SUSTAINABILITY STATEMENT

551-557 Finchley Road

Produced by XCO2 for Hampstead Properties Ltd c/o Delta Properties

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EXECUTIVE SUMMARY

The sustainability strategy for 551-557 Finchley Road has been developed with the design team to comply with the relevant environmental policies from the London Borough of Camden and the London Plan. Relevant energy policies have been addressed in the accompanying Energy Statement. The proposed development is targeting the achievement of BREEAM 'Excellent' and expected to reduce on-site regulated carbon emissions by 26.1% with SAP 2012 emission factors.

This report outlines the sustainability strategy for the proposed development at 551-557 Finchley Road, in line with the requirements set out by the London Plan and the London Borough of Camden.

This sustainability statement is divided into three parts:

- Planning Policies;
- Sustainability Measures;
- Sustainability Standards.

The first part provides an overview of the site and planning policies applicable to this development in accordance with the London Plan and relevant London Borough of Camden policies.

The second part then outlines the sustainability strategy that has been employed to address the relevant planning policies.

The third part of this report outlines the sustainability measures that have been adopted to achieve a BREEAM Refurbishment and fit Out 'Excellent' rating for the commercial areas.

A summary of the pre-assessment credits for the BREEAM assessment are provided at the end of the BREEAM section.

The key sustainable design and construction measures incorporated in the proposals are summarised below, following the London Plan Sustainable Design and Construction SPG structure:

In summary, the proposed development at 551-557 Finchley Road meets the targets set out by London Borough of Camden and the Greater London Authority (GLA). The development could achieve a BREEAM score of 71.8%, exceeding the BREEAM 'Excellent' target of 70%.

The number of credits obtained in the BREEAM pre-assessment/sustainability measures incorporated reflect the client and design team's aspirations in integrating sustainability measures and demonstrates that the project is designed to exceed the planning policy sustainability requirements.

SITE

The site is located in the London Borough of Camden and occupies a prominent position on Finchley Road. The site has excellent transport links to and from other areas of London, including the City, Kings Cross, and Central London.

The site is located on Finchley Road in the London Borough of Camden. The site is bound by Finchley Road to the east, and mansion housing blocks to the west. The terrace of buildings continues to the north of 551-557, with detached three storey houses to the south.

The existing site at 551-557 Finchley Road comprises 4 four storey terraced buildings. The ground floor of 551-557 and the upper floors of three (553-557) are currently used as a Language school.

Proposed is a change of use from Use Classes B1a/B1c/A1/D1 and remodelling of the existing building to provide apart-hotel (C1) and co-working/café (B1/A3) and a flexible retail/ non-residential institution/ assembly and leisure unit (A1-A5/D1/D2), alterations including partial demolition and extensions at the rear at lower ground, ground and first floor levels, extension to provide an additional storey at roof level, levelling of the lower ground floor level, remodelling and restoration of front façade, cycle parking and all associated works.

The approximate location and boundary of the application site is shown in the figure below.

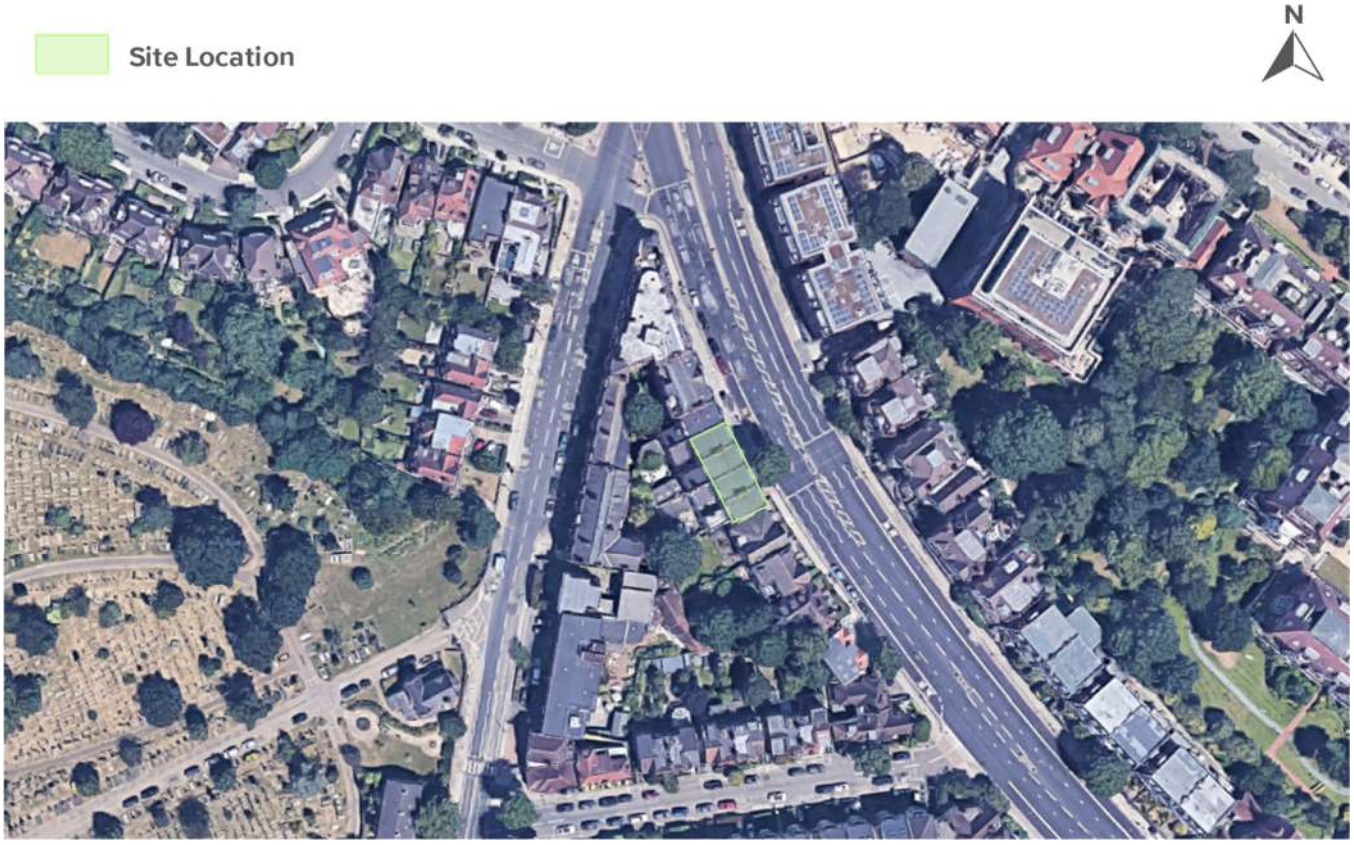


Figure 1: Approximate location of application site

PLANNING POLICY

The 551-557 Finchley Road development has been designed in line with the requirements set out by the London Borough of Camden as well as the London Plan[1].

The relevant planning policy documents for sustainability are:

- The London Plan (2016);
- Draft New London Plan (2019);
- Camden Local Plan (2017)
- Camden Council Core Strategy (2010-2025);
- Camden Development Policies (2010-2025);
- Mayor's Sustainable Design and Construction SPG (2014);
- Mayor's Housing Supplementary Planning Guidance (2016).
- Camden Planning Guidance: Energy Efficiency and Adaptation (2019).

THE LONDON PLAN

The London Plan is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years.

The overarching policy setting out the principles of sustainable design and construction to be incorporated in major proposals is Policy 5.3:

POLICY 5.3 SUSTAINABLE DESIGN AND CONSTRUCTION

"Planning decisions:
B. Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process.

C. Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles:

a. minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems)
b. avoiding internal overheating and contributing to the urban heat island effect
c. efficient use of natural resources (including water), including making the most of natural systems both within and around buildings
d. minimising pollution (including noise, air and urban runoff)
e. minimising the generation of waste and maximising reuse or recycling
f. avoiding impacts from natural hazards (including flooding)
g. ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions
h. securing sustainable procurement of materials, using local supplies where feasible, and
i. promoting and protecting biodiversity and green infrastructure."

Complementary to, and expanding upon Policy 5.3 are the following London Plan policies:

- Policy 5.2 Minimising Carbon Dioxide Emissions
- Policy 5.5 Decentralised Energy Networks
- Policy 5.6 Decentralised Energy in Development proposals
- Policy 5.7 Renewable Energy
- Policy 5.9 Overheating and Cooling

[1] The London Plan, Further Alterations to the London Plan (March 2015) and Housing Standards Minor Alterations to the London Plan (March 2016), herein referred to as The London Plan

- Policy 5.11 Green Roofs and Development Site Environs
- 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.

Specific requirements on the use of energy and water resources, applicable to all major proposals, are as follows.

POLICY 5.2 MINIMISING CARBON DIOXIDE EMISSIONS

"...Major developments [must] meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019."

POLICY 5.15 WATER USE AND SUPPLIES

"...setting an upper limit of daily domestic water consumption to 105 litres/head for residential developments (excluding a maximum allowance of 5 litres/head/day for external water consumption)."

DRAFT NEW LONDON PLAN 2019

The current 2016 consolidation Plan is still the adopted Development Plan. However, the Draft London Plan is a material consideration in planning decisions. The New London Plan is scheduled to be adopted in March 2020.

The following paragraphs highlight the key changes and additional requirements stemming from emerging policies as currently drafted (published July 2019).

MINIMISING GREENHOUSE GAS EMISSIONS

Policy GG6 (Increasing efficiency and resilience) sets a positive direction for the new draft Plan in terms of ambitious new greenhouse gas emission targets. This policy references London's target to become zero carbon by 2050 and the need to design buildings and infrastructure for a changing climate. To drive this change both residential and non-residential schemes will need to be net zero-carbon (via offset payments). At least 35% of this reduction must be made on site for major developments, with residential developments expected to achieve at least a 10% and non-residential at least a 15% reduction in emissions through energy efficiency measures alone (Policy SI2).

In a major departure from the previous London Plan, calculations will be required to include both regulated and unregulated emissions at each stage of the energy hierarchy. Furthermore, major developments will have to submit details of the method with energy performance and carbon dioxide emissions monitored post-construction for at least the first five years of building operation.

ENERGY INFRASTRUCTURE

In addition to upgrades to the lean and green stages of the energy hierarchy the clean stage has also been enhanced. Most notably, all major developments within Heat Network Priority Areas will need to utilise a communal heating system.

For the first time in UK policy this policy (SI3: Energy infrastructure) recommends fuel cell technology, as step on the heating hierarchy, for selecting communal heating systems. Where developments are utilising CHP this policy also requires them to demonstrate that 'the emissions relating to energy generation will be equivalent or lower than those of an ultra-low NOx gas boiler'.

MATERIALS, WASTE & EMBODIED CARBON

A requirement for Energy Strategies to include proposals to minimise the embodied carbon in construction will be made. This may result in more sustainable material choices at design stage and could lead to straw, bamboo, clay and recycled materials alongside the more widely recognised cross-laminated timber becoming more commonplace in the capital. This section also links with Policy SI7: Reducing waste and supporting the circular economy, whereby materials are retained in use at their highest value for as long as possible. All referable applications will be required to submit a Circular Economy Statement.

AIR QUALITY

The new draft Plan addresses this crucial area by requiring all proposals to utilise 'design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems with air quality.'

In practice this will mean that a preliminary Air Quality Assessment (AQA) will need to be carried out for all major developments prior to any design work taking place, with a full AQA submitted in support of the planning application; these pieces of green infrastructure will also contribute towards the new draft Plan's target to make at least 50% green by 2050.

It should be noted that, as the policies in the draft London Plan are not yet adopted, the following sections demonstrate compliance with the current plan.

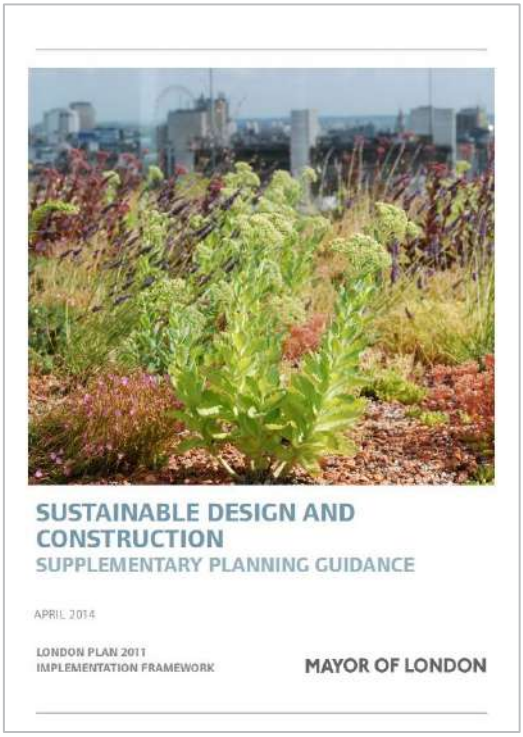
MAYOR'S SUSTAINABLE DESIGN AND CONSTRUCTION SPG

The Sustainable Design and Construction SPG, adopted in April 2014, provides additional information and guidance to support the implementation of the Mayor's London Plan. The SPG does not set new policy, but explains how policies in the London Plan should be carried through into action.

It is applicable to all major developments and building uses so it is not technically applicable to this development, however in line with the developer's intention to implement the requirements of the London Plan it has been used to guide the design. It covers the following areas:

- Resource Management
- Adapting to Climate Change and Greening the City
- Pollution Management

This SPG provides a basis for sustainable design in London and is used as the overarching structure of this report. Where additional local policies are addressed by these areas this has also been indicated.

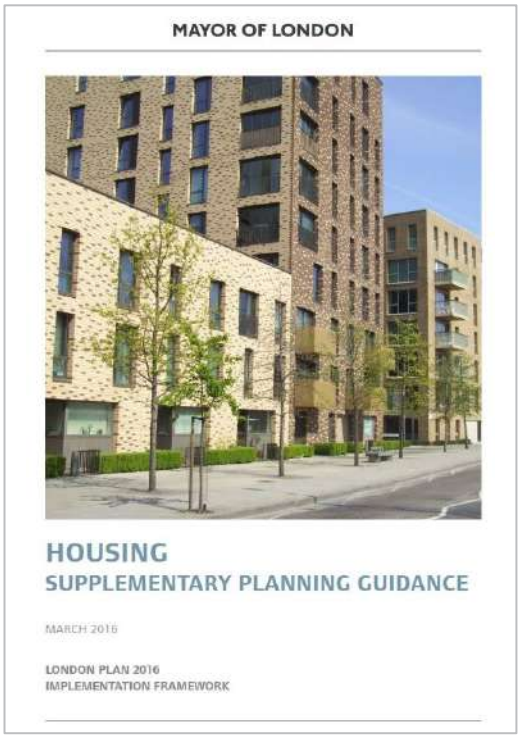


Housing SPG

This document provides guidance on the implementation of housing policies in the London Plan and it replaces the 2012 Housing SPG.

Part 2 covers housing quality and updates London housing standards to reflect the implementation of the government's new national technical standards through the Minor Alterations to the London Plan (2015-2016).

As design affects the quality of life, health & wellbeing, safety and security of users and neighbours, this guidance is integral to sustainable development and will be cross-referenced as relevant in the subsequent sections.



LOCAL BOROUGH POLICY

CAMDEN LOCAL PLAN (2017)

Policy CC2 Adapting to climate change

The Council will require development to be resilient to climate change. All developments should adopt appropriate climate change adaptation measures such as:

a. the protection of existing green spaces and promoting new appropriate green infrastructure;
b. not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems;
c. incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and
d. d. measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy. Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

Sustainable design and construction measures: The Council will promote and measure sustainable design and construction by:

e. ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation;
f. encourage new build residential development to use the Home Quality Mark and Passivhaus design standards;
g. encouraging conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings to achieve “excellent” in BREEAM domestic refurbishment; and
h. expecting non-domestic developments of 500 sqm of floorspace or above to achieve “excellent” in BREEAM assessments and encouraging zero carbon in new developments from 2019.

Policy CC3 Water and flooding

The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible. We will require development to:

a. incorporate water efficiency measures;
b. avoid harm to the water environment and improve water quality;
c. consider the impact of development in areas at risk of flooding (including drainage);
d. incorporate flood resilient measures in areas prone to flooding;
e. utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible; and
f. not locate vulnerable development in flood-prone areas.

Where an assessment of flood risk is required, developments should consider surface water flooding in detail and groundwater flooding where applicable. The Council will protect the borough’s existing drinking water and foul water infrastructure, including the reservoirs at Barrow Hill, Hampstead Heath, Highgate and Kidderpore.

Policy CC4 Air quality

The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council’s Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact.

Policy CC5 Waste

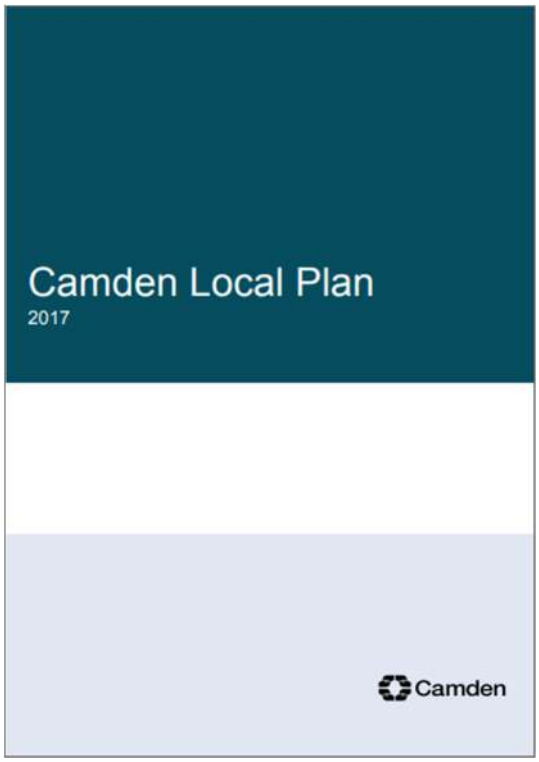
The Council will seek to make Camden a low waste borough. The council will:

a. deal with North London's waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan;
b. safeguard Camden's existing waste site at Regis Road unless a suitable compensatory waste site is provided that replaces the maximum throughput achievable at the existing site; and
c. make sure that developments include facilities for the storage and collection of waste and recycling.

Policy T2 Parking and car-free development

The Council will limit the availability of parking and require all new developments in the borough to be car-free. They will:

a. not issue on-street or on-site parking permits in connection with new developments and use legal agreements to ensure that future occupants are aware that they are not entitled to on-street parking permits;
b. limit on-site parking to:
    i. spaces designated for disabled people where necessary, and/or
    ii. ii. essential operational or servicing needs;
c. support the redevelopment of existing car parks for alternative uses; and resist the development of boundary treatments and gardens to provide vehicle crossovers and on-site parking.



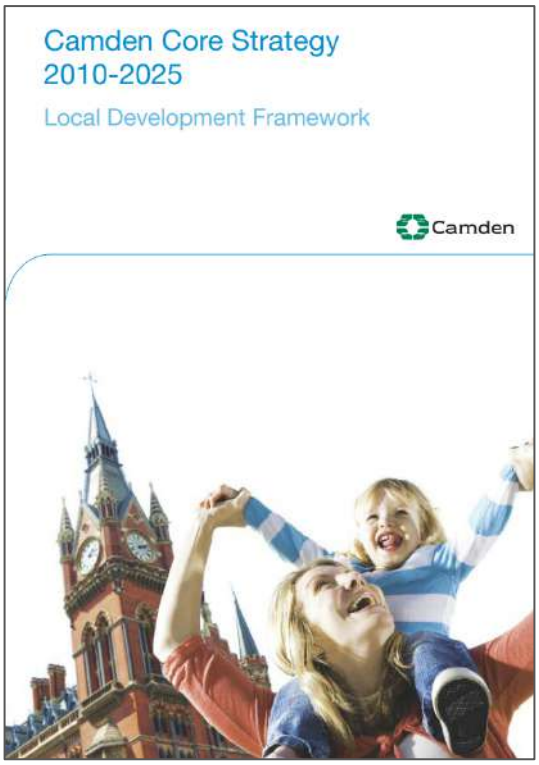
CAMDEN CORE STRATEGY (2010-2025)

CS13 – 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:
    1. ensuring developments use less energy,
    2. making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralised energy networks;
    3. generating renewable energy on-site; and
d. ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

The Council will have regard to the cost of installing measures to tackle climate change as well as the cumulative future costs of delaying reductions in carbon dioxide emissions.

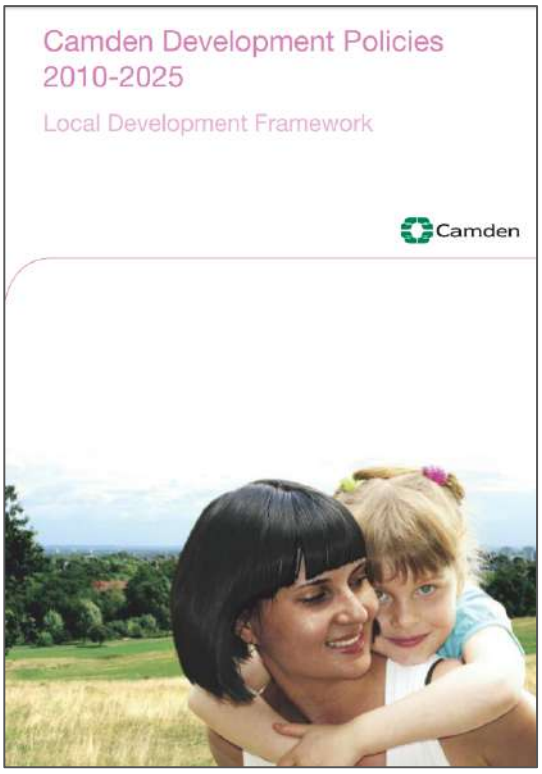


CAMDEN DEVELOPMENT POLICIES (2010-2025)

DP22 – 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, 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:
c. expecting non-domestic developments of 500sqm of floorspace 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:
d. summer shading and planting;
e. limiting run-off;
f. reducing water consumption;
g. reducing air pollution; and
h. not locating vulnerable uses in basements in flood-prone areas.



CAMDEN PLANNING GUIDANCE: ENERGY EFFICIENCY AND ADAPTATION (2019).

Making the most of daylight

- Maximise the amount daylight entering the building, minimising the need for artificial lighting.
- Carefully design windows to maximise the amount of daylight entering rooms to meet the needs of the intended use.
- Daylight is dependent on the amount of open, un-obscured sky available outside a window, the amount of sunshine and the amount of light reflected from surrounding surfaces.
- The size, angle and shape of openings together with room height depth and decoration determine the distribution of daylight.

Energy reduction

The following energy reduction requirements are set out in the Camden Planning Guidance report:

- All development in Camden is expected to reduce carbon dioxide emissions through the application of the energy hierarchy.
- All new build major development to demonstrate compliance with London Plan targets for carbon dioxide emissions.
- Deep refurbishments (i.e. refurbishments assessed under Building Regulations Part L1A/L2A) should also meet the London Plan carbon reduction targets for new buildings.
- Developments of five or more dwellings and/or more than 500sqm of any gross internal floorspace to achieve 20% reduction in carbon dioxide emissions from on-site renewable energy generation

Preventing overheating

Some developments may experience too much sunlight in the summer; therefore, applicants should achieve a balance between benefitting from solar gain and preventing overheating. Measures that contribute to preventing overheating include:

- use of low energy lighting;
- electrical services equipment and sourcing IT provision should be located in separate sealed areas;
- locate any spaces that need to be kept cool or that generate heat on the north side of developments;
- use smaller windows on the south elevation and larger windows on the north (a balance is needed between solar gain/daylighting);
- use shading measures, including balconies, louvers, internal or external blinds, shutters, trees and vegetation. Any shading needs to be carefully designed to take into account the angle of the sun and the optimum daylight and solar gain;
- include high performance glazing e.g. triple glazed windows, specially treated or tinted glass; and
- incorporating green and brown roofs and green walls which help to regulate temperature as well as providing surface water run-off, biodiversity and air quality benefits.

Natural cooling

Natural cooling is a non-mechanical way of cooling a building. It uses an approach to design that controls the heat entering a building and encouraging dissipation.

Room layouts aiding circulation, shallow floor plans and high floor to ceiling heights all help the natural ventilation of buildings.

Night cooling is the operation of natural ventilation at night to lose excess heat and cool building fabric.

Renewable energy technologies

All developments should consider the feasibility of on-site renewable energy generation. Renewable energy generation should only be considered once the earlier stages of the energy hierarchy have been followed and energy demand has been reduced as far as possible.

Management of construction waste

Developers should reduce the construction waste arising from new development and re-use and recycle as much material as possible, following the waste hierarchy.

Similarly, in demolition developers should:

- prioritise the on-site re-use of demolition materials;
- recycle materials on site where feasible, then off site;

- recovery (energy); and
- the least preferred option, disposal to landfill.

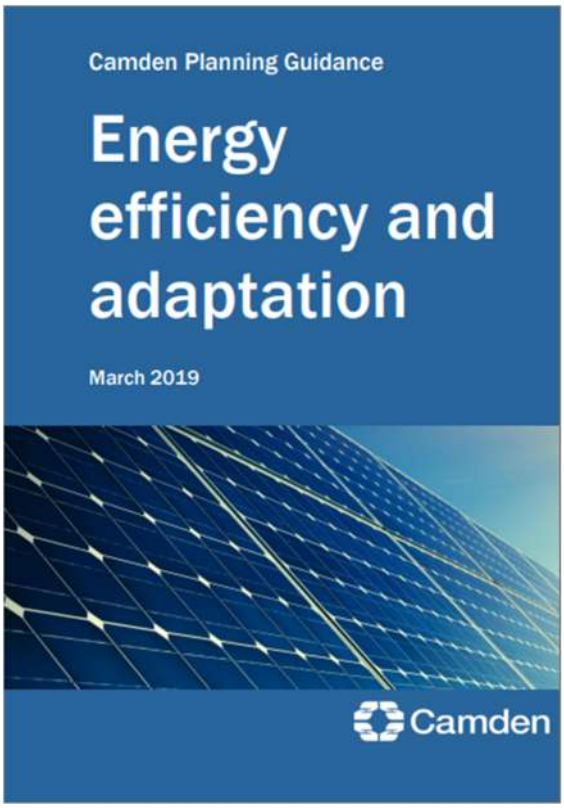
It is expected that 85% of construction and demolition waste should be diverted from landfill and comply with the Institute for Civil Engineers Demolition Protocol where substantial demolition is proposed. In general, the protocol is a 'demolition waste audit' - a process that describes the percentage of the materials present on a site which can be reused/recycled (either in the development site or one nearby).

Sustainable Assessment tools

BREEAM Excellent is required for all non-residential development of 500sqm or more floorspace.

Local Plan Policy CC2 expects non-residential developments of 500sqm or more of floorspace to achieve an Excellent BREEAM rating, achieving 60% of all available Energy and Water credits and 40% of available Materials credits. These sub-targets are included as achieving this weighting of credits is considered to result in the greatest environmental benefits.

Refurbishments/change of use schemes can undertake a BREEAM Refurbishment and Fit Out assessment, which has four parts.



RESPONSE TO PLANNING POLICIES

This part of the report presents how the development complies with sustainable development policies and incorporates guidance on sustainable design and construction. The following sections are structured around the London Plan's Sustainable Design and Construction SPG and present the key elements of the proposal that underpin environmental sustainability.

ENERGY & CO_2 EMISSIONS

The proposals will seek to adhere to the guidance and minimum requirements of Building Regulations Part L2B 2013 or go beyond, where feasible. The following sections detail the passive and active design measures that will be employed to reduce energy demand, energy consumption and overall carbon emissions of the commercial development; the approach has allowed for an overall reduction in CO_2 emissions of 26.1% from a pre-refurbishment baseline, equivalent to 41.7 tCO_2.

MAXIMISING EFFICIENCY

The first step addresses reduction in energy demand, through the adoption of passive and active design measures including:

ENHANCED U-VALUES FOR NEW ELEMENTS

The heat loss of different building fabric elements is dependent upon their U-value. A building with low U-values provides better levels of insulation and reduced heating demand during the cooler months.

The new rear façade and roof will be specified to have a U-value no higher than Building Regulations Part L 2013 standards. Proposed windows will have a U-value of 1.8W/m^2K, which is the threshold performance for windows within Part L of the Building Regulations; this is in line with the guidance for the provision of new thermal elements within Part L2B (par. 5.1).

IMPROVED U-VALUES FOR REFURBISHED ELEMENTS

Where building facades are retained, it is proposed that existing party walls between the development and adjacent unheated spaces will be insulated so that the resulting U-value of the walls are no higher than 0.30 W/m^2K.

The new extensions will be provided with insulation levels that improve upon current Building Regulations Part L minimum standards.

REDUCING THE NEED FOR ARTIFICIAL LIGHTING

The building will benefit from the tall glazed windows punched into the façade and is expected to experience high daylight levels throughout the year. This is expected to reduce the need for artificial lighting whilst delivering pleasant, healthy spaces for occupants and guests to the apart-hotel.

Advanced lighting controls will be incorporated, comprising occupancy sensing within the WC and daylight sensors for the occupied zones of the building, where appropriate.

HIGH EFFICACY LIGHTING

The lighting installations for the building will incorporate low energy lighting fittings in all spaces. All new light fittings will be specified as low energy lighting, and will accommodate LED, compact fluorescent (CFLs) or fluorescent luminaries only.

MONITORING

Apart from the listed design measures, the development will incorporate monitoring equipment and systems to enable occupiers to monitor and reduce their energy use where feasible.

SUPPLYING ENERGY EFFICIENTLY

The building's ventilation and space conditioning system will be renewed to include split or multi-split systems powered by highly efficient air source heat pumps (AHSP); this allows a level of flexibility to the end-user yet control at a management level from the controller.

ONSITE RENEWABLE ENERGY GENERATION

The space heating and cooling of the commercial section of the building comprises an ASHP system, supplying renewable heat whilst in heating mode.

WATER EFFICIENCY & RECYCLING

Any new sanitary elements specified as part of the fit-out works, water efficient fittings will be selected as such to correspond with achieving three credits within BREEAM 2014 Refurbishment and Fit-out, surpassing the requirements of Policy DM7.4 – Sustainable Design Standards for a two-credit score.

It has been assumed that no grey-water or rainwater recycling will be provided at this site given the increased complexity of doing so for refurbished sites (all being recommendations within the *Environmental Design Planning Guidance*).

New low water usage taps and showers will be installed throughout the bundling with new WC cisterns; please see the following maximum water consumption levels for guidance on how the fittings may be specified:

Table 1: Recommended specification for sanitary fittings

Fitting	Fitting specification
WC cistern	6/3 litre effective flush volume
Kitchen sink tap	6 litres per min
Wash basin tap	4 litres per min
Shower	8 litres per min
Bath	180 litres

BIODIVERSITY

PROTECTION OF EXISTING BIODIVERSITY

The proposals will not have an effect in terms of existing biodiversity within the site or its immediate surroundings.

ADAPTATION TO CLIMATE CHANGE

OVERHEATING MITIGATION

The potential risk of overheating will be mitigated by incorporating passive and active design measures.

Efficient lighting will be used to further minimise internal heat gains and reduce energy expenditure.

Reducing the amount of heat entering the buildings in summer

The appropriately sized windows will reduce solar heat gains. Internal blinds will be included in the guestrooms and commercial spaces to reduce the solar gains into occupied rooms where required. Glazing with low transmittance will be used in the non-domestic elements of the development to reduce solar gains.

Use of thermal mass and high ceilings to manage the heat within the buildings

During peak summer periods the thermal mass of the buildings will absorb and store excess heat. The building will release heat in the cooler evenings to allow for cooler internal spaces, dampening the peak diurnal weather conditions.

MATERIALS

MINIMISE MATERIAL USE

The construction of new buildings has a large environmental impact both in terms of energy used and the embodied carbon of new materials. Reusing or refurbishing existing buildings rather than demolishing and rebuilding generates an enormous saving in embodied energy and carbon.

As a large amount of the existing building fabric and systems is to be retained this will reduce the need for new construction materials and building services.

In line with the waste hierarchy, any salvageable materials from the strip-out and refurbishment of the existing elements will be considered for reuse on site or will be recycled and redirected from landfill.

MINIMISE IMPACTS OF DEMOLITION AND CONSTRUCTION

The development will minimise the possible negative effects of construction, such as air pollution, noise and vibration, traffic congestion, dust and contamination of land and water and disturbance of local ecology.

EFFECTIVE USE, MANAGEMENT AND MAINTENANCE

USER FRIENDLY DESIGN OF BUILDING SYSTEMS/CONTROLS

Buildings can only operate effectively and efficiently if occupants know how to use them correctly. The proposed building systems will be specified for their easy-use and will be fitted with a local controller allowing adjustment of operating times and temperature set points by users within pre-determined limits.

USE OF ENERGY EFFICIENT WHITE GOODS, APPLIANCES AND EQUIPMENT

White goods are likely to be provided as part of the contractor's fit-out works; these will be specified to be A or A+ rated under the EU Energy Labelling Scheme.

SITE LOCATION

The building is very well served by public transport, as it is situated on Finchley Road, with bus links to most major destinations in London; it is also close to Finchley road and Finchley Road & Frognal Stations. It is therefore considered that staff as well as visitors and guests will be commuting to the building via public transport links.

SUSTAINABILITY STANDARDS

Within the London Borough of Camden, the BREEAM standard of Excellent is required for all non-residential developments with 500sqm or more of floorspace. The following Pre-Assessment demonstrates compliance with the Local Authority's policies in relation to BREEAM assessments.

BREEAM UK REFURBISHMENT AND FIT-OUT 2014

BREEAM UK Refurbishment and Fit-out is a performance based environmental assessment method and certification scheme for existing building refurbishment and fit-out projects. The primary aim of BREEAM UK Refurbishment and Fit-out is to promote the delivery of sustainable refurbishment and fit-out, in order to mitigate the life cycle impacts of existing buildings on the environment in a robust and cost-effective manner. This is achieved through integration and use of the scheme by clients and their project teams at key stages in the design and refurbishment/fit-out works process.

A BREEAM Refurbishment and Fit Out 2014 Pre-Assessment was carried out for the development. The proposed development has been assessed under the BREEAM's hotel class, this includes the apart-hotel, café, co-working space and gym, as these spaces serve the activities of the apart-hotel. The retail unit was not considered as a separate BREEAM assessment as it falls outside of the specified size for BREEAM consideration according to Guidance Note GN10.

The pre-assessment tool uses established benchmarks to evaluate a building's specification, design, construction and operation, over a broad range of categories and criteria:

- Management processes
- Health and wellbeing
- Energy use
- Transport
- Water use
- Materials
- Waste
- Land use and ecology
- Pollution
- Innovation

The outcome of the pre-assessment is expressed as a single certified BREEAM rating, ranging from Pass (≥30%) to Outstanding (≥ 85%).

Table 2: BREEAM Certification Thresholds

BREEAM 2018 Rating	Percentage of Credits Required
Outstanding	85%
Excellent	70%
Very Good	55%
Good	45%
Pass	30%

The following section discusses how the development addresses the BREEAM sustainability criteria required to meet BREEAM Excellent.

Each of the sustainability categories as set out in BREEAM are addressed; each sub-section highlights the sustainability measures that have been adopted to meet BREEAM Excellent.

It is recommended that all measures set out to achieve BREEAM Excellent be incorporated into the development by the design and construction team.

MANAGEMENT

Man01 Project Brief and Design

Prior to completion of the Concept Design (RIBA Stage 2 or equivalent), a project delivery consultation meeting was held to identify and define their roles and responsibilities at each key stage of the project delivery.

In addition, relevant third-party stakeholders were consulted by the project team regarding various aspects of the design before the end of RIBA Stage 2 (Concept Design). The project team will demonstrate how these consultations have influenced the design and feedback will be given to the consultation groups before the end of RIBA Stage 4 (Technical Design).

Man02 Life Cycle Cost and Service Life Planning

Life Cycle Analysis is based on recognising and encouraging the use of life cycle costing and service life planning and the sharing of data to raise awareness and understanding.

The capital cost for the building will be reported via the BREEAM Assessment Scoring and Reporting Tool in pounds per square metre (£k/m^2).

Man03 Responsible Construction Practices

All timber used in the project will be 'legally harvested and traded' timber. This is a prerequisite for the following issues which will also be included for this project:

- The principal contractor will achieve compliance with the Considerate Constructors Scheme and go beyond best practice with a total CCS score of between 35-39 points, and a minimum score of 7 in each of the 5 sections.
- Energy use and water consumption from on-site construction processes will be monitored and recorded.
- The Principal Contractor will set targets, monitor and record the distance travelled by materials to and waste from the site.
- The Principal Contractor will be required to operate an Environmental Management System (EMS).

Man04 Commissioning and Handover

Inspection of the building fabric via a thermographic survey and an airtightness test in accordance with the Building Regulations, BSRIA and CIBSE guidelines shall be undertaken.

A commissioning manager will be appointed to undertake design reviews, give advice and manage performance testing and handover/post-handover stages.

A schedule including a timescale for commissioning and testing of all building services and control systems in accordance the Building Regulations, BSRIA and CIBSE guidelines will be provided.

A Building User Guide and a training schedule will be prepared for the building occupier and user, to ensure the efficient operation and maintenance of the building.

Man05 Aftercare Support

There will be operational infrastructure and resources in place to provide aftercare support to the building occupier(s), which will include among others, an initial occupation meeting, on-site facilities management training, initial and long-term aftercare support services.

Seasonal commissioning activities will be completed over a minimum 12-month period once the building becomes occupied; these will include testing of building services and interviews with occupants.

A post occupancy evaluation (POE) will be undertaken one year after occupation to gain performance feedback from building users and improve productivity, health, safety and comfort.

HEALTH & WELLBEING

Hea01 Visual comfort

The relevant building areas will either meet good practice daylight factors or meet good practice average and minimum point daylight illuminance criteria and will have access to aesthetically pleasing views.

All lighting will be designed to give occupants the flexibility in achieving desired illuminance levels without excessive energy use. Appropriately maintained illuminance levels will be achieved in line with the SLL Code for Lighting 2012, CIBSE Lighting Guide 2009 and other relevant industry standards.

All external lighting will be designed to provide illuminance levels that enable the users to perform outdoor visual tasks efficiently at night. External lighting will be specified in accordance with BS 5489-1:2013 and BS EN 12464- 2:2014.

Hea02 Indoor Air Quality

An indoor air quality (IQA) plan will be produced, with the objective of facilitating actions to minimise indoor air pollution during occupation of the building.

Hea04 Thermal comfort

A thermal model will be built in accordance with CIBSE AM11 to inform the development of a thermal zoning and control strategy, which considers the influence of the projected climate change scenarios, or demonstrates how the building can be adapted in future using passive design solutions. The thermal strategy for the building will be informed by this modelling.

Hea05 Acoustic performance

The building will be designed to meet the acoustic performance standards and internal ambient noise levels in compliance with the design ranges given in BS 8233:2014. A programme of pre-completion testing will be carried out by a compliant test body.

Hea06 Safety and security

A suitably qualified security specialist (SQSS) should conduct a Security Needs Assessment (SNA) during the Concept Design stage (RIBA Stage 2) of the project, and the resulting set of recommendations implemented on site. For the external areas, safe access will be designed for cyclists and pedestrians.

ENERGY

Ene01 Reduction of energy use and carbon emissions

An SBEM calculation was carried out to determine the energy demand and CO_2 emissions for the notional and actual buildings. The results were subsequently applied to the Ene01 calculator within the BREEAM 2014 Pre-assessment Scoring tool.

Ene02 Energy Monitoring

Energy sub-meters with pulsed or other open protocol communication outputs will be installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems.

Sub-meters should be installed on the energy supply to each relevant function areas or departments within the building.

Ene03 External lighting

All external luminaries will be energy efficient and all light fittings are to be controlled for the presence of daylight. Daylight sensors will help to ensure that artificial lights are not used when daylight levels are sufficient.

The average initial luminous efficacy of the external light fittings within the construction zone will not be less than 60 luminaire lumens per circuit Watt.

Ene04 Low Carbon Design

A feasibility study will be carried out by the completion of the Concept Design stage (RIBA Stage 2) to establish the most appropriate (if any) low or zero carbon (LZC) energy source(s) for the building.

LZC technologies specified for the building should meet at least 5% of the overall building energy demand, unless considered unfeasible.

Project team to analyse building design at concept design stage (RIBA Stage 2) to identify the potential implementation of passive design measures, to reduce the overall building energy demand by at least 5%.

TRANSPORT

Tra01 Public transport accessibility

The proposed development will be accessible by public transport, being served by London buses (including night time services), and national and underground rail services. The PTAL rating – which ranges from 0 (very poor) and 6b (excellent) - on the site is 4 and an associated Accessibility Index of 17.11.

Tra02 Proximity to amenities

There are restaurants, cash points and food outlets located in close proximity to the building site.

Tra04 Maximum car parking capacity

Car parking provision will be limited, with no parking spaces proposed); encouraging the use of public transport.

Tra05 Travel plan

A draft transport statement is developed as part of the design and feasibility stages, encouraging the use of sustainable modes of transport of people and goods during the buildings' operation and use. The transport statement accompanies the application submission.

WATER

Wat01 Water Consumption

Sanitary fittings within each commercial unit will be specified and installed by the prospective tenants due to the shell and core nature of the scheme.

Where sanitary fittings are to be specified by the developer/landlord, water efficient fittings will be included.

Wat02 Water monitoring

A water meter with a pulsed or other open protocol output will be provided on the mains water supply to accurately monitor the building's water usage.

Building service systems with a significant water demand will have additional water monitoring equipment fitted to them.

Any water consuming plant or building areas installed by the tenant need not be assessed.

Wat03 Water leak detection and prevention

A leak detection system will be employed on the main water supply to each of the units. Flow control devices will be required to be installed to each WC zone within all tenanted units.

MATERIALS

Mat01 Life cycle impacts

The materials specified for the main building elements will have a low environmental impact.

For this development, the external walls, windows, upper floor slabs, internal walls, roof and floor finishes will achieve Green Guide ratings of between A+ and C.

Mat03 Responsible sourcing

Building materials used for the main construction elements will need to be 'responsibly sourced' with a documented Sustainable Procurement plan in place.

All timber and timber-based products specified will be legally harvested and traded timber.

In addition, responsible sourcing of materials (RSM) points will be achieved in accordance with the BREEAM methodology to allow for 2 credits.

Mat04 Insulation

All insulation specified for the development will have a low embodied environmental impact relative to its thermal properties. Insulation specified for use within external walls, ground floor, roof and building services will be assessed and the Insulation Index will be equal to or greater than 2.5.

Mat05 Designing for Durability and Resilience

Suitable durability and protection measures or designed features will be incorporated into the building to prevent damage to vulnerable parts.

Mat06 Material Efficiency

At the end of each RIBA stage the project team will convene to examine opportunities to implement appropriate measures to ensure that the amount of materials used in the construction of the development are optimised and therefore reduce the amount of construction waste arising from site.

WASTE

Wst01 Construction waste management

A Resource Management Plan (RMP) or Site Waste Management Plan (SWMP) covering non-hazardous construction waste and dedicated off-site manufacture will be developed, to ensure that the amount of waste generated is lower than or equal to 7.5m^3 per 100m^2 of gross internal floor area. In addition, 70% of non-demolition waste and 80% of demolition waste must be diverted from landfill.

A pre-refurbishment audit must be carried out for any existing buildings and structures or hard surfaces, to identify key refurbishment/demolition materials and highlight the potential issues in the reuse and recycling of these materials. This audit must be referenced in the RMP.

Wst03 Operational waste

There will be dedicated space to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. A minimum of 2m^2 of waste storage per 1,000m^2 of net floor area shall be provided.

Wst04 Speculative Finishes

Specification of floor and ceiling finishes only where agreed with the occupant or for tenanted areas where the future occupant is not known, carpets, other floor finishes and ceiling finishes are installed in a show area only to reduce wastage.

Wst05 Adaptation to Climate Change

Encourage consideration and implementation of measures to mitigate the impact of more extreme weather conditions arising from climate change over the lifespan of the building.

Wst06 Functional Adaptability

The client and design team will develop a strategy that ensures the building design is flexible and can be easily modified to accommodate changes in working practices, change in-use, plant replacement and refurbishment and incorporated into the building design by the end of RIBA Stage 4 (Technical Design) where feasible.

LAND USE AND ECOLOGY

LE02 Ecological value of site and protection of ecological features

It is deemed that the existing site is of low ecological value. This will be confirmed by the Suitably Qualified Ecologist (SQE) appointed for the scheme. Any local trees will be protected during the construction works on site.

LE03 Minimising impact on existing site ecology

As the development is replacing an existing development, no negative change in plant species richness is expected.

LE05 Long term impact on biodiversity

An appropriate landscape and habitat management plan will be prepared, covering at least the first five years after project completion, in compliance with BS 42020:2013. This is to be handed to the building owner and occupants.

A biodiversity champion will be appointed to minimise the impact of site activities on the existing flora and fauna and a biodiversity action plan will be produced by the SQE.

Four of the additional measures will be sought in order to achieve the maximum credits for this category.

The additional requirements are:

- The main contractor appoints a biodiversity champion;
- The main contractor provides ecological awareness training to site operatives;
- The main contractor records actions taken to protect biodiversity and to monitor their effectiveness during construction;
- New ecologically valuable habitat is created in accordance with local, regional or national Biodiversity Action Plans (BAP); and
- Site works are programmed to minimise disturbance to wildlife.

POLLUTION

Pol01 Impact of refrigerants

HVAC systems using refrigerants will be specified so that the level of greenhouse gas emissions arising from the leakage of refrigerants is limited (Direct Effect Life Cycle CO_2 emissions - DELC $CO_2e \leq 1000$).

In addition, a robust and tested refrigerant leak detection system will be installed which is capable of continuously monitoring for leaks in order to meet compliance with BS EN 378:2008.

Pol02 NOx Emissions

NOx emissions from space heating & hot water will be ≤40 mg/kWh dry NOx at 0% excess O2.

Pol03 Surface water run off

The Environmental Agency Flood Map shows that the development is located in an area with a low probability of flooding (Flood Zone 1). The Flood Map is shown on the following page.

The peak rate surface water runoff from the site to watercourses will be no greater than it was pre-development. All maintenance agreements for the ownership and long-term operation of specified SUDs will be available and watercourse pollution will be minimised. All calculations will allow for the effects of climate change.

Pol04 Reduction of night time light pollution

External lighting will be confined to appropriate areas for security and safety purposes, and lighting will comply with the Institution of Lighting Engineers guidance notes for the reduction of obtrusive light.

All external lighting (except for safety and security lighting) will be fitted with timers to enable them to switch off automatically between the hours of 23:00hrs and 07:00hrs.

Pol05 Noise Attenuation

A noise impact assessment was carried out in compliance with BS7445 to determine the existing background noise levels at the nearest or most exposed noise sensitive development to the proposed development and the rating noise level resulting from the new noise source.

In instances where the noise source from the proposed site is greater than the levels described above, measures will be installed to attenuate the noise at its source to a level where it will comply with the above.

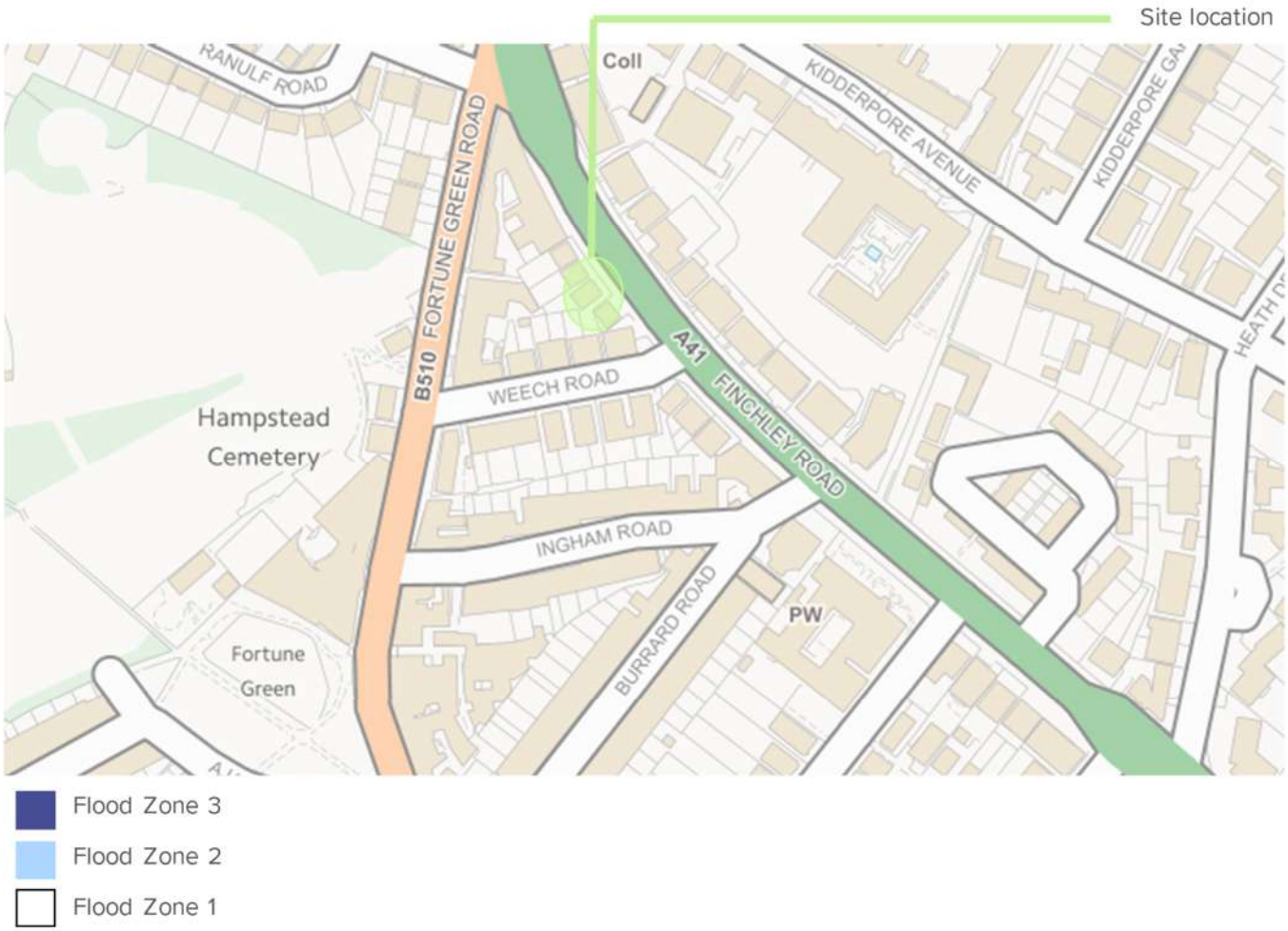


Figure 2: Environment Agency Flood Risk Map

BREEAM PRE-ASSESSMENT RESULTS

A BREEAM pre-assessment has been undertaken at pre-application stage which has shown that a score of 70% (Excellent) is feasible.

The results for the pre-assessment are summarised in the table below, and include a breakdown of the currently targeted score for each issue and category.

Table 3: BREEAM Pre-Assessment Breakdown

BREEAM Category	Total Credits Available	Score Assessment		
		Sub-total	Weighting	Score (%)
Management	21	21	0.12	12.0
Health & Wellbeing	20	13	0.15	9.8
Energy	26	15	0.19	11.0
Transport	12	8	0.08	5.3
Water	8	5	0.06	3.8
Materials	13	9	0.13	8.7
Waste	12	8	0.08	5.0
Land Use & Ecology	4	3	0.10	7.5
Pollution	9	8	0.10	8.9
Innovation	10	0	0.10	0.0
BREEAM Excellent		**Total Points Scored: 71.8%**		

CONCLUSION

The proposals aim to comply, where feasible, with the sustainable development policies of Camden's Local Plan and the recommendations of Camden's Development Policies and Camden Planning Guidance.

A range of applicable sustainable design and construction measures have been incorporated which reflect the client and design team's aspirations in creating a new sustainable apart-hotel and commercial area with a frontage in keeping with the existing context of 551-557 Finchley Road, designed to a high environmental standard.

Key features that impact the sustainability of the proposed project include:

- The reuse of previously developed underused land;
- Thoughtful design to reduce energy demand through enhanced building fabric;
- Efficient design of the proposed massing, openings and internal layouts so that habitable spaces benefit from abundant daylight and sunlight levels, whilst impacts to neighbouring buildings are kept to a minimum;
- Reduced demand for the use of new materials as some elements of existing structure will be reused;
- Training and support for occupants during handover to enable the building to be used efficiently;
- High efficacy lighting and advanced controls
- Effective pollution management and control: The development is not expected to have any significant adverse effects to air, noise, land or watercourses.

Overall, the proposed development at 551-557 Finchley Road meets the sustainability targets set out by London Borough of Camden and the Greater London Authority (GLA). The apart-hotel areas of the scheme, which includes the guestrooms, café, co-working space and gym, could achieve a BREEAM score of 71.8%, exceeding the BREEAM 'Excellent' target of 70%.

The number of credits obtained in the BREEAM preassessment and the sustainability measures incorporated reflect the client and design team's aspirations in integrating sustainability measures and demonstrates that the project is designed to exceed the planning policy sustainability requirements.

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