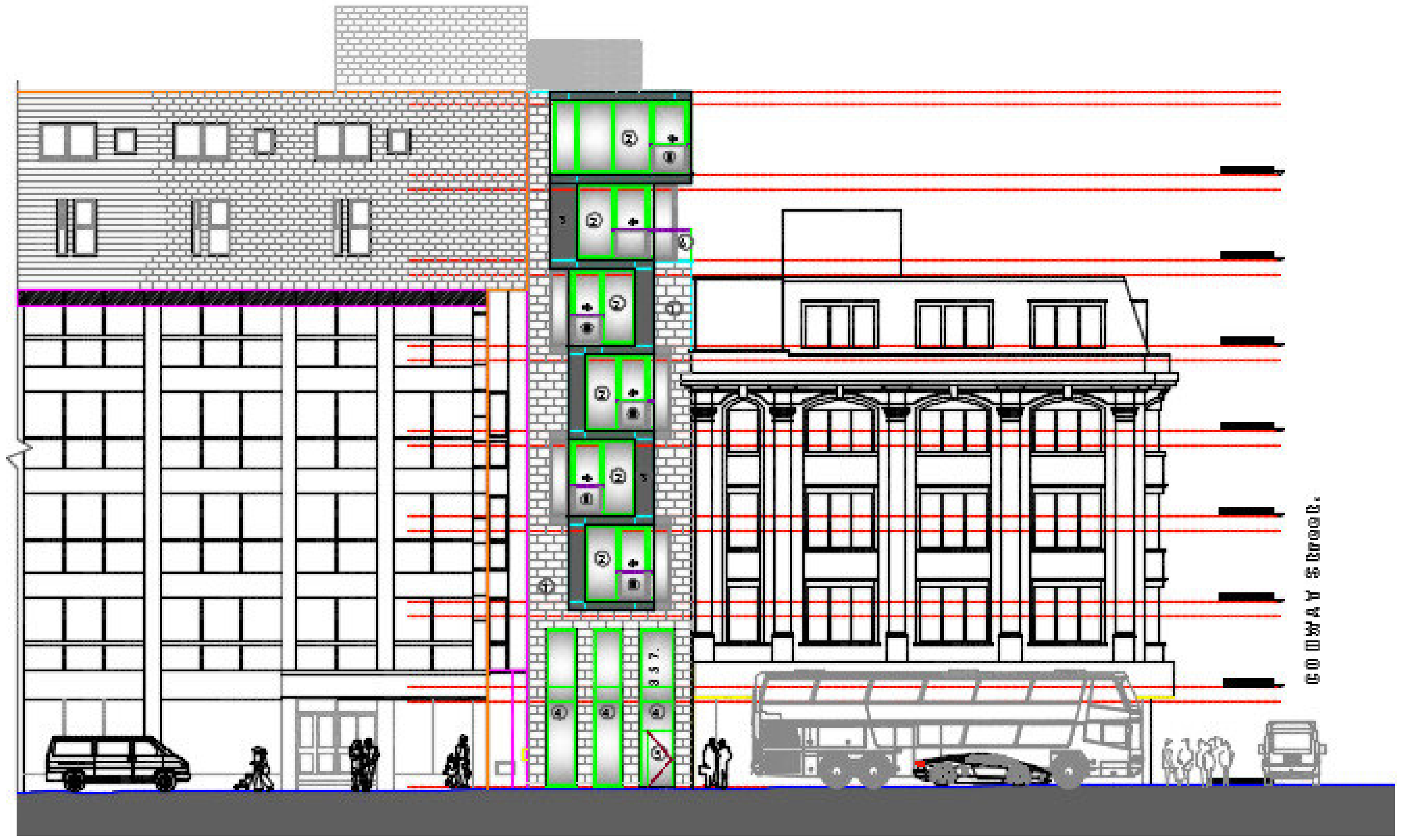
MENDICK WARING LTD
consulting engineers



Mendick Waring Ltd
Edelman House
1238 High Road
London
N20 0LH

T: 020 8446 9696

357 Euston Road

Energy Statement

Oct-15

MENDICK WARING LTD
consulting engineers

Project	357 Euston Road
MW Reference	J2158
Location	Camden
Local Authority	Camden Council
Client	Philip Collet
Report Scope	Energy Statement

Issue 02

Date 13/10/2015

Author Alex Mozaffari

Signature

Checked by Suresh Patel

Signature

Disclaimer

The performances of renewable systems, especially wind and solar, are difficult to predict with any certainty. This is due to the variability of environmental conditions from location to location and from year to year. As such all budget/cost and figures, which are based upon the best available information, are to be taken as estimation only and should not be considered as a guarantee.

Mendick Waring Ltd disclaims any responsibility to the Client and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence within the terms of the Contract with the Client and taking account of the manpower, resources, investigations and testing devoted to it by agreement with the Client. This report is confidential to the Client and Mendick Waring Ltd accepts no responsibility of whatsoever nature to third parties

MENDICK WARING LTD
consulting engineers

Contents

1.0 Executive Summary

This report forms part of a planning application from Patterson Design Architects to London Borough of Camden for '357 Euston Road' development.

The proposed development comprises the construction of 9 no residential dwellings over 7 storeys.

Mendick Waring have been appointed to produce an Energy Statement identifying how the development will address the policies set out by both the GLA London Plan and Camden Council. In line with these policies, a 35% improvement over Part L1A Building Regulation 2013 is to be targeted and an achievement of Code for Sustainable Homes *'Level 4'*

The strategy is based on the Mayor of London's Energy Hierarchy, as follows:

- Use less energy (be lean) and
- Supply energy efficiently (be clean)

A low carbon approach for the design of the building's fabric and associated engineering system has been used to minimise energy use.

Air Source Heat Pumps is proposed, as a lead system to provide space heating and hot water supply. These measures result in a reduction in site-wide CO_2 emissions of approximately 49% when measured against Part L1A 2013 Building Regulations.

The proposed development under outline specifications within this document, meets criteria set out by London Borough of Camden, by ensuring the proposed development achieves the required necessary improvements over Part L1A Building Regulations 2013 and an achievement of Code for Sustainable Homes *'Level 4'*

Further detail is outlined in Figure 1 & Table 1.

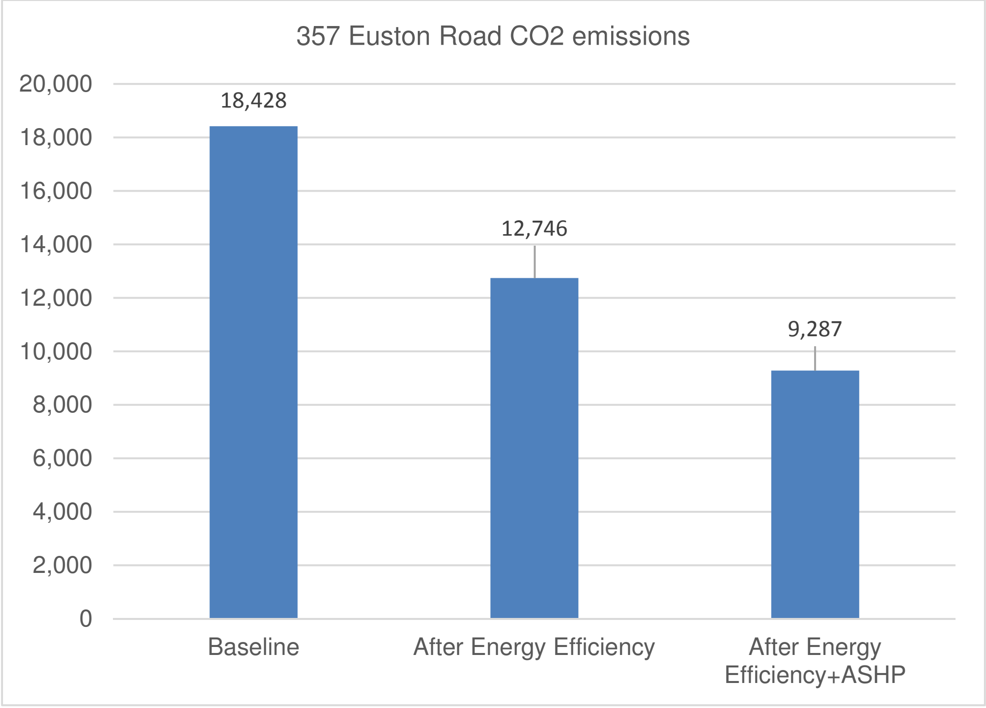


Figure 1 – *357 Euston Road CO_2 Emissions*

Table 1 – *357 Euston Road CO_2 Emissions*

	Carbon dioxide emissions (Kg CO_2 per annum)	
	Regulated CO_2 Emissions	**Regulated CO_2 Emissions Reduction**
Baseline: Building Regulations 2013 Part L Compliance Development	18,428	0%
After energy demand reduction - Be Lean	12,746	30.8%
After energy efficiency +ASHP	9,287	49.6%

2.0 Introduction

Patterson Design Architects are proposing to submit a planning application to Camden Council for the 357 Euston Road development.

Mendick Waring are appointed as energy/sustainability consultants on the scheme and have developed a strategy to comply with policies set out by both the GLA London Plan and Camden Council.

Having completed a review of the relevant planning policies the proposed development must achieve a 35% improvement over Part L1A Building Regulations 2013 with the achievement of the measures of sustainability.

- Code for Sustainable Homes Level 4 (Minimum 19% improvement over Building Regulations Part L1A 2013)

The energy strategy proposed on this scheme will follow the mayor's energy hierarchy:

- Use less energy (be lean) and
- Supply energy efficiently (be clean)

3.0 Development Proposal

The proposed development comprises the erection of 9 residential units, with associated bicycle parking, servicing and private balconies.

4.0 Planning Policy Guidance & Legislation

The National Planning Policy Framework (NPPF) was published on 27th March 2012. The NPPF replaces many national planning policy guidance and statement (PPG and PPS) documents and includes the replacement of:

- PPS1 - Delivering Sustainable Development
- Supplement to PPS1
- PPS 22 - Renewable Energy

The definition of sustainable development within NPPF refers both to the Brundtland definition as *"the development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*[1], and the 'Securing the Future' five guiding principles. Paragraph 6 also states:

"The purpose of the planning system is to contribute to the achievement of sustainable development. The policies in paragraphs 18 to 219, taken as a whole, constitute the Government's view of what sustainable development in England means in practice for the planning system"

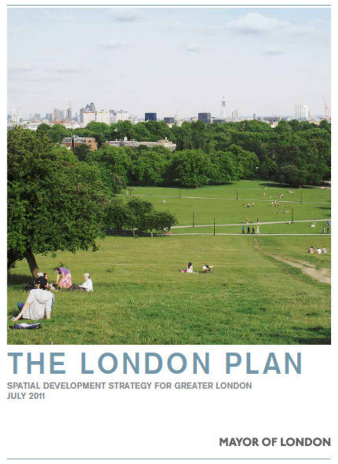
Thirteen chapters set out the framework:

1. Building a strong, competitive economy
2. Ensuring the vitality of town centres
3. Supporting a prosperous rural economy
4. Promoting sustainable transport
5. Supporting high quality communications infrastructure
6. Delivering a wide choice of high quality homes
7. Requiring good design
8. Promoting healthy communities
9. Protecting Green Belt land
10. Meeting the challenge of climate change, flooding and coastal change
11. Conserving and enhancing the natural environment
12. Conserving and enhancing the historic environment
13. Facilitating the sustainable use of minerals

As detailed under the NPPF, local authorities are required to undertake a review of standards currently in place with submission to the secretary of state for examination.

In light of the above and having reviewed relevant planning policy, the following policies will apply to the development;

London Plan 2011



- Mayor of London SPD on Sustainable Design and Construction
- Policy 5.2 – Minimising Carbon Dioxide Emissions
- Policy 5.3 – Sustainable Design & Construction
- Policy 5.5 – Decentralised Energy Networks

Camden Council: Camden Development Policies 2010-2025

- Development Plan DP22

The council will promote and measure sustainable design and construction by:

c) expecting new build housing to meet Code for Sustainable Homes Level 4 by 2013 and encouraging Code Level 6 (zero carbon) by 2016.;
d) expecting developments (except new build) of 500 m^2 of residential floor space or above or 5 or more dwellings to achieve "very good" in EcoHomes assessments prior to 2013 and encouraging "excellent" from 2013;
e) Expecting non-domestic developments of 500sqm of floors pace or above to achieve "very good" in BREEAM assessments and "excellent" from 2016 and encouraging zero carbon from 2019.

As the development falls under the threshold 2013 regulations as described above therefore Code for Sustainable Homes Level 4 compliance will be met to satisfy Local authority planning policies.

It should be noted that following the conclusion of the Housing Standards review on 25th March 2015 there is uncertainty as to whether Local Authorities can require residential developments to be assessment with the Code for Sustainable Homes (CSH) Scheme. The Camden's Development Plan currently states a requirement for CSH Level 4 certification.
To summarise, the development will achieve the requirements as follow:

- 35% improvement over Building Regulations 201 Part L1A (Ene 01)
- Code for Sustainable Homes Level 4

[1] World Commission on Environment and Development. "Our Common Future, Chapter 2: Towards Sustainable Development". http://www.un-documents.net/ocf-02.htm. Retrieved 18-07-2012

Design Principles

5.0 Approach

Passive measures to improve the thermal performance of the building fabric focus on specifying higher levels of insulation for the roof, external walls and floor, alongside high performance glazing and doors. Other important measures include targeting lower air permeability and include the minimising of thermal bridges through best practice detailing. A full, recommended specification is provided in Section 12.0 of this report.

Efficient energy use and distribution is assured by specifying an efficient heating and cooling system with appropriate controls.

6.0 Methodology

Energy demand and resultant CO_2 emissions are estimated for the base case Target Emissions Rate (TER) and improved, through energy efficiency, Dwelling Emission Rate (DER). Low and zero-carbon energy technology is then applied to further enhance performance to meet the target.

CO_2 emissions are reported according to CSH Ene 1, which compares CO_2 emissions from regulated energy use (DER) with those of an equivalent dwelling built to Part L 2013 (TER). This does not include cooking or appliances.

Government approved software (NHER Plan Assessor 6.1) has been used to calculate energy consumption based on current SAP methodology (2012).

Technology Consideration

7.0 Code for Sustainable Homes Ene 7 'Low and Zero Carbon Technologies'

Given the requirement to achieve a number of Building standards and requirements, design development has been undertaken as part of the RIBA Stage 1 / 2 process. Mapleton Crescent is required to achieve a Code for Sustainable Homes rating of *'Level 4'*. As part of this process, a number of technologies have been considered, with feasibility / viability and practicality considered given the various design considerations.

In light of this, a feasibility study has been undertaken, identifying the following:

a) Appropriate technologies

b) Energy generated from Low and Zero Carbon Technologies per annum

c) Available funding grants

d) Life cycle cost of specification (including allowances for payback)

e) Local planning criteria (inc preferred solutions)

f) Feasibility of exporting heat / electricity from chosen system

In order to fully identify appropriate technologies, an initial evaluation has been undertaken based on the expected baseline energy demand. Baseline Energy is calculated on a development with identical geometry built to meet Building Regulations, thus using standard building fabric parameters and notional heating systems.

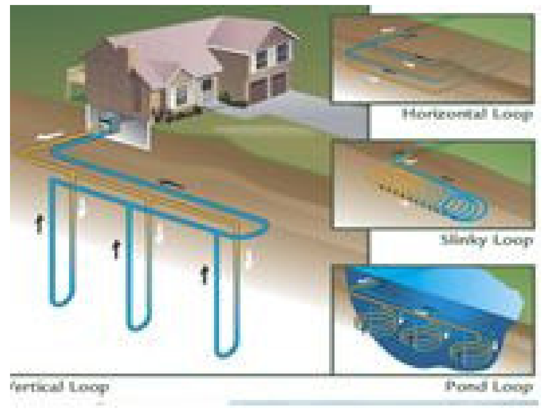
8.0 Considered Technologies

Wind Energy

Although wind turbines can generate up to 3MW of electricity, smaller units are available generating between 0.5 kW to 6.0 kW. The area would need to be accessed to establish the practicality of installing a wind turbine. Electricity is generated in DC and requires an inverter to convert to AC to operate domestic appliances. Where electricity is generated but not required, it can be sold to the local electricity company,

Given the location and the wind speed available provides minimal feasible electrical generation and as such has been discounted. It should also be noted there are a number of considerations with regards to daylight impact on the surrounding buildings, further providing rational for discounting wind technology.

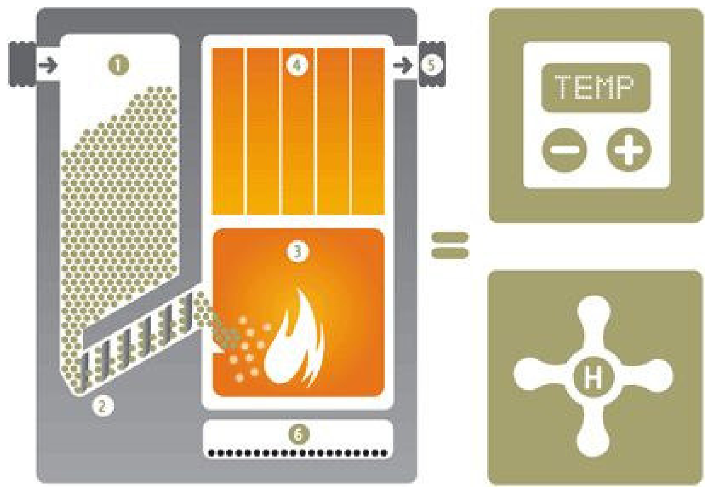
Ground Source Heat Pump



A Ground Source Heat Pump (GSHP) transfers energy from the ground to the building to provide space heating or pre-heating of domestic hot water. Unlike wind and solar heating it requires an electrical input, however, the heat recovered is three to four times the required electrical input. Heat is transferred from the ground using a ground loop, which can either be within a vertical borehole arrangement or laid as coils in a horizontal trench. The heat pump works in the same way as a domestic refrigerator in reverse, by extracting heat from the borehole/trench to evaporate the refrigerant on the heat pump circuit. Heat is then input to the building as the refrigerant condenses.

Any proposed GSHP would require the use of a large number of vertical boreholes across the site. Given the small site, the piling of the foundations and the network pipes that run below ground, this has been discounted owing to practical constraints associated with GSHP.

Biomass



Biomass boilers burn renewable fuel to generate hot water for direct use, or for heating purposes. The fuel they burn is renewable because it is in a constant carbon cycle. There are three main forms of biomass boilers available, namely those using wood chips as fuel, those using wood pellets as fuel and those using wood logs

The operation and installation of Biomass requires additional plant space for the storage of solid fuel and design of access routes for delivery of fuel. Given the urban location of the development, this has been discounted owing to practical constraints associated with Biomass.

Combined Heat & Power (CHP)

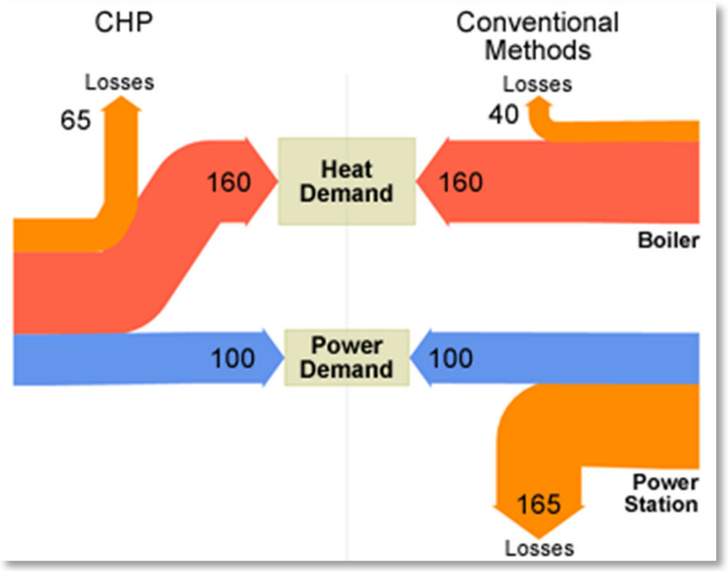
CHP effectively uses waste heat from the electricity generation process to provide useful heat for space and water heating; the advantage of this system is that it leads to higher system efficiencies when compared to a typical supply arrangement of grid-imported electricity and conventional boilers. A further advantage is that because electricity is generated close to the point of use, the losses incurred in High Voltage (HV) transmission are avoided. CHP is considered as a low carbon technology when fired by gas or fuel oil to generate electricity and provide heating and hot water. At this scale, a gas-fired reciprocating engine CHP* is the preferred technology due to efficiency, maintenance and plant space considerations, and is well-proven with many successful installations in UK. CHP systems offer optimum carbon and cost savings when matched to the site electricity and heat load profiles such that the units see a high utilisation and make a significant contribution to the site's annual energy demands.

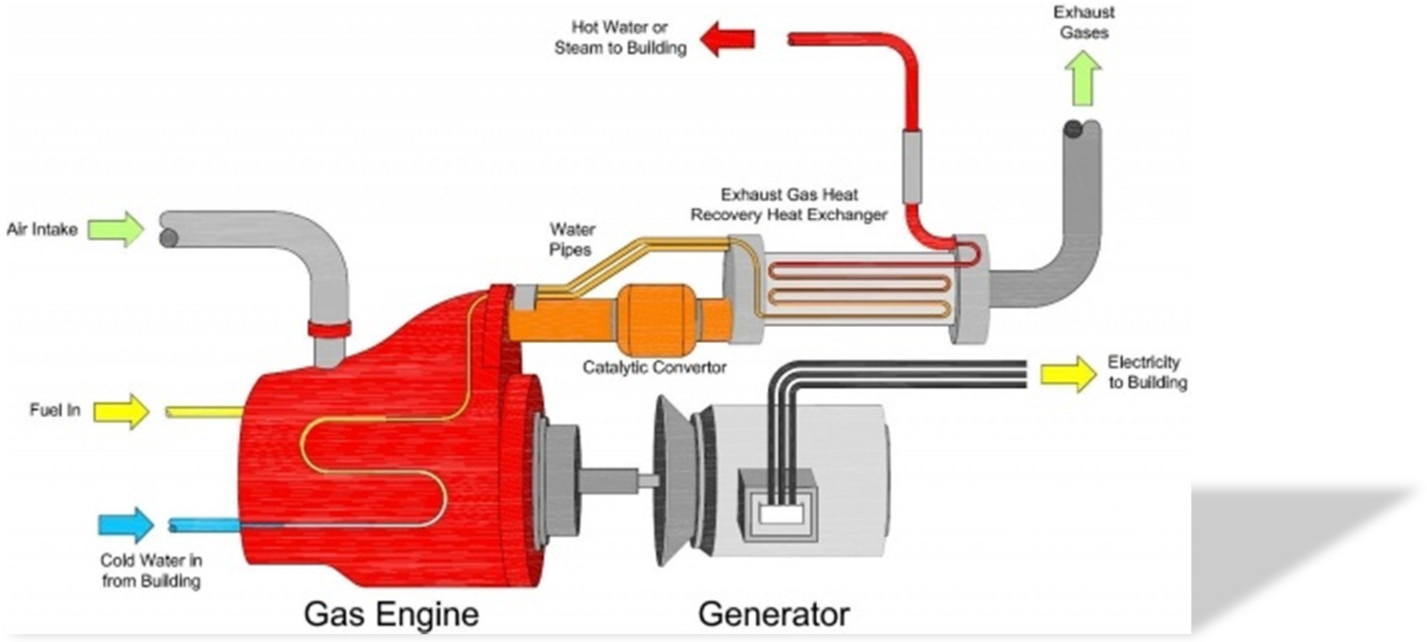
CHP units should be replaced every 15-17 years, with replacement timeframes subject to alteration pending regular maintenance and part failure.

Once an understanding of the site's heat and electricity demand profile has been established the designer is then faced with the task of deciding on the size of the CHP*. There is no straightforward way to size a CHP. Some guidance recommends sizing only to meet the lowest demand that occurs — the base-load that will result in the longest running hours and the shortest payback period. However this is not necessarily the most economically advantageous approach and certainly would limit the amount of CO_2 savings that could be achieved on a given site.

The most accurate models are hourly models simulated over a whole year with occupancy, heat, DHW and electricity demand profiles representing an average year. This is the recommended approach for new buildings where dynamic simulation modelling can be carried out.

Whereas in most engineering calculations it is possible to make simplifications that result in a conservative or a worst case scenario, simplifying a CHP model generally will result in a more optimistic result (best case scenario) with respect to the CHP operating hours and hence the economic payback and efficiency, which is usually not the case.





*As detailed under CIBSE AM12 (2013) Combined Heat & Power for Buildings (Applications Manual 12)

Photovoltaics

Photovoltaic (PV) panels create electricity from solar radiation with efficiency ranging between 5 and 19%. PV modules generally require minimal maintenance, usually consisting of a visual inspection and associated electrical testing. They have no moving parts and an expected lifetime of over 30-40 years. Manufacturers typically offer a warranty on power output of 20-25 years. PV modules have no operating emissions and produce no noise, making them the most benign zero-carbon technology.

Following a review of available roof area, the provision of PV placement should be considered in context, noting any issues resulting from external plant, access and architectural aesthetics. An initial investigation has been carried out in conjunction with the architect, in order to identify a suitable position for installation of PV arrays at roof level. The feasibility study has concluded that the roof area will not be available for PV array installation.

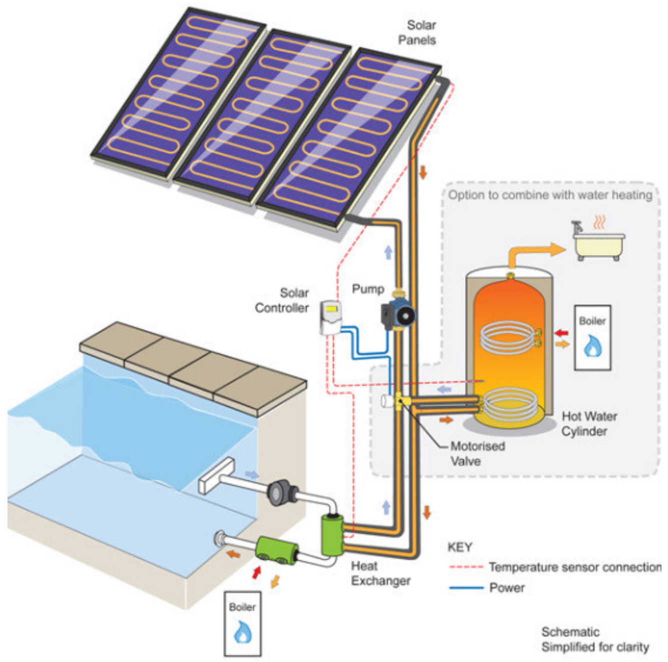
Solar Thermal Collectors

Solar thermal collectors utilise solar radiation to heat water for use in water heating of a building. The radiation is converted using a solar collector, of which there are two main types available: Flat Plate and Evacuated Tube collectors. Evacuated tube systems occupy a smaller area and are more efficient, but also generally more expensive. Flat plate systems are cheaper to install but generally less efficient.

The solar coverage indicates what percentage of the annual domestic hot water energy requirement can be covered by a solar water heating system. The higher the solar coverage, the more conventional energy usage can be offset, but can cause excess heat generation in the peak summer months and generally lower the average collector efficiency. Therefore solar coverage's of 40-70% are recommended for most domestic applications and up to 40% in non-domestic buildings.

Solar thermal systems in the UK normally operate with a back-up fuel source, such as gas or electricity. The solar system pre-heats the water up to a maximum hot water temperature. If there is not enough solar power available to fully meet the required hot water load, then the back-up fuel system fires up to meet this short fall. The optimum orientation for a solar collector in the UK is a south facing surface, tilted at an angle of 30º from the horizontal. However, orientation is not critical, with azimuths of +/-30o from South and angles of +/-20o from 30o still achieve reasonable outputs.

In order for the solar water heating system to run safely and efficiently, a series of temperature sensors are connected to a digital solar controller to switch the system on or off according to the solar energy available. The roof area required depends on the efficiency of the modules specified and will vary depending on the product selected. This will be determined by the relevant contractor.



9.0 Energy Generation, Life Cycle Costing & Funding

Given the identified systems (Air Sources Heat Pumps) consideration must be made to identify the expected energy demand and related off-set energy use throughout the development.

Air Source Heat Pumps

ASHP in combination with fan coil units, provide an efficient method in delivering space heating. ASHPs do not provide any electrical generation via operation, however, can provide operational efficiencies of in excess of 300%.

At present the use of an ASHP provides significant reduction in CO_2 emissions p/annum, however, ASHPs must be replaced every 7-10 years (owing to mechanical parts and operational failures).

A total systems size of approximately 50kW* is expected, with an initial capital cost of £55,000 with yearly maintenance of approximately £3,000 p/annum.

**Specified capacity is based on indicative models created to date, the specific size of systems will be clearly defined during detailed design stage, considering a number of factors including design changes and technology available at the time of design / construction*

The ASHP have been proposed for non-domestic space at the ground floor of the proposed development and have been utilised under Part L1A 2010 analysis. The thermal modelling results and Part L compliance report has been included under Appendix B of this report.

Funding

At present ASHPs have been identified as a preferred solution, the domestic RHI scheme opened on 9th April 2014, the current scheme constitutes of following table and the tariffs per unit of heat generated will be paid for seven years,

Technology	Tariff
Air Source Heat Pump	7.3 p/kWh
Ground and Water Source Heat Pump	18.8 p/kWh
Biomass-only boilers and biomass pellet stoves with integrated boilers	12.2 p/kWh
Solar thermal panels (flat plate and evacuated tube for hot water only)	19.2 p/kWh

The above table is published by Office for Gas & Electricity Markets (ofgem). On April 2014

Table 2 – Renewable Heat Incentive Table

The above table suggest that the proposed development would be able to obtain funding at the rate of 7.3p/kWh from the RHI funds, however, the correct tariff should be obtain at the time of development.

10.0 Baseline Energy and CO_2 Demand

Baseline energy demand assessment is based on a development with identical geometry built to meet Building Regulations, thus using standard building fabric parameters and notional heating systems.

Energy modelling shows that the base CO_2 emissions across the development is 18,428 kg CO_2/pa.

11.0 Energy Efficiency

Energy demand will be curbed by incorporating measures including high levels of thermal insulation, detailing to reduce air permeability and thermal bridging, and low-energy lighting. Given the development of the scheme in line with the Energy Hierarchy, consideration should be first made to design through passive design.

Passive Measures

The most cost-effective method of improving energy efficiency and reducing the long-term CO_2 emissions of a new development is through passive, low-energy design. Every unit of energy saved is equivalent to a unit of LZC energy generated, however passive design measures will help reduce the building's carbon footprint throughout its entire life, and thus they should be applied before LZC energy technologies are considered.

To minimise the requirement for space heating it is essential to minimise heat loss through the building envelope. The following figure illustrates conductive heat loss in a typical building, with thicker arrows representing a higher heat flux, highlighting areas where thermal resistance should be maximised.

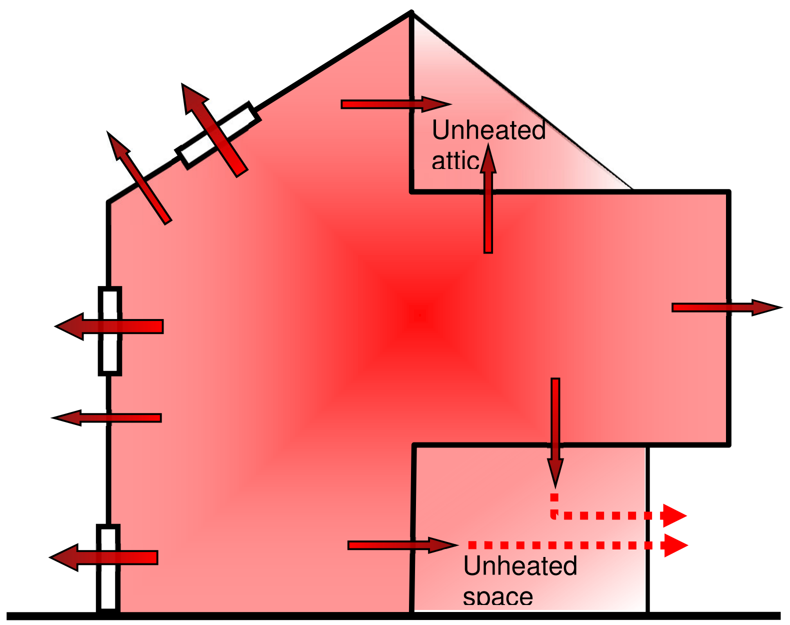


Figure 2 – *Conductive heat loss*

In addition to heat loss through conduction, it is important to reduce uncontrolled convective heat loss due to air leakage.

Heating System

Once energy demand has been addressed, the next step is to supply energy efficiently. In the case of heat, this relates to heat source efficiency, distribution losses, control system and heat emitters.

Energy efficiency has been addressed through the proposed use of on-site energy centre located within the ground floor of the development. Based on design development to-date Air Source Heat Pumps (ASHP) is proposed to provide space heating requirements across the development.

**Please note that system sizing is based on calculations completed to date and will be further developed during detailed design stage.*

Ventilation

Mechanical Ventilation with Heat Recovery (MVHR) is proposed across the development. This in combination with reduced air tightness seeks to maximise recoverable heat gains and reduce overall energy consumption accordingly.

12.0 Specification

The following specification has been assumed in modelling the energy efficiency case:

- U-value of floors 0.11 W/m^2K
- U-value of walls 0.13 W/m^2K
- U-value of roofs 0.11 W/m^2K
- U-value of windows 1.4 W/m^2K (g-value of 0.5)
- U-value of doors 1.5 W/m^2K
- Air permeability: 5 $m^3/m^2.h$
- No flues, open fireplaces, or flue less gas fires
- No cooling via air conditioning
- Time and temperature zone control
- 100% low energy light lamps
- Ψ values – *Approved Construction Details used where possible*
- Heating and Instantaneous Domestic Hot Water (IDHW) provided via community CHP system ($15kW^e$) and Communal Gas Boilers with localised Heat Interface Units (HIUs)
- Mechanical Ventilation & Heat Recovery (90% efficiency with SFP of 0.42 w/l/s)

Conclusion

The strategy is based on the Mayor of London's Energy Hierarchy, as follows:

- Use less energy (be lean)
- Supply energy efficiently (be clean) and

A low carbon approach for the design of the building's fabric and associated engineering system has been used to minimise energy use.

Air Source Heat Pumps (ASHP) is proposed, as a lead system to provide heating and hot water supply.

These measures result in a reduction in site-wide CO_2 emissions of approximately 49% when measured against Part L1A 2013 Building Regulations.

The proposed development under outline specifications within this document, meets criteria set out by London Borough of Camden, by ensuring the proposed development achieves the required necessary improvements over Part L1A Building Regulations 2013 and an achievement of Code for Sustainable Homes *'Level 4'*

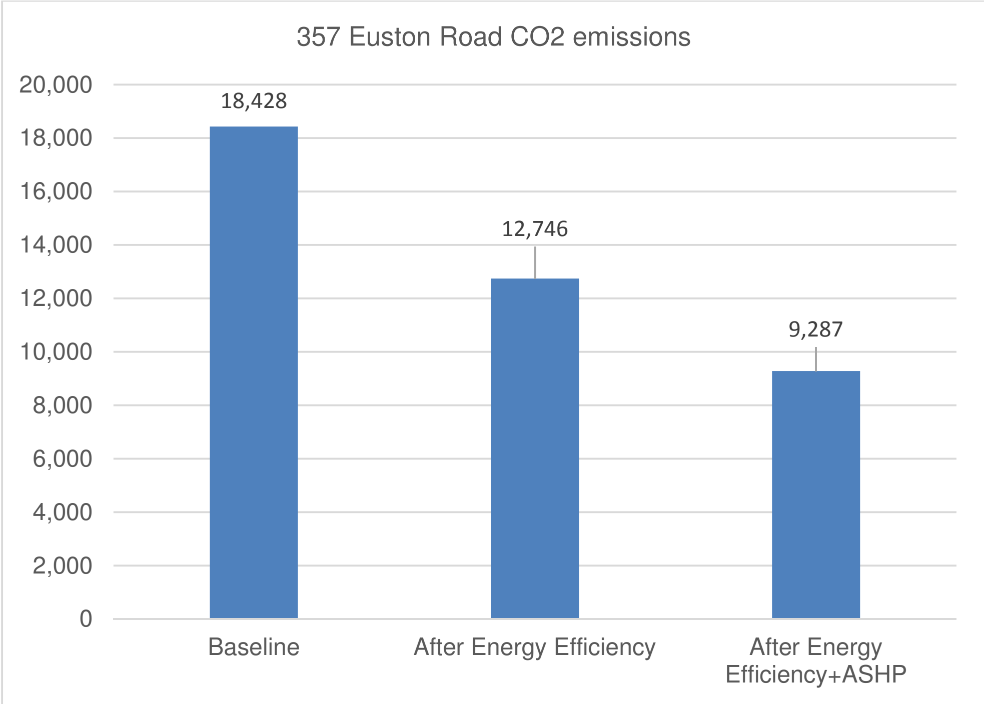


Figure 3 – *357 Euston Road CO_2 Emissions*

Table 3 – *357 Euston Road CO_2 Emissions*

	Carbon dioxide emissions (Kg CO_2 per annum)	
	Regulated CO_2 Emissions	**Regulated CO_2 Emissions Reduction**
Baseline: Building Regulations 2013 Part L Compliance Development	18,428	0%
After energy demand reduction - Be Lean	12,746	30.8%
After energy efficiency +ASHP	9,287	49.6%

1.0 Appendix A – SAP Worksheets

Buildings Regulations Compliance for Multiple Dwellings

This report checks compliance against criterion 1 of the Building Regulations where there are multiple dwellings in the same building. Where a building contains more than one dwelling (such as in a terrace of houses or in a block or apartments/flats), compliance with the Building Regulations is achieved if
a) EITHER every individual dwelling has a DER that is no greater than its corresponding TER
b) OR the average DER is no greater than the average TER.
The average DER is the floor-area-weighted average of all the individual DERs and is calculated in the same way as the average TER. Block averaging is permitted only across multiple dwelling in a single building, NOT across multiple buildings on a site.
The formula used is as follows:
{{TER1 x floor area1) + (TER_2 x floor $area_2$) + ... + (TERn x floor arean) } / {floor area1 + floor $area_2$ + ... + floor arean}

Assessor name	Miss Rachel Wootliff	Assessor number	8847
		Created	05/10/2015

Results

URN	Version	Address	DER	TER
Flat 8	1	Flat 8 357 Euston Road	12.43	21.57
Flat 7	1	Flat 7 357 Euston Road	15.56	31.71
Flat 6	1	Flat 6 357 Euston Road	13.88	25.64
Flat 5	1	Flat 5 357 Euston Road	15.50	31.41
Flat 4	1	Flat 4 357 Euston Road	13.88	25.64
Flat 3	1	Flat 3 357 Euston Road	15.50	31.41
Flat 2	1	Flat 2 357 Euston Road	13.95	25.79
Flat 1	1	Flat 1 357 Euston Road	14.63	26.67
Flat 9	1	Flat 9 357 Euston Road	14.96	25.33

Multiple dwelling DER = 14.31

Multiple dwelling TER = 26.14

Compliance = PASS

Code for Sustainable Homes for Multiple Dwellings

Energy averaging for the Code for Sustainable Homes Ene 1 and Ene 2 is permitted where a building contains multiple dwellings. For Ene 1 the area weighted average DER and TER must be calculated in accordance with the block averaging methodology defined in clauses 4.6 and 4.14 of the ADL1A. For apartment blocks it is acceptable to assess Ene 2 based on area weighted average FEE. The area weighted FEE must be calculated in accordance with the methodology defined in clause 4.6 of ADL1A. The use of energy averaging to assess performance against Ene 2 is at the discretion of the developer and Assessor.

Assessor name	Miss Rachel Wootliff	Assessor number	8847
		Created	05/10/2015

Energy Averaging

URN	Vrs	Address	Built Form	DER	TER	FEE	Floor Area (m²)	DER x Floor Area	TER x Floor Area
Flat 8	1	Flat 8 357 Euston Road	Flat	12.43	21.57	-1.0	107.69	1338.59	2322.87
Flat 7	1	Flat 7 357 Euston Road	Flat	15.56	31.71	-1.0	40.75	634.07	1292.18
Flat 6	1	Flat 6 357 Euston Road	Flat	13.88	25.64	-1.0	67.98	943.56	1743.01
Flat 5	1	Flat 5 357 Euston Road	Flat	15.50	31.41	-1.0	40.75	631.63	1279.96
Flat 4	1	Flat 4 357 Euston Road	Flat	13.88	25.64	-1.0	67.98	943.56	1743.01
Flat 3	1	Flat 3 357 Euston Road	Flat	15.50	31.41	-1.0	40.75	631.63	1279.96
Flat 2	1	Flat 2 357 Euston Road	Flat	13.95	25.79	-1.0	67.98	948.32	1753.20
Flat 1	1	Flat 1 357 Euston Road	Flat	14.63	26.67	-1.0	111.40	1629.78	2971.04
Flat 9	1	Flat 9 357 Euston Road	Flat	14.96	25.33	-1.0	159.69	2388.96	4044.95
						Total	**704.97**	**10090.10**	**18430.18**

Multiple dwelling DER = 14.31

Multiple dwelling TER = 26.14

Multiple dwelling FEE = -1.0

Ene 1 Results

Ene 1 using energy averaging = 45.3 % improvement*

4.8 credits

*100 x (1 - (DER/TER))

Ene 2 Results

Mid terrace and apartment blocks

Number of dwellings of this type = 9

FEE using energy averaging = -1

credits = 9

End terrace, semi-detached and detached

Number of dwellings of this type = 0

Ene 2 credits using energy averaging for all dwelling types = 9

(Flats-MidTerrace-TFA x Flats-MidTerrace-Credits) + (Detached-Semi-TFA x Detached-Semi-Credits) / (TFA-All-Dwellings)

(704.97 x 9) + (0 x 0) / (704.97)