

Mayor of London

**London Heat Map +**

Heat Mapping Study - London  
Borough of Richmond upon Thames

REP-Richmond/01

Issue | 30 March 2012

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It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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### Appendix A

Populated Template and London Heat Map Heat Load Typologies

#### A1 Populated template

#### A2 London Heat Map Heat Load Typologies



## Executive Summary

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The aim of the London Heat Map and the Heat Map Reports is to identify opportunities for decentralised energy networks in London. This process is part of the Mayor of London's drive to deliver 25% of London's energy through decentralised energy (DE) by 2025.

Arup has been commissioned by the Greater London Authority to complete the London Heat Map and provide each of the Boroughs remaining from the DEMaP programme with a report outlining their potential opportunities for DE; the London Borough of Richmond upon Thames is one such Borough.

The heat load and supply data used for the London Heat Map has been sourced by the London Borough of Richmond upon Thames and supplemented by additional data available through publically available central databases. From this, Arup have performed a high level mapping study to identify clusters where potential opportunities for decentralised energy networks may exist.

In the London Borough of Richmond upon Thames, seven clusters have been identified through this study, some within the Borough and some as opportunities in conjunction with activities or clusters in neighbouring Boroughs. These opportunities have currently been named as follows:

1. Richmond Centre
2. Teddington
3. Mortlake
4. Twickenham Centre
5. Richmond-Wandsworth
6. Richmond-Kingston
7. Richmond-Hounslow

Of these identified clusters, the Mortlake opportunity is perhaps the best for a cluster within the borough alone, and would benefit from further feasibility work. The Richmond-Hounslow cluster presents the greatest opportunity from the cross-borough clusters, being based around a significant CHP development in Hounslow's Mogden Sewage Works and a number of large and relatively diverse loads. Some early, high-level engagement between the two boroughs on this opportunity is recommended.

Further to the findings of the heat mapping study in the London Borough of Richmond upon Thames, it is recommended that the Borough also consider other decentralised energy interventions that may be better suited to its characterisation as a suburban region with energy loads relatively sparsely spread. These could include technologies such as solar thermal, biomass boilers or ground source heat pumps, but it is recommended that a more detailed renewable and low carbon energy resource study would be required to identify and analyse the potential for any such programmes of work within the borough.



# 1 Introduction

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The London Heat Map was developed through the London Development Agency's (LDA) Decentralised Energy Master Planning (DEMaP) programme in 2009 – 2010 with the aim of providing information about heat loads in London to help identify opportunities for decentralised energy.

In November 2011, the Greater London Authority (GLA) commissioned Arup to complete the London Heat Mapping exercise with the following tasks;

- to carry out heat mapping for the remaining ten London Boroughs and therefore provide a consistent London Heat Map
- to provide each of these remaining Boroughs with a report outlining potential opportunities for decentralised energy

This report outlines the potential opportunities for decentralised energy in the London Borough of Richmond upon Thames. To compile it, Arup consultant engineers worked in partnership with the London Borough of Richmond upon Thames to carry out the data collection and analysis to identify opportunities for decentralised energy.

This report sets out the methodology employed for the heat mapping process and presents the findings of potential decentralised energy opportunity within the London Borough of Richmond upon Thames.

The data collected from the London Borough of Richmond upon Thames has also been uploaded onto the online interactive GIS London Heat Map ([www.londonheatmap.org.uk](http://www.londonheatmap.org.uk)).

## 2 Background

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Energy generated by centralised power stations and transmitted through the national grid can be highly inefficient and wasteful. One of the Mayor's top priorities for reducing London's CO<sub>2</sub> emissions is to reduce the capital's reliance on centralised power stations. This means increasing the use of local, low carbon energy supplies through decentralised energy systems.

In 2010, residential, commercial and public sector buildings represented over 40% of UK greenhouse gas emissions<sup>1</sup>; reducing the carbon content of the heat and electricity supplied to these buildings is clearly a vital undertaking in efforts to mitigate climate change.

### 2.1 Decentralised Energy and District Heating

In broad terms, DE is the local or sub-regional supply of energy from a local source. A District Heating (DH) network uses this principle on a district scale and delivers heat generated at an Energy Centre (EC) to local end users via a network. The EC normally hosts one or more Combined Heat and Power (CHP) units as well as back-up boilers and thermal stores.

CHP is the simultaneous generation of heat and power in a more efficient way than if the two forms of energy would have been produced separately. Heat is recovered from the power generation process and is typically supplied in the form of hot water. Richmond currently has one known CHP plant, at Teddington pools which generates almost 100,000 kWh per annum.

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<sup>1</sup> Building Britain: The path to sustainable growth for the built environment (2012). Aldersgate Group.

DE will play a key role in developing a more sustainable, secure and cost-effective energy supply for London, and help target a number of important problems such as climate change and fuel poverty.

## 2.2 The history of heat mapping: DEMaP

In 2009 the Mayor of London set a target to supply a quarter of London's energy from decentralised sources by 2025.

To this end, the DEMaP (Decentralised Energy Master Planning) programme was introduced by the London Development Agency<sup>2</sup> (LDA) in 2009. The LDA allocated nearly £5 million towards decentralised energy over four years from 2009, with additional support made available through the JESSICA (Joint European Support for Sustainable Investment in City Areas) fund to unlock the development of decentralised energy in London.

The DEMaP programme was developed to enable Boroughs to identify opportunities for decentralised energy, and to develop the capacity to realise those opportunities. This was based on a trajectory of work packages, broken down into three phases, from initial capacity building through to feasibility study and project delivery. The heat mapping exercise was originally carried out during the first phase.

The London Heat Map was developed as part of DEMaP to help address the lack of information and certainty surrounding London's heat loads. It is intended to be used by policy and decision-makers to help identify opportunities for DE in their area and to develop new decentralised energy schemes and enable the market to make informed investment decisions without risking significant development costs.

The first round of heat mapping collected data from 23 London Boroughs. This data was used to populate the London Heat Map (Figure 1).

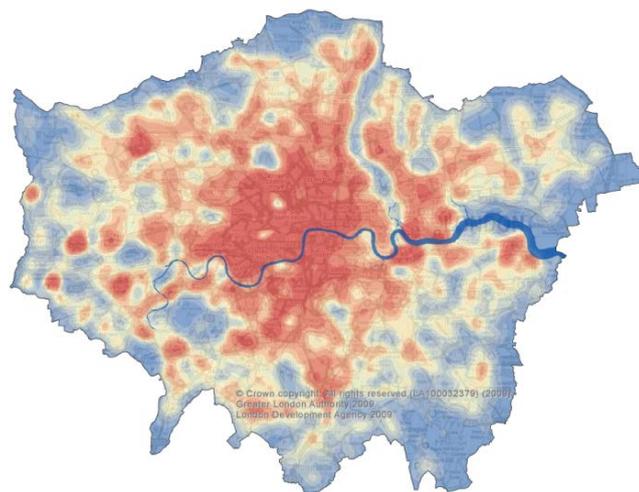


Figure 1: The London Heat Map, as viewable at [www.londonheatmap.org.uk](http://www.londonheatmap.org.uk)

The second round of heat mapping has been undertaken by the GLA in November 2011 and the remaining ten Boroughs were invited to participate in order to complete the heat map for the entirety of the Greater London area.

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<sup>2</sup> The functions of the London Development Agency are being folded in the Greater London Authority as a result of the government announcement in June 2010 that all Regional Development Agencies be abolished by March 2012.

The aims of the heat mapping exercise are:

- To identify potential opportunity areas for the development of decentralised energy networks across London, and
- To provide an evidence base for local authority and GLA planning policies requirements for connections to district heating networks.

The image below illustrates the status of heat mapping in London Boroughs. Those in red have completed Heat Mapping and the data results are available on the Heat Map website, along with a report of the opportunity area ([www.londonheatmap.org.uk](http://www.londonheatmap.org.uk)). Boroughs highlighted in yellow have provided data which was uploaded to the London Heat Map having completed independent data collection and mapping exercises. The Boroughs highlighted in blue are part of the final tranche of heat mapping currently underway.

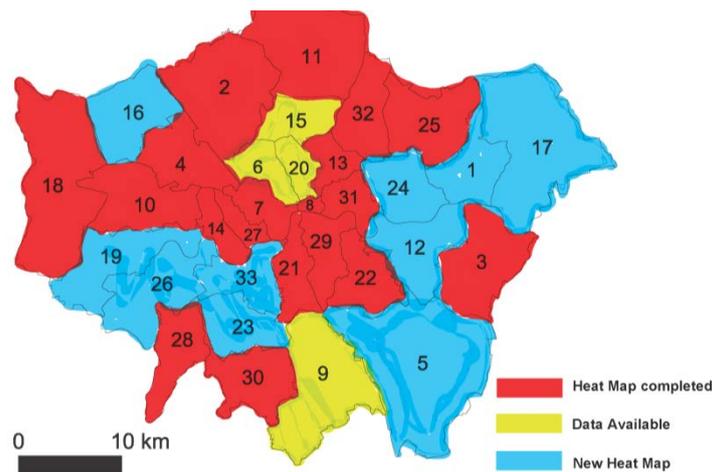


Figure 2: The Heat mapping status of London Boroughs.

Those remaining London Boroughs involved in the second round of completing the London Heat Map were:

1. London Borough of Barking and Dagenham
5. London Borough of Bromley
12. London Borough of Greenwich
16. London Borough of Harrow
17. London Borough of Havering
19. London Borough of Hounslow
23. London Borough of Merton
24. London Borough of Newham
26. London Borough of Richmond upon Thames
33. London Borough of Wandsworth
7. City of Westminster

## 3 Policy context

### 3.1 UK climate change agenda

The UK Government has responded to the climate change agenda with a range of climate change legislation, targets and actions to reduce greenhouse gas emissions (GHG), including:

- Setting a national target of 80% reduction in annual GHG emissions compared to 1990 levels by 2050, with an interim target of 34% reduction by 2020
- Establishing the world's first national Climate Change Act to tackle the threat of climate change, and
- Introducing financial measures such as: the Renewables Obligation (RO); the Feed in Tariff (FIT); the Renewable Heat Incentive (RHI); and the Carbon Reduction Commitment (CRC).

Legislation is intended to support the transition to a low carbon economy – an economy that minimises environmental impact, is sustainable and limits GHG emissions. The national government's agenda is being taken forward by all the local authorities in the UK.

### 3.2 The London Plan

The London Plan 2011 sets out the spatial development strategy for London. Chapter 5 specifically addresses 'London's Response to Climate Change' and sets out the following policy requirements:

#### **Policy 5.2 – Minimising carbon dioxide emissions**

This policy sets out a range of CO<sub>2</sub> emission targets for new developments which must be achieved through a hierarchy of:

- **Be lean: use less energy**
- **Be clean: supply energy efficiently**
- **Be green: use renewable energy**

#### **Policy 5.5 – Decentralised energy networks**

- **Strategic:** The Mayor expects 25 per cent of the heat and power used in London to be generated through the use of localised decentralised energy systems by 2025. In order to achieve this target the Mayor prioritises the development of decentralised heating and cooling networks at the development and area wide levels, including larger scale heat transmission networks.
- **LDF preparation:** Within LDFs Boroughs should develop policies and proposals to identify and establish decentralised energy network opportunities. As a minimum Boroughs should:
  - i. Identify opportunities for expanding existing networks and establishing new networks. Boroughs should use the London Heat Map tool and consider any new developments, planned major infrastructure works and energy supply opportunities which may arise
  - ii. Develop energy master plans for specific decentralised energy opportunities which identify:
    - major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
    - major heat supply plant

- possible opportunities to utilise energy from waste
- possible heating and cooling network routes
- implementation options for delivering feasible projects, considering issues of procurement, funding and risk and the role of the public sector.

### 3.3 Borough policy

The Council's Core Strategy 2009 sets out the spatial vision and objectives for the Borough, including strategic policies. The Council's Development Management Plan 2011 builds on the Core Strategy and sets out detailed policies for developments. The following local planning policies set out requirements in relation to decentralised energy:

#### 3.3.1 Core Strategy policy CP2 – Reducing Carbon Emissions

“2.A The Borough will reduce its carbon dioxide emissions by requiring measures that minimise energy consumption in new development and promoting these measures in existing development, particularly in its own buildings.

2.B The Council will require the evaluation, development and use of decentralised energy in appropriate development.

2.C The Council will increase the use of renewable energy by requiring all new development to achieve a reduction in carbon dioxide emissions of 20% from on-site renewable energy generation unless it can be demonstrated that such provision is not feasible, and by promoting its use in existing development.

#### **Justification:**

Energy use in new development can be reduced by appropriate siting, design, landscaping and energy efficiencies within the building, and these can be retro-fitted to existing buildings. New developments, including conversions and refurbishments, will be expected to achieve high environmental standards, and all new buildings to include the use of renewable energy sources, in accordance with

The London Plan consolidated with Alterations since 2004. The production of energy close to where it is to be consumed (combined heat and power or CHP) is more efficient than centralised electricity generation where both heat and energy are wasted in production and transmission, and the potential for CCHP/CHP in new developments should be evaluated in accordance with The London Plan consolidated with Alterations since 2004. Where the principle of decentralised energy generation has been accepted on a specific site, developments on nearby sites should be designed to connect to the network when it is established. The Council will require an assessment of energy demand and carbon dioxide emissions from the proposed development, which should demonstrate the expected energy and carbon dioxide emissions savings from energy efficiency and renewable energy measures incorporated into the development.”

#### 3.3.2 Core Strategy policy CP9 – Twickenham Town Centre

Section 9.I sets out requirements for decentralised energy:

“9.I: Requiring decentralised energy generation initiatives in appropriate development.”

### 3.3.3 Development Management policy DM SD 2 - Renewable Energy and Decentralised Energy Networks

“New development will be required to conform with the Sustainable Construction Checklist SPD and:

- a. Maximise opportunities for the micro-generation of renewable energy. Some form of low carbon renewable and/or de-centralised energy will be expected in all new development, and
- b. Developments of 1 dwelling unit or more, or 100sqm of non-residential floor space or more will be required to reduce their total carbon dioxide emissions by following a hierarchy that first requires an efficient design to minimise the amount of energy used, secondly, by using low carbon technologies and finally, where feasible and viable, including a contribution from renewable sources.
- c. Local opportunities to contribute towards decentralised energy supply from renewable and low-carbon technologies will be encouraged where there is no over-riding adverse local impact.
- d. All new development will be required to connect to existing or planned decentralised energy networks where one exists. In all major developments and large Proposals Sites identified in the (forthcoming) Site Allocations DPD, provision should be made for future connection to a local energy network should one become available.

#### Justification:

“Tackling climate change will require widespread uptake of sustainable energy sources and support decentralised energy systems, through greater support of both established and innovative low carbon and renewable energy technologies. Over time the Government expects all new developments to be zero carbon. This can be best achieved through the application of the energy hierarchy whereby development should maximise energy efficiency, use low carbon technologies and reduce carbon dioxide emissions through the use of renewable energy. This also reflects the approach in the London Plan.

In this policy new development does not apply to residential extensions, unless creating one new dwelling unit or more, and non residential extensions below 100sqm. The Council expects all schemes including 1 or more residential units and commercial or other developments of 100sqm or more, to be subject to the Sustainable Construction Checklist SPD. Designing for minimum energy use and reducing predicted site CO<sub>2</sub> emissions should be addressed in an energy statement. The Council encourages developers to achieve a 20 per cent reduction in total site CO<sub>2</sub> emissions from the use of on-site renewable energy, to improve savings beyond those generated by energy efficiency measures, as set out in Core Strategy Policy CP2. The Council will take into account relevant viability information.

Due to the built up nature of most of the Borough, wind turbines are unlikely to be suitable, but other renewable technologies such as photovoltaic cells, solar panels, ground and air source heat pumps and other forms of renewable energy may be appropriate in many parts of the Borough.

Decentralised energy (DE) systems generate power at the point of use thereby reducing energy loss and waste. DE will be predominantly based around combined heat and power (CHP), district heating and cooling. Opportunities for decentralised heating and cooling networks at the development and area wide level and larger scale heat transmission networks will be explored by the Council. The Mayor has set a target for London to generate 25 per cent of its heat and power requirements through the use of local DE systems by 2025. The GLA Heat density map shows areas of high heating fuel use, major developments and proposals on larger sites identified in the

Site Allocations DPD must prioritise connection to existing or planned decentralised energy networks where feasible. These may be CCHP or energy from waste schemes.”

### **3.3.4 London Borough of Richmond upon Thames 2008 Climate Change Strategy**

The London Borough of Richmond upon Thames’ 2008 Climate Change Strategy has a vision to “accelerate the installation of low-carbon micro-generation technologies and reduce the distance between sources of energy production and consumption”. The Strategy is being updated by summer 2012 to reflect current policy and revise targets. It is expected that energy supply will continue to be a key focus.

## 4 Decentralised Energy in London

Following on from the successful DEMaP programme, the GLA is committed to further strategic development and support to deliver more DE schemes within London, through the Decentralised Energy for London programme. Set up with €3.3m in funding, 90% of which was secured from the European Investment Bank's ELENA facility, the Mayor's Decentralised Energy for London programme will provide Boroughs and other project sponsors with technical, financial and commercial assistance to develop and bring DE projects to market.

London has been home to DH networks for a number of years, with schemes in Whitehall, Pimlico, Barkantine and the City of London, to name but a few, set to be joined by many more in the near future. There will be a growth in interconnections between existing schemes, and the potential development of a number of high-capacity strategic networks, notably SELCHP, the London Thames Gateway Heat Network, and the Upper Lee Valley Strategic Heat Network transporting industrial volumes of waste heat from power stations over long distances, which could allow for truly significant carbon savings.

Existing schemes and those planned for future development are shown in the London "Vision Map" (Figure 3). These can be viewed in more detail on the London Heat Map website by turning on the vision layer ([www.londonheatmap.org.uk](http://www.londonheatmap.org.uk)).

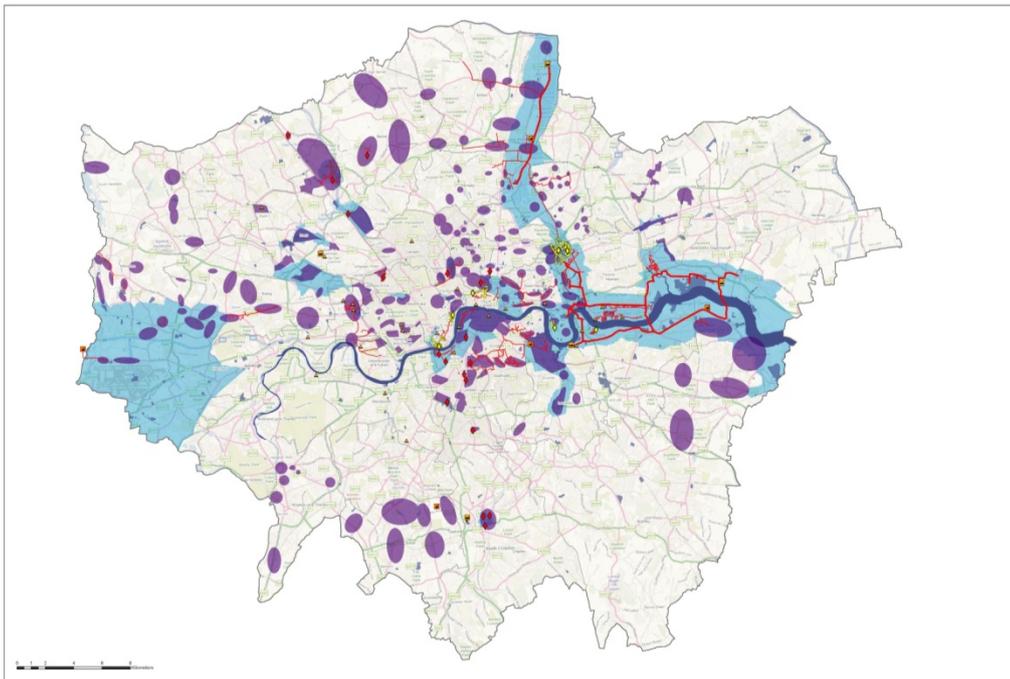


Figure 3: The London Decentralised Energy for London Vision Map 2012

## 5 Methodology

The methodology for heat mapping was developed by Arup in conjunction with the LDA / GLA.

The heat mapping process identifies potential DE opportunities in each Borough, and where relevant cross-Borough opportunities. The process concludes with an implementation plan developed jointly with the London Borough of Richmond upon Thames to identify how these opportunities could be progressed. The process consists of two main phases:

### Phase 1: Data collection

This data collection should create a reliable database and identify:

- Major heat loads (existing and planned)
- Major heat supply plants (existing and planned)
- District Heating (DH) networks (existing and planned)

### Phase 2: Identifying opportunities for potential DE schemes

This process includes the identification of ‘clusters’ of buildings and development areas that have the best potential for future DH networks and / or extending existing heat networks.

## 5.1 Phase 1: Data Collection

The aim of Phase 1 is to populate the London Heat Map with data points from which the analysis in Phase 2 can take place. These data points should identify both existing and already planned heat loads, heat supply plants and district heating networks.

Some data points within the London Borough of Richmond upon Thames already existed on the London Heat Map from the first round of heat mapping that took place under the DEMaP programme. The data for these points had been collected from central data bases such as the London Fire and Emergency Planning Authority (LFEPA) and the London Development Database 2004 (LDD).

To complete the dataset for the London Borough of Richmond upon Thames, the Borough was asked to source the data and verify that which was already in the London Heat Map. The following data locations were suggested to the Borough to source the data:

- The former NI 185 register
- The Council’s Property Services
- Specific Borough documents (such as Asset Management Plans)
- Members of the Borough Local Strategic Partnership
- Council’s Planning Applications (for large scale applications)
- Council boiler replacement programme
- Private Landowners / Developers
- Other public sector bodies
- Display Energy Certificates (DEC)
- CRC Energy Efficiency data

The typologies used to define the heat loads in the London Heat Map are available in Appendix A2.

An inception meeting was held on the Richmond Civic Centre on 27<sup>th</sup> January 2012 with representatives from the London Borough of Richmond upon Thames. Andrea Kitzberger, the Principal Planning Policy Officer, and Jess Wiles, the Sustainability Officer, attended the

meeting. Following the meeting, the London Borough of Richmond upon Thames carried out the data gathering exercise for heat mapping.

The full data set provided is available in Appendix A1.

## 5.2 Phase 2: Identifying opportunities for potential DH networks

The aim of Phase 2 is to use the populated London Heat Map to identify opportunities for potential DE schemes both within the London Borough of Richmond upon Thames, and across Borough borders.

To do this, the following factors were considered to identify clusters of buildings with the potential to form a DH network:

- The **physical proximity and heat load density** of buildings. This is important to identify high level cluster opportunities and to identify the scale of infrastructure required to meet the demand.
- The presence of **existing anchor loads** which could be able to trigger a DE network. An anchor load is a heat load that is large, has a relatively constant load profile and is therefore suitable for a long-term heat supply or purchase contract. Anchor loads are important as they reduce the risk associated with securing connection of multiple heat loads.
- The presence of **heat load diversity** throughout the buildings identified. Diversity is important to balance the overall load profile of the DH network and make more efficient use of the heat generation source.
- The presence of **planned developments**. This is important for a number of reasons, firstly that the network/parts of the network can be built out as part of the development, reducing the disruption specifically associated with the DH network. Secondly those buildings within the development can be required to connect through their planning consent, securing heat demand. Finally, the avoided costs of installing individual heat supply plant per unit instead of smaller interface units with communal heat off-take can improve the economic and financial viability of new schemes, and often results in additional floorspace available to the developer.
- The presence of **publically owned buildings**. Public organisations can have policy objectives which may make them more likely to connect to DH networks, such as carbon reduction commitments and tackling fuel poverty.

Having a cluster of buildings which are characterised by as many of the above factors as possible is considered essential for a more efficient and cost effective DH network.

The identified clusters within the London Borough of Richmond upon Thames were then visualised for this report using the London Heat Map data, along with the key reasons for their identification and the recommended next steps should the London Borough of Richmond upon Thames wish to investigate the cluster opportunity further.

Where buildings within an identified cluster had no fuel consumption data, this has been calculated using recognised CIBSE heat consumption benchmarks for the building typology and the gross internal floor area of the building. In cases where the floor area was also unavailable this has been approximated. The estimated capacity required for each cluster has then been calculated using the recognised average number of hours that heat is required in a year (2250hrs/year).

## 6 Cluster Analysis for the London Borough of Richmond upon Thames

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Through following the methodology for Phases 1 and 2 of the heat mapping process, the clusters for the London Borough of Richmond upon Thames have been identified and visualised on the map in Figure 4. Each cluster is addressed in more detail in the following report sections.

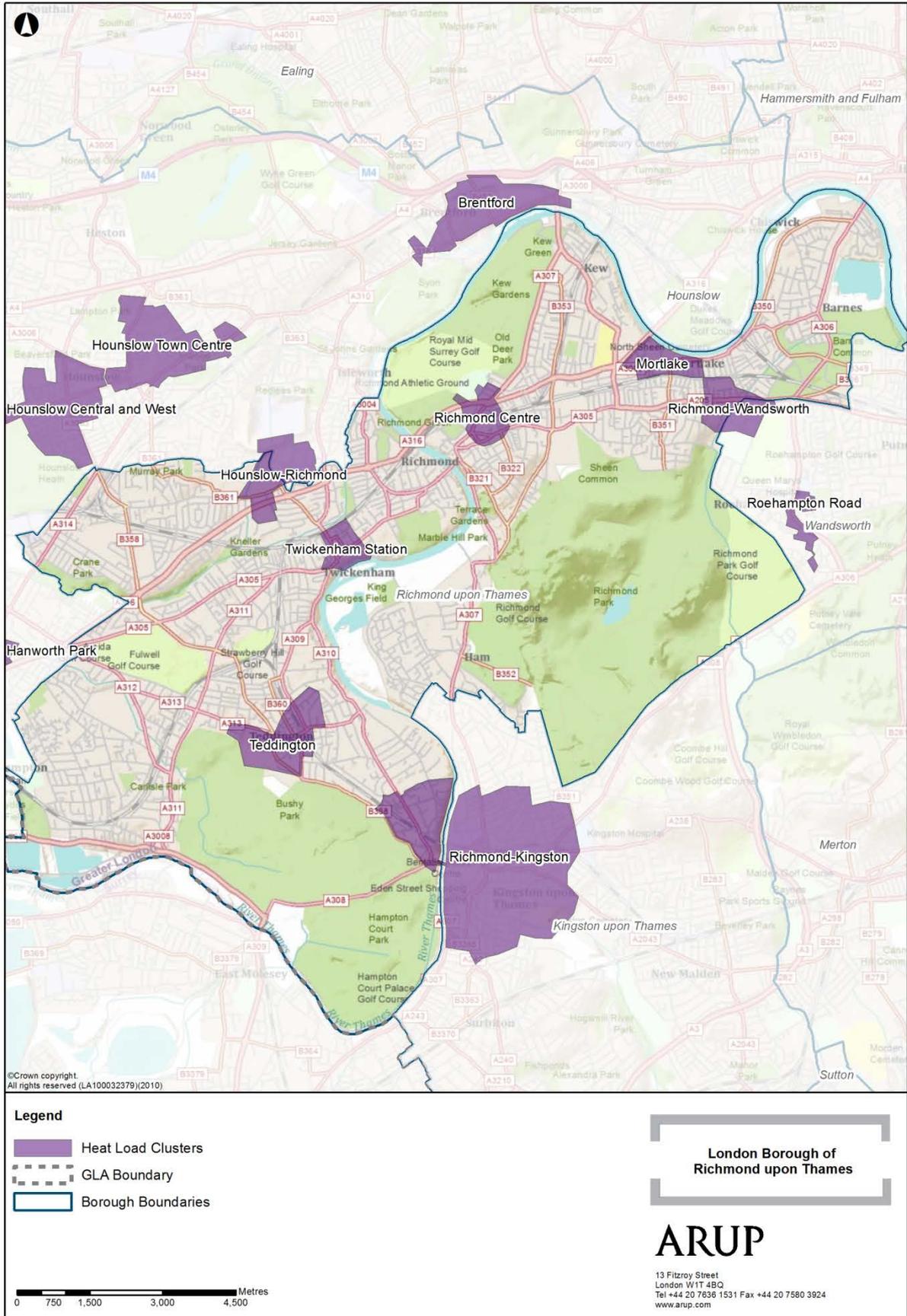


Figure 4: Identified heat clusters for the London Borough of Richmond upon Thames

## 6.1 Heat Clusters within the London Borough of Richmond upon Thames

Each of the clusters is described in more detail below. The descriptions are based on a desk top analysis of data provided by the Borough and as such provide a high level indication of potential opportunities for DE schemes. It should be noted that site surveys were not carried out nor were any potential stakeholders contacted as part of this analysis. The cluster analysis represents potential opportunities that will require further feasibility and assessment before progressing to the next stage of development.

### 6.1.1 Richmond Centre Cluster

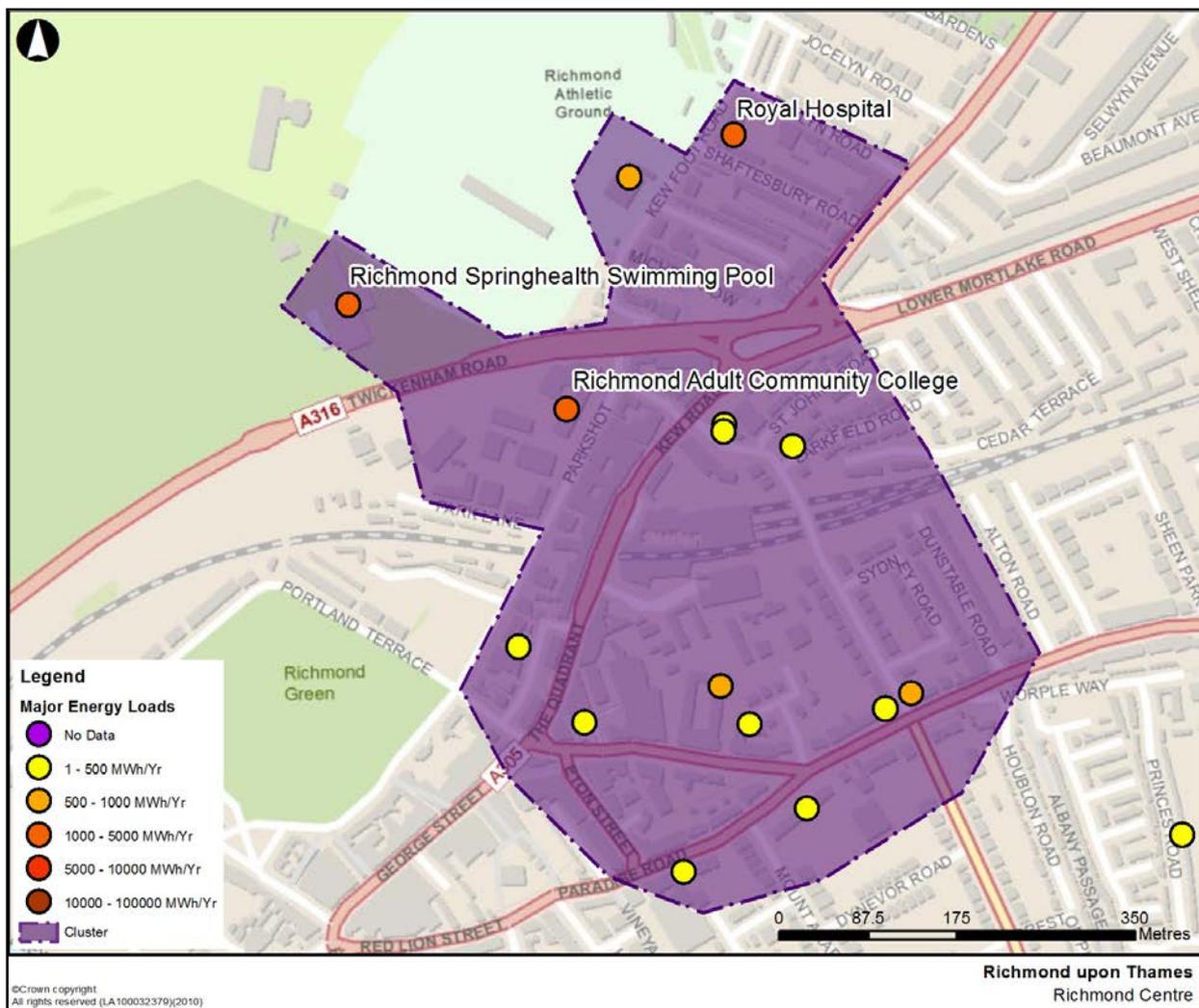


Figure 5: Richmond Centre Heat Cluster

The potential opportunity for a district heat network identified in the Richmond Green Cluster currently incorporates 14 buildings and 1 planned development, as shown in Table 1 at the end of this section.

With the data available, it can be seen from the map (Figure 5) that there is physical proximity between the loads identified and density within the area, the area covered by these buildings is approximately 0.32 km<sup>2</sup>.

In the north western corner, the Richmond Springhealth swimming pool provides a key potential anchor load for developing a network in this area and is relatively close to the next largest loads identified; Royal Hospital and Richmond Adult Community College. Development plans for a multi-address development close to Richmond station also make the opportunity in this area more attractive.

Whilst seven of the buildings within this cluster currently have no fuel consumption data associated with them and have only been benchmarked, it can already be seen that they present a diverse mix of typologies; residential, offices, hotels, sports and leisure facilities, education facilities and commercial use allowing for good operation of a potential heat network. Equally there are a number of publically owned buildings that could present an opportunity for a network to be developed. The area is also home to many businesses and retail shops that could prove interesting in a feasibility study. A new office block at Eton Street/Lower George Street is also under development.

It should also be noted that the development of this cluster is relatively constrained by both a railway and major road cutting off the two large anchor loads (Richmond Springhealth swimming pools and Richmond Adult Community College) from the rest of the identified potential development. These issues are not necessarily barriers, but consideration would need to be made of costs and practicalities of building out a network across such transport infrastructure.

#### Further steps:

- Ascertain actual demand of loads with no data
- Engage with potential anchor loads to determine plant-replacement dates and gauge their appetite to participate in a DH network
- Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.

**Table 1: Existing buildings in Richmond Centre cluster**

Name	Ownership	Typology	Fuel Consumption (MWh/yr)
Richmond Pool (Springhealth)	Local Government	Sport and Leisure facilities	2,262
Royal Hospital*	Other public	NHS	1,643
Richmond Adult Community College	Private	Education facilities	1,384
Lichfield Court Properties*	Private	Multi-address buildings	1028
Cannons Health & Fitness Ltd *	Private	Sport & Leisure facilities	743
The Richmond Inn Hotel*	Private	Hotels (> 99 units or 4,999 m2)	589
Quinns Hotel*	Private	Hotels (> 99 units or 4,999 m2)	443
Richmond Police Training Centre*	Other public	Police stations	394
Richmond Library	Local Government	Local government estate	203
<b>TOTAL Fuel Consumption</b>			<b>8,689 MWh/yr</b>

\*Benchmarked from industry standards

**Table 2: Planned developments in Richmond Centre cluster**

Name	Ownership	Typology	Estimated Fuel Consumption (MWh/yr)
Eton Street, Lower George Street	Private	Multi-Address Buildings	140
<b>TOTAL Fuel Consumption</b>			<b>140 MWh/yr</b>

**Table 3: Summary of Existing and New Developments for Richmond Centre Cluster**

<b>Total Fuel Consumption</b>	<b>8,829 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>7,063MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>3.1 MW</b>

## 6.1.2 Teddington Cluster

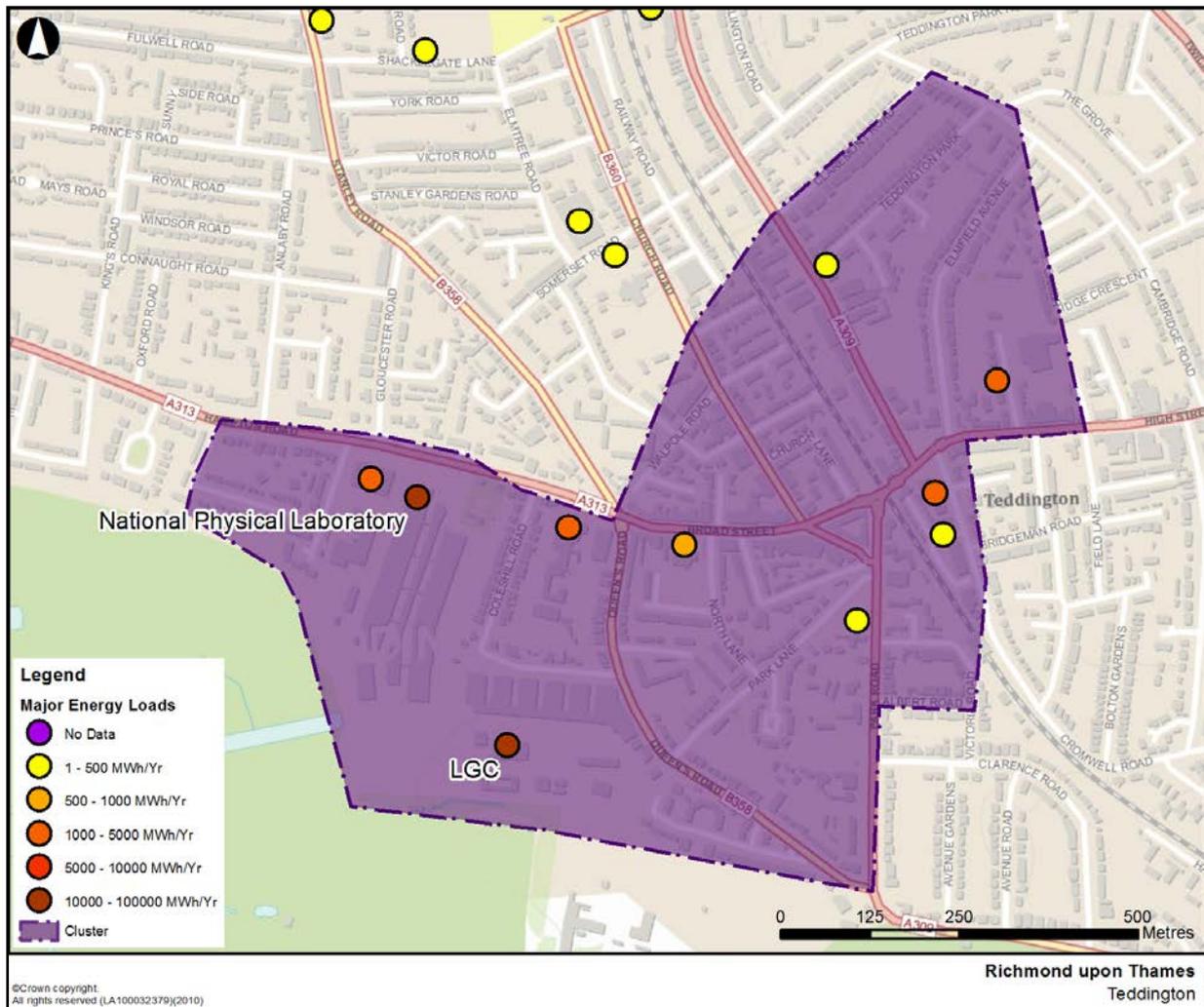


Figure 6: Teddington Heat Cluster

The Teddington Cluster consists of a number of existing buildings in relatively close proximity. All buildings in the cluster are listed in **Table 4** at the end of this section.

Fuel consumption data was not available for most of these buildings, so they have been benchmarked; however the cluster indicates good variation of building types, including a leisure centre, hospital, hotel and laboratory. These buildings are likely to have a constant heat demand throughout the season, therefore ideal for a DH network. The combination of these buildings could potentially give a good balance of demands for a DH network. Looking at the available fuel consumption data, the LGC and National Physical Laboratory consume a large volume of gas, which can be considered as potential anchor loads for the DH network in the cluster.

There are currently no plans for any new development identified in this cluster. As a result, the first opportunity may arise when large heat consumers in this area e.g. the National Physical Laboratory, LGC are looking to replace their existing plants. There exists the opportunity for these buildings to act as catalysts for an area-wide network development. A more detailed feasibility study of a potential DH network would be required when plant replacement or upgrade opportunities arise.

It should also be noted that there is a CHP plant at Teddington pools which generates almost 100 MWh per annum and could provide a source of heat for any potential network if there is surplus heat at any point in time.

### Further steps:

- Ascertain actual demand of loads with no data
- Engage with potential anchor loads to determine plant-replacement dates and their appetite for participating in a large DH network
- Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.

**Table 4: Existing buildings in the Teddington cluster**

Building Name	Typology	Ownership	Fuel Consumption (MWh/yr)
National Physical Laboratory	Other public	Other public buildings	32,160
LGC Limited	Private	Private commercial (> 9,999 m <sup>2</sup> )	12,833
Teddington Swimming Pool	Local Government	Sport and Leisure facilities	2,316
Travelodge Teddington*	Private	Hotels (> 99 units or 4,999 m <sup>2</sup> )	1,559
Teddington Memorial Hospital*	Other public	NHS	1,477
National Weights & Measures Laboratory*	Central government	Central government estate	1,050
Fitness First Ltd*	Private	Sport & Leisure facilities	541
Teddington Business Park*	Private	Private commercial (> 9,999 m <sup>2</sup> )	416
Teddington Police Station, Metropolitan Police*	Other public	Police stations	155
Teddington Library*	Local Government	Local government estate	79
<b>TOTAL Fuel Consumption</b>			<b>52,585 MWh/yr</b>

\*Benchmarked from industry standards

**Table 5: Summary of existing and new developments for Teddington cluster**

<b>Total Fuel Consumption</b>	<b>52,585 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>42,068 MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>18.7 MW</b>

### 6.1.3 Mortlake Cluster

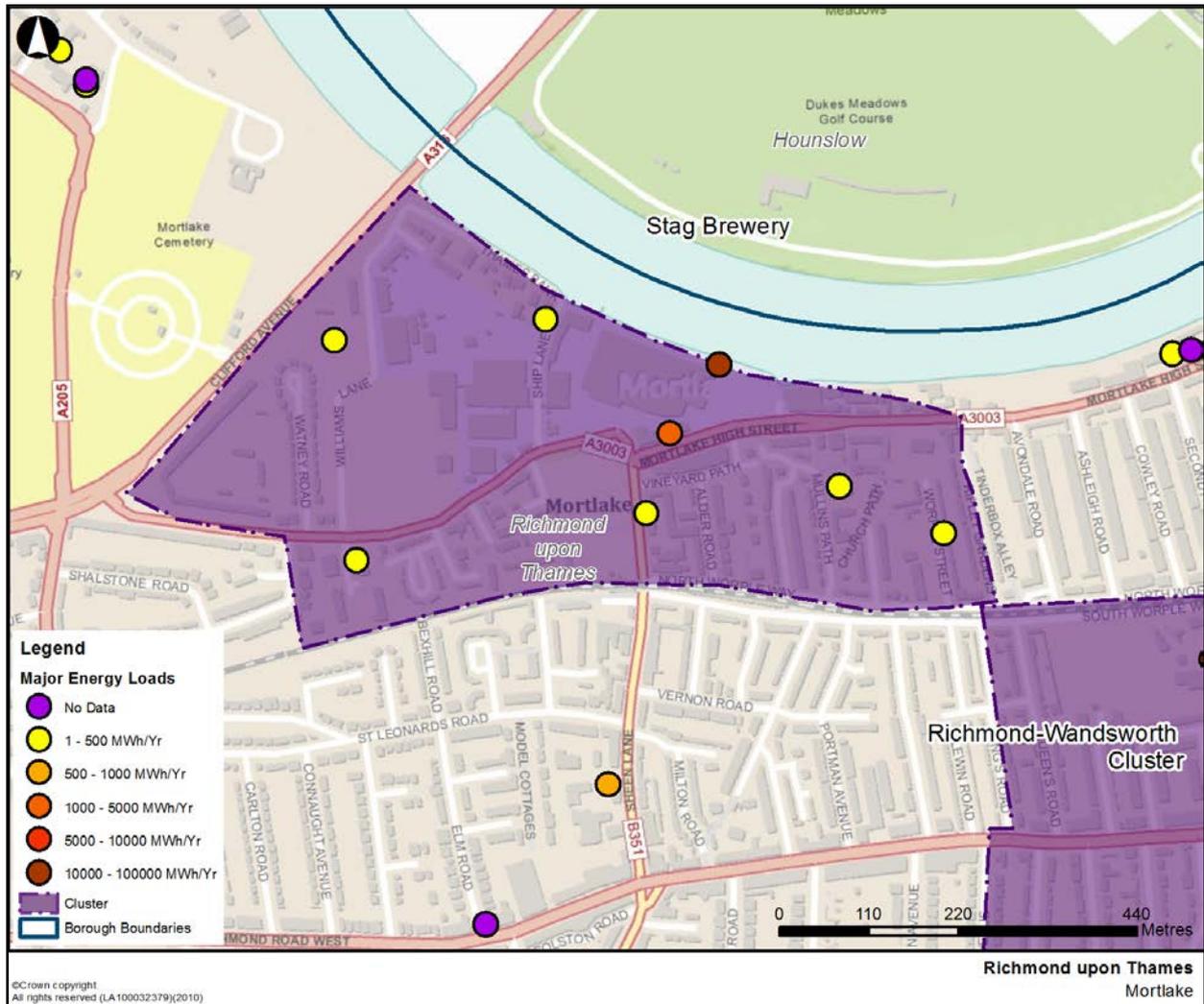


Figure 7: Mortlake heat cluster

The Mortlake Cluster is made up of six key existing buildings. As can be seen clearly from the consumption in the table below, there exists a key anchor load in the buildings of the Stag Brewing Company Ltd, which has a considerably large consumption of over 68,000 MWh/yr per year and 20 MW of installed thermal capacity, presumably for process use. This site participates in the EU-ETS scheme. The complex already has a sizeable plant room, and might have space available for the additional plant necessary for an energy centre serving the entire cluster.

In addition to the existing buildings, there are plans for two new residential developments in the area, totalling up to 376 residential units. The largest of these is on the brewery site, and as such may present a good opportunity for future connection to a possible network centred on the brewery.

While there are only eight buildings identified in this cluster, there is a good level of diversity in their occupancy, with a mix of residential, office, hotel, education facilities and commercial / industrial uses allowing for good operation of a CHP unit.

In terms of ownership, three buildings are education facilities under local or central government control.

It should be noted that development of this cluster is relatively constrained by the river on the northern side and the railway on the southern side. The cluster is relatively isolated, although there exists the opportunity for connection to the nearby Richmond-Wandsworth cluster if a suitable network crossing of the railway can be found (see Figure 7).

### Further steps:

- Ascertain demand of loads with no data
- Engage with the Brewery and learn their appetite for participation in a large scheme, and the possibility of selling any waste heat or spare capacity.
- Gain further clarity on the new developments in the area, and investigate the possible extent of developer contributions towards the scheme.
- Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.
- Explore the possibility of running DH network piping across the railway for potential connection to the Richmond-Wandsworth cluster.

**Table 6: Existing buildings in the Mortlake cluster**

Name	Ownership	Typology	Fuel Consumption (MWh/yr)
Stag Brewing Company Limited	Private	Private commercial (> 9,999 m <sup>2</sup> )	68,179
Ship Hotel	Private	Hotels (> 99 units or 4,999 m <sup>2</sup> )	281
St Mary Magdalens C Primary School	Local Government	Education Facilities	221
Nursery School	Private	Education facilities	98
Training & Development Centre, Mortlake	Local Government	Local government estate	83
Mortlake Contact & Assessment Centre	Local Government	Local government estate	19
<b>TOTAL Fuel Consumption</b>			<b>68,880 MWh/yr</b>

**Table 7: Planned developments in the Mortlake Cluster**

Name	Ownership	Typology	Estimated Fuel Consumption (MWh/yr)
Budweiser Stag Brewery, Mortlake	Private	Private residential (> 149 units or 9,999 m <sup>2</sup> )	1,286
Land at Williams Lane Bowling Green	Private	Multi-address buildings	326
<b>TOTAL Fuel Consumption</b>			<b>1,612 MWh/yr</b>

**Table 8: Summary of new and existing buildings in the Mortlake Cluster**

<b>Total Fuel Consumption</b>	<b>70,492 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>56,393 MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>25 MW</b>

### 6.1.4 Twickenham Station Cluster

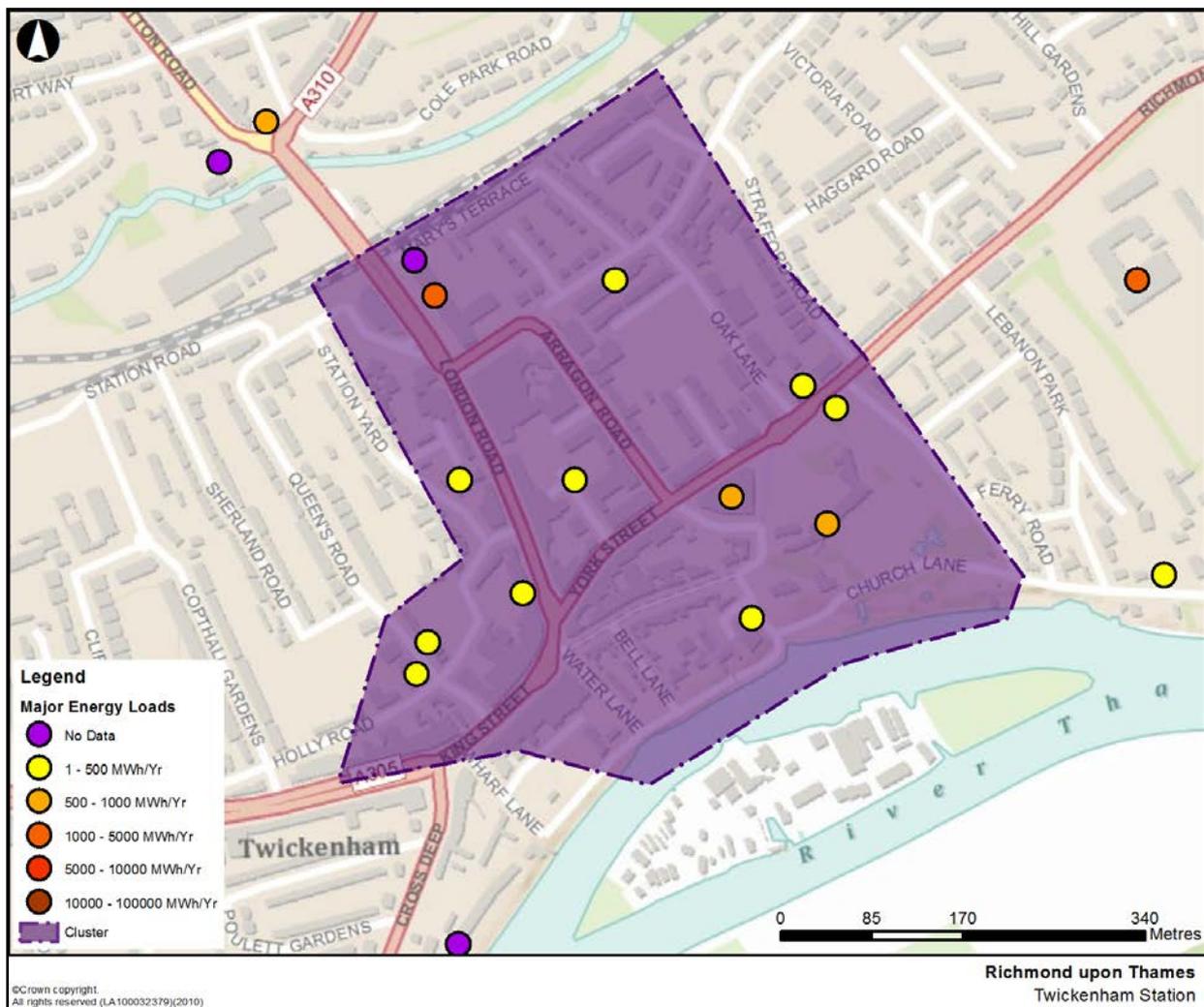


Figure 8: Twickenham Station heat cluster

There are fifteen existing and new developments that have been identified in this cluster – many of which are buildings in close proximity which indicates a good opportunity for a DH network. However there are number of limiting factors to be considered for this cluster:

- Relatively small heat requirement for buildings within the cluster, and lack of an identified anchor heat load; the apparent anchor load would be Regal house (based on benchmarking), however the private ownership of this building would require a proactive approach for connection to a DE scheme.
- Most of public buildings in the cluster are commercial buildings; therefore, the lack of diversity of buildings could result in a heat demand with high daily and seasonal variance. Further identification of potential private sector connections may present an opportunity to add more diversity to any eventual scheme.

- Finally, lack of new development in the area also may limit the DE opportunity in the cluster.

The old Twickenham Sorting Office also sits opposite this cluster on the other side of the railway tracks; it has a fuel consumption of 492 MWh/yr and is due to be regenerated. It may therefore be of interest in expanding the opportunity northwards. Similarly the Richmond Adult Community College on Clifden road to the west of this cluster is to be redeveloped.

#### Further steps:

- Ascertain demand of loads with no data
- Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.

**Table 9: Existing Buildings in the Twickenham Station cluster**

Building Name	Typology	Ownership	Fuel Consumption (MWh/yr)
Regal House*	Private	Multi-address buildings	1,350
York House (Gas Only)	Local Government	Local government estate	855
Civic Centre	Local Government	Local government estate	517
Twickenham Police Station*	Other public	Police stations	357
St Mary's Ce Primary Amyand Park	Local Government	Education Facilities	199
York Street No 42	Local Government	Local government estate	159
Twickenham Library	Local Government	Local government estate	130
Twickenham Museum*	Private	Museums & Art Galleries	125
Travelodge Twickenham	Private	Hotels (> 99 units or 4,999 m2)	tbc
<b>TOTAL Fuel Consumption</b>			<b>3,692 MWh/yr</b>

\*Benchmarked from industry standards

**Table 10: New Development in the Twickenham Station cluster**

Building Name	Typology	Ownership	Estimated Fuel Consumption (MWh/yr)
Twickenham Station	Multi-address buildings	Private	493
<b>TOTAL (available data)</b>			<b>493 MWh/yr</b>

**Table 11: Summary of new and existing buildings in the Twickenham Station cluster**

<b>Total Fuel Consumption</b>	<b>4,185 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>3,348 MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>1.5 MW</b>

## 6.2 Cross-Borough opportunities

### 6.2.1 Richmond-Wandsworth

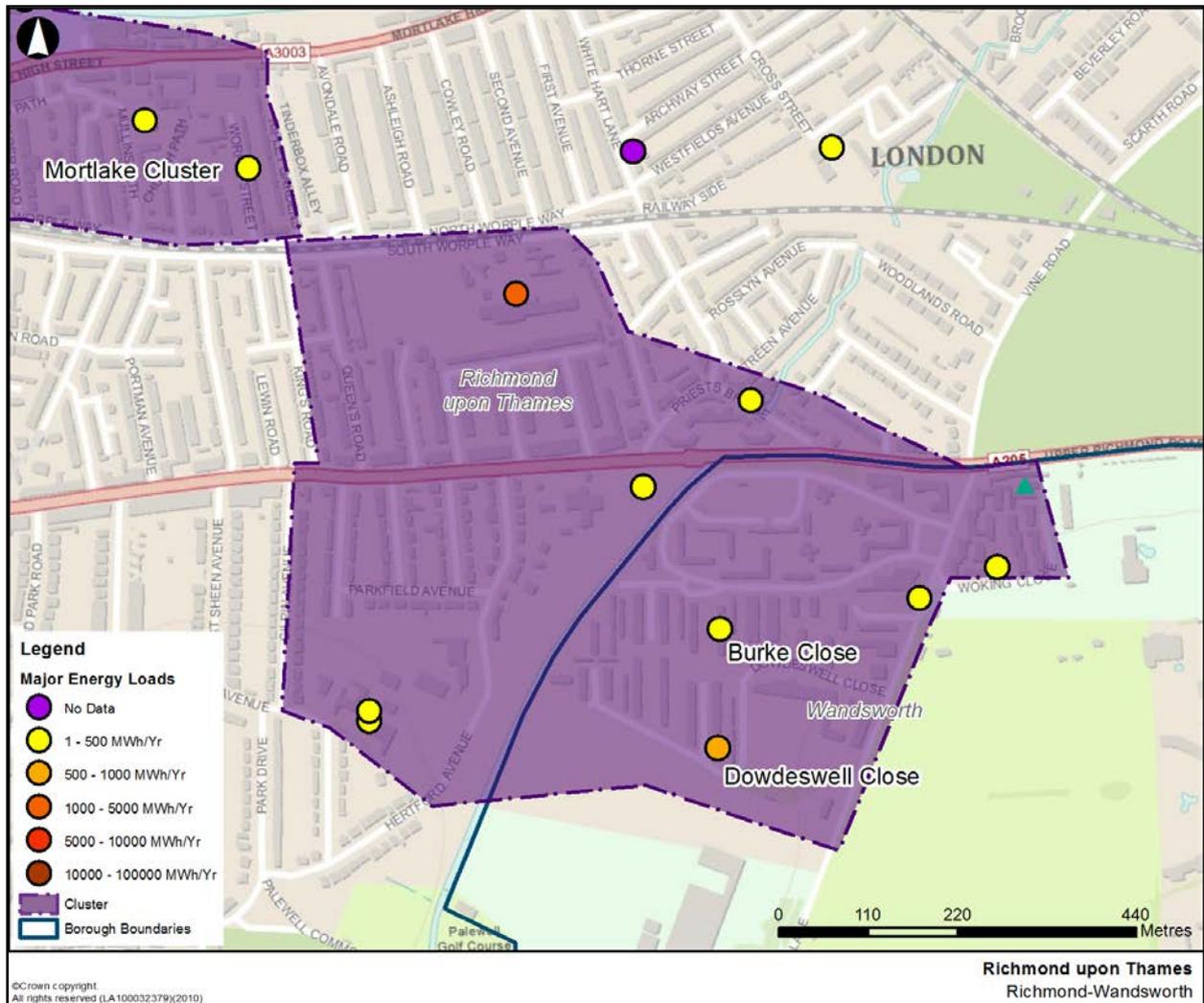


Figure 9: Richmond-Wandsworth heat cluster

The Richmond-Wandsworth cluster identifies 10 unique heat loads that are relatively dispersed, and so would warrant careful future consideration for any eventual network build-out.

This cluster spans two Boroughs, with the majority of identified loads located in the London Borough of Wandsworth. Because of this, it is envisaged that any network growing in this cluster would be led from the Wandsworth side. While not a physical barrier, the Borough border might represent an increased level of stakeholder complexity. The Barnes Hospital could represent a good anchor load; however it is located on the north side of the South Circular road, and hence might prove difficult to connect to.

The potential anchor loads for this cluster is likely to be the social housing estates served by Dowdeswell Close and Burke Close boiler houses, which together exhibit some of the highest fuel consumption in the cluster, and are already served by communal boilers. The plant rooms on these sites would be potential locations for energy centers, and the communal nature of these buildings means they are readily adaptable to a DH network for this cluster.

There is one potential new development located in the cluster, which could represent a future network node, and in addition could provide some of the development funding for a potential scheme through planning requirements. The Garage redevelopment is listed as being private residential, with over 149 units, but no more information is available at this stage; clarity on this would be required to further any case for feasibility investigations for the cluster.

The Richmond-Wandsworth cluster exhibits a good degree of diversity, with high residential demand typologies being balanced by a number of educational facilities, sports facilities, and the Roehampton Priory and Barnes hospitals. This diversity would ensure optimum operation of a CHP unit in the future.

As mentioned in Section 6.1.3, this cluster has the opportunity for connection to the Mortlake cluster.

#### Further steps specific to the London Borough of Richmond upon Thames:

- Contact those loads with no data available and ascertain demand, particularly the Barnes Hospital at the North of the cluster.
- Gain further clarity on the new developments in the area, and investigate the possible extent of developer contributions towards the scheme.
- Explore the possibility of running DH network piping across the railway to the North for potential connection to the Mortlake cluster.
- Engage with the London Borough of Wandsworth to ascertain the degree of interest for development of such a cross-Borough scheme.
- Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.

**Table 12: Existing Buildings in Richmond-Wandsworth cluster within Richmond upon Thames**

Name	Ownership	Typology	Fuel Consumption (MWh/yr)
Richmond Park Academy (Including Shene Fitness Centre)	Private	Education Facilities	1,422
Barnes Hospital*	Other public	NHS	1,100
Richmond Park Academy Annexe	Private	Education facilities	430
East Sheen Primary School	Local Government	Education Facilities	241
<b>TOTAL Fuel Consumption</b>			<b>3,193 MWh/yr</b>

\*Benchmarked from industry standards

**Table 13: Summary of New and Existing Developments for Richmond-Wandsworth Cluster**

<b>Total Fuel Consumption</b>	<b>3,193 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>2,554 MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>1.14 MW</b>

## 6.2.2 Richmond-Kingston

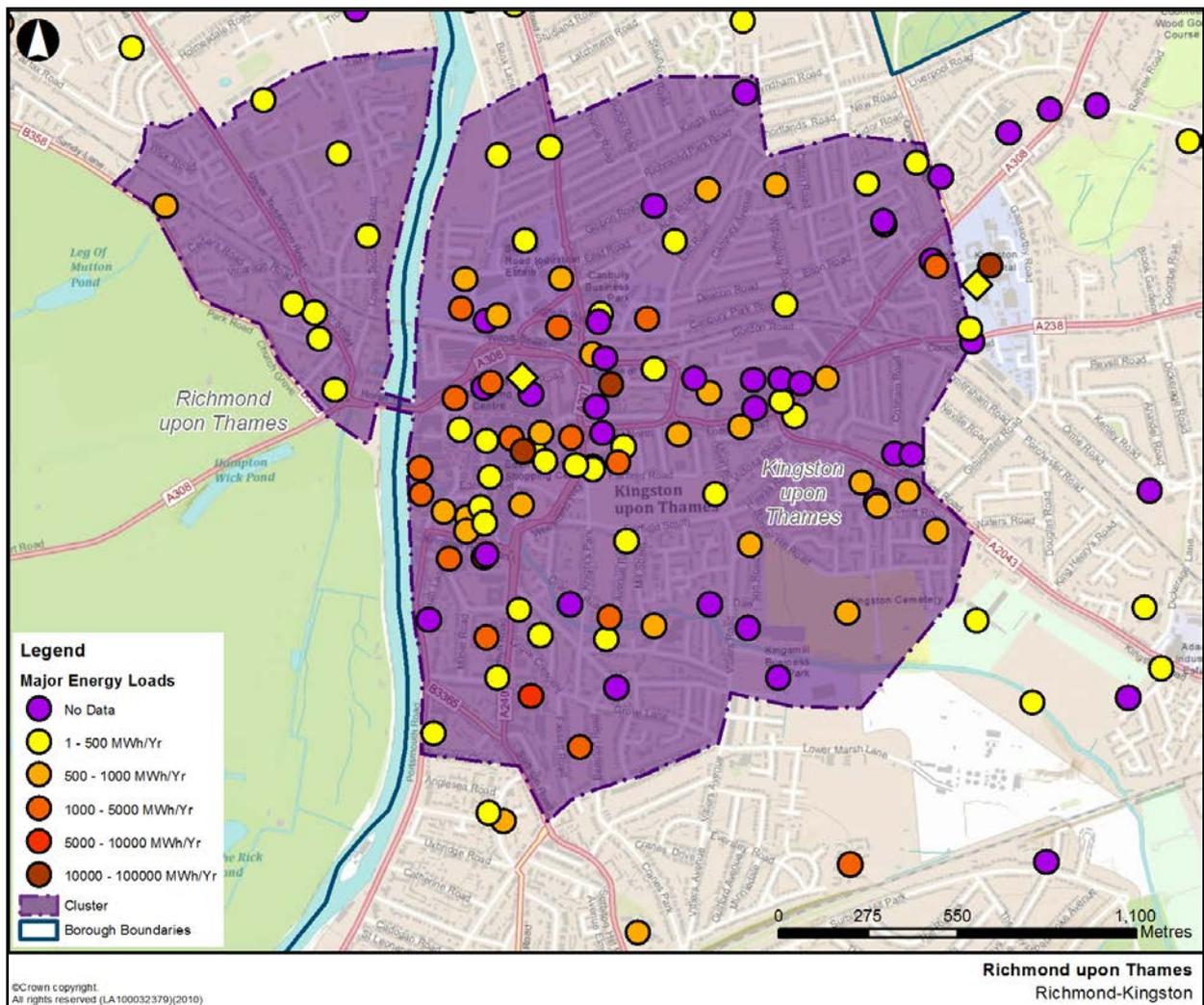


Figure 10: Richmond-Kingston heat cluster

The Richmond-Kingston cluster cross-borough opportunity is described here briefly only from the perspective of the London Borough of Richmond upon Thames. The heat map report for the London Borough of Kingston upon Thames was published in June 2010, and identified four clusters in the “Town Centre Ring”, the extent of which can be observed in Figure 11. The cross-Borough opportunity here would require the linking up of loads identified on the west bank of the Thames (as in the table below) with those in Kingston Town Centre. It should be noted that the river itself would present a considerable barrier to the inter-connection of this cluster, although it would not be impracticable to run heat pipe ducting along either the road or rail bridge.

Seven existing loads and two new developments have been identified in this cluster, but currently consumption data only exists for three of the current loads, with the others being benchmarked. The planned developments are residential, and will total up to 287 units; these developments could possibly be used to contribute financially to any eventual scheme. The typology in this cluster shows a moderate level of diversity, with residential, education, religious, hotel, sport and leisure and office typologies being represented.

An issue at this stage is that these loads are relatively spread out, and overall estimated consumption is relatively low; whether this is enough to justify a possibly expensive connection to a Kingston-based scheme would require further assessment.

**Further steps specific to the London Borough of Richmond upon Thames:**

- Contact those stakeholders with no load data available and ascertain demand.
- Gain further clarity on the new developments in the area, and investigate the possible extent of developer contributions towards the scheme.
- Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.
- Engage with the London Borough of Kingston-upon-Thames to explore the opportunities for cross-Borough collaboration for this cluster

**Table 14: Existing Buildings in Richmond-Kingston cluster in Richmond**

Name	Ownership	Typology	Fuel Consumption (MWh/yr)
White Hart Hotel	Private	Hotels (> 99 units or 4,999 m <sup>2</sup> )	343
Lower Teddington Road	Local Government	Education Facilities	226
Normansfield Avenue	Local Government	Education Facilities	162
Chase Lodge Hotel	Private	Hotels (> 99 units or 4,999 m <sup>2</sup> )	116
<b>TOTAL (available data)</b>			<b>847 MWh/yr</b>

**Table 15: New Developments in Richmond-Kingston cluster in Richmond**

Name	Ownership	Typology	Fuel Consumption (MWh/yr)
Former Seaboard Site	Private	Private residential (> 149 units or 9,999 m <sup>2</sup> )	849
Normansfield, Kingston Road	Private	Multi-address buildings	381
<b>TOTAL (available data)</b>			<b>1,230 MWh/yr</b>

**Table 16: Summary of Existing and New Developments for Richmond Green Cluster**

<b>Total Fuel Consumption</b>	<b>2,077 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>1,661 MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>0.72 MW</b>

### 6.2.3 Richmond-Hounslow

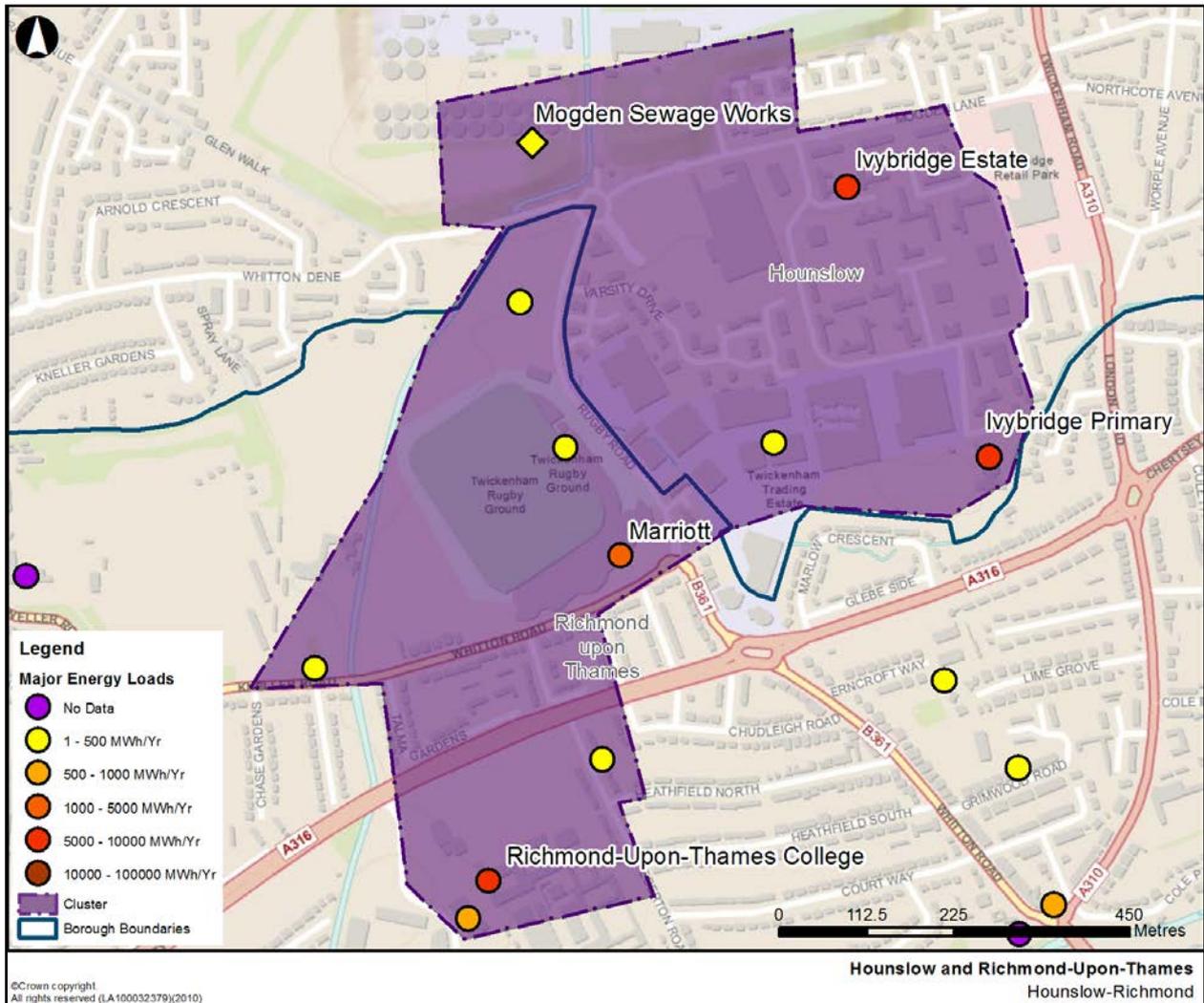


Figure 11: Richmond-Hounslow Cluster

The Richmond-Hounslow cluster is a medium-sized cluster made up of nine demands, with some level of cross-borough opportunity with the London Borough of Hounslow. This cluster builds on the previous opportunity outlined in the 2009 report by White Young Green for identifying low carbon energy options for Twickenham Campus.

The White Young Green report recommended a district heating scheme using a wood pellet boiler offered the greatest carbon reduction potential for the Twickenham Campus site. This high level study has also identified another heat source opportunity as part of a cross-borough opportunity at the Mogden Sewage Works in the London Borough of Hounslow (See Figure 11), which currently has a CHP unit installed that is due to increase in capacity. In the Evidence Base for Carbon Reduction Policies<sup>3</sup>, the existing CHP plant at the site is due to increase in capacity in line with extensions to the site, to a predicted rating of 12 MW<sub>th</sub><sup>4</sup>. The Evidence Base estimates there could be circa 400 kW<sub>th</sub> of spare capacity, with a caveat that it would most likely vary

<sup>3</sup> Evidence Base for Carbon Reduction Policies, London Borough of Hounslow (February 2010) [http://www.hounslow.gov.uk/evidence\\_base\\_carbon\\_reduction\\_policies.pdf](http://www.hounslow.gov.uk/evidence_base_carbon_reduction_policies.pdf)

<sup>4</sup> The Evidence Base actually states 12kW<sub>th</sub> rather than MW<sub>th</sub>; this is viewed as an error, given that the spare capacity is estimated at 400kW<sub>th</sub>.

significantly throughout the year. As it is, this potential spare capacity could be used to feed this cluster, although the Evidence Base also considers exporting it to meet relatively low heat demands in Isleworth. The existing CHP site could also form the basis of an energy centre for the cluster, and depending on the appetite of the sewage works, could be expanded upon further in capacity to meet loads further south in the London Borough of Richmond-Upon-Thames.

There are some significant heat loads in the area in both Boroughs. In Richmond, the College and Marriott Hotel both present strong candidates as large loads. On the Hounslow side, the considerable demands of Ivybridge Primary and the Ivybridge Estate, which is served by communal boilers, presents an attractive prospect for connection to a DH scheme.

In addition, it is noted that potential residential developments at the former Gregg's Bakery site (857 MWh/yr fuel consumption) and north of Twickenham Rugby Stadium could further expand the scheme.

At the moment the identified loads are well-split between both Boroughs and some early engagement between the two to consider this opportunity is advised.

#### Further steps specific to the London Borough of Richmond Upon Thames:

- Investigate the vicinity (predominantly on the Richmond side) for additional potential heat loads.
- Engage with the London Borough of Hounslow, investigating appetites for development of the scheme, and further potential developments in the vicinity.

**Table 17: Existing Buildings in Richmond-Hounslow cluster in Richmond**

Name	Ownership	Typology	Fuel Consumption (MWh/yr)
Richmond-Upon-Thames College	Private	Education Facilities	6,047
Twickenham Marriott Hotel	Private	Hotels (> 99 units or 4,999 m2)	4,290*
Nuffield Fitness Centre	Private	Sport & Leisure Facilities	792
Twickenham Stadium / Rugby Football Union (RFU) Site	Private	Multi-address Buildings	493
Chase Bridge Primary School	Local Government	Education Facilities	388
Council Depot	Private	Multi-address Buildings	236
Museum of Rugby Twickenham	Private	Museums & Art Galleries	149*
<b>TOTAL Fuel Consumption</b>			<b>12,159 MWh/yr</b>

\*Benchmarked from industry standards

**Table 18: Summary of Existing Buildings in Richmond-Hounslow Cluster**

<b>Total Fuel Consumption</b>	<b>12,159 MWh/yr</b>
<b>Total Estimated Heat Demand</b>	<b>9,727 MWh/yr</b>
<b>Estimated Peak Heat Load</b>	<b>4.32 MW</b>

## 7 Implementation Plan

This implementation plan has been developed from the clusters identified in the high level heat mapping study undertaken for the London Borough of Richmond upon Thames. It summarises the technical opportunities, constraints and next steps from this analysis. It is not inclusive of any political or economic drivers or barriers.

DE Opportunity Area	Technical opportunity (Low/Medium/High)	Constraints	Next Steps for delivering DE schemes
Richmond Centre Cluster	Low / Medium	Railway and large A-road running through the cluster	Ascertain actual demand of loads with no data Engage with potential anchor loads to determine plant-replacement dates and gauge their appetite to participate in a DH network Explore the vicinity for additional public / private loads that have not yet been captured in this analysis
Teddington Cluster	Low	No new development planned in the area, timing linked to age of existing loads' boilers	Ascertain actual demand of loads with no data Engage with potential anchor loads to determine plant-replacement dates and their appetite for participating in a large DH network Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.
Mortlake Cluster	Medium	Railway running through the cluster Possibly dependent on the Brewery's development plans	Ascertain demand of loads with no data Engage with the Brewery and learn their appetite for participation in a large scheme, and the possibility of selling any waste heat or spare capacity. Gain further clarity on the new developments in the area, and investigate the possible extent of developer contributions towards the scheme. Explore the vicinity for additional public / private loads that have not yet been captured in this analysis. Explore the possibility of running DH network piping across the railway for potential connection to the Richmond-Wandsworth cluster.
Twickenham Station Cluster	Low / Medium	Lack of apparent anchor loads Lack of diversity and significant heat loads No new developments planned in the area	Ascertain demand of loads with no data Explore the vicinity for additional public / private loads that have not yet been captured in this analysis
Richmond-Wandsworth	Low	Large A road runs through cluster Reliance on cross-Borough negotiations	Contact those loads with no data available and ascertain demand, particularly the Barnes Hospital at the North of the cluster. Gain further clarity on the new developments in the area, and investigate the possible extent of developer contributions towards the scheme. Explore the possibility of running DH network piping across the railway to the North for potential connection to the Mortlake cluster. Engage with the London Borough of Wandsworth to

			<p>ascertain the degree of interest for development of such a cross-Borough scheme.</p> <p>Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.</p>
Richmond-Kingston	Low	<p>Rivers runs through the cross-Borough opportunity</p> <p>Reliance on cross-Borough negotiations</p> <p>Current Richmond loads are disperse and low heat demand</p>	<p>Contact those stakeholders with no load data available and ascertain demand.</p> <p>Gain further clarity on the new developments in the area, and investigate the possible extent of developer contributions towards the scheme.</p> <p>Explore the vicinity for additional public / private loads that have not yet been captured in this analysis.</p> <p>Engage with the London Borough of Kingston-upon-Thames to explore the opportunities for cross-Borough collaboration for this cluster</p>
Richmond-Hounslow	Medium	<p>Reliant on cross-Borough negotiations</p>	<p>Investigate the vicinity (predominantly on the Richmond side) for additional potential heat loads.</p> <p>Engage with the London Borough of Hounslow, investigating appetites for development of the scheme, and further potential developments in the vicinity.</p>

## 8 Conclusions and Recommendations

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Based on the data made available in this heat mapping exercise, it has been found that there are a number of heat load clusters that offer varying degrees of opportunity for the implementation of DE and DH schemes in the London Borough of Richmond upon Thames. These are highlighted, and further steps are briefly discussed below.

### 8.1 Opportunity areas

The identified Mortlake cluster offers some of the best opportunity for the development of a DH network within the borough. Based around the Stag Brewery site and some potential residential developments, there could be the option of expanding its heating capacity with a new CHP installation. There exists the potential for interconnection with the Richmond-Wandsworth cluster, although a railway line might inhibit such growth.

The Richmond Centre opportunity cluster contains a potential large anchor heat load in the Springhealth swimming pools and some complementary large heat loads such as the Royal Hospital and Adult Community College. Combined, these account for approximately 5289 MWh/yr of fuel consumption for heating. There is a diverse mix of building typologies and a number of publically owned buildings that increase the technical opportunity of this cluster, however it is constrained by a railway and main road between two of the large loads and the rest of the buildings.

The Teddington opportunity cluster contains two potential large anchor heat loads in the LGC and National Physical Laboratory buildings. There also appears to be a good mix of building typologies for the cluster creating diversity and an existing CHP at the Teddington Pools which may, at times, have surplus heat to contribute to any potential heat network. There are currently no plans for any new development in the area and so it is likely that any potential here is reliant on when the large heat loads look to replant their existing energy plants/systems.

Elsewhere in the borough, clusters of lower technical opportunity are the Twickenham Station cluster, and the Richmond-Wandsworth and Richmond-Kingston cross-borough opportunities. The Richmond-Hounslow cross-borough cluster does, however, offer a good degree of technical opportunity, possibly being supplied by a CHP unit that is planned to expand within Hounslow's Mogden Sewage works, and supported by a number of large, diverse loads. Depending on future developments within the borough this could expand south, perhaps even to join with any future development in the Twickenham Station cluster. Some early engagement between the two boroughs on this opportunity is recommended to explore appetites and aspirations.

### 8.2 Next steps

At this stage a general recommendation before taking any clusters forward for additional feasibility investigation work would be to acquire greater knowledge of other potential loads in the cluster areas. Whilst this study covered the whole borough and was necessarily high-level, having identified the high-opportunity areas it should now prove more resource efficient to find additional information on additional potential loads within the clusters and in their immediate surroundings.

Clusters containing existing loads served by central boilers or community heating systems would benefit from investigation into the conditions of existing plant, and likely replacement dates.

Clusters with potential physical barriers to network build-out, such as railway lines or main roads would benefit from consideration being given to the feasibility of crossing these obstacles.

Where new developments are determined to impact the viability of any scheme, consideration could be given to requiring these to connect to any eventual DH network, or at least incorporating DH-readiness into their heating systems.

Further cluster-specific recommendations can be found in the Implementation Plan in Section 7.

### 8.3 Additional opportunities for DE

It should also be noted that there may be other potential opportunities in the borough that achieve the wider aims of decentralised energy schemes, namely; decarbonisation of the energy supply, reduced fuel poverty and increased security of supply.

To fully understand the potential for wider decentralised energy opportunities is outside the scope of this Heat Map report, which has specifically focused on the development of heat networks within the London Borough of Richmond upon Thames. A more detailed renewable and low carbon energy resource study would be required to identify and analyse the potential for any such programmes of work within the borough. These other programmes of work could include:

- Implementing other technological interventions such as solar thermal, small scale biomass boilers, ground source heat pumps, air source heat pumps, photovoltaic panels (PV) and appropriately sized wind turbines
- Contributing to the decarbonisation of the national gas and electricity grids, perhaps through energy from waste mechanisms or other renewable resources
- Identifying a suitable addition to any proposed Community Infrastructure Levy (CIL) that would allow the borough to fund carbon reduction infrastructure
- Setting up a local carbon fund collected through the planning process to enable the borough to prioritise carbon reduction programmes

Ultimately these programmes of work should help the London Borough of Richmond upon Thames to meet their own carbon reduction targets as well as contribute towards meeting the Mayor of London's carbon reduction commitment of 60% by 2025.

### 8.4 Concluding remarks

This study has found that there are a number of potential areas within the borough that contain sufficient levels of heat demand, density, and diversity to justify the development of DH networks around CHP. If pursued, these could deliver carbon emissions savings to the borough, and the potential to reduce instances of fuel poverty for its residents.

## Appendix A

# Populated Template and London Heat Map Heat Load Typologies

# A1 Populated template

## A1.1 Major Heat Loads

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
518141	175016	1 Lichfield Court	Sheen Road Richmond	TW9 1AU	Private	No	Multi-address buildings	-	-	103.00	-	-	152.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
515720	173109	121 Heath Road	121 Heath Road, Twickenham	TW1 4BE	Private	Yes	Multi-address buildings	-	-	94.29	-	-	22.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Mixed use scheme - application for 22 units - construction already started
518170	174978	153 Lichfield Court	Sheen Road Richmond	TW9 1AZ	Private	No	Multi-address buildings	-	-	723.00	-	-	59.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
515561	171718	209 Waldegrave Road	209 Waldegrave Road, Teddington, Middlesex	TW11 8LX	Private	Yes	Multi-address buildings	-	-	94.29	-	-	22.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Planning permission granted; construction already started
519313	175660	293 Lower Richmond Road	293 Lower Richmond Road, Richmond	TW9 4LU	Private	Yes	Multi-address buildings	-	-	222.87	-	-	52.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Permission granted; construction started
516556	175185	361 To 367a St Margarets Road	361 To 367a St Margarets Road, Twickenham, Middlesex	TW1 1PP	Private	Yes	Multi-address buildings	-	-	115.72	-	-	27.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Planning permission granted.
514975	172730	Air Sea House (Phase 2)	Air Sea House, Third Cross Road, Twickenham	TW2 5DU	Private	Yes	Multi-address buildings	-	-	227.16	-	-	53.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Other known large site; permission has been granted for 53 units; construction started
518424	173759	Ancaster House	Richmond Hill, Richmond	TW10 6RR	Private	No	-	Central Boilers	Mixed source	320.00	-	-	-	-	-	-	-	-	2011	-	-	-	-	-	Richmond upon Thames	-	-
515420	172955	Archdeacon Cambridges School	The Green	TW2 5TU	Local Government	No	Education Facilities	-	Natural gas	270.00	-	2,469	-	-	-	-	50	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
522161	176624	Ark Nursery School	Ark Nursery School	SW13 9HJ	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516005	173766	Arragon Road Car Park	London Road	TW1 1EE	Local Government	No	Local government estate	Electric heating	Electricity	166.41	-	11,758	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	No heating - one electric heater in office: Consumption is total electricity
513222	169931	Athelstan House School	Athelstan House School	TW12 2LA	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517532	170164	Avenue Day Centre	1 Normansfield Avenue	TW11 9RP	Local Government	No	Local government estate	-	Natural gas	0	-	1,621	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Vacant
521203	175677	Barnes Hospital	South Worples Way, London	SW14 8SU	Other public	No	NHS	-	-	1100.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
521592	175859	Barnes Primary School	Cross Street	SW13 0QQ	Local Government	No	Education Facilities	-	Natural gas	348.00	-	2,890	-	-	-	-	64	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513637	173441	Bishop Perrin School	Hospital Bridge Road	TW2 6LF	Local Government	No	Education Facilities	-	Natural gas	164.00	-	1,248	-	-	-	-	30	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517916	174544	Body Experience Ltd	50, Hill Rise, Richmond	TW10 6UB	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
513633	171422	Briar House	179 Uxbridge Road	TW12 1AZ	Local Government	No	Local government estate	-	Natural gas	247.00	-	1,480	-	-	-	-	45	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
514137	173663	Brittania Lane Day Centre / Whitton Crc	1 Brittania Lane	TW2 7JX	Local Government	No	Local government estate	-	Natural gas	195.00	-	900	-	-	-	-	36	1996	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517698	170733	Broom Road Recreation Ground	Trowlock Way, Broom Road	TW11 9QY	Local Government	No	Local government estate	-	Natural gas	11.00	-	316	-	-	-	-	2	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
518971	176919	Broomfield House School	Broomfield House School	TW9 3HS	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516702	175260	Brunel University/Richmond Lock	Gordon House 300, St. Margarets Road, Twickenham	TW1 1PT	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
512902	171130	Buckingham Primary School	Buckingham Road	TW12 3LT	Local Government	No	Education Facilities	-	Natural gas	310.00	-	2,376	-	-	-	-	57	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
520536	175957	Budweiser Stag Brewery, Mortlake	Budweiser Stag Brewery, Lower Richmond Road, Mortlake	SW14 7ET	Private	Yes	Private residential (> 149 units or 9,999 m2)	-	-	1285.81	-	-	300.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Proposal Site (Ref: S4); Closure of brewery expected at end of 2014; mixed-use scheme; site brief adopted.
516263	173216	Bu'sen Fitness Centre	9, King Street, Twickenham	TW1 3SD	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517523	174048	Cambridge Park No 40b	40 Cambridge Parl	TW1 2JU	Local Government	No	Local government estate	-	Natural gas	86.00	-	866	-	-	-	-	16	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515253	173749	Cannon Health Club	Twickenham Stoop Stadium, Langhorn Drive, Twickenham	TW2 7SX	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518051	175521	Cannons Health & Fitness Ltd	Kew Foot Road, Richmond	TW9 2SS	Private	No	Sport & Leisure facilities	-	-	743.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
513869	170613	Carlisle Infant School	Broad Lane	TW12 3AJ	Local Government	No	Education Facilities	-	Natural gas	89.00	-	1,515	-	-	-	-	16	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
513869	170613	Carlisle Infant School	Broad Lane	TW12 3AJ	Local Government	No	Education Facilities	-	Burning Oil	111.00	-	1,515	-	-	-	-	20	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513794	170446	Carlisle Park	Wensleydate Road	TW12 2UL	Local Government	No	Local government estate	Electric heating	Electricity	21.41	-	1,560	-	-	-	-	-	1928	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Imagine electrically heated - assuming heated, certainly no gas on-site. Total elec consumption stated
515091	172594	Carpenters Court	1 Hampton Road Twickenham	TW2 5QJ	Private	No	Multi-address buildings	-	-	-	-	-	53.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
522465	177086	Castlenau Library	75 Castlenau	SW13 9RT	Local Government	No	Local government estate	-	Natural gas	76.00	-	564	-	-	-	-	14	1960's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
522242	177545	Castlenau Youth Centre	Stillingfleet Road	SW13 9AQ	Local Government	No	Local government estate	-	Natural gas	-	-	400	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	Yes	-	Richmond upon Thames	Actual Data	Probably not complete, as only some gas data for site -Council rents building for minimum 20 hours per week.
519686	176863	Cedar House	Flat 1 35 Melliss Avenue Richmond	TW9 4BG	Private	No	Multi-address buildings	-	-	-	-	-	62.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518418	173908	Cedars Health Club	144-150, Richmond Hill, Richmond	TW10 6RW	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515274	173535	Central Depot (Richmond)	Craneфорд Way	TW2 7SG	Local Government	No	Local government estate	-	Natural gas	60.00	-	5,100	-	-	-	-	11	Mix of buildings 1900's to 1970's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515274	173535	Central Depot (Richmond)	Craneфорд Way	TW2 7SG	Local Government	No	Local government estate	-	Burning Oil	692.00	-	5,100	-	-	-	-	127	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Some portacabins electrically heated
515056	174072	Chase Bridge Primary School	Kneller Road	TW2 7DE	Local Government	No	Education Facilities	-	Natural gas	388.00	-	2,786	-	-	-	-	71	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517471	169588	Chase Lodge Hotel	Park Road, Kingston Upon Thames, Hampton Wick	KT1 4AS	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519020	174697	Christ's School	Queen's Road	TW10 6HW	Local Government	No	Education Facilities	-	Natural gas	651.00	-	6,522	-	-	-	-	120	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519818	176389	Civic Amenity Centre	Townmead Road	TW9 4EL	Local Government	No	Local government estate	-	Natural gas	18.00	-	2,498	-	-	-	-	3	1990	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519818	176389	Civic Amenity Centre	Townmead Road	TW9 4EL	Local Government	No	Local government	-	Burning Oil	222.00	-	2,498	-	-	-	-	41	1990	2010	n/a	n/a	Direct readings	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
							estate															for CRC 2010/11 purposes			Thames		
516439	173413	Civic Centre	44 York Street	TW1 3BZ	Local Government	No	Local government estate	-	Natural gas	517.00	-	8,770	-	-	-	-	95	Refurbished 1990	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513818	170807	Clarendon School	Hanworth Road,	TW12 3DH	Local Government	No	Education Facilities	-	Natural gas	153.00	-	1,826	-	-	-	-	28	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513818	170807	Clarendon School	Hanworth Road,	TW12 3DH	Local Government	No	Education Facilities	-	Burning Oil	39.00	-	1,826	-	-	-	-	7	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516491	170568	Collis Primary School	Fairfax Road	TW11 9BS	Local Government	No	Education Facilities	-	Natural gas	527.00	-	4,390	-	-	-	-	97	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	School has solar thermal panels approx 4kWp
517933	175261	Consumer Protection Office	7b Parkshot	TW9 2RT	Local Government	No	Local government estate	-	Natural gas	0	-	994	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Vacant
515274	173535	Council Depot	Council Depot, Langhorn Drive/Craneford Way, Twickenham	TW2 7SG	Private	Yes	Multi-address buildings	-	-	235.73	-	-	55.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Proposal Site (Ref: T14)
514468	173955	Crane Way No 36	36 Crane Way	TW2 7NJ	Local Government	No	Local government estate	-	Natural gas	36.00	-	351	-	-	-	-	7	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
514325	171117	Cross Street	26, Cross Street	TW12 1RT	Local Government	No	Local government estate	-	Natural gas	108.38	-	-	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513735	169651	Curves Fitness For Women	77-81, Station Road, Hampton	TW12 2BJ	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516127	173184	Curves For Women	2-4, Heath Road, Twickenham	TW1 4BZ	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519224	175760	Darell Junior & Infants School	Darell Road	TW9 4LQ	Local Government	No	Education Facilities	-	Natural gas	210.00	-	2,237	-	-	-	-	39	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516364	173322	Day Job	14 Church Street, Twickenham	TW1 3NJ	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
513542	170112	Denmead School	Denmead School	TW12 2LP	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519289	174920	East Sheen Cemetery	Sheen Road	TW10 5BJ	Local Government	No	Local government estate	Electric heating	Electricity	44.14	-	175	-	-	-	-	-	1970#, refurbished 2008	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Electrically heated: Consumption is total electricity

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
521359	175438	East Sheen Primary School	Upper Richmond Road West	SW14 8ED	Local Government	No	Education Facilities	-	Natural gas	241.00	-	2,206	-	-	-	-	44	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
521347	175854	Educogym Barnes	75-77, White Hart Lane, London, Greater London	SW13 0PW	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515426	173954	Egerton Road No 26 / Respite Services	26 Egerton Road	TW2 7SP	Local Government	No	Local government estate	-	Natural gas	60.00	-	320	-	-	-	-	11	1940's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515608	170960	Fitness First Ltd	20, Broad Street, Teddington	TW11 8RF	Private	No	Sport & Leisure facilities	-	-	541.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
514483	171174	Former Gordon Court	106 - 108 And 1 - 8 Gordon Court, High Street, Hampton Hill, Middlesex	TW12 1NT	Private	Yes	Multi-address buildings	-	-	120.01	-	-	28.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Construction already started, completion due in 2011/12
519643	177065	Former Inland Revenue Sorting Office, Ruskin Avenue, Kew	Former Inland Revenue Sorting Office, Ruskin Avenue, Kew	TW9 4DU	Private	Yes	Multi-address buildings	-	-	214.30	-	-	50.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Other known large site; progressing (10/1256/FUL)
521492	175545	Garage Studio	Unit 1 26, Priests Bridge, London	SW14 8TA	Private	No	Sport & Leisure facilities	-	-	41.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
515410	172924	Gifford House, Popes Avenue, Twickenham	Gifford House, Popes Avenue, Twickenham	TW2 5TP	Private	Yes	Multi-address buildings	-	-	124.30	-	-	29.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Other known large site; granted permission; now under construction
515308	173338	Greggs Bakery	Greggs Bakery, Gould Road, Twickenham	TW2 6RT	Private	Yes	Private residential (> 149 units or 9,999 m2)	-	-	857.21	-	-	200.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Other known large site; Bakery plans to relocate, residential-mixed use scheme.
518868	174383	Greville House (Care Uk)	Greville Road	TW10 6HR	Local Government	No	Local government estate	-	Natural gas	954.00	-	1,620	-	-	-	-	175	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	Yes	-	Richmond upon Thames	Actual Data	Care UK so private
517329	172490	Grey Court School	Ham Street	TW10 7HN	Local Government	No	Education Facilities	-	Natural gas	1412.00	-	9,559	-	-	-	-	259	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515830	171939	Gymnasium	-	-	Private	No	Sport & Leisure facilities	-	-	-	-	0	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518573	171342	H M Resettlement Prison Latchmere House	Church Road	TW10 5HH	Other public	No	Prisons	-	-	-	-	0	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516890	172269	Ham Day Centre	Woodville Road	TW10 7QW	Local Government	No	Local government estate	-	Natural gas	201.00	-	1,264	-	-	-	-	37	1965	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517201	172364	Ham Hall	Ashburnham Road	TW10 7PL	Local Government	No	Education Facilities	-	Natural gas	109.00	-	611	-	-	-	-	20	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
517245	173032	Ham House And Garden	Ham Street, Ham, Richmond	TW10 7KS	Private	No	Museums & Art Galleries	Individual boilers	Natural gas	460532.00	-	3,000	3.00	-	-	-	-	1610	-	-	-	-	No	-	Richmond upon Thames	-	-
517432	172170	Ham Library	61 Ham Street	TW10 7HR	Local Government	No	Local government estate	Electric heating	Electricity	26.60	-	280	-	-	-	-	-	1950	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Electrically heated: Consumption is total electricity
513129	171293	Hampton Academy	Hanworth Road	TW12 3HB	Private	No	Education Facilities	-	Natural gas	1664.00	-	9,328	-	-	-	-	306	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	Yes	-	Richmond upon Thames	Actual Data	-
513129	171293	Hampton Academy	Hanworth Road	TW12 3HB	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	-	-	Richmond upon Thames	-	-
514062	171137	Hampton Hill Junior School	St James's Avenue	TW12 1HW	Local Government	No	Education Facilities	-	Mixed source	252.00	-	2,116	-	-	-	-	46	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	School has solar thermal panels approx 4kWp
514428	171048	Hampton Hill Library	Hampton Hill High Street	TW12 1NY	Local Government	No	Local government estate	-	Natural gas	61.68	-	206	-	-	-	-	8	New site built 2009	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Old site sold, data should only relate to new site on High St not Windmill Road.
513070	170187	Hampton Infant School	Ripley Road	TW12 2JH	Local Government	No	Education Facilities	-	Natural gas	44.00	-	1,425	-	-	-	-	8	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513070	170187	Hampton Infant School	Ripley Road	TW12 2JH	Local Government	No	Education Facilities	-	Burning Oil	128.00	-	1,425	-	-	-	-	24	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513222	169931	Hampton Junior School	Percy Road	TW12 2LA	Local Government	No	Education Facilities	-	Natural gas	422.00	-	2,455	-	-	-	-	78	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513412	169625	Hampton Library	Rosehill	TW12 2AB	Local Government	No	Local government estate	-	Natural gas	74.00	-	456	-	-	-	-	14	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513337	169264	Hampton Water Treatment Works	Hampton Water Treatment Works, Thames Water, Upper Sunbury Road, Hampton	TW12 2ES	Private	Yes	Multi-address buildings	-	-	235.73	-	-	55.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Proposal Site (Ref: H1); only part of the site likely to be redeveloped as remainder is operational water treatment works; Green Belt and Flood risk issues
517532	170164	Hampton Wick Infants School	Normansfield Avenue	TW11 9RP	Local Government	No	Education Facilities	-	Natural gas	162.00	-	1,361	-	-	-	-	30	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517391	169697	Hampton Wick Library (Inc. 0429 Bullen Hall)	Bennett Close, Park Road	KT1 4AT	Local Government	No	Local government estate	-	Natural gas	93.00	-	253	-	-	-	-	17	1981	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
																						purposes					
513009	170611	Hampton Youth Centre	Bramble Lane, Off The Avenue	TW12 3RS	Local Government	No	Education Facilities	-	Natural gas	187.00	-	777	-	-	-	-	34	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
521878	177313	Harrodian School	Harrodian School	SW13 9QN	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517201	172364	Heatham House	Whitton Road	TW10 7PL	Local Government	No	Local government estate	-	Natural gas	197.00	-	1,095	-	-	-	-	36	1740, extension 1840	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515961	173728	Heatham House Youth Club	Heatham House, Whitton Road, Twickenham	TW1 1BH	Local government	No	Local government estate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Added to list
513462	173307	Heathfield Infant	Cobbett Road	TW2 6EN	Local Government	No	Education Facilities	-	Natural gas	-	-	2,873	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Gas consumption included within Junior site - next door to each other
513462	173307	Heathfield Junior	Cobbett Road	TW2 6EN	Local Government	No	Education Facilities	-	Natural gas	729.00	-	4,587	-	-	-	-	134	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515579	173023	Heathlands Industrial Estate	Heathlands Industrial Estate, Heath Rd, Twickenham	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
516113	173586	Hm Revenue & Customs	Second Floor Bridge House 69 London Road ,Twickenham	TW1 3QR	Central government	No	Central government estate	Central Boilers	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517946	174380	Hobart Hall Hotel	Petersham Road, Richmond	TW10 6UL	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
512515	170627	Hollygrove Nursery School	Hollygrove Nursery School	TW12 3PE	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515630	172319	Holt Schooling Public Relations	Holt Schooling Public Relations	TW1 4QB	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519178	175220	Holy Trinity C Of E School	Carrington Road	TW10 5AA	Local Government	No	Education Facilities	-	Natural gas	338.00	-	1,427	-	-	-	-	62	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519212	175601	International Mail Express	International Mail Express, Orchard Road, Richmond, Surrey	TW9 4NE	Private	Yes	Multi-address buildings	-	-	330.03	-	-	77.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Permission granted; construction started
514718	169081	Iona	Taggs Island Hampton	TW12 2HA	Private	No	Multi-address buildings	-	-	-	-	-	59.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515162	172920	Jack & Jill Nursery School	Jack & Jill Nursery School	TW2 5QA	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
513361	170852	Jack & Jill School	Jack & Jill School	TW12 3HX	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
512804	173992	Jamieson House	43 4 Edgar Road Hounslow	TW4 5QH	Private	No	Multi-address buildings	-	-	-	-	-	84.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
512709	169803	Kempton Gate Business Centre	Kempton Gate Business Centre, Oldfield Road, Hampton	TW12 2AF	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
519062	176630	Kew Gardens Hotel	Sandycombe Road, Richmond	TW9 3NG	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519224	176679	Kew Library	106 North Road	TW9 4HJ	Local Government	No	Local government estate	-	Natural gas	13.00	-	106	-	-	-	-	2	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519600	176886	Kew Retail Park	Kew Retail Park, Bessant Drive, Richmond	TW9 4AA	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
519786	176433	Kew Riverside Primary School	37 Courtlands Avenue	TW9 4ES	Local Government	No	Education Facilities	-	Natural gas	204.00	-	1,607	-	-	-	-	37	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	PFI school
518688	174756	Kings House School	Kings House School	TW10 6ES	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516476	171022	Kingston Lane No 21	21, Kingston Lane	TW11 9HL	Local Government	No	Local government estate	-	Natural gas	197.55	-	778	-	-	-	-	-	1980	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
512840	169781	Kingsway Business Park/Sandfield Industrial Estate	Kingsway Business Park/Sandfield Industrial Estate, Oldfield Rd, Hampton	TW12 2HD	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
518643	174255	Lamington Fine Art Ltd	39 Queens Road, Richmond	TW10 6JX	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
520123	176073	Land At Williams Lane Bowling Green	Land At Williams Lane Bowling Green, Mortlake	SW14 7QU	Private	Yes	Multi-address buildings	-	-	325.74	-	-	76.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Permission granted for 76 units; started construction
516587	171242	Landmark Arts Centre	Teddington	TW11 9NN	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516186	173576	Leisure Card	Regal House, London Road, Twickenham	TW1 3QB	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516967	171221	Lensbury Ltd	Broom Road, Teddington	TW11 9NU	Private	No	Sport & Leisure facilities	Central Boilers	Natural gas	4990.00	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	-
515360	170677	Lgc Limited	Queens Road, Teddington	TW11 0LY	Private	No	Private commercial (> 9,999 m2)	Central Boilers	Natural gas	12833.00	-	23,243	-	-	-	-	4488	1987	2011	-	-	EBMS	No	-	Richmond upon Thames	-	Laboratories
514696	171833	London United Busways Ltd	Fulwell Garage, Wellington Road, Twickenham	TW2 5NX	Private	No	Private commercial (> 9,999 m2)	Central Boilers	Natural gas	1249.74	-	8,156	-	-	-	-	88110	-	2011	-	-	Meters	No	-	Richmond upon Thames	-	-
515645	174363	London United Busways Ltd	Twickenham Garage, The Skills Centre, Twickenham Trading Estate, Rugby Road, Twickenham	TW1 1DQ	Private	No	Private commercial (> 9,999 m2)	Central Boilers	Natural gas	479.90	-	1,068	-	-	-	-	229452	-	2011	-	-	Meters	No	-	Richmond upon Thames	-	-
518663	174144	Lower Grove Road Hostel	1a Lower Grove Road	TW10 6SN	Local Government	No	Local government estate	-	Natural gas	45.00	-	148	-	-	-	-	8	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
519266	175626	Lower Richmond Road	Lower Richmond Road, Richmond	TW9 4PN	Private	Yes	Multi-address buildings	-	-	128.58	-	-	30.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Other known large site; potential for mixed use re-development
522323	177523	Lowther Cp School	Stillingfleet Road	SW13 9AE	Local Government	No	Education Facilities	-	Natural gas	262.00	-	1,819	-	-	-	-	48	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517808	173353	Manor Farm Riding School	Manor Farm Riding School	TW10 7AH	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519665	176921	Maple House	Flat 1 37 Melliss Avenue Richmond	TW9 4BF	Private	No	Multi-address buildings	-	-	-	-	-	54.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519544	176692	Marlborough Trading Estate	Marlborough Trading Estate, 159 Mortlake Road, Kew	TW9 4AW	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
518896	174985	Marshgate Primary School	Queens Road	TW10 6HY	Local Government	No	Education Facilities	-	Natural gas	323.00	-	2,476	-	-	-	-	59	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	PFI school
517231	171821	Meadlands School	Broughton Avenue	TW10 7TS	Local Government	No	Education Facilities	-	Natural gas	342.00	-	1,603	-	-	-	-	63	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	School has solar thermal panels approx 4kWp
515041	173199	Mereway Day Centre	Mereway Road	TW2 6RF	Local Government	No	Local government estate	-	Natural gas	-	-	1,144	-	-	-	-	-	1950	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Vacant
514344	174011	Milkshake Montessori School	Milkshake Montessori School	TW2 7DJ	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515384	168596	Mitre Hotel	Hampton Court Road, East Molesey	KT8 9BN	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516486	174075	Moormead Rec (Inc. Pavillion)	Moor Mead Road	TW1 1JS	Local Government	No	Local government estate	-	Natural gas	7.00	-	214	-	-	-	-	1	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
520508	175858	Mortlake Contact & Assessment Centre	27 Sheen Lane	SW14 8HY	Local Government	No	Local government estate	-	Natural gas	19.00	-	728	-	-	-	-	3	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513950	169629	Mount Mews & Castle Business Village	Mount Mews, 13-25 High Street & Castle Business Village, Hampton	TW12 2BX	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
517036	170647	Munster Road No 11	11 Munster Road	TW11 9LR	Local Government	No	Local government estate	-	Natural gas	56.00	-	414	-	-	-	-	10	1910	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
514410	174289	Murray Park Hall	Kneller Road	TW2 7DX	Local Government	No	Local government estate	-	Natural gas	61.00	-	620	-	-	-	-	11	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
518838	177026	Museum No 1, Kew Gardens	Royal Botanic Gardens, Kew Kew,	TW9 3AB	Private	No	Museums & Art	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes	
			Richmond				Galleries																			Thames		
517750	174678	Museum Of Richmond	Old Town Hall Whittaker Avenue, Richmond	TW9 1TP	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-	
515378	174358	Museum Of Rugby Twickenham	Twickenham Stadium Rugby Road, Twickenham, Middlesex	TW1 1DZ	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-	
515234	171027	National Physical Laboratory	Hampton Road	TW11 0LW	Other public	No	Other public buildings	-	Natural gas	32160.01	-	-	-	-	-	-	-	-	2008	-	-	-	no	-	Richmond upon Thames	-	-	
515169	171053	National Weights & Measures Laboratory	-	TW11 0JZ	Central government	No	Central government estate	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-	
514061	173959	Nelson Primary School	Nelson Road	TW2 7BU	Local Government	No	Education Facilities	-	Natural gas	470.00	-	2,916	-	-	-	-	86	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-	
514061	173959	Nelson Primary School	Nelson Road, Twickenham	TW2 7BU	Private	Yes	Multi-address buildings	-	-	120.01	-	-	28.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Proposal Site (Ref: W3); part of the site to be developed for housing (to be confirmed)	
515871	171814	Newland House School	Newland House School	TW1 4TQ	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-	
515369	173326	Norcutt House	Norcutt House, Norcott Road, Twickenham	TW2 6SR	Private	Yes	Multi-address buildings	-	-	94.29	-	-	22.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Planning permission granted	
517300	170328	Normansfield	Normansfield, Kingston Road, Teddington, Middlesex	TW11 9JH	Private	Yes	Multi-address buildings	-	-	381.46	-	-	89.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Planning permission granted; construction in progress	
520745	175892	Nursery School	Nursery School	SW14 8EZ	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-	
516851	174333	Old Lodge Place	Old Lodge Place, St Margarets	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks	
519154	176675	Old Power House/Blake Mews	Old Power House/Blake Mews, Kew Gardens Station/Station Approach	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks	
521155	176056	Old Power Station Youth Centre	121a Mortlake High Street	SW14 8SN	Local Government	No	Education Facilities	-	Natural gas	58.00	-	509	-	-	-	-	11	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-	

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521859	176270	Old Sorting Office Art Centre	Barnes	SW13 0LF	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
513035	169701	Oldfield Centre	Oldfield Road	TW12 2HP	Local Government	No	Education Facilities	-	Natural gas	183.00	-	1,143	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516555	174484	Orchard Road/Market Road (Incl International Mail Express)	Orchard Road/Market Road, Richmond (Near Manor Rd Gas Works)	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks. Housing development on part of the site - in progress
516843	173340	Orleans House Gallery	Orleans Road	TW1 3DJ	Local Government	No	Local government estate	-	Natural gas	120.00	-	1,055	-	-	-	-	22	1885	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516805	174007	Orleans Infant And Nursery School	Hartington Road	TW1 3EN	Local Government	No	Education Facilities	-	Natural gas	265.00	-	1,690	-	-	-	-	49	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516818	173617	Orleans Park School	Richmond Road	TW1 3BB	Local Government	No	Education Facilities	-	Natural gas	1061.00	-	8,799	-	-	-	-	195	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516363	173298	Par Ici	41 Church Street, Twickenham	TW1 3NS	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518105	174832	Paradise Road Multi Storey Car Park	Paradise Road	TW9 1SA	Local Government	No	Local government estate	Electric heating	Electricity	257.14	-	10,474	-	-	-	-	-	1970	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	No heating - one electric heater in office: Consumption is total electricity
520310	175349	Park Side Gallery	308a Upper Richmond Road West, London	SW14 7JG	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515988	171139	Passport To Leisure Summer School	Passport To Leisure Summer School	TW11 9YX	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518265	173818	Petersham Hotel	Nightingale Lane, Richmond	TW10 6UZ	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
513394	169150	Platts Eyott	Platts Eyot, Lower Sunbury Road, Hampton	TW12 2HF	Private	Yes	Multi-address buildings	-	-	300.02	-	-	70.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Proposal Site (Ref: H15); subject to planning application for 70 units
513504	169198	Port Hampton	Port Hampton, Platts Eyot, Hampton	TW12 2HF	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
518596	174869	Princes Road No 46	46, Princes Road	TW10 6DH	Local Government	No	Local government estate	-	Natural gas	105.00	-	-	-	-	-	-	19	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
518753	174350	Queens Road No 122 & 118	122 Queens Road	TW10 6HN	Local Government	No	Local government estate	-	Natural gas	434.00	-	1,628	-	-	-	-	80	1970's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516145	173246	Queens Road No 91	91 Queens Road	TW1 4EU	Local Government	No	Local government estate	-	Natural gas	94.00	-	772	-	-	-	-	17	1900	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
518303	174994	Quinns Hotel	Sheen Road, Richmond	TW9 1AW	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	443.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
515745	173387	Racc Clifden Centre	Clifden Road	TW1 4LT	Local Government	No	Education Facilities	-	Natural gas	1051.00	-	2,232	-	-	-	-	193	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	Yes	-	Richmond upon Thames	Actual Data	Probably not complete, as only some gas data for site - separately run by RACC
516692	174989	Rambert School Of Ballet & Contemporary Dance	Clifton Lodge, St Margarets Drive, Twickenham	TW1 1QN	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Added to list
516162	173603	Regal House	70 London Road Twickenham	TW1 3QS	Private	No	Multi-address buildings	-	-	1350.00	-	-	53.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
516424	171555	Regatta House	Flat 1 32 Twickenham Road Teddington	TW11 8AZ	Private	No	Multi-address buildings	-	-	-	-	-	52.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518226	174895	Registrars Office	1 Spring Terrace	TW9 1LW	Local Government	No	Local government estate	-	Natural gas	46.00	-	530	-	-	-	-	8	1900	2010	n/a	n/a	Direct readings for CRC	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
																						2010/11 purposes					
515745	173387	Richmond Adult Community College	Clifden	TW1 4LT	-	No	Education facilities	-	Natural gas	265.71	-	-	-	-	-	-	-	-	2007	-	-	-	no	-	Richmond upon Thames	-	-
515745	173387	Richmond Adult Community College	Clifden	TW1 4LT	-	No	Education facilities	-	Oil	112.00	-	-	-	-	-	-	-	-	2007	-	-	-	no	-	Richmond upon Thames	-	-
517989	175291	Richmond Adult Community College	Parkshot	TW9 2RE	-	No	Education facilities	-	Natural gas	1384.06	-	-	-	-	-	-	-	-	2007	-	-	-	no	-	Richmond upon Thames	-	-
518477	173933	Richmond American International University In London	American International University In London, Queens Road, Richmond	TW10 6JP	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518663	174144	Richmond Cemetery	Grove Road	TW10 6SN	Local Government	No	Local government estate	Electric heating	Electricity	-	-	8	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515279	173797	Richmond College	Richmond College, Egerton Road, Twickenham	TW2 7SJ	Private	Yes	Multi-address buildings	-	-	214.30	-	-	50.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	estimated	Proposal Site (Ref T29); site brief adopted in December 2008. Possible limited enabling development; potential to deliver 50 units
518007	174980	Richmond Council For Voluntary Services	1 Princes St, Richmond	TW9 1ED	-	no	Private commercial (> 9,999 m2)	-	-	81.89	-	-	-	-	-	-	-	-	2008	-	-	-	no	-	Richmond upon Thames	-	-
516155	173276	Richmond Council For Voluntary Services	88 Queens Rd, Twickenham	TW1 4ET	-	no	Private commercial (> 9,999 m2)	-	Natural gas	22.12	-	-	-	-	-	-	-	-	2007	-	-	-	-	-	Richmond upon Thames	-	-
519237	175670	Richmond Fire Station	323 Lower Richmond Road	TW9 4PN	Other public	No	Fire stations	Individual boilers	Natural gas	182.73	-	887	-	0.16	-	-	-	1963	2010	-	-	Meters	No	-	Richmond upon Thames	-	-
518448	173846	Richmond Gate Hotel	Richmond Hill, Richmond	TW10 6RP	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519818	176396	Richmond Gymnasium Association	Townmead Road	TW9 4EL	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517846	174698	Richmond Hill Health Club	19, Lewis Road, Richmond	TW10 6SA	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
518418	173908	Richmond Hill Hotel	Richmond Hill, Richmond	TW10 6RW	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
512902	171130	Richmond House	Buckingham Road, Nurserylands	TW12 3LT	Local Government	No	Education Facilities	-	Natural gas	121.00	-	1,376	-	-	-	-	22	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517942	175055	Richmond Library	The Little Green	TW9 1QL	Local Government	No	Local government estate	-	Natural gas	203.00	-	1,304	-	-	-	-	37	1800's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517677	174659	Richmond Old Town Hall	Whitaker Avenue	TW9 1EH	Local Government	No	Local government estate	-	Natural gas	120.00	-	2,003	-	-	-	-	22	1893	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
521022	175147	Richmond Park Academy (Including Shene Fitness Centre)	Park Avenue	SW14 8RG	Private	No	Education Facilities	-	Natural gas	1422.00	-	10,089	-	-	-	-	261	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	Yes	-	Richmond upon Thames	Actual Data	-
521022	175160	Richmond Park Academy Annexe	Hertford Avenue	SW14 8RG	Private	No	Education facilities	-	Oil	430.20	-	-	-	0.128036	-	-	125.6932	-	2010	-	-	Boiler Sites	No	-	Richmond upon Thames	-	-
517862	174727	Richmond Police Station	8 Red Lion Street, Richmond	TW9 1RW	Other public	No	Police stations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Added to list
518144	175269	Richmond Police Training Centre	Sovereign Gate, 18/20Kew Road, Richmond	TW9 2ND	Other public	No	Police stations	-	-	394.00	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	Estimated	Added to list
517774	175394	Richmond Pool (Springhealth)	A136	TW9 2SF	Local Government	No	Sport and Leisure facilities	-	Natural gas	2262.00	-	3,966	-	-	-	-	415	1966	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Run by private trust, although Council owned. We provide DEC, Accurate data
516506	173518	Richmond Road No 1-3	1-3 Richmond Road	TW1 3AB	Local Government	No	Local government estate	Electric heating	Electricity	50.18	-	894	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Electrically heated: Consumption is total electricity
518145	175275	Richmond Station	Richmond Station, Kew	TW9	Private	Yes	Multi-address	-	-	85.72	-	-	20.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond	Estimated	Proposal Site (Ref: R6);

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
			Road, Richmond	2NA			buildings																		upon Thames		Site brief published; mixed use scheme
515279	173797	Richmond-Upon-Thames College	Egerton Road, Twickenham	TW2 7SJ	Private	No	Education facilities	Central Boilers	Natural gas	6046.55	-	-	-	-	-	-	-	-	2008	-	-	-	no	-	Richmond upon Thames	Estimated	-
518154	175563	Royal Hospital	Kew Foot Road, Richmond	TW9 2TE	Other public	No	NHS	-	-	2262.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
514685	174191	Royal Military School Of Music (Kneller Hall)	Kneller Hall Kneller Road, Twickenham	TW2 7DU	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
518419	173737	Royal Star & Garter	Royal Star & Garter, Richmond Hill, Richmond	TW10 6RR	Private	Yes	Multi-address buildings	-	-	257.16	-	-	60.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	Estimated	Other known large site; need for Star and Garter to relocate from Richmond; site brief finalised August 2008; potential to deliver 60 units.
517456	169671	Roys Gym Weight Training Club	63b, High Street, Hampton Wick, Kingston Upon Thames	KT1 4DG	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517895	173170	Russell Primary School	Petersham Road	TW10 7AH	Local Government	No	Education Facilities	-	Natural gas	150.00	-	2,140	-	-	-	-	27	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517895	173170	Russell Primary School	Petersham Road	TW10 7AH	Local Government	No	Education Facilities	-	Burning Oil	107.00	-	2,140	-	-	-	-	20	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516894	170491	Sacred Heart Rc Primary School	St Mark's Road	TW11 9DD	Local Government	No	Education Facilities	-	Natural gas	189.00	-	1,554	-	-	-	-	35	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519084	175956	Sainsbury's	Sainsbury's, Manor Road/Lower Richmond Road	TW9 4LT	Private	Yes	Private residential (> 149 units or 9,999 m2)	-	-	1092.94	-	-	255.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	Estimated	Other known large site; airspace development; number of units will depend on storeys
516996	170000	Sandy Lane	Former Seeboard Site, Sandy Lane, Teddington,	TW11 0DS	Private	Yes	Private residential (>	-	-	848.64	-	-	198.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	Estimated	Construction already started, completion

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWh)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWh)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
			Middlesex				149 units or 9,999 m2)																				expected in summer 2012
591015	175777	Sandycombe Centre	Sandycombe Centre, Sandycombe Lane, Kew	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
520460	175522	Sheen Lane No 68 - Centre House	68-74 Sheen Lane	SW14 8LP	Local Government	No	Local government estate	Electric heating	Electricity	207.09	-	3,776	-	-	-	-	-	1975	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Electrically heated: Consumption is total electricity
520460	175522	Sheen Lane No 74 - Sheen Lane Centre	68-74 Sheen Lane	SW14 8LP	Local Government	No	Local government estate	-	Natural gas	528.00	-	2,067	-	-	-	-	97	1978	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519892	174979	Sheen Mount Primary School	West Temple Sheen	SW14 7RT	Local Government	No	Education Facilities	-	Natural gas	282.00	-	2,321	-	-	-	-	52	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
521022	175147	Shene International School	Shene International School	SW14 8RG	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
521022	175147	Shene Sports And Fitness Centre	East Shene	SW14 8RG	Local Government	No	Local government estate	-	Natural gas	79.15	-	495	-	-	-	-	14.5312 4173	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
520384	176099	Ship Hotel	Ship Lane, London	SW14 7QW	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
512821	174031	Slade House	1 2 Edgar Road Hounslow	TW4 5QF	Private	No	Multi-address buildings	-	-	-	-	84.00	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
521596	176487	Small & Elegant Hotels Of Europe	Lonsdale Road, London	SW13 9PY	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
514317	170864	Smart Art Direct Uk Ltd	24 High Street Hampton Hill, Hampton, Middlesex	TW12 1PD	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515461	171416	Somerset House	Somerset House, 14 Elmtree Road	TW11 8ST	Private	Yes	Multi-address buildings	-	-	248.59	-	58.00	-	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames	Estimated	Permission granted (10/1447/FUL)
515761	171905	Sports Hall, St Marys	Waldegrave Road,	TW1	Private	No	Sport &	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond	-	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
		University	Twickenham	4SX			Leisure facilities																		upon Thames		
514192	170915	St Clare Business Park	St Clare Business Park, Holly Rd, Hampton Hill	TW12 1PZ	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
514026	173916	St Edmund's RC Primary School	Nelson Road	TW2 7BB	Local Government	No	Education Facilities	-	Natural gas	206.00	-	1,966	-	-	-	-	38	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
518753	174350	St Elizabeths RC School	Queen's Road	TW10 6HN	Local Government	No	Education Facilities	-	Natural gas	137.00	-	1,546	-	-	-	-	25	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516897	173914	St George West London Ltd	76 Crown Road	TW1 3EU	-	No	Private commercial (> 9,999 m2)	-	Natural gas	133.50	-	-	-	-	-	-	-	-	2008	-	-	-	no	-	Richmond upon Thames	-	-
515178	173067	St George's Industrial Estate	St George's Industrial Estate, The Green, Twickenham	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
514952	172192	St James's Catholic Primary School	Stanley Road	TW2 5NP	Local Government	No	Education Facilities	-	Natural gas	335.00	-	3,426	-	-	-	-	61	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	PFI School
517620	169907	St John The Baptist CE Primary School	Lower Teddington Road	KT1 4HQ	Local Government	No	Education Facilities	-	Natural gas	21.00	-	1,417	-	-	-	-	4	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517620	169907	St John The Baptist CE Primary School	Lower Teddington Road	KT1 4HQ	Local Government	No	Education Facilities	-	Burning Oil	226.00	-	1,417	-	-	-	-	41	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516536	174054	St Margarets Business Centre	St Margarets Business Centre, Winchester Rd/Moor Mead Rd, Twickenham	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
520873	175833	St Mary Magdalens C Primary School	Worple Street	SW14 8HE	Local Government	No	Education Facilities	-	Natural gas	221.00	-	1,400	-	-	-	-	41	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516330	173617	St Mary's CE Primary Amyand Park	Amyand Park Road	TW1 3HE	Local Government	No	Education Facilities	-	Natural gas	199.00	-	1,304	-	-	-	-	37	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	PFI school: School due to have another site in Amyand Park Road
516908	173660	St Mary's CE Primary Richmond Road	Richmond Road	TW1 3BA	Local Government	No	Education Facilities	-	Natural gas	236.00	-	1,340	-	-	-	-	43	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	PFI school: School due to have another site in Amyand Park Road
515510	171368	St Marys & St Peters CEP School	Somerset Road	TW11 8RX	Local Government	No	Education Facilities	-	Natural gas	274.00	-	2,390	-	-	-	-	50	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515817	172192	ST MARY'S COLLEGE	Waldegrave Road, Twickenham	TW1 4SX	Private	No	Education facilities	-	Oil	419.45	-	-	-	0.12	-	-	122.55087	-	2010	-	-	Boiler Sites	No	-	Richmond upon Thames	-	-
521938	176474	St Osmund's RC Primary School	Church Road	SW13 9HQ	Local Government	No	Education Facilities	-	Natural gas	174.00	-	1,285	-	-	-	-	32	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
516888	172223	St Richard's with St Andrew's CE Primary School	Ashburnham Road	TW10 7NL	Local Government	No	Education Facilities	-	Natural gas	0	-	1,716	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Children's Centre adjacent has ground source heat pump
516888	172223	St Richard's with St Andrew's CE Primary School	Ashburnham Road	TW10 7NL	Local Government	No	Education Facilities	-	Burning Oil	168.00	-	1,716	-	-	-	-	31	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Heated with gas oil
516612	174348	St Stephens C of E Junior School	Winchester Road	TW1 1LF	Local Government	No	Education Facilities	-	Natural gas	96.00	-	1,651	-	-	-	-	18	-	2010	n/a	n/a	Direct readings for CRC 2010/11	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
																						purposes					
516026	172811	ST. CATHERINES SCHOOL	ST. CATHERINES SCHOOL	TW1 4QJ	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516058	172753	ST. JAMES INDEPENDENT SCHOOL FOR BOYS	ST. JAMES INDEPENDENT SCHOOL FOR BOYS	TW1 4QG	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
516361	170876	ST. MARYS HOSPITAL ATHLETIC GROUND	UDNEY PARK ROAD, TEDDINGTON	TW11 9BB	Other public	No	NHS	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
521513	176076	ST. MICHAELS NURSERY SCHOOL	ST. MICHAELS NURSERY SCHOOL	SW13 0NX	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
522371	178089	ST. PAULS SCHOOL	ST. PAULS SCHOOL	SW13 9JT	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
520597	176043	Stag Brewing Company Limited	Budweiser Stag Brewing Company Limited, Lower Richmond Road, Mortlake	SW14 7ET	Private	No	Private commercial (> 9,999 m2)	-	Oil	68179.28	-	-	-	20.291453	-	-	14583	-	2010	-	-	Boiler Sites	No	-	Richmond upon Thames	-	-
515100	171700	Stanley Infant and Nursery School	Strathmore Road	TW11 8UE	Local Government	No	Education Facilities	-	Natural gas	236.00	-	1,528	-	-	-	-	43	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515100	171700	Stanley Junior School	Stanley Road	TW11 8UE	Local Government	No	Education Facilities	-	Natural gas	125.00	-	2,785	-	-	-	-	23	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515100	171700	Stanley Junior School	Stanley Road	TW11 8UE	Local Government	No	Education Facilities	-	Burning Oil	239.00	-	2,785	-	-	-	-	44	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515171	171824	Strathmore Centre	0	TW11 8UH	Local Government	No	Education Facilities	-	Natural gas	102.00	-	1,226	-	-	-	-	19	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
517907	172905	Strathmore School	Meadlands Drive	TW10	Local	No	Education	-	Natural gas	249.00	-	1,226	-	-	-	-	46	-	2010	n/a	n/a	Direct	No	-	Richmond	Actual	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
				7ED	Government		Facilities															readings for CRC 2010/11 purposes			upon Thames	Data	
512844	170880	Tangley Hall Day Centre	1 Bramble Lane	TW12 3XB	Local Government	No	Local government estate	-	Natural gas	29.00	-	270	-	-	-	-	5	1991	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515970	170974	Teddington Business Park	Teddington Business Park, Station Rd, Teddington	TW11 9BQ	Private	No	Private commercial (> 9,999 m2)	-	-	416.00	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	Estimated	Existing Business Parks
515245	171657	Teddington Cemetary	Shacklegate Lane	TW11 8SF	Local Government	No	Local government estate	Electric heating	Electricity	15.31	-	360	-	-	-	-	-	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Electrically heated: Consumption is total electricity
515807	171354	Teddington Library	Waldegrave Road	TW11 8NY	Local Government	No	Local government estate	-	Natural gas	79.00	-	397	-	-	-	-	15	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515445	170984	TEDDINGTON MEMORIAL HOSPITAL	HAMPTON ROAD, TEDDINGTON	TW11 0JL	Other public	No	NHS	-	-	1477.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
515650	171224	Teddington Pilates Studio	62, Church Road, Teddington	TW11 8EY	Private	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515850	170853	TEDDINGTON POLICE STATION, METROPOLITAN POLICE	PARK ROAD, TEDDINGTON	TW11 0AQ	Other public	No	Police stations	-	-	155.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
516101	171225	Teddington Pools & Fitness Centre	Vicarage Road, Teddington	TW11 8EZ	Local government	No	Sport & Leisure facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Added to list
517656	170886	Teddington School and Sports Centre	Trowlock Island	TW11 9QZ	Local Government	No	Local government estate	-	Natural gas	679.00	-	10,637	-	-	-	-	125	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWh)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWh)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
517656	170886	Teddington School and Sports Centre	Trowlock Island	TW11 9QZ	Local Government	No	Local government estate	-	Burning Oil	71.00	-	10,637	-	-	-	-	13	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Old school, now closed, sports centre remains, rebuilt on same site, see above
516046	171191	Teddington Swimming Pool	Vicarage Road	TW11 8EZ	Local Government	No	Sport and Leisure facilities	Assets including CHP	Natural gas	2316.00	354	2,652	-	-	0.02	0.03	425	1960's/2003 hydro pool extension	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Solar thermal system being installed by April 2012, 22.4m2 panels expected to save 13.9 MWh gas
518220	174232	Terrace Garden	Petersham Road	TW10 6RH	Local Government	No	Local government estate	-	Natural gas	8.00	-	-	-	-	-	-	2	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
519444	173939	Thames Landscape Strategy	Holly Lodge Richmond Park, Richmond	TW10 5HS	Central government	No	Central government estate	-	Natural gas	346.92	-	-	-	-	-	-	-	-	2008	-	-	-	No	-	Richmond upon Thames	-	-
518212	175254	Thames Link House	1 Church Road	TW9 2QA	Local Government	No	Local government estate	Electric heating	Electricity	24.31	-	342	-	-	-	-	-	1984	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	Electrically heated: Consumption is total electricity
516231	173493	Thames Valley Housing Association	Premier House, 52 London Road, Twickenham, Middlesex	TW1 3RP	Private	No	Private commercial (> 9,999 m2)	Electric heating	Electricity	1.77	-	-	-	-	-	-	757.32	-	2009	2009	2010	FM Team	Yes	-	Richmond upon Thames	-	-
517708	171791	THE CASSEL HOSPITAL	HAM COMMON, RICHMOND	TW10 7JF	Other public	No	NHS	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515245	168783	THE CHARLTON HOTEL	HAMPTON COURT ROAD, EAST MOLESEY	KT8 9BW	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515665	173202	The Day Job	14 Laurel Avenue, Twickenham	TW1 4JA	Private	No	Museums & Art Galleries	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517895	173170	THE GERMAN SCHOOL	THE GERMAN SCHOOL	TW10 7AH	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
513572	171092	THE LADY ELEANOR HOLLES SCHOOL	THE LADY ELEANOR HOLLES SCHOOL	TW12 3HF	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515772	168829	THE LION GATE	HAMPTON COURT	KT8	Private	No	Hotels (> 99	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond	-	-

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
		HOTEL	ROAD, EAST MOLESEY	9BZ			units or 4,999 m2)																		upon Thames		
515716	168803	THE LIONGATE HOTEL	HAMPTON COURT ROAD, EAST MOLESEY	KT8 9DD	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
514845	172213	THE MALL SCHOOL	THE MALL SCHOOL	TW2 5NQ	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
515017	172622	THE MALL SCHOOL	THE MALL SCHOOL	TW2 5QS	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519557	177265	The National Archives	-	TW9 4DU	Central government	No	Central government estate	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
517584	170613	THE PAVILION MONTESSORI SCHOOL	THE PAVILION MONTESSORI SCHOOL	TW11 9QY	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
519102	177063	The Queen's C of E Primary School	Cumberland Road	TW9 3HJ	Local Government	No	Education Facilities	-	Natural gas	407.00	-	2,231	-	-	-	-	75	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
518329	175009	THE RICHMOND INN HOTEL	SHEEN ROAD, RICHMOND	TW9 1UG	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	589.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	Estimated	-
518424	173759	The Royal Star & Garter Homes	RICHMOND HILL, RICHMOND	TW10 6RR	Private	No	-	Central Boilers	Mixed source	5152.00	-	-	-	-	-	-	-	-	2011	-	-	-	-	-	Richmond upon Thames	-	-
517518	169429	THE WHITE HART HOTEL	HIGH STREET, KINGSTON UPON THAMES, HAMPTON WICK	KT1 4DA	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames	-	-
514973	172725	Third Cross Road	Third Cross Road, Twickenham	TW2 5DY	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks. Planning applications for residential/mixed uses under consideration
521178	176061	Tideway Yard	Tideway Yard, Mortlake High Street	SW14 8SN	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Existing Business Parks
514711	173067	Trafalgar Infant School (Meadway)	Meadway	TW2 6PY	Local Government	No	Education Facilities	-	Natural gas	120.00	-	1,102	-	-	-	-	22	-	2010	n/a	n/a	Direct readings for CRC	No	-	Richmond upon Thames	Actual Data	PFI school

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
																						2010/11 purposes					
514873	172797	Trafalgar Junior School (Elmsleigh)	Elmsleigh Road	TW2 5EG	Local Government	No	Education Facilities	-	Natural gas	409.00	-	2,992	-	-	-	-	75	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	PFI school
520151	175800	Training & Development Centre, Mortlake	69 Lower Richmond Road	SW14 7HJ	Local Government	No	Local government estate	-	Natural gas	83.00	-	714	-	-	-	-	15	1910	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
515959	171033	Travelodge Teddington	Park House, Station Road, Teddington	TW11 9AD	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	1559.00	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	Estimated	Construction completed; opening soon
516143	173636	Travelodge Twickenham	London Road, Twickenham	TW1 3QS	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames	-	Construction completed; just opened up
513268	170480	Tudor Avenue No 3	3, Tudor Avenue	TW12 2ND	Local Government	No	Local government estate	-	Natural gas	70.00	-	-	-	-	-	-	13	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames	Actual Data	-
513851	172975	Twickenham Academy	Percy Road	TW2 6JW	Private	No	Education Facilities	-	Natural gas	3744.00	-	8,726	-	-	-	-	687	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	Yes	-	Richmond upon Thames	Actual Data	Now an academy so data confidentiality
513661	173041	Twickenham Cemetary & Lodge	Hospital Bridge Road	TW2 6LD	Local Government	No	Local government estate	Electric heating	Electricity	0.67	-	175	-	-	-	-	-	1930's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
514849	171987	TWICKENHAM FIRE STATION	30 SOUTH ROAD	TW2 5NT	Other public	No	Fire stations	Assets including CHP	Natural gas	296.60	28	1,289	-	0.25	0.01	0.02	-	1959	2010	-	-	Meters	No	-	Richmond upon Thames		
516353	173318	Twickenham IDC Centre (& St Mary's Church Hall)	Arragon Road	TW1 3NJ	Local Government	No	Local government estate	-	Natural gas	84.00	-	830	-	-	-	-	15	-	2010	n/a	n/a	Direct readings for CRC 2010/11	Yes	-	Richmond upon Thames		

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
516293	173429	Twickenham Library	Garfield Road	TW1 3JS	Local Government	No	Local government estate	-	Natural gas	130.00	-	739	-	-	-	-	24	1906	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
515449	174218	Twickenham Marriott Hotel	198 Whitton Road, Twickenham	TW2 7BA	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames		
516458	173299	Twickenham Museum	25 The Embankment, Twickenham	TW1 3DU	Private	No	Museums & Art Galleries	-	-	125.00	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames		
516185	173429	Twickenham Police Station	41 London Road, Twickenham	TW1 3SY	Other public	No	Police stations	-	-	357.00	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames		
516005	173766	Twickenham Sorting Office	Twickenham Sorting Office, 109 London Road, Twickenham	TW1 1EE	Private	Yes	Private residential (> 149 units or 9,999 m2)	-	-	728.63	-	-	170.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames		
515319	174546	Twickenham Stadium / Rugby Football Union (RFU) Site	Rugby Football Union, Rugby Road, Twickenham	TW1 1DG	Private	Yes	Multi-address buildings	-	-	492.89	-	-	115.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames		
516244	173322	Twickenham Station	Twickenham Station, Twickenham	TW1 3SX	Private	Yes	Multi-address buildings	-	-	492.89	-	-	115.00	-	-	-	-	-	-	-	-	Benchmark	No	-	Richmond upon Thames		
515959	173943	Twining Day Centre / Business Centre	53 Grimwood Road	TW1 1BY	Local Government	No	Local government estate	-	Natural gas	143.00	-	1,058	-	-	-	-	26	1976	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
518813	176672	UNICORN SCHOOL	UNICORN SCHOOL	TW9 3JX	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames		
518061	174407	VICARAGE SCHOOL	VICARAGE SCHOOL	TW10 6QX	Private	No	Education facilities	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames		
518321	174186	Vineyard School	Friars Stile Road	TW10 6NE	Local Government	No	Education Facilities	-	Natural gas	363.00	-	2,635	-	-	-	-	67	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
515850	171317	Waldegrave Road	Waldegrave Road, Teddington (number of commercial buildings on	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames		

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
			both sides of Waldegrave Road)																								
514710	172450	Waldegrave School	Fifth Cross Road	TW2 5LH	Local Government	No	Education Facilities	-	Natural gas	197.00	-	9,169	-	-	-	-	36	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
514710	172450	Waldegrave School	Fifth Cross Road	TW2 5LH	Local Government	No	Education Facilities	-	Burning Oil	279.00	-	9,169	-	-	-	-	51	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
515316	173367	West Twickenham cluster	Norcutt Rd, Hamilton Rd, Crane Rd and Colne Rd Twickenham	-	Private	No	Private commercial (> 9,999 m2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames		
517625	174684	WHITE CROSS HOTEL	RIVERSIDE, RICHMOND	TW9 1TH	Private	No	Hotels (> 99 units or 4,999 m2)	-	-	-	-	-	-	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames		
516736	172943	Whitton Health and Social Care Centre	Whitton Community Centre, Percy Road, Whitton	TW2 6JL	Other public	Yes	NHS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No	-	Richmond upon Thames		
514026	173916	Whitton Library	141-145 NELSON ROAD	TW2 7BB	Local Government	No	Local government estate	-	Natural gas	72.00	-	441	-	-	-	-	13	1974	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
523132	177636	WILLIAM HUNT MANSIONS	FLAT 3 4 SOMERVILLE AVENUE LONDON	SW13 8HS	Private	No	Multi-address buildings	-	-	-	-	-	59.00	-	-	-	-	-	2010	-	-	-	No	-	Richmond upon Thames		
518894	175831	Windham Nursery / Croft Centre	16 Windham Road	TW9 2HP	Local Government	No	Education Facilities	-	Natural gas	123.00	-	1,231	-	-	-	-	23	-	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
516537	173497	York Cottage	2 Sion Road	TW1 3DB	Local Government	No	Local government estate	-	Natural gas	29.00	-	170	-	-	-	-	5	1870	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		
516529	173388	York House (gas only)	Richmond Road	TW1 3AA	Local Government	No	Local government	-	Natural gas	855.00	-	4,608	-	-	-	-	157	1660-1956	2010	n/a	n/a	Direct readings for	No	-	Richmond upon Thames		

OXS	OYS	Name	Address	Postcode	Ownership	New Development	Typology	Heating supply	Fuel source	Fuel consumption: all assets exc. CHP (MWh/yr)	Fuel consumption: CHP (MWh/yr)	Gross internal floor area (m2)	Number of dwellings	Installed thermal capacity: all assets exc. CHP (MWth)	CHP installed electrical capacity (MWe)	CHP installed thermal capacity (MWth)	CO2 emissions (tCO2/yr)	Year of Construction	Year of data collection	Start date	Completion date	Data Source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
							estate															CRC 2010/11 purposes					
516439	173413	York Street No 42	42 York Street	TW1 3BZ	Local Government	No	Local government estate	-	Natural gas	159.00	-	1,416	-	-	-	-	29	1930's	2010	n/a	n/a	Direct readings for CRC 2010/11 purposes	No	-	Richmond upon Thames		

## A1.2 Major Heat Supply

OXS	OYS	Name	Plant Address	Postcode	Ownership	New development	Typology	Fuel source	Fuel consumption: all assets inc. CHP (MWh/yr)	Heat generation: all assets inc CHP (MWh/yr)	Installed thermal capacity: all assets inc. CHP (MWth)	Installed power: all assets inc CHP (MWe)	CO2 emissions (tCO2/yr)	Date of Construction	Year of data collection	Start date	Completion date	Data source	Confidentiality of data	Attach file	Borough	Real or estimated data?	Notes
520536	175957	Ea-Etco2-0575	Budweiser Stag Brewing Company Limited Lower Richmond Road Mortlake London SW14 7 ET	SW14 7ET	Stag Brewing Company Limited	-	Significant Supply Plant	-	-	-	-	-	12766	-	-	-	-	-	No		Richmond		
522371	178089	St Pauls School	-	-	-	-	CHP Sites	-	-	-	0.15	0.226	-	-	-	-	-	-	No		Richmond		

## A2 London Heat Map Heat Load Typologies

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The London Heat Map categorises heat loads in accordance with the previous DEMaP database provided by the LDA.

The London Heat Map's categories are listed below:

- [Residential] Multi-Address buildings (>49 per building)
- Sport & Leisure Facilities
- Prisons
- Hotels (>99 units or 4,999m<sup>2</sup>)
- Educational Facilities
- Police Stations
- Fire Stations
- NHS
- Museums and art galleries
- Central government estate
- Local government estate
- Religious Buildings
- Private residential units (>149 units or 9,999m<sup>2</sup>)
- Private commercial units (>9,999m<sup>2</sup>)
- Social Housing Estate
- Other Public Buildings

Buildings with small loads have not been included in this categorisation. This is because their thermal demand is considered big enough to influence the potential of identifying a district heat network opportunity.