

99 Frognal
Sustainability Statement

Rev P04

Final

December 2023

MAX FORDHAM

Max Fordham LLP
Max Fordham LLP
42/43 Gloucester Crescent
London
NW1 7PE

T +44 (0)20 7267 5161

maxfordham.com

Max Fordham LLP is a Limited Liability Partnership.

Registered in England and Wales
Number OC300026.

Registered office:
42-43 Gloucester Crescent
London NW1 7PE

This report is for the private and confidential use of the clients for whom the report is undertaken and should not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the express written authority of Max Fordham LLP

© Max Fordham LLP

ISSUE HISTORY

Issue	Date	Description
P05	07/12/2023	Final – For Planning Submission

CONTENTS

1.0	Executive Summary	4
2.0	Project Introduction	5
3.0	Sustainability Statement	6
3.1	Energy Strategy	6
3.2	Material efficiency, embodied carbon and waste	6
3.3	Water Consumption	7
3.4	Climate Change Adaptation	7
3.5	Air Quality	7
3.6	Biodiversity	7
3.7	Transport	7
4.0	Integration of BREEAM Domestic Refurbishment measures	8
	Appendix A - Summary Of Key Sustainability Policy	10
4.1	Camden Local Plan (2017)	10

1.0 Executive Summary

This Sustainability Statement supports the planning application for the proposed refurbishment and extension of the historic house at 99 Frognal.

This report addresses the following:

- Review of relevant planning policy
- Summary of key sustainability strategies

This statement should be reviewed alongside the other planning documents that have been submitted for this application.

The project is aiming to be an environmentally excellent example of the renovation and extension of a listed home, and the development of 3 new homes. The table on the right shows the key measures that have been integrated into the design of 99 Frognal, ensuring the development meets the sustainability-related planning requirements.

While BREEAM Domestic Refurbishment is not being formally targeted by the project, we are delivering a majority of the requirements into the project. A summary table of these measures can be found in Section 4.

	Key measures	Relevant Policy
Energy	<ul style="list-style-type: none"> • Electrification of space heating and hot water demand • Fabric performance is at least 10% better than Part L 2021 • Fabric energy efficiency improvements to the existing house • Meet LETI Retrofit (constrained) energy use intensity target of 80 kWh/m²/yr. 	CC1 Policy 8.15
Material efficiency, embodied carbon and waste	<ul style="list-style-type: none"> • Use of low-carbon materials in the construction of the new extension. • Carry out a pre-demolition audit to identify how the residual value of the building can be reused in the most valuable way 	CC1 Policy 8.18 Policy 8.19
Water	<ul style="list-style-type: none"> • Installation of low-flow fittings on wash hand basins and WCs • Installation of rainwater harvesting and storage for use in the garden 	CC3
Climate Change Adaptation	<ul style="list-style-type: none"> • The protection of an existing green space and creation of new green infrastructure through the removal of an existing and inappropriate building • Reducing surface water runoff through increasing permeable surfaces. • Designing the extension to be comfortable in future climate scenarios 	CC2
Air Quality	<ul style="list-style-type: none"> • No fossil fuel combustion on-site 	CC4
Biodiversity	<ul style="list-style-type: none"> • Significant enhancement of the biodiversity of the existing gardens, preserving the assets of greatest value and creating new habitat spaces that are ecologically rich and diverse. Including: <ul style="list-style-type: none"> • A net gain in proposed tree planting, including deciduous and evergreen species, • a new grassland meadow slope, • a range of native meadow flowers to establish, and with them a broader invertebrate ecology than the mono-species lawn that exists, • a range of intensive and extensive green roofs, providing invertebrate habitat, water attenuation and reducing solar gain in hot weather. 	A3
Transport	<ul style="list-style-type: none"> • Provision of cycling spaces on site 	T1 and T2



2.0 Project Introduction

General description

99 Froggnal is mid-18th century Grade II listed building with later extensions, in the heart of Hampstead.

Following the Crimean War, the house became the Sailors' Orphan Girls' Home and was the home of General de Gaulle and family in 1942-44. The house was listed on 11 August 1950. It was converted in 1968 to a finishing school and convent. Most recently the use has been St Dorothy's Convent and student accommodation.

Proposal

The project is;

- To convert a Grade II building from its current use as a Convent back into a private house. This will involve the demolition of the 20th Century extension that is detrimental to the historic house and the construction of a smaller more appropriate extension and an underground swimming pool.
- The development of 3 additional homes.

The proposed development scheme will consist of three main zones of new development, as shown in Figure 3. These three zones are described below:

- Zone 1 - The area of the proposed extension with a single level basement.
- Zone 2 – The area of the two proposed one-storey homes located in the north-eastern corner of the site. These homes will be constructed so that they are accessed from the same level as the existing garage/northern access.
- Zone 3 – Zone 3 has been split into two subzones, which have been designated as Zone 3i (northeast, includes the additional 3rd home) and Zone 3ii (northwest). These zones are portions of the proposed extension without a basement.

The key aspects of this development are:

- Demolition and removal of the existing extension and the erection of a 1 to 2 storey side/rear extension,
- new mansard roof extension,
- construction of basement,
- provision of new homes,
- internal alterations,
- green roofs on garage and associated landscaping.

Sustainability Aspirations

The overall sustainability aspirations for the project are:

- To reduce the operational energy use of the house,
- To deliver an exemplar of low embodied carbon design, through efficient design and the use of low embodied carbon materials
- The reduction of construction waste through the re-use materials and off-site manufacture of components,
- Biodiversity net gain to through the enhancement of external space,
- Eliminate all fossil fuel combusting technology on-site

- Minimise water consumption through the use of low flow fittings and rainwater harvesting.
- Use of Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate
- Adaption to climate change,
- The provision of cycle storage to encourage active transportation.

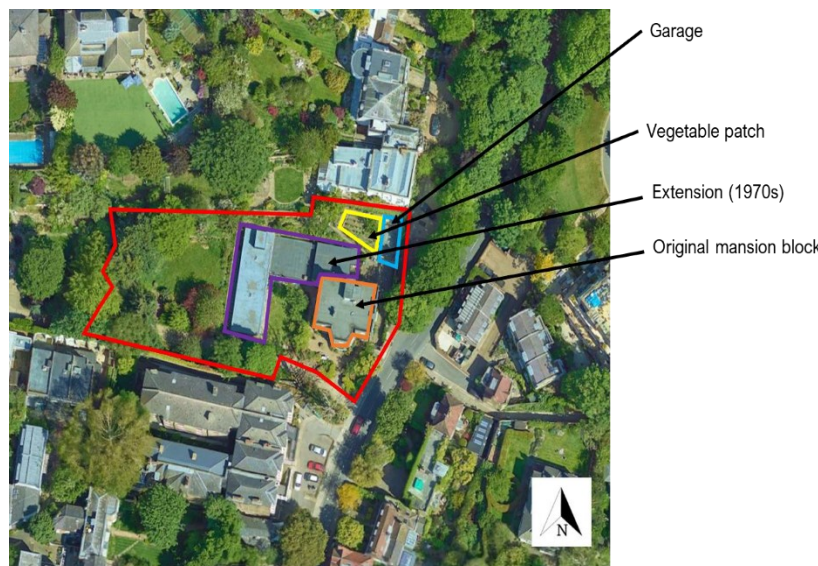


Figure 1: 99 Froggnal, Existing Site Layout and indicative Boundary



Figure 2: 99 Froggnal House, London, NW5



Figure 3: 99 Froggnal, Site Boundary First floor plan, annotated with the three zones of proposed development

3.0 Sustainability Statement

3.1 Energy Strategy

The project is going to achieve full electrification through the installation of air source heat pumps. This will significantly reduce the carbon emissions of the buildings over their operational lifespan.

The project is targeting at least a 10% improvement on Part L for the building fabric of the new elements and the LETI Retrofit (constrained) Energy Use Intensity (EUI) target of 80 kWh/m²/yr for the refurbished house. The LETI target was developed in October 2021 as an energy target that is suitable for Listed Buildings that are undergoing refurbishment.

Adopting the LETI benchmarks, full electrification and making a meaningful improvement on the Part L requirements creates a more appropriate approach to minimising the carbon emissions of a listed building than adopting BREEAM Domestic Refurbishment, a certification scheme that was launched in 2012 and last updated in 2016.

To assess if the project will meet the LETI Retrofit EUI target, the Government’s Standard Assessment Procedure (SAP) was followed for the existing house, the extension, and the new dwellings according to properties for fabric and mechanical services outlined below.

Existing House

Proposed improvements to the existing building fabric of the main house includes upgrades to the exposed floor, walls and roof. The existing windows are to be retained, and rehung, together with the replacement of seals and brushes (where necessary) in order to improve airtightness and reduce drafts. All glazing panels are to be reviewed on site and putty replaced/made good as required. To the primary, southern-facing elevation, shutters and shutter boxes are to be reinstated to the windows at first and second floors.

Targeting full electrification, the scheme includes an air source heat pump, utilising a refrigerant with a low global warming potential, to provide domestic hot water and space heating predominantly through underfloor heating emitters with supplementary radiators where necessary.

High efficiency lighting is proposed throughout.

Extension

The building fabric for the extensions to the existing house have been designed to improve upon the energy performance requirements for extensions as outlined in Building Regulations Part L.

The heating and domestic hot water for the extension are to be provided by the main heating system for the existing house with a secondary air source heat pump serving the indoor swimming pool equipment. Mechanical ventilation with heat recovery is included within the scheme for the extension including within the gym and indoor pool.

As with the existing house, high efficacy lighting is proposed throughout.

New Dwellings

The building fabric for the new dwellings has been designed to improve upon the energy performance requirements for new dwellings as outlined in Building Regulations Part L.

The new dwellings incorporate exhaust air heat pumps providing space heating, ventilation, and domestic hot water to the dwellings.

As with the main house, high efficacy lighting is proposed throughout.

Renewables

The project team do not consider the inclusion of photovoltaics on the site as viable due to a combination of heritage and conservation area constraints, and the high degree of shading from trees and surrounding buildings.

Estimated Outcome

Following SAP methodology, the design estimate for energy use intensity separated by load and building type is shown in Figure 4. In both cases the buildings meet the LETI Retrofit energy use target set for the project when considering both unregulated and regulated system loads.

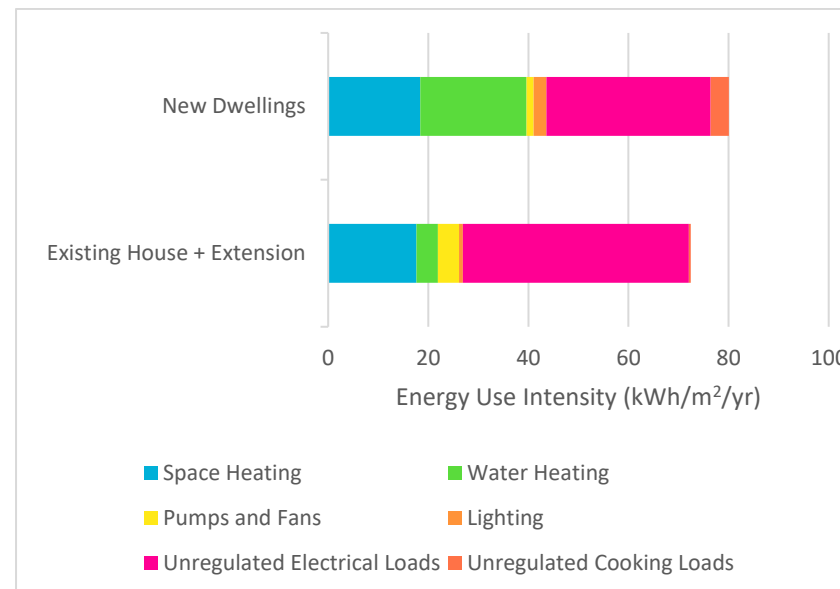


Figure 4: Energy Use Intensity for the Main House and New Dwellings

3.2 Material efficiency, embodied carbon and waste

Existing House

The project team’s approach is centred on providing a range of measures to reduce carbon impact of new materials in the renovation of the existing house including:

- Retention of the primary structure and foundations of the main house with minor alterations,
- Retaining as much of the structure as feasible at roof level where an additional lightweight storey is proposed,

- Commissioning of structural investigations to understand the existing fabric and limit alterations,
- Identification of removed floorboards for retention and reuse, with a priority to reuse on site,
- Identification and retention of brickwork in the landscape for use in repairs and alteration to the existing house.

Extension

The structure will amount for 30-40% of embodied carbon of the scheme, with the basement being the highest contributor. To minimise this impact the project team will adopt the following measures:

- Keeping the superstructure lightweight to limit requirements for additional strengthening,
- Use of cement replacement where appropriate to reduce the embodied carbon of concrete in the basement and substructure. This includes possible use of calcine clay as a cement replacement which is a new, innovative technology.
- Commissioning of further structural investigations to hone the efficiency of structural alterations and retain the existing reinforced concrete where possible.
- Specification of electric arc furnace sourced steel where carbon benefit is not outweighed by transport impact.
- Setting out of the basement footprint to take advantage of the existing retaining walls on site and reduce excavation. Keeping existing retaining in-situ where possible reduces requirement for temporary works.
- Developing efficient and direct load paths through the basement structure to the foundations.

For the superstructure of the extension, the project team are exploring how they can make use of stone and timber in the most sustainable ways including:

- Exploring the sourcing of stone from electrified quarries within a suitable transport radius.
- Glulam will be used to limit the use of large section solid timber.
- The project team is also exploring the use of low-carbon lining systems within the extension considering products like Breathaboard or clay board in the place of standard plasterboard.

Waste and circular economy

The development aims to maximise the use of recycled or reused content, by total project value, for the proposed scheme.

To achieve this, the project team are evaluating the following approaches:

- Carefully removing the existing kitchens, steel bathrooms and laminate floorings, in order to donate them to organisations who can reuse them
- Reusing timber floorboards where possible
- Reusing flooring tiles
 - higher grade: pre-identified, carefully removed and sorted,
 - lower grade used: on site as hardcore
- Reusing the existing concrete frame as aggregate (crush on site or off site to be agreed)
- Reusing house bricks or use reclaimed bricks.

Careful consideration will be given to how construction and demolition waste will be minimised and diverted from Landfill.

The project aims for 85% (either by volume or tonnage) of all demolition, construction and excavation waste to be diverted from landfill to be reused and/or recycled.

Demolition:

- A pre-demolition audit will be carried out by a suitably qualified individual.
- The results of the audit will be used to inform the detailed plans for material reuse on and off site.
- The project team is currently exploring how concrete from the existing building can be reused on-site or off-site.

Excavation:

- The creation of a basement will result in soil removal from the site.
- Soil testing has been carried out to confirm its waste acceptance criteria and suitability for reuse on and off site.

Construction:

- A site waste management plan will be implemented.
- The contractor will be required to carry out on-site waste segregation.

Responsible sourcing

The project aims to maximise the total material by value that is responsibly sourced against BES 6001 certification (or equivalent) and having all timber FSC certified and legally sourced.

The development will provide appropriately sized facilities for waste and recycling in operation.

3.3 Water Consumption

Water consumption will be reduced through the water saving hierarchy.

- Low flow fittings will be specified for the wash hand basin taps and WC flush.
- Rainwater harvesting has been considered for plant irrigation, with provision for below ground storage to be made.
- An automated watering system for large green roofing is being considered to minimise water.
- The use of greywater recycling is not proposed due to the higher lifecycle carbon emissions associated with these systems in comparison to the local water network, and their unsuitability for maintenance in a domestic environment.
- Principal storm water attenuation is achieved below ground. The structure below ground is anticipated to provide a lower embodied carbon solution than suspending the principal storm water attenuation via a blue roof. A green roof is accommodated in the structural solution providing some secondary attenuation.

3.4 Climate Change Adaptation

The development is adopting appropriate climate change adaptation measures which include:

- the protection of an existing green space and creating new green infrastructure through the removal of an existing and inappropriate building
- not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces.
- incorporating bio-diverse roofs, and green infrastructure where possible which will mitigate the impact of dwelling overheating.

Avoiding Overheating

The cooling hierarchy has been followed to manage the risk of overheating within the building.

An approach using Approved Document Part O, CIBSE Technical Memorandum 59 for the assessment of overheating risk in homes (TM59) and the Good Homes Alliance Tools and Guidance have been used to establish what are likely to be the most effective measures for controlling overheating risk.

Table 3.1 Measures taken within the cooling hierarchy to manage overheating risk

Step	Description	Measures
1	Minimise internal heat generation through energy efficient design	Energy efficiency targeted under the energy strategy. Assessed against proscribed gains profiles in the methodology.
2	Reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls	Deepened reveals and overhangs proposed Low g-value glazing proposed Movable external shuttering incorporated in the architectural scheme in response to elevations exposed to high external gains. Green roofs proposed
3	Manage the heat within the building through exposed internal thermal mass and high ceilings	Assessment of the habitable spaces has included for the effect of thermal mass and high ceilings where present in the proposals
4	Passive ventilation	Securable opening windows distributed through the habitable spaces of the architectural scheme
5	Mechanical ventilation	Wiring provision for future connection of ceiling fans
6	Active cooling systems	None applied

Other climate change adaptations

Green roofs are included in the design, which will contribute towards mitigating the effects of climate change by aiding surface water attenuation and improving biodiversity.

3.5 Air Quality

The development will not use any fossil fuel combusting technologies for heating, hot water or cooking. This approach will have no adverse effect on local air quality (ref. Policy CC4).

3.6 Biodiversity

Our proposals aim to significantly enhance the biodiversity of the existing gardens, preserving the assets of greatest value (i.e., mature trees) and creating new habitat spaces that are ecologically rich and diverse.

Among the proposed enhancements are:

- A net gain in proposed tree planting, including deciduous and evergreen species
- A new grassland meadow slope, with a diverse sward. This will be managed by annual cutting to promote a range of native meadow flowers to establish, and with them a broader invertebrate ecology than the mono-species lawn that exists
- An array of native shrubs to be planted throughout the site, including hedgerow species such as hawthorn, blackthorn and hazel.
- Long flowering and diverse perennial planting which will benefit pollinators and invertebrates
- Permeable surfaces such as gravel to reduce surface run-off and enhance site drainage
- A range of intensive and extensive green roofs, providing invertebrate habitat, water attenuation and reducing solar gain in hot weather. These roofs will feature drought tolerant planting and will therefore require minimal irrigation.

The proposed landscape scheme creates a range of habitat spaces across the site, which will work together holistically to establish a rich garden ecology suitable for a broad range of fauna. Our proposals will aim to be low resource, using little irrigation, and require modest maintenance input.

3.7 Transport

Cycling provision is proposed for all 4 residential units on site.

4.0 INTEGRATION OF BREEAM DOMESTIC REFURBISHMENT MEASURES

Scope	Sustainability action	Measures adopted by the project that align with BREEAM Domestic Refurbishment requirements - elements that exceed the requirements of BREEAM Domestic Refurbishment are in Green	Relevant BREEAM Domestic Refurbishment Credit
Management	Home User Guide	A user guide will be provided to the home owners for each dwelling in the project, written in Plain English on the key building systems and element technologies, with basic user instructions labelled on equipment or controls where appropriate.	Man 01 Home user guide
	Responsible Construction Practices	<ul style="list-style-type: none"> - The principal contractor to be certified under the Considerate Constructors scheme (CCS). - All site timber used on the project will be sourced in accordance with the UK government's timber procurement policy - A Thermographic surveying will be carried out prior to practical completion. - A handover meeting will be arranged as soon as possible after occupation. 	Man 03 Construction Site Impacts Man 06 Project management
	Ecology	<p>The project is targeting a Net Gain in Biodiversity, measures include:</p> <ul style="list-style-type: none"> - A net gain in trees onsite, including deciduous and evergreen species, - a new grassland meadow - improvement of the lawn with a range of native meadow flowers - implementation of a range of intensive and extensive green roofs 	Man 05 Protection and enhancement of ecological features
Health and wellbeing	Daylighting	<ul style="list-style-type: none"> - Living spaces in extension have abundant daylight - Additional house daylight levels exceed BRE recommendations 	Hea 01 Daylighting
	Acoustics	<p>Refurbishment</p> <ul style="list-style-type: none"> - sound insulation will be installed between floors to improve existing performance - Reinstatement of window shutters will reduce external noise <p>New dwellings</p> <ul style="list-style-type: none"> - Partitions to be designed to achieve a 5dB improvement on Building Regulations 	Hea 02 Sound insulation
	Indoor Air Quality	-Low VOC paints and finishes will be specified for use in the refurbishment, extension and new dwellings	Hea 03 Volatile organic compounds
	Thermal Comfort and Adaptation to Future Climate	<p>Cooling hierarchy has been followed to manage the risk of overheating. The specific measures include:</p> <ul style="list-style-type: none"> - Deepened reveals and overhangs to provide shading - Low g-value glazing - Movable external shuttering incorporated on elevations exposed to high external gains. - Green roofs - Securable opening windows throughout habitable spaces 	Heat 05 Ventilation
	Ventilation	<p>Exhaust air heat pumps for the new dwellings</p> <p>Mechanical heat recovery and ventilation is proposed for the extension, including the gym and indoor pool</p> <p>Ventilation levels in the refurbishment will be appropriate to the levels of historic buildings</p>	Heat 05 Ventilation
	Active Transportation	Provision of cycling spaces for all residential units on site	Ene 09 Cycle storage
Energy	Reduction of Carbon emissions	<ul style="list-style-type: none"> - Electrification of space heating and hot water demand - Air Source Heat Pump to provide space heating and hot water for all buildings on-site 	Ene 04 Renewable technologies

	Energy Efficiency improvements	<ul style="list-style-type: none"> - Fabric energy efficiency improvements to the existing house - Meet LETI Retrofit (constrained) energy use intensity target of 80 kWh/m²/yr. - High efficiency lighting - Appliances have an A+ or A++ energy rating - Provision of a smart energy meter 	<p>Ene 01 Improvement in energy efficiency rating</p> <p>Ene 02 Energy efficiency rating post-refurbishment</p> <p>Ene 03 Primary energy demand</p> <p>Ene 05 Energy labelled white goods</p> <p>Ene 07 Lighting</p> <p>Ene 08 Energy display devices</p> <p>Ene 08 Energy display devices</p>
Water	Reduction in regulated water demand	<ul style="list-style-type: none"> - Installation of low-flow water fittings on wash hand basins and WCs 	<p>Wat 01 Internal water use</p>
Materials	Reducing environmental impact of materials	<ul style="list-style-type: none"> - Use of low-carbon materials in the construction of the new extension. - Carry out Whole Life Carbon modelling to inform reductions in embodied carbon 	<p>Mat 01 Environmental impact of materials</p> <p>Mat 03 Insulation</p>
	Responsible sourcing of materials	<p>Project team aiming to maximise the use of materials that are responsibly sourced against BES 6001 certification (or equiv.) and all timber FSC certified and legally sourced.</p>	<p>Mat 02 Responsible sourcing of materials</p> <p>Mat 03 Insulation</p>
Waste	Circular economy	<ul style="list-style-type: none"> - Project team to commission a pre-demolition audit of existing extension - Require the contractor to implement a site-wide waste management plan (SWMP) to reduce construction waste. - 85% (either by volume or tonnage) of all demolition, construction and excavation waste to be diverted from landfill to be reused and/or recycled. 	<p>Was 02 Refurbishment site waste management</p>
	Operational Waste	<ul style="list-style-type: none"> - Provide appropriately sized recycling storage facilities - Provide appropriately sized composting facilities 	<p>Was 01 Household waste</p>
Pollution	External Air Quality	<p>No fossil fuel combustion on-site</p>	<p>Pol 01 Nitrogen oxide emissions</p>
	Flood risk and Surface water run off	<p>Use of Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate</p>	<p>Pol 02 Surface water run-off</p> <p>Pol 03 Flooding</p>

APPENDIX A - SUMMARY OF KEY SUSTAINABILITY POLICY

4.1 Camden Local Plan (2017)

The Camden Local Plan sets out the Council’s planning policies. It ensures that Camden continues to have robust, effective and up-to-date planning policies that respond to changing circumstances and the borough’s unique characteristics and contribute to delivering the Camden Plan and other local priorities. The Local Plan covers the period from 2016-2031. The Local Plan will play an essential role in the delivery of the Camden Plan, which sets out the Council’s vision for the borough.

Camden’s Local Plan and other development plans need to be in general conformity with the London Plan.

Other planning guidance

The Council has prepared a number of other documents that provide advice and guidance on how our planning policies will be applied for certain topics, areas or sites known as Supplementary Planning Guidance (SPG);

- CPG2: Housing
- CPG3: Sustainability
- CPG4: Basements and lightwells

Councils must have regard to the National Planning Policy Framework (NPPF) when drawing up their plans and it is a material consideration in decision making on planning applications. The NPPF is supported by more detailed National Planning Practice Guidance. The NPPF includes a ‘presumption in favour of sustainable development’.

Sustainability appraisal and other assessments

The Local Plan has been subject to a number of impact assessments, including Sustainability Appraisal (incorporating Strategic Environmental Assessment), Health Impact Assessment, Habitats Regulations Assessment and Equality Impact Assessment. The Sustainability Appraisal assessed the environmental, social and economic impacts of the Plan, including an appraisal of alternative approaches for addressing a range of key Plan issues.

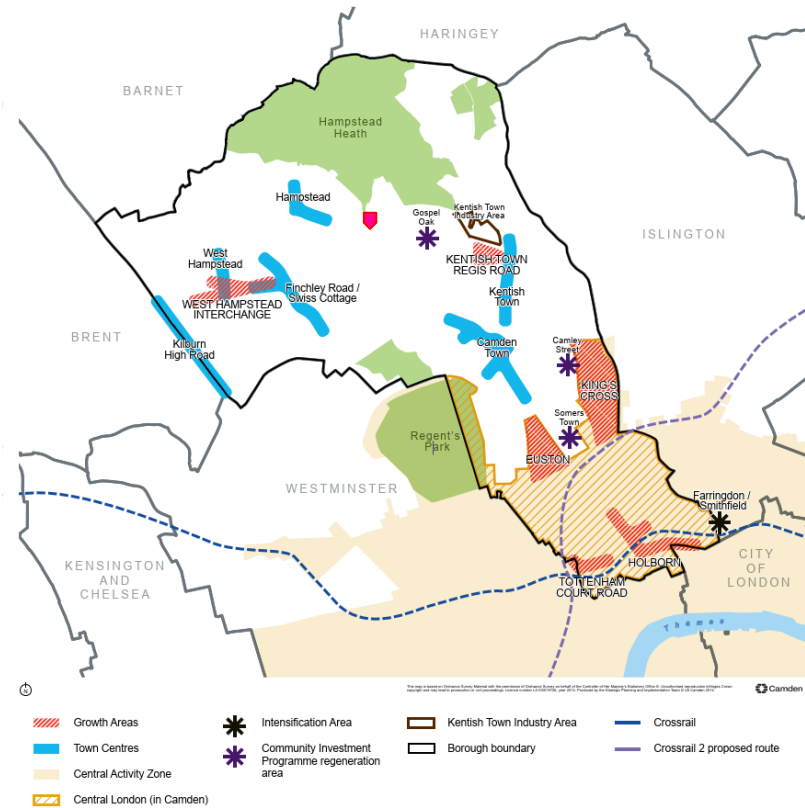
Policy G1 Delivery and location of growth

The Council will deliver growth by securing high quality development and promoting the most efficient use of land and buildings in Camden by:

- a. supporting development that makes best use of its site, taking into account quality of design, its surroundings, sustainability, amenity, heritage, transport accessibility and any other considerations relevant to the site.

2.11 Good design can increase density while protecting and enhancing the character of an area (Please see Policy D1 Design and Policy D2 Heritage for more detail on our approach to design and heritage). All development should be of excellent design quality and should sensitively consider the amenity of occupiers and neighbours and, particularly in conservation areas, the character, heritage and built form of its surroundings.

Map 1: Key Diagram, Growth Areas



London Plan targets for Camden’s growth areas, West Hampstead Interchange

- sustainable and safe design of the highest quality that respects the character and heritage value of West Hampstead; and
- prioritise the use of decentralised energy networks.

3.48 The following are examples of proposals that would not be required to provide housing:

- the additional floorspace is 200sqm (GIA) or less.
- the development involves an extension to an existing building (especially a listed building or a building that makes a positive contribution to a conservation area) that cannot accommodate new features necessary to support housing, such as entrances, windows, staircases and lifts.

Policy H3 Protecting existing homes

The Council will aim to ensure that existing housing continues to meet the needs of existing and future households by:

- a. resisting development that would involve a net loss of residential floorspace, including any residential floorspace provided.
- b. protecting housing from permanent conversion to short-stay accommodation intended for occupation for periods of less than 90 days.

High quality accessible homes

3.139 Many aspects of housing quality have a critical impact on the health and well-being of occupiers. These aspects of quality include the external environment, the condition of the property and its state of repair and decoration, accessibility, internal space and number of bedrooms, separation between functions such as kitchens, living rooms and bedrooms, adequate noise insulation, and daylight and sunlight and all of which can affect physical and mental health and influence life chances.

Policy H7 Large and small homes

The Council will aim to secure a range of homes of different sizes that will contribute to creation of mixed, inclusive and sustainable communities and reduce mismatches between housing needs and existing supply.

Policy C1 Health and wellbeing

The Council will improve and promote strong, vibrant and healthy communities through ensuring a high-quality environment with local services to support health, social and cultural wellbeing and reduce inequalities.

Integrated approach to health and wellbeing

4.14 Many measures set out in other parts of this Local Plan play a part in promoting health and wellbeing and addressing health inequalities and should be addressed, where appropriate:

- Housing quality – there are a number of factors that contribute to the quality of housing, including (but not restricted to) overcrowding, accessibility, space and layout, noise insulation, fabric energy efficiency, shading, and ventilation.
- Crime reduction and community safety – crime and fear of crime is a significant concern for many of Camden’s residents and businesses and can undermine people’s quality of life, health and wellbeing (Policy C5 Safety and security). We will require development to demonstrate it has incorporated design principles which contribute to community safety and security.
- Social cohesion and lifetime.

Policy C5 Safety and security

4.84 Crime and the fear of crime can undermine people’s quality of life, health and wellbeing. Planning plays an important role in reducing crime and helping to create safe and secure places. Our challenge is to make the borough a safer place for everyone, while making sure that Camden maintains the vibrancy that contributes so much to its character and success.

4.87 Consideration of how crime, disorder and fear of crime can be addressed is an important element in good design. This can create safe and attractive places to live and work, reduce the opportunity for crime and allow for better maintenance and management of buildings and spaces. The Council will require all developments to incorporate appropriate design, layout and access measures to help reduce opportunities for crime, the fear of crime and to create a more safe and secure environment. Crime Impact Assessments will also be sought for major developments.

4.88 We strongly encourage security features to be incorporated into a scheme from the beginning of the design process and complement other key design considerations. Internal security measures are preferred. Further information on designing safer environments is set out in our supplementary planning document Camden Planning Guidance on design.

Policy A3 Biodiversity

Policy A3 Biodiversity The Council will protect and enhance sites of nature conservation and biodiversity. We will:

- c. assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed.
- g. require the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species; secure management plans, where appropriate, to ensure that nature conservation objectives are met. We will:
 - j. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation.
 - k. require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 ‘Trees in relation to Design, Demolition and Construction’ and positively integrated as part of the site layout.
 - l. expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development.
 - m. expect developments to incorporate additional trees and vegetation wherever possible.

Policy A4 Noise and vibration

Where uses sensitive to noise and vibration are proposed close to an existing source of noise or when development is likely to generate noise is proposed, the Council will require an acoustic report to accompany the application.

Policy A5 Basements

6.107 With a shortage of development land and high land values in the borough, the development of basements is a popular way of gaining additional space in homes. Basements are also often included in developments in the Central London part of Camden and used for various purposes including commercial, retail and leisure uses, servicing and storage.

6.108 Basement development and other development that involves excavation changes the ground and water conditions of the area which can potentially lead to ground instability or flooding. Basement development can also have significant construction impacts due to the need to remove spoil and the general complexities of excavation. The Council recognises the need to protect the environment and adjoining neighbours’ properties and buildings from these impacts.

6.112 The following policies in this Local Plan are also relevant to basement development and will be taken into account when assessing basement schemes:

- Policy A2 Open space.
- Policy A3 Biodiversity.
- Policy D1 Design.
- Policy D2 Heritage; and
- Policy CC3 Water and flooding.

The Council will only permit basement development where it is demonstrated to its satisfaction that the proposal would not cause harm to:

- a. neighbouring properties
- b. the structural, ground, or water conditions of the area
- c. the character and amenity of the area
- d. the architectural character of the building; and
- e. the significance of heritage assets.

the Council will require an assessment of the scheme’s impact on drainage, flooding, groundwater conditions and structural stability in the form of a Basement Impact Assessment and where appropriate, a Basement Construction Plan.

The siting, location, scale and design of basements must have minimal impact on, and be subordinate to, the host building and property. Basement development should:

- f. not comprise of more than one storey
- g. not be built under an existing basement
- h. not exceed 50% of each garden within the property
- i. be less than 1.5 times the footprint of the host building in area
- j. extend into the garden no further than 50% of the depth of the host building measured from the principal rear elevation.
- k. not extend into or underneath the garden further than 50% of the depth of the garden.
- l. be set back from neighbouring property boundaries where it extends beyond the footprint of the host building; and avoid the loss of garden space or trees of townscape or amenity value.

Exceptions to f. to k. above may be made on large comprehensively planned sites.

The Council will not permit basement schemes which include habitable rooms and other sensitive uses in areas prone to flooding. We will generally require a Construction Management Plan for basement developments.

6.143 The Council will only permit basements where they do not cause harm to the significance of a listed building or its garden.

Policy D1 Design

The Council will seek to secure high quality design in development. The Council will require that development:

- a. respects local context and character.
- b. preserves or enhances the historic environment and heritage assets in accordance with Policy D2 Heritage.
- c. is sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation
- d. is of sustainable and durable construction and adaptable to different activities and land uses
- e. comprises details and materials that are of high quality and complement the local character.

7.7 The Council expects development to be sustainable in design and construction.

7.10 Schemes should incorporate materials of a high quality. The durability and visual attractiveness of materials will be carefully considered along with their texture, colour, tone and compatibility with existing materials. Alterations and extensions should be carried out in materials that match the original or neighbouring buildings, or, where appropriate, in materials that complement or enhance a building or area.

7.22 The Council will expect development schemes to provide a high standard of landscape design and encourages the development of green and brown roofs and walls. The design of new hard and soft landscaping should be contextual and consider access requirements.

Policy D2 Heritage

The Council will preserve and, where appropriate, enhance Camden’s rich and diverse heritage assets and their settings, including conservation areas, listed buildings, archaeological remains, scheduled ancient monuments and historic parks and gardens and locally listed heritage assets.

Listed buildings are designated heritage assets and this section should be read in conjunction with the section above headed ‘designated heritage assets. To preserve or enhance the borough’s listed buildings, the Council will:

- i. resist the total or substantial demolition of a listed building.
- j. resist proposals for a change of use or alterations and extensions to a listed building where this would cause harm to the special architectural and historic interest of the building; and
- k. resist development that would cause harm to significance of a listed building through an effect on its setting.

Policy CC1 Climate change mitigation

The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

We will:

- a. promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy.
- b. require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met.

8.12 All major developments will also be expected to demonstrate how relevant London Plan targets for CO2 reduction, including targets for renewable energy, have been met. Where it is demonstrated that the required London Plan reductions in carbon dioxide emissions cannot be met on site, the Council will require a financial contribution to an agreed borough wide programme to provide for local low carbon projects. The borough wide programme will be connected to key projects identified in the Council’s Green Action for Change.

8.15 Given the significant contribution existing buildings make to Camden’s CO2 emissions, the Council will support proposals that seek to sensitively improve the energy efficiency of existing buildings. Further guidance on how the energy performance of existing homes in conservation areas can be improved without harming the character and appearance of the area can be found in our supplementary planning documents (‘Energy efficiency planning guidance for conservation areas’ and ‘Retrofitting planning guidance’). Policy D2 Heritage further explains that the Council will take into consideration the public benefits gained from the improved energy efficiency of existing buildings.

8.18 We will expect all developments, whether for refurbishment or redevelopment, to optimise resource efficiency by:

- reducing waste.
- reducing energy and water use during construction.
- minimising materials required.
- using materials with low embodied carbon content; and
- enabling low energy and water demands once the building is in use.

8.19 Embodied carbon is the carbon impact associated with the production, transport, assembly, use and disposal of materials. This will include consideration of maintenance and repair but does not include the carbon emissions associated with the energy used for heating, lighting or cooling in the completed building (please see Policy T4 Sustainable movement of goods and materials). Additionally, the Council will expect developers to consider the service life of buildings and their possible future uses to optimise resource

efficiency. The durability and lifespan of the buildings' components should be matched to its likely service life, and where appropriate the building should be designed to be flexible in terms of adaptation to future alternative uses in order to avoid the need for future demolition.

8.20 As part of the assessment of resource efficiency, all developments involving five or more dwellings and/or more than 500 sqm gross internal floor space are encouraged to assess the embodied carbon emissions associated with the development within the energy and sustainability statement. Where such an assessment has been completed, we would encourage that the results are logged on the WRAP embodied carbon database in order to contribute to the embodied carbon knowledge base.

8.21 Further guidance on resource efficiency and embodied carbon assessment can be found in supplementary planning document Camden Planning Guidance on sustainability.

Policy CC2 Adapting to climate change

8.31 Adapting to a changing climate is identified in Camden's environmental sustainability plan, Green Action for Change (2011-2020). The three key risks which require adaptation measures are flooding, drought and overheating. Specific design measures and 'green infrastructure' such as green roofs, green walls and open spaces can help mitigate some of these risks.

All development 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 run-off 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. measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy
- 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 development from 2019.

8.37 To support a sustainable approach to drainage, all development should install green roofs, permeable landscaping, green walls and combination green and blue roofs, where appropriate. Further information on these systems can be found in our supplementary planning document Camden Planning Guidance on sustainability.

8.41 All new developments will be expected to submit a statement demonstrating how the London Plan's 'cooling hierarchy' has informed the building design. Any development that is likely to be at risk of overheating (for example due to large expanses of south or southwest facing glazing) will be required to complete dynamic thermal modelling to demonstrate that any risk of overheating has been mitigated.

In all cases where assessment methods are changed or superseded, the Council will use the equivalent replacement standards. BREEAM and BREEAM domestic refurbishment

8.46 BREEAM (Building Research Establishment Environmental Assessment Method) is a tool that enables us to assess the environmental sustainability of a development.

8.47 BREEAM and BREEAM domestic refurbishment contains the following categories: Energy, Water, Materials, Waste, Surface Water, Management, Transport, Land use, Ecology, Health and Wellbeing, and Pollution. Each category contains credits that can be obtained by implementing a sustainable design or construction measure. We have been successfully applying sub-targets, which we developed in consultation with the Building Research Establishment within the assessment categories of Energy, Water and Materials. The securing of the credits in these categories is considered to have the greatest environmental benefits and more information can be found in our supplementary planning document Camden Planning Guidance on sustainability.

8.48 The sustainability of residential development arising from conversions, extensions and changes of use can be assessed through the use of BREEAM domestic refurbishment. We will encourage developments of five or more dwellings or 500 sqm of residential floorspace or above resulting from conversions, extensions and changes of use to achieve an excellent rating in BREEAM domestic refurbishment.

8.49 The Council will expect the application of a BREEAM assessment to non-residential developments (including conversions, extensions and changes of use) of 500 sqm or more. We will expect these to achieve a BREEAM rating of excellent and will encourage zero carbon from 2019.

8.50 The Home Quality Mark, launched 2015, is one way of demonstrating the standard of a new residential dwelling, which includes measures for low CO2, sustainable materials, good air quality and natural daylight. The Council will strongly encourage schemes to use the Home Quality Mark. The use of Passivhaus standard is also encouraged in demonstrating energy efficient design. Further details on energy efficient design and principles and Passivhaus are set out in our supplementary planning document Camden Planning Guidance on sustainability.

Policy CC3 Water and flooding

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.

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. Similarly, developments that introduce sensitive receptors (i.e., housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact. Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in.

Policy CC5 Waste

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

- a. aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031.

8.97 To make sure that residents and businesses can properly store and sort their waste and to make household recycling as easy as possible, the Council will require developments to provide adequate facilities for recycling and the storage and disposal of waste.

Policy T1 Prioritising walking, cycling and public transport

The Council will promote sustainable transport by prioritising walking, cycling and public transport in the borough.

In order to promote cycling in the borough and ensure a safe and accessible environment for cyclists, the Council will seek to ensure that development:

- g. provides for and makes contributions towards connected, high quality, convenient and safe cycle routes, in line or exceeding London Cycle Design Standards, including the implementation of the Central London Grid, Quietway's Network, Cycle Superhighways and.
- h. provides for accessible, secure cycle parking facilities exceeding minimum standards outlined within the London Plan (Table 6.3) and design requirements outlined within our supplementary planning document Camden Planning Guidance on transport. Higher levels of provision may also be required in areas well served by cycle route infrastructure, taking into account the size and location of the development.
- i. makes provision for high quality facilities that promote cycle usage including changing rooms, showers, dryers and lockers.

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.

We 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. essential operational or servicing needs.
- c. support the redevelopment of existing car parks for alternative uses.