Hampstead Neighbourhood Plan

Sustainable Buildings

9th of May 2023

First Update

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UK Homes: Fit for the Future?

***Source**: UK Housing: Fit for the Future?*

The Climate Change Committee

We cannot meet our climate objectives without a major improvement in UK housing

- 2050: Government Net Zero Target
- 30m+ homes stock and growing

Our targets for emissions reduction require a significant decarbonization of the housing stock

- 15% of total UK GHGE linked to energy use in homes
- 25% reduction needed by 2030: currently off track
- 40% of total UK GHGE comes from households (energy, transport, waste, aviation)

The housing stock is not well adapted for the current or future climate

- 20% of stock overheats even in cool summers
- 1.8m people live in areas at risk of flooding
- Daily water consumption 140 litre per person (vs <75L)

Current policies are not driving the required changes

- Low-carbon measures have been weakened or withdrawn
- Policy gaps
- Building standards are not ambitious

Camden Borough

Edwardian house, circa 1910	Circa 1975	New housing, post 1995
		
Where is energy used?		
		
Cooking 4 per cent Space heating 63 per cent Water heating 16 per cent Lights and appliances 17 per cent	Cooking 6 per cent Space heating 44 per cent Water heating 25 per cent Lights and appliances 25 per cent	Cooking 8 per cent Space heating 33 per cent Water heating 25 per cent Lights and appliances 34 per cent
Carbon dioxide (CO_2)		
Emits in the region of 8 tonnes of CO_2 per year	Emits in the region of 5 tonnes of CO_2 per year	Emits in the region of 4 tonnes of CO_2 per year

In Camden, **over 25% of borough carbon dioxide (CO2) emissions result from heating and powering homes**.

To achieve our 40% borough wide CO2 reduction target by 2020 and contribute to national action under the Climate Change Act, 2008, **we estimate that over 30,000 of the 58,000 solid wall homes typical of those found in conservation areas require significant energy efficiency improvement** (approximately a 60% CO2 saving on average per home).

*Energy Efficiency Planning Guidance for Conservation Areas

heating

"It is expected that by 2030 emissions associated with **heating and hot water from a gas boiler will account for 85% of a household's emissions**.

Reducing carbon emissions from heating our homes and buildings is the biggest challenge Camden faces in its journey to net zero."

The Case for Sustainable Buildings (1)

Neighbourhood planning at the heart of the National Planning Policy Framework

"The creation of high quality, beautiful and **sustainable buildings** and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates **better places in which to live** and work and helps make development acceptable to communities. Being clear about design expectations, and how these will be tested, is essential for achieving this. So too is effective engagement between applicants, communities, local planning authorities and other interests throughout the process."

"The presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision-making. **Where a planning application conflicts with an up-to-date development plan** (including **any neighbourhood plans** that form part of the development plan), **permission should not usually be granted**."

OUR VISION

"**Neighbourhood planning gives communities the power to develop a shared vision for their area**. Neighbourhood plans can shape, direct and help to deliver sustainable development, by influencing local planning decisions as part of the statutory development plan. Neighbourhood plans should not promote less development than set out in the strategic policies for the area, or undermine those strategic policies."

"**Neighbourhood plans** should **support the delivery of strategic policies contained in local plans** or spatial development strategies; and should shape and direct development that is outside of these strategic policies."

The Case for Sustainable Buildings (2)

Sustainable buildings are future proofed, healthier, cheaper to run, more comfortable places to live

Lower Utility Bills

Sustainable buildings are **energy efficient,** produce **green energy** and use **less water**

Reduced Maintenance

Sustainable buildings have **longer useful lives** and cost less to run and maintain

Improved Comfort

Sustainable buildings deliver pleasantly **warm**, and **draught free** properties

Healthier Internal Environment

Sustainable buildings improve **air quality** and **reduce noise pollution**

Combat Climate Change

Sustainable buildings help **reduce greenhouse gas emissions**: our actions matter!

Increased Resilience

Sustainable buildings are **resilient** to heat stress, flood risk, extreme weather

***Source**: Weathering a Warming Planet: Ecospheric's Guide to Low Energy Design and Sustainability – Ecospheric*

What other NPs say?

Frome, Somerset Case Study Heritage Retrofit

Frome Neighbourhood Plan – Made 2016 Policy

LHN 1 - Provision of well-designed energy efficient buildings and places

The **design and standard** of **<u>any</u> new development** should aim to meet a high level of **sustainable design and construction** and be optimised for energy efficiency, **targeting zero carbon emissions**. This includes:

- **Siting and orientation** to optimise passive solar gain,
- The use of **high quality, thermally efficient building materials**,
- Installation of energy efficiency measures such as **loft and wall insulation** and **double glazing**.
- Non-residential developments should aim to meet the Buildings Research Establishment BREEAM building standard 'excellent'.
- Any new development to incorporate **on-site energy generation** from renewable sources such as solar panels, to at least the extent required by NS core strategy policy CS2**.**
- **The retrofit of heritage properties/assets is encouraged to reduce energy demand and to generate renewable energy where appropriate, providing it safeguards historic characteristics and development is done with engagement and permissions of relevant organisations.**
- **Alterations to existing buildings must be designed with energy reduction in mind and comply with sustainable design and construction standards.**

Frome is a town in eastern **Somerset**, England. The town is built on **uneven high ground** at the eastern end of the **Mendip Hills**, and centres on the River Frome. The population was **28,559** in 2021.

In its 2018 and 2021 report on the "Best places to live in the UK", *The Sunday Times* listed Frome as the best in the South-West. In April 2019, *Time Out* listed Frome among 15 of the best weekend breaks from London.

What other NPs say?

Knightsbridge Case Study Renewable Energy

Knightsbridge Neighbourhood Plan – made 2018

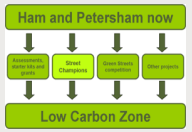
Policy KBR36: **Renewable energy**

- **A**. To **mitigate emissions** that worsen climate change it is essential that buildings in the Knightsbridge Neighbourhood Area **minimise energy use and maximise energy efficiency** and the **production and use of renewable energy** to meet their needs.
- **B. Major development** must minimise energy use and maximise the proportion of energy used from renewable sources, and medium development and substantial refurbishment of existing buildings is also encouraged to do so. **Such development should consume significantly less non-renewable energy than the development it replaces**. Such development should:
    - demonstrate that it has taken all reasonable steps to minimise energy use and maximise energy efficiency;
    - demonstrate that systems have been designed to operate at optimum efficiency e.g. low return water temperatures;
    - facilitate the reduced use of unregulated energy on-site where technically feasible and commercially viable;
    - **maximise the proportion of renewable energy generated on-site consistent with local amenity, the character of any Conservation Area and Policy KBR10 (Roofscapes and balconies);**
    - **facilitate the maximum use of renewable energy from off-site sources for example by the provision of space for battery storage that takes fire risk into account**; and
    - be **future-proofed** where practical.
- …
- **E**. Development seeking to comply with sustainability standards is encouraged to **maximise electricity usage** over other forms of energy generation that can have adverse impacts on air quality

What other NPs say?

Ham & Petersham Case Study
A Low Carbon Zone

Ham & Petersham Neighbourhood Plan 2018 - 2033



In Ham & Petersham **new development** is expected to be carbon neutral or low carbon and to build on the success of the **Low Carbon Zone project**.

Carbon targets for new buildings must comply with those in **policy LP 22** of Richmond Local Plan. In addition, **all new residential development** is **encouraged** to achieve the high sustainability standards of the **Home Quality Mark** or **Passivhaus**.

Retrofitting Existing Housing and Residential Extensions: Planning applications for the installation of measures on residential properties to **improve energy efficiency** (such as solar panels and ground heat pumps) will be supported except where the works would adversely affect the appearance of the building or area.

The Neighbourhood Forum has a strategic target to significantly increase the proportion of buildings **with solar thermal and solar photovoltaic panels within the next ten years** both in existing properties and in new build properties.

All **new houses** should provide **water butts**. In developments of blocks of flats, facilities for communal water storage and reuse shall be provided. The provision of water butts is also encouraged and supported in commercial developments and extensions to residential properties.

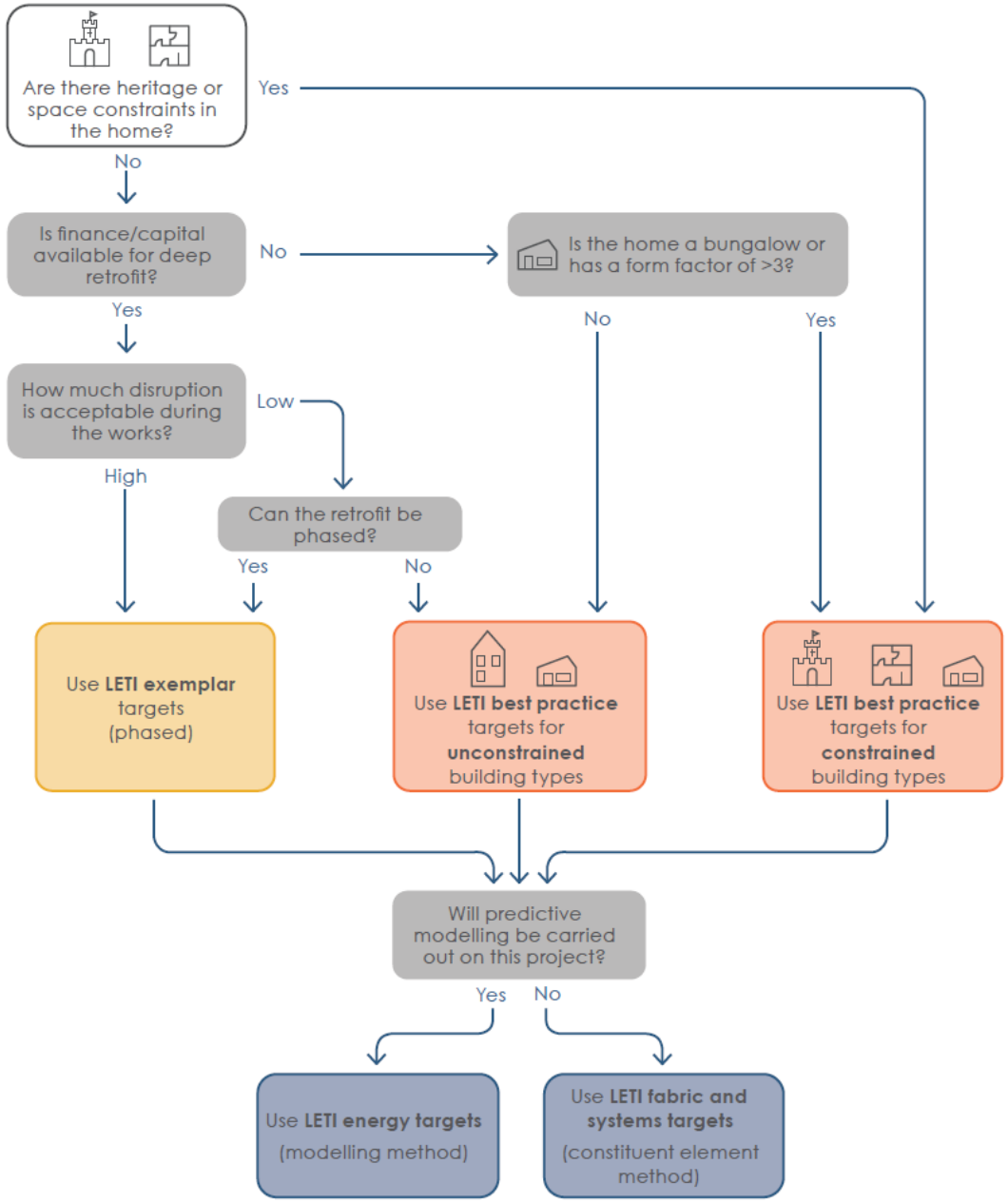
All new buildings will be expected to include a **sustainable drainage system** to dispose of surface water. **All new and replacement hard standings, forecourts, driveways and parking areas will be required to be constructed with permeable (or porous) surfacing**.

Retrofit: No One-Size-Fits-All

The following flowchart highlights LETI decision tree to determine the appropriate retrofit target for a project.

Key decision factors are:

- Heritage or space constrains
- Available financial resources
- Acceptable level of disruption
- Form factor of the building
- Possibility to phase the retrofit
- Predictive modelling vs fabric targets



The benefits of bringing Victorian and Edwardian buildings into the 21st century

Benefits

- **Improve internal comfort** / reduce draughts through insulation and airtightness
  - Cool in summer
  - Warm in winter
- **Improve internal air quality** with ventilation and heat recovery system
- Reduce fuel consumption for heating => **reduce costs**
- **Eliminate gas** and reduce accidents from fire or gas leakage
- Increase **safety and security** of home and **reduce noise** through double and triple glazed windows

Process and solutions

- **Procure a consultant** to build a thermal model: this reveals exactly how much energy is required to heat and run the existing building and what impact each intervention will have on the overall performance
- **Common solutions**: insulation, airtightness, mechanical ventilation and heat recovery (MVHR), double or triple glazed windows, PV (photovoltaic) system, air or ground source heat pump
- **Challenges**: MVHR system can be installed relatively easily; creating internal insulation in a building without cavity walls is an invasive process and generally requires the occupants to vacate the property for a period

Sustainability: Camden Five Pillars

Policy CC1 - Climate Change Mitigation

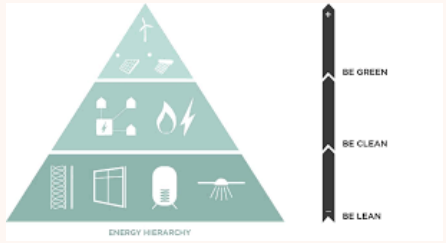
The Council will **require all development** to **minimise the effects of climate change** and **encourage all developments** to meet the highest feasible environmental standards that are financially viable during construction and occupation.
We will:

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;
c) **ensure** that the location of development and mix of land uses **minimise the need to travel by car** and help to support **decentralised energy networks**;
d) support and encourage sensitive energy efficiency improvements to existing buildings;
e) **require all proposals** that involve **substantial demolition** to demonstrate that it is not possible to retain and improve the existing building; and
f) expect **all developments** to optimise resource efficiency.

For **decentralised energy networks**, we will promote decentralised energy by:
g) working with local organisations and developers to implement decentralised energy networks in the parts of Camden most likely to support them;
h) protecting existing decentralised energy networks (e.g. at Gower Street, Bloomsbury, King's Cross, Gospel Oak and Somers Town) and safeguarding potential network routes; and
i) requiring all major developments to assess the feasibility of connecting to an existing decentralised energy network, or where this is not possible establishing a new network.

To ensure that the Council can monitor the effectiveness of renewable and low carbon technologies, major developments will be required to install appropriate monitoring equipment.

Major development: **10 or more** homes or **1,000 sqm** floorspace



Policy CC2 Adapting to climate change

The Council will require development to be resilient to climate change.

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.

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**.

e) **encourage** new build residential development to use the **Home Quality Mark** and **Passivhaus design standards**;
f) **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
g) **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.

Medium development: **5 or more** homes or **500 sqm** floorspace

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. [ ]

Policy CC5 Waste

The Council will seek to make Camden a low waste borough. [ ]

The New London Plan - 2021

Policy SI 1: Improving Air Quality

Development Plans, through relevant strategic, site-specific and area based policies, should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.

To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed: […] **development proposals must be at least Air Quality Neutral**

Major development:
10 or more homes
or **1,000 sqm**
floorspace

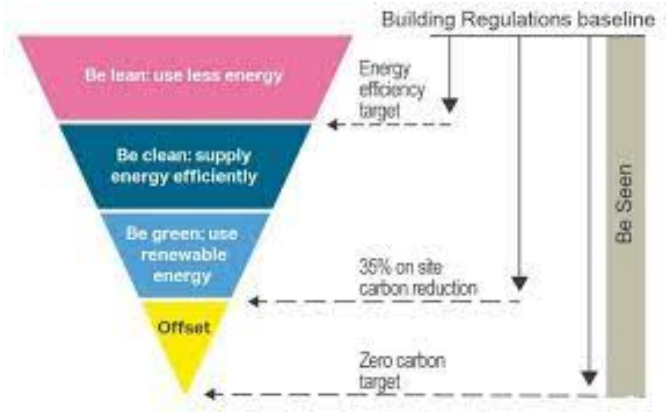
Policy SI 2: Minimising Greenhouse Gas Emissions

Major development should be net zero-carbon. […]

A minimum on-site reduction of **at least 35 per cent** beyond Building Regulations is required for major development. **Residential development** should achieve **10 per cent,** and **non-residential development** should achieve **15 per cent through energy efficiency measures**.

Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, **any shortfall should be provided**, in agreement with the borough, either:

1) through a cash in lieu contribution to the borough's carbon offset fund, or
2) off-site provided that an alternative proposal is identified and delivery is certain.



Policy SI 4: Managing Heat Risk

Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.

Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:

1) reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure
2) minimise internal heat generation through energy efficient design
3) manage the heat within the building through exposed internal thermal mass and high ceilings
4) provide passive ventilation
5) provide mechanical ventilation
6) provide active cooling systems

Policy SI 5: Water Infrastructure

Minimise the use of mains water in line with the optional requirement of the Building Regulations (residential development), achieving mains water consumption of **105 litres or less per head per day** (excluding allowance of up to five litres for external water consumption)

What should a model neighbourhood policy on sustainable development consider?

Address <u>any</u> new developments as well as alterations to existing buildings (Frome)

Support and encourage the development of innovative Low Carbon Homes (e.g. CSE suggested policy)

Extend Sustainability Statements (currently only for medium and major developments)

Encourage retrofit of heritage / historic buildings and assets

Set expectation for a medium domestic conversion & extension to achieve excellent standards (e.g. BREEAM)

Require medium non domestic development to achieve excellent standards (e.g. BREEAM)

Encourage use of recognised standards for new development (e.g. Passivhaus) and retrofit (e.g. LETI)

Extend Air Quality Assessment (currently only for major developments)

Focus on water recovery and other water efficiency measures (Ham & Petersham)

New development to contribute to biodiversity gains (including through bio-diverse roofs & walls)

Medium development: **5 or more** homes or **500 sqm** floorspace

Major development: **10 or more** homes or **1,000 sqm** floorspace