHP plant in the summer.

From a design and operation point of view higher temperatures are desirable when considering the use of absorption chillers. A high temperature heat source will reduce the overall size of the chilled system. Therefore, from a district cooling point of view, the higher the operation flow temperature in the distribution network the better.

## 5.1 District heating network outline

As part of the heat map study work Ramboll has outlined two examples of a heat network. An area around the Ealing Metropolitan and Green Man Lane was selected and can be seen in Appendices 6 and 6.1. A further area in South Action was selected and can be seen in Appendices 7 and 7.1. Further details can be seen in the sections below.

### 5.1.1 Pre-conditions

The outline of the district heating network considered in this assessment is based on the conditions described below.

The flow temperature has been chosen as 90°C and the cooling of the district heating water, which could also be expressed as the delta ( $\Delta$ ) T through all consumer installations, chosen as 40°C (meaning that the consumers return the district heating water at or below 50° C). A  $\Delta T$  of 40 °C at a flow temperature of 90°C is normally a very cost effective option to minimise construction costs of district heating networks while still meeting the standard heating design temperatures within the properties for connection.

The distribution network is recommended as being pressure rated at 16 bar. A maximum pressure of 16 bar and a static pressure of 1.5 bar, therefore, has been used for the hydraulic optimisation. A pressure difference of 1 bar at the end-user installations has also been assumed.

It is assumed that there are no significant changes in ground level throughout the study area but no information is available in this respect.

The necessary pipe dimensions are estimated by using the software package "SYSTEM RORNET", which is a simulation programme for hydraulic and thermal analysis of district heating networks. SYSTEM RORNET (SR) calculates the optimum diameters of the pipes based on knowledge about temperature difference between flow and return, pressure levels, costs for piping and the maximum velocity in the pipes. SR is a Ramboll in-house software package specifically developed for district heating and cooling network optimisation.

### 5.1.2 Heat loads and Diversity

Heat loads are used for network dimensioning and are calculated based on the annual heat demand.

In a district heating network the branch supplying a single consumer is designed for the consumers peak load demand. A distribution pipe supplying several consumers is not designed for supplying all the consumers with their peak load demand at the same time; the individual peak load demands will not occur at the same time due to diversity. Therefore, the peak load demand of each consumer has to be multiplied by a diversity factor to find the heat load that the distribution pipe should be designed for.

The annual heat demands in Tables 3 & 4 are turned into heat loads using a yearly utilisation time of 2,250 hrs per annum taking diversification in the system into account.

The rounded heat demands and network heat loads for the schemes are shown in Tables 3 & 4.

Area	Estimated heat consumption (MWh/yr)	Max. Heat Load (MW)
------	-------------------------------------	---------------------

Part of Focus Area 2.	25,000	11.1
Part of Focus Area 5.	35,000	15.6
others	2,400	1.1
<b>TOTAL HEAT DEMAND OF NETWORK:</b>	<b>62,400</b>	<b>27.8</b>

Table 3: Rounded heat demands and loads estimated for the potential district heating network.

Area	Estimated heat consumption (MWh/yr)	Max. Heat Load (MW)
Part of Focus Area 1.	27,000	12.0
<b>TOTAL HEAT DEMAND OF NETWORK:</b>	<b>27,000</b>	<b>12.0</b>

Table 4: Rounded heat demands and loads estimated for the potential district heating network.

### 5.1.3 Network layout

#### 5.1.3.1 Ealing Metropolitan/Green Man Lane

A network layout showing the proposed nominal diameters is seen below:

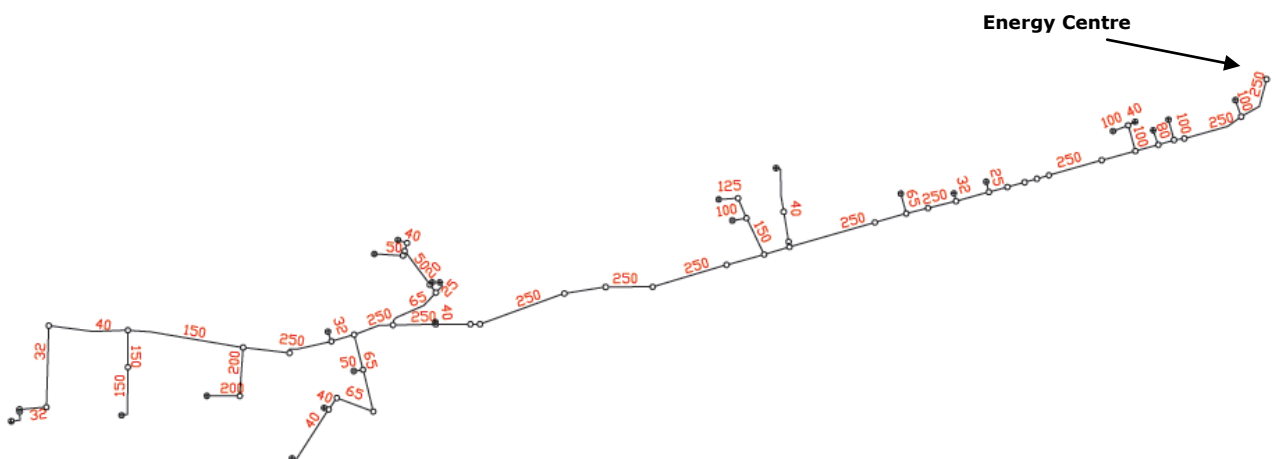


Figure 1: Example heat network layout – Ealing Metropolitan/Green Man Lane.

The total length of the network is approximately 6.5 km. The largest pipe dimension is DN250.



full load situation is found to be around 135 kW which gives a heat loss of around 1,000 MWh per annum.

### **5.1.5 District heating main network cost estimate**

#### **5.1.5.1 Ealing Metropolitan/Green Man Lane**

The network costs have been estimated to be around £9,740,000. This excludes the cost of the energy centre and any modifications required by buildings to connect to the heat network.

#### **5.1.5.2 South Acton**

The network costs have been estimated to be around £3,900,000. This excludes the cost of the energy centre and any modifications required by buildings to connect to the heat network.

### **5.1.6 Comments on network**

The networks indicated are an example of connecting a number of buildings across focus areas. The focus areas are to some extent indicative and a network does not have to consist of the precise number of buildings.

The outlined networks are, in UK terms, relatively large both in respects to the length and demand that is being met.

The exact approach and connection of buildings should be investigated in more detail.

## **6. DISTRICT HEATING VIABILITY**

District heating represents a significant capital investment. Often it requires long term investment to pay for the establishment of a district heating network.

This very high level assessment study does not include a detailed cost analysis which would be required to fully evaluate the viability of a complete district heating scheme. This study does not provide enough information to fully evaluate the viability of a complete district heating scheme with all its capital costs and operation and maintenance over a whole life cycle.

This assessment only looks at the outlined heat network as an example from when it leaves the energy centre and to a node or point of entry into a building or area of buildings. It does not include any heat production facility or energy centre, any heat exchangers and/or consumer interface units.

The network costs are generally by far the most significant investment which can account for as much as 70% of the total capital investment.

This is of course very rough estimate based on a basic network outline which needs to be validated with a feasibility study.

When looking to establish the feasibility and/or options available in respect to implementing a district heating infrastructure there are a number of potential variations and/or level of detail that can be required. It is unlikely that there will be one model that fits all potential schemes and it will be important to look at the particular scheme to establish the best way forward.

In terms of viability there will be other measures than capital costs and short paybacks should be contributed a value. Ramboll's experience from Denmark is that district heating offers many environmental, social and in a longer perspective also economic benefits to a community or country as a whole.

The history of both large and medium scale district heating systems bears evidence that the scale of the investment and the length of the payback period make both the funding and the organisations implementing and operating the system very important when considering a scheme.

The delivery vehicle is frequently referred to as an Energy Services Company (ESCO) in the UK but a traditional ESCO is not necessarily always the answer. The scale of the technical installations, the complexity involved in the phasing of the scheme and the commercial arrangements could call for a different approach. Again the details of the specific scheme proposed will and should have an influence in the model chosen.

The requirements of those who finance schemes will have a strong influence over the chosen delivery vehicle, and the nature of energy supply agreements. They will lead to fundamental requirements that will include:

- Return on capital
- Servicing of debts
- Loan period
- Supply agreements

Looking at the history of district heating in the UK each of the models used in the past has been driven by Local Authority leadership, influenced by specific local priorities, and constrained by policies governing the apportionment of risk and public sector borrowing.

There is a variation on the ESCO model which has been termed a MUSCO (Multi Utility Services Company). This approach has not yet been implemented on any significant scale in the UK. The UK's largest MUSCO is currently being planned in London<sup>1</sup>.

Setting up the delivery model for a potential district heating scheme is often a study in itself.

The demand for flexibility could be the most serious obstacle to a framework contract with a private enterprise, but also the financing, which is essential to the future heat price. This is very important because it will influence the heat price and thereby the competitiveness of the scheme compared with the alternatives.

An obvious conclusion, therefore, could be that the delivery vehicle will have to be based on a public framework agreement, possibly including private stakeholders but with strong influence from local government. The planning requirements and the fuel poverty issue also point in the direction of a public enterprise.

The investment in the pipe network is substantial and long-term and developers often find it difficult to identify any special conditions that would make the scheme more attractive to them.

If we look at the most successful schemes in the UK, like Sheffield and Nottingham, they were originally set up by the city councils as public enterprises driven by social and environmental goals.

We are not aware of any modern district heating scheme in any part of the world that has been established without public investment or other public support mechanisms and it seems unlikely

---

<sup>1</sup> The London Borough of Southwark has determined that the regeneration of the Elephant & Castle district should be a model of sustainable development with particular focus on reducing the energy-related carbon footprint of the new developments. The regeneration is privately funded but facilitated by the public sector (LB Southwark), necessitating a private sector solution to the provision of low carbon energy services to the site.

that significant scaled scheme can go ahead without local authority initiative and financial support from either local or central government.

In section 7 we look a little further at non technical issues to consider when venturing into a district heating project.

## **7. OTHER DISTRICT HEATING NETWORK ISSUES**

There are a number of technical issues that have to be overcome to be able to establish a heat network but the development, installation and operation of a system has some very important aspects from the (relatively) short term engagement to the very long term operation and maintenance.

The following outlines some of the non-technical issues that need careful consideration and inclusion prior to the development of a heat network.

### **7.1 Local Authority and stakeholder engagement**

Engaging the Local Authority (LA) and other stakeholders early in the development process can result in a simplified marketing requirement.

A continued engagement will allow aspects of the future system to be explained and accepted. Many of the benefits that can be deployed through a district heating (DH) system can be relayed through local meetings and positive press coverage. It is important that, at this stage, robust technical and commercial support and guidance is offered to ensure that the correct technical and economical message is conveyed.

### **7.2 Marketing**

Marketing, particularly to third party potential business, is key in informing and reassuring. New developments that will have obligations under National Planning Policies may feel that their options are limited by the presence of a local heat network and will require gentle and informative guidance as to the benefits of a DH system. Typically discussions would concentrate on capital cost savings over a traditional solution, operational cost savings, reliability of operation, efficiency and controllability of the DH system and space saving. In many instances many aspects of building design can be simplified and enhanced by not having to design in space for boiler flues, for example.

A different approach can be taken with existing buildings whose heating plant has reached, or is about to reach, the end of its working life. In many cases a need is automatically created and can be met with a DH connection. Discussions at this stage can typically involve speed of solution and cost rather than the other benefits.

Maintaining a close awareness of existing buildings without an immediate need for a connection will be an ongoing activity until such time that their heating system comes to the end of its working life. Other factors like fuel price or modernisation may accelerate a change.

Clearly these activities will require resources – particularly at the outset – maintained throughout the business via the use of a computerised customer database.

### **7.3 Local Authority involvement**

The LA involvement is essential in creating the correct environment for the success of a DH system. Much of the assistance that the LA can contribute is the coordinated view of new and existing development when considered from a LDF perspective. This critical element will provide an, as yet, developing DH system useful foresight of potential future business.

Close cooperation with the Planning Department will help develop a coordinated approach to helping the LA adhere to National Planning Policies particularly with respect to Energy and Sustainability.

A continued dialogue and understanding with the 'Highways' department will ensure that the installation of the DH apparatus in LA possessed land can be identified to ease the financial and technical risks involved in the ongoing development.

Ideally a LA would want to have cross-party consensus on the development of a DH system but it is important that such a development should have, at least, a champion at Councillor level; if not at Officer level. Maintaining the political will for such a scheme in the early days of development can provide a powerful boost to the uptake of a DH system.

## **7.4 Operating company**

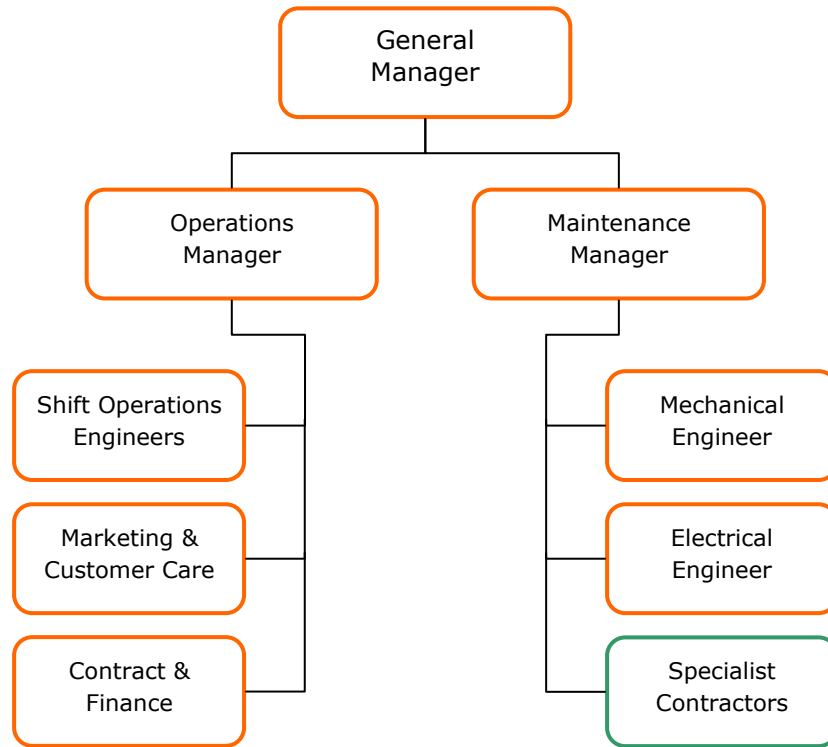
### **7.4.1 Structure**

Very early in the conceptual stage of business development, a decision has to be made regarding the future structure of the Operating Company. Typically, reference is made to an Energy Services Company (ESCo); this being a common offered solution. In reality the formation of an operating company can be borne out of the inclusion of a number of sources and be quite fluid in its structure.

If the LA is driving the initial agenda, it is they who can provide the initial staff to operate the Company. LAs have a broad skills base from which they can second specific requirements until such time as the company can recruit. Typically resources from housing, engineering, highways and finance departments would have the skills base to provide assistance and may be able to be seconded on an extended or permanent basis.

More specialist skills that are unique to DH systems, e.g. pre-insulated pipe laying will have to be contracted in. It is unlikely that the Company would become sufficiently large enough to directly employ such specialism but it could share this with neighbouring developments as the demand increases.

The size of the initial business may preclude a formal structure but the diagram below indicates a typical organisation.



**Figure 3: Typical organisational structure.**

A General Manager will be required to provide the company figurehead, take responsibility for business development and interaction with shareholders and key stakeholders. The General Manager will be instrumental in driving expansion and growth.

The identification of a separate Operation and Maintenance work streams is to ensure that sufficient importance is allocated to each. The asset base will grow to a multi-million pound responsibility and the Company should ensure that sufficient resources are allocated to its long term care.

The Maintenance team may need to grow over the early years, depending upon the intended size of the DH system. It is prudent to identify this team early on to allow familiarisation by the team of the technology. This is critical in engendering confidence in the new customers of the system, particularly in the very early months of operation.

Specialist services should be handled by contractors and this can often lead to a long term partnership through which benefits and security can be developed.

The Operational work stream is no less important but has a different kind of imperative. It can also be seen to compose of a technical and a non-technical requirement.

The technical operation of the system ideally requires constant monitoring and control to take place. A control facility will have to be established for both the energy production and the DH network. This can act independently of labour but it is not possible to make all decisions and manual intervention is ultimately required. Decision making for the operational strategy – which can change periodically – has to be carried out. Finally the whole DH system has to be monitored for correct operation and for information feedback to the Maintenance work stream.

The non-technical element of the work requires marketing, contract and financing skills and again these can be seconded in. Marketing skills should be seen as an early requirement to assist in the development and acceptance of the concept of the DH system. Finance and contract issues will

require sufficient resources to ensure revenues are secured. This will require suitable operational assistance from accurate metering and data collection.

It is possible, of course, to outsource some or all of these work streams but whatever the set-up of the operating company might be, it is necessary to have a core staff dedicated to the operation of the system. It is important to ensure a high degree of stability in staff so that the lessons learned during the operation of the system can be more effectively adopted in the operation strategy. It is for this reason, though, that it should be carefully considered whether the operation should be outsourced.

#### **7.4.2 Delivery Vehicle**

The size and structure of an operating company, be it a traditional ESCo or any other arrangement, will depend on the duties undertaken by that specific company and whether these duties include maintenance.

There are a number of models that can be identified which can be used to establish an 'ESCo'. Each of these models can be driven by Local Authority leadership, influenced by specific local priorities, and constrained by policies governing the apportionment of risk and public sector borrowing and can be broadly characterised into five models:

- Private enterprise driven by public sector framework agreement
- Private enterprise driven by public sector stakeholding
- Social enterprise driven by public sector stakeholding
- Social enterprise driven by consumer and public sector stakeholding
- Public enterprise driven by social and environmental goals

The variations between these models are largely the result of the following factors:

- Public sector borrowing: The need to minimise borrowing that would appear on a Local Authorities balance sheet, as required by Central Government.
- Exposure to risk: The need to minimise the potential exposure of a Local Authority to financial risk if an ESCo was to default on finance repayments.
- Expansion and replication: The ability of the ESCo and its partners to expand and replicate energy networks across towns and cities.
- Social and environmental goals: The ability of an ESCo to strategically deliver on social and environmental goals in the short, medium and long term.

#### **7.4.3 Financing**

Clearly the ongoing access to finance to further develop the DH system is an essential element of the success of the system.

Whether through public borrowing, privately provided debt or equity finance or European infrastructure investment funds, the cash flow for repayment will need to generate sufficient surplus to cover the lenders required rate of return.

The lender will need to be provided with sufficient security in the event that the ESCo is unable to service its debts. This could take the form of equity geared finance but can also be in the form of energy supply contracts particularly if sufficient number of contracted anchor loads can be secured – often this can come from the LA controlled buildings.

The period of the loan repayment could vary from 5-20 years for Bank debt finance or private equity, to 10-15 years or more for public sector borrowing or European investment funds or a

combination of a number of sources. Clearly care has to be taken to ensure the financing matches the long term business plan.

Debt risk has to be sufficiently factored into any financing arrangements with individual housing typically carrying the highest debt risk. This can be mitigated through contracting with the housing provider who will have already factored this into their business models.

#### **7.4.4 Contract arrangements**

The type and duration of the energy supply contracts will be intrinsically linked to the financing options open to the ESCo.

Energy supply contracts can be made up of a number of items ranging from a balance of capital and revenue, including operational incentives and penalties.

It may be possible to require consumers to pay the full cost of heating connections, thereby reducing the risk associated with recovery of capital costs through an availability charge. This, though, can often make connections to smaller buildings unviable. Larger ESCos may have the financial strength to offset some of the capital cost through an availability charge, making connection more attractive financially to building developers and managers. The balance of the capital cost recovered from the long term revenue of the energy charge.

District heating, by its very nature, represents a monopoly supply but this is necessary to securitize the high capital costs. This, however, can raise concerns for customers – particularly commercial building managers who may have the ability to negotiate wholesale energy tariffs. It is therefore important that supply agreements are transparent and linked to retail and/or fuel price indices to ensure they remain competitive throughout the life of the contract.

Variable and optional contract elements can include time weighted tariffs to reward the avoidance of demanding heat at peak times. Operational 'cooling' tariffs ensure that the building connected to the DH system consumes energy correctly (kWh/m<sup>3</sup> DH water delivered).

### **7.5 Building surveying/Optimisation**

Identifying existing buildings capable of being connected to a DH system will initially involve ascertaining whether they have a 'wet' heating system, typically those using radiators.

Clearly buildings that have electric based heating systems will not be suitable without significant modification. This work is still possible and has been typified, for example, in the refurbishment of tower blocks originally built with electric underfloor heating.

Buildings that are notionally able to connect to a DH system may still need to be determined for suitability. Many heating systems are designed using old design techniques applicable to coal fired heat generation and are not suitable for DH without some modification.

Whilst the process of surveying a single building is not time consuming, the process of surveying all buildings initially highlighted for connection will require a carefully structured programme of work. The interpretation and determination of any solution required will then have to be disseminated to the building owner to start the process of optimisation.

Optimisation of building heating systems requires careful adaptation and negotiation with the building owner. This activity can be time consuming and must be considered at the earliest opportunity as the process may take several months and require investment to undertake. It is possible that evidence of the operating parameters has to be gained prior to an assessment being complete and this could require a winter period being monitored further adding time to the

process. It is possible that this process can create an unpopular environment between building owner and DH operator so it is critical that the impact and potential disruption are communicated as soon as possible. It is often the maintenance staff of the building that can provide the most insight into a building heating system and building a close working relationship with these people can simplify the optimisation process.

## **7.6 Planning**

An important and inherent part of the implementation plan is the need to assess the potential of connecting heat loads beyond the original scope. This may include areas beyond which any control can be employed.

It is quite possible that in situations where heat loads surround a boundary between LAs, for example, it should be considered that these heat loads can form part of the scope of the system. Careful coordination with neighbouring LAs should take place to ensure the optimum solution for cross-border heat supply is arranged.

The identification of buildings currently in the planning process should be considered carefully as to whether they can form part of a future system. The development of a DH system may take several years by which time any building having previously identified through the planning process, is likely to have been completed with a conventional energy source. Whilst the building may still be able to be connected, the building owner is likely to be left with a stranded asset.

## **7.7 Licensing and Legislation**

Any new Energy Centres will require planning consent under the standard procedure required of by the Town and Country Planning Act 1990.

Emissions from installations with a gross energy input of more than 50MW will be legislated under the auspices of the IPPC Directive. The Directive has a number of requirements that the ESCo will have to adhere to. The ESCo shall need to demonstrate that BAT techniques have been employed, that a suitable Environmental Management System is in place with robust control systems and procedures and that a full understanding of the releases to atmosphere can be shown.

Emissions from installations with a gross energy input below 20MW will require approval to be granted by the Local Planning Authority.

The installation of pipework into the ground will require to be carried out under the provisions of the Roads and Street Works Act 1991 and the Traffic Management Act 2004. This provision is applicable in the case of land under the control of the Local Highway Authority, TfL or other statutory body (Authority). The Authority can grant licenses to install and maintain apparatus but also can constrain when and for how long the highway can be opened for. Considerations such as traffic sensitivity, bus and ambulance routes will determine the working window for pipe installations and maintenance. Knowledge of these potential restrictions must be part of the detailed planning to ensure that the capital (and subsequent maintenance) costs are not adversely affected.

When pipework and equipment is installed in land not controlled by the Authority, the ESCo will have to enter into negotiation with the land owner(s) for this right. This can be a lengthy and costly process as legal agreements will have to be drawn up in advance of any work being carried out. The cost of this work plus the ongoing (annual) charges, likely to be levied by the land owner, should be weighed up against the additional capital cost of a less direct pipe route.

Generally District Heating undertakings are classified as a Specialist Rating Unit (SRU) class and the responsibility of the rating lies with one of the regional SRUs. Valuation of the equipment has been a matter of discussion for some years but the VOA adopts a policy that such undertakings should be valued under the Contractor's Basis. There generally is a potential for reasoned discussion with the regional SRU regarding the final valuation.

## 8. RECOMMENDATIONS & WAY FORWARD

Ramboll's experience is that district heating offers many environmental, social and in a longer perspective, economic benefits to a community or country as a whole. For example, around 60% of all households in Denmark are connected to a heat network with three-quarters of that heat supplied as waste heat from CHP plants, some of which are biomass fueled. A further 12% comes from waste incineration, 6% is biomass burned in boilers and 3% is industrial waste heat. Only the remaining 4% is natural gas or oil used in back up boilers during peak demand or to provide spare capacity in case of emergency or maintenance.

Eight Focus Areas were identified in this study and ranked in the following order;

South Acton – High  
Ealing Metropolitan Centre / Green Man Lane – High

Copley Estate – Medium/High  
Farrier Rd/Union Rd – Medium/High

Ealing Hospital/Hanwell - Medium

Southall – Low  
Greenford Rd - Low  
North Acton - Low

The heat network proposals for the Borough of Ealing and others like it are fundamental to the UK and its environmental targets. Hitherto, there has been insufficient importance placed on the role heat networks can play in the future energy demands of the country.

Recently though the UK has finally seen heat moving up the political agenda. Heat and its production and utilisation are being discussed through various consultations. This heat map study and future potential implementation of schemes is timely and can show the way forward.

The investment in a heat network and can be considerable and it is important that the work is planned to reduce risks.

When implementing district heating there are a number of good practices and recommendations in relation to the design and installation that have been developed over the years.

This study is a very early high level assessment of the potential network locations. The next phase should be to complete a more detailed feasibility study of the preferred schemes as a whole.

- A detailed and more in-depth study would examine the heat demands and their connection to a district heating system in more detail.
- Due to the varying sizes of the district heating networks considered in this study and to fully consider the potential for a Borough-wide approach, a more detailed study needs to consider the transmission/distribution network approach as to what will be the best technical solution in combination with the viability of the scheme.

- The investment is significant and a more detailed study should look at phasing the implementation of the heat networks and look at reducing the investment risk.
- A detailed cost analysis and viability calculation based on whole life cost should be carried out on each network.

It is likely that even following a detailed feasibility study that a number of questions and uncertainties will remain. These should be thoroughly investigated and/or determined directly.

The detailed specification for the installation and maintenance of the district heating network is something worth considering as early as possible in the project process. This helps to gain greater certainty for both the capital and operating costs.

Ramboll would recommend that;

- A feasibility study or number of feasibility studies be undertaken for each of the recommended Focus Areas potential heat networks.
- A study should be undertaken to determine what other buildings, not identified within the scope of this study, could form part of the core heat networks.
- For each heat network an additional investigation should be undertaken to consider the network and the heat production facility in more detail.
- A study should be undertaken to determine the heat data for buildings that this study was unable to retrieve
- A study should be undertaken to determine how the heat energy demands for the Borough – as a whole - can be met, particularly from low carbon sources. This work should be considered in light of the developing heat networks.
- Consideration should be given to determining an overarching energy plan with all neighbouring Boroughs.

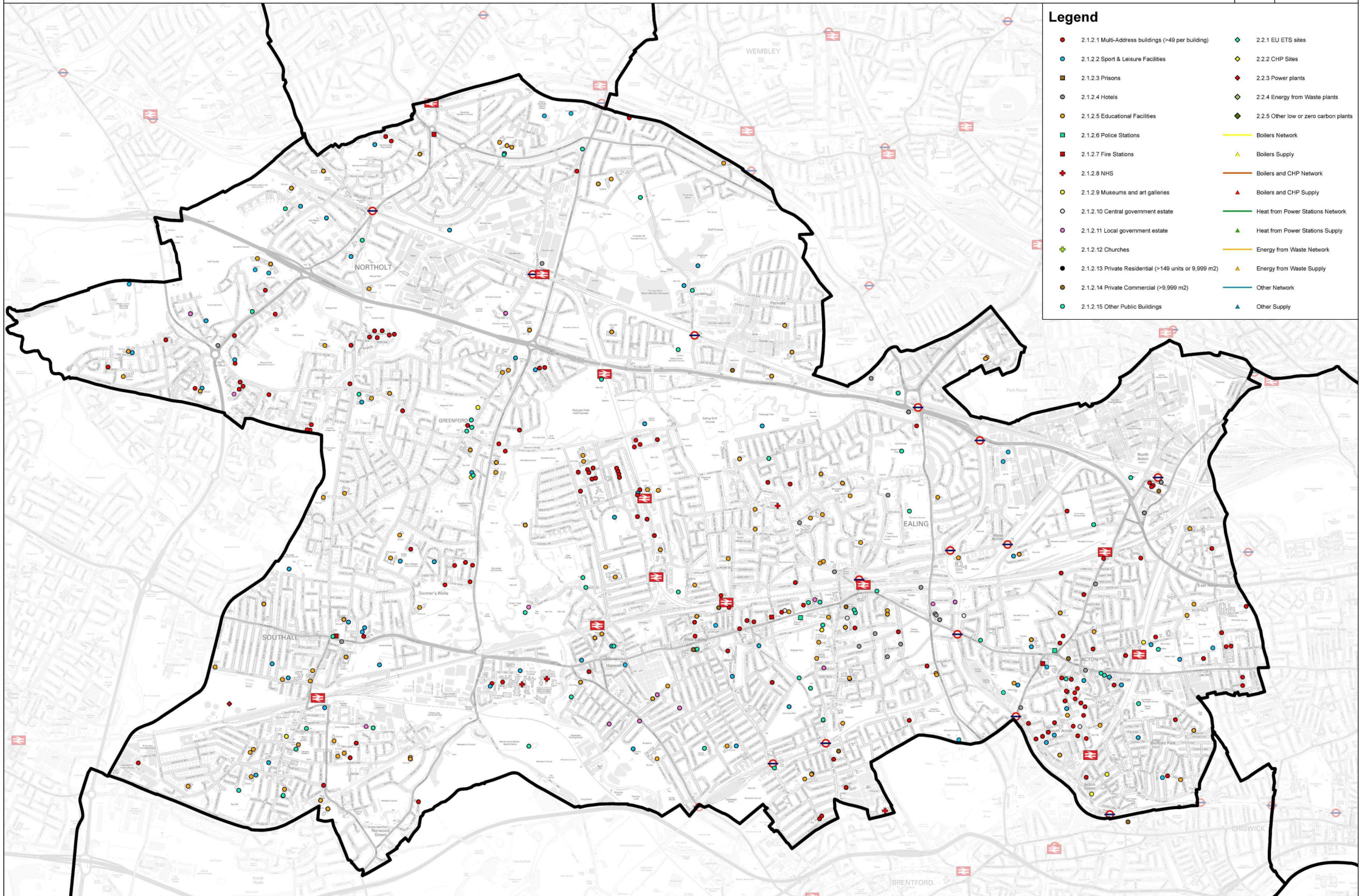
Once the decision has been taken to establish a district heating scheme it is Ramboll's experience that the next stage should be a preliminary design.

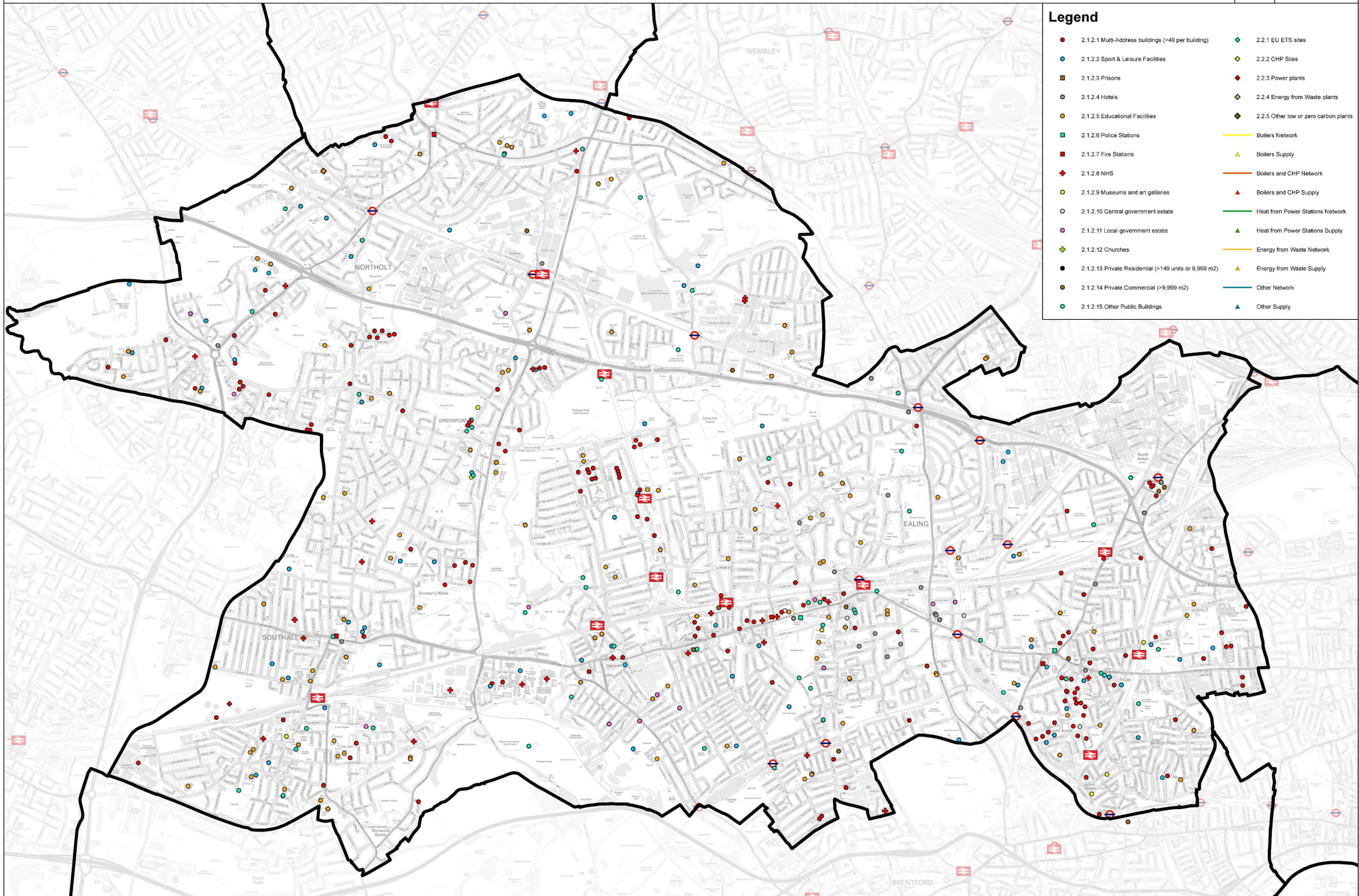
The project process can be listed as below, what is included within the different stages will depend on time and budget available but it is important to the success of the scheme that it is planned and investigated thoroughly.

- Feasibility study – can be carried out at different levels
- Preliminary design
- Detailed design
- Tendering / procurement
- Construction management
- Supervision
- Commissioning

Legend

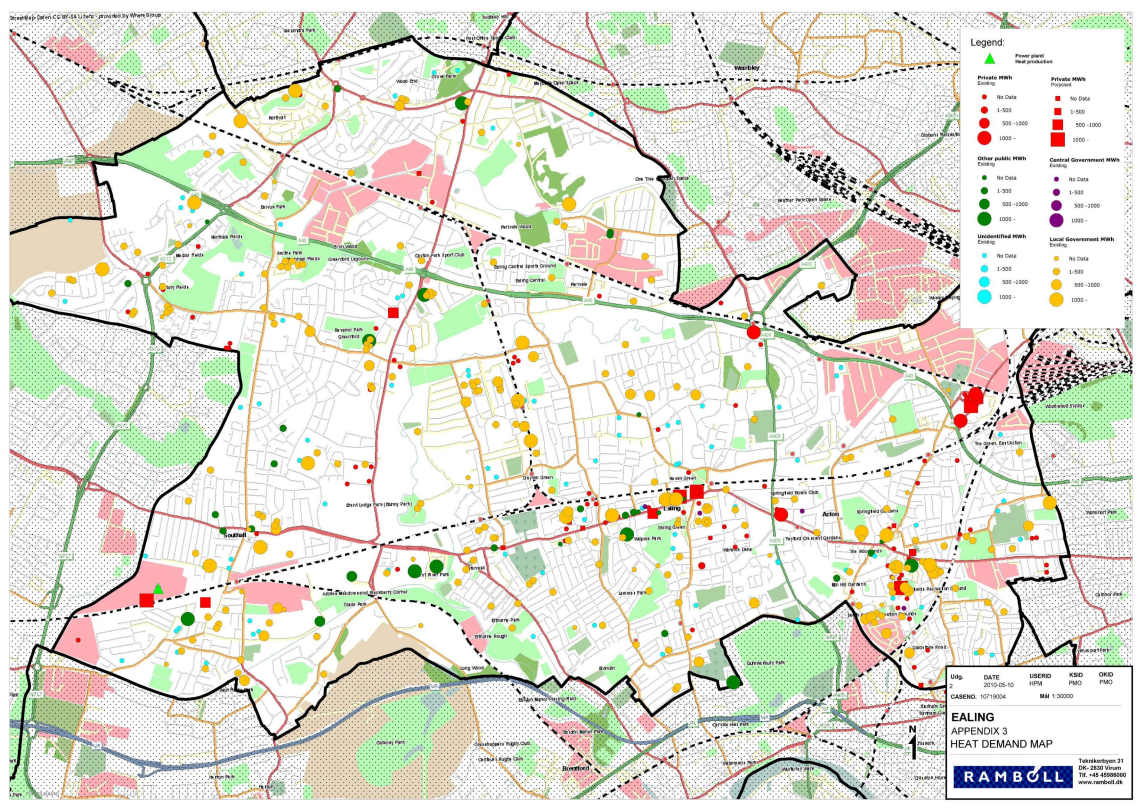
- |  |   |
|--|---|
| ● 2.1.2.1 Multi-Address buildings (>49 per building)                 | ◆ 2.2.1 EU ETS sites                    |
| ● 2.1.2.2 Sport & Leisure Facilities                                 | ◆ 2.2.2 CHP Sites                       |
| ■ 2.1.2.3 Prisons  | ◆ 2.2.3 Power plants                    |
| ○ 2.1.2.4 Hotels   | ◆ 2.2.4 Energy from Waste plants        |
| ● 2.1.2.5 Educational Facilities                                     | ◆ 2.2.5 Other low or zero carbon plants |
| ■ 2.1.2.6 Police Stations  | — Boilers Network                       |
| ■ 2.1.2.7 Fire Stations  | ▲ Boilers Supply                        |
| ■ 2.1.2.8 NHS  | — Boilers and CHP Network               |
| ● 2.1.2.9 Museums and art galleries                                  | ▲ Boilers and CHP Supply                |
| ○ 2.1.2.10 Central government estate                                 | — Heat from Power Stations Network      |
| ○ 2.1.2.11 Local government estate                                   | ▲ Heat from Power Stations Supply       |
| ■ 2.1.2.12 Churches  | — Energy from Waste Network             |
| ● 2.1.2.13 Private Residential (>140 units or 9,999 m <sup>2</sup> ) | ▲ Energy from Waste Supply              |
| ● 2.1.2.14 Private Commercial (>9,999 m <sup>2</sup> )               | — Other Network                         |
| ● 2.1.2.15 Other Public Buildings                                    | ▲ Other Supply                          |





### Legend

● 2.1.2.1 Multi-Address buildings (>49 per building)	◆ 2.2.1 EU ETS sites
● 2.1.2.2 Sport & Leisure Facilities	◆ 2.2.2 CHP Sites
■ 2.1.2.3 Prisons	◆ 2.2.3 Power plants
○ 2.1.2.4 Hotels	◆ 2.2.4 Energy from Waste plants
● 2.1.2.5 Educational Facilities	◆ 2.2.5 Other low or zero carbon plants
■ 2.1.2.6 Police Stations	— Boilers Network
■ 2.1.2.7 Fire Stations	▲ Boilers Supply
✚ 2.1.2.8 NHS	— Boilers and CHP Network
● 2.1.2.9 Museums and art galleries	▲ Boilers and CHP Supply
○ 2.1.2.10 Central government estate	— Heat from Power Stations Network
○ 2.1.2.11 Local government estate	▲ Heat from Power Stations Supply
✚ 2.1.2.12 Churches	— Energy from Waste Network
● 2.1.2.13 Private Residential (>149 units or 9,999 m <sup>2</sup> )	▲ Energy from Waste Supply
● 2.1.2.14 Private Commercial (>9,999 m <sup>2</sup> )	— Other Network
● 2.1.2.15 Other Public Buildings	▲ Other Supply



**Legend:**

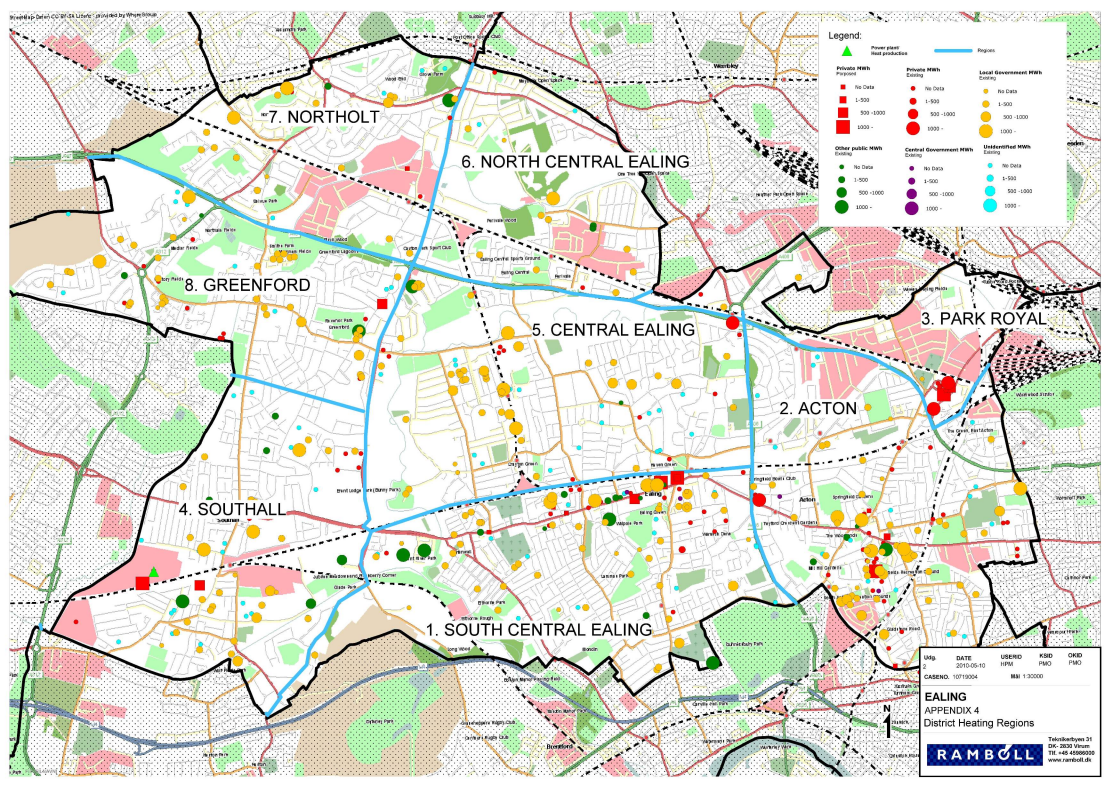
- Power plant heat production
- Private MHW Existing**
  - No Data
  - 1-500
  - 500-1000
  - 1000+
- Other public MHW Existing**
  - No Data
  - 1-500
  - 500-1000
  - 1000+
- Unidentified MHW Existing**
  - No Data
  - 1-500
  - 500-1000
  - 1000+
- Central Government MHW Existing**
  - No Data
  - 1-500
  - 500-1000
  - 1000+
- Local Government MHW Existing**
  - No Data
  - 1-500
  - 500-1000
  - 1000+

Urb	DATE	USERID	KSID	OKID
2	2010-05-10	HFM	FHM0	FHM0
CASENO:	10119004	MIM	1.30000	

**EALING APPENDIX 3 HEAT DEMAND MAP**

**RAMBOLL**

Toukokuoyon 31  
 Chiyoda-ku, Tokyo  
 TEL: +81-45-8009500  
 www.ramboll.co.jp



**Legend:**

- Power plant heat production: Green triangle
- Regions: Blue line

Private MW Production	Private MW Existing	Local Government MW Existing
No Data	No Data	No Data
1-500	1-500	1-500
500-1000	500-1000	500-1000
1000+	1000+	1000+

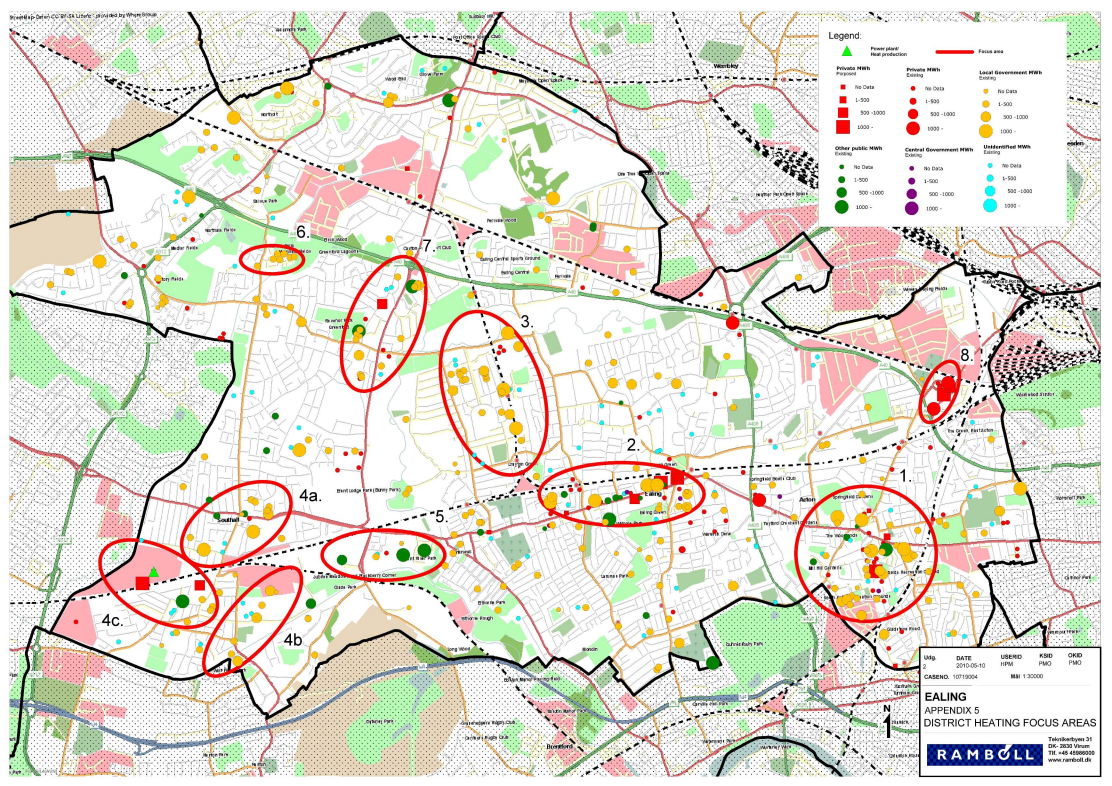
Other public MW Existing	Central Government MW Existing
No Data	No Data
1-500	1-500
500-1000	500-1000
1000+	1000+

Urb DATE 2010-05-10 USERID HPM KSD PMS OKID PMS  
 CASENO. 10119304 MBI 1 30000

**EALING**  
 APPENDIX 4  
 District Heating Regions

**RAMBOLL**

Two Oak Grove 21  
 Old 2020 Street  
 TEL +45 45009500  
 www.ramboll.dk



**Legend:**

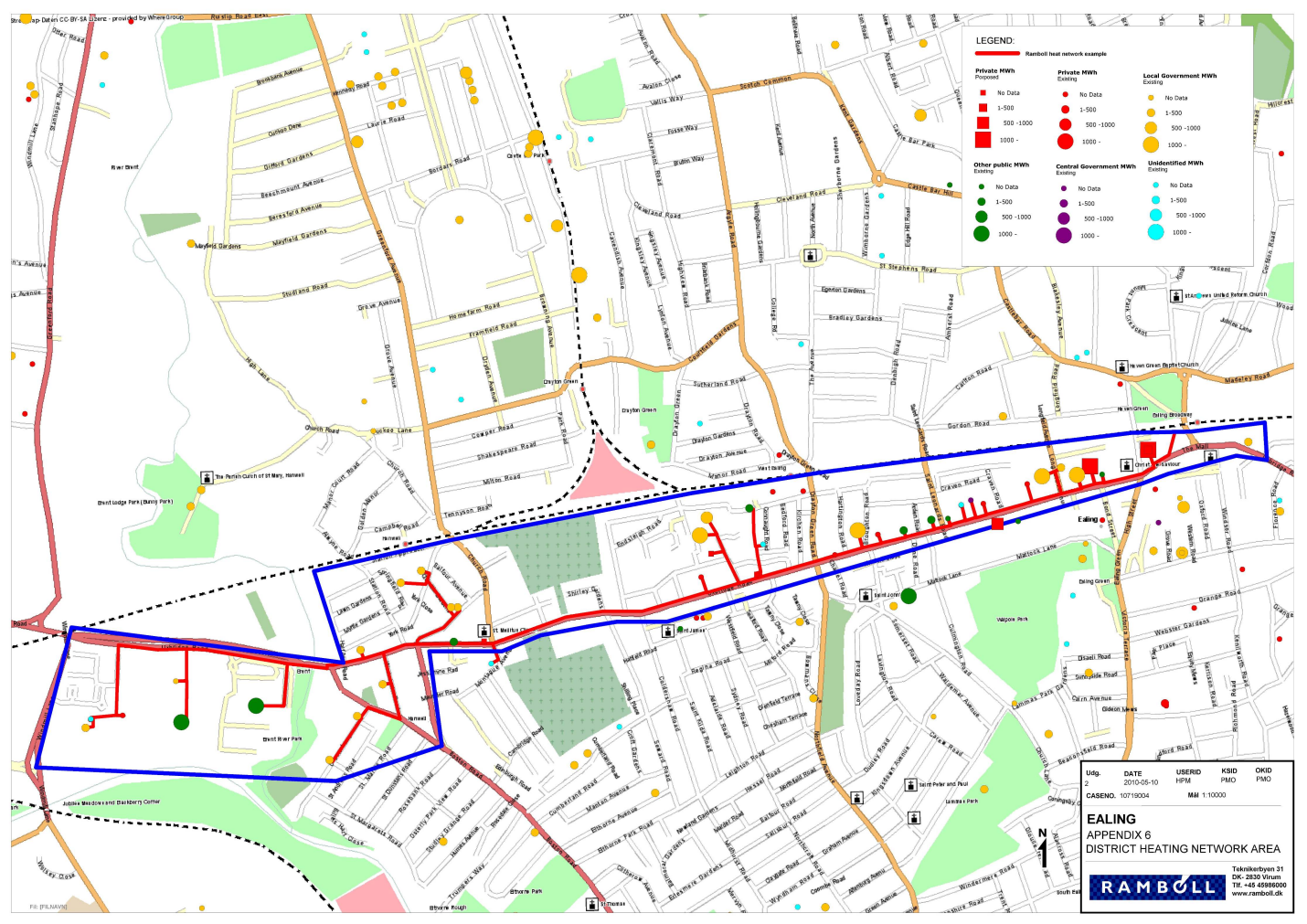
- Power plant: Heat production (Green triangle)
- Focus area (Red line)
- Private MWH Existing:
  - No Data (Red square)
  - 1-500 (Red square)
  - 500-1000 (Red square)
  - 1000+ (Red square)
- Private MWH Esting:
  - No Data (Red circle)
  - 1-500 (Red circle)
  - 500-1000 (Red circle)
  - 1000+ (Red circle)
- Local Government MWH Existing:
  - No Data (Yellow circle)
  - 1-500 (Yellow circle)
  - 500-1000 (Yellow circle)
  - 1000+ (Yellow circle)
- Other public MWH Existing:
  - No Data (Green circle)
  - 1-500 (Green circle)
  - 500-1000 (Green circle)
  - 1000+ (Green circle)
- Central Government MWH Existing:
  - No Data (Purple circle)
  - 1-500 (Purple circle)
  - 500-1000 (Purple circle)
  - 1000+ (Purple circle)
- Undeclared MWH Existing:
  - No Data (Cyan circle)
  - 1-500 (Cyan circle)
  - 500-1000 (Cyan circle)
  - 1000+ (Cyan circle)

Urb DATE 2010-05-10 USERID HPM KSD PMS OKID PMS  
 CASENO. 10119304 MBI 1 3000

**EALING**  
**APPENDIX 5**  
**DISTRICT HEATING FOCUS AREAS**

**RAMBOLL**

Tweebakken 31  
 DK-2600 Slørns  
 TEL +45 45999700  
 www.ramboll.dk



**LEGEND**

Ramboll heat network examples

<b>Private MWH Proposed</b>	<b>Private MWH Existing</b>	<b>Local Government MWH Existing</b>
■ No Data	● No Data	● No Data
■ 1-500	● 1-500	● 1-500
■ 500-1000	● 500-1000	● 500-1000
■ 1000 -	● 1000 -	● 1000 -
<b>Other public MWH Existing</b>	<b>Central Government MWH Existing</b>	<b>Undeveloped MWH Existing</b>
● No Data	● No Data	● No Data
● 1-500	● 1-500	● 1-500
● 500-1000	● 500-1000	● 500-1000
● 1000 -	● 1000 -	● 1000 -

Udg. DATE USERID KSID OKID  
 2 2010-05-10 HPM PNO PNO  
 CASENO. 10719004 Mbl 1:10000

**EALING**  
 APPENDIX 6  
 DISTRICT HEATING NETWORK AREA

**RAMBOLL**

Takaraköy 31  
 DK-2830 Sluis  
 Tlf. +45 48989000  
 www.ramboll.dk



## General Guidance

### **OXS & OYS**

The X & Y fields must be completed for all Heat Loads and Heat Supply Plants.

The X & Y values used for a site should match the X & Y values found in the address point for that building (using the OS Address Point database).

Where no address point is available the X & Y value must be within the boundary of the building.

DO NOT use an X & Y value from a post code, as these represent several addresses and will not position the site in its correct location.

For more detailed information please refer to the data collection methodology.

### **DH Networks**

Any DH Networks entries must be accompanied by a shapefile or drawing of the actual network so it can be added to the Heat Map website.

These attached files should have the same name as the site they refer to.

If there are 2 sites with the same name, please further identify each file so the correct attachment can be matched to the site.



**Major Heat Loads**

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP (MWh/year)	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
			NONE																					
<b>TOTAL</b>											<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

	Manual input (wording)
	Select from drop-down list
	Mandatory input
	Desirable input

Major Heat Loads

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
518,413	182,571		Crowne Plaza London Ealing	Western Avenue Hanger Lane	W5 1HG	Private	No	(> 99 units or 4,999 m2)			2735.28		7,598	131									internet	No
520,692	181,598		Ramada Encore London West	4 Portal Way, London	W3 6RT	Private	No	(> 99 units or 4,999 m2)			3132		8,700	150									internet	No
520,855	181,892		Express by Holiday Inn London Park	Victoria Road, London	W3 6XU	Private	No	(> 99 units or 4,999 m2)			2171.52		6,032	104									internet	No
518,714	180,566		Ramada London Ealing	Ealing Common, London	W5 3HN	Private	No	(> 99 units or 4,999 m2)			3946.32		10,962	189									internet	No
517302	180579		Proposed Travelodge Hotel	77 Uxbridge Road Ealing Lond	W5 5ST	Private	Yes	(> 99 units or 4,999 m2)	Natural gas		961.2044	70	2,748		0.02								P/2009/2012	No
<b>TOTAL</b>											<b>11,985</b>	<b>0</b>	<b>33,292</b>	<b>574</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

	Manual input (wording)
	Select from drop-down list
	Mandatory input
	Desirable input



Major Heat Loads

DATA TO BE PROVIDED BY THE LDA

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
517,368	180,587		Falino Police Station	67-69 Uxbridge Road, Lond	W5 5S	Other public	No	Police stations																
519,824	180,268		Acton Police Station	250 High Street, Acton	W3 9BH	Other public	No	Police stations																
514,194	182,439		Greenford Police Station	21 Oldfield Lane, Greenfor	UB6 9LO	Other public	No	Police stations																
513,072	180,378		Southall Police Station	67 High Street, Southall	UB1 3HG	Other public	No	Police stations																
TOTAL											0	0	0	0	0.00	0.00	0.00	0	-	-	-	-	-	-

Manual input (wording)
Select from drop-down list
Mandatory input
Desirable input

Major Heat Loads

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP (MWh/year)	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
519681	180080		Acton G26	27 Gunnersbury Lane	W3 8EA	Local government	No	Fire stations	Central Boilers	Natural gas	399	0	1,836	1.00	0.235	0.00	0.00		1938	08/09				No
513827	185250		Northholt G31	74 Petts Hill	UB5 4JT	Local government	No	Fire stations	Central Boilers	Natural gas	242	21	712	1.00	0.265	0.02	0.01		1963	08/10				No
512904	180395		Southall G24	17-19 High Street	UB1 3HA	Local government	No	Fire stations	Central Boilers	Natural gas	260	21	633	1.00	0.265	0.02	0.01		1965	08/11				No
517089	180592		Ealing G25	60-64 Uxbridge Road	W13 8RA	Local government	No	Fire stations	Central Boilers	Natural gas	95	0	1,153	1.00	0.229	0.00	0.00		1933	08/12				
<b>TOTAL</b>											<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

Manual input (wording)
Select from drop-down list
Mandatory input
Desirable input



Major Heat Loads

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
512401	179440		Dominion Arts Education Centre	114 The Green, Southall	UB2 4BQ	Local government	No	Museums & Art Galleries		Natural gas	405		1,200					74.98					NI 185	No
517575	180467		Pitzhanger Manor & Gallery	Walpole Park, Mattock Lane, Ea	W5 5EQ	Local government	No	Museums & Art Galleries		Natural gas	321		1,950					59.33					NI 185	No
<b>TOTAL</b>											<b>726</b>	<b>0</b>	<b>3,150</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>134</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

Manual input (wording)
Select from drop-down list
Mandatory input
Desirable input

**Major Heat Loads**

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP (MWh/year)	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
											0	0	0	0	0.00	0.00	0.00	0	-	-	-	-	-	-
<b>TOTAL</b>											<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

	Manual input (wording)
	Select from drop-down list
	Mandatory input
	Desirable input

Year	Month	Day	Event	Location	Time	Category	Sub-category	Priority	Status	Responsible	Start Date	End Date	Duration	Cost	Revenue	Profit	Loss	Net	Margin	ROI	Notes
2019	01	01	Event A	Location A	10:00	Category 1	Sub-category 1	High	Completed	John Doe	2019-01-01	2019-01-01	1d	1000	2000	1000	0	100%	200%	Event A successful	
2019	01	02	Event B	Location B	11:00	Category 2	Sub-category 2	Medium	Completed	Jane Smith	2019-01-02	2019-01-02	1d	800	1600	800	0	100%	200%	Event B successful	
2019	01	03	Event C	Location C	12:00	Category 3	Sub-category 3	Low	Completed	Mike Johnson	2019-01-03	2019-01-03	1d	600	1200	600	0	100%	200%	Event C successful	
2019	01	04	Event D	Location D	13:00	Category 4	Sub-category 4	High	Completed	Sarah Brown	2019-01-04	2019-01-04	1d	900	1800	900	0	100%	200%	Event D successful	
2019	01	05	Event E	Location E	14:00	Category 5	Sub-category 5	Medium	Completed	David Green	2019-01-05	2019-01-05	1d	700	1400	700	0	100%	200%	Event E successful	
2019	01	06	Event F	Location F	15:00	Category 6	Sub-category 6	Low	Completed	Emily White	2019-01-06	2019-01-06	1d	500	1000	500	0	100%	200%	Event F successful	
2019	01	07	Event G	Location G	16:00	Category 7	Sub-category 7	High	Completed	Chris Black	2019-01-07	2019-01-07	1d	850	1700	850	0	100%	200%	Event G successful	
2019	01	08	Event H	Location H	17:00	Category 8	Sub-category 8	Medium	Completed	Alex Blue	2019-01-08	2019-01-08	1d	650	1300	650	0	100%	200%	Event H successful	
2019	01	09	Event I	Location I	18:00	Category 9	Sub-category 9	Low	Completed	Mia Purple	2019-01-09	2019-01-09	1d	450	900	450	0	100%	200%	Event I successful	
2019	01	10	Event J	Location J	19:00	Category 10	Sub-category 10	High	Completed	Noah Yellow	2019-01-10	2019-01-10	1d	950	1900	950	0	100%	200%	Event J successful	
2019	01	11	Event K	Location K	20:00	Category 11	Sub-category 11	Medium	Completed	Liam Grey	2019-01-11	2019-01-11	1d	750	1500	750	0	100%	200%	Event K successful	
2019	01	12	Event L	Location L	21:00	Category 12	Sub-category 12	Low	Completed	Olivia Pink	2019-01-12	2019-01-12	1d	550	1100	550	0	100%	200%	Event L successful	
2019	01	13	Event M	Location M	22:00	Category 13	Sub-category 13	High	Completed	Ethan Green	2019-01-13	2019-01-13	1d	800	1600	800	0	100%	200%	Event M successful	
2019	01	14	Event N	Location N	23:00	Category 14	Sub-category 14	Medium	Completed	Ava Blue	2019-01-14	2019-01-14	1d	600	1200	600	0	100%	200%	Event N successful	
2019	01	15	Event O	Location O	00:00	Category 15	Sub-category 15	Low	Completed	Lucas Purple	2019-01-15	2019-01-15	1d	400	800	400	0	100%	200%	Event O successful	
2019	01	16	Event P	Location P	01:00	Category 16	Sub-category 16	High	Completed	Sophia Yellow	2019-01-16	2019-01-16	1d	900	1800	900	0	100%	200%	Event P successful	
2019	01	17	Event Q	Location Q	02:00	Category 17	Sub-category 17	Medium	Completed	Benjamin Grey	2019-01-17	2019-01-17	1d	700	1400	700	0	100%	200%	Event Q successful	
2019	01	18	Event R	Location R	03:00	Category 18	Sub-category 18	Low	Completed	Charlotte Pink	2019-01-18	2019-01-18	1d	500	1000	500	0	100%	200%	Event R successful	
2019	01	19	Event S	Location S	04:00	Category 19	Sub-category 19	High	Completed	Liam Blue	2019-01-19	2019-01-19	1d	850	1700	850	0	100%	200%	Event S successful	
2019	01	20	Event T	Location T	05:00	Category 20	Sub-category 20	Medium	Completed	Olivia Purple	2019-01-20	2019-01-20	1d	650	1300	650	0	100%	200%	Event T successful	
2019	01	21	Event U	Location U	06:00	Category 21	Sub-category 21	Low	Completed	Ethan Yellow	2019-01-21	2019-01-21	1d	450	900	450	0	100%	200%	Event U successful	
2019	01	22	Event V	Location V	07:00	Category 22	Sub-category 22	High	Completed	Ava Grey	2019-01-22	2019-01-22	1d	950	1900	950	0	100%	200%	Event V successful	
2019	01	23	Event W	Location W	08:00	Category 23	Sub-category 23	Medium	Completed	Lucas Pink	2019-01-23	2019-01-23	1d	750	1500	750	0	100%	200%	Event W successful	
2019	01	24	Event X	Location X	09:00	Category 24	Sub-category 24	Low	Completed	Sophia Blue	2019-01-24	2019-01-24	1d	550	1100	550	0	100%	200%	Event X successful	
2019	01	25	Event Y	Location Y	10:00	Category 25	Sub-category 25	High	Completed	Benjamin Purple	2019-01-25	2019-01-25	1d	800	1600	800	0	100%	200%	Event Y successful	
2019	01	26	Event Z	Location Z	11:00	Category 26	Sub-category 26	Medium	Completed	Charlotte Yellow	2019-01-26	2019-01-26	1d	600	1200	600	0	100%	200%	Event Z successful	
2019	01	27	Event AA	Location AA	12:00	Category 27	Sub-category 27	Low	Completed	Liam Grey	2019-01-27	2019-01-27	1d	400	800	400	0	100%	200%	Event AA successful	
2019	01	28	Event AB	Location AB	13:00	Category 28	Sub-category 28	High	Completed	Olivia Pink	2019-01-28	2019-01-28	1d	900	1800	900	0	100%	200%	Event AB successful	
2019	01	29	Event AC	Location AC	14:00	Category 29	Sub-category 29	Medium	Completed	Ethan Blue	2019-01-29	2019-01-29	1d	700	1400	700	0	100%	200%	Event AC successful	
2019	01	30	Event AD	Location AD	15:00	Category 30	Sub-category 30	Low	Completed	Ava Purple	2019-01-30	2019-01-30	1d	500	1000	500	0	100%	200%	Event AD successful	
2019	01	31	Event AE	Location AE	16:00	Category 31	Sub-category 31	High	Completed	Lucas Yellow	2019-01-31	2019-01-31	1d	950	1900	950	0	100%	200%	Event AE successful	
2019	02	01	Event AF	Location AF	17:00	Category 32	Sub-category 32	Medium	Completed	Sophia Grey	2019-02-01	2019-02-01	1d	750	1500	750	0	100%	200%	Event AF successful	
2019	02	02	Event AG	Location AG	18:00	Category 33	Sub-category 33	Low	Completed	Benjamin Pink	2019-02-02	2019-02-02	1d	550	1100	550	0	100%	200%	Event AG successful	
2019	02	03	Event AH	Location AH	19:00	Category 34	Sub-category 34	High	Completed	Charlotte Blue	2019-02-03	2019-02-03	1d	850	1700	850	0	100%	200%	Event AH successful	
2019	02	04	Event AI	Location AI	20:00	Category 35	Sub-category 35	Medium	Completed	Liam Purple	2019-02-04	2019-02-04	1d	650	1300	650	0	100%	200%	Event AI successful	
2019	02	05	Event AJ	Location AJ	21:00	Category 36	Sub-category 36	Low	Completed	Olivia Yellow	2019-02-05	2019-02-05	1d	450	900	450	0	100%	200%	Event AJ successful	
2019	02	06	Event AK	Location AK	22:00	Category 37	Sub-category 37	High	Completed	Ethan Grey	2019-02-06	2019-02-06	1d	900	1800	900	0	100%	200%	Event AK successful	
2019	02	07	Event AL	Location AL	23:00	Category 38	Sub-category 38	Medium	Completed	Ava Pink	2019-02-07	2019-02-07	1d	700	1400	700	0	100%	200%	Event AL successful	
2019	02	08	Event AM	Location AM	00:00	Category 39	Sub-category 39	Low	Completed	Lucas Blue	2019-02-08	2019-02-08	1d	500	1000	500	0	100%	200%	Event AM successful	
2019	02	09	Event AN	Location AN	01:00	Category 40	Sub-category 40	High	Completed	Sophia Purple	2019-02-09	2019-02-09	1d	950	1900	950	0	100%	200%	Event AN successful	
2019	02	10	Event AO	Location AO	02:00	Category 41	Sub-category 41	Medium	Completed	Benjamin Yellow	2019-02-10	2019-02-10	1d	750	1500	750	0	100%	200%	Event AO successful	
2019	02	11	Event AP	Location AP	03:00	Category 42	Sub-category 42	Low	Completed	Charlotte Grey	2019-02-11	2019-02-11	1d	550	1100	550	0	100%	200%	Event AP successful	
2019	02	12	Event AQ	Location AQ	04:00	Category 43	Sub-category 43	High	Completed	Liam Pink	2019-02-12	2019-02-12	1d	850	1700	850	0	100%	200%	Event AQ successful	
2019	02	13	Event AR	Location AR	05:00	Category 44	Sub-category 44	Medium	Completed	Olivia Blue	2019-02-13	2019-02-13	1d	650	1300	650	0	100%	200%	Event AR successful	
2019	02	14	Event AS	Location AS	06:00	Category 45	Sub-category 45	Low	Completed	Ethan Purple	2019-02-14	2019-02-14	1d	450	900	450	0	100%	200%	Event AS successful	
2019	02	15	Event AT	Location AT	07:00	Category 46	Sub-category 46	High	Completed	Ava Yellow	2019-02-15	2019-02-15	1d	900	1800	900	0	100%	200%	Event AT successful	
2019	02	16	Event AU	Location AU	08:00	Category 47	Sub-category 47	Medium	Completed	Lucas Grey	2019-02-16	2019-02-16	1d	700	1400	700	0	100%	200%	Event AU successful	
2019	02	17	Event AV	Location AV	09:00	Category 48	Sub-category 48	Low	Completed	Sophia Pink	2019-02-17	2019-02-17	1d	500	1000	500	0	100%	200%	Event AV successful	
2019	02	18	Event AW	Location AW	10:00	Category 49	Sub-category 49	High	Completed	Benjamin Blue	2019-02-18	2019-02-18	1d	950	1900	950	0	100%	200%	Event AW successful	
2019	02	19	Event AX	Location AX	11:00	Category 50	Sub-category 50	Medium	Completed	Charlotte Purple	2019-02-19	2019-02-19	1d	750	1500	750	0	100%	200%	Event AX successful	
2019	02	20	Event AY	Location AY	12:00	Category 51	Sub-category 51	Low	Completed	Liam Yellow	2019-02-20	2019-02-20	1d	550	1100	550	0	100%	200%	Event AY successful	
2019	02	21	Event AZ	Location AZ	13:00	Category 52	Sub-category 52	High	Completed	Olivia Grey	2019-02-21	2019-02-21	1d	850	1700	850	0	100%	200%	Event AZ successful	
2019	02	22	Event BA	Location BA	14:00	Category 53	Sub-category 53	Medium	Completed	Ethan Pink	2019-02-22	2019-02-22	1d	650	1300	650	0	100%	200%	Event BA successful	
2019	02	23	Event BB	Location BB	15:00	Category 54	Sub-category 54	Low	Completed	Ava Blue	2019-02-23	2019-02-23	1d	450	900	450	0	100%	200%	Event BB successful	
2019	02	24	Event BC	Location BC	16:00	Category 55	Sub-category 55	High	Completed	Lucas Purple	2019-02-24	2019-02-24	1d	900	1800	900	0	100%	200%	Event BC successful	
2019	02	25	Event BD	Location BD	17:00	Category 56	Sub-category 56	Medium	Completed	Sophia Yellow	2019-02-25	2019-02-25	1d	700	1400	700	0	100%	200%	Event BD successful	
2019	02	26	Event BE	Location BE	18:00	Category 57	Sub-category 57	Low	Completed	Benjamin Grey	2019-02-26	2019-02-26	1d	500	1000	500	0	100%	200%	Event BE successful	
2019	02	27	Event BF	Location BF	19:00	Category 58	Sub-category 58	High	Completed	Charlotte Pink	2019-02-27	2019-02-27	1d	950	1900	950	0	100%	200%	Event BF successful	
2019	02	28	Event BG	Location BG	20:00	Category 59	Sub-category 59	Medium	Completed	Liam Blue	2019-02-28	2019-02-28	1d	750	1500	750	0	100%	200%	Event BG successful	
2019	02	29	Event BH	Location BH	21:00	Category 60	Sub-category 60	Low	Completed	Olivia Purple	2019-02-29	2019-02-29	1d	550	1100	550	0	100%	200%	Event BH successful	
2019	02	30	Event BI	Location BI	22:00	Category 61	Sub-category 61	High	Completed	Ethan Yellow	2019-03-01	2019-03-01	1d	850	1700	850	0	100%	200%	Event BI successful	
2019	03	01	Event BJ	Location BJ	23:00	Category 62	Sub-category 62	Medium	Completed	Ava Grey	2019-03-01	2019-03-01	1d	650	1300	650	0	100%	200%	Event BJ successful	
2019	03	02	Event BK	Location BK	00:00	Category 63	Sub-category 63	Low	Completed	Lucas Pink	2019-03-02	2019-03-02	1d	450	900	450	0	100%	200%	Event BK successful	
2019	03	03	Event BL	Location BL	01:00	Category 64	Sub-category 64	High	Completed	Sophia Blue	2019-03-03	2019-03-03	1d	900	1800	900	0	100%	200%	Event BL successful	
2019	03	04	Event BM	Location BM	02:00	Category 65	Sub-category 65	Medium	Completed	Benjamin Purple	2019-03-04	2019-03-04	1d	700	1400	700	0	100%	200%	Event BM successful	
2019	03	05	Event BN	Location BN	03:00	Category 66	Sub-category 66	Low	Completed	Charlotte Yellow	2019-03-05	2019-03-05	1d	500	1000	500	0	100%	200%	Event BN successful	
2019	03	06	Event BO	Location BO	04:00	Category 67	Sub-category 67	High	Completed	Liam Grey	2019-03-06	2019-03-06	1d	950	1900	950	0	10			

**Major Heat Loads**

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP (MWh/year)	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data
<b>TOTAL</b>											0	0	0	0	0.00	0.00	0.00	0	-	-	-	-	-	-

Manual input (wording)
Select from drop-down list
Mandatory input
Desirable input

Major Heat Loads

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption from all assets excluding CHP	Fuel consumption from CHP (MWh/year)	Gross internal floor area (m <sup>2</sup> )	Number of dwellings	Installed thermal capacity from all assets	CHP Installed power (MWe)	CHP Installed thermal capacity (MWe)	CO2 emissions (tCO2/year)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	
516381	180483		Green Man Lane Estate	Green Man Lane Estate, Singapore Road Multi Storey Car Park, Singapore Road Surface Car Park, Dean Hall And Other Associated Highway West Ealing London	W13 0SN	Private	Yes	Multi-address buildings		Natural gas		4,476	3,960			0.33	0.30				2011	2021	P/2010/0106	No	
511724	179622		Southall Gas Works	Southall Gas Works Site Southall Middlesex, Southall	UB1 1QZ	Private	Yes	Multi-address buildings		Mixed source	19430.787		413,421	4,500	2	1.11	1.76				2011	2026	P/2008/3981	No	
517599	180764		Dickens Yard	Land At Dickens Yard & The Church Of Christ The Saviour & 2-12 New Broadway Ealing London	W5 2XA	Private	Yes	Multi-address buildings		Mixed source	3826.888		66,264	698		0.30	0.62				2011	2021	P/2008/0156	No	
520,035	179760		South Acton Estate	Part Of South Acton Estate-Including Land On/Adj To Part Bollo Bridge Road, Stanley Road, Palmerston Road, Vincent Road, All Saints' Road and southern part of Recreation Ground, excluding Charles Hocking House, Barwick House Woolf And Wodehouse Courts And Community	W3	Private	Yes	Multi-address buildings			3236.989		66,367	756		0.44					2011		LB Ealing (Donna Skordill)	No	
514442	182788		Residential Care Home	118 Oldfield Lane South Greenford Greenford	UB6 9JX	Private	Yes	Multi-address buildings		Natural gas	731.7		2,700				0.02						P/2009/3309	No	
520,035	179760		South Acton Estate / Subsequent phases	Part Of South Acton Estate-Including Land On/Adj To Part Bollo Bridge Road, Stanley Road, Palmerston Road, Vincent Road, All Saints' Road and southern part of Recreation Ground, excluding Charles Hocking House, Barwick House Woolf And Wodehouse Courts And Community	W3	Private	Yes	Multi-address buildings			5670.08		195,520	2,444								2026		LB Ealing DPD Sites (Ian Walker)	No
520,165	180149		ACT02 - Oaks Shopping Centre and Churchfield Road Car Park	High Street, Churchfield Road and Hoopers Mews, Acton		Private	Yes	Multi-address buildings			487.2		16,800	210							2011	2021	LB Ealing DPD Sites (Ian Walker)	No	
512371	179599		SOU04 - 'Suterwalla site' and Phoenix House	Land west of The Green, south of Southbridge Way and east of Queen's Road		Private	Yes	Multi-address buildings			719.2		24,800	310							2011	2026	P/2005/4387	No	
520807	181761		PAR01 - Southern Gateway and Perfume Factory	Portal Way		Private	Yes	Multi-address buildings			2262		78,000	975							2011	2026	LB Ealing DPD Sites (Ian Walker)	No	
517,786	180,817		Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers and car park adjacent to Haven Green	W5 2ND	Private	Yes	Private residential (> 149 units or 9,999 m2)		Natural gas	1315.44		45,360	567							2011	2021	P/2007/4246	No	
<b>TOTAL</b>											<b>37680.284</b>	<b>4,476</b>	<b>913,192</b>	<b>10,460</b>	<b>2.00</b>	<b>2.18</b>	<b>2.70</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	

Manual input (wording)
Select from drop-down list
Mandatory input
Desirable input





Major Heat Supply plants

OXS	OYS	Object ID	Name	Address	Postcode	Ownership	New development	Typology	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Heat generation from all assets including CHP (MWh/year)	Installed thermal capacity from all assets including CHP (MWth)	Installed power from all assets including CHP (MWe)	CO2 emissions (tCO2/year)	Date of Construction	Year of data collection	Start date	Completion date	Data source	Confidentiality of data	
511,850	179755		Blue NG	The Straight, Southall	UB1 1QX	Private	Yes	Power plants	Renewable			5.00	18					2012	P/2009/0780	No	
<b>TOTAL</b>										<b>0</b>	<b>0</b>	<b>5.00</b>	<b>18.00</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

	Manual input (wording)
	Select from drop-down list
	Mandatory input
	Desirable input

DH Networks

OXS	OYS	Object ID	Name	Area Covered	Energy Centre Address	Energy Centre Postcode	Ownership	Energy Centre Typology	Fuel source	Length of trench (km)	Fuel consumption from all assets including CHP (MWh/year)	Heat generation from all assets including CHP (MWh/year)	Installed thermal capacity from all assets including CHP	Installed power from all assets including CHP (MWe)	CO2 emissions (tCO2/year)	Date of Construction	Year of data collection	Start date	Completion date	Data source	Confidentiality of data	
TOTAL										0.00	0	0	0.00	0.00	0	-	-	-	-	-	-	

	Manual input (wording)
	Select from drop-down list
	Mandatory input
	Desirable input

## General Guidance

### **OXS & OYS**

The X & Y fields must be completed for all Heat Loads and Heat Supply Plants.

The X & Y values used for a site should match the X & Y values found in the address point for that building (using the OS Address Point database).

Where no address point is available the X & Y value must be within the boundary of the building.

DO NOT use an X & Y value from a post code, as these represent several addresses and will not position the site in its correct location.

For more detailed information please refer to the data collection methodology.

### **DH Networks**

Any DH Networks entries must be accompanied by a shapefile or drawing of the actual network so it can be added to the Heat Map website.

These attached files should have the same name as the site they refer to.

If there are 2 sites with the same name, please further identify each file so the correct attachment can be matched to the site.



Major Heat Supply plants

GXS	OFS	Object ID	Name	Address	Postcode	Ownership	New development	Typology	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Heat generation from all assets including CHP (MWh/year)	Installed thermal capacity from all assets including CHP (MWh)	Installed power from all assets including CHP (MWe)	CO2 emissions (tCO2/year)	Date of Construction	Year of data collection	Start date	Completion date	Data source	Confidentiality of data	Attach file	Notes
74	520354	180013	ACTON TOWN HALL OFFICES/SWIMMIN	-				LEISURE		0	0	0.29	0	0						No		Ealing
<b>TOTAL</b>										<b>0</b>	<b>0</b>	<b>0.29</b>	<b>0.13</b>	<b>0</b>	-	-	-	-	-	-	-	

Manual input (wording)
Select from drop-down list
Mandatory input
Desirable input

**DH Networks**

OXS	OYS	Object ID	Name	Area Covered	Energy Centre Address	Energy Centre Postcode	Ownership	Energy Centre Typology	Fuel source	Length of trench (km)	Fuel consumption from all assets including CHP	Heat generation from all assets including CHP (MWh/year)	Installed thermal capacity from all assets	Installed power from all assets including CHP (MWe)	CO2 emissions (tCO2/year)	Date of Construction	Year of data collection	Start date	Completion date	Data source	Confidentiality of data	Attach file	Notes
<b>TOTAL</b>										<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	-	-	-	-	-	-	-	

	Manual input (wording)
	Select from drop-down list
	Mandatory input
	Desirable input

## Region 1 South Central Ealing

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Ealing Hospital	Uxbridge Road, Southall	Other public	No	NHS		Natural gas	22,363		Real
St Bernard's Hospital	Uxbridge Road, Southall	Other public	No	NHS		Natural gas	12,400		Real
Clayponds Hospital In-Patient & Outpatient Rehab & Stroke Unit	Sterling PlaceOff Occupational LaneEaling	Other public		NHS		Natural gas	10,674		Real
Tintern Court	Tintern Court, Williams Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	6,202		Real
Perceval House	14-16 Uxbridge Road, Ealing,	Local government	No	Other public buildings		Natural gas	3,857		Real
Dickens Yard	Land At Dickens Yard & The Church Of Christ The Saviour & 2-12 New Broadway Ealing London	Private	Yes	Multi-address buildings		Mixed source	3,827	698	Estimate
Mattock Lane Health Centre Community Health Centre	78 Mattock LaneEaling	Other public		NHS		Natural gas	3,781		Real
Ealing Town Hall	New Broadway, Ealing,	Local government	No	Other public buildings			1,969		Estimate
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Private residential (> 149 units or 9,999 m2)		Natural gas	1,315	567	Estimate
Broughton Court Communal	Broughton Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,197		Real
Proposed Travelodge Hotel	77 Uxbridge Road Ealing London	Private	Yes	Hotels (> 99 units or 4,999 m2)		Natural gas	961		Estimate
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Private commercial (> 9,999 m2)		Natural gas	952		Estimate
Bakers House	Bakers House, The Grove	Local government	No	Multi-address buildings	Central Boilers	Natural gas	819		Real
Lindsey House	1 South Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	653		Real
St Johns Children's Centre	Felix Road, West Ealing,	Local government	No	Sport & Leisure facilities			632		Estimate
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Multi-address buildings		Natural gas	593		Estimate
Ealing Central Library	The Broadway, Ealing	Local government	No	Other public buildings		Natural gas	583		Real
Walnut Court (Sheltered Housing)	Walnut Court, Rowan Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	568		Real
Hawthorne Court	Hawthorne Court, The Common	Local government	No	Multi-address buildings	Central Boilers	Natural gas	487		Real
Benjamin court	Benjamin court, Westminster	Local government	No	Multi-address buildings	Central Boilers	Natural gas	474		Real
Walton House (Sheltered Housing)	41 Carlyle Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	457		Real
Cherry Close (Sheltered Housing)	Cherry Close (Sheltered Housing)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	426		Real
St Anns School	Springfield Road, Hanwell,	Local government	No	Education facilities	Central Boilers	Natural gas	406		Real
St Johns Primary School	Felix Rd, West Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	358		Real
Oaklands Primary School	Oaklands Road, Hanwell,	Local government	No	Education facilities	Central Boilers	Natural gas	358		Real
Community Team for People with Learning Disabilities	64 Green Lane, Hanwell,	Local government	No	Other public buildings		Natural gas	327		Real
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Sport & Leisure facilities		Natural gas	324		Estimate
Pitzhanger Manor & Gallery	Walpole Park, Mattock Lane, Ealing	Local government	No	Museums & Art Galleries		Natural gas	321		Real
St Marks Primary School	Lower Boston Road, Hanwell,	Local government	No	Education facilities	Central Boilers	Natural gas	313		Real
Patients and Liaison Office	117-119 Uxbridge Road,Hanwell	Other public		NHS		Natural gas	298		Real
Thames Valley University, Ealing Campus,St. Marys road	Argyl Road	Private	No	Education facilities		Oil	286		LDA
Ealing Central Sports Ground	PARK VIEW ROAD, EALING	Local government	No	Other public buildings		Natural gas	268		Real
Solace Centre	58 Bowmans Close, West Ealing,	Local government	No	Sport & Leisure facilities		Natural gas	255		Real
St David's Practice	Ground Floor2 Bramley RoadLondon	Other public		NHS		Natural gas	253		Real
LONGFIELD AVENUE	LONGFIELD AVENUE	Local government	No	Local government estate		Oil	247		LDA
Thames Valley University, Ealing Campus,St. Marys road	Vestry Hall	Private	No	Education facilities		Oil	235		LDA
St Josephs Catholic Primary School	York Avenue, Hanwell,	Local government	No	Education facilities	Central Boilers	Natural gas	226		Real

## Region 1 South Central Ealing

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Alexandria House Speech & Language Unit	14a Alexandria Road, Ealing	Other public		NHS		Natural gas	224		Real
St Saviours CE Infant School	The Grove, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	217		Real
Elthorne Sports Centre	Inside Elthorne Park High School, Westlea Road, Hanwell,	Local government	No	Sport & Leisure facilities		Natural gas	205		Real
Mount Carmel Catholic School	Little Ealing Lane, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	191		Real
Carmelita House	21 -22 The Mall, Ealing,	Local government	No	Other public buildings		Natural gas	190		Real
Windmill Park Childrens Centre	1 TULIP CLOSE	Local government	No	Sport & Leisure facilities			190		Estimate
Centre for Early Years Childcare and Play (Hanwell Nursery)	25A Laurel Gardens, Hanwell,	Local government	No	Sport & Leisure facilities		Natural gas	177		Real
Darwin Road	51 Darwin Road Flats (A-G)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	163		Real
Northfields Community Centre	71a Northcroft Road, Ealing	Local government	No	Sport & Leisure facilities		Natural gas	150		Real
West Ealing Library	Melbourne Avenue, Ealing	Local government	No	Other public buildings		Natural gas	146		Real
Mental Health and Well Being Service, 84 Uxbridge Road	3rd Floor84 Uxbridge RoadEaling	Other public		NHS			138		Estimate
15 Florence Road	15 Florence Road, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	127		Real
Hanwell Library	Cherington Road, Hanwell	Local government	No	Other public buildings		Natural gas	92		Real
W13 Social Club for Young People	Churchfield Road, Ealing,	Local government	No	Sport & Leisure facilities		Natural gas	87		Real
EALING FIRE STATION	60/64 UXBRIDGE ROAD	Other public	No	Fire stations	Individual boilers	Natural gas	85		LDA
Crossbow house	Crossbow house	Local government	No	Multi-address buildings	Central Boilers	Natural gas	80		Real
23 Sunnyside Road Ealing	23 Sunnyside Road, Ealing,	Local government	No	Local government estate		Natural gas	61		Real
Horizons Centre	15 Cherington Road, Hanwell,	Local government	No	Sport & Leisure facilities		Natural gas	58		Real
57 Oaklands Road Hanwell	57 Oaklands Road, Hanwell,	Local government	No	Local government estate		Natural gas	49		Real
Gordon Road	48 Gordon Road, Ealing	Local government	No	Multi-address buildings	Central Boilers	Natural gas	40		Real
Northfields Gardens Library	Northfield Avenue, Ealing	Local government	No	Other public buildings			39		Estimate
164 Boston Road Hanwell	164 Boston Road, Hanwell,	Local government	No	Local government estate		Natural gas	36		Real
Lammas Park	Culmington Road, West Ealing,	Local government	No	Other public buildings		Natural gas	35		Real
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Multi-address buildings		Natural gas	34		Estimate
125 Elthorne Avenue, Hanwell	125 Elthorne Avenue, Hanwell,	Local government	No	Local government estate		Natural gas	32		Real
Ealing Carers' Centre	46 South Ealing Road, Ealing,	Local government	No	Sport & Leisure facilities		Natural gas	27		Real
Lammas Park Play Centre	Elers/Culmington Roads, West Ealing,	Local government	No	Sport & Leisure facilities			19		Estimate
Drayton Green Youth Centre	Drayton Green, Hanwell	Local government	No	Other public buildings		Natural gas	18		Real
69 Studley Grange, Hanwell	69 Studley Grange, Hanwell,	Local government	No	Local government estate		Natural gas	14		Real
Green Man Lane Estate	Green Man Lane Estate, Singapore Road Multi Storey Car Park, Singapore Road Surface Car Park, Dean Hall And Other Associated Highways West Ealing London	Private	Yes	Multi-address buildings		Natural gas			Real
	79-89 Uxbridge Road	Private	Yes	Multi-address buildings					Real
Bakers House	Bakers House 1 - 30	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Bakers House	The Grove, Ealing	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Elm Avenue	3 Elm Avenue 3, Ealing	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Soan House	1 Lyncroft Gardens	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
50-54 Broadway	50 54 Broadway West Ealing Ealing London	Private	Yes	Multi-address buildings		Natural gas			N/A
Primary Care Education Centre Education Training Centre And West London Health Estates and Facilities Management	West Ealing House2 St. James AvenueEaling	Other public		NHS		Natural gas			N/A
Drug and Alcohol AbuseTeam	Part of fifth floor58 Uxbridge RoadEaling	Other public		NHS		Natural gas			N/A
Flu Response (Pandemic)Centre	16-18 New BroadwayEalingLondon	Other public		NHS		Natural gas			N/A
16 - 18 Ealing Broadway (Old Vertex Building)	16 - 18 Ealing Broadway (Old Vertex Building)	Local government	No	Other public buildings					N/A
Perceval Lodge	Mattock Lane, Ealing,	Local government	No	Other public buildings		Natural gas			N/A
West Ealing Bowls and Social Club	Mervyn Road, West Ealing	Local government	No	Other public buildings		Natural gas			N/A
Warren Farm	Windmill Lane , Southall,	Local government	No	Other public buildings		Natural gas			Real
Walpole Park	Mattock Lane, Ealing,	Local government	No	Other public buildings		Natural gas			Real
Ealing Direct	44 South Ealing Road, Ealing,	Local government	No	Other public buildings		Natural gas			
Waitrose West Ealing	2 Alexandria RoadWest EalingLondon	Private	No	Private commercial (> 9,999 m2)					N/A
Sainsbury's West Ealing	Melbourne Avenue London	Private	No	Private commercial (> 9,999 m2)					N/A

## Region 1 South Central Ealing

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Marks & Spencer	Ealing Broadway Centre, London	Private	No	Private commercial (> 9,999 m2)					N/A
The Co-Operative Food	The Woodlands, 89 South Ealing Road, Ealing	Private	No	Private commercial (> 9,999 m2)					N/A
Ealing Hospital NHS Workplace Nursery and Children's Centre	Uxbridge Road Southall	Local government	No	Sport & Leisure facilities					N/A
Eden Fitness	Cavalier House 46-50, Uxbridge Road, London		No	Sport & Leisure facilities					LDA
G's Gym	210, Popes Lane, London		No	Sport & Leisure facilities					LDA
Jealous Health Club Group	8, Windmill Avenue, Southall		No	Sport & Leisure facilities					LDA
Rank UK Holdings Ltd	6, Connaught Road, London		No	Sport & Leisure facilities					LDA
Vista Star Leisure Plc	52, Uxbridge Road, London		No	Sport & Leisure facilities					LDA
HM Revenue & Customs	International House 7 High Street ,London	Central government	No	Central government estate					LDA
Office of Fair Trading	Craven House 40-44 Uxbridge Road ,London	Central government	No	Central government estate					LDA
Thames Valley University	Walpole House 18-20, Bond Street, London	Private	No	Education facilities					LDA
Thames Valley University	St. Marys Road, London	Private	No	Education facilities					LDA
Thames Valley University	Westel House 32-38, Uxbridge Road, London	Private	No	Education facilities					LDA
ELTHORNE HIGH SCHOOL	ELTHORNE HIGH SCHOOL		No	Education facilities					LDA
FIELDING PRIMARY SCHOOL	FIELDING PRIMARY SCHOOL		No	Education facilities					LDA
BUTTONS DAY NURSERY SCHOOL	BUTTONS DAY NURSERY SCHOOL		No	Education facilities					LDA
DRAYTON GREEN PRIMARY SCHOOL	DRAYTON GREEN PRIMARY SCHOOL		No	Education facilities					LDA
LITTLE EALING PRIMARY SCHOOL	LITTLE EALING PRIMARY SCHOOL		No	Education facilities					LDA
MOUNT CARMEL RC PRIMARY SCHOOL	MOUNT CARMEL RC PRIMARY SCHOOL		No	Education facilities					LDA
GRANGE PRIMARY SCHOOL	GRANGE PRIMARY SCHOOL		No	Education facilities					LDA
MADDYS JIVING SCHOOL	MADDYS JIVING SCHOOL		No	Education facilities					LDA
MET FILM SCHOOL	MET FILM SCHOOL		No	Education facilities					LDA
POLISH SCHOOL	POLISH SCHOOL		No	Education facilities					LDA
DURSTON HOUSE SCHOOL	DURSTON HOUSE SCHOOL		No	Education facilities					LDA
HARVINGTON SCHOOL	HARVINGTON SCHOOL		No	Education facilities					LDA
ASTON HOUSE SCHOOL	ASTON HOUSE SCHOOL		No	Education facilities					LDA
THE FALCONS SCHOOL FOR GIRLS	THE FALCONS SCHOOL FOR GIRLS		No	Education facilities					LDA
BUTTERCUPS DAY NURSERY & MONTESSORI SCHOOL	BUTTERCUPS DAY NURSERY & MONTESSORI SCHOOL		No	Education facilities					LDA
EALING RIDING SCHOOL	EALING RIDING SCHOOL		No	Education facilities					LDA
Thames Valley University, Ealing Campus	Thames Valley University, Ealing Campus,St. Marys road	Private	No	Education facilities		Oil			LDA
Thames Valley University, Ealing Campus,St. Marys road	LRC B Block	Private	No	Education facilities		Oil			LDA
Thames Valley University, Ealing Campus,St. Marys road	Walpole House	Private	No	Education facilities		Oil			LDA
Thames Valley University, Ealing Campus,St. Marys road	LRC A Block	Private	No	Education facilities		Oil			LDA
Thames Valley University, Ealing Campus,St. Marys road	Paragon	Private	No	Education facilities		Oil			LDA
EALING POLICE STATION 67-69, METROPOLITAN POLICE	UXBRIDGE ROAD, LONDON	Other public	No	Police stations					LDA
GRANGE LODGE HOTEL	GRANGE ROAD, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
CASPIAN HOTEL	HAVEN GREEN, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
HAMILTON HOUSE HOTEL	HAMILTON ROAD, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
ABBAY LODGE HOTEL	GRANGE PARK, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
WINDSOR HOTEL	WINDSOR ROAD, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
BIJOU HOTEL	THE COMMON, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
ROSEMOOR HOUSE 90-94	FLAT 1 BROADWAY LONDON	Private	No	Multi-address buildings				132	LDA
LUMINOSITY COURT	FLAT 2 49 DRAYTON GREEN ROAD LONDON	Private	No	Multi-address buildings				82	LDA

**Region 1 South Central Ealing**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
LOVELACE HOUSE 96-122	FLAT 1 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				138	LDA
	1 COMER CRESCENT SOUTHALL	Private	No	Multi-address buildings				55	LDA
CAVALIER HOUSE 46-50	FLAT 508 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				132	LDA
LONGFIELD HOUSE 18-20	FLAT 1 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				55	LDA
DOMINION HOUSE	FLAT 9 THE AVENUE LONDON	Private	No	Multi-address buildings				88	LDA
OSTERLEY VIEWS	FLAT 1 WEST PARK ROAD SOUTHALL	Private	No	Multi-address buildings				65	LDA
	148 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				59	LDA
O'GRADY COURT	FLAT 1 MELBOURNE AVENUE LONDON	Private	No	Multi-address buildings				62	LDA
LINDSEY HOUSE	FLAT 1 2 SOUTH ROAD LONDON	Private	No	Multi-address buildings				70	LDA
CLAYPONDS HOSPITAL	STERLING PLACE, LONDON	Other public	No	NHS					LDA
<b>Total</b>							<b>82,592</b>		

## Region 2 Acton

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
South Acton Estate / Subsequent phases	Part Of South Acton Estate-Including Land On/Adj To Part Bollo Bridge Road, Stanley Road, Palmerston Road, Vincent Road, All Saints' Road and southern part of Recreation Ground, excluding Charles Hocking House, Barwick House Woolf And Wodehouse Courts A	Private	Yes	Multi-address buildings			5,670	2,444	Estimate
Acton Health Centre Community Clinic	35 - 61 Church Road Acton	Other public		NHS		Natural gas	4,187		Real
Ramada London Ealing	Ealing Common, London	Private	No	Hotels (> 99 units or 4,999 m2)			3,946	189	Estimate
Acton Sports Centre (Acton Pool)	Salisbury Street, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	3,649		Real
Barrington Court	Cheltenham Place	Local government	No	Multi-address buildings	Central Boilers	Natural gas	3,503		Real
South Acton Estate	Part Of South Acton Estate-Including Land On/Adj To Part Bollo Bridge Road, Stanley Road, Palmerston Road, Vincent Road, All Saints' Road and southern part of Recreation Ground, excluding Charles Hocking House, Barwick House Woolf And Wodehouse Courts A	Private	Yes	Multi-address buildings			3,237	756	Estimate
Twyford CE High School	Twyford Crescent, Acton,	Local government	No	Education facilities	Central Boilers	Natural gas	1,849		Real
Sheltered Housing	2-62 Neville Close, Acton	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,434		Real
Burghley Tower	1-94 (Con) Trinity Way	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,361		Real
Rufford Tower	1-100 (Con) Lexden Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,265		Real
Ludlow Court	Ludlow Court 1-54 (South)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	768		Real
Carisbrooke Court	1-54 North Carisbrooke Court	Local government	No	Multi-address buildings	Central Boilers	Natural gas	755		Real
Meredith Tower	90(A-D); 90-204 (Even) Hanbury Road 2	Local government	No	Multi-address buildings	Central Boilers	Natural gas	734		Real
Shillaker Court	1 Bromyard Avenue	Local government	No	Multi-address buildings	Central Boilers	Natural gas	697		Real
Conrad Tower	Conrad Tower 231 (A-D) - 345 (1)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	670		Real
Garden Court	32 Rothschild Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	653		Real
Acton Adult Training Centre	Stirling Road, Acton,	Local government	No	Education facilities		Natural gas	520		Real
ACT02 - Oaks Shopping Centre and Churchfield Road Car Park	High Street, Churchfield Road and Hoopers Mews, Acton	Private	Yes	Multi-address buildings			487	210	Estimate
Priory Community Centre	Acton Lane, Acton	Local government	No	Sport & Leisure facilities		Natural gas	486		Real
Southfield Primary School	Southfield Road, Bedford Park,	Local government	No	Education facilities	Central Boilers	Natural gas	398		Real
16 HANGER LANE	16 HANGER LANE	Local government	No	Local government estate		Oil	387		LDA
Graham Tower	93-205 (Odd) 93 A-E; Hanbury Road 1	Local government	No	Multi-address buildings	Central Boilers	Natural gas	381		Real
Southfield Road	41-45; 41A-45A (Odd) Southfield Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	327		Real
Blackmore Tower	1-187 (Odd) Stanley Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	306		Real
Michael Flanders Day Centre	Church Road, Acton	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	288		Real
Bedford Road	13 Bedford Road (1 - 21)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	283		Real
St Vincents Catholic Primary School	Pierrepoint Road, Acton,	Local government	No	Education facilities	Central Boilers	Natural gas	278		Real
ACTON FIU Fire Station	28 Gunnersbury Lane	Other public	No	Fire stations		Oil	263		LDA
ACTON Fire Station	27 Gunnersbury Lane	Other public	No	Fire stations		Oil	250		LDA
Carlton Day Centre	8 - 10 Carlton Road, Acton,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	243		Real
Westfields Lodge	60 Westfields Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	205		Real
West Acton Primary School	Noel Road, Acton,	Local government	No	Education facilities	Central Boilers	Natural gas	202		Real
Transport for London	118-120 Gunnersbury lane	Other public	No	Other public buildings		Oil	188		LDA
Twyford Sports Centre	Twyford Crescent, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	187		Real
Acton Library	High Street, Acton	Local government	No	Other public buildings		Natural gas	156		Real
South Acton Children's Centre (Early Excellence Centre)	Castle Close, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	153		Real
Learning Curve	1 - 5 Roslin Road East, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	145		Real
376 Uxbridge Road		Local government	No	Other public buildings		Natural gas	125		Real
Reynolds Sports Centre	Acton High School, Gunnersbury Lane, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	109		Real
Maples Children's Centre	4-12 East Churchfield Road, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	97		Real
36 Inglis Road (Group Home)	36 Inglis Road, Ealing,	Local government	No	Local government estate		Natural gas	94		Real
WEST ACTON YOUTH AND COMMUNITY CENTRE	Churchill Gardens. London.	Local government	No	Sport & Leisure facilities		Natural gas	85		Real
Lynton Road	35 Lynton Road, Acton	Local government	No	Multi-address buildings	Central Boilers	Natural gas	61		Real
Acton Vale Community Centre	Beech Avenue	Local government	No	Multi-address buildings	Central Boilers	Natural gas	54		Real
Acton Park Children's Centre	East Acton Lane, Acton,	Local government	No	Sport & Leisure facilities			44		Estimate
Bollo Brook Youth Centre	Bollo Bridge Road, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	37		Real
Youth Offending Team	2 Cheltenham Place, Acton,	Local government	No	Other public buildings			35		Estimate
Webb Court	373-419 (Odd) Bollo Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	25		Real

## Region 2 Acton

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Sheltered Housing	Arundel House 1-22	Local government	No	Multi-address buildings	Central Boilers	Natural gas	25		Real
Burlington Gardens	38 A;B;C;D Burlington Gardens	Local government	No	Multi-address buildings	Central Boilers	Natural gas	20		Real
Southfields Recreation Ground Pavilion	Adj to 89 Southfield Road, Acton,	Local government	No	Other public buildings		Natural gas	18		Real
4a Newburgh Road	4a Newburgh Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	15		Real
Acton Town Hall	High Street, Acton,	Local government	No	Other public buildings		Natural gas	13		Real
Acton Park	The Vale, Uxbridge Road, Acton,	Local government	No	Other public buildings		Natural gas	11		Real
2 Bollo Lane	2 Bollo Lane, Chiswick, London	Private	Yes	Multi-address buildings		Natural gas			Real
Jerome Tower	34-220 (Even) Osborne Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Shalimar Lodge	1-24 (Con) Horn Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Acton Central Industrial Estate	Rosemont Road Acton London	Private	Yes	Multi-address buildings					N/A
North Acton Bowls pavilion & Recreation & Playing Fields	Eastfields Road, Acton,	Local government	No	Other public buildings		Natural gas			N/A
Park Lodge Tennis Centre	Noel Road, Acton,	Local government	No	Other public buildings		Natural gas			N/A
Morrison's Acton	King Street Acton	Private	No	Private commercial (> 9,999 m2)					N/A
Become Healthy Herbal Life	51a, Esmond Road, London		No	Sport & Leisure facilities					LDA
Energise Fitness	Acton Centre, Gunnersbury Lane, London		No	Sport & Leisure facilities					LDA
Golds Gym	Royale Leisure Park, Kendal Avenue, London		No	Sport & Leisure facilities					LDA
Park Royal South Leisure Complex			No	Sport & Leisure facilities					LDA
Rocks Lane Multi Sports Centre	60, Chiswick Common Road, London		No	Sport & Leisure facilities					LDA
Virgin Active	36, Bromyard Avenue, London		No	Sport & Leisure facilities					LDA
Muslim Law (Shariah) Council	20-22 Creffield Road ,London	Central government	No	Central government estate					LDA
South Acton Regeneration Office London Borough of Ealing	108 Bollo Bridge Road ,London	Central government	No	Central government estate					LDA
ELLEN WILKINSON HIGH SCHOOL	ELLEN WILKINSON HIGH SCHOOL		No	Education facilities					LDA
THE MONTESSORI SCHOOL	THE MONTESSORI SCHOOL		No	Education facilities					LDA
BERRYMEDE FIRST & JUNIOR SCHOOL	BERRYMEDE FIRST & JUNIOR SCHOOL		No	Education facilities					LDA
BERRYMEDE INFANT SCHOOL	BERRYMEDE INFANT SCHOOL		No	Education facilities					LDA
ACTON HIGH SCHOOL	ACTON HIGH SCHOOL		No	Education facilities					LDA
VILLAGE MONTESSORI NURSERY SCHOOL	VILLAGE MONTESSORI NURSERY SCHOOL		No	Education facilities					LDA
DERWENT WATER PRIMARY SCHOOL	DERWENT WATER PRIMARY SCHOOL		No	Education facilities					LDA
ORCHARD HOUSE SCHOOL	ORCHARD HOUSE SCHOOL		No	Education facilities					LDA
EAST ACTON PRIMARY SCHOOL	EAST ACTON PRIMARY SCHOOL		No	Education facilities					LDA
BARBARA SPEAKE STAGE SCHOOL	BARBARA SPEAKE STAGE SCHOOL		No	Education facilities					LDA
ACTON POLICE STATION, METROPOLITAN POLICE	HIGH STREET, LONDON	Other public	No	Police stations					LDA
GRESHAM HOTEL	HANGER LANE, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
CRANLEIGH HOTEL	HANGER LANE, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
ACTON TOWN HOTEL	GUNNERSBURY LANE, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
BEST WEST HOTEL	HIGH STREET, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
HORNLANE HOTEL	HORN LANE, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
PARK ROAD NORTH	PARK ROAD NORTH	Local government	No	Local government estate		Oil			LDA
BARWICK HOUSE	FLAT 51 STRAFFORD ROAD LONDON	Private	No	Multi-address buildings				99	LDA
ARLINGTON COURT	FLAT 1 17 MILL HILL ROAD LONDON	Private	No	Multi-address buildings				66	LDA
CORFE TOWER	FLAT 1 PARK ROAD EAST LONDON	Private	No	Multi-address buildings				77	LDA
KIPLING TOWER	FLAT 1 PALMERSTON ROAD LONDON	Private	No	Multi-address buildings				95	LDA
BROMYARD HOUSE	FLAT 28 BROMYARD AVENUE LONDON	Private	No	Multi-address buildings				59	LDA
FRAMPTON COURT	FLAT 1 76 CHELTENHAM PLACE LONDON	Private	No	Multi-address buildings				64	LDA
	249 HORN LANE LONDON	Private	No	Multi-address buildings				68	LDA
MORETON TOWER	FLAT 1 LEXDEN ROAD LONDON	Private	No	Multi-address buildings				100	LDA
ANTILLES HOUSE	FLAT 1 1 FRIARY ROAD LONDON	Private	No	Multi-address buildings				52	LDA
HARLECH TOWER	FLAT 1 PARK ROAD EAST LONDON	Private	No	Multi-address buildings				76	LDA
ISSIGONIS HOUSE	FLAT 127 COWLEY ROAD LONDON	Private	No	Multi-address buildings				129	LDA

**Region 2 Acton**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
BEAUMARIS TOWER	FLAT 1 PARK ROAD NORTH LONDON	Private	No	Multi-address buildings				75	LDA
BROMYARD HOUSE	FLAT 82 BROMYARD AVENUE LONDON	Private	No	Multi-address buildings				56	LDA
CHARLES HOCKING HOUSE	FLAT 1 BOLLO BRIDGE ROAD LONDON	Private	No	Multi-address buildings				100	LDA
MORRIS HOUSE	FLAT 33 SWAINSON ROAD LONDON	Private	No	Multi-address buildings				50	LDA
BROMYARD HOUSE	FLAT 544 BROMYARD AVENUE LONDON	Private	No	Multi-address buildings				51	LDA
Terra Gallery	33 Bollo Lane, London	Private	No	Museum and art gallery					LDA
The Little Picture Gallery.Com	33-35 Rothschild Road, London, Greater London	Private	No	Museum and art gallery					LDA
Trackside Gallery	1a East Churchfield Road, London	Private	No	Museum and art gallery					LDA
<b>Total</b>							<b>41,377</b>		

**Region 3 Park Royal**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Ramada Encore London West	4 Portal Way, London	Private	No	Hotels (> 99 units or 4,999 m2)			3,132	150	Estimate
PAR01 – Southern Gateway and Perfume Factory	Portal Way	Private	Yes	Multi-address buildings			2,262	975	Estimate
Express by Holiday Inn London Park Royal	Victoria Road, London	Private	No	Hotels (> 99 units or 4,999 m2)			2,172	104	Estimate
BBC Former Costume Store	Victoria Road Acton London	Private	Yes	Private commercial (> 9,999 m2)			603		Estimate
West Twyford Primary School	Twyford Abbey Road, Park Royal,	Local government	No	Education facilities	Central Boilers	Natural gas	186		Real
St Andrews Road	73 St Andrews Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	184		Real
Westgate House	West Gate, Ealing,	Local government	No	Other public buildings		Natural gas	97		Real
Acton Cemetery Chapel	Park Royal Road, Park Royal	Local government	No	Other public buildings		Natural gas			Real
WEST TWYFORD PRIMARY SCHOOL	WEST TWYFORD PRIMARY SCHOOL		No	Education facilities					LDA
JOHN PERRYNS PRIMARY SCHOOL	JOHN PERRYNS PRIMARY SCHOOL		No	Education facilities					LDA
BBC REHEARSAL ROOM	-	Private	No	Private commercial (> 9,999 m2)		Oil			LDA
ISROTEL HOTELS	WEST GATE, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
EBBETT COURT	FLAT 1 VICTORIA ROAD LONDON	Private	No	Multi-address buildings				194	LDA
TRENTHAM COURT	FLAT 121 VICTORIA ROAD LONDON	Private	No	Multi-address buildings				203	LDA
POULTON COURT	FLAT 46 VICTORIA ROAD LONDON	Private	No	Multi-address buildings				54	LDA
<b>Total</b>							<b>8,636</b>		

## Region 4 Southall

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Southall Gas Works	Southall Gas Works Site Southall Middlesex, Southall	Private	Yes	Multi-address buildings		Mixed source	19,431	4,500	Estimate
FEATHERSTONE ROAD HEALTH CLINIC	Hartington RoadSouthall	Other public		NHS		Natural gas	3,352		Real
Dormers Wells Leisure Centre	156 Dormers Wells Lane, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	2,230		Real
Villiers High School	Boyd Avenue, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	1,863		Real
Southall Sports Centre	Beaconsfield Road, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	1,240		Real
Waterside Health Centre	1-2 Tyler RoadOff Havelock RoadSouthall,	Other public		NHS		Natural gas	974		Real
Charter Court	1 Park View Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	844		Real
Harmony Lodge	Harmony Lodge, Havelock Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	745		Real
SOU04 - 'Suterwalla site' and Phoenix House	Land west of The Green, south of Southbridge Way and east of Queen's Road	Private	Yes	Multi-address buildings			719	310	Estimate
WINDMILL LANE	WINDMILL LANE	Local government	No	Local government estate		Oil	635		LDA
Wolf Fields - Primary School	Norwood Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	558		Real
Ealing PCT Headquarters	1 Armstrong Way Southall	Other public		NHS			524		Estimate
St Anselms Catholic Primary School	Church Avenue, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	484		Real
Rutherford Tower	1-75 (Con) Lovell Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	448		Real
Tudor Primary School	53 Tudor Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	427		Real
North Primary School	10 Meadow Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	423		Real
Dominion Arts Education Centre	114 The Green, Southall	Local government	No	Museums & Art Galleries		Natural gas	405		Real
Three Bridges Primary School	Norwood Green, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	374		Real
Southall North Community Offices (HVs and DNs)	Flat 4 &36a Northcote AvenueSouthallMiddlesex	Other public		NHS		Natural gas	359		Real
Southall North Community Offices (HVs and DNs)	Flat 3 &36a Northcote AvenueSouthallMiddlesex	Other public		NHS		Natural gas	313		Real
Heller House	124 Norwood Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	300		Real
SOUTHALL FIRE STATION	17/19 HIGH STREET	Other public	No	Fire stations	Assets including CHP	Natural gas	255		LDA
Broadway Health Centre, Southall	71-73 The BroadwaySouthall, Middlesex	Other public		NHS		Natural gas	219		Estimate
Albert Dane Centre	19-21 Western Road, Southall,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	174		Real
Jubilee Gardens Clinic	Jubilee GardensSouthall	Other public		NHS		Natural gas	173		Real
0-12 SAFE	1st Floor, Talbot Road, Southall,	Local government	No	Other public buildings		Natural gas	137		Real
Ealing Day Treatment Centre Out-Patient Rehabilitation	Britten DriveSouthall	Other public		NHS			135		Estimate
Grove House [Nursery School] Children's Centre	North Road, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	127		Real
Southall Library	9 - 11 Osterley Park Road, Southall	Local government	No	Other public buildings		Natural gas	119		Real
Southall Young Adults Centre	Park View Road, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	104		Real
Hartsbourne Court	Fleming Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	81		Real
Cornucopia Day Centre - Duke of Edinburgh Award Scheme	Spikes Bridge Road, Southall,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	77		Real
Dormers Wells Play Centre	Cnr Longridge Lane And Edison Drive, Southall,	Local government	No	Sport & Leisure facilities			71		Estimate
Phoenix Social Club for Young People	Dormers Wells Lane, Southall,	Local government	No	Sport & Leisure facilities			66		Estimate
Southall Park Children's Centre	Boyd Avenue/Green Drive, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	49		Real
Visions Social Club	Montague Waye, Western Road, Southall, (Featherstone High School)	Local government	No	Sport & Leisure facilities			37		Estimate
The Lodge - Manor House Grounds (Southall Ranger Base)	The Green, Southall,	Local government	No	Other public buildings		Natural gas	25		Real
Norwood Road	123 Norwood Road, flats 1-4, Southall	Local government	No	Multi-address buildings	Central Boilers	Natural gas	16		Real
Hunt Road	37 Hunt Road, Southall	Local government	No	Multi-address buildings	Central Boilers	Natural gas	7		Real
Disraeli Day Nursery	111 Hambrough Road , Southall,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	2		Real
Southall Recreation Ground - Changing Rooms	The Common, Southall	Local government	No	Other public buildings		Natural gas	0		Real
Southall Decimal Centre	Bridge Road, Southall,	Local government	No	Other public buildings					N/A
Southall Town Hall	High Street, Southall,	Local government	No	Other public buildings					N/A
Southall Community Centre	20 Merrick Road	Local government	No	Sport & Leisure facilities					N/A
FEATHERSTONE PRIMARY SCHOOL	FEATHERSTONE PRIMARY SCHOOL		No	Education facilities					LDA
BLAIRE PEACH PRIMARY SCHOOL	BLAIRE PEACH PRIMARY SCHOOL		No	Education facilities					LDA
TALBOT ROAD SCHOOL	TALBOT ROAD SCHOOL		No	Education facilities					LDA
CLIFTON PRIMARY SCHOOL	CLIFTON PRIMARY SCHOOL		No	Education facilities					LDA
SYBIL ELGAR SCHOOL	SYBIL ELGAR SCHOOL		No	Education facilities					LDA
HAVELOCK PRIMARY SCHOOL	HAVELOCK PRIMARY SCHOOL		No	Education facilities					LDA

**Region 4 Southall**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
FEATHERSTONE JUNIOR MIXED SCHOOL	FEATHERSTONE JUNIOR MIXED SCHOOL		No	Education facilities					LDA
FEATHERSTONE HIGH SCHOOL	FEATHERSTONE HIGH SCHOOL		No	Education facilities					LDA
FEATHERSTONE INFANT SCHOOL	FEATHERSTONE INFANT SCHOOL		No	Education facilities					LDA
BEACONSFIELD PRIMARY SCHOOL	BEACONSFIELD PRIMARY SCHOOL		No	Education facilities					LDA
DAIRYMEAD MEADOW PRIMARY SCHOOL	DAIRYMEAD MEADOW PRIMARY SCHOOL		No	Education facilities					LDA
KHALSA SCHOOL SOUTHALL PROMOTERS	KHALSA SCHOOL SOUTHALL PROMOTERS		No	Education facilities					LDA
HAMBROUGH FIRST SCHOOL	HAMBROUGH FIRST SCHOOL		No	Education facilities					LDA
DURDANS PARK SCHOOL	DURDANS PARK SCHOOL		No	Education facilities					LDA
LADY MARGARET JUNIOR MIDDLE & INFANT SCHOOL	LADY MARGARET JUNIOR MIDDLE & INFANT SCHOOL		No	Education facilities					LDA
THREE BRIDGES PRIMARY SCHOOL	THREE BRIDGES PRIMARY SCHOOL		No	Education facilities					LDA
DORMERS WELLS JMI SCHOOL	DORMERS WELLS JMI SCHOOL		No	Education facilities					LDA
ALLENBY PRIMARY SCHOOL	ALLENBY PRIMARY SCHOOL		No	Education facilities					LDA
DORMERS WELLS HIGH SCHOOL	DORMERS WELLS HIGH SCHOOL		No	Education facilities					LDA
NAGINA HOTEL	HIGH STREET, SOUTHALL	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
INTERNATIONAL TRADING ESTATE	TRIDENT WAY SOUTHALL	Private	No	Multi-address buildings				55	LDA
1 GLENEAGLES TOWER	FLEMING ROAD SOUTHALL	Private	No	Multi-address buildings				74	LDA
1 PORTRUSH COURT	WHITECOTE ROAD SOUTHALL	Private	No	Multi-address buildings				65	LDA
1 ST. ANDREWS TOWER	BAIRD AVENUE SOUTHALL	Private	No	Multi-address buildings				73	LDA
10 SHERINGHAM TOWER	BAIRD AVENUE SOUTHALL	Private	No	Multi-address buildings				72	LDA
<b>Total</b>							<b>38,520</b>		

## Region 5 Central Ealing

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Gurnell Leisure Centre	Ruislip Road East	Local government	No	Sport & Leisure facilities		Natural gas	5,039		Real
Copley Close	Copley Close PT3 10	Local government	No	Multi-address buildings	Central Boilers	Natural gas	3,703		Real
Boiler House	21-74 Cheyne Path	Local government	No	Multi-address buildings	Central Boilers	Natural gas	2,988		Real
Copley Close	Copley Close; PT 1	Local government	No	Multi-address buildings	Central Boilers	Natural gas	2,975		Real
Crowne Plaza London Ealing	Western Avenue Hanger Lane, London	Private	No	Hotels (> 99 units or 4,999 m2)			2,735	131	Estimate
Copley Close	Copley Close PT2 10; PT3 2	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,359		Real
Copley Close	Copley Close PT2 1	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,145		Real
Greatdown Road	13-27 (Odd) Greatdown Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	851		Real
Cheriton Close	4-48 (Con) Cheriton Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	779		Real
Montpelier Primary School	Helena Road, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	650		Real
Buckingham Close	76-92 Buckingham Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	592		Real
Rolland House (Sheltered Housing)	Rolland House, Laurie Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	581		Real
Gurnell Grove Heron House 2	Gurnell Grove Heron House 2	Local government	No	Multi-address buildings	Central Boilers	Natural gas	557		Real
Pembroke Court	Pembroke Court, Park Road East	Local government	No	Multi-address buildings	Central Boilers	Natural gas	516		Real
Hanwell Community Centre	Westcott Crescent, London	Local government	No	Sport & Leisure facilities			492		Estimate
Ditchley Court	Ditchley Court, Templeman Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	486		Real
CHURCH ROAD	CHURCH ROAD	Local government	No	Local government estate		Oil	484		LDA
Brent Lodge	Church & Manor Park Roads, Hanwell,	Local government	No	Other public buildings		Natural gas	378		Real
St Gregorys Catholic Primary School	Woodfield Road, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	286		Real
Mayfield Primary School	High Lane, Hanwell,	Local government	No	Education facilities	Central Boilers	Natural gas	258		Real
North Ealing Primary School	Pitshanger Lane, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	214		Real
Springhallow School	Compton Close, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	186		Real
Greatdown Road	13-27 Greatdown Road 13-27	Local government	No	Multi-address buildings	Central Boilers	Natural gas	172		Real
Kennedy Road	26-40 (Even) Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	130		Real
Perivale Park	Stockdove Way, Perivale,	Local government	No	Other public buildings		Natural gas	123		Real
Kennedy Road	5-19 Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	116		Real
Cuckoo estate	Elfwine Road blk 26-32	Local government	No	Multi-address buildings	Central Boilers	Natural gas	111		Real
29; 45-49; 566 Greatdown Road	29; 45-49; 566 Greatdown Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	74		Real
Cuckoo Estate	Elfwine Road blk 10-14	Local government	No	Multi-address buildings	Central Boilers	Natural gas	70		Real
Kennedy Road	61-75 (Odd) Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	65		Real
Perivale Park Athletic Track & Gym	Stockdove Way/Ruislip Road East, Greenford,	Local government	No	Other public buildings		Natural gas	65		Real
Pitshanger Library	143-145 Pitshanger Lane, Ealing	Local government	No	Other public buildings			32		Estimate
Kennedy Road	39-53 (Odd) Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	25		Real
Pitshanger Park Play Centre	Meadvale Road, Ealing,	Local government	No	Sport & Leisure facilities			21		Estimate
Unit 1 187 Copley Close (EASE @ BASE)	187 Copley Close, Hanwell,	Local government	No	Sport & Leisure facilities			20		Estimate
Hanger Hill Pitch & Put	Hillcrest Road, Ealing,	Local government	No	Other public buildings		Natural gas	19		Real
Gurnell Grove Communal 3	Gurnell Grove Communal 3	Local government	No	Multi-address buildings	Central Boilers	Natural gas	18		Real
Tenants Club	189 Copley Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	18		Real
45 Greatdown Road	Greatdown Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	6		Real
Little Lodge	136 Church Road, Hanwell	Local government	No	Other public buildings		Natural gas			N/A
Brent Valley Golf Club	Church Road, Hanwell,	Local government	No	Other public buildings		Natural gas			Real
DRAYTON MANOR HIGH SCHOOL	DRAYTON MANOR HIGH SCHOOL		No	Education facilities					LDA
GURNELL MIDDLE SCHOOL	GURNELL MIDDLE SCHOOL		No	Education facilities					LDA
CASTLEBAR SPECIAL SCHOOL	CASTLEBAR SPECIAL SCHOOL		No	Education facilities					LDA
HATHAWAY PRIMARY SCHOOL	HATHAWAY PRIMARY SCHOOL		No	Education facilities					LDA
HOBBAYNE PRIMARY SCHOOL	HOBBAYNE PRIMARY SCHOOL		No	Education facilities					LDA
BRENTSIDE PRIMARY SCHOOL	BRENTSIDE PRIMARY SCHOOL		No	Education facilities					LDA
BRENTSIDE HIGH SCHOOL	BRENTSIDE HIGH SCHOOL		No	Education facilities					LDA
NOTTING HILL & EALING HIGH SCHOOL	NOTTING HILL & EALING HIGH SCHOOL		No	Education facilities					LDA
EALING COLLEGE UPPER SCHOOL	EALING COLLEGE UPPER SCHOOL		No	Education facilities					LDA
NOTTING HILL & EALING HIGH SCHOOL	NOTTING HILL & EALING HIGH SCHOOL		No	Education facilities					LDA
ST. BENEDICTS SCHOOL	ST. BENEDICTS SCHOOL		No	Education facilities					LDA
ASTON HOUSE SCHOOL	ASTON HOUSE SCHOOL		No	Education facilities					LDA
ST. BENEDICTS JUNIOR SCHOOL	ST. BENEDICTS JUNIOR SCHOOL		No	Education facilities					LDA
CHURCH RETREAT HOTEL	MONTPELIER AVENUE, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
HANGER HILL HOTEL	CORFTON ROAD, LONDON	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
FALCON HOUSE	FLAT 1 GURNELL GROVE LONDON	Private	No	Multi-address buildings				65	LDA

**Region 5 Central Ealing**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
GREYSTOKE HOUSE	FLAT 1 150 BRUNSWICK ROAD LONDON	Private	No	Multi-address buildings				50	LDA
DUNLIN HOUSE	FLAT 276 GURNELL GROVE LONDON	Private	No	Multi-address buildings				65	LDA
KESTREL HOUSE	FLAT 211 GURNELL GROVE LONDON	Private	No	Multi-address buildings				65	LDA
R N T N E HOSPITAL	CASTLEBAR HILL, LONDON	Other public	No	NHS					LDA
<b>Total</b>							<b>28,340</b>		

**Region 6 North Central Ealing**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Horsenden Childrens' Centre	Off Horsenden Lane North, Greenford,	Local government	No	Sport & Leisure facilities			1,088		Estimate
Selborne Primary School	Conway Crescent, Perivale,	Local government	No	Education facilities	Central Boilers	Natural gas	439		Real
Perivale Primary School	Federal Road, Perivale	Local government	No	Education facilities	Central Boilers	Natural gas	419		Real
Vicars Green School	Lily Gardens , Alperton,	Local government	No	Education facilities	Central Boilers	Natural gas	367		Real
Mandeville School	Horsenden Lane North, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	261		Real
Perivale Community Centre	Horsenden Lane South	Local government	No	Sport & Leisure facilities		Natural gas	213		Real
Hillview 179C District Nurses	179C Bilton Road	Other public		NHS		Natural gas	87		Real
Library Support Centre	Horsenden Lane South, Greenford	Local government	No	Other public buildings		Natural gas	86		Real
Perivale Library	Horsenden Lane, Greenford	Local government	No	Other public buildings		Natural gas	73		Real
Hillview Surgery & Mental Health and Well Being Service	179 Bilton Road	Other public		NHS		Natural gas	43		Real
St John Fisher Catholic Primary School	Thirlemere Avenue, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	21		Real
Diabetes Retinal Screening Service	179b Bilton Road, Perivale	Other public		NHS		Natural gas			N/A
Horsenden Recreation Ground Bowling Pavilion	Off Horsenden Lane North (opposite Ballot Box Pub), Greenford,	Local government	No	Other public buildings		Natural gas			N/A
Tesco	Hoover Building, Western Avenue, Southall, Greater London	Private	No	Private commercial (> 9,999 m2)					N/A
HORSENDEN PRIMARY SCHOOL	HORSENDEN PRIMARY SCHOOL		No	Education facilities					LDA
SUDBURY TOWN NURSERY SCHOOL	SUDBURY TOWN NURSERY SCHOOL		No	Education facilities					LDA
48 ALLEN COURT	RIDDING LANE GREENFORD	Private	No	Multi-address buildings				65	LDA
<b>Total</b>							<b>3,098</b>		

**Region 7 Northolt**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Northolt High School	Eastcote Lane, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	2,553		Real
Hill Court	1 - 41 Hill Court	Local government	No	Multi-address buildings	Central Boilers	Natural gas	2,170		Real
Greenford Green Clinic Community Clinic	Wadham GardensGreenford	Other public		NHS		Natural gas	1,822		Real
Wood End Childrens Centre	Wood End Library, Whitton Avenue West, Greenford	Local government	No	Sport & Leisure facilities			778		Estimate
50 Community Road	50 Community Road, Greenford,	Local government	No	Local government estate		Natural gas	388		Real
Willow Tree Primary School	Priors Farm Lane, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	378		Real
Wood End Junior School	Vernon Rise, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	282		Real
Wood End Infant School	Whitton Avenue West, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	280		Real
Ealing Family Support Service	21 Cowings Mead, Northolt,	Local government	No	Other public buildings		Natural gas	248		Real
Oldfield Primary School	Oldfield Lane, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	204		Real
NORTHOLT FIRE STATION	74 PETTS HILL	Other public	No	Fire stations	Assets including CHP	Natural gas	197		LDA
Petts Hill Primary School	Newmarket Avenue, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	174		Real
Caretakers House Northolt High School	Eastcote Lane, Northolt Middlesex	Other public		NHS		Natural gas	117		Real
Islip Manor Youth and Community Centre	Arnold Road, Northolt, Middlesex	Local government	No	Sport & Leisure facilities			108		Estimate
Wood End Library	Whitton Avenue West, Greenford	Local government	No	Other public buildings		Natural gas	98		Real
Northolt Park Play Centre	Dabbs Hill Lane, Northolt,	Local government	No	Sport & Leisure facilities			65		Estimate
Ken Acock Youth & Community Centre	Carr Road, Northolt,	Local government	No	Sport & Leisure facilities			47		Estimate
Islip Manor Park Children's Centre	Eastcote Lane, Northolt,	Local government	No	Sport & Leisure facilities			30		Estimate
Oldfield Kitchen (Meals on Wheels)	Greenford Road, Greenford,	Local government	No	Other public buildings		Natural gas	10		Real
Northolt Village Community Centre	The Manor House, Ealing Road, Northolt, Middlesex	Local government	No	Sport & Leisure facilities		Natural gas	2		Real
Northolt Rest Garden - Willow Cottages	Ealing Road, Northolt,	Local government	No	Other public buildings		Natural gas			N/A
Tera 40 Industrial Estate	Auriol Drive Greenford	Private	Yes	Private commercial (> 9,999 m2)		Renewable			Real
Ealing Northern Sports Centre			No	Sport & Leisure facilities					LDA
Ealing Northern Sports Centre			No	Sport & Leisure facilities					LDA
BELVUE SCHOOL	BELVUE SCHOOL		No	Education facilities					LDA
GREENWOOD PRIMARY SCHOOL	GREENWOOD PRIMARY SCHOOL		No	Education facilities					LDA
RAILWAY HOTEL	OLDFIELD LANE NORTH, GREENFORD	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
57 WILLIAM PERKIN COURT	1089 GREENFORD ROAD GREENFORD	Private	No	Multi-address buildings				66	LDA
1 CHURCHILL COURT	NEWMARKET AVENUE NORTHOLT	Private	No	Multi-address buildings				97	LDA
<b>Total</b>							<b>9,951</b>		

## Region 8 Greenford

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
West London Academy	Bengarth Road, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	2,856		Real
Ravenor Park Clinic	23 Oldfield Lane SouthGreenford	Other public		NHS		Natural gas	2,218		Real
Greenford Lodge (CTPLD)	14-16 Cowgate RoadGreenford	Other public		NHS		Natural gas	1,452		Real
Grange Court Estate	1-101 (Con) Old Ruislip Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,367		Real
Residential Care Home	118 Oldfield Lane South Greenford Greenford	Private	Yes	Multi-address buildings		Natural gas	732		Estimate
Ruislip Road (Sheltered Housing)	147-223; 225 blk 30 Ruislip Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	601		Real
Stanhope Primary	Mansell Road, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	534		Real
Whiteoaks Lane	1-8 Whiteoaks Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	531		Real
Tangmere Gardens Clinic Community Clinic	1b Tangmere GardensNortholt	Other public		NHS		Natural gas	439		Real
St Raphaels Catholic Primary School	Hartfield Avenue, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	422		Real
Down Way	23A-33A (Odd); 23B-33B (Odd) Down Way	Local government	No	Multi-address buildings	Central Boilers	Natural gas	417		Real
301 Ruislip Road, Greenford	301 Ruislip Road, Greenford	Local government	No	Other public buildings		Natural gas	380		Real
Kensington Road	1 Kensington Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	351		Real
Cowgate Day Centre	18 Cowgate Road, Greenford,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	351		Real
Viking Primary School	Radcliffe Way, Northolt,	Local government	No	Education facilities	Central Boilers	Natural gas	349		Real
Brent Lodge (Sheltered Housing)	Brent Lodge, Church Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	314		Real
Farrier Rd	28-46; 50-60 (Even) Farrier Rd	Local government	No	Multi-address buildings	Central Boilers	Natural gas	312		Real
Our Lady of the Visitation Catholic School	Greenford Road, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	252		Real
Stable Close	5 Stable Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	231		Real
Ravenor Primary School	Greenaway Gardens, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	231		Real
Cyril Grant Hall / Greenford Hall	Corner Of Oldfield Lane South & Ruislip Road, Greenford,	Local government	No	Sport & Leisure facilities		Natural gas	182		Real
Windmill Day Nursery	135-139 Windmill Lane, Greenford,	Local government	No	Sport & Leisure facilities		Natural gas	180		Real
Greenford Assembly Hall	Ruislip Road, Middlesex	Local government	No	Other public buildings		Natural gas	151		Real
Northolt Library	388-404 Church Road, Northolt	Local government	No	Other public buildings			146		Estimate
130-140 (Even) Farrier Road	130-140 (Even) Farrier Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	137		Real
Greenford Community Centre	170 Oldfield Lane South, Greenford	Local government	No	Sport & Leisure facilities		Natural gas	129		Real
Latham Court	Havelock Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	117		Real
Jupiter Court (Sheltered Housing)	Jupiter Court 4 Ruislip Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	109		Real
Greenford Sports Centre	Lady Margaret Road, Southall	Local government	No	Sport & Leisure facilities		Natural gas	109		Real
Sure Start Nursery,	1 Academy Gardens	Local government	No	Sport & Leisure facilities			108		Estimate
79-89 (Odd) Kensington Road	79-89 (Odd) Kensington Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	105		Real
Westland Court (Sheltered Housing)	Westland Court, Northolt	Local government	No	Multi-address buildings	Central Boilers	Natural gas	104		Real
83-93 Farrier Road	83-93 Farrier Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	98		Real
Paddock Close	1-7 (Con) Paddock Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	97		Real
Meadow Close	1-7 (Con) Meadow Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	90		Real
Greenford Library	25 Oldfield Lane South, Greenford	Local government	No	Other public buildings		Natural gas	81		Real
133 Windmill Lane	133 Windmill Lane, Greenford,	Local government	No	Other public buildings		Natural gas	76		Real
Lime Trees Children's Centre	2 Drayton Green	Local government	No	Sport & Leisure facilities		Natural gas	53		Real
Northolt Grange Community Centre	Rushdene Crescent, Northolt, Middlesex	Local government	No	Sport & Leisure facilities		Natural gas	47		Real
Oldfield Lane	19 Oldfield Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	39		Real
Viking Community Centre, Northolt	Radcliffe Way, Northolt	Local government	No	Sport & Leisure facilities			22		Estimate
Parkfield Drive	1;1A;3;3A;5;5A;7;7A Parkfield Drive	Local government	No	Multi-address buildings	Central Boilers	Natural gas	21		Real
3 Bancroft Court,	3 Bancroft Court, Northolt,	Local government	No	Local government estate		Natural gas	18		Real
Landseer House	1;1A;3;3A;5;5A;7;7A Parkfield Drive	Local government	No	Multi-address buildings	Central Boilers	Natural gas	14		Real
Brent Lodge	Costons Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1		Real
Moorlands (Sheltered Housing)	1 Godfrey Avenue	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Whiteoaks House	Whiteoaks Lane, Greenford	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Church Road Surgery	296 Church RoadNortholt	Other public		NHS		Natural gas			N/A
Greenford Broadway Public Conveniences (Tetragon)	Oldfield Lane South, Greenford,	Local government	No	Other public buildings		Natural gas			N/A
Playing Court			No	Sport & Leisure facilities					LDA
Sports Hall			No	Sport & Leisure facilities					LDA
West London Shooting School	West End Road, Northolt		No	Sport & Leisure facilities					LDA
DOWN MANOR COMBINED FIRST & MIDDLE SCHOOL	DOWN MANOR COMBINED FIRST & MIDDLE SCHOOL		No	Education facilities					LDA
GIFFORD PRIMARY SCHOOL	GIFFORD PRIMARY SCHOOL		No	Education facilities					LDA
GREENFORD HIGH SCHOOL	GREENFORD HIGH SCHOOL		No	Education facilities					LDA
CARDINAL WISEMAN SECONDARY SCHOOL	CARDINAL WISEMAN SECONDARY SCHOOL		No	Education facilities					LDA
COSTON PRIMARY SCHOOL	COSTON PRIMARY SCHOOL		No	Education facilities					LDA

**Region 8 Greenford**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
EDWARD BETHAM PRIMARY SCHOOL	EDWARD BETHAM PRIMARY SCHOOL		No	Education facilities					LDA
JOHN CHILTON SCHOOL	JOHN CHILTON SCHOOL		No	Education facilities					LDA
WHITE HART HOTEL	RUISLIP ROAD, NORTHOLT	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
10 KITTIWAKE ROAD	10 KITTIWAKE ROAD	Local government	No	Local government estate		Oil			LDA
99 WOBURN TOWER	BROOMCROFT AVENUE NORTHOLT	Private	No	Multi-address buildings				78	LDA
HERTFORD HOUSE	APARTMENT 12 TAYWOOD ROAD NORTHOLT	Private	No	Multi-address buildings				82	LDA
CENTRAL WEST	FLAT 1 320 RUISLIP ROAD EAST GREENFORD	Private	No	Multi-address buildings				69	LDA
MACMILLAN COURT	1 309 RUISLIP ROAD EAST GREENFORD	Private	No	Multi-address buildings				76	LDA
CALDON HOUSE	APARTMENT 15 WAXLOW WAY NORTHOLT	Private	No	Multi-address buildings				68	LDA
1 HIGHVIEW	BYRON WAY NORTHOLT	Private	No	Multi-address buildings				83	LDA
BRECON HOUSE	FLAT 1 TAYWOOD ROAD NORTHOLT	Private	No	Multi-address buildings				51	LDA
	117 MAKEPEACE ROAD NORTHOLT	Private	No	Multi-address buildings				56	LDA
1 GAINSBOROUGH TOWER	ACADEMY GARDENS NORTHOLT	Private	No	Multi-address buildings				91	LDA
Footsteps Art Group	131-133 Windmill Lane, Greenford	Private	No	Museum and art gallery					LDA
London Motorcycle Museum	Ravenor Farm 29 Oldfield Lane South, Greenford	Private	No	Museum and art gallery					LDA
<b>Total</b>							<b>16,574</b>		

## Focus Area 1 South Acton Estate

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
South Acton Estate / Subsequent phases	Part Of South Acton Estate-Including Land On/Adj To Part Bollo Bridge Road, Stanley Road, Palmerston Road, Vincent Road, All Saints' Road and southern part of Recreation Ground, excluding Charles Hocking House, Barwick House Woolf And Wodehouse Courts A	Private	Yes	Multi-address buildings			5,670	2,444	Estimate
Acton Health Centre Community Clinic	35 – 61 Church Road Acton	Other public		NHS		Natural gas	4,187		Real
Acton Sports Centre (Acton Pool)	Salisbury Street, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	3,649		Real
Barrington Court	Cheltenham Place	Local government	No	Multi-address buildings	Central Boilers	Natural gas	3,503		Real
South Acton Estate	Part Of South Acton Estate-Including Land On/Adj To Part Bollo Bridge Road, Stanley Road, Palmerston Road, Vincent Road, All Saints' Road and southern part of Recreation Ground, excluding Charles Hocking House, Barwick House Woolf And Wodehouse Courts A	Private	Yes	Multi-address buildings			3,237	756	Estimate
Sheltered Housing	2-62 Neville Close, Acton	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,434		Real
Ludlow Court	Ludlow Court 1-54 (South)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	768		Real
Carisbrooke Court	1-54 North Carisbrooke Court	Local government	No	Multi-address buildings	Central Boilers	Natural gas	755		Real
Meredith Tower	90(A-D); 90-204 (Even) Hanbury Road 2	Local government	No	Multi-address buildings	Central Boilers	Natural gas	734		Real
Conrad Tower	Conrad Tower 231 (A-D) - 345 (1)	Local government	No	Multi-address buildings	Central Boilers	Natural gas	670		Real
Garden Court	32 Rothschild Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	653		Real
Acton Adult Training Centre	Stirling Road, Acton,	Local government	No	Education facilities		Natural gas	520		Real
ACT02 – Oaks Shopping Centre and Churchfield Road Car Park	High Street, Churchfield Road and Hoopers Mews, Acton	Private	Yes	Multi-address buildings			487	210	Estimate
Priory Community Centre	Acton Lane, Acton	Local government	No	Sport & Leisure facilities		Natural gas	486		Real
Graham Tower	93-205 (Odd) 93 A-E; Hanbury Road 1	Local government	No	Multi-address buildings	Central Boilers	Natural gas	381		Real
Blackmore Tower	1-187 (Odd) Stanley Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	306		Real
Michael Flanders Day Centre	Church Road, Acton	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	288		Real
ACTON FIU Fire Station	28 Gunnersbury Lane	Other public	No	Fire stations		Oil	263		LDA
ACTON Fire Station	27 Gunnersbury Lane	Other public	No	Fire stations		Oil	250		LDA
Carlton Day Centre	8 - 10 Carlton Road, Acton,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	243		Real
Acton Library	High Street, Acton	Local government	No	Other public buildings		Natural gas	156		Real
South Acton Children's Centre (Early Excellence Centre)	Castle Close, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	153		Real
Learning Curve	1 - 5 Roslin Road East, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	145		Real
Reynolds Sports Centre	Acton High School, Gunnersbury Lane, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	109		Real
Bollo Brook Youth Centre	Bollo Bridge Road, Acton,	Local government	No	Sport & Leisure facilities		Natural gas	37		Real
Youth Offending Team	2 Cheltenham Place, Acton,	Local government	No	Other public buildings			35		Estimate
Webb Court	373-419 (Odd) Bollo Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	25		Real
Sheltered Housing	Arundel House 1-22	Local government	No	Multi-address buildings	Central Boilers	Natural gas	25		Real
Burlington Gardens	38 A;B;C;D Burlington Gardens	Local government	No	Multi-address buildings	Central Boilers	Natural gas	20		Real
Southfields Recreation Ground Pavilion	Adi to 89 Southfield Road, Acton,	Local government	No	Other public buildings		Natural gas	18		Real
4a Newburgh Road	4a Newburgh Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	15		Real
Acton Town Hall	High Street, Acton,	Local government	No	Other public buildings		Natural gas	13		Real*
Jerome Tower	34-220 (Even) Osborne Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Morrison's Acton	King Street Acton	Private	No	Private commercial (> 9,999 m <sup>2</sup> )					N/A
Energise Fitness	Acton Centre, Gunnersbury Lane, London		No	Sport & Leisure facilities					LDA
South Acton Regeneration Office London Borough of Ealing	108 Bollo Bridge Road ,London	Central government	No	Central government estate					LDA
BERRYMEDE FIRST & JUNIOR SCHOOL	BERRYMEDE FIRST & JUNIOR SCHOOL		No	Education facilities					LDA
BERRYMEDE INFANT SCHOOL	BERRYMEDE INFANT SCHOOL		No	Education facilities					LDA
ACTON HIGH SCHOOL	ACTON HIGH SCHOOL		No	Education facilities					LDA
VILLAGE MONTESSORI NURSERY SCHOOL	VILLAGE MONTESSORI NURSERY SCHOOL		No	Education facilities					LDA
ACTON POLICE STATION, METROPOLITAN POLICE	HIGH STREET, LONDON	Other public	No	Police stations					LDA

\* Validity unclear

**Focus Area 1 South Acton Estate**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
ACTON TOWN HOTEL	GUNNERSBURY LANE, LONDON	Private	No	Hotels (> 99 units or 4,999 m <sup>2</sup> )					LDA
BEST WEST HOTEL	HIGH STREET, LONDON	Private	No	Hotels (> 99 units or 4,999 m <sup>2</sup> )					LDA
PARK ROAD NORTH	PARK ROAD NORTH	Local government	No	Local government estate		Oil			LDA
BARWICK HOUSE	FLAT 51 STRAFFORD ROAD LONDON	Private	No	Multi-address buildings				99	LDA
ARLINGTON COURT	FLAT 1 17 MILL HILL ROAD LONDON	Private	No	Multi-address buildings				66	LDA
CORFE TOWER	FLAT 1 PARK ROAD EAST LONDON	Private	No	Multi-address buildings				77	LDA
KIPLING TOWER	FLAT 1 PALMERSTON ROAD LONDON	Private	No	Multi-address buildings				95	LDA
FRAMPTON COURT	FLAT 1 76 CHELTENHAM PLACE LONDON	Private	No	Multi-address buildings				64	LDA
MORETON TOWER	FLAT 1 LEXDEN ROAD LONDON	Private	No	Multi-address buildings				100	LDA
HARLECH TOWER	FLAT 1 PARK ROAD EAST LONDON	Private	No	Multi-address buildings				76	LDA
BEAUMARIS TOWER	FLAT 1 PARK ROAD NORTH LONDON	Private	No	Multi-address buildings				75	LDA
CHARLES HOCKING HOUSE	FLAT 1 BOLLO BRIDGE ROAD LONDON	Private	No	Multi-address buildings				100	LDA
Terra Gallery	33 Bollo Lane, London	Private	No	Museum and art gallery					LDA
The Little Picture Gallery.Com	33-35 Rothschild Road, London, Greater London	Private	No	Museum and art gallery					LDA
<b>Total</b>							<b>29,233</b>		

## Focus Area Area 2 Ealing Metropolitan Centre / Green Man Lane

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Tintern Court	Tintern Court, Williams Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	6,202		Real
Perceval House	14-16 Uxbridge Road, Ealing,	Local government	No	Other public buildings		Natural gas	3,857		Real
Dickens Yard	Land At Dickens Yard & The Church Of Christ The Saviour & 2-12 New Broadway Ealing London	Private	Yes	Multi-address buildings		Mixed source	3,827	698	Estimate
Mattock Lane Health Centre Community Health Centre	78 Mattock Lane Ealing	Other public		NHS		Natural gas	3,781		Real
Ealing Town Hall	New Broadway, Ealing,	Local government	No	Other public buildings			1,969		Estimate
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Private residential (> 149 units or 9,999 m2)		Natural gas	1,315	567	Estimate
Broughton Court Communal	Broughton Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,197		Real
Proposed Travelodge Hotel	77 Uxbridge Road Ealing London	Private	Yes	Hotels (> 99 units or 4,999 m2)		Natural gas	961		Estimate
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Private commercial (> 9,999 m2)		Natural gas	952		Estimate
Bakers House	Bakers House, The Grove	Local government	No	Multi-address buildings	Central Boilers	Natural gas	819		Real
St Johns Children's Centre	Felix Road, West Ealing,	Local government	No	Sport & Leisure facilities			632		Estimate
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Multi-address buildings		Natural gas	593		Estimate
Ealing Central Library	The Broadway, Ealing	Local government	No	Other public buildings		Natural gas	583		Real
St Johns Primary School	Felix Rd, West Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	358		Real
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Sport & Leisure facilities		Natural gas	324		Estimate
Pitzhanger Manor & Gallery	Walpole Park, Mattock Lane, Ealing	Local government	No	Museums & Art Galleries		Natural gas	321		Real
LONGFIELD AVENUE	LONGFIELD AVENUE	Local government	No	Local government estate		Oil	247		LDA
Alexandria House Speech & Language Unit	14a Alexandria Road, Ealing	Other public		NHS		Natural gas	224		Real
St Saviours CE Infant School	The Grove, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	217		Real
West Ealing Library	Melbourne Avenue, Ealing	Local government	No	Other public buildings		Natural gas	146		Real
Mental Health and Well Being Service, 84 Uxbridge Road	3rd Floor 84 Uxbridge Road Ealing	Other public		NHS			138		Estimate
W13 Social Club for Young People	Churchfield Road, Ealing,	Local government	No	Sport & Leisure facilities		Natural gas	87		Real
EALING FIRE STATION	60/64 UXBRIDGE ROAD	Other public	No	Fire stations	Individual boilers	Natural gas	85		LDA
Crossbow house	Crossbow house	Local government	No	Multi-address buildings	Central Boilers	Natural gas	80		Real
Gordon Road	48 Gordon Road, Ealing	Local government	No	Multi-address buildings	Central Boilers	Natural gas	40		Real
Arcadia Centre	Arcadia Centre (all), 9 - 29 (consecutive) and 36 - 42 (consecutive) The Broadway 1 - 10 (consecutive) Central Chambers 1 - 4 (consecutive) Haven Place Flower Haven Springbridge Road, land over the Railway between Springbridge Road and Central Chambers	Private	Yes	Multi-address buildings		Natural gas	34		Estimate
Green Man Lane Estate	Green Man Lane Estate, Singapore Road Multi Storey Car Park, Singapore Road Surface Car Park, Dean Hall And Other Associated Highways West Ealing London	Private	Yes	Multi-address buildings		Natural gas			N/A

## Focus Area Area 2 Ealing Metropolitan Centre / Green Man Lane

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Bakers House	Bakers House 1 - 30	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Bakers House	The Grove, Ealing	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
50-54 Broadway	50 54 Broadway West Ealing Ealing London	Private	Yes	Multi-address buildings		Natural gas			N/A
Primary Care Education Centre Education Training Centre And West London Health Estates and Facilities Management	West Ealing House2 St. James AvenueEaling	Other public		NHS		Natural gas			N/A
Drug and Alcohol AbuseTeam	Part of fifth floor58 Uxbridge RoadEaling	Other public		NHS		Natural gas			N/A
Flu Response (Pandemic)Centre	16-18 New BroadwayEalingLondon	Other public		NHS		Natural gas			N/A
16 - 18 Ealing Broadway (Old Vertex	16 - 18 Ealing Broadway (Old Vertex Building)	Local government	No	Other public buildings					N/A
Perceval Lodge	Mattock Lane, Ealing,	Local government	No	Other public buildings		Natural gas			N/A
Waitrose West Ealing	2 Alexandria RoadWest EalingLondon	Private	No	Private commercial (> 9,999 m2)					N/A
Sainsbury's West Ealing	Melbourne Avenue London	Private	No	Private commercial (> 9,999 m2)					N/A
Marks & Spencer	Ealing Broadway Centre, London	Private	No	Private commercial (> 9,999 m2)					N/A
Eden Fitness	Cavalier House 46-50, Uxbridge Road, London	0	No	Sport & Leisure facilities					LDA
Rank UK Holdings Ltd	6, Connaught Road, London	0	No	Sport & Leisure facilities					LDA
HM Revenue & Customs	International House 7 High Street ,London	Central government	No	Central government estate					LDA
Office of Fair Trading	Craven House 40-44 Uxbridge Road ,London	Central government	No	Central government estate					LDA
Thames Valley University	Walpole House 18-20, Bond Street, London	Private	No	Education facilities					LDA
Thames Valley University	Westel House 32-38, Uxbridge Road, London	Private	No	Education facilities					LDA
EALING POLICE STATION 67-69, METROPOLITAN POLICE	UXBRIDGE ROAD, LONDON	Other public	No	Police stations					LDA
ROSEMOOR HOUSE 90-94	FLAT 1 BROADWAY LONDON	Private	No	Multi-address buildings				132	LDA
LUMINOSITY COURT	FLAT 2 49 DRAYTON GREEN ROAD LONDON	Private	No	Multi-address buildings				82	LDA
LOVELACE HOUSE 96-122	FLAT 1 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				138	LDA
CAVALIER HOUSE 46-50	FLAT 508 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				132	LDA
LONGFIELD HOUSE 18-20	FLAT 1 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				55	LDA
DOMINION HOUSE	FLAT 9 THE AVENUE LONDON	Private	No	Multi-address buildings				88	LDA
-	148 UXBRIDGE ROAD LONDON	Private	No	Multi-address buildings				59	LDA
O'GRADY COURT	FLAT 1 MELBOURNE AVENUE LONDON	Private	No	Multi-address buildings				62	LDA
<b>Total</b>							<b>28,992</b>		

## Focus Area 3 Copley Estate

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Gurnell Leisure Centre	Ruislip Road East	Local government	No	Sport & Leisure facilities		Natural gas	5,039		Real
Copley Close	Copley Close PT3 10	Local government	No	Multi-address buildings	Central Boilers	Natural gas	3,703		Real
Boiler House	21-74 Cheyne Path	Local government	No	Multi-address buildings	Central Boilers	Natural gas	2,988		Real
Copley Close	Copley Close; PT 1	Local government	No	Multi-address buildings	Central Boilers	Natural gas	2,975		Real
Copley Close	Copley Close PT2 10; PT3 2	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,359		Real
Copley Close	Copley Close PT2 1	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1,145		Real
Greatdown Road	13-27 (Odd) Greatdown Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	851		Real
Rolland House (Sheltered Housing)	Rolland House, Laurie Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	581		Real
Gurnell Grove Heron House 2	Gurnell Grove Heron House 2	Local government	No	Multi-address buildings	Central Boilers	Natural gas	557		Real
Pembroke Court	Pembroke Court, Park Road East	Local government	No	Multi-address buildings	Central Boilers	Natural gas	516		Real
Hanwell Community Centre	Westcott Crescent, London	Local government	No	Sport & Leisure facilities			492		Estimate
Ditchley Court	Ditchley Court, Templeman Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	486		Real
Springhallow School	Compton Close, Ealing,	Local government	No	Education facilities	Central Boilers	Natural gas	186		Real
Greatdown Road	13-27 Greatdown Road 13-27	Local government	No	Multi-address buildings	Central Boilers	Natural gas	172		Real
Kennedy Road	26-40 (Even) Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	130		Real
Kennedy Road	5-19 Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	116		Real
Cuckoo estate	Elfwine Road blk 26-32	Local government	No	Multi-address buildings	Central Boilers	Natural gas	111		Real
29; 45-49; 566 Greatdown Road	29; 45-49; 566 Greatdown Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	74		Real
Cuckoo Estate	Elfwine Road blk 10-14	Local government	No	Multi-address buildings	Central Boilers	Natural gas	70		Real
Kennedy Road	61-75 (Odd) Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	65		Real
Kennedy Road	39-53 (Odd) Kennedy Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	25		Real
Unit 1 187 Copley Close (EASE @ BASE)	187 Copley Close, Hanwell,	Local government	No	Sport & Leisure facilities			20		Estimate
Gurnell Grove Communal 3	Gurnell Grove Communal 3	Local government	No	Multi-address buildings	Central Boilers	Natural gas	18		Real
Tenants Club	189 Copley Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	18		Real
45 Greatdown Road	Greatdown Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	6		Real*
GURNELL MIDDLE SCHOOL	GURNELL MIDDLE SCHOOL		No	Education facilities					LDA
CASTLEBAR SPECIAL SCHOOL	CASTLEBAR SPECIAL SCHOOL		No	Education facilities					LDA
HATHAWAY PRIMARY SCHOOL	HATHAWAY PRIMARY SCHOOL		No	Education facilities					LDA
BRENTSIDE PRIMARY SCHOOL	BRENTSIDE PRIMARY SCHOOL		No	Education facilities					LDA
BRENTSIDE HIGH SCHOOL	BRENTSIDE HIGH SCHOOL		No	Education facilities					LDA
FALCON HOUSE	FLAT 1 GURNELL GROVE LONDON	Private	No	Multi-address buildings				65	LDA
DUNLIN HOUSE	FLAT 276 GURNELL GROVE LONDON	Private	No	Multi-address buildings				65	LDA
KESTREL HOUSE	FLAT 211 GURNELL GROVE LONDON	Private	No	Multi-address buildings				65	LDA
<b>Total</b>							<b>21,705</b>		

\* Validity unclear

**Focus Area 4A**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Villiers High School	Boyd Avenue, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	1,863		Real
Southall Sports Centre	Beaconsfield Road, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	1,240		Real
Charter Court	1 Park View Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	844		Real
North Primary School	10 Meadow Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	423		Real
Southall North Community Offices (HVs and DNs)	Flat 4 & 36a Northcote Avenue Southall Middlesex	Other public		NHS		Natural gas	359		Real
Southall North Community Offices (HVs and DNs)	Flat 3 & 36a Northcote Avenue Southall Middlesex	Other public		NHS		Natural gas	313		Real
SOUTHALL FIRE STATION	17/19 HIGH STREET	Other public	No	Fire stations	Assets including CHP	Natural gas	255		LDA
Broadway Health Centre, Southall	71-73 The Broadway Southall, Middlesex	Other public		NHS		Natural gas	219		Estimate
Grove House [Nursery School] Children's Centre	North Road, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	127		Real
Southall Young Adults Centre	Park View Road, Southall,	Local government	No	Sport & Leisure facilities		Natural gas	104		Real
Phoenix Social Club for Young People	Dormers Wells Lane, Southall,	Local government	No	Sport & Leisure facilities			66		Estimate
Disraeli Day Nursery	111 Hambrough Road, Southall,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	2		Real*
Southall Town Hall	High Street, Southall,	Local government	No	Other public buildings					N/A
BEACONSFIELD PRIMARY SCHOOL	BEACONSFIELD PRIMARY SCHOOL		No	Education facilities					LDA
KHALSA SCHOOL SOUTHALL PROMOTERS	KHALSA SCHOOL SOUTHALL PROMOTERS		No	Education facilities					LDA
HAMBROUGH FIRST SCHOOL	HAMBROUGH FIRST SCHOOL		No	Education facilities					LDA
NAGINA HOTEL	HIGH STREET, SOUTHALL	Private	No	Hotels (> 99 units or 4,999 m2)					LDA
<b>Total</b>							<b>5,815</b>		

\* Validity unclear

**Focus Area 4B**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Harmony Lodge	Harmony Lodge, Havelock Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	745		Real
WINDMILL LANE	WINDMILL LANE	Local government	No	Local government estate		Oil	635		LDA
Wolf Fields - Primary School	Norwood Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	558		Real
Heller House	124 Norwood Road, Southall,	Local government	No	Education facilities	Central Boilers	Natural gas	300		Real
Norwood Road	123 Norwood Road, flats 1-4, Southall	Local government	No	Multi-address buildings	Central Boilers	Natural gas	16		Real*
Hunt Road	37 Hunt Road, Southall	Local government	No	Multi-address buildings	Central Boilers	Natural gas	7		Real*
Southall Decimal Centre	Bridge Road, Southall,	Local government	No	Other public buildings					N/A
SYBIL ELGAR SCHOOL	SYBIL ELGAR SCHOOL		No	Education facilities					LDA
HAVELOCK PRIMARY SCHOOL	HAVELOCK PRIMARY SCHOOL		No	Education facilities					LDA
DAIRYMEAD MEADOW PRIMARY SCHOOL	DAIRYMEAD MEADOW PRIMARY SCHOOL		No	Education facilities					LDA
<b>Total</b>							<b>2,260</b>		

\* Validity unclear

**Focus Area 4C Southall Gas Works.**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Southall Gas Works	Southall Gas Works Site Southall Middlesex, Southall	Private	Yes	Multi-address buildings		Mixed source	19,431	4,500	Estimate
FEATHERSTONE ROAD HEALTH CLINIC	Hartington Road Southall	Other public	0	NHS		Natural gas	3,352		Real
SOU04 – 'Suterwalla site' and Phoenix House	Land west of The Green, south of Southbridge Way and east of Queen's Road	Private	Yes	Multi-address buildings			719	310	Estimate
Dominion Arts Education Centre	114 The Green, Southall	Local government	No	Museums & Art Galleries		Natural gas	405		Real
FEATHERSTONE JUNIOR MIXED SCHOOL	FEATHERSTONE JUNIOR MIXED SCHOOL		No	Education facilities					LDA
FEATHERSTONE INFANT SCHOOL	FEATHERSTONE INFANT SCHOOL		No	Education facilities					LDA
<b>Total</b>							<b>23,907</b>		

**Focus Area 5 Ealing Hospital**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Ealing Hospital	Uxbridge Road, Southall	Other public	No	NHS		Natural gas	22,363		Real
St Bernard's Hospital	Uxbridge Road, Southall	Other public	No	NHS		Natural gas	12,400		Real
Ealing PCT Headquarters	1 Armstrong Way Southall	Other public	0	NHS			524		Estimate
Windmill Park Childrens Centre	1 TULIP CLOSE	Local government	No	Sport & Leisure facilities			190		Estimate
Ealing Hospital NHS Workplace Nursery and Children's Centre	Uxbridge Road Southall	Local government	No	Sport & Leisure facilities					N/A
Jealous Health Club Group	8, Windmill Avenue, Southall		No	Sport & Leisure facilities					LDA
1 COMER CRESCENT SOUTHALL	1 COMER CRESCENT SOUTHALL	Private	No	Multi-address buildings				55	LDA
OSTERLEY VIEWS	FLAT 1 WEST PARK ROAD SOUTHALL	Private	No	Multi-address buildings				65	LDA
<b>Total</b>							<b>35,477</b>		

**Focus Area 6 Ferrier Road / Union Road**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Farrier Rd	28-46; 50-60 (Even) Farrier Rd	Local government	No	Multi-address buildings	Central Boilers	Natural gas	312		Real
Stable Close	5 Stable Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	231		Real
130-140 (Even) Farrier Road	130-140 (Even) Farrier Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	137		Real
79-89 (Odd) Kensington Road	79-89 (Odd) Kensington Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	105		Real
83-93 Farrier Road	83-93 Farrier Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	98		Real
Paddock Close	1-7 (Con) Paddock Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	97		Real
Meadow Close	1-7 (Con) Meadow Close	Local government	No	Multi-address buildings	Central Boilers	Natural gas	90		Real
<b>Total</b>							<b>1,071</b>		

## Focus Area 7 Greenford Road

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Ravenor Park Clinic	23 Oldfield Lane SouthGreenford	Other public	0	NHS		Natural gas	2,218		Real
Greenford Lodge (CTPLD)	14-16 Cowgate RoadGreenford	Other public	0	NHS		Natural gas	1,452		Real
Residential Care Home	118 Oldfield Lane South Greenford Greenford	Private	Yes	Multi-address buildings		Natural gas	732		Estimate
Stanhope Primary	Mansell Road, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	534		Real
Whiteoaks Lane	1-8 Whiteoaks Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	531		Real
Cowgate Day Centre	18 Cowgate Road, Greenford,	Local government	No	Sport & Leisure facilities	Central Boilers	Natural gas	351		Real
Brent Lodge (Sheltered Housing)	Brent Lodge, Church Road	Local government	No	Multi-address buildings	Central Boilers	Natural gas	314		Real
Our Lady of the Visitation Catholic School	Greenford Road, Greenford,	Local government	No	Education facilities	Central Boilers	Natural gas	252		Real
Cyril Grant Hall / Greenford Hall	Corner Of Oldfield Lane South & Ruislip Road, Greenford,	Local government	No	Sport & Leisure facilities		Natural gas	182		Real
Windmill Day Nursery	135-139 Windmill Lane, Greenford,	Local government	No	Sport & Leisure facilities		Natural gas	180		Real
Greenford Assembly Hall	Ruislip Road, Middlesex	Local government	No	Other public buildings		Natural gas	151		Real
Greenford Community Centre	170 Oldfield Lane South, Greenford	Local government	No	Sport & Leisure facilities		Natural gas	129		Real
Greenford Library	25 Oldfield Lane South, Greenford	Local government	No	Other public buildings		Natural gas	81		Real
133 Windmill Lane	133 Windmill Lane, Greenford,	Local government	No	Other public buildings		Natural gas	76		Real
Oldfield Lane	19 Oldfield Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	39		Real
Brent Lodge	Costons Lane	Local government	No	Multi-address buildings	Central Boilers	Natural gas	1		Real*
Whiteoaks House	Whiteoaks Lane, Greenford	Local government	No	Multi-address buildings	Central Boilers	Natural gas			N/A
Greenford Broadway Public Conveniences (Tetraqon)	Oldfield Lane South, Greenford,	Local government	No	Other public buildings		Natural gas			N/A
CARDINAL WISEMAN SECONDARY SCHOOL	CARDINAL WISEMAN SECONDARY SCHOOL		No	Education facilities					LDA
COSTON PRIMARY SCHOOL	COSTON PRIMARY SCHOOL		No	Education facilities					LDA
EDWARD BETHAM PRIMARY SCHOOL	EDWARD BETHAM PRIMARY SCHOOL		No	Education facilities					LDA
CENTRAL WEST	FLAT 1 320 RUISLIP ROAD EAST GREENFORD	Private	No	Multi-address buildings				69	LDA
MACMILLAN COURT	1 309 RUISLIP ROAD EAST GREENFORD	Private	No	Multi-address buildings				76	LDA
Footsteps Art Group	131-133 Windmill Lane, Greenford	Private	No	Museum and art gallery					LDA
London Motorcycle Museum	Ravenor Farm 29 Oldfield Lane South, Greenford	Private	No	Museum and art gallery					LDA
<b>Total</b>							<b>7,221</b>		

\* Validity unclear

**Focus Area 8 Park Royal**

Name	Address	Ownership	New dev.	Typology	Heating supply	Fuel source	Fuel consumption from all assets including CHP (MWh/year)	Number of Dwellings	Data source
Ramada Encore London West	4 Portal Way, London	Private	No	Hotels (> 99 units or 4,999 m <sup>2</sup> )			3,132	150	Estimate
PAR01 – Southern Gateway and Perfume Factory	Portal Way	Private	Yes	Multi-address buildings			2,262	975	Estimate
Express by Holiday Inn London Park Royal	Victoria Road, London	Private	No	Hotels (> 99 units or 4,999 m <sup>2</sup> )			2,172	104	Estimate
BBC Former Costume Store	Victoria Road Acton London	Private	Yes	Private commercial (> 9,999 m <sup>2</sup> )			603		Estimate
BBC REHEARSAL ROOM	-	Private	No	Private commercial (> 9,999 m <sup>2</sup> )		Oil			LDA
EBBETT COURT	FLAT 1 VICTORIA ROAD LONDON	Private	No	Multi-address buildings				194	LDA
TRENTAM COURT	FLAT 121 VICTORIA ROAD LONDON	Private	No	Multi-address buildings				203	LDA
POULTON COURT	FLAT 46 VICTORIA ROAD LONDON	Private	No	Multi-address buildings				54	LDA
<b>Total</b>							<b>8,169</b>		