Design Stage Energy and Sustainability Assessment

J2680 317 Finchley Road, London

Ref: J2680-Doc-01

Revision: 02

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GENERAL NOTES

REVISION HISTORY

Revision	Status	Date	Author	Reviewer	Approver
01	Stage 4	03/04/18	PD	ES	AL
02	Stage 4	17/04/18	PD	ES	AL

1.0 SUMMARY

This report represents the design stage energy assessment and references a planning stage assessment produced by MLM, report reference GC/7133428/CKN revision 04 and dated the 27th April 2016.

The development as a whole was submitted and registered prior to October 2016, this update is presented under the council's guidance for energy statements for this period.

The development consists of the demolition of existing buildings and erection of 22 new build residential units and one shell and core commercial unit, associated landscaping and ancillary works.

The energy consumption figures for the proposed development are based on SAP modelling data produced under Building Regulations Part L1A 2013 software compliant for the residential part of the scheme. The energy consumption figures, for the communal part of the scheme are based on SBEM Benchmark in line with Building Regulations Part L2A 2013 Compliant Software and is a shell and core assessment.

This is affectively an update to the planning stage energy assessment and provides a record of the current stage of the project development, being broadly in line with RIBA stage 4.

The following schedule is an extract from the MLM report and outlines the target emissions for the project;

	Carbon Dioxide Emissions (Tonnes/ Annum)	**Incremental CO_2 Emissions Reduction (%)**	**Cumulative CO_2 Emissions Reduction (%)**
Step 1 – Baseline	55.486	-	-
Step 2 – 'Be Lean'	53.38	3.79	
Step 3 – 'Be Clean'	45.22	14.69	-
Step 4 – 'Be Green'	37.52	13.89	32.37

Planning Stage Target Emissions

The project has been developed generally in line with the parameters identified in the noted report and is currently achieving the carbon emission reductions indicated below. The table identifies a number of options in attempting to align the developed design with the planning stage assessment but falls short of the reduction value by an increment of 7.97%.

An assessment of the Decentralised Energy Networks (DEN's) has been completed under the referenced report and as a result no provision is made within the design for connection into future energy networks.

The project includes high performance U-values for walls and glazing; a good air permeability rating and the inclusion of Mechanical Ventilation and Heat Recovery (MVHR) to minimize heating needs during the winter period and provide supplementary ventilation during summer.

Space heating and hot water services for the project are provided via a community heat system serving underfloor heating. Central low carbon, small scale CHP and high efficiency condensing boilers being the primary heat source.

Lighting is provided via LED & Fluorescent luminaires incorporating presence detection controls and switching.

Renewable energy for the building under the planning submission has been identified as a Photovoltaic Array the capacity and specification for which are maintained in this assessment.

2.0 INTRODUCTION

The following lists the Energy and Sustainability design stage assessment for 317 Finchley Road.

Camden's Sustainability Policy and Guidance

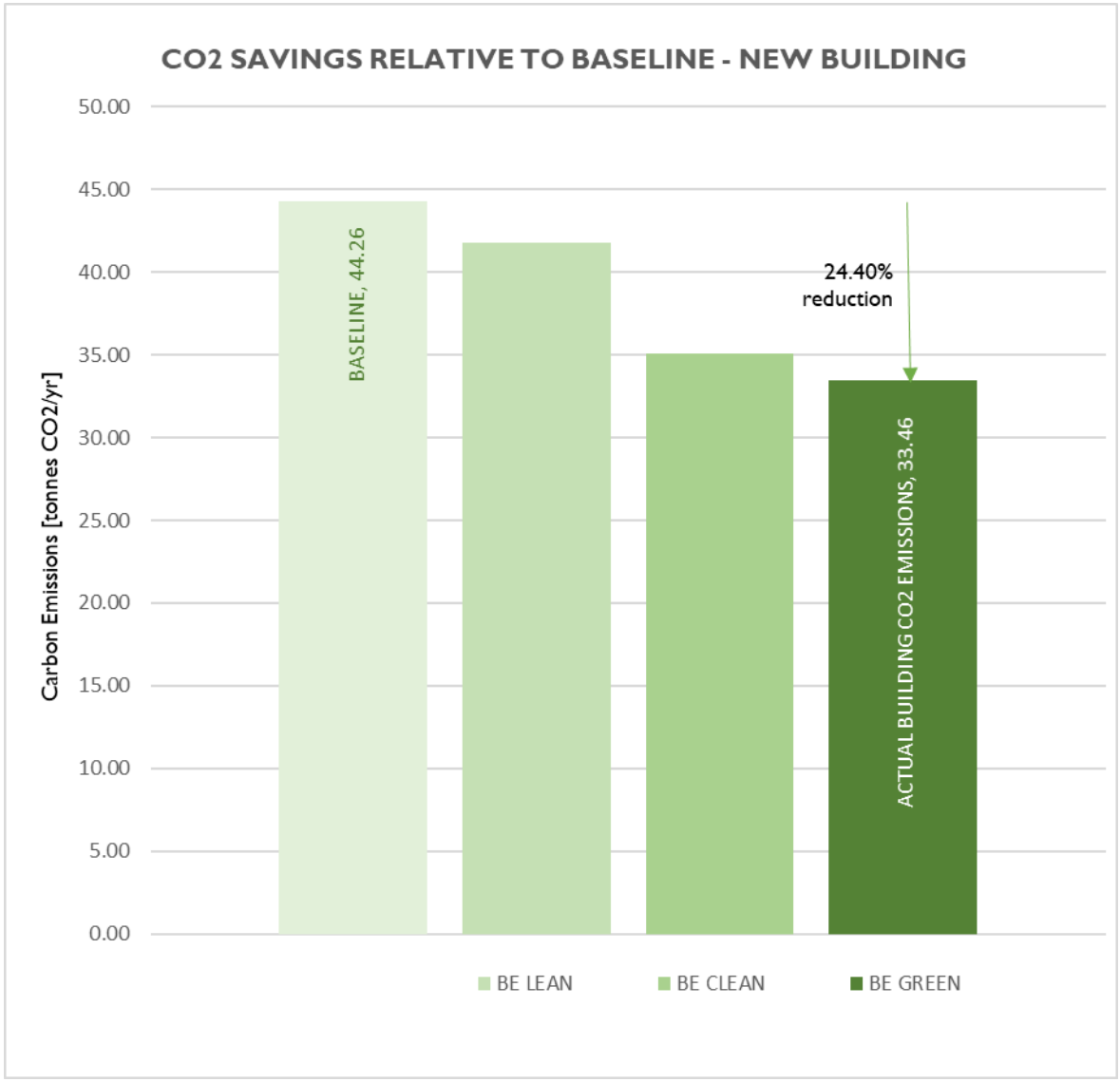
The Core Strategy Policy identifies the requirements for energy hierarchal assessment, passive design techniques in the avoidance of mechanical cooling, renewable forms of heating, efficient lighting through LED sources integrated with well-designed daylight spaces.

The proposed development is required by the London Borough of Camden and the Greater London Authority to make carbon emission reductions in accordance with the London Plan's Energy Hierarchy and meet a 35% carbon emissions reduction over the current Building Regulations Part L2013 minimum requirements. The London Borough of Camden requires the development to achieve 20% carbon reduction by renewable energy on-site where feasible.

3.0 ENERGY AND CARBON EMISSIONS SUMMARY

The Energy Statement provided below represents the assessment of the design stage baseline energy demand and carbon dioxide emissions (regulated) from proposed developments at each stage of the energy hierarchy.

	Energy Demand, (kWh/yr)	Energy Consumption savings (%)	CO_2 emissions (kg/yr)	CO_2 emission savings (%)
2013 compliant baseline scheme/Notional building	107,840.31		44,263.73	
Proposed scheme after energy efficiency measures ('Be Lean')			41,756.81	5.66
Proposed scheme after CHP ('Be Clean')			35,098.13	15.95
Proposed scheme after renewable savings ('Be Green')	98,979.24		33,463.16	4.66
Total savings (against baseline)	8,861.07	8.22	10,800.57	24.40



Carbon efficiency savings Summary

4.0 ENERGY ASSESMENT

The format of this section follows the energy hierarchy set out in The London Plan policy to ensure that energy needs are met in the most efficient way:

- Be Lean – use less energy
- Be Clean – supply energy efficiently
- Be Green – use renewable energy

Be Lean

The London Plan introduced in 2011, and currently of the 2015 version identifies an energy hierarchy that should be implemented in to effectively reduce carbon. The first measure recommended is to reduce energy demand in the first instance – i.e. "Be Lean".

Heating

The planned design stage U values

Proposed U-values [W/m²K] for the residential and commercial elements of the building are as listed below.

Element	**Residential**		**Commercial (Shell and Core)**	
	Part L1A Limiting parameter	Design	Part L2A Limiting parameter	Design
External Walls	0.30	0.16	0.35	0.13
Roof	0.20	0.12	0.25	0.12
Basement/Ground Floor	0.20	0.13	0.25	0.13
Glazing	2.00	1.25	2.20	1.40
Air Permeability $m^3/m^2/hr$ @50Pa	10	3	10	7

Heating to the residential units are supplied via a central community system Served by a CHP and condensing boiler. Heat within each flat is distributed through an underfloor heating manifold set to operate at 35°C achieving reduced carbon emissions.

Technologies

Mechanical Ventilation Heat Recovery MVHR

Mechanical Ventilation Heat Recovery units are provided to the residential part of the development. The advantage of this system in terms of heating related energy consumption is the reduction in energy consumed that would otherwise be required to heat air from ambient external temperatures.

Each MVHR unit will require an intake and discharge to outside air and will mechanically ventilate the residential unit by recovering the heat in the extract air before it is discharged, with a recovery rate of 70-80%. The units will be sized to provide the minimum fresh air rate to each room in line with building regulations.

Lighting

A lighting efficacy of average 90 lumens per circuit watt has been used as the design standard. This will be achieved including LED lighting sources throughout.

Occupancy control will be installed, with a manual switch on and a PIR detector enabling an automatic off.

5.0 BE CLEAN

The next phase of the London Plan is to provide the heating, cooling and power as efficiently as possible. The following technologies will be considered for further analysis for both buildings.

Gas Fired Boilers

High efficiency condensing boilers and incorporating underfloor heating is proposed; this allows a lower flow temperature and therefore the boiler will be condensing for a larger amount of its operating time ensuring efficiency. The boiler controls will incorporate external temperature compensation allowing fast response to external temperature change, which saves energy by reducing the need for sudden demands of duty from the boiler.

CHP & Decentralized Energy Networks

The Energy Hierarchy encourages the use of a CHP system to reduce CO_2 emissions further.

The feasibility of connecting into a Decentralized Energy Network (DEN) or providing the Shared Heating Network (SHN) has been assessed and with reference to the London Heat Map and has been excluded under a previous assessment

The principle behind combined heat and power (cogeneration) is to recover the waste heat generated by the combustion of a fuel in an electricity generation system. This heat is often rejected to the environment, thereby wasting a significant portion of the energy available in the fuel that can otherwise be used for space heating. This cogeneration of electricity and heat greatly increases the overall efficiency of the system, anywhere from 25-55% to 60-90% depending on the equipment used, and the application.

A small scale thermal lead CHP system incorporating back up boilers is proposed for this development.

Distribution

The heating system will be designed to be as efficient as possible, with an inverter driven pump to adjust the pumping power required dependent on the heating demand.

6.0 BE GREEN

The full list of viable renewable energy technologies assessed for the site are outlined below; these have been assessed fully again meeting the technical, functional and/or economic feasibility requirements for the site.

Solar Thermal

Solar water heating use free heat from the sun to warm domestic hot water; these systems use solar panels called collectors fitted to the roof. These collect heat from the sun and use it to heat up water which is stored in a hot water cylinder. A boiler or immersion heater can be used as a backup to heat the water further to reach the required temperature. The solar collectors provide the greatest hot water output during the summer season falling off to approximately 12% during winter months.

Solar thermal has not been considered for the project since there is insufficient hot water demand.

Photovoltaics

Photovoltaic (PV) Panels are a renewable technology which will decrease the amount of electricity used in the building, particularly during the summer months when the solar irradiance is at its peak. Panels can be integrated within the building roof or stand alone; most efficient when south facing and angled at 30° from the horizontal. Such panels would reduce carbon emissions from the electrical uses within the building.

Photovoltaic panels are provided for the project the details are indicated below.

Air Source Heat Pump (ASHP)

A heat pump operates like a fridge in reverse using pressure to produce an increase in temperature. An air to water heat pump uses the air as a heat sink and transfers the heat in the external space into the heating system. A maximum coefficient of performance (COP) of approximately 5 could be achieved by the heat pump in heating mode, but an average winter design period would give a seasonal COP of

around 3. The temperature of the Low Temperature Hot Water (LTHW) providing the heating also affects the COP of the units, with the ideal flow and return temperatures being 45°C/35°C.

ASHP is not considered for this project on the basis that the COP value fluctuates with external ambient temperature and the system efficiencies cannot be confirmed.

Ground Source Heat Pump (GSHP)

A GSHP operates in the same manner as an ASHP but utilizes the ground as a heat sink. This generally gives a larger seasonal COP due to the temperature of the ground being at a consistent level throughout the

year. A seasonal COP of 5 in heating mode can be achievable although this depends on the ground conditions and the building heating loads.

There are two distinct types of GSHP, open and closed loop. In an open loop system water is abstracted through an extraction borehole from a below ground aquifer, passed through a heat exchanger located in the building, and returned to the aquifer through a separate reinjection borehole. Groundwater is typically between 9-11◦C and with a heat pump the LTHW temperatures of 45◦C are achievable.

A closed loop system does not extract water from the ground; it instead relies on the near constant temperature of the ground to reject the heat or 'coolth' from the system. The required area for pipework to be installed is very large and often prohibitive unless significant ground works are being undertaken as part of the scheme.

GSHP is not considered for the project since insufficient available ground exchange network exists.

Biomass

A biomass boiler could be used to meet the space heating and DHW demands of the buildings with back-up and/or top-up would be provided by gas fired boilers. Plant space would need to be provided for a fuel store, automatic auger, the biomass and gas boilers and associated pumps, expansion vessels, etc. must be incorporated into the site plan.

Biomass boilers are not ideally suited to urban locations as the high NOx emissions which result from the incomplete combustion of fuel can cause local air quality problems. Another issue is the additional carbon involved in transporting biomass to the site, which can be significant unless a local fuel source (such as a factory with a suitable biomass waste product) can be found. It is not uncommon for wood pellets to be sourced from overseas, which negates any carbon reduction achieved.

Feasibility Assessment

Feasibility of all the above technologies considered has been assessed according to the following criteria:

- Renewable energy resource or fuel availability of the LZC technology on the site.
- Space limitations due to building design and urban location of the site.
- Capital, operating and maintenance cost.
- Planning Permission
- Implementation with regards the overall M&E design strategy for building type

Proposed Renewable

There is limited scope to incorporate renewables within this project due to its size and servicing. It is considered that the feasible renewable system is that consisting of photovoltaic panels which would go some way to producing energy for the building and justify itself by providing an income via feed in tariffs.

The proposed building features a large expanse of south east facing existing roof on to which a Photovoltaic (PV) array has been investigated as an option to provide energy for the building and an investment for the school.

Photovoltaic Panels are a renewable technology which will decrease the amount of electricity used in the building, particularly during the summer months when the solar irradiance is at its peak. Panels would be integrated, located on the pitched roof, south facing and angled at 30° from the horizontal. Such panels

would not directly offset any energy used by the heating systems but would reduce carbon emissions from the other electrical uses within the building.

	Estimated Annual Energy generation Required (kWh)
Photovoltaic Array	3,023

This requires a 3.5 kWp system of 15 PV panels, south oriented placed with a tilt of 30°; of around 38m^2 of plan roof area.

6.0 SUSTAINABILITY

SUMMARY

This report outlines the sustainability measures for the proposed development at 317 Finchley Road, London in line with the requirements set out by the London Plan (2015) and the relevant London Borough of Camden Planning Policy. The report is updted in line with the design development of the project.

The report provides an overview of the site and Planning Policies currently applicable to this development as set out in the Camden Core Strategy Policy CS13, Camden Development Policies DP22 and DP23, as well as the London Plan 2015, including the Greater London Authorities housing Standards Policy Transition Statement (May 2015) relating to water and materials and demonstrates how these Policies have been met, in accordance with Sections 5.2 to 5.7 of the London Plan 2015, the requirements of the Sustainable Design and Construction SPD.

The body of this report outlines the measures that are to be adopted to achieve high standards of sustainability. The proposed Finchley Road Development will aim to meet the targets set out by Camden Council and the Greater London Authority (GLA).

The average CO_2 savings being achieved at the design stage are as indicated under section 3.0 for improvements upon Part L Building Regulations (2013) and the contribution made by renewable technologies. These figures reflect regulated energy use only in accordance with Part L Building Regulations. The site also includes measures to promote health and wellbeing of the future occupants, maximising the benefit of daylighting and biodiversity.

This sustainability report should be read in conjunction with the energy statement, which provides details of the energy strategy and targets.

SITE

The proposed development at 317 Finchley Road is to be located on the site of the former public house, adjacent to Finchley Road & Frognal Overground station within the London Borough of Camden. The Local Planning Authority for the area is the London Borough of Camden.

The redevelopment scheme will comprise of the construction of a new Building accommodating a new retail unit and approximately 22 residential units; along with ancillary cycle storage, landscape works and other associated works.

7.0 PLANNING POLICES

The proposed development at Finchley Road, London is in line with the requirements set out by the London Plan, and the London Borough of Camden Core Strategy and the Development Management Local Plan.

The London Plan 2015 (Regional Policy)

The London Plan 2015 requires compliance with the following policies relating to climate change:

- Policy 5.2 Minimising Carbon Dioxide Emissions (refer to the supplementary energy report).
- Policy 5.3 Sustainable Design and Construction.
- Policy 5.5 Decentralised Energy Networks (refer to the supplementary energy report).
- Policy 5.6 Decentralised Energy in Development Proposals (refer to the supplementary energy report).
- Policy 5.7 Renewable Energy (refer to the supplementary energy report for more details).
- Policy 5.12 Flood Risk Management.
- Policy 5.13 Sustainable Drainage.
- Policy 5.15 Water Use and Supplies.
- Policy 5.18 Construction, Excavation and Demolition Waste.

London Borough of Camden Core Strategy - 2010

London Borough of Camden' Local Development Framework Core Strategy sets out recommendations for the following spatial policies:

Core Strategy Policy 13 – Tackling climate change through promoting higher environmental standards

Reducing the Effects of and Adapting to Climate Change:

The Council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all development to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

a) Ensuring patterns of land use that minimise the need to travel by car and help support local energy networks.
b) Promoting the efficient use of land and buildings.
c) Minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:

- ensuring developments use less energy

- making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks; - generating renewable energy on-site

d) Ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

Local Energy Generation

The Council will promote local energy generation and networks by:

e) Working with our partners and developers to implement local energy networks in the parts of Camden most likely to support them, i.e. in the vicinity of:
- Housing estates with community heating or the potential for community heating and other uses with large heating loads;
- The growth areas of King's Cross, Euston; Tottenham Court Road; West Hampstead Interchange and Holborn;
- Schools to be redeveloped as part of Building Schools for the Future programme;
- Existing or approved combined heat and power/local energy networks; and other locations where land ownership would facilitate their implementation.

f) Protecting existing local energy networks where possible (e.g. at Gower Street and Bloomsbury) and safeguarding potential network routes (e.g. Euston Road).

Water and Surface Water Flooding

We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

g) Protecting our existing drinking water and foul water infrastructure, including Barrow Hill Reservoir, Hampstead Heath Reservoir, Highgate Reservoir and Kidderpore Reservoir.
h) Making sure development incorporates efficient water and foul water infrastructure.
i) requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and down- stream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross (see Map 5).

Waste

New development in Camden must support the objectives of sustainable waste management. This includes:

- Aiming for at least 10% of the total value of materials used to be derived from recycled and reused sources.
- Major developments are anticipated to be able to achieve 15-20% of the total value of materials used to be derived from recycled and reused sources.

Development Policy 22 – Promoting sustainable design and construction

The Council will require development to incorporate sustainable design and construction measures. Schemes must:

a) Demonstrate how sustainable development principles, including the relevant measures set out in paragraph 22.5 below, have been incorporated into the design and proposed implementation; and
b) Incorporate green or brown roofs and green walls wherever suitable.

The Council will promote and measure sustainable design and construction by expecting non-domestic developments of 500sqmof floor space or above to achieve "very good" in BREEAM assessments and "excellent" from 2016 and encouraging zero carbon from 2019.

The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

a) Summer shading and planting;
b) Limiting run-off;
c) Reducing water consumption;
d) Reducing air pollution; and
e) Not locating vulnerable uses in basements in flood-prone areas.

Development Policy 23 – Water

The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

a) Incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;
b) Limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part
a) and other sustainable urban drainage methods to reduce the risk of flooding;
c) Reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the north London strategic flood risk assessment and shown on map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;
d) Ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present;
e) Encouraging the provision of attractive and efficient water features.

Housing Standards Policy Transition Statement- Implementation October 2015

The London plan and Housing Standards Policy Transition Statement sets out recommendations for the following:

Policy 5.2 Minimising Carbon Dioxide Emissions

Development will be required to be accompanied by an Energy Assessment to demonstrate its compliance with the following:

Year	Improvement on 2013 Building Regulations
2013-2016	35% CO_2 Emissions Reduction
2016-2036	Zero Carbon

New developments will be required to connect to or demonstrate a potential connection to a decentralised energy system unless it is demonstrated that this is not feasible or viable.

Sustainable design assessment tools will be used to ensure that the above climate change mitigation measures are maximised within developments.

8.0 PROPOSED SUSTAINABILITY MEASURES

The Sustainable Design and Construction SPD provides additional information to support the implementation of the Mayor's London Plan. The SPD does not set new policies, however it can be taken into account as a further material consideration. It is applicable to all development types, with specific information on different building types where applicable.

This section addresses issues which are relevant to the proposed development.

Reducing the Effects of and Adapting to Climate Change

This section respond to the Camden Core Strategy policy 13 and Camden Development Policies DP22 and DP23.

Minimising the Need to Travel by Car

The proposed development is located in a highly sustainable location and will not have a detrimental impact on the local public transport network and will have no impact on the local highway network. A full detail of the transport assessment can be found in the Transport Statement included in the planning application.

The proposed development will not include car parking spaces. An internal bike store will be located at the lower ground of the development. Additionally the proposed development is adequately located, according to the TfL Planning Information Database, the site has a PTAI (Public Transport Accessibility Index) of 35.2, which translates into a PTAL (Public Transport Accessibility Levels) of 6a.

The design team has also provided a Residential and Commercial Travel Plans to ensure that the need to travel by car is minimised.

Re-use Land and Buildings

The site is currently occupied by a former public house, the building will be demolished. 100% of the proposed development will be constructed on previously developed land. The proposed development has been design to ensure that the scheme will benefit from internal daylight, Windows have been positioned to allow sufficient daylight to enter the rooms. Please refer to the daylighting report. Solar gains will be utilised on facades and shading strategies will be incorporated into the building design if overheating is an issue.

Minimising Carbon Emissions

An energy assessment has been carried out for this development. Further details are provided in the

Energy Statement. The energy efficiency measures include:

Enhancements of the building fabric will be used in order to exceed Building Regulation Part L1/2A.

The proposed development will be designed to high performance with good air tightness. The air tightness level will be achieved by ensuring that sensitive areas are accounted for in the design and construction phases to make certain that a tightly sealed building is constructed and all punctures through the seal are air- tight. The Design Team must ensure that all opening both major and minor, such as services, be accounted for and assessed to reduce air leakage.

All lighting will be dedicated low energy fittings. Lighting systems to a number of spaces may include LED technology where viable and subject to the performance of each product being able to deliver to the performance requirements of the space served.

To reduce carbon emissions and atmospheric pollution by encouraging local energy generation from renewable sources to supply a significant proportion of the energy demand.

A feasibility study has been carried out in the energy statement to establish the most appropriate local low or zero carbon energy source for the development. In line with the site strategy this will be a connection to an energy centre (including a combine heat and power unit for the residential units) and the installation of an air source heat pump system for the commercial unit.

All major mechanical and electrical plant will be kept in dedicated plant rooms/spaces with easy access for maintenance.

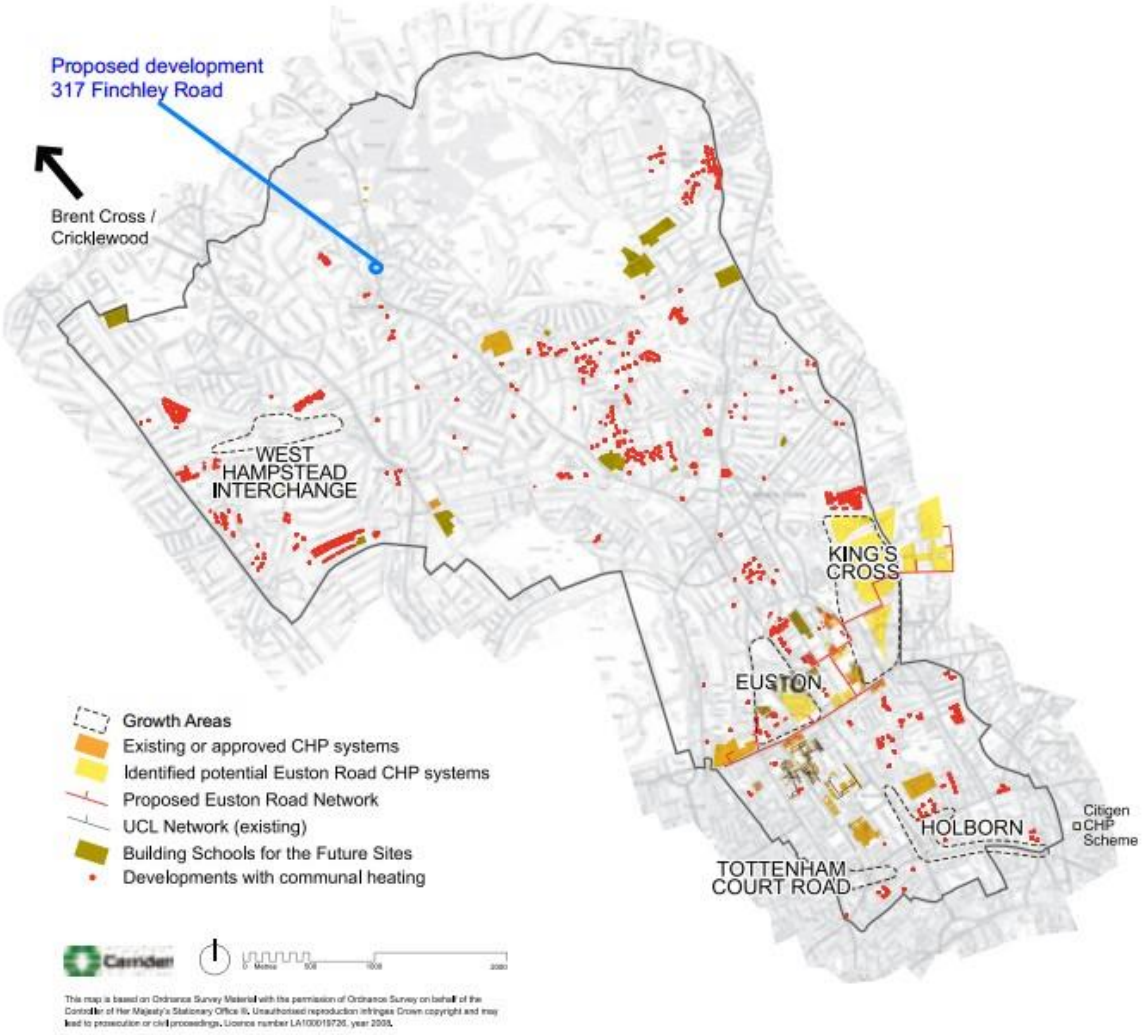
The proposed development will be design to ensure that all timber specified will be sourced responsibly such as FSC or similar. All insulation materials will have a Global Warming Potential of less than five. The use of new aggregates will be minimised on-site, on-site demolition waste will be used as aggregate where possible.

The proposed building has been designed to ensure that the effect of climate change are mitigated, this includes the use of Green roof and landscape area, to mitigate the heat island effect. The materials of the building will be defined to ensure that the thermal mass will mitigate any overheating risk due to variation of temperatures as a result of climate change.

Local Energy Generation

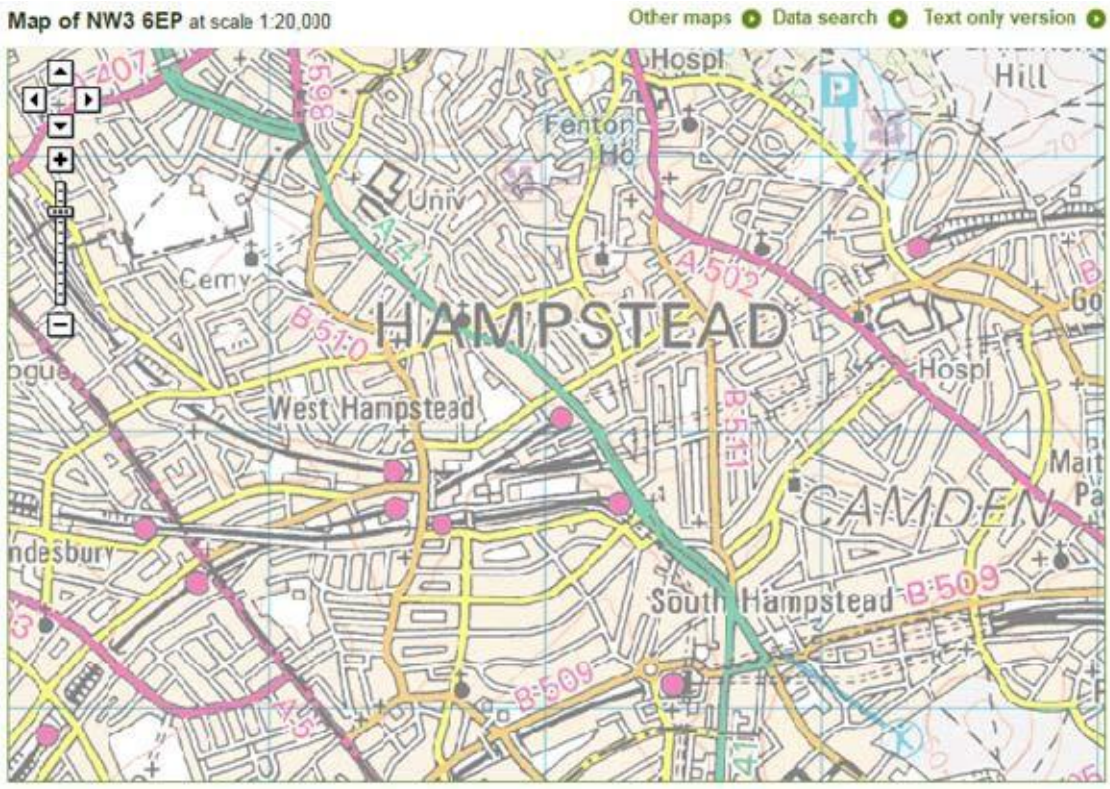
The Combined heat and power Network Map from the Camden Core Strategy Section 3 – Tackling Climate Change and improving and protecting Camden's environment and quality of life did not identify the proposed development as located in a zone of opportunity to connect to an existing or proposed district heating network. Therefore to follow the London plan energy hierarchy the proposed development has been designed to include an energy centre with a combined heat and power unit.

Map 4: Combined Heat and Power Network



Water and Surface Water Flooding

The proposed development has been identified by the Environmental Agency within a Zone of low flood risk (Zone 1).



Sufficient drainage will be incorporated to ensure water does not collect during wet weather. Sustainable Drainage Systems (Suds) will be incorporated where possible. The proposed development will reduce surface water run-off due to the integration of green spaces and green roofs. The green roof will be design to reduce the heat island effect and to act as roof garden. The details of the planting on the green roof is detailed in the landscape proposal.

External Water Consumption

The proposed development will mitigate the volume of water used for landscaping by the use of selected species that require minimum watering as per the landscape design. There will be a net increase in green space on the site due to the inclusion of semi-private and private gardens, as well as green roofs. Where new trees will be provided these will be selected as part of the Hard and

Soft.

Landscaping please refer to Landscape Plans submitted under separate cover by the Landscape Architects.

Surface Water Run-Off

The proposed development will mitigate the volume of surface water run-off. Sufficient drainage will be incorporated to ensure water does not collect during wet weather. The proposed development will reduce surface water run-off due to the integration of green spaces and green roofs. All at grade surfaces will be considered permeable.

Internal Water Usage

The proposed development will be designed to meet the requirements of Building Regulation Part G 2015. The following flow rate and capacity for the sanitaryware will be used as a guidance.

- 6/3litre dual flush WCs.
- Taps with a flow rate of no more than 4litres per minute.
- Baths with an average capacity of no more than 140litres to overflow.
- Showers with a flow rate of no more than 9litres per minute.
- Washing machines will have a consumption figure of no more than 17.16 litres per kilogram of dry load.
- Dishwashers will have a consumption figure of no more than 4.5 litres per place setting.
- Waste disposal units will not be supplied.
- Water softeners will not be supplied.

The above will result in a calculated daily consumption of less than 110litres per person, per day.

Additionally all water systems in the building will be designed in compliance with the measures outlined in the Health and Safety Executive's 'Legionnaires Disease, The Control of Legionella Bacteria in Water Systems'. Approved Code of Practice and Guidance, 200054 and, where relevant, other Industry/Best Practice Guidance.

Waste
Construction Waste Management

To promote resource efficiency via the effective management and reduction of construction waste. The proposed development will implement a Site Waste Management Plan.

Demolition waste will be minimised, reused and recycled, where practicable. The specification will include a Site Waste Management Plan (SWMP).

The proposed development will include a compliant Site Waste Management Plan (SWMP) that contains:

a) Target benchmarks for resource efficiency, i.e. m^3 of waste per $100m^2$ or tonnes of waste per $100m^2$ set in accordance with best practice.
b) Procedures and commitments to minimize non-hazardous construction waste at Design Stage. Specify waste minimisation actions relating to at least three waste groups and support them by appropriate monitoring of waste.
c) Procedures for minimising hazardous waste
d) Monitoring, measuring and reporting of hazardous and non-hazardous site waste production according to the defined waste groups (according to the waste streams generated by the scope of the works).

Diverting Waste from Landfill

The proposed development will include a compliant Site Waste Management Plan (SWMP) including procedures and commitments to sort and divert waste from landfill for at least 10% of the total value of the material used, through either:

a) Re-use on-site (in situ or for new applications).
b) Re-use on other sites.
c) Salvage/reclaim for re-use.
d) Return to the supplier via a 'take-back' scheme.
e) Recovery and recycling using an approved Waste Management Contractor.
f) Compost according to the defined waste groups (in line with the waste streams generated by the scope of the works).

The proposed development will ensure that at least 85% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill.

Operational Waste

To recognise and encourage the provision of dedicated storage facilities for a building's operational-related recyclable waste streams, so that this waste is diverted from landfill or incineration.

There is to be dedicated space for the segregation and storage of operational recyclable waste.

Individual recycling facilities will be provided to each dwelling.

A waste and recycling scheme will be established in line with the requirements set out by the Local Authorities.

Air Quality

Potential construction phase air quality impacts have been assessed as a result of fugitive dust emissions from demolition, earthworks, construction and track out activities. It is considered that the use of good practice control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

Potential impacts during the operational phase of the development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. A screening assessment was therefore undertaken to determine the potential for trips generated by the development to affect local air quality. This indicated that impacts were not anticipated to be significant.

Dispersion modelling was undertaken in order to quantify pollutant concentrations at the site and assess the potential for future site users to be exposed to poor air quality. The results indicated high pollutant concentrations at the ground, first and second floor of the development. In order to reduce future exposure of residents to poor air quality, suitable mitigation for inclusion within the development was identified. This included a mechanical ventilation system to supply clean air to specified areas. Mitigation measures are detailed in the air quality report.

9.0 CONCLUSION

The proposed development at 317 Finchley Road has been designed in line with the Local and Regional Planning Policies and achieves high standard of sustainability with the adoption of the energy efficient measures, energy centre, as well as water savings measures and waste management and sustainable