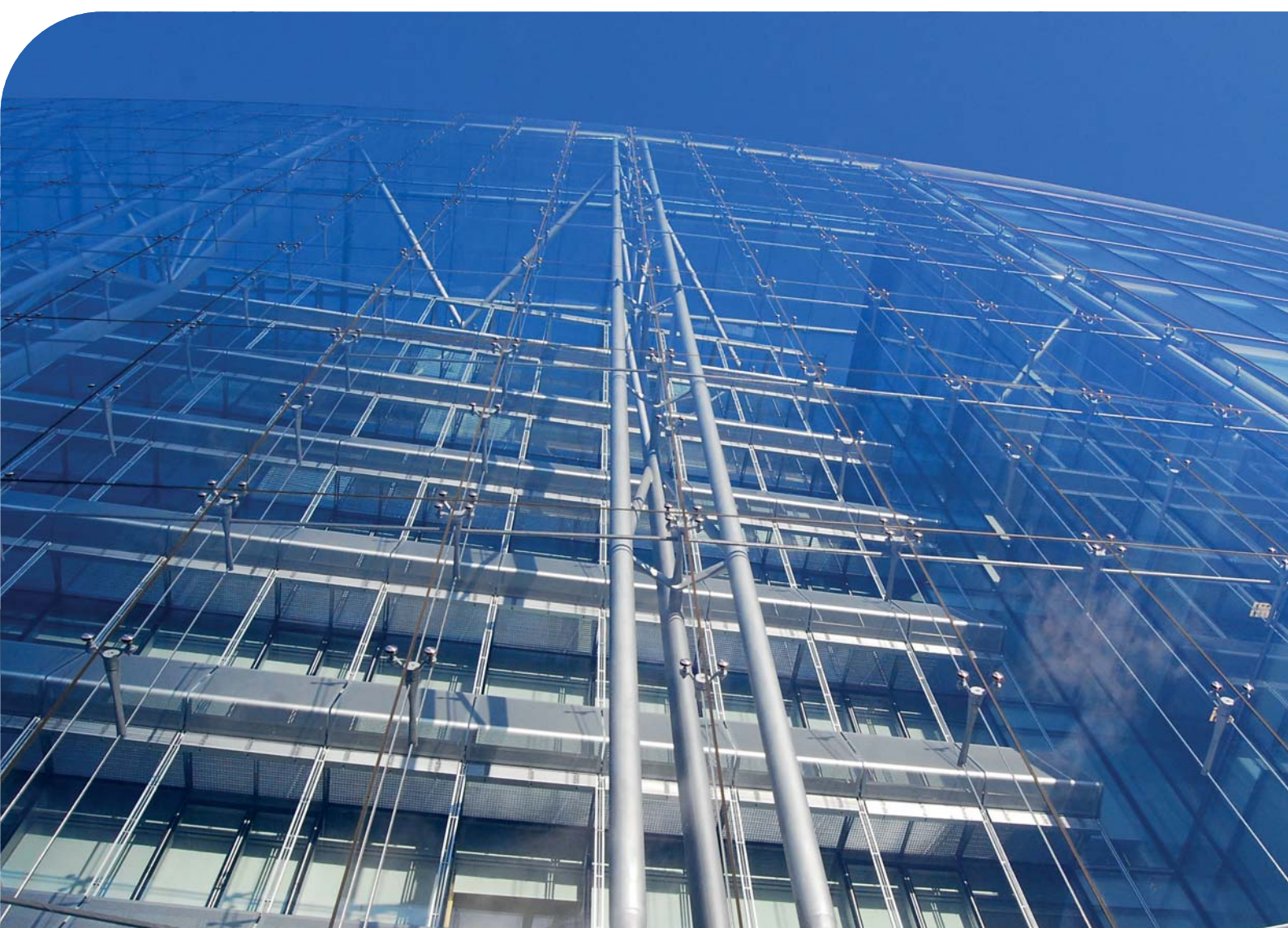


Camden Planning Guidance

# Design

London Borough of Camden

CPG **1**



July 2015



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# 1 Introduction

## What is Camden Planning Guidance?

- 1.1 We have prepared this Camden Planning Guidance to support the policies in our Local Development Framework (LDF). This guidance is therefore consistent with the Core Strategy and the Development Policies, and forms a Supplementary Planning Document (SPD) which is an additional “material consideration” in planning decisions. The Council adopted CPG1 Design on 6 April 2011 following statutory consultation. This document was updated in 2013 to include Section 12 on artworks, statues and memorials, and updated in 2015 to revise the guidance for recycling and waste storage. Details on these updates and the consultation process are available at [camden.gov.uk/cpg](http://camden.gov.uk/cpg).
- 1.2 The Camden Planning Guidance covers a range of topics (such as housing, sustainability, amenity and planning obligations) and so all of the sections should be read in conjunction, and within the context of Camden’s LDF.

## Design in Camden

- 1.3 Camden has many attractive and historic neighbourhoods as well as both traditional and modern buildings of the highest quality. These are a significant reason that the borough is such a popular place to live, work and visit. As well as conserving our rich heritage we should also contribute towards it by ensuring that we create equally high quality buildings and spaces which will be appreciated by future generations.
- 1.4 This objective of achieving high quality design does not just concern new development or large-scale schemes, but also includes the replacement, extension or conversion of existing buildings. The detailed guidance contained within this section therefore considers a range of design-related issues for both residential and commercial property and the spaces around them.



## What does this guidance cover?

- 1.5 This guidance provides information on all types of detailed design issues within the borough and includes the following sections:

1. Introduction
2. Design excellence
3. Heritage
4. Extensions, alterations and conservatories
5. Roofs, terraces and balconies
6. Landscape design and trees
7. Shopfronts
8. Advertisements, signs and hoardings
9. Designing safer environments
10. Waste recyclables storage
11. Building services equipment
12. Artworks, statues and memorials

- 1.6 This guidance supports the following Local Development Framework policies:

### Core Strategy

- CS14 Promoting high quality places and conserving our heritage
- CS15 Protecting and improving our parks and open spaces & encouraging biodiversity
- CS17 Making Camden a safer place
- CS18 Dealing with our waste and encouraging recycling

### Development Policies

- DP24 Securing high quality design
- DP25 Conserving Camden's heritage
- DP27 Basements and lightwells
- DP29 Improving access
- DP30 Shopfronts

- 1.7 It should be noted that the guidance covered in this section only forms part of the range of considerations that you should address when proposing new development. In addition to these specific design matters you should also consider wider issues such as cycle storage, residential space standards, wheelchair housing, designing in sustainability measures and impacts on neighbours. Further guidance on these, and other issues, is contained within the Local Development Framework documents and the Camden Planning Guidance.





## 2 Design excellence

### KEY MESSAGES

Camden is committed to excellence in design and schemes should consider:

- The context of a development and its surrounding area;
- The design of the building itself;
- The use of the building;
- The materials used; and
- Public spaces.

- 2.1 High quality design makes a significant contribution to the success of a development and the community in which it is located. Design of the built environment affects many things about the way we use spaces and interact with each other, comfort and enjoyment, safety and security and our sense of inclusion.
- 2.2 The purpose of this guidance is to promote design excellence and to outline the ways in which you can achieve high quality design within your development.
- 2.3 This guidance primarily relates to Core Strategy Policy CS14 Promoting high quality places and conserving our heritage and Development Policies DP24 Securing high quality design.



### When does this apply?

- 2.4 This guidance applies equally to all development, whether new build, converted, refurbished, extended and altered development. However, the implications for a proposal will vary greatly depending on the nature of the site, the proposed use, the scale of development, its interaction with surrounding sites, and existing buildings and structures on the site.

- 2.5 Other sections in this Camden Planning Guidance (CPG) relate to specific types of developments and relevant design matters, for example advertisements, signs and hoardings, designing safer environments, extensions, alterations and conversions, heritage and shopfronts.

### **General guidance on design**

- 2.6 Camden is committed to excellence in design. The borough contains many special and unique places, many of which are protected by conservation area status. In accordance with draft London Plan policies 7.1–7.7, Core Strategy policy CS14 requires development schemes to improve the quality of buildings, landscaping and public spaces and we will not approve design which is inappropriate to its context or fails to improve the character of an area.
- 2.7 We are working with our partners to promote design excellence and improve public buildings, landscaping and the street environment. We have established the Camden Design Initiative which seeks to encourage involvement, awareness and understanding of good design and this is promoted through the bi-annual Camden Design Awards which acknowledge high quality and innovative design. We are also a promoter of the national Civic Trust Awards which are awarded to buildings judged to have made a positive cultural, social or economic contribution to the local community.
- 2.8 In order to achieve high quality design in the borough we require applicants to consider buildings in terms of context, height, accessibility, orientation, siting, detailing and materials. These issues apply to all aspects of the development, including buildings and other structures (e.g. substations, refuse or cycle storage), outdoor spaces, landscaping and access points and should be considered at an early stage in the design of a development, as these elements are often difficult to change in later stages.



## **Context**

### 2.9 Good design should:

- positively enhance the character, history, archaeology and nature of existing buildings on the site and other buildings immediately adjacent and in the surrounding area, and any strategic or local views. This is particularly important in conservation areas;
- respect, and be sensitive to, natural and physical features, both on and off the site. Features to be considered include, but are not limited to: slope and topography, vegetation, biodiversity, habitats, waterways and drainage, wind, sunlight and shade, and local pollutant sources. Movement of earth to, from and around the site should be minimised to prevent flood risk, land instability and unnecessary transport of aggregates, especially by road; and
- consider connectivity to, from, around and through the site for people using all modes of transport, including pedestrians, cyclists, wheelchair users, those with visual impairments, people with pushchairs, and motorised vehicles.

## **Building design**

### 2.10 Good design should:

- ensure buildings do not significantly overshadow existing/proposed outdoor spaces (especially designated open spaces), amenity areas or existing or approved renewable energy facilities (such as solar panels). For further information, refer to CPG3 Sustainability Renewable energy (A shadowing exercise may be required for tall buildings or where they are near open spaces);
- consider the extent to which developments may overlook the windows or private garden area of another dwelling;
- consider views, both local and London wide, and particularly where the site is within a recognised strategic viewing corridor (as shown on the policy Proposals Map);
- consider the degree of openness of an area and of open spaces, including gardens including views in and out of these spaces
- contributions to the character of certain parts of the borough;
- provide visual interest for onlookers, from all aspects and distances. This will involve attention to be given to both form and detail;
- consider opportunities for overlooking of the street and, where appropriate, provide windows, doors and other 'active' features at ground floor; and
- incorporate external facilities such as renewable energy installations, access ramps, plant and machinery, waste storage facilities and shading devices into the design of the development. Careful consideration must be given to ensure that the facility does not harm the built environment.

## **Land use**

- 2.11 The use of a building should:
- take into account the proposed use, and the needs of the expected occupants of the buildings and other users of the site and development; and
  - provide clear indication of the use of the building. It is noted, however, that reuse of existing buildings, as well as the accommodation of possible future changes of use, can make this difficult.

## **Materials**

- 2.12 Materials should form an integral part of the design process and should relate to the character and appearance of the area, particularly in conservation areas or within the setting of listed buildings. The durability of materials and understanding of how they will weather should be taken into consideration. The quality of a well designed building can be easily reduced by the use of poor quality or an unsympathetic palette of materials. We will encourage re-used and recycled materials, however these should be laid to ensure a suitable level accessible surface is provided. Further guidance is contained within CPG3 Sustainability (Sustainable use of materials).

## **Tall buildings**

- 2.13 Tall buildings in Camden (i.e. those which are substantially taller than their neighbours and/or which significantly change the skyline) will be assessed against a range of design issues, including:
- how the building relates to its surroundings, both in terms of how the base of the building fits in with the streetscape, and how the top of a tall building affects the skyline;
  - the contribution a building makes to pedestrian permeability and improved public accessibility;
  - the relationship between the building and hills and views;
  - the degree to which the building overshadows public spaces, especially open spaces and watercourses; and
  - the historic context of the building's surroundings.
- 2.14 In addition to these design considerations tall buildings will be assessed against a range of other relevant policies concerning amenity, mixed use and sustainability. Reference should be made to this CPG (Heritage chapter), CPG3 Sustainability (Climate change adaptation chapter) and CPG6 Protecting and improving quality of life (Overlooking and privacy and Wind/microclimate chapters).
- 2.15 Where a proposal includes a development that creates a landmark or visual statement, particular care must be taken to ensure that the location is appropriate (such as a particular destination within a townscape, or a particular functional node) and that the development is sensitive to its wider context. This will be especially important where the

development is likely to impact upon heritage assets and their settings (including protected views).

- 2.16 Design should consider safety and access. Guidance on these issues is contained within this CPG (Designing safer environments chapter) and CPG4 Protecting and improving quality of life (Access for all chapter). Schemes over 90m should be referred to the Civil Aviation Authority.

### **Design of public space**

- 2.17 The design of public spaces, and the materials used, is very important. The size, layout and materials used in the spaces around buildings will influence how people use them, and help to create spaces that are welcoming, attractive, accessible, safe and useful. They can also contribute to other objectives such as reducing the impact of climate change (e.g. the use of trees and planters to reduce run-off and provide shading), biodiversity, local food production and Sustainable Urban Drainage Systems (SUDs), and provide useful amenity space. In Conservation Areas there may be particular traditional approaches to landscaping/boundary treatments that should be respected in new designs.
- 2.18 The spaces around new developments should be considered at the same time as the developments themselves and hard / soft landscaping and boundary treatments should be considered as part of wider cohesive design. The landscaping and trees chapter in this CPG, and individual Conservation Area Appraisals, provide further guidance on this issue.
- 2.19 Public art can be a catalyst for improved environmental quality by upgrading and animating public space and enhancing local character and identity through helping create a sense of place. The Council will therefore encourage the provision of art and decorative features as an integral part of public spaces, where they are appropriate to their location and enhance the character and environment.
- 2.20 It is important that public spaces and streets are maintained to a high standard and so, in line with the Local Implementation Plan, the Council will continue to undertake public space enhancement works through specifically targeted programmes. The Designing safer environments chapter in this CPG provides more detailed guidance on the incorporation of safety and security considerations in public spaces.

### **Design and access statements**

- 2.21 Design and Access Statements are documents that explain the design ideas and rationale behind a scheme. They should show that you have thought carefully about how everyone, including disabled people, older people and children, will be able to use the places you want to build.
- 2.22 Design and Access Statements should include a written description and justification of the planning application and sometimes photos, maps and drawings may be useful to further illustrate the points made. The length

and detail of a Design and Access Statement should be related to the related to the size and complexity of the scheme. A statement for a major development is likely to be much longer than one for a small scheme.

- 2.23
- Design and Access Statements are required to accompany all planning, conservation and listed building applications, except in certain circumstances as set out on our website [www.camden.gov.uk/planning](http://www.camden.gov.uk/planning). Our website also provides a template for Design and Access Statements and lists the information that each statement should contain. Further guidance on Access Statements is provided in CPG4 Protecting and improving quality of life (Access for all chapter).

**Further information**

General	By Design: Urban Design in the Planning System – Towards Better Practice, DETR/CABE, 2000 Design and Access Statements; how to read, write and use them, CABE, 2007
Tall Buildings	Guidance on tall buildings, English Heritage/CABE, 2007
Historic Environment	Understanding Place: conservation areas designation, appraisal and management (2011) Building in Context, English Heritage/CABE, 2002. Seeing History in the View (2011) Good Practice Advice 3- Settings and Views (2015)
Other	Royal Institute of Chartered Surveyors (RICS); and Royal Institute of British Architects (RIBA).



## 4 Extensions, alterations and conservatories

### KEY MESSAGES

- Alterations should always take into account the character and design of the property and its surroundings.
- Windows, doors and materials should complement the existing building.
- Rear extensions should be secondary to the building being extended.
- You can make certain types of minor alterations without planning permission (see below) external alterations.

4.1 This guidance provides advice to those seeking to alter or extend a residential property, including the erection of conservatories. The principles of this guidance also apply to extensions and alterations to other types of property. It expects high quality design that respects and enhances the character and appearance of a property and its surroundings, and also covers matters such as outlook, privacy and overlooking.

4.2 This guidance relates to Core Strategy Policy CS14 Promoting high quality places and conserving our heritage and Development Policies DP24 Securing high quality design.

### When does this apply?

4.3 This guidance applies to all proposals for alterations and extensions to residential properties, although some aspects will be relevant to alterations and extensions to other types of buildings.

4.4 You can make certain types of minor changes to your property without needing to apply for planning permission. These are called "permitted development rights", and further details can be found on the planning portal website [www.planningportal.gov.uk](http://www.planningportal.gov.uk) or by contacting the Council. In some conservation areas, Article 4 directions have been introduced which have removed certain permitted development rights. Details of Article 4 Directions, including where they apply in Camden can be found in the Conservation and Urban Design section of our website [www.camden.gov.uk](http://www.camden.gov.uk).

4.5 In addition to this guidance, you should also make reference to chapters on Heritage, Design excellence and Roofs, Terraces and balconies, in this CPG. If your property is situated within a conservation area then you should also refer to the relevant Conservation Area Statement, Appraisal or Management Plan, which sets out detailed guidelines for development in a particular area. Many of these are available on our website.

## Guidance for all extensions and alterations

### External alterations

- 4.6 The good practice principles set out below and the general design considerations for residential façades shown in Figure 1 – ‘Alterations to Residential Façades’ should be followed when undertaking external alterations. A façade is the front or face of a building.

### Good practice principles for external alterations

- 4.7 Alterations should always take into account the character and design of the property and its surroundings. A harmonious contrast with the existing property and surroundings may be appropriate for some new work to distinguish it from the existing building; in other cases closely matching materials and design details are more appropriate so as to ensure the new work blends with the old.

### Windows

- Where it is necessary to alter or replace windows that are original or in the style of the originals, they should be replaced like with like wherever possible in order to preserve the character of the property and the surrounding area. New windows should match the originals as closely as possible in terms of type, glazing patterns and proportions (including the shape, size and placement of glazing bars), opening method, materials and finishes, detailing and the overall size of the window opening.
- Where timber is the traditional window material, replacements should also be in timber frames. uPVC windows are not acceptable both aesthetically and for environmental reasons, including their relatively short lifespan and inability to biodegrade. Similarly, where steel is the traditional window material, steel replacements will be sought wherever possible, see also CPG3 Sustainability (Sustainable use of materials chapter), which gives guidance on the use of sustainable materials).
- Reference should be made to the Building Research Establishment's (BRE) Green Guide to Specification when sourcing replacement window frames.
- Where the original glazing bars are highly detailed and intricate, or contain stained glass or leaded panes these should be retained and repaired. See also the Camden leaflet *A Guide to Windows (2006)*, which is available on our website, for advice on secondary glazing and other ways to improve energy efficiency while retaining attractive original features.
- Where windows are replaced they should have the lowest 'U-value' feasible.
- Listed building consent will be required for replacement windows, secondary glazing and double-glazing in listed buildings.
- In conservation areas original single-glazed windows often contribute to the character and appearance of the area, and should be retained



and upgraded. There may however be some instances where double-glazing can be installed in a design that matches the original, for instance sash windows or casements with large individual pane sizes, or in secondary glazing. In such cases, the window frame and glazing bars of the replacement windows should match the existing.

- Further guidance on window alterations and the effect that this can have on energy efficiency and protecting heritage assets can be found on English Heritage's 'Climate Change and your Home' website: [www.climatechangeandyourhome.org.uk](http://www.climatechangeandyourhome.org.uk)

### Doors

- Where you are looking to replace doors their design should match the dimensions, proportions, joinery details, panelling and glazing of the original. Where timber replacement doors are proposed the timber should be sustainably sourced.
- Characteristic doorway features, such as porches, such be retained where they make a positive contribution to the character of groups of buildings.

### Materials

- Wherever possible you should use materials that complement the colour and texture of the materials in the existing building, see also CPG3 Sustainability (Sustainable use of materials chapter). In historic areas traditional materials such as brick, stone, timber and render will usually be the most appropriate complement to the existing historic fabric; modern materials such as steel and glass may be appropriate but should be used sensitively and not dominate the existing property.
- Materials for alterations should weather well, so their ageing process contributes positively to the character of the building, and the site's wider context.
- Original surface finishes should be retained or replicated wherever possible, as they are usually central to the architectural design / character treatment of a building. These may cover the entire building or façade (such as stucco facing), the roof elements (such as roof tiles and roof ridges), highlight specific features (such as windows or doors) or act as decorative elements (such as ironwork or terracotta panels).
- When repairing existing wall finishes, the composition of the original material (such as plaster, stucco or render) should be determined, the defective area cut out and a replacement material of identical chemical composition applied and properly bonded. Concrete repairs are generally non-original and unsympathetic to historic buildings, and can damage bricks, and should be replaced with a more traditional lime-based finish.
- The insulating quality of materials should be considered, along with their embodied energy (the energy used in manufacture) and the potential for re-use and recycling.

- Alterations or repairs to brickwork or stonework should match the original in all respects while satisfying the needs of durability and maintenance. This should include matching the original bond, mortar colour and texture. Retention of any existing pointing is encouraged wherever possible.
- Samples of brick type and mortar colour will normally be required to be submitted to the Council as part of any application.
- Painting, rendering or cladding of brickwork will normally be resisted, as it is often unsightly and can damage the appearance of a building by obscuring the texture and original colour of the façade. Painting, rendering or cladding may also trap moisture, which can cause major damp problems in the masonry.

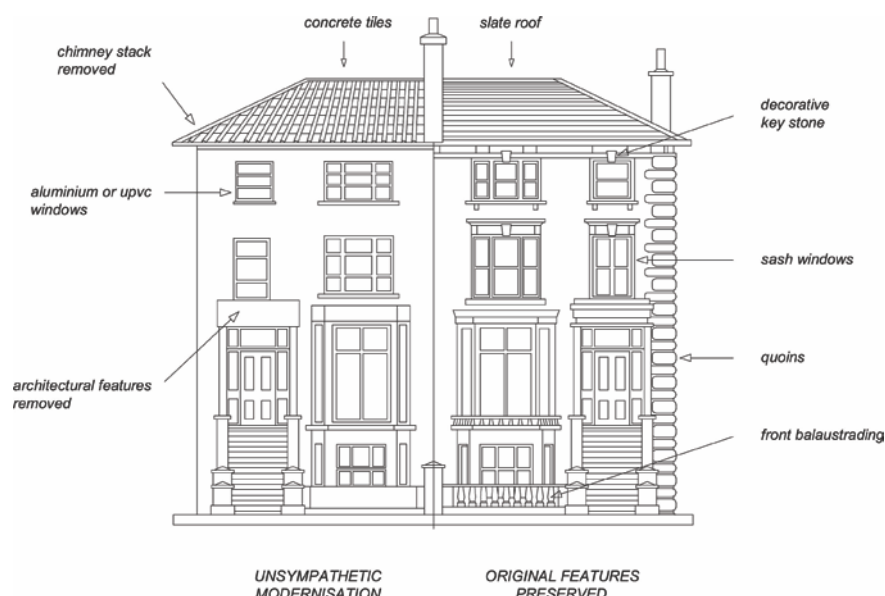
### External pipework

- Original external pipework and guttering should be repaired or reinstated in a like-for-like manner, where possible. In the case of historic buildings, cast iron replicas of original pipework are preferable to uPVC pipes. New pipework should be restricted to the side and rear elevations of buildings to avoid spoiling the appearance of the principal façade and should be grouped together and located in a discrete position.

### Scale

- 4.8 Extensions should be subordinate to the original building in terms of scale and situation unless the specific circumstances of the site, such as the context of the property or its particular design, would enable an exception to this approach. More detailed guidance on design considerations is contained within CPG1 Design (Design excellence chapter).

**Figure 2. Alterations to residential facades**



## **Rear extensions**

- 4.9 A rear extension is often the most appropriate way to extend a house or property. However, rear extensions that are insensitively or inappropriately designed can spoil the appearance of a property or group of properties and harm the amenity of neighbouring properties, for example in terms of outlook and access to daylight and sunlight.

### **General principles**

- 4.10 Rear extensions should be designed to:
- be secondary to the building being extended, in terms of location, form, scale, proportions, dimensions and detailing;
  - respect and preserve the original design and proportions of the building, including its architectural period and style;
  - respect and preserve existing architectural features, such as projecting bays, decorative balconies or chimney stacks;
  - respect and preserve the historic pattern and established townscape of the surrounding area, including the ratio of built to unbuilt space;
  - not cause a loss of amenity to adjacent properties with regard to sunlight, daylight, outlook, overshadowing, light pollution/spillage, privacy/overlooking, and sense of enclosure;
  - allow for the retention of a reasonable sized garden; and
  - retain the open character of existing natural landscaping and garden amenity, including that of neighbouring properties, proportionate to that of the surrounding area.
- 4.11 Materials should be chosen that are sympathetic to the existing building wherever possible (see also CPG3 Sustainability on Sustainable use of materials).

### **Height of rear extensions**

- 4.12 In order for new extensions to be subordinate to the original building, their heights should respect the existing pattern of rear extensions, where they exist. Ground floor extensions are generally considered preferable to those at higher levels. The maximum acceptable height of an extension should be determined in relation to the points outlined in paragraph 4.10 above. In cases where a higher extension is appropriate, a smaller footprint will generally be preferable to compensate for any increase in visual mass and bulk, overshadowing and overlooking that would be caused by the additional height.
- 4.13 In most cases, extensions that are higher than one full storey below roof eaves/parapet level, or that rise above the general height of neighbouring projections and nearby extensions, will be strongly discouraged.

**Width of rear extensions**

- 4.14 The width of rear extensions should be designed so that they are not visible from the street and should respect the rhythm of existing rear extensions.
- 4.15 In addition, the rear of some buildings may be architecturally distinguished, either forming a harmonious composition, or visually contributing to the townscape. The Council will seek to preserve these where appropriate. Some of the Borough's important rear elevations are identified in conservation area statements, appraisals and management plans.

**Side extensions**

- 4.16 Certain building forms may lend themselves to side extensions. Such extensions should be designed in accordance with the general considerations set out above in paragraph 4.10. Side extensions should also:
- be no taller than the porch; and
  - set back from the main building.
- 4.17 In many streets in the north of the Borough houses have mature rear gardens that can often be seen through gaps between buildings, softening the urban scene and providing visual interest. The infilling of gaps will not be considered acceptable where:
- significant views or gaps are compromised or blocked;
  - the established front building line is compromised;
  - the architectural symmetry or integrity of a composition is impaired;
  - the original architectural features on a side wall are obscured; or
  - access to the rear of a property is lost.
- 4.18 Where a property is located in a conservation area, reference should be made to the relevant conservation area statements, appraisals and management plans, which often identify important gaps and vistas where infilling would be inappropriate.

**Figure 3. Side extensions**

## Conservatories

4.19 Conservatories should normally:

- be located adjacent to the side and rear elevations of the building;
- be subordinate to the building being extended in terms of height, mass, bulk, plan form and detailing;
- respect and preserve existing architectural features, e.g. brick arches, windows etc;
- be located at ground or basement level. Only in exceptional circumstances will conservatories be allowed on upper levels;
- not extend the full width of a building. If a conservatory fills a gap beside a solid extension, it must be set back from the building line of the solid extension; and
- be of a high quality in both materials and design.

4.20 Conservatories should not overlook or cause light pollution to neighbouring properties, including to those in flats above. In order to minimise overlooking, opaque lightweight materials such as obscured glass may be necessary on façades abutting neighbouring properties. Also, in order to minimise light pollution, solid lightweight materials, one-way glass or obscured glass may be required.

- 4.21 Further guidance is contained within CPG4 Protecting and improving quality of life (Light Pollution chapter).

#### **Development in rear gardens and other open land**

- 4.22 The construction of garden buildings, including sheds, stand-alone green houses and other structures in rear gardens and other undeveloped areas, can often have a significant impact upon the amenity, biodiversity and character of an area. They may detract from the generally soft and green nature of gardens and other open space, contributing to the loss of amenity for existing and future residents of the property.
- 4.23 Large garden buildings may also affect the amenity value of neighbours' gardens, and if used for purposes other than storage or gardening, may intensify the use of garden spaces.
- 4.24 Development in rear gardens should:
- ensure the siting, location, scale and design of the proposed development has a minimal visual impact on, and is visually subordinate to, the host garden
  - not detract from the open character and garden amenity of the neighbouring gardens and the wider surrounding area
  - use suitable soft landscaping to reduce the impact of the proposed development
  - ensure building heights will retain visibility over garden walls and fences
  - use materials which complement the host property and the overall character of the surrounding area. The construction method should minimise any impact on trees (also see Landscape design and trees chapter in this CPG), or adjacent structures
  - address any impacts of extensions and alterations upon water run-off and groundwater flows, both independently or cumulatively with other extensions, and demonstrate that the impact of the new development on water run-off and groundwater flows will be negated by the measures proposed. Reference should be made to CPG3 Sustainability (Flooding chapter).
- 4.25 Pockets of privately owned land make important contributions to the character of certain parts of the borough, both in established neighbourhoods and areas of new development, creating village greens, informal verges, set backs for established structures or settings for listed buildings. Building on such areas will generally be discouraged.
- 4.26 Where any type of development, either in a rear garden or on private land that forms part of a public space, may be appropriate in principle, a full assessment should be made prior to the commencement of the development to avoid any potential impact upon trees or other vegetation in the surrounding area. This assessment may be required as part of an application for planning permission.

**Further information**

- 4.27 The following professional bodies provide further guidance and advice on buildings and design matters:
- Royal Institute of Chartered Surveyors (RICS); and
  - Royal Institute of British Architects (RIBA).





Camden Planning Guidance

# Amenity

London Borough of Camden

CPG 6





## CPG6 Amenity

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# 1 Introduction

## What is Camden Planning Guidance?

- 1.1 We have prepared this guidance to support the policies in our Local Development Framework (LDF). It is therefore consistent with the Camden Core Strategy and Development Policies, and is a formal Supplementary Planning Document (SPD) which is an additional “material consideration” in planning decisions. This guidance will replace Camden Planning Guidance 2006, updating advice where appropriate and providing new guidance on matters introduced or strengthened in the LDF.
- 1.2 Camden Planning Guidance covers a range of topics (such as design, housing, sustainability and planning obligations) and all of sections should be read in conjunction with, and within the context of, Camden’s other LDF documents.

## Amenity in Camden

- 1.3 A key objective of the Camden Core Strategy is to sustainably manage growth so that it avoids harmful effects on the amenity of existing and future occupiers and to nearby properties.

## What does this guidance cover?

- 1.4 This guidance provides information on all types of amenity issues within the borough and includes the following sections:
  1. Air quality
  2. Contaminated land
  3. Noise and vibration
  4. Artificial light
  5. Daylight and sunlight
  6. Overlooking, privacy and outlook
  7. Construction management plans
  8. Access for all
  9. Wind and micro-climate
  10. Open space, outdoor sport and recreation facilities
- 1.5 This guidance supports the following Local Development Framework policies:

## Camden Core Strategy

- CS5 - Managing the impact of growth and development
- CS15 - Protecting and improving our parks and open spaces & encouraging biodiversity
- CS16 - Improving Camden’s health and well-being



### **Camden Development Policies**

- DP26 - Managing the impact of development on occupiers and neighbours
- DP28 - Noise and vibration
- DP31 - Provision of, and improvements to, public open space and outdoor sport and recreation facilities
- DP32 - Air quality and Camden's Clear Zones

## 2 Air quality

### KEY MESSAGES:

- All of Camden is a designated Air Quality Management Area due to the high concentrations of nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>).
- All developments are to limit their impact on local air quality.

2.1 Poor air quality can harm health and the environment. The Council aims to make sure that new development does not harm air quality. This guidance provides advice on how to address air quality issues in planning applications.

2.2 Camden Core Strategy policy CS16 - *Improving Camden's health and well-being* and policy DP32 – *Air quality and Camden's Clear Zone* of the Camden Development Policies sets out our approach to air quality in the borough.

2.3 *Planning Policy Statement PPS23: Planning and Pollution Control* contains the Government's core policies and principles on air quality and air pollution. The London Plan outlines regional policies related to protecting local air quality during the planning process.



### Air quality in Camden

2.4 An Air Quality Management Area (AQMA) must be declared by the local authority for an area that is unlikely to meet the national air quality targets for specific air pollutants. The authority then produces a Local Air Quality Action Plan. See Camden's website for our air quality plan.

2.5 The whole of Camden is an Air Quality Management Area (AQMA) as it does not meet national air quality targets for nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>). The main sources of air pollution in Camden are road transport and gas boilers. The Council's Air Quality Action Plan outlines measures to reduce emissions from the key sources of air pollution in the borough. Included in the plan are measures to minimise and control NO<sub>x</sub> and PM<sub>10</sub> emissions associated with new developments both during the construction of a building and its future use.

2.6 Air quality is particularly poor in the south of borough which is characterised by high levels of traffic. We will only grant planning permission for development that significantly increases travel demand in

the south of the borough where it includes appropriate measures to minimise the transport impact of development.

- 2.7 Where appropriate we will seek developments to include monitoring equipment to allow us to better understand local air quality.

#### **WHAT DOES THE COUNCIL REQUIRE?**

The Council's overarching aim is for new development is to be 'air quality neutral' and not lead to further deterioration of existing poor air quality.

You will be required to include mitigation and offsetting measures to deal with any negative air quality impacts associated with your development proposals. At the same time your development should be designed to minimise exposure of occupants to existing poor air quality.

To manage and prevent further deterioration of air quality in Camden, we will require an air quality assessment with planning applications for development that could have a significant negative impact in air quality. This impact can arise during both the construction and operational stages of a development as a result of increased NO<sub>x</sub> and PM<sub>10</sub> emissions.

- 2.8 An air quality assessment will also be required for a proposal if it introduces uses that are susceptible to poor air quality, such as housing or a school, into areas of particularly poor air quality.
- 2.9 The Council will not grant planning permission for developments that could significantly harm air quality or introduce people into areas of elevated pollution concentrations, unless mitigation measures are adopted to reduce the impact to acceptable levels and protect public exposure (see paragraph 32.4 of policy DP32 of the Camden Development Policies).
- 2.10 Although all of Camden is covered by an AQMA we will only require an air quality assessments where development could potentially cause significant harm to air quality as set out in the table below.



**An Air Quality Assessment is required in developments:**

- with potential to significantly change road traffic on any road exceeding 10,000 vehicles per day. Significant changes include:
  - increase in traffic volumes > 5% (Annual Average Daily Traffic (AADT) – or peak);
  - lower average vehicle speed or significant increase in congestion;
  - significant increase in the percentage of HGVs;
- that introduce, or increase car parking facilities by, 100 spaces or more;
- with commercial floorspace of more than 1,000sq m;
- with more than 75 homes;
- where people will be exposed to poor air quality for significant periods of the day, in particular developments located on busy roads;
- involving the following - biomass boilers, biomass or gas combined heat and power (CHP);
- involving industrial or commercial floorspace regulation under the Environmental Permitting (England and Wales) Regulations (EPR) which will be subject to Environmental Assessment under the Town and Country Planning (Environmental Impact Assessment) Regulations 1999.

**What should an air quality assessment cover?**

2.11 Air quality assessments for developments potentially contributing to poor air quality are to include the following:

- a) An inventory of the PM<sub>10</sub> and NO<sub>x</sub> emissions associated with the proposed development, including the type and quantity of emission concentrations, during the construction and operational phase. This shall cover transport, stationary and mobile emission sources.
- b) The application of atmospheric dispersion modelling to predicted existing and future NO<sub>2</sub> and PM<sub>10</sub> concentrations, both with and without the proposed development. Dispersion modelling shall be carried out in accordance with Air Quality and Planning Guidance, London Councils (2007) and Technical Guidance Note (TG09). (Specific guidance for modelling combustion plant emissions can be obtained from the Council's Sustainability Team – see Useful Contacts at the end of this section).
- c) An assessment of the significance of air quality impacts during both the construction and operational phases. Reference shall be made to the Environmental Protection UK Guidance Note: Development Control: Planning for Air Quality (2010 Update).
- d) Consideration of the potential cumulative impacts on air quality which may arise during the construction or operational phases as a result of emissions arising from other developments within a 100m radius of the development.
- e) Where a biomass boiler or combined heat and power (CHP)/combined cooling, heating and power (CCHP) will be used for

on site energy generation, you are to complete the Council's Air Quality Information Request Form. This requires specific technical details related to the appliance, fuel type, emission concentrations, maintenance and exhaust stack. The forms can be obtained from Camden's Air Quality Officer or the Council's air quality webpage under Environment.

- f) Applications which include biomass boilers or biomass CHP, the air quality assessment shall compare the impact of emissions from the intended biomass boiler/CHP and a gas boiler/CHP of identical thermal rating.
- g) An indication of the number of new occupiers and users of the site who will be exposed to poor air quality as a result of the development (the occupiers/users should also be shown on a map). For further information please refer to the Environmental Protection UK Guidance Note: Development Control: Planning For Air Quality (2010 Update).
- h) An assessment of the impacts on air quality of the demolition and construction phase and details of mitigation methods for controlling dust and emissions from plant and machinery. Reference should be made to the Best Practice Guidance: The control of dust and emissions at construction and demolition, London Councils (2006).
- i) An outline of, and justification for, mitigation measures associated with the design, location and operation of the development in order to reduce air pollution and exposure to poor air quality.

### **Developments containing sensitive uses**

- 2.12 Developments which will not result in additional NO<sub>x</sub> and/or PM<sub>10</sub> emissions and present no risk in worsening air quality, but introduce new sensitive uses to an area which breaches the air quality standards for NO<sub>2</sub> or PM<sub>10</sub> need to submit an assessment of the local air quality but can omit requirements B, D and E above.

### **What measures can reduce air pollution emissions and protect public exposure?**

- 2.13 Various actions can be taken to mitigate air pollution emissions arising from the construction and operational phases of a new development. Additional actions can be adopted to curtail public exposure in areas where air pollution levels are particularly high. These should be taken into account during the design stage of an application. The key measures are detailed below:

#### **Demolition and construction**

- 2.14 The impact of the construction and demolition phases of a development on air quality must be taken into account as part of your planning application. Exhaust



emissions from construction vehicles and machinery such as generators, piling and grinding equipment can result in:

- dust emissions;
- gases (NO<sub>x</sub>); and
- fine particles.

2.15 Controlling dust emissions is important to:

- prevent disturbance to local residents due to soiling;
- minimise damage to vegetation; and
- reduce impacts on local PM<sub>10</sub> concentrations, thereby protecting public health.

2.16 We may require PM<sub>10</sub> monitoring, before and during the construction and demolition phase, dependant upon the scale of the proposed development.

2.17 We will encourage best practice measures to be adopted during construction and demolition work to reduce and mitigate air pollution emissions. You will be encouraged to adopt the procedures outlined in the London Council's best practice guidance *The control of dust and emissions from construction and demolition*. These focus around three principles to control emissions – prevention, suppression and containment. We will expect you to include the following items in construction management plans:

- Identification of whether demolition/construction represents a low, medium or high risk site in the context of air quality.
- Identification of the best practice measure required to control and mitigate plant and vehicles exhaust emissions.  
(See section 8 of this Guidance on Construction management plans for further details).

#### **Distance of impacts**

Depending of the size, location and characteristics of your development, impacts from demolition and construction phases can occur at distance of 10 to 500m.

### **Building location and design**

2.18 The location of a development has a direct influence on exposure to elevated air pollution levels. This is particular relevant where developments include sensitive uses such as hospitals, schools and children's playgrounds. Suitable building design, layout and orientation can avoid increasing exposure whilst minimising energy demand and energy loss. The Council requires the impact of outdoor air pollution on indoor air quality in new developments to be taken into account at the earliest stages of building design.

- 2.19 The location of outside space is also an important consideration and any exposure of gardens and roof terraces should be screened and, where practicable, minimised through appropriate positioning and orientation. You should take care not to locate flues and exhaust vents in close proximity to recreational areas such as roof terraces or gardens. An energy efficient building design can minimise air pollution resulting from the use of gas boilers. Adopting sustainable building design (e.g. the Code for Sustainable Homes and the Building Research Establishment Environmental Assessment Method (BREEAM)), will reduce thermal heat losses and result in less gas use leading to lower NO<sub>x</sub> emissions. See Camden Planning Guidance 3 – Sustainability for further details on the Code and BREEAM.

### **Gas boilers**

- 2.20 Gas boilers are a large source of NO<sub>x</sub> emissions in Camden. In order to minimise NO<sub>x</sub> emissions arising from heating and hot water systems the Council requires boilers fitted in new development to achieve a NO<sub>x</sub> emissions of <40 mg/m<sup>3</sup> and an energy efficiency rating >90%.

### **Renewable Energy and Combined Heat and Power**

- 2.21 Core Strategy policy CS13 promotes the use of renewable energy technologies to reduce carbon emissions and tackle climate change. The adoption of renewable energy and energy efficiency technologies in major developments can minimise air pollution emissions through reductions in gas consumption required for heating and hot water. These include solar thermal collectors and ground source heat pumps in addition to gas and hydrogen fuel cell combined heat and power (CHP) or combined cooling heat and power (CCHP).

#### **Hydrogen fuel cell**

A fuel cell is an electrochemical cell that converts energy from a fuel (hydrogen) into electricity.

- 2.22 Biomass boilers however can give rise to higher emissions of NO<sub>x</sub> and PM<sub>10</sub> emissions than conventional gas boilers. Permission to operate these appliances will only be granted if the air quality impacts are demonstrated to be equivalent or lower than those associated with a conventional gas boiler of similar thermal rating. Where an assessment demonstrates adverse effects on air quality, this type of biomass boiler should not be used in the development.
- 2.23 You are advised to refer to the national guidance note *Biomass and Air Quality Guidance Note for Local Authorities*, published by Environmental Protection UK. In cases where emissions released from a biomass boiler do not lead to negative impacts on air quality, the



appliance will be required to meet high standards of air pollution control with particular emphasis given to:

- boiler design and operation;
- pollution abatement equipment;
- servicing and maintenance;
- fuel quality, storage and delivery; and
- exhaust stack height.

2.24 We will require evidence that the exhaust stack height of gas CHP/CCHP has been appropriately calculated to guarantee that NO<sub>x</sub> emissions are effectively dispersed, and do not risk increasing ground level NO<sub>2</sub> concentrations. An air quality assessment will be required for developments including CHP/CCHP. Where the assessment reveals a negative impact on air quality, mitigation measures will be required entailing the best available techniques to reduce emissions. This includes the installation of NO<sub>x</sub> abatement technology such as:

- use of low NO<sub>x</sub> burners; or
- increasing stack height.

2.25 A programme of on-going maintenance and servicing will be necessary to minimise gas emissions released from CHP/CCHP.

2.26 The Council will use Section 106 obligations to set requirements for controlling emissions from biomass boilers and CHP/CCHP.

### **Traffic Reduction**

2.27 Reducing car usage caused by new developments is the principle way to minimise vehicle emissions and protect local air quality. Please refer to transport policy *CS11 - Promoting sustainable and efficient travel* in the Camden Core Strategy for more on our approach to improving air quality through transport measures. This requires:

- the adoption of car free and car capped developments;
- provision cycling facilities to encourage sustainable transport;
- green travel plans;
- provision of car club bays; and
- infrastructure for low emissions vehicles such as electric vehicle recharging points.

**Further information**

Planning Guidance	<ul style="list-style-type: none"> <li>• Planning Policy Statement 23: Planning and Pollution Control (2004)</li> <li>• Planning Policy Statement 23 Annex 1: Pollution Control, Air and Water Quality</li> </ul> <p>These documents outline the government's advice on methods of planning for pollution control.</p>
Air Quality Guidance	<ul style="list-style-type: none"> <li>• Technical Guidance Note: Assessment of Air Quality Issues of Planning Applications, Association of London Government (ALG), 2006 This provides technical advice on how to deal with planning applications that could have an impact on air quality.</li> <li>• Development Control: Planning for Air Quality. Environmental Protection UK, 2010 This advises of the significance of air quality assessments within the planning process.</li> <li>• Best Practice Guidance - The control of dust and emissions from construction and demolition (London Councils) 2006 The aim of this guidance is to protect the health of on-site workers and the public and to provide London-wide consistency for developers.</li> <li>• Biomass and Air Quality Guidance for Local Authorities (Environmental Protection UK) 2009 This guidance details procedures for assessing and managing the effects of biomass on air quality and provides background material.</li> <li>• Low Emission Strategies (Beacon Low Emission Group) 2009 This provides advice on how to reduce emissions of air pollutants and greenhouse gases from transport.</li> </ul>
Useful Contacts	<p>Camden Council Corporate Sustainability Team  <a href="http://www.camden.gov.uk/smallsteps">www.camden.gov.uk/smallsteps</a> (020 7974 4444)          provides guidance on air quality in Camden</p>

### 3 Contaminated land

#### KEY MESSAGES:

- Contaminated land can pose a serious risk to health.
- The Council will expect developers to identify and assess potentially contaminated land at an early stage.
- Developers will be expected to follow the Council's Contaminated Land Strategy.

- 3.1 This guidance provides advice on how to approach the development of potentially contaminated sites. This guidance should be read in conjunction with Core Strategy policy CS16 – *Improving Camden's health and well-being*.
- 3.2 To protect the local environment and the health and well-being of residents, workers and visitors, we will carefully assess any proposals for the redevelopment of sites that:
- are known to be contaminated;
  - have the potential to be contaminated, through previous or current uses; or
  - are located in close proximity to these sites.

#### What is contaminated land?

- 3.3 Contaminated land is land that has been polluted with harmful substances to the point where it now poses a serious risk to health and the environment.

#### Causes of land contamination

- improper chemical handling or disposal practices,
  - accidental spillages, or leakages of chemicals during manufacturing or storage.
  - polluted groundwater migrating under a site
  - particles settling from factory emissions.
- 3.4 The most common pollutants of land are metals and organic compounds. Typical land uses that can cause land contamination include petrol stations and gas works.
- 3.5 Contamination can also come from historical activities dating back many hundreds of years, such as spoil heaps from some Roman lead mines, and even from naturally occurring substances.
- 3.6 Contaminants may still be present above acceptable levels even though the polluting use stopped many years ago. 'Contaminated land' has a specific legal definition which is used in relation to an 'unacceptable risk'



of harm to health. For more information please see Department for Environment, Food and Rural Affairs (DEFRA) web pages.

- 3.7 In principle we will support the redevelopment of contaminated sites where the contamination issue can be successfully addressed and where future uses can be carried out safely. Remediation is particularly important where people have access to ground for gardening, play or planting food for consumption within redeveloped sites.

### **What should you do if your site is contaminated or potentially contaminated?**

- 3.8 In accordance with Planning Policy Statement (PPS) 23: Planning and Pollution Control, if you propose a development on contaminated or potentially contaminated land, it is your responsibility to ensure that contaminated land issues are considered at the planning application stage.
- 3.9 Where contamination is known or suspected on a site or the proposed use would be vulnerable to contamination, we will expect you to provide, as a part of your planning application, the necessary information as outlined in this chapter to determine whether the proposed development is acceptable.
- 3.10 The information required will need to be sufficient for us to determine:
- the existence or otherwise of contamination;
  - the nature of the contamination and the risks it may pose; and
  - whether these can be satisfactorily reduced to an acceptable level.
- Please refer to Annex 2 of PPS23 for further details.
- 3.11 The identification and assessment of land contamination issues is to be carried out by a qualified and experienced consultant, in consultation with the Council's Environmental Health Service. The contamination report is to be submitted with your planning application so that contamination issues can be assessed at the planning application stage and any necessary remediation measures secured through conditions or a Section 106 legal agreement.
- 3.12 The Council's Contaminated Land Strategy sets out how we will:
- deal with contaminated land;
  - make information available to the public; and
  - implement the requirements of the Part IIa of the Environmental Protection Act 1990 and Environment Act 1995. This and other documents are available on the Council's website ([www.camden.gov.uk/contaminatedland](http://www.camden.gov.uk/contaminatedland)) and should be referred to where contamination is a potential issue.
- 3.13 If there is any existing contamination (or potential risk of contamination) to ground or surface water or to land with statutory nature conservation designation, either from the existing state of land or from proposed



works, the Environment Agency must be informed and their consent obtained to any works. The English Heritage Archaeological Section should be contacted where contaminated land is included within an Archaeological Priority Area.

**Archaeological Priority Area**

As specified in the Camden Proposals Map, and Map 4 of the Camden Development Policies, to help protect archaeological remains that might be affected by development. See policy DP25 Conserving Camden's Heritage of the Camden Development Policies for further guidance on the borough's Archaeological Priority Areas.

- 3.14 Your report should comply with the policies and advice given in PPS23 and its annexes. There are also various best practice documents and British Standards that should be followed. The London Boroughs have produced a local guidance document titled *Contaminated Land: A Guide to Help Developers Meet Planning Requirements*. This document provides guidance on what information should be contained within a contamination report and is available on Camden's website.

## Supporting documents

PPS23	<p>Planning Policy Statement 23: Planning and Pollution Control. Office of the Deputy Prime Minister, November 2004. <a href="http://www.odpm.gov.uk">www.odpm.gov.uk</a></p> <p>In particular Annex 2 should be referred to as this section deals specifically with contaminated land issues. The policies and advice contained in PPS23 is not repeated in this guidance and therefore should be consulted for detailed guidance.</p>
Camden Council Website	<p>Information on the Council approach to management of land contamination, information on historical land uses in the Borough and a copy of the London Borough's 'Guide for Developers on Contaminated Land'.</p> <p><a href="http://www.camden.gov.uk/contaminatedland">http://www.camden.gov.uk/contaminatedland</a></p>
Department of Food, Environment and Rural Affairs	<p>has published a number of documents on land contamination. These can be found at:</p> <p><a href="http://www.defra.gov.uk/environment/land/contaminated/index.htm">www.defra.gov.uk/environment/land/contaminated/index.htm</a></p>
Environment Act 1995	<p>Available from Stationary Office:</p> <p><a href="http://www.opsi.gov.uk/acts/acts1995/Ukpga_19950025_en_1.htm">www.opsi.gov.uk/acts/acts1995/Ukpga_19950025_en_1.htm</a></p>

## Useful Contacts

Camden Environmental Health Service (Contaminated Land) web page [www.camden.gov.uk/contaminatedland](http://www.camden.gov.uk/contaminatedland) has more information on the Council's approach to contaminated land.

English Heritage [www.english-heritage.org.uk](http://www.english-heritage.org.uk) can provide advice on the approach to contaminated land within Archaeological Priority Areas.

## 4 Noise and vibration

### KEY MESSAGES:

We will ensure that noise and vibration is controlled and managed to:

- Limit the impact of existing noise and vibration sources on new development; and
- Limit noise and vibration emissions from new development.

- 4.1 The impact of noise and vibration can have a major affect on amenity and health and can severely affect people's quality of life.
- 4.2 Policy *DP28 – Noise and Vibration* of the Camden Development Policies aims to ensure that noise and vibration is controlled and managed. It sets out the Council's thresholds for noise and vibration and goes beyond the thresholds set out in Planning Policy Guidance 24: Planning and noise (see below). DP28 contains noise/vibration thresholds for the day, evening and night.



### **How can the impact of noise and vibration be minimised?**

4.3 The main sources of noise and vibration in Camden are generated from:

- Road traffic;
- Railways;
- Industrial uses;
- Plant and mechanical equipment;
- Entertainment uses (such as bars and nightclubs); and
- Building sites.

4.4 For details on how to manage noise and vibration from building sites see section 8 on Construction management plans.

### **Ways to minimise the impact of noise on your development**

#### **Design**

- Locating noise sensitive areas/rooms away from the parts of the site most exposed to noises;
- Creating set backs;
- Designing the building so its shape and orientation reflect noise and protect the most sensitive uses;
- Stacking similar rooms (such as kitchens and living rooms) above each other; and
- Positioning non-residential uses closer to the noise source in mixed use developments.

#### **Built fabric**

- Insulating and soundproofing doors, walls, windows, floors and ceilings;
- Sealing air gaps around windows;
- Double glazing;
- Including architectural fins (where appropriate); and
- Laminated glass.

#### **Landscaping and amenity areas**

- Incorporating planting, landscaping, fencing/barriers and solid balconies to reflect sound.

4.5 Our preference for controlling noise:

- Begins with attempting to reduce noise at its source;
- Then to separate the development (or at least the sensitive parts e.g. habitable rooms) from the source or to use noise barriers; and

- Finally construction materials such as acoustic glazing should be used.

- 4.6 When you consider measures to minimise noise and vibration you also need to take into account our policies on design and crime prevention. You should consider the implications of noise and vibration at the beginning of the design process to enable prevention or mitigation measures to be designed into the scheme. Poorly designed schemes will not be acceptable.
- 4.7 Proposals will be expected to include appropriate attenuation to alleviate or mitigate the impact of noise and vibrations to an acceptable level, as set out in policy *DP28 – Noise and vibration* of the Camden Development Policies. Where appropriate, the Council will consider the cumulative impact of noise sources (for example, air conditioning units).
- 4.8 Everyday domestic activities can also generate noise, e.g. communal entrances and roof terraces. Sufficient sound insulation must be provided between dwellings to prevent the transmission of noise between them, particularly in conversions where new partition walls are often deficient in terms of insulation.

### **Ways to mitigate noise emitted by your development**

#### **Engineering**

- Reducing the noise emitted at its point of generation (e.g. by using quiet machines and/or quiet methods of working);
- Containing the noise generating equipment (e.g. by insulating buildings which house machinery and/or providing purpose-built barriers around the site); and
- Protecting any surrounding noise-sensitive buildings (e.g. by improving sound insulation in these buildings and/or screening them by purpose-built barriers).

#### **Layout**

- Ensuring an adequate distance between source and noise-sensitive buildings or areas; and
- Screening by natural barriers, buildings, or non-critical rooms in the development.

#### **Administrative**

- Limiting the operating time of the source;
- Restricting activities allowed on the site; and
- Specifying an acceptable noise limit.

- 4.9 If your proposal could result in noise and vibration that would cause an unacceptable impact to nearby uses or occupiers, or proposes sensitive uses near a source of noise or vibration and cannot be adequately attenuated then planning permission is likely to be refused.

Developments will be assessed against the thresholds set out in policy DP28.

### **How will the Council manage the impact of noise and vibration?**

- 4.10 Detailed acoustic/noise and vibration information in the form of a report will be required if your development proposes:
- The installation of plant, ventilation or air conditioning equipment;
  - A use that will create significant noise (e.g. new industry, nightclub)
  - A noise-sensitive development in an area where existing noise sources are present (e.g. an existing industrial site, busy road, railway line);
  - A use that will generate a significant amount of traffic.

#### **Noise sensitive developments**

Those developments located near sources of noise, including housing, schools and hospitals as well as offices, workshops and open spaces.

- 4.11 The list above is a guide only and you may need to provide noise and vibration information for other developments depending on the circumstances of the site or proposal.
- 4.12 The appropriate amount and detail of information required will depend on the specific circumstances of your proposal. At a minimum you will be expected to provide the following information to support your application:
- Description of the proposal;
  - Description of the site and surroundings, a site map showing noise and vibration sources, measurement locations and noise receivers;
  - Background noise levels;
  - Details of instruments and methodology used for noise measurements (including reasons for settings and descriptors used, calibration details);
  - Details of the plant or other source of noise and vibration both on plan and elevations and manufacturers specifications;
  - Noise or vibration output from proposed plant or other source of noise and vibration, including:
    - Noise or vibration levels;
    - Frequency of the output;
    - Length of time of the output;
    - Features of the noise or vibration e.g. impulses, distinguishable continuous tone, irregular bursts;
  - Manufacturers' specification of the plant, supporting structure, fixtures and finishes;

- Location of neighbouring windows (and use if applicable);
- Details of measures to mitigate noise or fume emissions and vibration;
- Details of any associated work including acoustic enclosures and/or screening;
- Cumulative noise levels of all the proposed and existing units;
- Hours/days of operation.

4.13 Where appropriate the Council will seek a legal agreement to control or reduce noise levels where this is unlikely to be met through the use of a condition attached to a planning permission.

### Further information

PPG24	Planning Policy Guidance Note 24: Planning and Noise provide Government guidance on noise. This guidance defines four Noise Exposure Categories (A-D) and outlines what should be done if your proposal falls into one of these categories. Advice is also provided on how to address noise issues and secure amelioration methods through the planning system. <a href="http://www.communities.gov.uk/publications/planningandbuilding/ppg24">www.communities.gov.uk/publications/planningandbuilding/ppg24</a>
DEFRA	The Department of Food, Environment and Rural Affairs provide a number of publications on noise and noise related issues. <a href="http://www.defra.gov.uk">www.defra.gov.uk</a>
Camden Council website	Camden's Environmental Health web pages provide strategic information on noise in Camden including the results of monitoring that has taken place <a href="http://www.camden.gov.uk/noise">www.camden.gov.uk/noise</a> Also see <i>Camden's Guide for Contractors working in Camden</i> on the Camden website.
The Mayor's Ambient Noise Strategy	This provides details on the Mayor of London's approach to reducing noise in London. <a href="http://legacy.london.gov.uk/mayor/strategies/noise/docs/noise_strategy_all.pdf">http://legacy.london.gov.uk/mayor/strategies/noise/docs/noise_strategy_all.pdf</a>





## 5 Artificial light

### KEY MESSAGES:

When considering proposals for artificial lighting the Council will consider the:

- need for planning permission;
- need for the lighting;
- design of the lighting; and
- impacts on biodiversity.

5.1 This section provides guidance on the Council's approach to artificial lighting. This guidance should be read in conjunction with policy *DP26 Managing the impact of development on occupiers and neighbours* of the Camden Development Policies.

5.2 Artificial lighting has many benefits, however excessive or poorly designed lighting can be damaging to the environment and result in visual nuisance including by:

- Having a detrimental impact on the quality of life of neighbouring residents;
- Significantly changing the character of the locality;
- Altering wildlife and ecological patterns; and
- Wasting energy.



5.3 Nuisance often occurs due to glare and 'light spillage' because the lighting has been poorly designed.

5.4 *Planning Policy Statement 23 (PPS23): Planning and Pollution Control* enables the Council to take account of the possible obtrusive impact of

lighting and paragraph 3.25 of PPS23 permits us to use conditions or planning obligations to protect the environment.

#### **WHAT IS LIGHT POLLUTION?**

Light pollution is the term used to describe any adverse effect of artificial lighting. Light pollution includes:

- Glare - the uncomfortable brightness of a light source when viewed against a dark sky;
- 'Light trespass' – the spread of light spillage the boundary of the property on which a light is located; and
- 'Sky glow' - the orange glow we see around urban areas caused by a scattering of artificial light by dust particles and water droplets in the sky.

**Will planning permission be required for lighting?**

- 5.5 Structures supporting, and the installation of lighting equipment may require planning permission, especially if they are substantial or affect the external appearance of a building. Planning permission is not required for the carrying out of maintenance which affects only the interior of the building or does not materially affect the external appearance of the building. Temporary lighting schemes generally do not require planning permission.
- 5.6 Planning permission is normally required for:
- the erection of columns to support lighting or other similar structures;
  - the erection of substantial structures or installations that affect the external appearance of a property;
  - external lighting as part of an industrial or commercial scheme;
  - new lighting structures or works which are integral to other development requiring planning permission; and
  - illuminated advertisements, although there are some exceptions such as those indicating medical services and some commercial advertisements on the front of business premises (See Camden Planning Guidance 1 - Design).
- 5.7 You are advised to check with the Planning Service before installing any lighting scheme. You will need to provide the following details:
- Number of lights;
  - Likely lux output;
  - The height of the lighting columns (if applicable); and
  - The area to be lit.
- In accordance with policy DP26 in Camden Development Policies, schemes that would cause harm to amenity will not be permitted.

**What information should accompany a planning application?**

- 5.8 Where planning permission for lighting schemes is required you will need to submit the information required by paragraph 5.7. We will also expect the submission of the following additional information:
- The design of lights and infrastructure;
  - A plan or plans showing layout of the lights, including orientation of the beams of light;
  - Lighting levels, lumen details, lamp type, wattage;
  - Control systems including types and location of sensors, times lighting will be on; and
  - The need for the lighting, that is, an explanation of what activity the lighting is supporting.

- 5.9 All light installations must be energy efficient and 'Dark Sky' compliant, thereby not causing obtrusive light pollution, glare or spillage (by reference to the British Astronomical Association Campaign for Dark Skies).

**Lumen**

This is a measurement of the light output from a light source.

**Lux**

This is a measurement of the light intensity falling on a surface.

**Dark sky compliance**

To design lighting schemes in order to avoid lighting that extends beyond its intended target and would be inefficient and waste energy. It also avoids glare and light in unwanted areas.

## What should you consider when designing lighting?

### General lighting requirements

- 5.10 To minimise obtrusive light you should follow the general principles taken from the Institution of Lighting Engineers, Guidance Notes for the Reduction of Obtrusive Light (2005):
- Lighting is to be directed downwards wherever possible to illuminate its target. If there is no alternative to up lighting, then the use of shields will help reduce the spill of light to a minimum. Up lighting is a particularly bad form of obtrusive light and contributes to sky glow.
  - Lighting is to be designed to minimise the spread of light near to, or above, the horizontal. Again, any light that shines above the horizontal line of the light adds to the sky glow effect.
  - Lighting should be designed to the correct standard for the task. Over-lighting is a cause of obtrusive light and also represents a waste of money and energy.
  - The main beam angle of all lights proposed directed towards any potential observer is to be kept below 70°. It should be noted that the higher the mounting height, the lower the main beam angle could be. This will help reduce the effect of glare and light spill on neighbouring dwellings, passing motorists, pedestrians, etc.
  - Lighting should be directed to minimise and preferably avoid light spillage onto neighbouring properties. Wherever possible use floodlights with asymmetric beams that permit the front glazing to be kept at, or near parallel to, the surface being lit.
  - The lights used should be the most efficient taking into account cost, energy use, and the purpose of the lighting scheme required. All lighting schemes should meet British Standards.
- 5.11 We will seek to ensure that artificial lighting is sited in the most appropriate locations to cause minimal disturbance to occupiers and wildlife, while still illuminating the intended area. This includes considering any occupiers located above the lighting source.

- 5.12 Consideration should be given to lighting associated with buildings of special historic and architectural interest in order to protect their special interest and that of the wider area. This applies both to the lighting of such buildings and the impact of the lighting installation when seen by day.

### **Lighting Infrastructure**

- 5.13 The visual effect of lighting infrastructure when viewed in the daytime needs to be considered. These elements can include junction boxes, poles, brackets and cabling. The design, size and colours of the physical infrastructure needs to be carefully considered and should relate to the building it is located on.

### **Use**

- 5.14 The design of lighting should be specific to the use it supports (e.g. for recreation facilities). Hours of lighting should be limited to the times needed to support the use (both in summer and winter) and be restricted through the use of timers and sensors where relevant (e.g. for security lighting).
- 5.15 The Council may seek to secure conditions to any planning permission in order to control the hours of operation of any approved lighting scheme.

### **Why do impacts on biodiversity need to be considered?**

- 5.16 Artificial lighting can often impact on wildlife habitats, particularly where lighting is proposed in open spaces, for example to provide lighting for sports courts and pitches or to improve security (such as along Regents Canal). Artificial lighting can have particularly severe implications for the natural daily rhythms of a range of animals and plants, and therefore sites and habitats identified for their nature conservation value should not be adversely affected by lighting. (See the Local Development Framework Proposals Map for a list of nature conservation sites).
- 5.17 If your proposed lighting is located within or adjacent to areas of open space we will expect that any biodiversity impacts arising from the installation or operation of the lighting is mitigated. This may require a survey to identify if there are any nesting birds in the immediate vicinity or if it is close to an area where bats may hibernate or emerge at feeding time. This is particularly important if the operation of the lighting extends beyond dusk, which is roughly the time bats will come out to forage. See Camden Planning Guidance 3 – Sustainability for further information on our approach to protecting biodiversity.
- 5.18 You should contact Camden's Biodiversity Officer at an early stage to discuss measures to mitigate the impact of lighting schemes on biodiversity.

### Further information

PPS23	Planning Policy Statement 23: Planning and Pollution Control. Office of the Deputy Prime Minister, November 2004. <a href="http://www.odpm.gov.uk">www.odpm.gov.uk</a>
DEFRA	The Department of Food, Environment and Rural Affairs has published a number of documents on light pollution. These can be found at: <a href="http://www.defra.gov.uk/environment">http://www.defra.gov.uk/environment</a>
Environment Act 1995	Available at the Stationary Office: <a href="http://www.opsi.gov.uk/acts/acts1995/Ukpga_19950025_en_1.htm">www.opsi.gov.uk/acts/acts1995/Ukpga_19950025_en_1.htm</a>

### Useful Contacts

Camden Planning Service [www.camden.gov.uk/planning](http://www.camden.gov.uk/planning)

The Institution of Lighting Professionals [www.theilp.org.uk](http://www.theilp.org.uk) promotes good practice and excellence in lighting schemes.

The Chartered Institute of Building Services Engineers [www.cibse.org](http://www.cibse.org) provides information on appropriate lighting designs and mechanisms.



## 6 Daylight and sunlight

### KEY MESSAGES:

- We expect all buildings to receive adequate daylight and sunlight.
- Daylight and sunlight reports will be required where there is potential to reduce existing levels of daylight and sunlight.
- We will base our considerations on the Average Daylight Factor and Vertical Sky Component.

6.1 Access to daylight and sunlight is important for general amenity, health and well-being, for bringing warmth into a property and to save energy from reducing the need for artificial lighting and heating. The Council will carefully assess proposals that have the potential to reduce daylight and sunlight levels for existing and future occupiers.

6.2 This guidance relates to:

- Camden Core Strategy policy CS5 - *Managing the Impact of Growth and Development*;
- Core Strategy policy CS14 - *Promoting high quality places and conserving our heritage*; and
- Policy DP26 – *Managing the impact of development on occupiers and neighbours* of the Camden Development Policies.

DP26 sets out how the Council will protect the quality of life of building occupiers and neighbours by only granting permission for development that does not cause harm to amenity.

### **When will a daylight/sunlight report be required?**

6.3 The Council expects that all developments receive adequate daylight and sunlight to support the activities taking place in that building.

6.4 A daylight and sunlight report should assess the impact of the development following the methodology set out in the most recent version of Building Research Establishment's (BRE) "Site layout planning for daylight and sunlight: A guide to good practice". Reports may be required for both minor and major applications depending on whether a proposal has the potential to reduce daylight and sunlight levels. The impact will be affected by the location of the proposed development and its proximity to, and position in relation to, nearby windows.

### WHAT DOES THE COUNCIL REQUIRE?

The Council will require a daylight and sunlight report to accompany planning applications for development that has the potential to reduce levels of daylight and sunlight on existing and future occupiers, near to and within the proposal site.

Daylight and sunlight reports should also demonstrate how you have taken into consideration the guidance contained in the BRE document on passive solar design; and have optimised solar gain. Please refer to the BRE guidance on daylight and sunlight.

- 6.5 While we strongly support the aims of the BRE methodology for assessing sunlight and daylight we will view the results flexibly and where appropriate we may accept alternative targets to address any special circumstances of a site. For example, to enable new development to respect the existing layout and form in some historic areas. This flexible approach is at the Council's discretion and any exception from the targets will be assessed on a case by case basis.

### Daylight

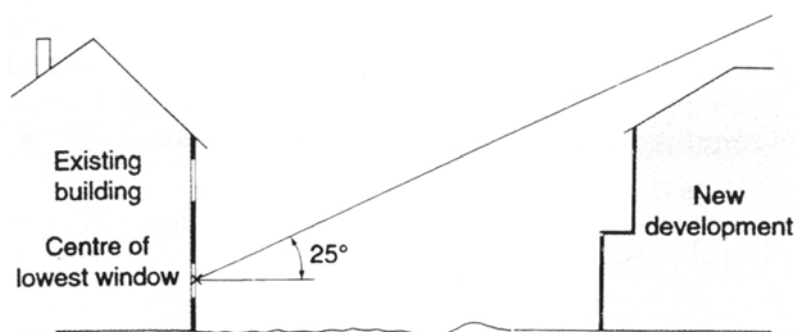
- 6.6 We will aim to minimise the impact of the loss of daylight caused by a development on the amenity of existing occupiers and ensure sufficient daylight to occupiers of new dwellings taking in account overall planning and site considerations. If your proposal will have an unreasonable impact on amenity the planning application will be refused. When assessing daylight issues, we will use the guidelines and methods contained in the BRE's *Site layout planning for daylight and sunlight: A guide to good practice*.
- 6.7 There are two quick methods that can be used to assess access to daylight:

#### Daylight to new development

- project a 25 degree line, starting 2m above ground level from a wall of your proposed development;
- if none of the existing surrounding buildings extend above this line, then there is potential for good daylighting to be achieved in the interior of your new development.

#### Daylight to existing development

- project a 25 degree line from the centre of the lowest window on the existing building;
- if the whole of your new development is lower than this line then it is unlikely to have a substantial effect on the daylight enjoyed by occupants in the existing building.

**Section**

Source: BRE, Site layout planning for daylight and sunlight: A guide to good practice.

- 6.8 For either test, if buildings extend above the 25 degree line a more detailed test needs to be carried out to fully assess either the loss of daylight in existing buildings or the level of daylight achievable in the new development. The two most common measurements of daylight of the more detailed test are the Vertical Sky Component (VSC) and the Average Daylight Factor (ADF).

**Vertical Sky Component**

The amount of light striking the face of a window

- 6.9 The Vertical Sky Component is expressed as a ratio of the maximum value of daylight achievable for a completely unobstructed vertical wall. The maximum value is almost 40%. This is because daylight hitting a window can only come from one direction immediately halving the available light. The value is limited further by the angle of the sun. This is why if the VSC is greater than 27% enough sunlight should be reaching the existing window. Any reduction below this level should be kept to minimum.
- 6.10 Windows to some existing rooms may already fail to achieve this target under existing conditions. In these circumstances it is possible to accept a reduction to the existing level of daylight to no less than 80% of its former value. Any greater reduction than this is likely to have a noticeable affect on amenity. If this occurs then applications may be refused.

**Average Daylight Factor**

Average Daylight Factor is a measure of the level daylight in a room. It can be used to establish whether a room will have a predominantly daylit appearance. It provides light levels below which a room should not fall even if electric lighting is provided.

- 6.11 The Average Daylight Factor can be used as a measure to determine whether a room will receive adequate daylight (expressed as a percentage). The ADV takes into account the:
- net glazed area of windows;

- the total area of the room surfaces (ceiling, floor, walls, and windows);
  - the average reflectance; and
  - the angle of visible sky.
- 6.12 If a predominately daylit appearance is required, then the daylight factor should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. This figure should be as high as possible to enable occupiers to rely on as much natural light and not use artificial lighting, but as a minimum for dwellings the figures should be 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.
- 6.13 These minimum figures may not be applicable when measuring the impact of new buildings on existing dwellings as the simple preservation of minimum ADFs will not necessarily be seen as an indication of acceptability, especially if the VSC demonstrates a significant worsening in daylight levels. For existing dwellings the Council will consider the overall loss of daylight as opposed to the minimum acceptable levels of daylight. As the BRE guidance suggests, the readings will be interpreted flexibly as their aim is to support rather than constrain natural lighting. However, daylight is only one of the many factors in site layout design. Therefore, when applying these standards in Camden, we will take into consideration other site factors and constraints.
- 6.14 The calculation of the VSC and the ADF is complex. For full details on how these calculations are carried out you should refer to the most up to date version the BRE's "Site layout planning for daylight and sunlight: A guide to good practice". For more complex and larger developments we will expect a daylight study to be submitted with the planning application showing the windows that will be affected and provide before development and post development figures for VSC and ADF.
- 6.15 Other methods can be used to measure daylight and these can be incorporated in daylight and sunlight reports, where necessary, as a supplement to VSC and ADF measurements, such as the No Sky Line (NSL) test contained within BRE guidance.

### **Sunlight**

- 6.16 The design of your development should aim to maximise the amount of sunlight into rooms without overheating the space and to minimise overshadowing.

**WHAT DOES THE COUNCIL EXPECT?**

New developments should be designed to provide at least one window to a habitable space facing within 90 degrees of south, where practical. This window should receive at least 25% of Annual Probable Sunlight Hours, including at least 5% of Annual Probable Sunlight Hours between 21 September and 21 March, where possible.

**Annual Probable Sunlight Hours**

The annual amount of sunlight a window receives in an average year.

- 6.17 The BRE's "Site layout planning for daylight and sunlight: A guide to good practice" provides guidance on access to sunlight in relation to:
- site layout, building orientation and overshadowing for new buildings;
  - protecting sunlight to existing buildings, and
  - new and existing gardens and open spaces.
- 6.18 Design for access to sunlight will be specific to the orientation of your site, and the specific design and uses within your proposed development. You should follow the detailed design requirements recommended in the "Sunlighting" section of the BRE document. The Council recognises that not all of the guidance contained within the BRE document, particularly orientation, can be adhered to in all developments due to the dense and constrained urban nature of Camden.

**Other considerations****Right to Light**

- 6.19 The right to light is a legal right which one property may acquire over the land of another. If a structure is erected which reduces the light to an unobstructed property to below sufficient levels this right is infringed. A right to light can come into existence if it has been enjoyed uninterrupted for 20 years or more, granted by deed, or registered under the Rights of Light Act 1959. Planning permission does not override a legal right to light, however where a right to light is claimed, this is a matter of property law, rather than planning law. The Council will have no role or interest in any private dispute arising and it will be for the owner or occupier affected to seek a legal remedy.

**Supporting documents**

- 6.20 For further information on daylight and sunlight please refer to:
- Building Research Establishment (BRE). Site layout planning for daylight and sunlight: A guide to good practice.
- Copies of this are available directly from BRE.

BRE Bookshop, 151 Roseberry Avenue, London, EC1R 4GB  
020 7505 6622  
brebookshop@emap.com  
[www.constructionplus.co.uk](http://www.constructionplus.co.uk)

## 7 Overlooking, privacy and outlook

### KEY MESSAGES:

- Development are to be designed to protect the privacy of existing dwellings;
- Mitigation measures are to be included when overlooking is unavoidable;
- Outlook from new developments should be designed to be pleasant;
- Public spaces benefit from overlooking as natural surveillance.

- 7.1 This section aims to ensure that when designing your development you successfully consider the potential impact on the privacy and outlook of neighbouring properties.
- 7.2 This guidance relates to Core Strategy policy CS5 Managing the Impact of Growth and Development and Core Strategy policy CS14 Promoting high quality places and conserving our heritage.
- 7.3 Policy *DP26 – Managing the impact of development on occupiers and neighbours* of the Camden Development Policies outlines how the Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity.

### Overlooking and privacy

- 7.4 Development should be designed to protect the privacy of both new and existing dwellings to a reasonable degree. Spaces that are overlooked lack privacy. Therefore, new buildings, extensions, roof terraces, balconies and the location of new windows should be carefully designed to avoid overlooking. The degree of overlooking depends on the distance and the horizontal and vertical angles of view. The most sensitive areas to overlooking are:
- Living rooms;
  - Bedrooms;
  - Kitchens; and
  - The part of a garden nearest to the house.

### WHAT IS GOOD PRACTICE?

To ensure privacy, there should normally be a minimum distance of 18m between the windows of habitable rooms of different units that directly face each other. This minimum requirement will be the distance between the two closest points on each building (including balconies).

- 7.5 Where this standard cannot be met we may require you to incorporate some of the following design measures into your scheme to ensure



overlooking is reduced to an acceptable level. Design measures to reduce the potential for overlooking and the loss of privacy include:

- Careful consideration of the location of your development, including the position of rooms;
- Careful consideration of the location, orientation and size of windows depending on the uses of the rooms;
- Use of obscure glazing;
- Screening by walls or fencing; and
- Screening by other structures or landscaping.

7.6 Where landscaping is used as a method of screening, arrangements for ongoing maintenance should be put in place and this may be secured by a planning condition.

7.7 Public spaces and communal areas will benefit from a degree of overlooking due to the increased level of surveillance it can provide.

### **Outlook**

7.8 Outlook is the visual amenity enjoyed by occupants when looking out of their windows or from their garden. How pleasant an outlook is depends on what is being viewed. For example, an outlook onto amenity space is more pleasant than an outlook across a servicing yard. You should design developments so that the occupiers have a pleasant outlook. You should screen any unpleasant features with permanent landscaping.

7.9 When designing your development you should also ensure the proximity, size or cumulative effect of any structures do not have an overbearing and/or dominating effect that is detrimental to the enjoyment of their properties by adjoining residential occupiers. You should carefully consider the location of bin or cycle stores if they are in close proximity to windows or spaces used by occupiers.

7.10 You should take particular care if your development adjoins properties with a single aspect over your development.

7.11 You should note that the specific view from a property is not protected as this is not a material planning consideration.

### **Further information**

*Better Places to Live: By Design - A companion guide to PPG3* (ODPM) makes number of design recommendations which recognise the importance of privacy in the home.

*Perceptions of Privacy and Density in Housing* report available from Design for Homes; 0870 416 3378 or [www.designforhomes.org](http://www.designforhomes.org). This report highlights some of the issues facing households living at higher densities, and the implications for future design of buildings.

## 8 Construction management plans

### KEY MESSAGES:

- Construction management plans are required for developments that are on constrained sites or are near vulnerable buildings or structures;
- They are essential to ensure developments do not damage nearby properties or the amenity of neighbours.

- 8.1 The purpose of this guidance is to give details on how construction management plans can be used to manage and mitigate the potential impacts of the construction phase of a development.
- 8.2 All construction and demolition work will cause at least some noise and disturbance. Where construction impact is particularly significant Camden will ensure it is managed through a legally binding construction management plan.
- 8.3 This guidance relates to Core Strategy Policy CS5 Managing the impact of growth and development and policies DP20 Movement of goods and materials, and DP26 Managing the impact of development on occupiers and neighbours of the Camden Development Policies.

### When does this guidance apply?

- 8.4 This guidance applies to all development proposals which, having regard to the nature of the surrounding area, are likely to give rise to significant noise and other disturbance during construction. Details on the circumstances in which the Council will expect construction management plans are set out within this guidance.

### How should construction management plans be prepared?

- 8.5 Camden's planning policies make it clear that the effect on local amenity and the highway network from construction and demolition is a material planning consideration. Construction management plans are used to set out the measures a developer should take (both on-site and off-site) in order to reasonably minimise and manage the detrimental effects of construction on local amenity and/or highway safety. Usually Camden will secure construction management plans through a Section 106 Agreement, although sometimes for less complicated schemes they may be secured by using a condition attached to planning permission.
- 8.6 Whilst construction management plans are a 'planning led' document they will incorporate mechanisms controlling planning considerations that overlap with other regulatory regimes (particularly highways and environmental protection). Hence, most construction management plans will be an umbrella document managing all impacts of the demolition, excavation and construction process.

- 8.7 Besides ensuring measures under these different regimes are coordinated in one document, construction management plans represent a proactive way of dealing with construction issues. They encourage developers to work with the Council and local people in managing the construction process with a view to ensuring that problems do not arise in the first place.

**Circumstances Camden will expect a construction management plan**

- 8.8 Whether a construction management plan is required for a particular scheme will be assessed on a case by case basis, although the Council will usually require a construction management plan for larger schemes (i.e. over 10 residential units or 1,000sq m of new commercial floorspace). However, occasionally a relatively large development will have comparatively little impact on its neighbourhood.
- 8.9 Conversely, small schemes on confined or inaccessible sites can have very significant impacts, particularly where the construction process will take place over a number of months (or even years) or outside normal working hours. When assessing smaller developments, special regard should be had to on-site factors that would seriously exacerbate the impact of the development works on the surrounding area. These could include development in residential areas, in close proximity to a school or a care home or very narrow or restricted site access (e.g. development in a mews with no footways). Regard will also be had to the nature and layout of a site. It will be much more difficult to fully absorb or contain the effects of demolition and construction in terms of noise, dust vibration etc within the boundaries of a small constrained site. Furthermore, lack of on-site space for plant, storage of materials and loading and unloading of construction may mean that construction effects will inevitably take place close to the boundary and spill out on to the highway network – a particular issue in much of Camden.
- 8.10 The types of schemes where a CMP will usually be appropriate include:
- Major developments (and some larger scale non major developments);
  - Development where the construction process has a significant impact on adjoining properties particularly on sensitive uses;
  - Developments which give rise to particular 'on-site' issues arising from the construction process (e.g. large scale demolition or complicated or intrusive remediation measures);
  - Basement developments;
  - Significant developments involving listed buildings or adjacent to listed buildings;
  - Developments that could seriously affect wildlife;
  - Developments that could cause significant disturbance due to their location or the anticipated length of the demolition, excavation or construction period;

- Development where site specific issues have arisen in the light of external consultation (where these are supported by objective evidence); and
- Development on sites where constraints arising from the layout or size of the site impact on the surrounding road network.

### **Contents of a construction management plan**

- 8.11 Any construction management plan will manage on-site impact arising from demolition and construction. It will also seek to establish control over construction traffic and how this integrates with other construction traffic in the area having regard to the cumulative effect.
- 8.12 A Section 106 or planning permission securing a construction management plan will contain provisions setting out in detail the measures the final version of the construction management plan should contain. Most construction management plans will be umbrella documents managing all impacts of the demolition, excavation and construction processes. This would include (but is not limited to) issues such as:
- Dust, noise and vibration on site and off site;
  - Traffic management highways safety and highways congestion;
  - Protection of listed buildings (if relevant);
  - Stability of adjacent properties;
  - Protection of any off-site features that may be damaged due to works;
  - Protection of biodiversity and trees; and
  - Preserve the amenity of surrounding residential and other sensitive uses.
- 8.13 A construction management plan is often split into two elements. The first element will be focussed on controlling environmental impacts, pollution and other non-highway related impacts arising from the scheme, having regard to the requirements of the Council's Considerate Contractor Manual and best practice guides from the GLA. In particular this will seek to control hours of operation and monitor and manage air quality, noise, dust and other emissions of other pollutants and location of equipment. The second element will be focussed on traffic control with a view to minimising disruption, setting out how construction work will be carried out and how this work will be serviced (e.g. delivery of materials, set down and collection of skips), with the objective of minimising traffic disruption and avoiding dangerous situations for pedestrians and other road users.
- 8.14 Sometimes the Section 106 will link the construction management plan with a requirement to convene a working group to act as a forum for the developer to meet with local residents and businesses to deal with construction issues as they arise.

- 8.15 Construction management plans will also have to be consistent with any other plans required for the development. For example, a Site Waste Management Plan, which is a legal requirement for works over a certain size which may require the re-use or recycling of materials on-site and therefore the construction management plan will have to reflect that space will be required to sort, store and perhaps crush or recycle materials.
- 8.16 The construction management plan should include the following statement:  
 “The agreed contents of the construction management plan must be complied with unless otherwise agreed with the Council. The project manager shall work with the Council to review this construction management plan if problems arise in relation to the construction of the development. Any future revised plan must be approved by the Council and complied with thereafter.”

### **Transport considerations**

- 8.17 The details contained within a construction management plan will relate to the nature and scale of the development, however, in terms of assessing the impact on transport the plan should demonstrate that the following has been considered and where necessary the impacts mitigated:
- a) Start and end dates for each phase of construction;
  - b) The proposed working hours;
  - c) The access arrangements for vehicles;
  - d) Proposed routes for vehicles between the site and the Transport for London Road Network (TLRN). Consideration should also be given to weight restrictions, low bridges and cumulative effects of construction on the highway;
  - e) Sizes of all vehicles and the frequency and times of day when they will need access to the site, for each phase of construction;
  - f) Swept path drawings for any tight manoeuvres on vehicle routes to the site;
  - g) Details (including accurate scaled drawings) of any highway works necessary to enable construction to take place;
  - h) Parking and loading arrangements of vehicles and delivery of materials and plant to the site;
  - i) Details of proposed parking bays suspensions and temporary traffic management orders;
  - j) Proposed overhang (if any) of the public highway (scaffolding, cranes etc);
  - k) Details of any temporary buildings outside the site boundary, or overhanging the highway;
  - l) Details of hoardings required or any other occupation of the public highway;

- m) Details of how pedestrian and cyclist safety will be maintained, including any proposed alternative routes (if necessary), and any banksman arrangements;
- n) Details of how traffic associated with the development will be managed in order to reduce congestion;
- o) Arrangements for controlling the movements of large/heavy goods vehicles on and in the immediate vicinity of the site, including arrangements for waiting, turning and reversing and the provision of banksmen, and measures to avoid obstruction of adjoining premises.
- p) Details of any other measures designed to reduce the impact of associated traffic (such as the use of construction material consolidation centres);
- q) Details of how any significant amounts of dirt or dust that may be spread onto the public highway will be cleaned or prevented;
- r) Details of any Construction Working Group that may be required, addressing the concerns of surrounding residents, as well as contact details for the person responsible for community liaison on behalf of the developer, and how these contact details will be advertised to the community;
- s) A statement confirming registration of the site with the Considerate Constructors Scheme;
- t) How the servicing approach takes into consideration the cumulative effects of other local developments with regard to traffic and transport;
- u) Provision for monitoring of the implementation of the CMP and review by the council during the course of construction works;
- v) Any other relevant information with regard to traffic and transport; and

### **Air quality and climate change considerations**

8.18 A method statement should be prepared and adopted as part of the construction management plan to minimise gaseous and particulate matter emissions generated during the Construction Phase. The following best practice measures shall be included in the method statement:

- Techniques to control PM<sub>10</sub> and NO<sub>x</sub> emissions from vehicles and plant;
- Techniques to control dust emissions from construction and demolition;
- Air quality monitoring; and
- Techniques to reduce CO<sub>2</sub> emissions from construction vehicles.

### **How will we secure construction management plans?**

8.19 Generally a Section 106 agreement (rather than a condition) is the most appropriate mechanism for securing a construction management plan. For larger schemes or developments on constrained sites within heavily

built-up areas where building activities could materially affect the highway construction management plans will always be secured through Section 106s. While the use of conditions is normally preferred to Section 106 Agreements, conditions can only be used to control matters on land within the developer's control. The range of matters typically covered by a CMP, particularly in relation to highways, mean that a Section 106 Agreement will be necessary in most cases.

- 8.20 The level of detail contained in a typical Section 106 also lends itself to the tailored, site-specific approach Camden uses for construction management plans. However, the use of a condition to secure a construction management plan may be sufficient for sites where the building activities associated with the build out can be totally accommodated within the site itself, particularly where these are smaller schemes.



## 9 Access for all

### KEY MESSAGES:

- Well designed, accessible buildings and spaces ensure that local services and facilities are accessible to everyone and increase equality of opportunity and social inclusion. We will seek to ensure the highest standards of access and inclusion in Camden's built environment and public realm.
- We expect all development of buildings and places, including changes of use and alterations to or refurbishment of existing buildings where practical and reasonable, to be designed to be accessible and useable by all to promote equality of opportunity.
- Access should be considered at the beginning of the design process.

- 9.1 A successfully accessible and inclusive environment is one that everyone can benefit from by being able to move freely, independently and uninhibited within the built environment regardless of age or disability.
- 9.2 This guidance applies to all development in Camden that may affect the accessibility of buildings and spaces.
- 9.3 All new developments should incorporate a suitable level of access for everyone and be inclusively designed.
- 9.4 Changes of use, alterations and extensions to existing buildings and spaces should, where practicable and reasonable, be designed to improve access for all.
- 9.5 The planning system is not able to require existing buildings or areas to retrospectively improve access where alterations are not being made.
- 9.6 For developments involving housing, reference should also be made to Camden Development Policies policy DP6 – *Lifetime homes & wheelchair housing* and Camden Planning Guidance on Lifetime homes and wheelchair housing. The accessibility needs are lower for certain sectors of the population, such as students, and so the Council will assess each development proposal on its own merits to determine a suitable level of accessible accommodation to be provided.
- 9.7 Guidance on the provision of parking spaces for drivers with disabilities is contained in Camden Planning Guidance on Vehicle access.
- 9.8 This guidance provides general advice on accessibility and advises on further sources of more detailed information. In particular this guidance relates to Core Strategy policy CS14 - *Promoting High Quality Places and conserving our heritage*; CS6 - *Providing quality homes* and policy DP29 - *Improving access* of the Camden Development Policies.
- 9.9 It is more effective to consider access arrangements from the beginning of the design process as they are an integral aspect of building design.

Overcoming access barriers at a later stage in the project can result in a building or space that is not inclusive and may be inaccessible to many people.

- 9.10 Applicants are advised to consult the Council’s Building Control Service at an early stage in the formulation of development proposals to ensure conformity with the relevant requirements relating to access. Satisfying some of the requirements of Part M of the building regulations can affect the size and design of the building and needs to be taken into account at the early design stage.
- 9.11 The following table sets out four key principles which, if put together successfully, should help create an accessible environment:



### **Additional information**

- 9.12 Level access should be provided to the principal entrance in all developments, and is a requirement for all new dwellings. Any new works must not make access any worse than what may have previously existed, in line with Approved Document M of the Building Regulations.
- 9.13 The design of routes around buildings should be clear and free from obstruction, especially to the entrance. Any obstructions should be made clear and avoidable, for example by changes in surface texture.
- 9.14 The above access principles apply mainly to non-residential developments – although the first two will also be applicable to residential developments. In the case of residential development, proposals must meet Lifetime Home Standards as set out in policy *DP6 – Lifetime Homes and wheelchair homes* of the Camden Development Policies. Reference should also be made to Camden Planning Guidance 2 and the section on Lifetime Homes and wheelchair housing.

### **Design and Access Statements**

- 9.15 A Design and Access Statement is a short written and illustrated report which accompanies and supports a planning application. It explains the thinking behind a design and its context in a proposal in a structured way. A Design and Access Statement should:
- Show how the applicant has analysed the site, its setting, and as a result of this assessment, formulated and applied design principles to achieve a good, inclusive design for buildings and public spaces;
  - Include the specific needs of disabled people, by showing how they have been integrated into the proposed development, and how inclusion will be maintained and managed; and
  - Be flexible, adaptable and be able to change with the design of the proposal should any amendments or changes occur.
- 9.16 The level of detail appropriate in an access statement will depend on the size, nature and complexity of the proposal, as a minimum, all should include:
- A short illustrated statement setting out the site and context appraisal, the purpose of the proposed development, a list of design principles and a description of the proposal explaining how the design responds to the appraisal and design principles;
  - A plan of the site, surrounding area or natural form and key features as identified in the appraisal;
  - Annotated sketches and photographs;
  - Important elements of the context that inform the design principles;
  - Plans and elevations of the proposal;
- 9.17 The following points should be taken into account when preparing a Design and Access statement:

- A brief explanation of the applicant's approach to access, with particular reference to the inclusion of disabled people;
- A description of how the sources of advice on accessibility and technical issues will be, or have been, followed;
- Details of any consultations undertaken or planned, including the number of users, particular user need groups (for example, visually impaired, deaf or hard of hearing, ethnic groups, people with learning disabilities and mental health) and the degree to which the process has been influenced by it;
- Details of any professional advice that has been followed, or will be sought, including recommendations from access audits or appraisals;
- An explanation of any specific issues affecting accessibility to, or within, the particular environment being considered, and/or service provision, employment or educational opportunities.
- Details of access solutions adopted to overcome any issues, including those which deviate from recognised good practice;
- Details of the management and maintenance practices adopted, or to be adopted, to maintain features enhancing accessibility (for example, lighting, colour and luminance contrast, door closing forces etc), specialist equipment (for example, induction loops, audible and visual fire alarm systems etc), and staff training; and
- A plan illustrating features such as routes in, out and around the outside of the building, vertical and horizontal circulation routes, positions of accessible car parking bays, the location of public transport, and any other features relevant to the proposal.

9.18 Where good practice cannot be met, the Access Statement should say why this is the case, set out the implications for users, and explain what other measures are being taken to ensure access is provided to the facilities available. See Further Information at the end of this section for links to more detailed guidance.

### **Listed buildings**

- 9.19 Design and access statements are also required for a listed building consent. Where a planning application is submitted in parallel with an application for listed building consent a single combined statement can be submitted which should address the requirements for both.
- 9.20 Measures to facilitate dignified and easy access to and within listed buildings can often be sensitively incorporated without damage to their special architectural or historic interest. However, the Disability Discrimination Act 1995 does not override other legislation such as listed building or planning legislation. Listed Building Consent will almost always be required for works to improve access and in formulating proposals; applicants are encouraged to undertake early discussions with the Council.

- 9.21 English Heritage has produced guidance on this topic titled Easy Access to Historic Buildings (see Further Information for the link). Additional information is also contained in Circular 01/06.

**Other considerations**

- 9.22 Applicants should note that Design and Access Statements differ from the requirements for Access statements set out in Approved Document M of the Building Regulations, which are only required when specific building control regulations can not be met. Approved Document M of the Building Regulations sets out the requirements to ensure access to and use of a building's facilities are accessible to all.
- 9.23 It may also be appropriate to combine the Design and Access Statements with other statements requested in other sections of Camden Planning Guidance, provided that the requirements of all such statements are adequately addressed.
- 9.24 Part 3 of the Disability Discrimination Act 1995 gives disabled people a right of access to goods, facilities and services. This requires service providers to:
- Alter a barrier feature so that it no longer has effect;
  - Provide a reasonable means of avoiding that feature; or
  - Provide a reasonable alternative method of making the service available.
- 9.25 These requirements apply to all buildings where services are provided to the public and to transportation infrastructure.

## Further information

Design and Access Statements	<p>Department for Communities and Local Government (March 2010) Guidance on information requirements and validation:  <a href="http://www.communities.gov.uk/publications/planningandbuilding/validationguidance">www.communities.gov.uk/publications/planningandbuilding/validationguidance</a></p> <p>ODPM publication: Planning and Access for Disabled People: A Good Practice Guide  <a href="http://www.communities.gov.uk/publications/planningandbuilding/planningaccess">www.communities.gov.uk/publications/planningandbuilding/planningaccess</a></p> <p>Department for Communities and Local Government Circular 01/2006: Guidance on Changes to the Development Control System: Section 3 provides guidance on the legislative position and information required  <a href="http://www.communities.gov.uk/publications/planningandbuilding/circularcommunities2">www.communities.gov.uk/publications/planningandbuilding/circularcommunities2</a></p> <p>The Commission for Architecture and the Built Environment (CABE) 'Design and access statements: how to write, read and use them'  <a href="http://www.cabe.org.uk">www.cabe.org.uk</a></p> <p>Mayor of London's Supplementary Planning Guidance: Accessible London: Achieving an Inclusive Environment  <a href="http://legacy.london.gov.uk/mayor/strategies/sds/docs/spg_accessible_london.pdf">http://legacy.london.gov.uk/mayor/strategies/sds/docs/spg_accessible_london.pdf</a></p>
Access and the historic environment	<p>English Heritage have published guidance on 'Easy Access to Historic Landscapes' and 'Easy Access to Historic Buildings' which can be found on their website at:  <a href="http://www.english-heritage.org.uk/publications/easy-access-to-historic-buildings/">www.english-heritage.org.uk/publications/easy-access-to-historic-buildings/</a></p>
Lifetime Homes and wheelchair housing standards	<p>Lifetime Homes  <a href="http://www.lifetimehomes.org.uk">www.lifetimehomes.org.uk</a></p> <p>Accessible London: Achieving an Inclusive Environment, GLA (April 2004)</p>





## 10 Wind and micro-climate

### KEY MESSAGES:

- Buildings taller than their surroundings may cause excessive wind in neighbouring streets and public areas.
- New developments should consider the local wind environment, local temperature, overshadowing and glare, both on and off the site.
- Where poor wind conditions already exist reasonable attempts must be made to improve conditions generally.

- 10.1 The construction of a building changes the microclimate in its vicinity. Micro-climate refers to local conditions including wind, temperature, overshadowing, access to daylight and general comfort. In particular high-rise buildings can cause high wind velocities at pedestrian level which can create an uncomfortable environment and can even be dangerous. Therefore, the design of your building should not only focus on the building envelope and on providing good indoor environment, but should also include the effect of the design on the surrounding outdoor environment.
- 10.2 The purpose of this guidance is to ensure that appropriate standards are met in the design of buildings and outdoor features to ensure that suitable wind safety and comfort levels are achieved.
- 10.3 This guidance relates to Core Strategy CS14 - *Promoting high quality places and conserving our heritage* and policy DP24 - *Securing high quality design* of the Camden Development Policies.

### When does this guidance apply?

- 10.4 This guidance applies to all development that has the potential to change their environment with regard to wind and micro-climate, whether new build or extension. However, the implications for a proposal will vary greatly depending on the nature of the site, the scale of development, its interaction with surrounding sites, and existing buildings and structures on the site.

#### **DEVELOPMENTS LARGE ENOUGH TO CHANGE THEIR LOCAL ENVIRONMENT WILL INCLUDE:**

- New or modified buildings that are 18 metres or 5 storeys higher than any surrounding building;
- Significant modifications to the built environment in areas of quantifiable and recognised existing wind nuisance;
- Major proposals adjacent to or incorporating a significant area of public or outdoor space;
- Developments with a large amount of glazing or dark masonry surfaces; or
- A combination of new or modified buildings that cumulatively, will significantly change the wind environment.

#### **Wind environment around buildings**

- 10.5 Buildings taller than their surroundings may cause excessive wind in neighbouring streets and public areas. Environmental winds are primarily driven by building massing and should be considered at the early design stages, when changes to achieve design objectives can be made most easily.
- 10.6 We will expect you to consider the local wind environment when designing your scheme, both on and off the site. Where poor wind conditions exist in the area prior to development, a reasonable attempt must also be made to improve conditions in general.

#### **What information should I provide?**

- 10.7 Relevant developments are expected to use the Lawson Comfort Level Ratings (set out below). Areas that must be considered are:
- public and private open spaces on and adjacent to the site;
  - outdoor areas on upper levels of the development;
  - entrance and exit areas;
  - shop windows;
  - bus stops;
  - outdoor dining areas;
  - thoroughfares; and
  - pedestrian crossing points.

- 10.8 The Lawson Criteria are used throughout the UK to assess local wind environments and are a widely accepted assessment tool.

**The Lawson Comfort Criteria**

The Lawson Comfort Criteria is a scale for assessing the suitability of wind conditions in the urban environment based upon threshold values of wind speed and frequency of occurrence. It sets out a range of pedestrian activities from sitting through to crossing the road and for each activity defines a wind speed and frequency of occurrence. If the wind conditions exceed the threshold then the conditions are unacceptable for the stated activity.

**Figure 1. Lawson Comfort Level Rating**

<b>Lawson Comfort Level Rating</b>	<b>Predominant activity</b>	<b>Mean hourly wind speed exceeded less than 5% of the time</b>
C4 - Long term "Sitting"	Reading a newspaper and eating and drinking	4m/s
C3 - "Standing" or short term sitting	Appropriate for bus stops, window shopping and building entrances	6m/s
C2 - Pedestrian Walking or "Strolling"	General areas of walking and sightseeing	8m/s
C1 - Business "Walking"	Local areas around tall buildings where people are not expected to linger	10m/s

- 10.9 If this applies to your development your planning application should be accompanied by qualitative wind impact statement, prepared by a suitably qualified professional (i.e. wind engineer or similar).
- 10.10 You must firstly carry out a qualitative wind impact assessment. If the results of this show potential negative impacts you will also need to carry out a quantitative assessment. Both assessments must be submitted with your planning application. Your assessment must provide detailed information on how the proposal meets the criteria in the guidance, using quantitative measures (i.e. evidence of wind tunnel testing or similar).

**Your Wind Impact Statement must:**

- Show how the proposal is expected to affect the local wind environment;
- Describe how the proposal has addressed the local wind environment;
- Include reference to specific features of the site or the development that make a contribution to the wind environment, either positively or negatively, and highlight areas of concern; and

- Reference the proposal's ability to meet the targets of this guidance, and make recommendations regarding the necessity for additional work, as described below.

**Your Wind Impact Statement should:**

- Compare existing and proposed conditions against the Lawson Comfort Criteria in both summer and winter conditions;
  - Demonstrate how the proposal has adapted to the local wind environment;
  - Reference specific features of the site or the development that make a contribution to the wind environment, both positively or negatively;
  - Highlight areas of concern, and
  - Describe the proposal's ability to adhere to the guidance.
- 10.11 If your proposal does not achieve the targeted ratings or outcomes you must provide sound justification to demonstrate, to the satisfaction of the Council, why your proposal cannot meet the targets. This justification should be prepared in conjunction with, and endorsed by your wind engineer, and must include evidence of the attempts that have been made to address design deficiencies.
- 10.12 If your proposal does not satisfactorily meet the criteria, and you have not provided justification, your proposal may be refused.
- 10.13 A condition may be imposed to secure the achievement of wind speed(s) around the building no greater than those predicted. The Council may require alterations or other remedial measures at the developer's expense if wind speed targets are not met.

**Other considerations relating to the wind environment**

- 10.14 Your development must not compromise the viability of wind-driven renewable energy generators on adjacent and nearby sites. Where wind-driven energy generators are likely to be significantly affected, you are responsible for ameliorating the loss by moving, modifying or replacing the installation, or by incorporating equivalent renewable energy generation within your site.
- 10.15 Where a development affects the viability of an existing wind-driven renewable energy generator, and the solution is to modify the installation off-site, all approvals, expenses and risks are the responsibility of the applicant. This requirement will be incorporated as a condition or in a S106 agreement relating to any approval. Where additional renewable energy capacity is to be installed on site, this will be assessed in conjunction with other renewable energy installations. (Note: additional capacity that is gained by installations off-site should be credited toward the onsite requirement for the development)
- 10.16 Wind environment also impacts on natural ventilation systems. Natural ventilation must also be considered in building design.

## Other influences on micro-climate

### Local heat

- 10.17 Local air temperature can be affected by your building's ability to absorb heat during the day and release it at night. This cumulative effect of this happening across London results in the urban heat island effect. We strongly encourage green roofs, brown roofs, green walls and soft landscaping in all developments to reduce this affect. You can also consider light coloured building materials so unnecessary heat is not absorbed by your building. See Camden Planning Guidance 3 – Sustainability for further guidance on these issues.

### Overshadowing

- 10.18 You should consider the design of your proposal carefully so that it does not overshadow windows to habitable rooms or open spaces and gardens. This may be particularly difficult in central London. However, it will be particularly important in Central London to prevent overshadowing of amenity space and open spaces given the limited amount of open spaces and the existing amount of overshadowing.

### Glare

- 10.19 Glare is uncomfortably bright sunlight reflected from a building façade. It is generally caused by tall, fully glazed and sloping facades with reflective finishes that reflect the sun. Tall buildings should be designed to avoid this and use materials that do not result in glare.

### Further information

General guidance on design principles	By Design: Urban Design in the Planning System – Towards Better Practice, DETR/CABE, 2000
Tall buildings	Guidance on tall buildings, English Heritage/CABE, 2007
Urban design in relation to the historic environment	Understanding Place, English Heritage 2010; and Building in Context, English Heritage/CABE, 2002



## 11 Open space, outdoor sport and recreation facilities

### KEY MESSAGES:

- If your scheme is over a certain size it is expected to make a contribution towards the provision of public open space in the borough;
- Our priority is for the provision of public open space on-site, therefore it is important this is taken into account at the design stage of your scheme;
- Other forms of public open space contributions could be provision off-site or as a payment in lieu.

- 11.1 This guidance gives details of how the Council expects development to provide for a variety of public open space, outdoor sport and recreation facilities. It sets out:
- Which developments are expected to make provision for open space, outdoor sport and recreation opportunities;
  - The amount of open space we expect;
  - The type of open space and outdoor sport and recreation facilities we expect;
  - How we will calculate the open space expected for a specific development; and
  - The Council's priorities for how open space, outdoor sport and recreation facilities will be provided.

- 11.2 This guidance primarily relates to:

#### Core Strategy Policies:

- CS5 – Managing the impact of growth
- CS15 – Protecting and improving our parks and open spaces and encouraging biodiversity

#### Development Policies:

- DP26 – Managing the impact of development on occupiers and neighbours
- DP31 – Provision of, and improvements to, open space and outdoor sport and recreation facilities.

### **Which developments are expected to contribute towards open space, outdoor sport and recreation facilities?**

- 11.3 As set out in paragraph 31.6 the Camden Development Policies document you will need to make a contribution to the provision of these facilities in the borough if your development falls within the following categories:

- Five or more additional dwellings;
- Student housing schemes creating an additional 10 or more units/rooms or occupiers; and
- Developments of 500sq m or more of any floorspace that are likely to increase the resident, worker or visitor populations of the borough.



**How much open space do we expect?**

- 11.4 Development Policy *DP31 – Provision of, and improvements to, open space and outdoor sport and recreation facilities* sets out the amount of open space to be provided by developments as follows:

**Figure 2. Amount of open space to be provided by land use**

Development type	Open space provision
Residential (all types)	9 sq m per occupier
Commercial development	0.74 sq m per worker

- 11.5 Non-residential developments for higher education are considered to generate requirements per occupier (including employees and students) at the same rate as commercial developments.

**What types of open space, outdoor sport and recreation facilities will we expect?**

- 11.6 Open space standards relate specifically to public open space. The Council acknowledges the private amenity space and other private open land can reduce pressure on the use of public open space. However public open spaces provide opportunities for social interaction and a focus for community activities. Private spaces cannot be used as a substitute for public open space.



- 11.7 Public open space includes a wide variety of different facilities that are available to the public:
- Green amenity spaces, including natural and semi-natural spaces;
  - Active spaces for outdoor sport and recreation and for children's play; and
  - Civic spaces.
- 11.8 Green amenity spaces can be formal or informal parks and gardens or other landscaped areas, which provide areas of passive recreation for all age groups and attractive green areas within the urban environment. They are intended to be attractive spaces for people to enjoy using or viewing. This type of open space can include areas of natural or semi-natural green spaces, which support wildlife conservation and biodiversity and promote environmental education and awareness.
- 11.9 Active spaces are areas of grassed or artificial surfaces providing opportunities for sport and recreation together with ancillary facilities such as changing rooms and flood lighting. These include playing pitches, courts, greens, athletic tracks and Multi Use Games Areas (MUGAs). Formal recreation areas may be stand-alone facilities or may form part of a larger open space (e.g. the tennis courts and bowling greens at Hampstead Heath).
- 11.10 Civic spaces are hard surfaced areas designed for pedestrians, such as piazzas, which often provide a setting for civic buildings.
- 11.11 Given the amount of hard surfaces in Camden, our priority will generally be for green spaces, especially in the south of the borough. Paragraphs 11.12 to 11.17 give more details of specific types of public open space.

### **Children's play space and young people's recreation space**

- 11.12 These are formal or informal areas designed to engage children or young people. Formal spaces are designated areas for children and young people containing a range of facilities and an environment that has been designed to provide focused opportunities for outdoor play. There are three categories of formal children's play space defined by the National Playing Fields Association (NPFA).
1. LAP - Local Area for Play;
  2. LEAP - Local Equipped Area for Play;
  3. NEAP - Neighbourhood Equipped Area for Play.
- 11.13 Informal spaces are less well defined areas and can be incorporated into smaller spaces such as local footpaths where wide enough or town centre spaces. It involves incorporating features that children can play with such as fountains or objects to climb.
- 11.14 Contributions to children's play space and young people's recreation space can include formal and informal areas. We must be satisfied that any informal space has been sufficiently designed to meet the requirements of children and young people.

### **Natural and semi-natural green spaces**

- 11.15 These include sites and areas formally recognised for their nature conservation value such as Sites of Special Scientific Interest, Sites of Nature Conservation Importance and Local Nature Reserves as well as other areas with biodiversity such as gardens, parks and open spaces.
- 11.16 In exceptional circumstance, generally in areas deficient in nature conservation sites, we may consider the inclusion of a biodiverse green roof, brown roof or green wall as a contribution towards natural and semi-natural green spaces in the borough. For more information about areas of deficiency please see Appendix A to this section. For more information about green roofs, brown roof and green walls please see Camden Planning Guidance 3 – Sustainability.

### **Allotments and Community Gardens**

- 11.17 Allotments and community gardens provide opportunities for people to grow food as part of the long term promotion of sustainability, health and social inclusion.

### **What type of open space, outdoor sport and recreation facilities are expected for specific development types?**

- 11.18 For this guidance, and in line with *Camden's Open space, Sport and Recreation Study Update 2008* we have identified the following five broad categories of open space:
- Public amenity open space;
  - Children's play space and young people's recreation space;
  - Natural and semi-natural green space;
  - Allotments and community gardens; and
  - Outdoor sport and recreation.
- 11.19 We recognise that not every type of development will generate a need for all types of open space, outdoor sport and recreation facilities. For example, housing for older people will not generate demand for children's play space. Figure 3 sets out the types of open space that are likely to be needed for various types of development.

**Figure 3. Type of open space to be provided by development**

	<b>Amenity open space</b>	<b>Children's playspace</b>	<b>Natural green- space</b>	<b>Outdoor sport facilities</b>	<b>Allotments / Community gardens</b>
Self-contained homes (Use Class C3)	✓	✓	✓	✓	✓
Student housing	✓	x	✓	✓	x
Housing for older people	✓	x	✓	x	✓
Commercial	✓	x	✓	✓	x

Source: adapted from Camden Open Space, Sport and Recreation Study Update 2008.

- 11.20 The requirement for 9 sq m of public open space per residential occupier and 0.74 sq m of public open space per employee/ student (commercial/ higher education developments) should generally be divided into different types of open space approximately as set out in Figure 4.
- 11.21 In Camden the potential to add to outdoor sports facilities for adults is limited. Provision for outdoor sports will be sought within the overall requirement of 9 sq m per residential occupier where an opportunity for provision arises. Where a development provides public facilities for outdoor sports these will reduce the requirement for other types of open space.
- 11.22 The Camden Open Space, Sport and Recreation Study Update 2008 derived a separate standard for allotments of 0.9 sq per residential occupier. The study indicated that additional space to grow food could only be provided by taking a flexible approach including community gardens, roof gardens, temporary use of vacant sites and converting parts of existing open spaces. Although the standard is not included within the 9 sq m overall requirement, paragraph 31.7 of the Camden Development Policies document indicates that allotments and community gardens are a Council priority. Provision will be sought wherever an opportunity arises, and will be considered to reduce the requirement for other types of open space.

**Figure 4. Break down of open space by type of provision**  
**Residential Developments (all types)**

Type of open space	Provision per adult	Provision per child
Amenity open space	5 sq m	4 sq m
Children's playspace (where applicable)		2.5sq m
Natural green space	4 sq m	2.5 sq m

**Commercial / higher education (non-residential)**

Type of open space	Provision
Amenity open space	0.4 sq m per person
Natural green space	0.34 sq m per person

**How we will calculate the open space expected for a specific development**

- 11.23 Figure 5 below shows the figures we will use to assess open space requirements for individual residential, commercial and higher education developments. The figures are based on the break down of open space requirements in Figure 4 and the occupancy rates recommended by the Camden Open Space, Sport and Recreation Study Update 2008. The occupancy rates are given in Appendix B to this section.

**Figure 5. Open space required for specific developments**

Self-contained homes in Use Class C3	Amenity open space	Children's play space	Natural green space	Total
One bedroom home	6.5 sq m		5.2 sq m	11.7 sq m
Two bedroom home	9.2 sq m	0.6 sq m	7.2 sq m	17.0 sq m
Three bedroom home	12.8 sq m	2.9 sq m	9.5 sq m	25.2 sq m
Four bedroom home	14.1 sq m	3.6 sq m	10.2 sq m	27.9 sq m
<b>Student housing, hotels and hostels</b>				
Single room	5.0 sq m		4.0 sq m	9.0 sq m
Double room	10.0 sq m		8.0 sq m	18.0 sq m
<b>Commercial/ higher education development</b>				
Per 1,000 sq m gross external area	21.6 sq m		17.9 sq m	38.9 sq m

- 11.24 Appendix D sets our worked examples showing the open space required for a number of different development types and sizes.

## How public open space will be provided

11.25 There are three ways in which you can make a contribution to public open space in Camden:

1. On site provision of new public open space;
2. Off site provision of new public open space;
3. Providing a financial contribution in lieu of direct provision.

## On site provision of new public open space

11.26 If your development is located in an area deficient in public open space or with an under provision of public open space we expect provision of new public open space on the development site (see Appendix A to this section and Core Strategy Map 7). This is in accordance with paragraph 31.7 of the Camden Development Policies document. Paragraph 31.7 and accompanying Table 1 also set out other developments that are expected to provide open space on-site. Some on-site provision is expected for residential development adding 60 or more homes and commercial development adding 30,000 sq m or more.

11.27 The amount and type of public open space that can be achieved on-site will be determined by the size of the site. Where children's play facilities are required as a result of the development, priority should be given to the provision of these facilities. On sites already covered by development, and where appropriate access may have to be restricted to the occupiers of the building, the provision of a roof garden as a contribution to public open space may be considered. If a roof garden is to be considered as public open space, as a minimum it should be able to be used by all the occupants of the building.

11.28 Any new public open space that is provided as part of your development should be:

- Large enough to cater effectively for the intended users;
- Designed to be fully accessible, where possible;
- Designed in consultation with the Council's Open space team; and
- Practical to maintain.

11.29 Where you are required to make a contribution to public open space we will ensure that the type of open space you provide best meets the needs of the occupiers or users of the development. You should consider designing your open space carefully to enable different types of open space to be located together or adjacent to each other to complement the overall provision of open space, sport and recreation opportunities.

11.30 We will expect new open space provision to be publicly accessible, however in exceptional circumstances, for example where an existing open space is in private ownership or already has restricted access we may accept an alternative access arrangement.

### **Off site provision of new public open space**

- 11.31 Where a site cannot provide public open space on-site, the preferred option will be provision of new suitable open space off-site. Once again this is especially important where a site does not have access to existing open space in accordance with the distance thresholds (see Appendix A to this section). The new provision should be within the distance threshold for the type of public open space to be provided. For example, if a developer is to provide a children's play area of 100 sq m this should be provided within 50 m walking distance of the development, if amenity open space is to be provided, this should be a maximum of 280 m from the development. If the developer is to provide for a new formal recreation area such as a multi-use games area, this should be provided within 1,200 m of the development.
- 11.32 We will accept the provision of public access to an existing open space that currently has restricted access as a contribution to off-site public open space provision.

### **Providing a financial contribution in lieu of direct provision**

- 11.33 The Council may agree to accept financial contributions in place of direct provision of new public open space where the development site is too small to incorporate on-site open space and the densely built up character of Camden prevents direct provision of off-site public open space. Financial contributions may be used for:
- The creation of an area of public open space, including buying additional land or leasing it at a nominal rate;
  - Improving access to existing public open space;
  - Opening up access to existing private open space;
  - Fit out of a new or existing open space, or some elements of the open space; and
  - Qualitative improvements to existing open space.
- 11.34 Financial contributions may be pooled to create, fit out, improve or provide access to open space. For example, where the Site Allocations Document indicates that new public open space is required on a development site, contributions from other developments within 280 m may be pooled to facilitate the creation of the new public open space.
- 11.35 Financial contributions are calculated on the basis of the costs and requirements set out in Figure 6.. We will aim to spend the collective amount in the proportions set out in Figure 6 and within the same ward as the contributing development where possible. However individual financial contributions will be spent on priorities identified in:
- Camden's open space, sport and recreation study update 2008;
  - Camden's open space strategy;
  - Camden's biodiversity action plan;
  - Camden's play strategy;
  - Camden's sport strategy;

- Individual park management plans.

11.36 A financial contribution is based on the:

- Capital cost of providing new public open space;
- Cost of maintenance for the first 5 years; and
- Cost for the open space team to administer the contribution and design schemes.

**Figure 6. The financial contributions**

	<b>Capital cost</b>	<b>Maintenance</b>	<b>Design and admin</b>
<b>Self-contained homes in Use Class C3</b>			
One bedroom home	£385	£386	£46
Two bedroom home	£663	£561	£80
Three bedroom home	£1,326	£832	£159
Four bedroom home	£1,537	£921	£184
<b>Student housing, hotels and hostels</b>			
Single room	£297	£297	£37
Double room	£593	£594	£71
<b>Commercial/ higher education development</b>			
Per 1,000 sq m	£1,265	£1,284	£152

- 11.37 These aggregate contributions are based on provision of public open space, natural green space and (where applicable) children's play space. Specific contributions to allotments and community gardens and to outdoor sport and recreation provision will be sought on a case by case basis depending on whether there are opportunities to add to provision or are local facilities that need to be maintained.
- 11.38 The calculation of the aggregate contributions is set out in Appendix C to this section. Appendix C includes break down of the capital cost by open space type. This may be needed for developments where a proportion of the open space requirement is met on site or where adequate open space of some types is already available locally.
- 11.39 Payments for maintenance and design and administration are explained in paragraphs 11.45 to 11.50. They have not been aggregated with capital costs as payments will sometimes be required need to be calculated separately (eg where open space will be provided by the developer but maintained by the Council. The Council may also wish to draw separately on funds for capital works, funds for maintenance and funds for design and administration.
- 11.40 The contributions may be adjusted upwards or downwards according to the particular circumstances of the development. They provide a starting

point for negotiations between the Council and developers. The scale of financial contributions will be reviewed and updated as appropriate.

- 11.41 Appendix D to this section sets out worked examples showing the contributions required for a number of different development types and sizes.

### **Providing a combination of open space provisions**

- 11.42 Your development may contribute to public open space through one of the ways listed above or by a combination of them. To determine the amount and type of public open space you are expected to provide, either on-site or off-site we will consider the:

- Type and size of the existing public open space provision within the distance threshold of your development; and
- Size and likely users of your development.

- 11.43 For example, if you propose a residential development located within 280 m of a small local park you may not be required to contribute to amenity open space, but may still be required to contribute to children's play facilities or a formal recreation area if suitable facilities do not exist within the distance threshold of the development.

- 11.44 In all cases a legal agreement will be required to secure the ongoing use of the open space provided as public open space, or to secure the financial contribution in lieu of direct provision.

## **Maintenance**

### **On or off-site provision**

- 11.45 Where you provide a contribution towards public open space outdoor sport or recreation facilities (either on-site or off-site), the Council will need to be satisfied that it has been properly laid out and completed and that suitable contractual arrangements for its long-term maintenance have been put in place. If you provide new public open space (either on-site or off-site) you will be expected to transfer the space to the Council to maintain and retain for such use.
- 11.46 Where your new public open space is to be transferred to us, you will normally be required to remain responsible for its maintenance for an initial establishment period of 5 years. After this time, we will take full responsibility for the maintenance of that public open space.

### **Financial contribution**

- 11.47 If you make a financial contribution in lieu of direct provision, whether it is for substantial qualitative or accessibility improvements to existing sites already maintained by the Council or for the provision of a new public open space, we will expect you to provide a commuted sum for the maintenance of these facilities for a period of five years.
- 11.48 Where your new public open space is not to be transferred to the Council a commuted sum for maintenance will not be required. However,



if you choose to retain control of your public open space, we will need to be sure that adequate provision for the maintenance and access of that public open space is in place.

- 11.49 In ALL cases a legal agreement will be required to secure the maintenance of public open space over a defined period or to secure the financial contribution in lieu of direct maintenance.

### **Design and administration**

- 11.50 For payments in lieu of providing public open space, on-site or off-site payments we will also require a 12% contribution towards the costs of our open space team to administer the financial contribution and to plan and design works within our open spaces.

### **Further information**

Open Space, Sport And Recreation Study	Camden's open space, sport and recreation study update 2008 provides an assessment of open space, sport and recreation provision and demand in the borough. <a href="http://www.camden.gov.uk/planning">www.camden.gov.uk/planning</a>
Biodiversity Action Plan	Camden's Biodiversity Action Plan provides Camden's priorities for improving our greenspaces and biodiversity. <a href="http://www.ukbap-reporting.org.uk/plans/lbap.asp">www.ukbap-reporting.org.uk/plans/lbap.asp</a>
PPS17	Planning Policy Guidance 17 – Planning for open space and its companion guide provide policy and guidance for the provision of open space including the quantitative and qualitative considerations. <a href="http://www.communities.gov.uk">www.communities.gov.uk</a>
Mayor of London's Supplementary Planning Guidance	The Mayor of London's Supplementary Planning Guidance Providing for children and young people's play and informal recreation provides guidance and examples of how to incorporate space for children and young people. <a href="http://legacy.london.gov.uk/">http://legacy.london.gov.uk/</a>

## Appendix A

### Public Open Space Deficiency

Figure 7 shows the maximum distance that people can reasonably be expected to travel on a regular basis to use different types of open space. Amenity open space and children's play space should be available within easy walking distance of the development to which they relate. People are generally willing to travel further to use recreation areas providing outdoor sport facilities or to larger parks.

**Figure 7. Distance threshold for different types of public open space**

Type of public open space	Minimum size (where applicable)	Distance from development to public open space
Public amenity open space		280m*
Formal recreation area		1.2 km
<b>Play Space</b>		
LAP	100sq m	50m*
LEAP	400sq m	280m*
NEAP	1000sq m	500m*
Natural greenspace	Any	500m
Allotments and community gardens	Any	Any

\*This distance is the actual walking distance, taking into account local circumstances, such as the location of entrance gates, street patterns, the severance effects of railway lines or heavy traffic flows that could all reduce the accessibility of open spaces.

(Based on Guide to preparing Open Space Strategies: Best practice guidance of the London Plan, Mayor of London, 2002)

Camden Core Strategy Map 7 shows areas of the borough that are deficient in public open space.

#### AREAS DEFICIENT IN PUBLIC OPEN SPACE

Areas more than 280m walking distance away from a public open space with a multi-functional role, that is a space over 0.25ha (2,500sq m).

Core Strategy policy CS13 also refers to areas with an under-provision of open space. These are areas with access to open space, but the provision is not sufficient to meet the level of local need due to the number of children, dwelling density, and social disadvantage in the area. These are shown in Figure 4.4 of Camden's Open Space, Sport and Recreation Study Update.

Both components are needed to ensure that everyone is within an appropriate distance of public open space based upon their needs and to ensure that people are not prevented from accessing that open space as a result of prohibitive costs. Contributions to open space will be

encouraged within the distance thresholds for the particular type of open space to be provided.

Paragraph 15.18 of Camden's Core Strategy indicates that residents and visitors further than 1 km away from a metropolitan or borough Site of Nature Conservation Importance (SNCI) are considered to have poor access to the natural environment. Core Strategy Map 8 shows all areas greater than 500 m from an SNCI as deficient in access to nature conservation areas.

**AREAS DEFICIENT IN NATURE CONSERVATION SITES**

Areas more than 500m walking distance away from a Borough or Metropolitan level Site of Nature Conservation Interest.

**Appendix B**

**Occupancy rate by development type**

The Camden Open Space, Sport and Recreation Study Update 2008 recommends calculating occupancy rates and child yields on the basis of the London Housing Survey 2002 and DMAG briefing 2005/25. The occupancy rates are shown in Figure 8.

**Figure 8. Occupancy rate for C3 homes based on the London Housing Survey and DMAG briefing 2005/25**

Self-contained homes in Use Class C3	Total persons	Children (average)	Adults (net)
One bedroom home	1.3	0.04*	1.3
Two bedroom home	1.9	0.25	1.65
Three bedroom home	2.8	1.15	1.65
Four bedroom home	3.1	1.44	1.66

Source: Camden Open Space, Sport and Recreation Study Update 2008.  
\*The average child yield for a one bedroom home equates to 1 child per 25 homes, which would not generate a meaningful play space requirement, and has been treated as 0.

Occupancy rates for student housing, hotels and hostels are assumed to be one person per single bedroom and two people per double bedroom.

The study recommends assuming an employee density of one worker per 19 sq m (gross external area) for commercial floorspace. This generates an occupancy rate of 52.6 employees per 1,000 sq m (gross external area). Non-residential developments for higher education are considered to generate the same number of occupants (including employees and students) as commercial developments.

## Appendix C

### Calculation of financial contributions

This appendix shows how we have calculated the financial contributions for provision or enhancement of public open space.

In addition to this capital cost, you will be expected to pay a commuted sum to cover:

- Maintenance of the facility and open space provision over a 5 year period; and
- Designing the new open space works and administering the financial contribution by Camden's open space team.

**Figure 9. Capital cost of provision**

Type of public open space	Capital cost
Amenity open space	£46.22 per sq m
Children's play space and young people's recreation space	£199.48 per sq m
Natural and semi-natural greenspace	£16.42 per sq m
Allotments/Community Gardens	£32.50 per sq m

Source: Camden Open Space, Sport and Recreation Study Update 2008

Figure 5 sets out the break down of open space requirements for developments of specific sizes. The capital costs have been aggregated in accordance with Figure 5 as set out in Figure 10.

**Figure 10. Calculation of financial contribution to capital cost**

<b>Capital cost per square metre</b>	<b>Amenity open space £46.22 psm</b>	<b>Children's play space £199.48 psm</b>	<b>Natural green space £16.42 psm</b>	<b>Total (amenity space + play space + green space)</b>
<b>Self-contained homes in Use Class C3</b>				
One bedroom home: space required	6.5 sq m		5.2 sq m	
Space required x cost per square metre	£300		£85	£385
Two bedroom home: space required	9.2 sq m	0.6 sq m	7.2 sq m	
Space required x cost per square metre	£425	£120	£118	£663
Three bedroom home: space required	12.8 sq m	2.9 sq m	9.5 sq m	
Space required x cost per square metre	£592	£578	£156	£1,326
Four bedroom home: space required	14.1 sq m	3.6 sq m	10.2 sq m	
Space required x cost per square metre	£652	£718	£167	£1,537
<b>Student housing, hotels and hostels</b>				
Single room: space required	5 sq m		4 sq m	
Space required x cost per square metre	£231		£66	£297
Double room: space required	10 sq m		8 sq m	
Space required x cost per square metre	£462		£131	£593
<b>Commercial/ higher education development</b>				
Space required per 1,000 sq m	21.0 sq m		17.9 sq m	
Space required x cost per square metre	£971		£294	£1,265

### Contributions to maintenance costs

In addition to capital costs, the Council has established a maintenance cost of £6.60 per square metre per year, based on the 2006 Parks and Open Spaces Budget, plus inflation.

The standard length of time developers should provide for maintenance of new and enhanced public open space is 5 years.

Commuted sums for maintenance of public open space are calculated as follows: open space requirement (sq m) x £6.60 x 5. This equates to £33 per square metre of open space required.

### Contributions to the cost of design and administration

Design and administration costs have been assessed as 12% of the capital cost of the open space provision or contribution.

## Appendix D

### Worked Examples

#### Worked Example 1:

##### Public open space provision for self-contained homes (C3)

A residential development of 16 new homes provides the following mix of dwelling sizes: 3 x 1-bedroom, 8 x 2-bedroom, 4 x 3-bedroom and 1 x 4-bedroom. The open space requirement can be calculated as follows:

Home size	No of homes	x open space requirement per home (sq m) from Figure 5	= total requirement (sq m)
One bedroom home	3	11.7	35.1
Two bedroom home	8	17.0	136.0
Three bedroom home	4	25.2	100.8
Four bedroom home	1	27.9	27.9
Total for all homes	16		299.8

The total open space requirement for this 16 home scheme would be approximately 300 sq m.

#### Worked Example 2:

##### Public open space provision for non-residential development

An office development provides 1,500sq m of additional floorspace. The open space requirement can be calculated as follows:

Additional floorspace	÷ 1,000 to give floorspace in thousands of sq m	x open space requirement per 1,000 sq m from Figure 5	= total requirement (sq m)
1,500 sq m	1.5	38.9	58.35

The total open space requirement for this additional non-residential floorspace would be approximately 60 sq m.

#### Worked Example 3:

##### Payment in lieu of open space provision for non-residential development – capital costs

As per example 2, an office development provides 1,500 sq m of additional floorspace. The payment in lieu of open space provision can be calculated as follows:

<b>Additional floorspace</b>	<b>÷ 1,000 to give floorspace in thousands of sq m</b>	<b>x capital cost per 1,000 sq m from Figure 6</b>	<b>= total payment for capital costs</b>
1,500 sq m	1.5	£1,265	£1,897.50

The payment in lieu of open space provision for this additional non-residential floorspace based on capital costs would be £1,897.50. However, we would also expect payments towards maintenance and design and administration – see example 5.

#### **Worked Example 4**

##### **Payment in lieu of open space provision for student housing – capital costs**

A student housing scheme provides 30 single rooms and 10 double rooms. The payment in lieu of open space provision can be calculated as follows:

<b>Bedroom type</b>	<b>No of bedrooms</b>	<b>x capital cost per bedroom from Figure 6</b>	<b>= total payment for capital costs</b>
Single	30	£297	£8,910
Double	10	£593	£5,930
Total for all bedrooms	40		£14,840

The payment in lieu of open space provision for this student housing based on capital costs would be £14,840. However, we would also expect payments towards maintenance and design and administration – see example 5.

#### **Worked Example 5**

##### **Payment in lieu of open space provision for self-contained homes (C3) – all costs**

A residential development of 5 new homes provides the following mix of dwelling sizes: 1 x 1-bedroom, 3 x 2-bedroom, 1 x 3-bedrooms. The total payment in lieu of open space provision can be calculated in 4 stages



**Stage 1 – Capital costs**

Home size	No of homes	x capital cost per home from Figure 6	= total payment for capital costs
One bedroom home	1	£385	£385
Two bedroom home	3	£663	£1,989
Three bedroom home	1	£1,326	£1,326
Total for all homes	5		£3,700

The payment in lieu of open space provision for this 5 home scheme based on capital costs would be £3,700.

**Stage 2 – Maintenance costs**

Home size	No of homes	x maintenance cost per unit from Figure 6	= total payment for maintenance
One bedroom home	1	£386	£386
Two bedroom home	3	£561	£1,683
Three bedroom home	1	£832	£832
Total for all homes	5		£2,901

The payment in lieu to cover maintenance of new or enhanced open space for this 5 home scheme would be £2,901.

**Stage 3 – Design and administration costs**

Home size	No of homes	x design and administration cost per unit from Figure 6	= total payment for design and administration
One bedroom home	1	£46	£46
Two bedroom home	3	£80	£240
Three bedroom home	1	£159	£159
Total for all homes	5		£445

The payment in lieu to design and administration for new or enhanced open space for this 5 home scheme would be £445.

**Stage 4 – Sum of all costs**

The three separate types of costs will not usually be aggregated for the Council's purposes (see paragraph 11.39). However, for the guidance of developers, the three costs can be added together.

In this example, the total cost to the developer would be:

Capital costs	£3,700
+ maintenance costs	£2,901
+ design and administration costs	£445
<b>= grand total</b>	<b>£7,046</b>

## 12 Planning for healthy communities

### KEY MESSAGES:

- Planning has a significant role in improving health;
- Applicants should consider the impact of the development on health;
- Applicants should submit a completed health checklist with applications.

- 12.1 It is widely recognised that the health and well-being of individuals is directly influenced by a number of related factors. These include:
- housing;
  - employment;
  - education;
  - access to green and open spaces;
  - social capital and community cohesion;
  - climate change and sustainability;
  - community safety;
  - building and urban design;
  - air and noise pollution;
  - diet and food;
  - waste; and
  - other factors.
- 12.2 Planning and the built environment have a significant role in influencing, both directly and indirectly, all of these health determinants.
- 12.3 In the UK, the 2010 Marmot review, Fair Society and Healthy Lives, also identified a number of recommendations to help deliver one of its objectives to: create and develop healthy and sustainable places and communities. These include:
- active travel;
  - provision of good quality open and green spaces;
  - improving the food environment;
  - energy efficiency of housing; and
  - to fully integrate planning, transport, housing, environmental and health systems to address the social determinants of health.



12.4 Camden's Core Strategy reflects health across the strategy as a cross-cutting theme and so almost all the policies in the Core Strategy will have an impact on health. For example, the following policies all have an influence on health and well-being:

- CS6 - *Providing quality homes;*
- CS15 - *Protecting and improving our parks and open spaces and encouraging diversity;* and
- CS11 - *Promoting sustainable and efficient travel.*

12.5 Policy CS16 - *Improving health and well-being* brings these policies together to ensure they are all working to tackle health inequalities and improve well-being. CS16 also sets out how we will work with NHS Camden to improve and protect health and also support the provision of new health facilities.

12.6 The following Core Strategy policies are also relevant as they work together to promote health and improve well-being:

- CS8 - *Promoting a successful and inclusive Camden economy,*
- CS10 - *Supporting community facilities and services,* and
- CS17 - *Making Camden a safer place.*

12.7 The following policies of the Camden Development Policies are also relevant:

- DP15 - *Community and leisure uses;*
- DP26 - *Managing the impact of development on occupiers and neighbours;* and
- DP32 - *Air quality and Camden's Clear Zone.*

### **Creating healthy communities**

12.8 Where possible developments should:

- Encourage walking and cycling;
- Discourage car use to reduce emissions and accidents;

- Provide landscaping, planting and trees to improve air quality and quality of life;
- Provide adequate amenity space for visual and physical recreation;
- Ensure a mix of uses within or near the residential area to reduce the need to travel; and
- Improve the environmental quality of buildings to ensure buildings stay warm in winter and cool in summer.

### **The NHS Camden Health Checklist for Planning**

- 12.9 This guidance is designed to complement policy 3.2 of the London Plan which requires Health Impact Assessments for major developments, and consideration of the health impacts of development to ensure major new development promotes public health within our borough.
- 12.10 The NHS Camden health checklist for planning has been developed to ensure that health is a key consideration within new developments. The checklist provides support and guidance for developers in order to maximise the health benefits of any scheme. The NHS Camden Health Checklist for Planning is contained in Appendix 1 of this section.
- 12.11 We will require a completed health checklist to be supplied alongside all applications for all developments which meet the following criteria:
- More than 10 residential units, including changes use and new dwellings
  - More than 1,000sq m of non-residential floor space
  - Loss/gain of D1 floorspace of more than 50sq m

### **Hot food takeaways (A5 uses)**

- 12.12 The document *Healthy Weight, Healthy Lives: A Cross Government Strategy for England*, published by the government in January 2008 highlights the commitment to promoting healthier communities. A key element of this strategy is the promotion of healthier food choices. The document highlights the need for local authorities to manage the proliferation of fast food outlets as a means of combating their known adverse impact on community health.
- 12.13 Core Strategy policy CS7 and policy DP12 of the Camden Development Policies, along with Camden Planning Guidance 5 - Town Centres, Retail and Employment aim to manage the number and concentration of food, drink and entertainment uses, including hot food takeaways. The measures we use include:
- limiting the number of A5 units in centres and rows of shops (frontages);
  - preventing consecutive takeaway shops opening next to one another;
  - only allowing new A5 uses in appropriate locations where their impact can be minimised; and

- using legal obligations to ensure that impacts are controlled e.g. opening hours.

12.14 Please see section 5 on town centres, retail and entertainment uses in Camden Planning Guidance 5.

### **Assessing the requirement for new health facilities**

12.15 Health facilities include hospital and other premises that provide health and medical services such as doctors, integrated care centres, polyclinics and dentists. Camden Core Strategy policy CS10 aims to ensure that sufficient community facilities (including health facilities) are provided to meet the needs of Camden's population. Policy CS16 specifically aims to ensure that there is adequate provision of health facilities in partnership with NHS Camden.

12.16 Part e) of CS10 expects development that increases the demand for community facilities and services to make appropriate contributions towards providing new facilities or improving existing facilities. These contributions could be financial or they could involve the direct (re)provision of health facilities within or near a proposed development site.

12.17 The Council will consult with NHS Camden to assess the appropriate level and type of contribution required to mitigate any health care impacts which might be generated by a development proposal. The Council will also have regard to the model commissioned by the Healthy Urban Development Unit (HUDU), updated October 2009. The model is designed to forecast the level of demand for health facilities that might result from a new development and the subsequent cost of provision. Large, strategic schemes will be expected to assess the impact of visitors and employees in addition to the new and existing resident population. In other cases, contributions will not normally be sought for developments of less than 10 residential units.

12.18 Please see Camden Planning Guidance 8 – *Planning obligations* for our detailed approach.

**Further information**

PPS1	PPS1 - Delivering Sustainable Development indicates that LDF policies should plan to protect human health and address accessibility for all members of the community to a range of facilities including health, leisure and community services. It also states that LDF documents should deliver safe, healthy and attractive places to live and support the promotion of health and wellbeing by making provision for physical activity.
PPS23	PPS 23 - Planning and Pollution Control states that potential health impacts arising from development can be a material consideration.
The London Plan	The London Plan (consolidated since 2004) published in 2008 recognises health as a key cross-cutting objective of the overall strategy. The Plan also contains the following relevant policies: <ul style="list-style-type: none"> <li>• Policy 3A.20 Locations for health care</li> <li>• Policy 3A.21 Health objectives</li> <li>• Policy 3A.22 Medical excellence</li> </ul>
Mayor's Guidance	<ul style="list-style-type: none"> <li>• Health Issues in Planning: Best Practice Guidance (June 2007) – explains how planning decisions can directly and indirectly improve health and reduce health inequalities through a number of topics, e.g. housing, transport, employment and skills, education etc.</li> <li>• Sustainable design and Construction (May 2006) – recommends a number of building specific measures to benefit the health of occupants, e.g. improving internal air quality, ensuring sufficient levels of natural light etc.</li> </ul>
CABE	Commission for Architecture and the Built Environment. (2009). Future health: sustainable places for health and wellbeing.
Key determinants of health	Search on the London Health Observatory: <a href="http://www.lho.org.uk">www.lho.org.uk</a>
Healthy Urban Development Unit	Guidance on linking planning and health: <a href="http://www.healthyurbandevelopment.nhs.uk/pages/key_docs/key_documents_hudu.html">www.healthyurbandevelopment.nhs.uk/pages/key_docs/key_documents_hudu.html</a>



## Appendix 1: NHS Camden health checklist for planning

Issue to address	Included in proposal/development	Provide details (Evidence from proposals)	Further action required	Relevant LDF policies
<b>1.0 HEALTHCARE FACILITIES AND SERVICES</b>				
<b>1.1</b> Will the development increase demand on existing primary and secondary care health services?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core strategy policy CS16
<b>2.0 PHYSICAL ACTIVITY</b>				
<b>2.1</b> Do the proposals maximise physical activity opportunities? (Active travel; leisure facilities; access to green and open spaces; HomeZones; schools; business; Olympics etc)	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policies, CS11, CS15, CS16 and Development Policies DP15, DP17, DP31
<b>3.0 CRIME AND COMMUNITY SAFETY</b>				
<b>3.1</b> Have measures been taken to ensure that the proposals will not have a negative impact on crime and community safety? (Licensed premises; drugs & alcohol; road traffic injuries; etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policy CS17
<b>4.0 HOUSING</b>				
<b>4.1</b> Do the proposals include housing which is: affordable, in mixed use developments; mixed tenure (private, affordable, social); different sizes, accessible and suitable for all ages.	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policy CS6 and Development Policies DP1-9
<b>5.0 EMPLOYMENT AND TRAINING</b>				
<b>5.1</b> Do the proposals provide employment and training opportunities for local people?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policy CS8 and Development Policy DP13
<b>6.0 EDUCATION</b>				
<b>6.1</b> If education facilities are provided, will they be designed to include wider community use and include green and open space?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policy CS10
<b>7.0 NEIGHBOURHOOD AND BUILDING DESIGN</b>				
<b>7.1</b> Do the proposals include: accessible street designs for older people and people with mobility problems; and gardens allotments or play areas?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policies CS14 and CS15
<b>7.2</b> Do proposals ensure that buildings are designed to maximise physical activity (positioning of stairwells, shower rooms, secure cycle parking etc)	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy policies CS11, CS16 and Development Policies DP6, DP17, DP24
<b>8.0 CLIMATE CHANGE AND SUSTAINABILITY</b>				
<b>8.1</b> Do the proposals mitigate against a negative impact on the environment (noise & air quality; renewable energy; contaminated land; waste management etc.)	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			Core Strategy Policy CS13 and Development Policy DP22
<b>9.0 FOOD</b>				
<b>9.1</b> Do the proposals include provision of affordable and nutritious food outlets, food growing and limit the proliferation of fast-food outlets?	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			CS16
<b>10.0 WIDER ASSESSMENT</b>				
<b>10.1</b> Have the health impacts been considered as part of any other assessment? (SEA, HIA, IIA, EIA etc)	<input type="checkbox"/> Yes <input type="checkbox"/> No (if no, please indicate what further action will be required)			n/a



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# 1 Introduction

## What is Camden Planning Guidance?

- 1.1 We have prepared this guidance to support the policies in our Local Development Framework (LDF). It is therefore consistent with the Camden Core Strategy and Development Policies, and is a formal Supplementary Planning Document (SPD) which is an additional “material consideration” in planning decisions. This guidance will replace Camden Planning Guidance 2006, updating advice where appropriate and providing new guidance on matters introduced or strengthened in the LDF.
- 1.2 Camden Planning Guidance covers a range of topics (such as design, housing, sustainability and planning obligations) and all of sections should be read in conjunction with, and within the context of, Camden’s other LDF documents.

## Amenity in Camden

- 1.3 A key objective of the Camden Core Strategy is to sustainably manage growth so that it avoids harmful effects on the amenity of existing and future occupiers and to nearby properties.

## What does this guidance cover?

- 1.4 This guidance provides information on all types of amenity issues within the borough and includes the following sections:
  1. Air quality
  2. Contaminated land
  3. Noise and vibration
  4. Artificial light
  5. Daylight and sunlight
  6. Overlooking, privacy and outlook
  7. Construction management plans
  8. Access for all
  9. Wind and micro-climate
  10. Open space, outdoor sport and recreation facilities
- 1.5 This guidance supports the following Local Development Framework policies:

## Camden Core Strategy

- CS5 - Managing the impact of growth and development
- CS15 - Protecting and improving our parks and open spaces & encouraging biodiversity
- CS16 - Improving Camden’s health and well-being

### **Camden Development Policies**

- DP26 - Managing the impact of development on occupiers and neighbours
- DP28 - Noise and vibration
- DP31 - Provision of, and improvements to, public open space and outdoor sport and recreation facilities
- DP32 - Air quality and Camden's Clear Zones

## 6 Daylight and sunlight

### KEY MESSAGES:

- We expect all buildings to receive adequate daylight and sunlight.
- Daylight and sunlight reports will be required where there is potential to reduce existing levels of daylight and sunlight.
- We will base our considerations on the Average Daylight Factor and Vertical Sky Component.

6.1 Access to daylight and sunlight is important for general amenity, health and well-being, for bringing warmth into a property and to save energy from reducing the need for artificial lighting and heating. The Council will carefully assess proposals that have the potential to reduce daylight and sunlight levels for existing and future occupiers.

6.2 This guidance relates to:

- Camden Core Strategy policy CS5 - *Managing the Impact of Growth and Development*;
- Core Strategy policy CS14 - *Promoting high quality places and conserving our heritage*; and
- Policy DP26 – *Managing the impact of development on occupiers and neighbours* of the Camden Development Policies.

DP26 sets out how the Council will protect the quality of life of building occupiers and neighbours by only granting permission for development that does not cause harm to amenity.

### **When will a daylight/sunlight report be required?**

6.3 The Council expects that all developments receive adequate daylight and sunlight to support the activities taking place in that building.

6.4 A daylight and sunlight report should assess the impact of the development following the methodology set out in the most recent version of Building Research Establishment's (BRE) "Site layout planning for daylight and sunlight: A guide to good practice". Reports may be required for both minor and major applications depending on whether a proposal has the potential to reduce daylight and sunlight levels. The impact will be affected by the location of the proposed development and its proximity to, and position in relation to, nearby windows.

### WHAT DOES THE COUNCIL REQUIRE?

The Council will require a daylight and sunlight report to accompany planning applications for development that has the potential to reduce levels of daylight and sunlight on existing and future occupiers, near to and within the proposal site.

Daylight and sunlight reports should also demonstrate how you have taken into consideration the guidance contained in the BRE document on passive solar design; and have optimised solar gain. Please refer to the BRE guidance on daylight and sunlight.

- 6.5 While we strongly support the aims of the BRE methodology for assessing sunlight and daylight we will view the results flexibly and where appropriate we may accept alternative targets to address any special circumstances of a site. For example, to enable new development to respect the existing layout and form in some historic areas. This flexible approach is at the Council's discretion and any exception from the targets will be assessed on a case by case basis.

### Daylight

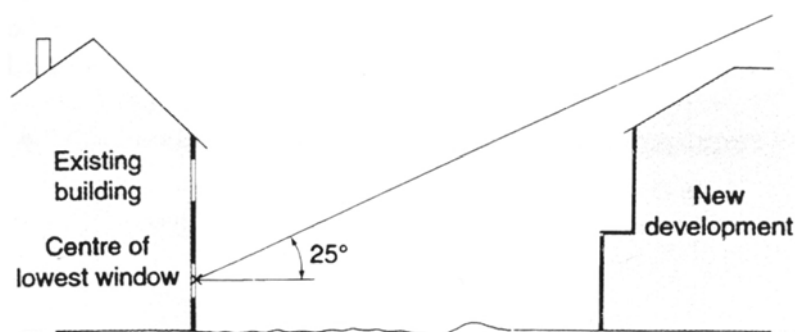
- 6.6 We will aim to minimise the impact of the loss of daylight caused by a development on the amenity of existing occupiers and ensure sufficient daylight to occupiers of new dwellings taking in account overall planning and site considerations. If your proposal will have an unreasonable impact on amenity the planning application will be refused. When assessing daylight issues, we will use the guidelines and methods contained in the BRE's *Site layout planning for daylight and sunlight: A guide to good practice*.
- 6.7 There are two quick methods that can be used to assess access to daylight:

#### Daylight to new development

- project a 25 degree line, starting 2m above ground level from a wall of your proposed development;
- if none of the existing surrounding buildings extend above this line, then there is potential for good daylighting to be achieved in the interior of your new development.

#### Daylight to existing development

- project a 25 degree line from the centre of the lowest window on the existing building;
- if the whole of your new development is lower than this line then it is unlikely to have a substantial effect on the daylight enjoyed by occupants in the existing building.

**Section**

Source: BRE, Site layout planning for daylight and sunlight: A guide to good practice.

- 6.8 For either test, if buildings extend above the 25 degree line a more detailed test needs to be carried out to fully assess either the loss of daylight in existing buildings or the level of daylight achievable in the new development. The two most common measurements of daylight of the more detailed test are the Vertical Sky Component (VSC) and the Average Daylight Factor (ADF).

**Vertical Sky Component**

The amount of light striking the face of a window

- 6.9 The Vertical Sky Component is expressed as a ratio of the maximum value of daylight achievable for a completely unobstructed vertical wall. The maximum value is almost 40%. This is because daylight hitting a window can only come from one direction immediately halving the available light. The value is limited further by the angle of the sun. This is why if the VSC is greater than 27% enough sunlight should be reaching the existing window. Any reduction below this level should be kept to minimum.
- 6.10 Windows to some existing rooms may already fail to achieve this target under existing conditions. In these circumstances it is possible to accept a reduction to the existing level of daylight to no less than 80% of its former value. Any greater reduction than this is likely to have a noticeable affect on amenity. If this occurs then applications may be refused.

**Average Daylight Factor**

Average Daylight Factor is a measure of the level daylight in a room. It can be used to establish whether a room will have a predominantly daylit appearance. It provides light levels below which a room should not fall even if electric lighting is provided.

- 6.11 The Average Daylight Factor can be used as a measure to determine whether a room will receive adequate daylight (expressed as a percentage). The ADV takes into account the:
- net glazed area of windows;

- the total area of the room surfaces (ceiling, floor, walls, and windows);
  - the average reflectance; and
  - the angle of visible sky.
- 6.12 If a predominately daylit appearance is required, then the daylight factor should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. This figure should be as high as possible to enable occupiers to rely on as much natural light and not use artificial lighting, but as a minimum for dwellings the figures should be 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.
- 6.13 These minimum figures may not be applicable when measuring the impact of new buildings on existing dwellings as the simple preservation of minimum ADFs will not necessarily be seen as an indication of acceptability, especially if the VSC demonstrates a significant worsening in daylight levels. For existing dwellings the Council will consider the overall loss of daylight as opposed to the minimum acceptable levels of daylight. As the BRE guidance suggests, the readings will be interpreted flexibly as their aim is to support rather than constrain natural lighting. However, daylight is only one of the many factors in site layout design. Therefore, when applying these standards in Camden, we will take into consideration other site factors and constraints.
- 6.14 The calculation of the VSC and the ADF is complex. For full details on how these calculations are carried out you should refer to the most up to date version the BRE's "Site layout planning for daylight and sunlight: A guide to good practice". For more complex and larger developments we will expect a daylight study to be submitted with the planning application showing the windows that will be affected and provide before development and post development figures for VSC and ADF.
- 6.15 Other methods can be used to measure daylight and these can be incorporated in daylight and sunlight reports, where necessary, as a supplement to VSC and ADF measurements, such as the No Sky Line (NSL) test contained within BRE guidance.

### **Sunlight**

- 6.16 The design of your development should aim to maximise the amount of sunlight into rooms without overheating the space and to minimise overshadowing.



**WHAT DOES THE COUNCIL EXPECT?**

New developments should be designed to provide at least one window to a habitable space facing within 90 degrees of south, where practical. This window should receive at least 25% of Annual Probable Sunlight Hours, including at least 5% of Annual Probable Sunlight Hours between 21 September and 21 March, where possible.

**Annual Probable Sunlight Hours**

The annual amount of sunlight a window receives in an average year.

- 6.17 The BRE's "Site layout planning for daylight and sunlight: A guide to good practice" provides guidance on access to sunlight in relation to:
- site layout, building orientation and overshadowing for new buildings;
  - protecting sunlight to existing buildings, and
  - new and existing gardens and open spaces.
- 6.18 Design for access to sunlight will be specific to the orientation of your site, and the specific design and uses within your proposed development. You should follow the detailed design requirements recommended in the "Sunlighting" section of the BRE document. The Council recognises that not all of the guidance contained within the BRE document, particularly orientation, can be adhered to in all developments due to the dense and constrained urban nature of Camden.

**Other considerations****Right to Light**

- 6.19 The right to light is a legal right which one property may acquire over the land of another. If a structure is erected which reduces the light to an unobstructed property to below sufficient levels this right is infringed. A right to light can come into existence if it has been enjoyed uninterrupted for 20 years or more, granted by deed, or registered under the Rights of Light Act 1959. Planning permission does not override a legal right to light, however where a right to light is claimed, this is a matter of property law, rather than planning law. The Council will have no role or interest in any private dispute arising and it will be for the owner or occupier affected to seek a legal remedy.

**Supporting documents**

- 6.20 For further information on daylight and sunlight please refer to:
- Building Research Establishment (BRE). Site layout planning for daylight and sunlight: A guide to good practice.
- Copies of this are available directly from BRE.

BRE Bookshop, 151 Roseberry Avenue, London, EC1R 4GB  
020 7505 6622  
brebookshop@emap.com  
[www.constructionplus.co.uk](http://www.constructionplus.co.uk)

## 7 Overlooking, privacy and outlook

### KEY MESSAGES:

- Development are to be designed to protect the privacy of existing dwellings;
- Mitigation measures are to be included when overlooking is unavoidable;
- Outlook from new developments should be designed to be pleasant;
- Public spaces benefit from overlooking as natural surveillance.

- 7.1 This section aims to ensure that when designing your development you successfully consider the potential impact on the privacy and outlook of neighbouring properties.
- 7.2 This guidance relates to Core Strategy policy CS5 Managing the Impact of Growth and Development and Core Strategy policy CS14 Promoting high quality places and conserving our heritage.
- 7.3 Policy *DP26 – Managing the impact of development on occupiers and neighbours* of the Camden Development Policies outlines how the Council will protect the quality of life of occupiers and neighbours by only granting permission for development that does not cause harm to amenity.

### Overlooking and privacy

- 7.4 Development should be designed to protect the privacy of both new and existing dwellings to a reasonable degree. Spaces that are overlooked lack privacy. Therefore, new buildings, extensions, roof terraces, balconies and the location of new windows should be carefully designed to avoid overlooking. The degree of overlooking depends on the distance and the horizontal and vertical angles of view. The most sensitive areas to overlooking are:
- Living rooms;
  - Bedrooms;
  - Kitchens; and
  - The part of a garden nearest to the house.

### WHAT IS GOOD PRACTICE?

To ensure privacy, there should normally be a minimum distance of 18m between the windows of habitable rooms of different units that directly face each other. This minimum requirement will be the distance between the two closest points on each building (including balconies).

- 7.5 Where this standard cannot be met we may require you to incorporate some of the following design measures into your scheme to ensure

overlooking is reduced to an acceptable level. Design measures to reduce the potential for overlooking and the loss of privacy include:

- Careful consideration of the location of your development, including the position of rooms;
- Careful consideration of the location, orientation and size of windows depending on the uses of the rooms;
- Use of obscure glazing;
- Screening by walls or fencing; and
- Screening by other structures or landscaping.

7.6 Where landscaping is used as a method of screening, arrangements for ongoing maintenance should be put in place and this may be secured by a planning condition.

7.7 Public spaces and communal areas will benefit from a degree of overlooking due to the increased level of surveillance it can provide.

### **Outlook**

7.8 Outlook is the visual amenity enjoyed by occupants when looking out of their windows or from their garden. How pleasant an outlook is depends on what is being viewed. For example, an outlook onto amenity space is more pleasant than an outlook across a servicing yard. You should design developments so that the occupiers have a pleasant outlook. You should screen any unpleasant features with permanent landscaping.

7.9 When designing your development you should also ensure the proximity, size or cumulative effect of any structures do not have an overbearing and/or dominating effect that is detrimental to the enjoyment of their properties by adjoining residential occupiers. You should carefully consider the location of bin or cycle stores if they are in close proximity to windows or spaces used by occupiers.

7.10 You should take particular care if your development adjoins properties with a single aspect over your development.

7.11 You should note that the specific view from a property is not protected as this is not a material planning consideration.

### **Further information**

*Better Places to Live: By Design - A companion guide to PPG3* (ODPM) makes number of design recommendations which recognise the importance of privacy in the home.

*Perceptions of Privacy and Density in Housing* report available from Design for Homes; 0870 416 3378 or [www.designforhomes.org](http://www.designforhomes.org). This report highlights some of the issues facing households living at higher densities, and the implications for future design of buildings.

## 9 Access for all

### KEY MESSAGES:

- Well designed, accessible buildings and spaces ensure that local services and facilities are accessible to everyone and increase equality of opportunity and social inclusion. We will seek to ensure the highest standards of access and inclusion in Camden's built environment and public realm.
- We expect all development of buildings and places, including changes of use and alterations to or refurbishment of existing buildings where practical and reasonable, to be designed to be accessible and useable by all to promote equality of opportunity.
- Access should be considered at the beginning of the design process.

- 9.1 A successfully accessible and inclusive environment is one that everyone can benefit from by being able to move freely, independently and uninhibited within the built environment regardless of age or disability.
- 9.2 This guidance applies to all development in Camden that may affect the accessibility of buildings and spaces.
- 9.3 All new developments should incorporate a suitable level of access for everyone and be inclusively designed.
- 9.4 Changes of use, alterations and extensions to existing buildings and spaces should, where practicable and reasonable, be designed to improve access for all.
- 9.5 The planning system is not able to require existing buildings or areas to retrospectively improve access where alterations are not being made.
- 9.6 For developments involving housing, reference should also be made to Camden Development Policies policy DP6 – *Lifetime homes & wheelchair housing* and Camden Planning Guidance on Lifetime homes and wheelchair housing. The accessibility needs are lower for certain sectors of the population, such as students, and so the Council will assess each development proposal on its own merits to determine a suitable level of accessible accommodation to be provided.
- 9.7 Guidance on the provision of parking spaces for drivers with disabilities is contained in Camden Planning Guidance on Vehicle access.
- 9.8 This guidance provides general advice on accessibility and advises on further sources of more detailed information. In particular this guidance relates to Core Strategy policy CS14 - *Promoting High Quality Places and conserving our heritage*; CS6 - *Providing quality homes* and policy DP29 - *Improving access* of the Camden Development Policies.
- 9.9 It is more effective to consider access arrangements from the beginning of the design process as they are an integral aspect of building design.

Overcoming access barriers at a later stage in the project can result in a building or space that is not inclusive and may be inaccessible to many people.

- 9.10 Applicants are advised to consult the Council’s Building Control Service at an early stage in the formulation of development proposals to ensure conformity with the relevant requirements relating to access. Satisfying some of the requirements of Part M of the building regulations can affect the size and design of the building and needs to be taken into account at the early design stage.
- 9.11 The following table sets out four key principles which, if put together successfully, should help create an accessible environment:



### **Additional information**

- 9.12 Level access should be provided to the principal entrance in all developments, and is a requirement for all new dwellings. Any new works must not make access any worse than what may have previously existed, in line with Approved Document M of the Building Regulations.
- 9.13 The design of routes around buildings should be clear and free from obstruction, especially to the entrance. Any obstructions should be made clear and avoidable, for example by changes in surface texture.
- 9.14 The above access principles apply mainly to non-residential developments – although the first two will also be applicable to residential developments. In the case of residential development, proposals must meet Lifetime Home Standards as set out in policy *DP6 – Lifetime Homes and wheelchair homes* of the Camden Development Policies. Reference should also be made to Camden Planning Guidance 2 and the section on Lifetime Homes and wheelchair housing.

### **Design and Access Statements**

- 9.15 A Design and Access Statement is a short written and illustrated report which accompanies and supports a planning application. It explains the thinking behind a design and its context in a proposal in a structured way. A Design and Access Statement should:
- Show how the applicant has analysed the site, its setting, and as a result of this assessment, formulated and applied design principles to achieve a good, inclusive design for buildings and public spaces;
  - Include the specific needs of disabled people, by showing how they have been integrated into the proposed development, and how inclusion will be maintained and managed; and
  - Be flexible, adaptable and be able to change with the design of the proposal should any amendments or changes occur.
- 9.16 The level of detail appropriate in an access statement will depend on the size, nature and complexity of the proposal, as a minimum, all should include:
- A short illustrated statement setting out the site and context appraisal, the purpose of the proposed development, a list of design principles and a description of the proposal explaining how the design responds to the appraisal and design principles;
  - A plan of the site, surrounding area or natural form and key features as identified in the appraisal;
  - Annotated sketches and photographs;
  - Important elements of the context that inform the design principles;
  - Plans and elevations of the proposal;
- 9.17 The following points should be taken into account when preparing a Design and Access statement:



- A brief explanation of the applicant's approach to access, with particular reference to the inclusion of disabled people;
- A description of how the sources of advice on accessibility and technical issues will be, or have been, followed;
- Details of any consultations undertaken or planned, including the number of users, particular user need groups (for example, visually impaired, deaf or hard of hearing, ethnic groups, people with learning disabilities and mental health) and the degree to which the process has been influenced by it;
- Details of any professional advice that has been followed, or will be sought, including recommendations from access audits or appraisals;
- An explanation of any specific issues affecting accessibility to, or within, the particular environment being considered, and/or service provision, employment or educational opportunities.
- Details of access solutions adopted to overcome any issues, including those which deviate from recognised good practice;
- Details of the management and maintenance practices adopted, or to be adopted, to maintain features enhancing accessibility (for example, lighting, colour and luminance contrast, door closing forces etc), specialist equipment (for example, induction loops, audible and visual fire alarm systems etc), and staff training; and
- A plan illustrating features such as routes in, out and around the outside of the building, vertical and horizontal circulation routes, positions of accessible car parking bays, the location of public transport, and any other features relevant to the proposal.

9.18 Where good practice cannot be met, the Access Statement should say why this is the case, set out the implications for users, and explain what other measures are being taken to ensure access is provided to the facilities available. See Further Information at the end of this section for links to more detailed guidance.

### **Listed buildings**

- 9.19 Design and access statements are also required for a listed building consent. Where a planning application is submitted in parallel with an application for listed building consent a single combined statement can be submitted which should address the requirements for both.
- 9.20 Measures to facilitate dignified and easy access to and within listed buildings can often be sensitively incorporated without damage to their special architectural or historic interest. However, the Disability Discrimination Act 1995 does not override other legislation such as listed building or planning legislation. Listed Building Consent will almost always be required for works to improve access and in formulating proposals; applicants are encouraged to undertake early discussions with the Council.

- 9.21 English Heritage has produced guidance on this topic titled Easy Access to Historic Buildings (see Further Information for the link). Additional information is also contained in Circular 01/06.

**Other considerations**

- 9.22 Applicants should note that Design and Access Statements differ from the requirements for Access statements set out in Approved Document M of the Building Regulations, which are only required when specific building control regulations can not be met. Approved Document M of the Building Regulations sets out the requirements to ensure access to and use of a building's facilities are accessible to all.
- 9.23 It may also be appropriate to combine the Design and Access Statements with other statements requested in other sections of Camden Planning Guidance, provided that the requirements of all such statements are adequately addressed.
- 9.24 Part 3 of the Disability Discrimination Act 1995 gives disabled people a right of access to goods, facilities and services. This requires service providers to:
- Alter a barrier feature so that it no longer has effect;
  - Provide a reasonable means of avoiding that feature; or
  - Provide a reasonable alternative method of making the service available.
- 9.25 These requirements apply to all buildings where services are provided to the public and to transportation infrastructure.

## Further information

Design and Access Statements	<p>Department for Communities and Local Government (March 2010) Guidance on information requirements and validation:  <a href="http://www.communities.gov.uk/publications/planningandbuilding/validationguidance">www.communities.gov.uk/publications/planningandbuilding/validationguidance</a></p> <p>ODPM publication: Planning and Access for Disabled People: A Good Practice Guide  <a href="http://www.communities.gov.uk/publications/planningandbuilding/planningaccess">www.communities.gov.uk/publications/planningandbuilding/planningaccess</a></p> <p>Department for Communities and Local Government Circular 01/2006: Guidance on Changes to the Development Control System: Section 3 provides guidance on the legislative position and information required  <a href="http://www.communities.gov.uk/publications/planningandbuilding/circularcommunities2">www.communities.gov.uk/publications/planningandbuilding/circularcommunities2</a></p> <p>The Commission for Architecture and the Built Environment (CABE) 'Design and access statements: how to write, read and use them'  <a href="http://www.cabe.org.uk">www.cabe.org.uk</a></p> <p>Mayor of London's Supplementary Planning Guidance: Accessible London: Achieving an Inclusive Environment  <a href="http://legacy.london.gov.uk/mayor/strategies/sds/docs/spg_accessible_london.pdf">http://legacy.london.gov.uk/mayor/strategies/sds/docs/spg_accessible_london.pdf</a></p>
Access and the historic environment	<p>English Heritage have published guidance on 'Easy Access to Historic Landscapes' and 'Easy Access to Historic Buildings' which can be found on their website at:  <a href="http://www.english-heritage.org.uk/publications/easy-access-to-historic-buildings/">www.english-heritage.org.uk/publications/easy-access-to-historic-buildings/</a></p>
Lifetime Homes and wheelchair housing standards	<p>Lifetime Homes  <a href="http://www.lifetimehomes.org.uk">www.lifetimehomes.org.uk</a></p> <p>Accessible London: Achieving an Inclusive Environment, GLA (April 2004)</p>



Camden Planning Guidance

# Sustainability

London Borough of Camden

CPG 3



July 2015



## CPG1 Sustainability

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# 1 Introduction

## What is Camden Planning Guidance?

- 1.1 We have prepared this Camden Planning Guidance to support the policies in our Local Development Framework (LDF). This guidance is therefore consistent with the Core Strategy and the Development Policies, and forms a Supplementary Planning Document (SPD) which is an additional “material consideration” in planning decisions.
- 1.2 The Council adopted CPG3 Sustainability on 6 April 2011 following statutory consultation. This document has been subject to two updates:
- 4 September 2013 to clarify the guidance in Section 9 related to the Code for Sustainable Homes, and
  - 17 July 2015 to update a number of sustainable design standards and targets.

Details on these updates and the consultation process are available at [camden.gov.uk/cpg](http://camden.gov.uk/cpg).

- 1.3 The Camden Planning Guidance covers a range of topics as well as sustainability (such as design, housing, amenity and planning obligations) and so all of the sections should be read in conjunction, and within the context of Camden’s LDF.

## What is this sustainability guidance for?

- 1.4 The Council is committed to reducing Camden’s carbon emissions. This will be achieved by implementing large scale projects such as installing decentralised energy networks alongside smaller scale measures, such as improving the insulation and energy performance of existing buildings.
- 1.5 This guidance provides information on ways to achieve carbon reductions and more sustainable developments. It also highlights the Council’s requirements and guidelines which support the relevant Local Development Framework (LDF) policies:
- CS13 - *Tackling climate change through promoting higher environmental standards*
  - DP22 - *Promoting sustainable design and construction*
  - DP23 - *Water*

**What does the guidance cover?**

- Energy statements
- The energy hierarchy
  - Energy efficiency – in new and existing buildings
  - Decentralised energy and combined heat and power (CHP)
  - Renewable energy
- Water efficiency
- Sustainable use of materials
- Sustainability assessment tools - BREEAM
- Green roofs, brown roofs and green walls
- Flooding
- Climate change adaptation
- Biodiversity
- Urban food growing

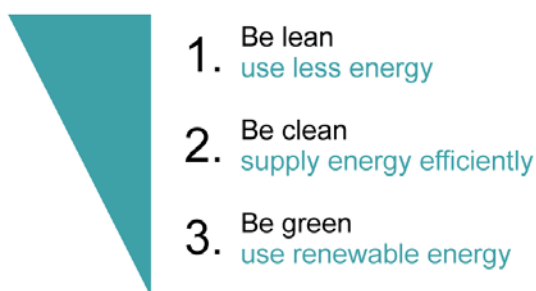
## 2 The energy hierarchy

### KEY MESSAGES

- All developments are to be design to reduce carbon dioxide emissions
- Energy strategies are to be designed following the steps set out by the energy hierarchy

- 2.1 Buildings in Camden account for 88% of Camden's overall carbon dioxide emissions. These emissions result from the energy used within buildings. Therefore the Council encourages all buildings to be as energy efficient as possible. Our approach is to implement the energy hierarchy as set out in policy CS13 of the Core Strategy. The energy hierarchy is a sequence of steps that, if taken in order, will minimise the energy consumption in a building.
- 2.2 This section provides an overall introduction to the energy hierarchy and energy statements. This section sets out:
- The energy hierarchy
  - How to apply the energy hierarchy
  - When an energy statement is required
  - What to include in an energy statement
- 2.3 The next four sections provide more detailed guidance on each of the 3 steps in the hierarchy.

The 3 steps of the energy hierarchy are:



- 2.4 All developments are expected to reduce their carbon dioxide emissions by following the steps in the energy hierarchy to reduce energy consumption.
- 2.5 Developments involving 5 or more dwellings and/or 500sq m (gross internal) floorspace or more are required to submit an energy statement which demonstrates how carbon dioxide emissions will be reduced in line with the energy hierarchy (see below for more details on what to include in an energy statement).

**Gross internal area**

The area within the perimeter of the outside walls of a building as measured from the inside surface of the exterior walls, with no deduction for hallways, stairs, closets, thickness of walls, columns, or other interior features.

**What to include in an energy statement?**

- 2.6 An energy statement is to set out how a development has been designed to follow the steps in the energy hierarchy. It should demonstrate how the proposed measures are appropriate and viable to the context of the development.

**Baseline energy demand and carbon dioxide emissions**

Calculate the baseline energy demand of the development and the corresponding carbon dioxide emissions arising from the development. You should clearly show the methodology used. See below for more guidance on how to calculate the baseline demand and carbon dioxide emissions.

**Reduce the demand for energy**

Describe the design measures which are proposed to maximise the energy efficiency of the development. See sections 2 and 3 for guidance on how to ensure your development is as energy efficient as possible.

**Supply energy efficiently**

Describe how your development has considered further reducing carbon dioxide emissions by sourcing energy efficiently e.g. through the use of decentralised energy, such as combined heat and power systems. See section 4 for guidance on decentralised energy network and combined heat and power.

Calculate the energy use and the corresponding carbon emissions from the development having applied the first two stages of the energy hierarchy.

**Use renewable energy**

Describe how your development has considered using renewable energy technologies to further reduce carbon dioxide emissions. See section 5 for more guidance on renewable energy.

Calculate the remaining energy use and the corresponding carbon emissions from the development having applied all three stages of the energy hierarchy.

**Conclusion**

A concluding section should be provided outlining the contribution of each set of measures, technology or combination of technologies towards meeting the relevant targets set out in this guidance and providing recommendations as to which approach is most suitable for the site. Where it has not been possible to reach the targets, a clear explanation should be provided.

- 2.7 An energy statement should present technical data while remaining easy to read and to understand. Clearly laid out tables should be used to present data for ease of reading and comparison. Plans should be used where possible, e.g. to indicate suitable roof areas for installing solar technologies or the location of a plant room. References should be used to explain where data has been obtained from.

## **Calculating the baseline energy demand and carbon dioxide emissions**

- 2.8 You should produce a single energy statement for the entire development. The baseline energy demand should include an assessment of all the energy consumed in the operation of the development, including where there will be more than one occupier, use or building. This should include regulated energy or 'fixed' consumption (covered by building regulations) e.g. fixed lighting, heating and hot water systems, ventilation/cooling etc and non-regulated energy sources from 'plug-in' sources (not covered by building regulations) e.g. cooking, electrical appliances, centralised IT (server room) systems, communications equipment. Major developments should use modelling SAP/SBEM (Standard Assessment Procedure/Simplified Building Energy Model) to calculate this data. Benchmark data is only acceptable for minor developments.
- 2.9 The energy statement should clearly identify the total baseline energy demand and the carbon dioxide emissions of the development prior to the inclusion of any measures to reduce carbon dioxide emissions beyond the minimum requirements of current Building Regulations. The statement should clearly demonstrate the energy demand and carbon dioxide emissions of the development regulated by the Building Regulations as well as the additional energy demand and resulting carbon dioxide emissions. Reductions in each type of energy use should be demonstrated and the resulting total energy demand and carbon dioxide emissions.
- 2.10 Baseline carbon dioxide emissions should be calculated for energy use using Part L of the Building Regulations for domestic and non-domestic developments. Total development emissions should take into account all emissions sources.

**Further information**

Camden Core Strategy	Policy CS13 - <i>Tackling climate change through promoting higher environmental standards</i> – sets out Camden's overarching approach to environmental sustainability.
Camden Development Policies	Policy DP22 - <i>Promoting sustainable design and construction</i> – sets out Camden's detailed requirements for developments to comply with.
Mayor of London	The London Plan Supplementary Planning Guidance, Sustainable Design and Construction: – sets out the Mayor's requirements for environmental sustainability.
GLA Energy Team Guidance on Planning Energy Assessments October 2010	Sets out how the GLA want Energy Assessments accompanying planning applications to be set out and what information is to be provided <a href="http://www.london.gov.uk/sites/default/files/guidance-energy-assessments-28-sep-10.pdf">www.london.gov.uk/sites/default/files/guidance-energy-assessments-28-sep-10.pdf</a>
Building Regulations	Approved Documents Part L - Conservation of Fuel and Power. This section of the Building Regulations deals specifically with the energy efficiency of buildings. The latest version of the Regulations can be found on the Planning Portal website <a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a>

### 3 Energy efficiency: new buildings

#### KEY MESSAGES

All new developments are to be designed to minimise carbon dioxide emissions

The most cost-effective ways to minimise energy demand are through good design and high levels of insulation and air tightness.

This guidance covers:

- Stage 1 of the energy hierarchy; and
- How to ensure new buildings are as energy efficient as possible.

- 3.1 Stage 1 involves ensuring that the design of a development includes a range of low carbon techniques that will reduce its energy consumption.
- 3.2 Stages 2 and 3 of the energy hierarchy – Decentralised energy networks and combined heat and power and renewable energy are dealt with in sections 4 and 5 of this document.
- 3.3 Core Strategy policy CS13 – *Tackling climate change through promoting higher environmental standards* encourages developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

#### WHAT WILL THE COUNCIL EXPECT?

All new developments are to be designed to minimise carbon dioxide emissions by being as energy efficient as is feasible and viable

#### Energy efficient design techniques

- 3.4 Energy efficient design requires an integrated approach to solar gain, access to daylight, insulation, thermal materials, ventilation, heating and control systems. It is important you always consider these aspects in relation to each other when designing a scheme.
- 3.5 This section provides detailed guidance on all the ways you can design your building to be more energy efficient. It is split into four sections:
- Natural systems;
  - Thermal performance;
  - Mechanical systems; and
  - Other energy efficient technology.

#### Natural systems

- 3.6 Designing natural systems into new buildings can make the most of naturally occurring energy, such as the heat and light from the sun.

**Making the most of sunlight**

- Consider locating principal rooms that require warmth and daylight on the south side of buildings to benefit from the sun's heat. Within 30 degrees of south is ideal.
- Consider any overshadowing from adjoining or of adjoining buildings and spaces that will reduce the amount of solar gain.
- Consider the possibility of including renewable energy technologies, for example by including a flat or south facing roof for solar panels.

**Making the most of daylight**

- Maximise the amount daylight while minimising the need for artificial lighting.
- Carefully design windows to maximise the amount of sunlight 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.

- 3.7 More information on daylight and sunlight can be found in CPG6 Amenity.

**Preventing overheating**

- 3.8 Some developments may experience too much sunlight in the summer, therefore you should achieve a balance between benefitting from solar gain and preventing over heating. To prevent over heating:
- 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.
  - 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.
  - Make use of overshadowing from other buildings.
  - Include green and brown roofs and green walls which help to regulate temperature. See section 9 of this guidance on brown roofs, green roofs and green walls for more information.

**Natural ventilation**

- Natural ventilation includes openable windows, the 'stack effect' system where pressure differences are used to draw air through a building (see Figure 1) and, double layers, where one layer has



openable windows where air can flow freely. These systems allow air to be drawn through a building and can operate in tall buildings. Careful design of the space is required as air flows are impeded by walls and partitioning.

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

### **Natural cooling**

- Can be created by shading, the evaporation effect from trees and other vegetation including green roofs and walls which naturally cool the environment. See section 9 for more guidance on green roofs.

#### **WHAT INFORMATION DOES THE COUNCIL REQUIRE?**

- A full model of the building should be carried out to ensure the building design optimises solar gain and daylight without resulting in overheating for developments comprising 5 dwellings or more or 500sq m or more of any floorspace
- Consider maximising the use of natural systems within buildings before any mechanical services are considered

### **Thermal performance**

- 3.9 The thermal performance of a building relates to the amount of heat that is retained inside and the amount that is lost to the outside air. Ensuring a high thermal performance is one of the most effective ways to ensure your development is energy efficient.

#### **Insulation**

- 3.10 A high level of insulation is the most effective way to ensure new buildings are energy efficient. Use insulation with low overall heat transfer coefficient (U-value). See the Energy Savings Trust's Insulation materials chart for details on the thermal performance of various materials.

##### **U-value**

The rate at which heat transfers through a building material. The lower the U-value, the better the insulator.

- 3.11 Consider how the insulation is attached to the building structure or walls. If a joint is badly insulated or if the material is penetrated by materials that conduct heat such as metal nails, it could cause cold patches and reduce the efficiency of the insulation. Ensure special attention is given to these potential heat loss areas to prevent cold bridging and potential points of condensation.

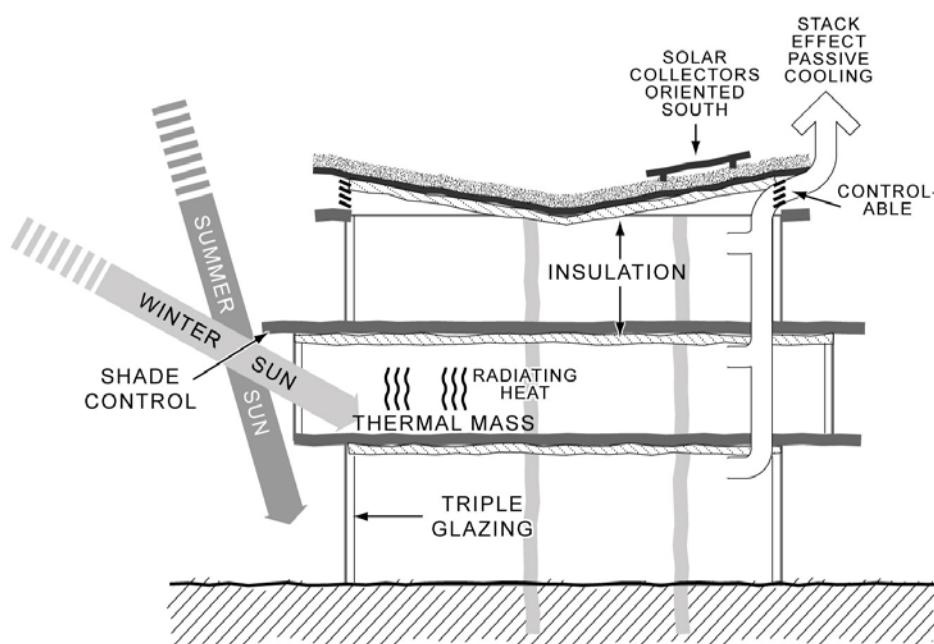
##### **Cold bridging**

Cold bridging occurs on a surface where one material loses heat faster than other, for example, through a concrete frame or a metal nail.

### Materials with thermal properties

- 3.12 Materials with a high thermal mass e.g. concrete absorb and retain heat produced by the sun. These materials can be used to regulate indoor temperatures, especially to keep inside spaces cool during the day. Where heat is generated from within a building, exposed areas of thermal mass within the building can be used to transmit heat out of a building as the outdoor temperature drops.
- 3.13 Figure 11 below shows how heat from the sun can be absorbed by the thermal mass material and be released over time to help keep the building warm and insulated

Figure 1. Natural system principles



### Thermal buffers

- 3.14 Porches, atriums, conservatories, lobbies and sheltered courtyards are useful 'thermal buffers'. You can design these features to prevent excessive heat loss from doors and windows by providing a transition between the cold outside and the warm inside of a building.
- 3.15 Insulation is central to low energy construction but it must be installed without any gaps to ensure a building is air tight to reduce heat loss. In some buildings around half of all heat losses are due to air leakage throughout the building materials.
- 3.16 To achieve air tightness, buildings must be designed with a continuous seal around the internal materials to eliminate unwanted draughts. Once the seals are in place, they ensure that the insulation can function to its optimum performance, saving energy and drastically reducing carbon emissions for the lifetime of the building.

**Air tightness**

Air tightness is the control of air leakage, i.e. the elimination of unwanted draughts and holes through the external materials of the building. It is measured by the rate at which air passes through a building (m<sup>3</sup>/m<sup>2</sup>/h)

- 3.17 Particularly air tight buildings may need to include a specialised ventilation system to ensure that naturally pre-heated fresh air is circulated through all the rooms without losing heat. See the section on Mechanical systems below for more information on Mechanical Ventilation with Heat Recovery (MVHR).

**Mechanical systems**

- 3.18 Mechanical systems are generally required by the Building Regulations to enable buildings to be occupied. These systems vary from simply extraction fans in kitchens and bathrooms to whole office cooling systems. The Council will expect applicants to consider the following when choosing mechanical systems:

**Efficient heating**

- Use heating systems that run using gas as they are generally more carbon efficient than systems which use electricity. Gas systems can also be designed so that they can be connected to a decentralised heating network.
- Locating plant e.g. pipes, flues, machinery, close to where the heat is required ensures a lower level of energy for pumping.
- A community heating scheme, where appropriate e.g. Combined Heat and Power (see section 4 of this guidance on Decentralised energy and combined heat and power for more information)
- Avoiding electric heating systems unless there is no access to a gas connection, or where heating is required for very short periods in isolated locations

**WHAT INFORMATION DOES THE COUNCIL REQUIRE?**

- Any development proposing electric heating (including heat pumps) will need to demonstrate the carbon efficiency of the proposed heating system. Specifications of the electric heating system and calculations will need to be provided to demonstrate that the proposed electric heating system would result in lower carbon dioxide emissions than an efficiency gas fuelled heating system.

**Efficient ventilation and cooling**

- Mechanical Ventilation with Heat Recovery (MVHR) conserves energy by recovering heat from stale warm air leaving a building and transferring the heat to the cooler incoming air.
- Water based cooling systems reduce the need for air conditioning by running cold water through pipes in the floor and/or ceiling to cool the air.

- Ground source cooling.
- Evaporation cooling which cools air through the simple evaporation of water.
- Exposed concrete slabs.
- The natural 'stack effect' which draws cool air from lower levels whilst hot air is released.

3.19 For some uses such as laboratories, where sterile conditions are essential, natural ventilation will not be required. These rooms should be located to minimise the heating or cooling required and close to the plant to limit the energy required by fans and pumps.

#### WHAT INFORMATION DOES COUNCIL REQUIRE?

- Where traditional mechanical cooling e.g. air conditioning units are proposed applicants must demonstrate that energy efficient ventilation and cooling methods have been considered first, and that they have been assessed for their carbon efficiency.
- NB: Air source heat pumps will be considered to provide air conditioning in the summer unless it can be demonstrated that the model chosen is not capable of providing cooling.

#### Other energy efficient technology

- In the average home, lighting accounts for around 20% of the electricity bill. In some developments it can be one of the highest energy consumers and can generate large amounts of heat that is wasted.
- High efficiency lighting with controlled sensors e.g. timers, movement sensors and photo sensors, which adjust the brightness of the light depending on the natural light level.
- Zoned lighting, heating and cooling with individual control.
- Specifying appliances which are A+ rated.
- Efficient mechanical services system or a building management system – computer systems which control and monitor a building's mechanical and electrical equipment. Their main aim is to control the internal environment, but in doing so can also reduce the energy consumption of a building.
- Using heat recovery systems.
- Energy monitoring, metering and controls should be used to inform and facilitate changes in user behaviour.

##### Heat recovery system

A heat recovery system uses heat leaving a building or generated as waste from mechanical operations to pre-heat fresh air entering a building

### What is considered best practice?

- 3.20 Policy 5.2 *Minimising carbon dioxide emissions* of the Draft Replacement London Plan introduces a carbon dioxide reduction target for new development to make a 35% improvement on the current 2013 Building Regulations:
- 2010 – 2013 25 per cent
  - 2013 – 2016 35 per cent
  - 2016 – 2031 Zero carbon
- 3.21 The following standards focus on improving a building's fabric to achieve best practice U-values over and above current Building Regulations. The Council considers that the standards below are feasible in all but exceptional circumstances to meet the new London Plan targets. There are other ways to reduce the energy efficiency of a building as set out in the first part of this section.
- 3.22 The table below generally relates to residential developments, however the building fabric standards are also applicable to commercial developments. For all developments a balance will need to be reached between the need to retain heat, the heat generated within a development and the need to remove excess heat.

### Standards

External wall	0.20
Roof	0.13
Floor	0.20
Windows	1.50 British Fenestration Rating Council band B or better
Doors	1.00 (solid) 1.50 (glazed)
Air tightness	3.00 (m <sup>3</sup> /h.m <sup>2</sup> at 50 Pa)
Proportion of energy efficient lighting	100%
BREEAM	Developments will be expected to achieve 60% of the un-weighted credits in the Energy category of their BREEAM assessment. (See section 8 on sustainability assessment tools for more details relating to BREEAM.

Thermal insulation measured in U-Values (W/m<sup>2</sup>.K)

### What is carbon offsetting?

- 3.23 Where the London Plan carbon reduction target in policy 5.2 cannot be met onsite, we may accept the provision of measures elsewhere in the borough or may require a s106 financial contribution to Camden's carbon offset fund which will be used to secure the delivery of carbon

reduction measures elsewhere, in connection with projects identified in the Council's Environmental Sustainability Plan 'Green Action for Change'. A contribution may be in the form of an integral element of the development, "in-kind" provision on or off site or a financial contribution secured through a s106 agreement (in accordance with CIL regulations). What does zero-carbon mean?

- 3.24 The government has set out a timetable for residential development to be zero carbon by 2016, public buildings by 2018 and non-residential development to be 'zero carbon' by 2019. The Council has reflected these ambitions in Development Policy DP22 – *Promoting sustainable design and construction* by using a stepped approach to the requirements for achieving higher levels of the Code for Sustainable Homes. Buildings built or refurbished today will be competing with low and 'zero-carbon' buildings in the near future. For commercial buildings this could have a particular impact on their future letability and value as new commercial buildings are anticipated to be zero carbon from 2019.
- 3.25 To determine how developments should meet the 'zero carbon' standard the Zero Carbon Hub has developed an energy efficiency standard for all new homes (currently awaiting government approval). For more information see the Zero Carbon Hub website [www.zerocarbonhub.org](http://www.zerocarbonhub.org)

#### **What does PassivHaus mean?**

- 3.26 PassivHaus is a specific design and construction standard from Germany that can result in a 90% reduction in energy demand and usage. It can be applied to both commercial and residential buildings. Core Strategy policy CS13 - *Tackling climate change through promoting higher environmental standards* notes that PassivHaus is an example of energy efficiency principles.
- 3.27 To be PassivHaus buildings must meet the following criteria:
- the total energy demand for space heating and cooling is less than 15 kWh/m<sup>2</sup>/yr of the treated floor area;
  - the total primary energy use for all appliances, domestic and hot water and space heating and cooling is less than 120 kWh/m<sup>2</sup>/yr
- 3.28 PassivHaus' are designed using a special software package called the PassivHaus Planning Package (PHPP) and regional climate data.
- 3.29 The Council will be supportive of schemes that aim to PassivHaus standards, subject to other policy and design considerations. More information can be found on the PassivHaus website - [www.passivhaus.org.uk](http://www.passivhaus.org.uk)

**Further information**

The London Plan	Sustainable Design and Construction: Supplementary Planning Guidance, Mayor of London provides detailed guidance on the energy hierarchy.
The Energy Saving Trust	Provides detailed guidance on the specification of new homes to reduce energy consumption. The Energy Saving Trust has developed a range of guidance and technical documents to help meet the energy performance requirements of the Code for Sustainable Homes and assess a range of materials and technologies for their thermal and carbon dioxide emissions levels. A wide range of best practise documents and guidance can be found at <a href="http://www.energysavingtrust.org.uk">www.energysavingtrust.org.uk</a>
The Town and Country Planning Association (TCPA)	Has produced a guide titled 'sustainable energy by design'. Section 4.1 of that document focuses on the design and development process, and shows how sustainable energy can be incorporated into new development in line with the energy hierarchy. <a href="http://www.tcpa.org.uk">www.tcpa.org.uk</a>
Building Regulations	Approved Documents – Part L - Conservation of Fuel and Power. This section of the Building Regulations deals specifically with the energy efficiency of buildings. The latest version of the Regulations can be found on the Planning Portal website: <a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a>
The Zero Carbon Hub	Has a lead responsibility for delivering homes to zero carbon standards by 2016. It has produced guidance on energy efficiency standards for new homes. <a href="http://www.zerocarbonhub.org">www.zerocarbonhub.org</a>





## 4 Energy efficiency: existing buildings

### KEY MESSAGES

As a guide, at least 10% of the project cost should be spent on environmental improvements

Potential measures are bespoke to each property

Sensitive improvements can be made to historic buildings to reduce carbon dioxide emissions

- 4.1 Many of the sections in this guidance focus on reducing the environmental impact of new buildings, however Camden's existing buildings account for almost 90% of the borough's carbon dioxide emissions. Therefore it is essential that these buildings make a contribution towards the borough's reduction in carbon dioxide emissions.
- 4.2 This section provides more information on how existing buildings can be more energy efficient. It builds on the previous section, which covered Stage 1 of the energy hierarchy and improving energy efficiency in new buildings.
- 4.3 Camden Core Strategy Policy CS13, paragraph 13.9 expects development or alterations to existing buildings to include proportionate measures to be taken to improve their environmental sustainability, where possible.

### WHAT DOES THE COUNCIL EXPECT?

- All buildings, whether being updated or refurbished, are expected to reduce their carbon emissions by making improvements to the existing building. Work involving a change of use or an extension to an existing property is included. As a guide, at least 10% of the project cost should be spent on the improvements.
- Where retro-fitting measures are not identified at application stage we will most likely secure the implementation of environmental improvements by way of condition. Appendix 1 sets out a checklist of retro fit improvements for applicants.
- Development involving a change of use or a conversion of 5 or more dwellings or 500sq m of any floorspace, will be expected to achieve 60% of the un-weighted credits in the Energy category in their BREEAM assessment. (See the section on Sustainability assessment tools for more details).
- Special consideration will be given to buildings that are protected e.g. listed buildings to ensure that their historic and architectural features are preserved.

## How can I make an existing building more energy efficient?

- 4.4 There are many opportunities for reducing the energy we use in our homes. The design and the materials used can make a significant contribution. Simple measures, such as closing curtains at dusk, can help stop heat loss. Installing condensing boilers, heating controls and energy saving light bulbs and appliances reduce energy use and carbon dioxide emissions significantly. Reduced energy use also means lower energy bills.
- 4.5 When dealing with historic buildings a sensitive approach needs to be taken. Guidance on this is provided later within this section.

### Draught proofing

- 4.6 There is a range of effective draft proofing measures you can use to help insulate your home:
- Fix brush seals to exterior doors and letterboxes, and tape to ill-fitting doors;
  - Put reflector panels behind radiators to reflect heat into the room; and
  - Use shutters for windows and/or thicker curtains that do not drape over radiators.

### Energy efficient lighting

- 4.7 In most homes lighting accounts for 20% of the electricity bill. It is easy to cut waste by simply turning off lights and adjusting blinds and curtains to let in more natural light. When lighting a room, always use energy saving light bulbs.

### Windows

- 4.8 Windows let light and heat into your home, but they can also let a lot of heat out when temperatures are colder outside than inside. If you are replacing windows or building an extension, thermally efficient glazed windows will provide more effective insulation than older windows. Double glazed panels can now be fitted into some original wooden frames, without the need to replace the whole frame. This helps preserve the historic character of the building.
- 4.9 The use of PVCu windows is not considered to be acceptable in historic buildings, conservation areas and listed buildings as this material detracts from their historic significance and the architectural qualities of historic buildings and places. See below for more information on listed buildings and conservation areas.
- 4.10 There is a range of simple measures which can improve the energy efficiency of windows. These include:



- General repair and maintenance – which can substantially improve the energy efficiency of windows, as much of the heat lost through windows is through leaks and cracks.
- Installation of draught seals – which can help to further eliminate cold draughts and leaks.
- Secondary glazing – adding a second sheet of glass or plastic to a window frame can improve sound-proofing as well as energy efficiency. If carefully designed it can be unobtrusive and appropriate in a listed property or one within a conservation area.
- Secondary protection - e.g. shutters or heavy curtains, although these are predominantly a night-time option.

### **Insulation**

- Loft insulation - Your home may already have some loft insulation, but if the material is thin it will not be saving as much energy and money as it could. Fitting proper loft insulation is the most cost-effective way of saving energy. As a guide, your loft insulation should be around 250mm thick to be effective.
- Floor insulation - If you have any gaps between your floorboards and skirting boards, you can reduce heat loss by sealing them with a regular tube sealant, like the silicon sealant used around the bath. It is also very useful to insulate underneath the floorboards at ground floor level.
- Cavity wall insulation involves filling the gap between the bricks with insulating material. It can reduce heat loss by up to 60%. Most homes built after 1930 will have a cavity that could be insulated
- Solid wall insulation (internal or external) – buildings constructed before 1930 almost always have solid wall construction. The only way to insulate solid walls is to add insulation to the inside or outside of the wall. External insulation involves adding a decorative weather-proof insulating treatment to the outside of your wall while internal insulation involves attaching insulating plaster board laminates or wooden battens in-filled with insulation to the inside of the wall. Generally 100mm of insulation is required to be effective. Solid wall insulation, whether internal or external, will require relocation of the services attached to the wall e.g. radiators, electrical sockets, drainpipes.

### **Heating and hot water**

- New boiler - Replacing an old boiler (more than 10 years old) with a high efficiency condensing boiler and heating controls to provide heating and hot water could significantly cut energy consumption.
- New/upgraded central heating – If you install a new boiler the rest of your central heating system may need upgrading, for example large, old radiators could be replaced with smaller, more efficient radiators that are better suited to the new boiler

- Upgrading heating controls - You can install heating controls that allow you to control the temperature in different parts of your building. These can be included as an electronic timer control for your boiler, room thermostats for your main living area and thermostatic valves on all your radiators.
  - Insulating hot water pipes and your hot water tank will retain hot water for longer, and save money on heating it.
- 4.11 See the Council's website for further information for householders on various retro-fitting measures and whether permission is required.

### Generating your own energy

- 4.12 Buildings can also reduce their energy consumption by generating their own energy in the form of heat or electricity using low carbon and renewable technologies which use little or no energy. See section 6 of this guidance on renewable energy for more advice on the technologies that are available and appropriate in Camden.

#### CASE STUDY

Renovated Victorian Eco-home: A semi-detached Victorian house in one of Camden's conservation areas was transformed in 2007, reducing its carbon footprint by 60%. Works undertaken to improve energy efficiency included:

- internal solid wall insulation;
- a new fully insulated roof;
- underfloor insulation;
- double glazing; and
- draught proofing.

Heat is provided by an efficient condensing boiler complemented by solar hot water panels on the rear extension; power to the panels' water pumps is provided by solar panels. Other improvements include an upgraded ventilation system with heat recovery, water saving features (e.g. rainwater harvesting for garden irrigation, dual flush toilets), low energy lighting and energy monitoring.

For further information on this property and improvements to other properties of a similar age see [www.sd-commission.org.uk](http://www.sd-commission.org.uk)



### What if my building is historic, Listed or in a conservation area?

- 4.13 Historic buildings have special features that need to be conserved and therefore need to be treated sensitively. This section explains how energy efficiency improvements can be achieved without causing harm to the historic environment.

- 4.14 Reflecting the special qualities of historic buildings, additional consents may be required for statutorily designated buildings (listed buildings, or those in conservation areas). The Council's website has more detailed guidance on what types of permission are required. The Council will aim to balance the conservation of fuel and power against the need to conserve the fabric of the building.
- 4.15 Historic buildings can perform well in terms of energy efficiency. When looking to install high energy efficiency measures, however, it is essential to ensure that works do not compromise the character and significance of the building or area.
- 4.16 In order to identify the most appropriate measures, we recommend taking the following approach, which takes into account measures best suited to individual buildings and households (i.e. taking human behaviour into consideration as well as the building envelope and services):
- Assess the heritage values of the building;
  - Assess the condition of the building fabric and building services;
  - Assess the effectiveness and value for money of measures to improve energy performance;
  - Assess their impact on heritage values; and
  - Assess the technical risks.
- 4.17 A range of thermal efficiency measures can then be implemented, which avoid harm to the historic environment. Ranked according to their impact on heritage and the technical risks, these include:
1. Ensure that the building is in a good state of repair
  2. Minor interventions - upgrade the easier and non-contentious elements:
    - insulate roof spaces and suspended floors;
    - provide flue dampers - (close in winter, open in summer);
    - use curtains, blinds and window shutters;
    - provide energy efficient lighting and appliances
    - draught-seal doors and windows;
    - provide hot water tank and pipe insulation.
  3. Moderate interventions - upgrade vulnerable elements:
    - install secondary (or double) glazing (if practicable);
  4. Upgrade building services and give advice to building users on managing them efficiently:
    - install high-efficiency boiler and heating controls;
    - install smart metering;
    - install solar panels, where not visible from the street or public spaces.

5. Major interventions - upgrade more difficult and contentious elements (where impact on heritage values and level of technical risk shown to be acceptable)
- provide solid wall insulation.
- 4.18 When considering refurbishment, it is the owner's responsibility to ensure that any work does not cause unlawful or unnecessary damage to the building.
- 4.19 The Energy Savings Trust and English Heritage have published detailed guidance on refurbishing and improving the efficiency of historic buildings. See the Further Information section below for details of where to find these guides.
- 4.20 Before carrying out any work, find out if your property is listed, in a conservation area or subject to any other planning restrictions such as an Article 4 Direction. Then check if any of the proposed works require consent – such as listed building consent, planning permission or conservation area consent. See CPG1 Design for more information on Camden's historic buildings. The Council's website also provides detailed information on these matters.

**Article 4 Direction**

Removes the permitted development rights awarded to properties by legislation and means a planning application has to be made for minor works that usually do not need permission.

## Further information

Energy efficiency in existing buildings:

The Energy Saving Trust	<p>A national agency promoting energy efficiency in the domestic sector. For information on home energy efficiency measures including grants, visit their website: <a href="http://www.energysavingtrust.org.uk">www.energysavingtrust.org.uk</a></p> <p>The Energy Saving Trust also provides technical guidance on energy efficiency in the Publications and Case Studies section of their website. <a href="http://www.est.org.uk/housingbuildings/publications">www.est.org.uk/housingbuildings/publications</a></p> <p>Recommended Best Practice in Housing technical guidance documents:</p> <ul style="list-style-type: none"> <li>• CE120 - Energy Efficient Loft Extensions</li> <li>• CE122 - Energy Efficient Domestic Extensions</li> </ul>
GreenSpec	<p>Provides details of products and how they can be used to improve the efficiency of your home or building</p> <p><a href="http://www.greenspec.co.uk">www.greenspec.co.uk</a></p>
The Planning Portal	<p>Provides information on what alterations you can make to your home without requiring planning permission</p> <p><a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a></p>

## Energy efficiency in historic buildings:

Historic England	<p>Historic England, the UK government's adviser on the historic environment, has produced the following guidance:</p> <ul style="list-style-type: none"> <li>• A Guide to Energy Conservation in Traditional Buildings, which looks at a range of improvements that can be made to reduce the heat lost through a building's walls, windows, floor and roof. This guide is one of a series looking at reducing energy consumption in traditionally constructed homes. <a href="https://www.historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/">https://www.historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/</a></li> <li>• Meeting building regulations Part L in existing buildings. The purpose of the guidance is to help prevent conflicts between the requirements of the regulations and the conservation of historic and traditionally constructed buildings. <a href="https://www.historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/">https://www.historicengland.org.uk/advice/technical-advice/energy-efficiency-and-historic-buildings/</a></li> <li>• saving energy in historic buildings at <a href="http://www.climatechangeandyourhome.org.uk">www.climatechangeandyourhome.org.uk</a> which includes very detailed information about a wide range of improvements, e.g. insulating solid walls.</li> </ul>
The Energy Saving Trust	<p>Provides technical guidance on energy efficiency in the Publications and Case Studies section of their website. <a href="http://www.est.org.uk/housingbuildings/publications">www.est.org.uk/housingbuildings/publications</a></p> <p>This includes their Recommended Best Practice in Housing technical guidance documents: CE138 - Energy Efficient Historic Homes</p>
The Victorian Society	<p>Has information on their website on greening Victorian homes - <a href="http://www.victoriansociety.org.uk/advice/greening">www.victoriansociety.org.uk/advice/greening</a></p>
Building Conservation	<p>Provides a directory of useful contacts, grant sources and websites <a href="http://www.buildingconservation.com">www.buildingconservation.com</a></p>
The Sustainable Development Commission	<p>Provides case studies of existing homes that have improved their energy efficiency, including the example detailed in this section. <a href="http://www.sd-commission.org.uk">www.sd-commission.org.uk</a></p>



## Appendix 1: Checklist for retro-fitting measures

Applies to all:

- changes of use
- conversions
- extensions over 30sq m

Please note that not all the measures will be appropriate for all buildings and some measures will require planning permission e.g. alterations to the front of a property

Measure	Specification	Evidence
Draught proofing		
Reflective radiator panels		
Overhauling/upgrading windows		
New boiler		
LED lighting		
Meters, timers, sensors, controls on heating or lighting		
Mechanical Ventilation with Heat Recovery		
Insulation		
Hot water tank & pipes		
Roof		
Walls Internal		
Walls External		
Floor		
Renewable energy technology		
Solar PV panels		
Solar thermal (hot water) panels		
Ground source heat pumps		
Double glazed windows / Secondary glazing		
Combined heat and power unit		
Green or brown roof		
Rainwater harvesting		
Other measures		
Join the Camden Climate Change Alliance (commercial only)		
Off-setting contribution		



## 5 Decentralised energy networks and combined heat and power

### KEY MESSAGES

Decentralised energy could provide 20% of Camden's heating demand by 2020.

Combined heat and power plants can reduce carbon dioxide emissions by 30-40% compared to a conventional gas boiler.

Where feasible and viable your development will be required to connect to a decentralised energy network or include CHP.

- 5.1 This section relates to stage 2 of the energy hierarchy. Stage 2 aims to ensure that developments have done all they can to obtain an efficient supply of energy.

### THE ENERGY HIERARCHY:

1. use less energy
2. supply energy efficiently
3. use renewable energy

- 5.2 Core Strategy policy CS13 and section 1 of this guidance require carbon dioxide emissions from developments to be minimised by following all the steps of the energy hierarchy. Development Policy DP22 and sections 2 and 3 of this guidance set out how the Council expects less energy to be used by developments through their design and operation.
- 5.3 The Mayor of London has set a target that 25 per cent of the heat and power used in London is to be generated through the use of localised decentralised energy systems by 2025. In order to achieve this target the Mayor prioritises the development of decentralised heating and cooling networks at the development and area wide level, as well as larger scale heat transmission networks.
- 5.4 We will expect developments to connect to a decentralised energy network and use the heat unless developers can demonstrate it is not technically feasible or financially viable.
- 5.5 This guidance explains how heating, cooling and power systems should be selected in order to minimise carbon dioxide emissions. It provides details of what combined heat and power is and what decentralised energy networks are including when and where they should be delivered. The guidance is set out as follows:
- What are decentralised energy networks?
  - What is combined heat and power?
  - In what sequence should the provision of these measures be considered?
  - Which developments should investigate providing these measures?

- What is the size threshold to test feasibility and viability?
- What is the distance threshold to test feasibility and viability?
- Where are decentralised energy networks located?
- How do we expect viability to be tested?
- What is the financial contribution?
- What needs to be considered to enable installation of combined heat and power?

**What are decentralised energy networks?**

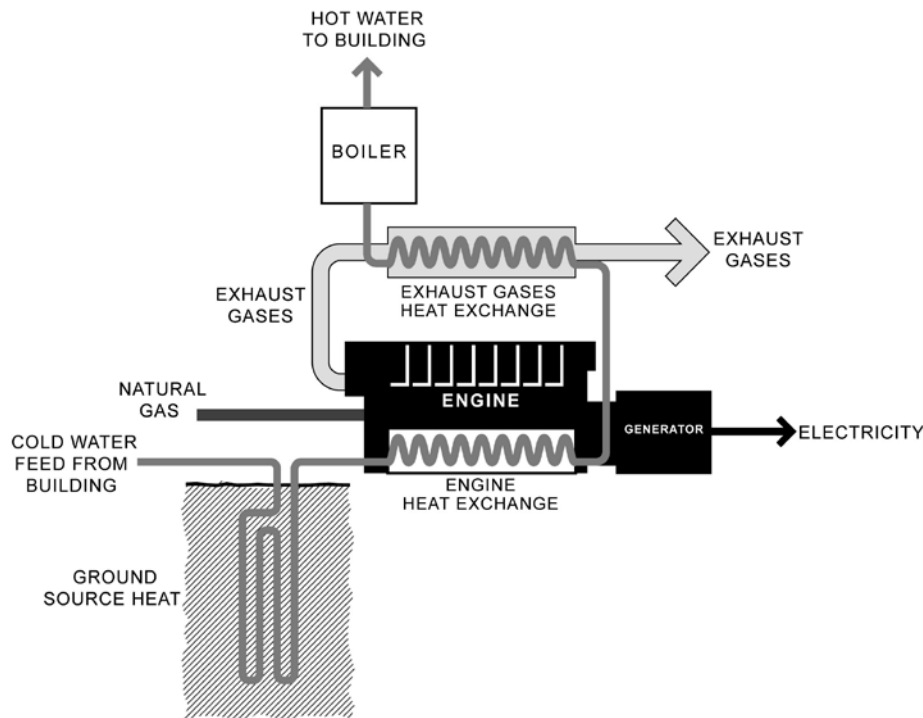
- 5.6 Decentralised energy networks generate and supply electricity, heating or cooling close to where it is used. The energy can be generated in the same building or a relatively short distance from where it is used and transmitted through pipes (generally as hot or cold water) or along cables. Decentralised energy is more carbon dioxide efficient than traditional energy sources due to the shorter distances the energy has to travel to where it is used. This results in less heat, coolness or electricity loss, which occurs as the energy travels along a pipe or cable. Heat, coolness or power for the decentralised energy network can be generated by various technologies including traditional boilers, combined heat and power and renewable energy technologies (See section 6 of this guidance for information on renewable energy technologies).
- 5.7 The provision of decentralised energy networks in an already built up area like Camden is difficult due to the need to install pipes to transfer heat. However, it is also a particularly suitable approach in Camden to reduce carbon dioxide emissions as the networks, located under roads would have minimal impacts on the conservation areas which cover much of the borough and on listed buildings.

**What is combined heat and power?**

- 5.8 Combined heat power (CHP) includes various technologies that turn fuel such as gas or biofuel into electricity. The process of producing electricity generates heat which is captured and used to heat water. The hot water is then transported around the building or to another building by pipes. The capture and use of the heat means this method of generating electricity produces less carbon dioxide emissions than traditional power stations. Combined heat and power plants can reduce carbon dioxide emissions by 30-40% compared to a conventional gas boiler. Figure 2 below provides a diagrammatical explanation of how combined heat and power plants work.

**Biofuel**

Liquid or gas source of energy derived from organic matter that can be reproduced in a short period of time

**Figure 2. Combined Heat and Power Schematic**

- 5.9 Combined cooling, heating and power (CCHP) is where the heat generated by CHP is turned into coolness. Coolness is produced by passing the heat through an absorption chiller. The combined production of electricity and heat and coolness that are used is also known as trigeneration. The use of chillers to produce cooling is generally inefficient, however as part of a decentralised energy system it may be efficient, with regards to emissions in carbon dioxide where there is surplus heat in the summer.

**Absorption chiller**

Is a machine that uses chemicals to reduce the temperature of one liquid within the machine compared to another liquid in the machine.

**What is the relationship between decentralised energy and combined heat and power?**

- 5.10 The previous paragraph above notes that heat, coolness or power for a decentralised energy network can be generated by various technologies. However, using a combined heat and power plant to generate both the electricity and heat results in greater savings in carbon dioxide emissions as the heat is being captured and distributed for use, whereas in traditional power stations it is released. Other technologies that could supply heat with low carbon emissions to a decentralised energy network include boilers that operate on biofuels or that use waste materials. However, these technologies may not be acceptable in

Camden as they emit higher levels of pollution into the air. To find out about the Council’s requirements to protect air quality see CPG6 Amenity.

**What are developments expected to do?**

- 5.11
- Once a development has been designed to be as energy efficient as possible (Energy hierarchy - Stage 1), developments will be required to consider the following steps, in the order listed, to ensure energy from an efficient source is used, where possible:
1. investigating the potential for connecting into an existing or planned decentralised energy scheme and using heat

2. installing a Combined (Cooling) Heat and Power Plant (CHP or CCHP), including exporting heat, where appropriate

3. providing a contribution for the expansion of decentralised energy networks

4. strategic sites are to allow sufficient accessible space for plant equipment to support a decentralised energy network

5. designing the development to enable its connection to a decentralised energy network in the future

**Strategic sites**

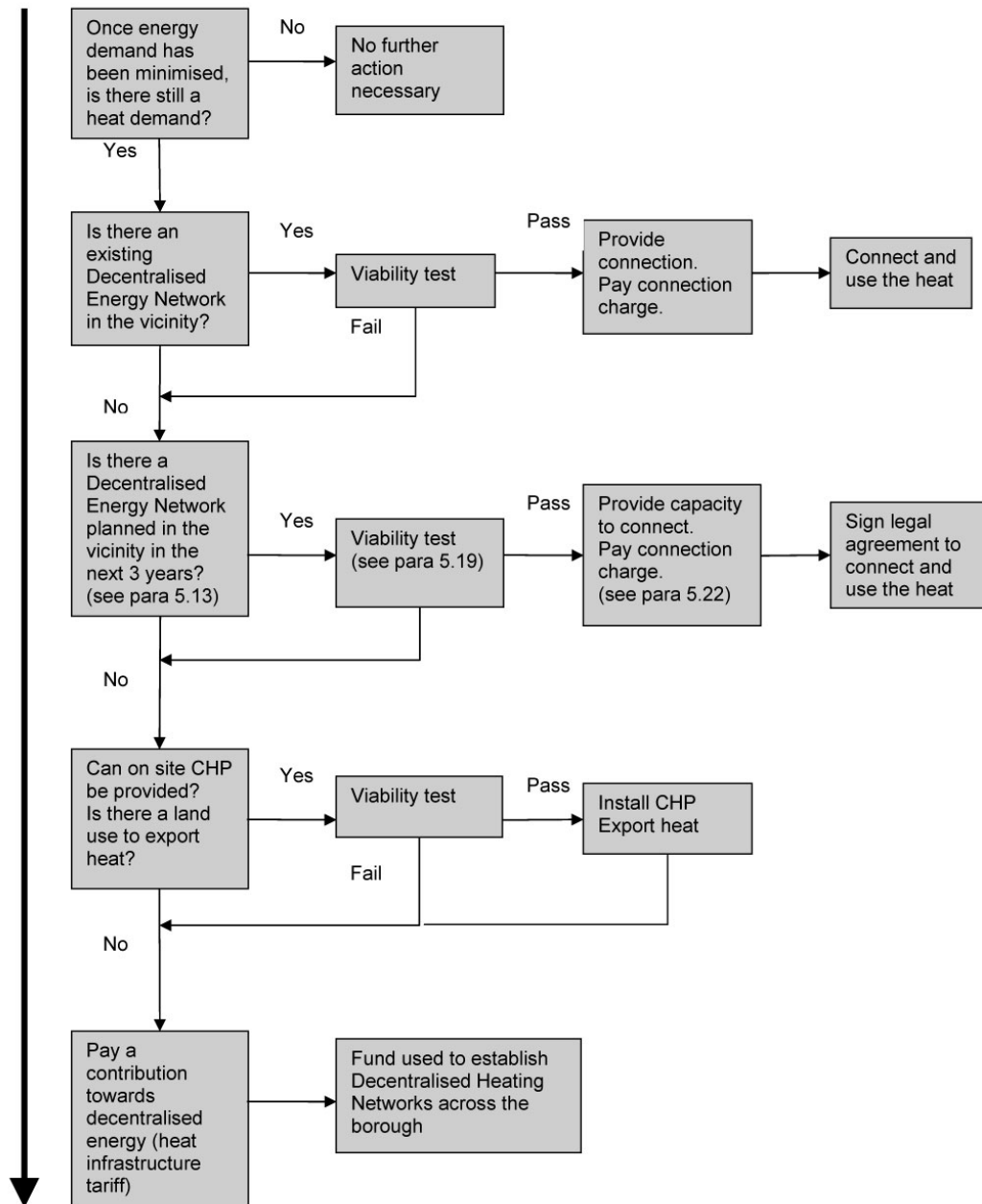
Those identified in the Site Allocations document as being required to provide an energy centre to connect or expand energy networks

- 5.12
- You should use the flow chart below to determine whether your development will be expected to connect to a decentralised energy network, install a combined heat and power plant or make a contribution towards a decentralised energy network.
- 5.13
- In line with the flow chart:
- The connection of your development to a decentralised energy network is the Council’s priority where it is feasible and viable to do so;

• Where there is no connection and or no agreement to connect your development within 3 years to a decentralised energy network, on-site CHP will be expected where the heating demand makes it feasible;

• Where there is a willing user for the heat, schemes will be expected to export heat to at least a similar heat demand, where feasible and viable; and
- 5.14
- Where the development containing the combined heat and power plant has a large electricity demand, a larger amount of heat may be expected to be exported to enable the maximum viable electricity production to be generated on-site.

Figure 3. Decentralised Energy Flowchart



## Investigating the potential for connecting into an existing or planned decentralised energy scheme

### Is my development suitable?

- 5.15 There is no threshold to guide whether your development is suitable to connect to a decentralised energy network or to include combined heat and power. In general, it will depend on the heat demand of your development and its proximity to a decentralised heating network as well as the feasibility and viability of connecting or including the plant.
- 5.16 As a guide, developments and areas with the following characteristics will be suitable for decentralised and CHP systems:
- High heating demand;
  - Mixed energy demands – a range of electricity and heating demands throughout the day; and
  - Located close to an existing or emerging decentralised energy network. The location of existing and proposed/emerging networks can be found on map 4 of the Core Strategy or on the London Heat Map [www.londonheatmap.org.uk](http://www.londonheatmap.org.uk)

### Is my development close to an existing or proposed network?

- 5.17 Developments which fall within proposed within 1km of an existing decentralised energy network, or one that is likely to be operational within 3 years of occupation of the development, should assess the feasibility of connecting to the network. See figure 4 below for a map of existing and emerging networks. Further information on the networks can be found in Camden's or other provider's decentralised energy strategies. A connection should be made unless it can be clearly demonstrated that it would not be viable. Where no connection is made, a financial contribution will be sought. See paragraph 5.28 for more information on financial contributions.
- 5.18 Developments which are proposed within 500m of a potential network (see figure 5 below) which have no timetable for delivery should ensure that the development is capable of connecting to a network in the future. A financial contribution will be sought to fund the future expansion of the network, unless on-site CHP is feasible and included as part of the development.

#### Where are the decentralised energy networks?

The location of existing and proposed/emerging networks can be seen on figures 4 and 5 below, map 4 of the Core Strategy or on the London Heat Map: [www.londonheatmap.org.uk](http://www.londonheatmap.org.uk)



Figure 4. Developments within 1km radius of an existing or emerging network.

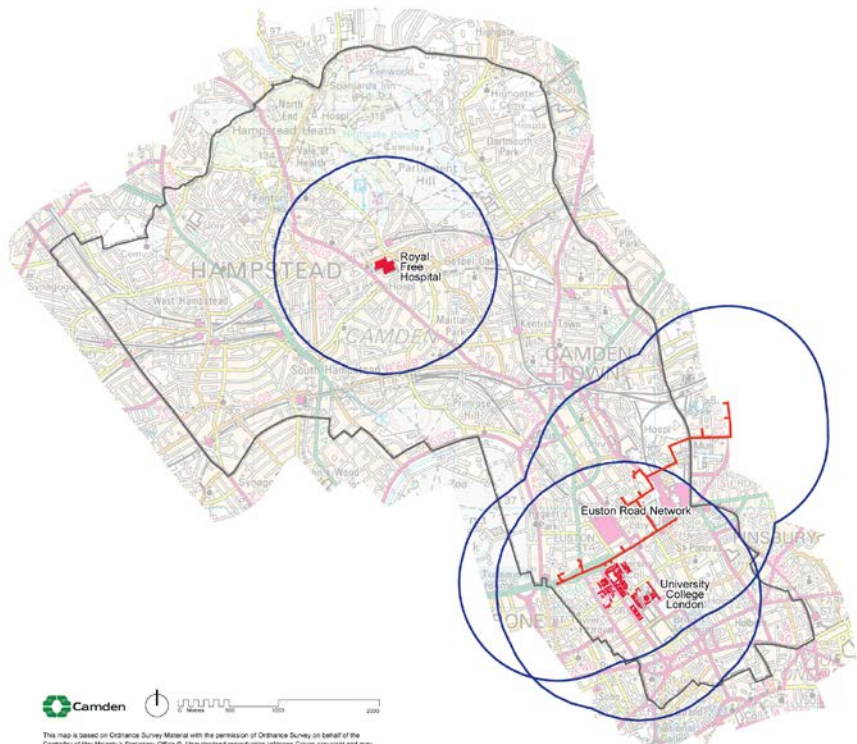
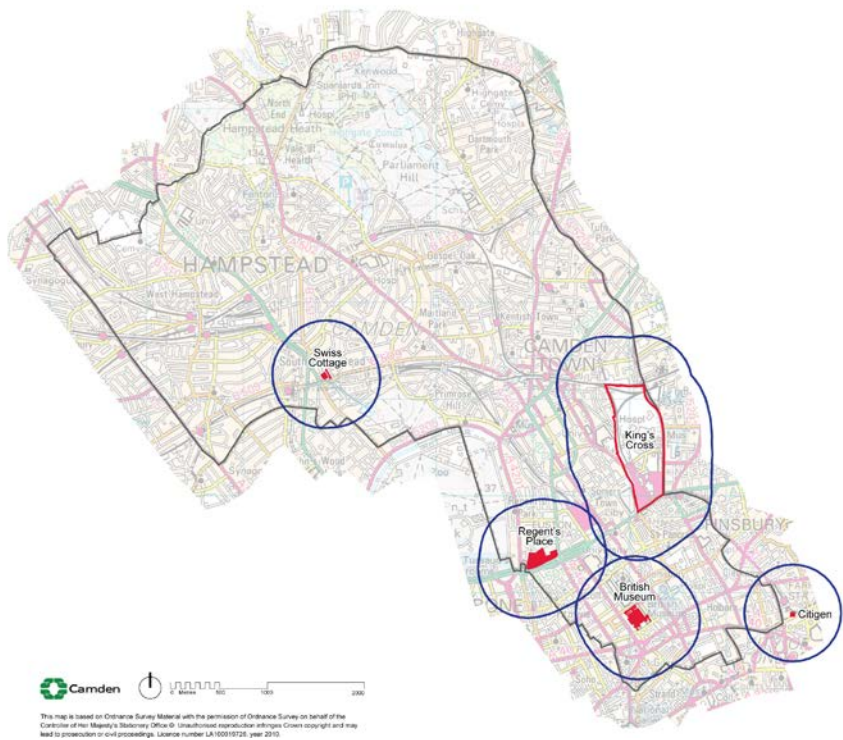


Figure 5. Developments within 500m radius of a potential network



### Should my development include a community heating systems

Where there is more than one occupier, use or building a community heating network will be expected.

- 5.19 A community heating system is a heating network that provides heat to more than one dwelling or building. A site wide or community heating system enables the whole development to convert to a low carbon fuel source in the future or connect to a decentralised heating network. For larger schemes, this approach also enables the heating demands across the site to be balanced throughout the day. You will have to provide individual heat meters and heating controls to each property.
- 5.20 Heat can be generated at different pressures and temperatures. Your development's heating system will also need to be designed to be compatible with the decentralised energy network it will connect to.

### Viability and feasibility

- 5.21 Your development will be expected to connect to a decentralised energy network and use/export the heat unless you can demonstrate that it is not technically feasible or financially viable.
- 5.22 Considerations of feasibility and viability include, but are not limited to:
- Size of the development;
  - Distance to existing network pipes;
  - Physical barriers, e.g. roads or railways;
  - Other developments in the vicinity that may also be required to connect to the network;
  - Other buildings in the area that are willing to connect/take heat;
  - Other building in the area in the same ownership or occupation as the lead development that have a heating load;
  - Cost of connection;
  - Any grants available;
  - Any specific technical compatibility issues; and
  - The business/expansion plan of the network operator.

When demonstrating the feasibility and viability of not connecting to a decentralised energy network or including a combined heat and power plant developers will be required to address the relevant considerations above.

### Connecting to a decentralised energy network - things to consider

- 5.23 To ensure connection is technically feasible the heating system has to be designed to be compatible with the temperature and pressure of the heat in the decentralised energy network. This will generally require a water based or 'wet' heating system at a certain temperature and pressure.

Where a development is not connecting immediately to a network the following measures need to be included in your scheme:

- space in the plant room for a heat exchanger, any other plant and pipe and electricity connections; and
- pipes from the plant room to the property boundary where the decentralised energy pipe is most likely to be located.

A **heat exchanger** is a device that transfers heat from one source to another to either cool or heat an object or system.

### Installing combined heat and power - things to consider

- 5.24 There are various types of CHP engines, including gas turbines, gas engines, steam turbines or engines that run on biofuels. Heat can be produced at different pressures and temperatures. It is essential that the design of the building's heating network considers the type of heat and pressure proposed. Where the CHP is to link to, or has the potential to link into, an existing wider network it is essential that the proposed temperature and pressure are compatible with the existing network.
- 5.25 Where several schemes with or without CHP are to be connected through a decentralised energy network it is essential that the heat system of the buildings are compatible. This can sometimes be achieved through a heat exchanger.
- 5.26 Where large developments are proposed that are not near a proposed decentralised energy network, a scheme should ensure a variety of land uses to ensure a mixed heat load that would make CHP viable, subject to other policy requirements.
- 5.27 For existing buildings, it will be important to ensure that the potential impact on the historic fabric and archaeology has been fully considered. Please refer to CPG1 Design, the section on heritage in particular, for more information.

### Financial contributions

- 5.28 In line with the flow diagram above, if your scheme does not connect to a decentralised energy network or have a secure agreement to do so within 3 years, and does not include combined heat and power, a financial contribution may be required to enable expansion of the network and future connection. The financial contribution should be in line with the following table (or as updated in CPG8 Planning obligations):

Size of development	Residential (per dwelling) or Per 300sq m of non-residential floorspace
Over 20 stories	£2,800
8-20	£2,500
5-7	£2,800
3-4	£4,100
2-3	£5,300
Single dwelling houses or single storey commercial developments	£8,600

Source: Community energy: Urban planning for a low carbon future.

**How will the requirements of this guidance be secured?**

- 5.29    Where appropriate Section 106 agreements will be used to secure:
- the installation of CHP/CCHP and the generation and use of energy
  - details that ensure the plant and its operation is carbon dioxide efficient with regards to operating hours, compatibility with the need (amount and timing) for heat, and requirements for a heat store
  - details that ensure the design of the heating system is compatible with any nearby decentralised energy network
  - the export of heat, cooling and/or electricity
  - development use heat, cooling and or electricity from a decentralised energy network, including by entering into a long term energy contract
  - sufficient space is provided for future plant, heat exchanges, connection points to either generate, export and take heat, cooling and/or electricity
  - a financial contribution towards future decentralised energy networks

## Further information

Information on combined heat and power:

Combined heat and power association	<a href="http://www.chpa.co.uk">www.chpa.co.uk</a>
DECC microsite	<a href="http://chp.decc.gov.uk/cms/">http://chp.decc.gov.uk/cms/</a>

Information on how to plan for decentralised energy:

Powering ahead. Delivering low carbon energy in London	<a href="http://legacy.london.gov.uk/mayor/publications/2009/docs/powering-ahead141009.pdf">http://legacy.london.gov.uk/mayor/publications/2009/docs/powering-ahead141009.pdf</a>
Cutting the Capital's Carbon Footprint – Delivering decentralised energy	<a href="http://www.londonfirst.co.uk/documents/Cutting_the_Capital's_Carbon_Footprint_FULL_Low_res_FINAL.pdf">http://www.londonfirst.co.uk/documents/Cutting_the_Capital's_Carbon_Footprint_FULL_Low_res_FINAL.pdf</a>
Community energy. Urban planning for a low carbon future	<a href="http://www.tcpa.org.uk/data/files/ceg.pdf">http://www.tcpa.org.uk/data/files/ceg.pdf</a>

Existing decentralised energy networks in or near Camden:

<ul style="list-style-type: none"> <li>• Citigen - <a href="http://www.eon-uk.com/generation/citigen.aspx">http://www.eon-uk.com/generation/citigen.aspx</a></li> <li>• Bloomsbury heat and power</li> <li>• Gower street heat and power</li> <li>• King's Cross Central – managed by Metropolitan</li> <li>• Royal Free Hospital to Gospel Oak – managed by the NHS/Mitie</li> <li>• Euston Corridor Phase 1 – Somers Town/Kings Cross – Camden owned</li> </ul>
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How Camden can reduce its carbon dioxide emissions by 40%:

[www.camden.gov.uk/ccm/cms-service/download/asset/?asset\\_id=2460603](http://www.camden.gov.uk/ccm/cms-service/download/asset/?asset_id=2460603)



## 6 Renewable energy

### KEY MESSAGES

There are a variety of renewable energy technologies that can be installed to supplement a development's energy needs

Developments are to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies.

- 6.1 This guidance covers Stage 3 of the energy hierarchy. Stage 3 involves considering how renewable energy technologies can be used to further reduce the carbon dioxide emissions of a development. You will find information in this section on the types of renewable energy technologies that are available and when they are most appropriate. Stages 1 and 2 of the energy hierarchy – energy efficiency and decentralised energy & CHP – are dealt with in sections 2, 3 and 4.
- 6.2 Core Strategy policy CS13 - *Tackling climate change through promoting higher environmental standards* encourages developments to meet the highest feasible environmental standards that are financially viable during construction and occupation. Paragraph 13.11 states that developments will be expected to achieve a 20% reduction in carbon dioxide emissions from on-site renewable energy generation unless it can be demonstrated that such provision is not feasible. The 20% reduction should only be attempted once stages 1 and 2 of the energy hierarchy have been applied.

### WHAT DOES THE COUNCIL EXPECT?

All developments are to target at least a 20% reduction in carbon dioxide emissions through the installation of on-site renewable energy technologies. Special consideration will be given to heritage buildings and features to ensure that their historic and architectural features are preserved.

When assessing the feasibility and viability of renewable energy technology, the Council will consider the overall cost of all the measures proposed and resulting carbon savings to ensure that the most cost-effective carbon reduction technologies are implemented in line with the energy hierarchy.



## Renewable energy technologies

### Solar/Thermal Hot Water Panels

#### What is it?

A system made of flat plate collectors or evacuated tubes which allow water to flow through and be heated by the sun's rays.



#### What does it do?

Uses the sun's heat to warm water - up to 85 degrees Celsius

#### What issues should I consider?

- Flat plate systems are cheaper. Evacuated tube systems are more efficient so need less space.
- Generally used for hot water where approximately 4sq m of solar panel per household is sufficient with 80 litres of hot water storage.
- Aim to minimise pipe lengths as this reduces heat losses.
- Not ideal with combined heat and power as it can reduce the efficiency of the CHP system.

#### Where might this technology be appropriate?

- Suitable for developments with all year hot water demands.
- South facing at 30-40 degrees is ideal, but as the panels do not rely on direct sunlight they can still be efficient at other angles.
- Can be fitted to existing buildings, but need to consider additional weight of the panels and compatibility of heating/hot water system

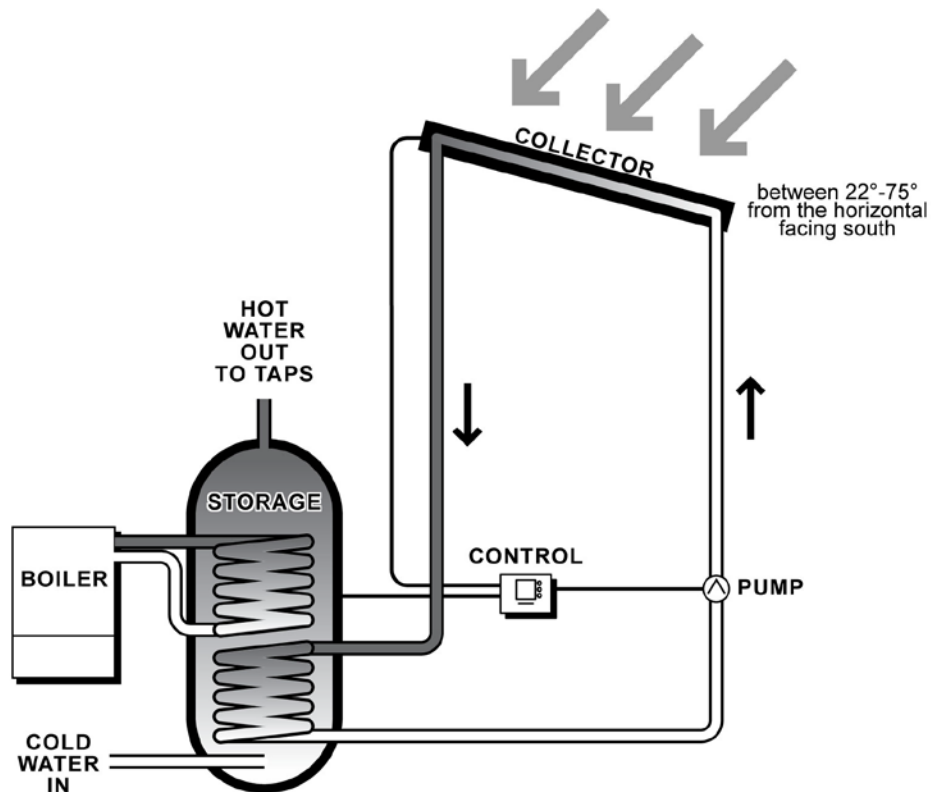
#### WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?

- Where space allows, panels are to meet 100% of the site's summer hot water needs, which equates to 50-60% of the annual demand.
- Applicants are to confirm the number and size of panels or the overall square meters to be installed



- The accompanying heating system such as the top up boiler must be compatible. For example, it must include a storage tank and be able to use pre-heated water.
- Larger schemes should use a central system
- A meter is to be installed on the system for monitoring

Figure 6. Solar Hot Water Heating Schematic



## Photovoltaic (PVs)

### What is it?

Photovoltaic cells are panels you can attach to your roof or walls. Each cell is made from one or two layers of semiconducting material, usually silicon. There are a number of different types available e.g. panels, tiles cladding and other bespoke finishes.



### How does it work?

When light shines on the PV cell it creates an electric field across the layers. The stronger the sunshine, the more electricity is produced.

### What issues should I consider?

- PV works best in full sunlight.
- Consider movement of shadows during the day and over the year. Overshadowing can impact the overall performance of the PV array.
- The best commercial efficiency is 22%.
- In general 1sq m of conducting material such as crystalline array will provide an output of 90-110 kWh per year.

### Where might this technology be appropriate?

- On a roof or wall that faces within 90 degrees of south, and isn't overshadowed by trees or buildings. If the surface is in shadow for parts of the day, your system will generate less energy.
- On top of a green or brown roof is ideal because the cooler temperature created locally by the vegetation improves the efficiency of the solar panel.
- Can be fitted to existing buildings, but need to consider additional weight of the panels.

### WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?

- Preference is for PVs to be flush to the roof or wall, but considerations will include the efficiency of the panel/s and whether they are visible
- Applicants are to confirm the number and size of panels or the overall square meters to be installed
- A meter is to be installed on the system for monitoring

## Ground Source Heat Pumps (GSHP) or geothermal

### What is it?

A network of underground pipes, which circulate a mixture of water and chemicals (to prevent freezing) through a loop and a heat exchanger.

### How does it work?

The heat from the ground is absorbed by the liquid that is pumped through the buried pipes. A heat exchanger in the heat pump extracts the heat from the liquid and transfers it the water in the building's heating system which can be used for central heating and hot water. In the summer, when the ground is cooler than the air, the system can be reversed to provide cooling.

### What issues should I consider?

- There are horizontal and vertical systems.
- Horizontal systems, also known as loop systems use trenches
- Vertical systems use boreholes which require a ground survey and a drilling license from the Environment Agency
- There are a range of permits and consents that might be required
- Generally provides heat at lower temperatures (30-50 degrees Celsius) than normal gas boilers.
- Buildings need to be well insulated for a GSHP to be effective
- The pump requires electricity to run so this technology will not be renewable or energy efficient in all developments.

### Where might this technology be appropriate?

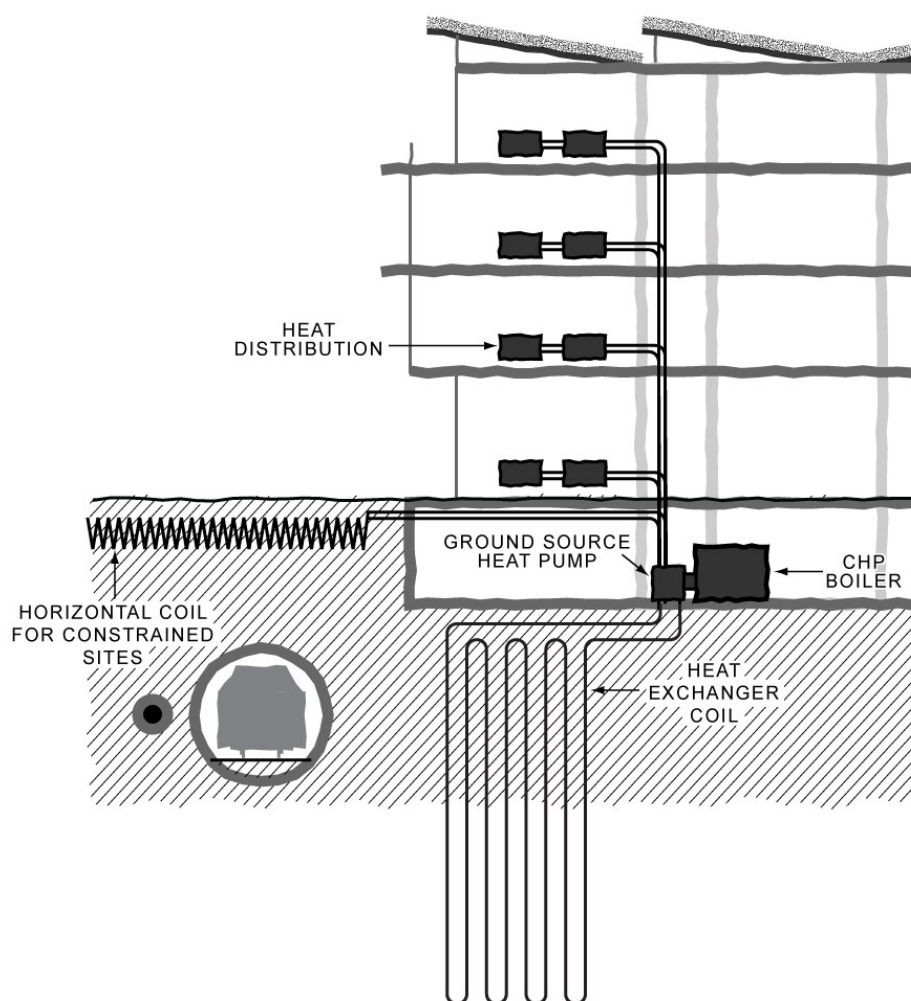
- The lower temperatures mean that GSHPs are well suited for underfloor heating
- Ideal for buildings which need heating in winter and cooling in summer

### WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?

- Evidence is to be provided to demonstrate that the local geology can accommodate the necessary excavation
- Consider how much electricity is required to work the pump versus the energy savings of providing heat or cooling. The carbon content of the electricity required to run the pump could be higher than the gas need to run a traditional gas boiler. The ratio of heat or cooling produced to the energy used to produce the heat is called the coefficient of performance (COP). For example, a heat pump which uses 1kW of electricity to produce 4kW of usable energy has a COP of 4 and is therefore 400% efficient. GSHPs need to have a COP of 4 or more to be considered renewable.

- When considering the carbon efficiency of a heat pump system the Council will take into account research and evidence of past performance of heat pumps and the seasonable performance.
- A meter on the system for monitoring

Figure 7. Ground Source Heat Pump Schematic



## Air source heat pumps (ASHP)

### What is it?

A heat pump that extracts heat from the outside air to heat the interior of a building or to heat hot water. It can also extract the heat from inside a building to provide cooling.

### How does it work?

Air to water heat pumps operate on a similar principle to an ordinary refrigerator. Heat from the atmosphere is extracted by an outdoor unit and is absorbed by a refrigerant solution which is then compressed to a high temperature. The heat generated is used by the indoor unit to create hot water for a traditional heating and hot water system.

Air to air heat pumps work in a similar way, but instead of generating hot water, the heat from the compressed refrigerant solution is turned into hot air by an indoor unit which is used to heat the building.

### What issues should I consider?

- ASHPs need electricity to run
- Can be less efficient than GSHPs as air temperature is more variable, i.e. colder in the winter when more heat needs to be extracted from the air.
- Consider the noise and vibration impact.
- Consider the visual impact.

### Where might this technology be appropriate?

- Where there is no gas connection.
- Where the heating demand is isolated and for a short period of time.
- Can produce cool air as well as heat, so could be suitable in buildings which may otherwise require air conditioning

### WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?

- Consider how much electricity is required to work the pump versus the energy savings of providing heat or cooling. We will expect carbon calculations to show that their use for heating is more efficient than gas. Otherwise they will not be acceptable. The calculations will be based on the co-efficient of performance (COP) and the carbon content of electricity and gas. ASHPs need to have a COP of more than 4 to be more efficient than a conventional heating system.
- When considering the carbon efficiency of a heat pump system the Council will take into account research and evidence of past performance of heat pumps and the seasonable performance.
- Noise assessment and mitigation report to be submitted
- A meter on the system for monitoring

## **Biomass heating and power**

### **What is it?**

A boiler which generates heat for central heating as well as hot water or a system which generates heat and electricity, known as a Combined Heat and Power (CHP) system.

### **How does it work?**

Produces heat or heat and electricity by burning organic materials (such as wood, straw, energy crops or liquid biofuels). Natural gas can also be used, however, this will be considered to be a 'low carbon technology' rather than renewable, as gas is a fossil fuel.

### **What issues should I consider?**

- The suitability of this technology will depend on the:
  - local air quality
  - need for air quality mitigation measures
  - source and carbon intensity of processing the fuel
  - emissions generated from transporting the fuel
  - the impact on air quality – biomass boilers releases higher levels of nitrogen oxides (NOx) and particulates than conventional gas fired boilers or CHP systems
- There are a range of permits and consents that might be required
- Space is needed for power plant and fuel store
- Servicing arrangements for fuel delivery and transfer
- Possibility of sharing the system with other developments or consider establishing of a Community Combined Heat and Power scheme (CCHP)

### **Where might this technology be appropriate?**

Biomass fed CHP systems are generally only proven on very large scale.

#### **WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?**

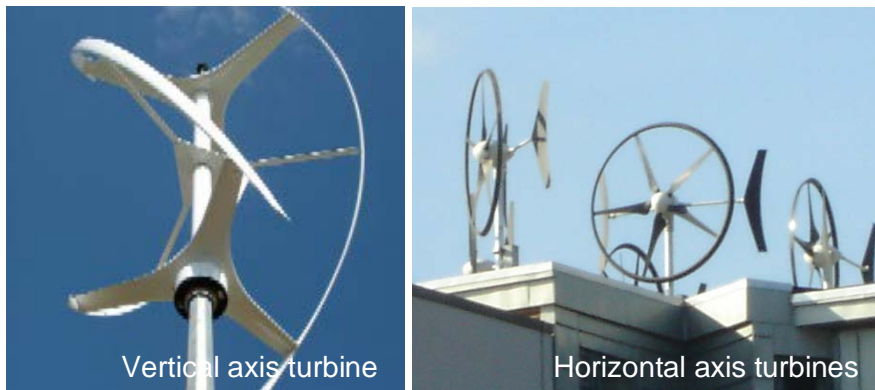
- Boilers must be accredited as 'exempt appliance' under the Clean Air Act 1999
- Technical information relating to the biomass boiler/CHP will be required
- All biomass boilers and CHP will require an air quality assessment, including location and height of flues, details of emissions and how the emissions can be mitigated

- Biomass boilers and CHP are required to be designed, operated and maintained in accordance with best practise measures to minimise emissions to air. (Please refer to the section on Air Quality in the CPG6 Amenity for more detailed information)
- Evidence of potential fuel suppliers – a local fuel source is preferable
- Fuel is to be carbon neutral. Preparation of fuels must be treated and handled appropriately to ensure there are zero carbon emissions e.g. natural drying process not one that uses energy
- A meter on the system for monitoring

## Wind turbines

### What is it?

Blades or turbines which are rotated by the power of the wind.



### How does it work?

The wind turns the blades of the turbine to produce electricity. Horizontal or vertical axis turbines are available

### What issues should I consider?

- Require a certain level of wind to make them feasible which is often difficult in London where there are large obstacles such as buildings and trees which distort the flow of wind.
- If poorly located could use more energy than they generate.
- Need to be orientated towards the prevailing wind.
- Noise, vibration and flicker.

#### **Flicker:**

Rotating wind turbine blades can cast moving shadows when the sun is in a low position behind the turbine

### Where might this technology be appropriate?

Could be suitable for low density developments or those with large amounts of open space e.g. schools and playing fields.

**WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?**

- An assessment of the impact on neighbouring properties, particularly flicker, noise and vibrations
- A wind study and feasibility report.
- A meter on the system for monitoring

**What is the feed-in tariff?**

- 6.3 The feed-in tariff is a scheme where energy suppliers make regular payments to householders and communities who generate their own electricity from renewable or low carbon sources. The scheme guarantees a minimum payment for all electricity generated by the system, as well as a separate payment for the electricity exported to grid. These payments are in addition to the bill savings made by using the electricity generated on-site.
- 6.4 When considering the viability of the installation of technologies, the financial benefits of the feed-in tariff must be considered.



**Further information**

The London Energy Partnership	<p>Has produced a toolkit which explains how renewable energy can be integrated into new developments: London Renewables Toolkit - Integrating renewable energy into new developments: Toolkit for planners, developers and consultants</p> <p>Available from the London Energy Partnership website  <a href="http://www.lep.org.uk">www.lep.org.uk</a></p>
REAL Renewable Energy Action for London	<p>A web resource run by Creative Environmental Networks which provides information on installing renewable energy for home owners, architects and developers.  <a href="http://www.cen.org.uk/REAL">www.cen.org.uk/REAL</a></p>
Environmental Protection UK and LACORS	<p>Have produced guidance on biomass and air quality. The guidance provides background material on the issues involved, and details procedures for assessing and managing the effects of biomass on air quality – specifically nitrogen dioxide (NO<sub>2</sub>) and particulates (PM<sub>10</sub> and PM<sub>2.5</sub>). There are a number of guidance leaflet available on their website:</p> <ul style="list-style-type: none"> <li>• 'Biomass and Air Quality Guidance for Local Authorities'</li> </ul> <p>'Biomass and Air Quality, Developers' Information Leaflet'  <a href="http://www.environmental-protection.org.uk/biomass">www.environmental-protection.org.uk/biomass</a></p>
The Mayor of London	<p>Mayor's Air Quality Strategy includes emissions standards for new biomass and CHP equipment which will be implemented by the GLA  <a href="http://www.london.gov.uk/publication/mayors-air-quality-strategy">www.london.gov.uk/publication/mayors-air-quality-strategy</a></p>



## 7 Water efficiency

### KEY MESSAGES

At least 50% of water consumed in homes and workplaces does not need to be of drinkable quality re-using water

All developments are to be water efficient

Developments over 10 units or 1000sq m should include grey water recycling

- 7.1 Core Strategy Policy CS13 protects the borough's existing water infrastructure to ensure we have an adequate water supply as well as adequate water storage and foul water capacity. Development Policy DP23 expects all developments to be designed to be water efficient and to minimise the need for further water infrastructure.

- 7.2 This section outlines what measures the council will expect to ensure developments reduce the consumption of water and reduce the amount of water that is disposed of.

### WHAT DOES THE COUNCIL EXPECT?

The Council expects all developments to be designed to be water efficient by minimising water use and maximising the re-use of water. This includes new and existing buildings.

### Minimising water use

- 7.3 The simplest way of doing this is through installing efficient water fittings and plumbing, such as
- dual flush toilets;
  - low flow taps and shower heads; and
  - low water consuming washing machines and dishwashers.
- 7.4 Your development will need to use a range of these measures to reduce their water consumption. Specifications should be practical for the intended occupier to ensure that fittings are not simply replaced.
- 7.5 Your development should include meters which are visible to occupants, as this has been shown to result in reductions in water use.
- 7.6 We will assess the performance of water minimisation measures used against the water category in BREEAM (see section 8 on sustainability assessments for more information).

### Maximising the re-use of water

- 7.7 At least 50% of water consumed in homes and workplaces does not need to be of drinkable quality. For example, rain water can be water used for flushing toilets, washing laundry and watering plants and gardens.

### Collecting rain water

- 7.8 This involves collecting rainwater from a building's roof, as well as its surroundings, and storing it in a tank. Once filtered of leaves and larger objects, the water can be re-used for toilet flushing, laundry and watering plants. If used outside, the rain water harvesting system can take the form of a simple water butt. If used within the building it will need to be supplied through pipes and taps that are separate from the standard mains water supply.



Water butt

#### WHAT WILL THE COUNCIL EXPECT?

The Council will require buildings with gardens or landscaped areas that require regular maintenance to be fitted with water butts.

### Green/brown roofs and collecting rain water

- 7.9 Green/brown roofs can be designed to include rain water collection. However, more consideration needs to be given to the materials and pipe work that will go underneath the green/brown roof structure. Green/brown roofs with rainwater harvesting may also need to use extra filters to ensure the water can be re-used. See section 10 for more information on green/brown roofs.

### Re-using water

- 7.10 'Grey water' (water that has already been used in hand basins, baths and showers) can be stored, filtered and disinfected, and then reused, for toilet flushing, garden watering or laundry. It is also possible to recycle 'black water' (water used for toilet flushing and washing up) although this is more resource intensive. Both 'grey water' and 'black water' systems will require regular maintenance to ensure their ongoing quality and effectiveness. A separate standard mains supply will also always be needed in addition to provide drinking water.

The Council will require developments over 10 units or 1000sq m and/or intense water use developments, such as hotels, hostels, student housing etc to include a grey water harvesting system, unless the applicant demonstrates to the Council's satisfaction that this is not feasible.

- 7.11 When considering the feasibility of grey water systems applicants should consider
- The cost of the system;
  - Cost savings for owner/occupier over a 10 year period;
  - Projected grey water generation;
  - Projected demand for use of grey water; and

- Water savings as a result of the grey water system.

**Further information**

The Environment Agency produces a range of guidance about how to conserve and reduce water consumption.

- Conserving Water in Buildings: Fact Sheets, Environment Agency,
- Greywater: An information guide, Environment Agency, 2008
- Harvesting rainwater for domestic uses, Environment Agency, 2008

They are all available on the EA website:

[www.environmentagency.gov.uk](http://www.environmentagency.gov.uk)



## 8 Sustainable use of materials

### KEY MESSAGES

Reduce waste by firstly re-using your building, where this is not possible you should implement the waste hierarchy

The waste hierarchy prioritises the reduction, re-use and recycling of materials

Source your materials responsibly and ensure they are safe to health.

- 8.1 This guidance relates to Core Strategy policy CS13 - *Tackling climate change through promoting higher environmental standards* in design and construction. It encourages developments to be sustainable: through the choice of appropriate materials which will assist in minimising energy needs both during construction and occupation periods and by making efficient use of resources.
- 8.2 It also relates to Development Policy DP22 - *Promoting sustainable design and construction* which encourages developments to conserve energy and resources through the use of recycled and renewable buildings materials.
- 8.3 This guidance shows how you can minimise the use of resources through your choice of materials to limit the environmental impact of developments. You can achieve this by focusing on the sustainable (re)use of existing materials as far as possible before considering introducing new materials. There are 5 key measures:
1. Managing existing resources;
  2. Specifying materials using the Building Research Establishment's Green Guide to Specification;
  3. Ensuring that materials are responsibly sourced;
  4. Minimising the harmful effects of some materials on human health; and
  5. Ensuring that specified materials are robust and sensitive to the building type and age.

### Managing existing resources

- 8.4 Most development sites have existing materials which can be re-used, recycled or obtained from nearby development sites. You should always look for options to sensitively re-use, refurbish, repair and convert buildings, rather than wholesale demolition (see Camden Development Policies paragraph 22.4). This will reduce the amount of resources used and will help reduce construction waste.
- 8.5 Where the retention of a building or part of a building is not possible, you should aim to tackle the quantity of waste produced - from the demolition phase through to the construction phase – through the use of the waste hierarchy.

**WHAT WILL THE COUNCIL EXPECT?**

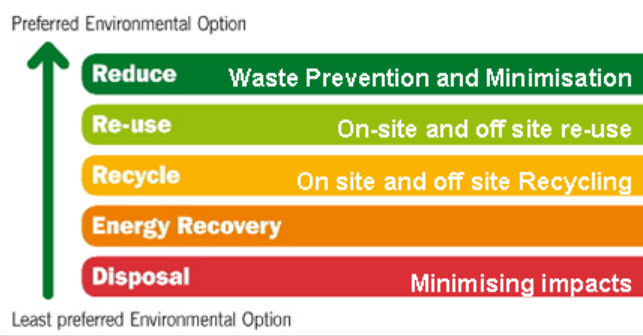
All developments should aim for at least 10% of the total value of materials used to be derived from recycled and reused sources. This should relate to the WRAP Quick Wins assessments or equivalent as (highlighted in the waste hierarchy information section below). Special consideration will be given to heritage buildings and features to ensure that their historic and architectural features are preserved.

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

**The Waste Hierarchy**

8.6 The 'waste hierarchy' ranks the different ways in which waste can be treated so that it limits the amount of resources used and waste generated. You are to justify the use of (existing) resources and materials in your development through the implementation of the waste hierarchy below to minimise waste generated during the demolition and construction process.

Figure 8. The waste hierarchy



8.7 In line with the waste hierarchy, during the construction phase, our preferred approach is:

- 1. the use of reclaimed materials;
- 2. the use of materials with higher levels of recycled content; and
- 3. the use of new materials.

8.8 Similarly, in demolition you should:

- 1. prioritise the on site reuse of demolition materials;
- 2. recycle materials on site recycling, then off site recycling; and
- 3. the least preferred option - disposal to landfill.

**Reduce**

8.9 Reducing waste is the preferred option and at the top of the waste hierarchy – this means the Council prefers you prevent waste being produced in the first place rather than recycle or dispose waste that is



produced. You should focus on opportunities for waste reduction from the outset, at the earliest stages of design, as well as through better methods of purchasing and ways of working, for example by ordering the right amount of materials for the job.

8.10 Where demolition is necessary, you and your contractors are encouraged to:

- safely remove the most valuable or more contaminating materials and fittings for later re-use or processing before work commences.
- optimise the reuse and recycling of demolition materials - the Council strongly encourages the use of the Demolition Protocol where substantial demolition is proposed (over 1000 square meters). 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). For further detailed guidance on the Demolition Protocol (2003), refer to: Institute of Civil Engineers (ICE) and London Remade: [www.londonremade.com](http://www.londonremade.com)
- You are to demonstrate that the most significant opportunities to increase the value of materials derived from recycled and reused content have been considered. A good way of achieving this aim at no additional construction cost is to use the Waste and Resources Action Programme (WRAP) by selecting the top ten WRAP Quick Wins or equivalent, and implement the good practice guidance highlighted: [www.wrap.org.uk](http://www.wrap.org.uk)
- Building contractors are legally required to produce Site Waste Management Plans (SWMP) for all projects with an estimated construction cost of over £300,000. A Site Waste Management Plan provides a framework for managing waste in line with the hierarchy by identifying types and quantities of materials for re-use/recycling to reduce the amount of waste produced by construction projects. For further guidance see the WRAP NetWaste tool which has a site waste management plan function: [www.wrap.org.uk](http://www.wrap.org.uk)
- The WRAP Quick Wins assessment can form part of a development's Site Waste Management Plan.
- Designing for deconstruction (rather than demolition) is strongly encouraged. Deconstruction is the dismantling of a structure in the reverse order in which it was constructed, which means that the materials that were put on last are removed first.
- From the outset, new buildings should be designed with the prospect of future deconstruction being implementable. This process will facilitate the segregation and extraction of materials that could be carefully removed intact during redevelopment, and then re-used/recycled wherever possible.
- You are encouraged to incorporate a 'material salvage phase', in which construction and surplus materials are recovered from the site. Additionally, materials should be segregated into categories, e.g.

timber waste, metal waste, concrete waste and general waste – to aid re-use or recycling.

- 8.11 Only once all the 'Reduce' options have been considered, should you consider the other waste options.

### Re-use

- 8.12 Re-using materials (either onsite/off-site) is defined as putting resources/materials to an alternative use so that they are not wasted and disposed of. This can be done during the design, procurement and construction phases of a development by, for example:
- identifying and segregating materials already on site for re-use in the new development, such as:
    - bricks, concrete
    - internal features – historic fireplaces, timber floorboards, doors
    - metal frames, plastics, granite
    - sub-soil, top soil;
  - using the BRE Smart Waste [www.smartwaste.co.uk](http://www.smartwaste.co.uk) management plan tool. This is an on line template contractors can use to input data on the amount and type of waste and have it sorted by the management tool;
  - making materials not reused on site available for reuse elsewhere. Consider the exchange/sale/donation of construction site materials to waste recovery businesses, such as: BRE Materials Information Exchange ([www.bre.co.uk](http://www.bre.co.uk)); Waste Alert North London's Waste Exchange service ([www.wastewatch.org.uk](http://www.wastewatch.org.uk)), etc. These specialists can sort the waste materials into various types and then find businesses that can reuse/recycle them.

### Recycling

- 8.13 Recycling materials (either onsite/off-site), is the preferable solution only when waste minimisation 'reduce' or reuse are not feasible. The recycling of materials enables them to be made into something new). Every opportunity should be taken to recycle materials, this can be done by, for example:
- identifying and segregating materials for recycling, such as:
    - metals and high value materials
    - timber, plasterboard, packaging
    - concrete crushed and re-used for concrete aggregate;
  - using the BRE Smart Waste [www.smartwaste.co.uk](http://www.smartwaste.co.uk), mentioned above
  - considering 'take-back' schemes with suppliers for materials and packaging. This where suppliers take back any materials not used as well as any packaging the materials are delivered in

- making materials not reused on site available for reuse elsewhere, as discussed above.

### **Disposal**

- 8.14 Disposal is the least preferred waste management approach. Developers should only consider disposal of materials and waste after all of the above approaches have been carried out. Disposal generally involves burying the materials in a landfill or burning it at high temperatures in an incinerator. Where disposal is the only option for the materials developers should:
- identify materials that are contaminated and cannot be reused and arrange for their safe and legal disposal by the authorised waste management;
  - remove all toxic and hazardous materials from a development site in accordance with any relevant legislation, unless they are integral to the structure or a feature to be retained, and any harm to environmental or public health should be mitigated;
  - limit waste disposal to minimise the amount of land fill tax that needs to be paid.

### **Using the BRE Green Guide to Specification**

- 8.15 You are encouraged to use the BRE Green Guide which provides guidance on how to make the best environmental choices when selecting construction materials and building components. The Green Guide ranks, materials and components on an A+ to E rating scale – where A+ represents the best environmental performance / least environmental impact, and E the worst environmental performance / most environmental impact.
- 8.16 In new-build and development projects with either - 500sq m of any floorspace or more or 5 dwellings or more - you should seek to achieve an area weighted average of A+ to B for the major building elements (roof, external walls, floor finishes, internal partitions and windows) in accordance with the BRE Green Guide to Specification. For further guidance see the sections on BREEAM assessments in section 9 of this guidance which sets out standards for developments to meet in the Materials category. For further guidance on BRE Green Guide to Specification: [www.bre.co.uk](http://www.bre.co.uk)

### **Responsible Sourcing**

- 8.17 You should specify materials from suppliers who participate in responsible sourcing schemes such as the BRE BES 6001:2008 Responsible Sourcing Standard. All timber specified should be sourced from schemes supported by the Central Point of Expertise for Timber Procurement such as Forest Stewardship Council (FSC) accreditation (which ensures that the harvest of timber and non-timber products maintains the forest's ecology and its long-term viability). The use of

responsible sourcing can contribute towards attaining the BREEAM credits but a clear audit trail will need to be provided to gain these credits. For further guidance on responsible sourcing of materials:

<http://www.bre.co.uk/>

### **‘Healthy’ materials**

- 8.18 The Council recommends the use of environmentally sensitive building (non-toxic) materials and avoiding the use of materials or products that produce VOC (volatile organic compounds and formaldehyde) which can affect human health. For current controls on VOC’s see the link below. The use of ‘healthy’ material options can contribute towards attaining the BREEAM credits but a clear audit trail will need to be provided to gain these credits.

### **Historic materials**

- 8.19 In projects that involve the refurbishment of heritage buildings (those built before 1919) or those in conservation areas, materials should be specified in line with the following hierarchy:
- Reclaimed materials should be matching and appropriate to the building type/area (original construction time/period) and sufficiently robust in their performance not to compromise building function;
  - Materials with a low environmental impact as determined by the BRE Green Guide to Specification subject to approval from Conservation Officers and provided those materials do not compromise the performance (thermal, structural or otherwise) of the existing building; and
  - When selecting insulation materials for older buildings, preference should be given to natural fibre based materials that prevent moisture retention in the building fabric.

## **How will the Council secure the sustainable use of materials?**

### **Design and Access Statement**

- 8.20 As part of the Design and Access Statement for your development, you will be expected to describe how the development has considered materials and resources. This statement should provide an explanation of the opportunities for the selection and sourcing of sustainable materials that have been considered in the proposal, and the reasons for the sourcing choices made. Your statement should also detail which existing materials on the site are to be re-used as part of your development or made available for re-use elsewhere.

### **Construction Management Plan (CMP)**

- 8.21 A Construction Management Plan will be required to support many developments and will help manage on site impact arising from demolition and construction processes. The types of schemes where a CMP will usually be appropriate include:

- major developments;
- basement developments;
- developments involving listed buildings or adjacent to listed buildings; and
- For a full list see Development Policy DP26 - *Managing the impact of development on occupiers and neighbours*, paragraph 26.10 and the relevant sections on Construction management plans in CPG4 Basements and Lightwells, CPG6 Amenity, and CPG8 Planning Obligations.

A set of minimum standards and a template Construction Management plan is available on the Council's website.

### **Site Waste Management Plan (SWMP)**

- 8.22 Where a 'site waste management plan' (SWMP) is required (in projects with an estimated construction cost of over £300,000) it should include a pre-demolition audit of materials completed by a qualified professional and submitted with an application, in accordance with the Demolition Protocol. The audit must show what materials can and will be reused. If a full audit cannot be provided with the application, it should be submitted to and approved by the Council prior to commencement of works on site. Therefore the Construction Management Plan (where required) will have to reflect that space will be required to sort, store and perhaps crush/recycle materials as part of the SWMP. This link into the WRAP NetWaste tool has a site waste management plan function: [www.wrap.org.uk/construction/tools\\_and\\_guidance/net\\_waste\\_tool](http://www.wrap.org.uk/construction/tools_and_guidance/net_waste_tool)

### **Planning obligations and Section 106**

- 8.23 Meeting the requirements for sustainable design and construction is often achieved in the detailed design or construction phases. Normally, requirements for environmental design will be dealt with using conditions, but in some circumstances a Section 106 agreement may be required to secure an environmental assessment of the proposed development carried out by an impartial assessment body or a sustainability plan to provide and maintain the highest environmental standards of development.
- 8.24 If a proposal generates a requirement for a management plan such as a SWMP or CMP (as discussed above) but cannot be implemented through the approved design or satisfactorily secured through conditions, they may be secured as part of a Section 106 Agreement. The requirements will be relevant, proportionate and related to the specific nature and potential impacts of the development proposed. The associated costs to the Council of any post-planning decision assessments, verification, or monitoring in relation to these and other related sustainability and energy plans shall be met by the developer.

### Further information

Sustainable Design and Construction	The London Plan Supplementary Planning Guidance, Mayor of London <a href="http://www.london.gov.uk">www.london.gov.uk</a>
BREEAM	BRE Environmental Assessment Method <a href="http://www.breeam.org">www.breeam.org</a>
BRE Smart Waste	An on-line site waste management plan tool. It's a template contractors can use to input data. <a href="http://www.smartwaste.co.uk">www.smartwaste.co.uk</a>
Materials	<p>For Materials Information Exchange and Architectural salvage and surplus building materials:</p> <ul style="list-style-type: none"> <li>• Architrader - <a href="http://www.architrader.com">www.architrader.com</a></li> <li>• SALVO - <a href="http://www.salvomie.co.uk/">www.salvomie.co.uk/</a></li> <li>• Waste Exchange - <a href="http://www.wasteexchange.net">www.wasteexchange.net</a></li> </ul> <p>To find out how you can use more recycled and reclaimed products and building materials see <a href="http://www.ecoconstruction.org">www.ecoconstruction.org</a>. There is a searchable database of available products on this website with information about the manufacturing processes of the products and their compositions, as well as contact details of suppliers.</p> <p>Design for deconstruction – principles of design to facilitate reuse and recycling, B Addis (2003) CIRIA Best Practice Guidance C607.</p>
Volatile Organic Compounds	<p>For current controls on avoiding VOCs and using healthy materials, see:</p> <p>British Standard (BS) regulates UFFI quality, limits the product's use and limits ingress of formaldehyde vapour into buildings (BS: 5617, 5618 (1985)).</p> <p>A BS Institution standard (BS 5669 part I (1989), BS 1142 (1989)) regulates the formaldehyde content, together with test methods that must be used to assess formaldehyde levels in particle boards and fibreboards.</p>

## 9 Sustainability assessment tools

### KEY MESSAGES

Arrangements following the Government's Housing Standards Review and withdrawal of the Code for Sustainable Homes The creation of 5 or more dwellings from an existing building will need to be designed in line with BREEAM Domestic Refurbishment

500sq m or more of non-residential floorspace will need to be designed in line with BREEAM

- 9.1 A way to ensure buildings are sustainable is to use a standardised environmental assessment tool to measure the overall performance of buildings against set criteria. Buildings that achieve high ratings use less energy, consume less water and have lower running costs than those designed to building regulations alone.
- 9.2 Paragraph 13.8 of Core Strategy policy CS13 - *Tackling climate change through promoting higher environmental standards* notes that BREEAM is a helpful assessment tool for general sustainability.
- 9.3 This section explains:
  - when you need to carry out a BREEAM assessment
  - arrangements following the Housing Standards Review The standards which need to be met for each type of development. These are more detailed targets for Energy, Water and Materials than those in the Development Policy DP22 - *Promoting sustainable design and construction*.
  - The information required at each stage of the assessment

**When do you need to carry out a sustainability assessment?**

Development type	What does this include?	Threshold for assessment	Appropriate assessment tool
Residential - Existing	Refurbishments, conversions and changes of use	5 dwellings or more 500sq m of floorspace or more	BREEAM Domestic Refurbishment
Non-residential	Includes offices, retail, industrial, education health	500sq m of floorspace or more	BREEAM
Mixed use schemes	If your scheme includes both residential and non-residential uses that total 500sq m of floorspace or more we will require a BREEAM assessment for the non-residential parts.		

- 9.4 This table sets out when the Council will require a sustainability assessment for all the types of development and which assessment tool to use.
- 9.5 The assessment tools are updated periodically and therefore the most recent version of the assessment tool is to be used.

**Code for Sustainable Homes – housing standards review transitional arrangements and approach**

- 9.6 The Code for Sustainable Homes has now been withdrawn and the Ministerial Statement dated 25 March 2015 sets out the Government's national policy on the setting of technical standards for new dwellings.
- 9.7 The Council will continue to require new residential development to submit a sustainability statement demonstrating how the development mitigates against the causes of climate change and adapts to climate change, in line with existing policies contained in Camden's Core Strategy CS13 Tackling climate change through promoting higher environmental standards and Development Policies document DP22 Sustainable design and construction.
- 9.8 Proposals should demonstrate how sustainable design and construction principles, including the relevant measures noted in the table on page 104 of the Development Policies Document have been incorporated into the design and proposed implementation. Acceptable new residential schemes will be required to ensure that the measures stated in the Sustainability Statement are secured and implemented.
- 9.9 New residential development will be required to demonstrate that the development is capable of achieving a maximum internal water use of 105 litres per person/day, with an additional 5 litres person/day for external water use.



- 9.10 The Council is still able to apply policies which require compliance with energy performance standards until the Planning and Energy Act 2008 has been amended. The Code Level 4 equivalent in carbon dioxide emissions reduction below part L Building Regulations 2013 is 20%. New residential dwellings will be required to demonstrate how this has been met by following the energy hierarchy in an energy statement. Policy CS13 also requires that all developments (existing and new build) achieve a 20% reduction in on-site carbon dioxide emissions through renewable technologies, unless demonstrated that such provision is not feasible.

#### **Zero Carbon**

Zero carbon refers to buildings that are so energy efficient they do not release any carbon emissions. The Government is currently aiming to ensure that all new homes are zero carbon by 2016. For more information visit [www.zerocarbonhub.org](http://www.zerocarbonhub.org)

You are strongly encouraged to meet the following standards in accordance with Development Policy DP22 - *Promoting sustainable design and construction*:

### **BREEAM**

- 9.11 BREEAM stands for Building Research Establishment Environmental Assessment Method. It is a tool to measure the sustainability of non-domestic buildings. There are specific assessments for various building types such as offices, retail, industrial, education and multi-residential. For developments that are not covered by one of the specific BREEAM assessment tools, this often applies to mixed use schemes, a tailored assessment can be created using the BREEAM Bespoke method
- 9.12 BREEAM assessments are generally made up of nine categories covering:
- Energy
  - Health and Well-being
  - Land use and Ecology
  - Management
  - Materials
  - Pollution
  - Transport
  - Waste
  - Water
- 9.13 Each of the categories above contain criteria which need to be met in order to gain credits. The higher the rating, the greater the number of specific credits needed. Some of the criteria have weighted credits which are used to reflect how important certain elements are, such as energy efficiency. All the credits are added together to produce the overall score. The development is then rated on a scale from PASS, to GOOD, VERY GOOD, EXCELLENT and ending with OUTSTANDING

You are strongly encouraged to meet the following standards in accordance with Development Policy DP22 - *Promoting sustainable design and construction*:

Time period	Minimum rating	Minimum standard for categories (% of un-weighted credits)
2010-2015	'very good'	Energy 60%
2016+	'excellent'	Water 60% Materials 40%

### BREEAM Domestic Refurbishment

- 9.14 BREEAM Domestic Refurbishment is used to assess the sustainability of existing of housing where refurbishment, conversion or a change of use is proposed. It uses the same principles as BREEAM with categories, criteria and credits.

You are strongly encouraged to meet the following standards in accordance with Development Policy DP22 - *Promoting sustainable design and construction*:

Time period	Minimum rating	Minimum standard for categories (% of un-weighted credits)
2010-2012	'very good'	Energy 60%
2013+	'excellent'	Water 60% Materials 40%

### What are the relevant stages?

#### Pre-assessment

- 9.15 The pre-assessment stage involves an initial review of the development to determine how sustainable it will be. It provides you with an early indication of the overall score your development will achieve by using the plans and drawings to estimate the number of credits that are likely to be achieved for each category. The results of the pre-assessment identify changes that need to be made to your scheme before construction begins to ensure it is as sustainable as possible. The pre-assessment stage also helps to identify if there are any experts, such as ecologists, that you need to invite to become involved in the development.
- 9.16 The results of your pre-assessment will form the basis of the condition or Section 106 planning obligation for the final development, so accuracy is crucial. In some circumstances it may be appropriate to over estimate the credits needed to achieve the final rating as some credits can be lost during the final design stages.

#### AT THIS STAGE THE COUNCIL WILL EXPECT:

- The submission of a pre-assessment report at the planning application stage. The report should summarise the design strategy for achieving your chosen level of BREEAM and include details of the credits proposed to be achieved.

- The pre-assessment report is to be carried out by a licensed assessor. The name of the assessor and their licence number should be clearly stated on the report.

### **Design stage assessment**

- 9.17 The aim of the design stage assessment is to review the detailed design specifications of your development. More detailed site specific information is generally available at this stage, in comparison to the pre-assessment stage, which allows the assessor to make a more precise estimate of the BREEAM rating. Some elements of the assessment will need to be refined once construction has begun, because some materials and appliances are not specified until after or during construction. However, the assessor will ensure that any design and/or specification changes are reflected in the final Design Stage Assessment.
- 9.18 Once the assessor has completed the assessment it is submitted to the BRE for review and certification. The BRE will then issue a BREEAM Design Stage certificate indicating what level of sustainability the development has achieved.

#### **AT THIS STAGE THE COUNCIL WILL EXPECT:**

- Submission of an early design stage assessment to the Council prior to beginning construction of the development. This is needed to discharge the relevant condition or Section 106 planning obligation
- Ensure the assessor submits the final Design Stage Assessment to BRE for certification
- Submission of a copy of the Design Stage certificate to the Council

### **Post-construction assessment**

- 9.19 The post-construction assessment reviews the design stage assessment and compares it with the completed development to ensure that all the specified credits have been achieved. It is carried out once your development has been completed and is ready for occupation. Once the assessment has been completed, it needs to be submitted to BRE for certification.

#### **AT THIS STAGE THE COUNCIL WILL EXPECT:**

- A post-construction assessment to be carried out as soon as possible after completion
- Submission of a copy of the post-construction certificate to the Council
- Submission of a copy of the Design Stage certificate to the Council, if not already submitted

- 9.20 There is often a delay between the completion of a development and the receipt of a post-construction certificate. Therefore the Council will allow occupation prior to the receipt of the final certificate. This approach will

be monitored to ensure that the design stage certificate is consistent with the final post-construction report and certificate.

#### Further information

BRE (Building Research Establishment)	Provides detailed information on sustainability assessments, how to find an assessor, example assessments and how to submit your assessment: <a href="http://www.bre.co.uk">www.bre.co.uk</a>
BREEAM	Provides detailed information on all the different types of BREEAM assessments that are available, how to use them, how to find an assessor, what all the different stages are and other useful guidance: <a href="http://www.breeam.org">www.breeam.org</a>
Zero Carbon Hub	This organisation is working with the Government to implement the target towards ensuring all new homes are zero carbon. Their website provides information on what zero carbon is, how it can be achieved and case studies: <a href="http://www.zerocarbonhub.org">www.zerocarbonhub.org</a>

## 10 Brown roofs, green roofs and green walls

### KEY MESSAGES

All developments should incorporate green and brown roofs

The appropriate roof or wall will depend on the development, the location and other specific factors

Specific information needs to be submitted with applications for green/brown roofs and walls

- 10.1 As development densities increase, brown roofs, green roofs and green walls can provide valuable amenity space, create habitats and store or slow down the rate of rain water run-off, helping to reduce the risk of flooding.
- 10.2 Green and brown roofs can help to reduce temperatures in urban environments. This is particularly valuable in Camden where we suffer from increased temperatures in Central London (known as the urban heat island effect).
- 10.3 Development Policy DP22 states that schemes must incorporate green or brown roofs and green walls wherever suitable. Due to the number of environmental benefits provided by green and brown roofs and green walls, where they have not be designed into a development the Council will require developers to justify why the provision of a green or brown roof or green wall is not possible or suitable.

### WHAT WILL THE COUNCIL EXPECT?

The Council will expect all developments to incorporate brown roofs, green roofs and green walls unless it is demonstrated this is not possible or appropriate. This includes new and existing buildings. Special consideration will be given to historic buildings to ensure historic and architectural features are preserved.

### What are green and brown roofs?

- 10.4 Green and brown roofs are roofs that are specially designed and constructed to be waterproof and covered with material to encourage wildlife and to help plants grow. They can be left without planting - 'brown' or planted with a range of vegetation - 'green' depending on the depth or the soil or substrate.

#### Substrate

Substrate is a layer of material which supports the roots and sustains the growth of vegetation.

There are three main types of green and brown roof:

- 1. Intensive roofs
- 2. Semi intensive roofs
- 3. Extensive roofs.

The general features of these roofs are shown below:

	Extensive	Semi Intensive	Intensive
Use	Ecological Landscape	Garden/Ecological Landscape	Garden/Park
Type of vegetation	Mosses, Herbs, Grasses	Grasses-Herbs-Shrubs	Lawn, Perennials, Shrubs & Trees
Depth of Substrate	60-200mm	120-250mm	140-400mm
Weight	60-150 kg/m2	120-200 kg/m2	180-500 kg/m2
Maintenance requirement	Low	Periodic	High

**Intensive roofs**

- 10.5
- Intensive roofs provide the widest range of uses such as for accessible amenity space or to create ecological habitats. They are known as ‘intensive’ due to the high level of design, soil or substrate depth and maintenance that they require. They can also be used to manage water by including systems that process wastewater or store surplus rain water. They can also be designed specifically for food production.

**Semi Intensive roofs**

- 10.6
- Semi Intensive Roofs can provide a degree of access and the potential for the creation of habitat. Similar water management functions can be integrated into their design as outlined above.

**Extensive roofs**

- 10.7
- Extensive Roofs are generally light weight, with a thin layer of substrate and vegetations. They can be further sub divided into 3 types:

**1. Sedum Roofs:**

These either take the form of Sedum mats or plug planted Sedum into a porous crushed brick material. Sedum roofs are relatively light weight and demand low levels of maintenance. They can be more readily fitted on to existing roofs.

**Sedum**

Sedum is a type of vegetation. They are generally short plants with shallow roots and thick leaves.

## 2. Brown roofs for biodiversity:

Brown roofs should create habitats mimicking local brownfield sites by using materials such as crushed brick or concrete reclaimed from the site. However, these materials are very heavy and cannot hold water for irrigation. Therefore it is preferable to use materials of known quality and water holding capacity. The brown roof is then planted with an appropriate wild flower mix or left to colonise naturally with areas of dead wood or perches for birds.

## 3. Green roofs for biodiversity:

Green roofs are usually formed by planting a wild flower mix on an appropriate layer of material. There are various techniques for the creation of this type of roof.

## What are green walls?

- 10.8 Green Walls are walls or structures attached to walls where plants have been planted. Plants can be planted directly into a material within the wall or can be planted in the ground or a pot and encouraged to climb up a structure so that the wall is covered with vegetation.

Green walls provide a number of benefits:

- They provide useful habitat for invertebrates which in themselves provide a food source for birds and bats. Dense foliage provides nesting sites for a number of birds such as robin, wren and blackbirds
- evergreen, climbing plants provide insulation and can reduce wind chill during winter months
- climbing plants provide shade which can help to cool a building in summer, particularly when grown on south and western facing walls.
- climbing plants can also be effective in trapping airborne pollutants
- provide visual interest adding colour and texture to the wall surface



Green wall can be split into 3 main types:

4. Self clinging climbers such as Ivy, Russian Vine and Virginia Creeper. These plants are able to grow directly onto the wall surface.
5. Climbers which need support e.g. Honeysuckle and Jasmine. Supports are usually provided by trellis structures, wires etc. Well designed trellis or cable structures can become design features in themselves.



6. Vertical Systems (also known as Living Walls, Vertical Gardens). These walls are called 'systems' as they are made up of modular panels designed to support plant growth and require a feeding and watering system. The modules themselves are supported on or within a steel framework. Watering systems and a plant nutrient supply is incorporated into these systems requiring ongoing maintenance. The planted panels can be designed with a variety of plants depending on the aesthetic and habitat requirements of a project.

### **What to consider when choosing green roof or brown roof or green wall**

- 10.9 Selecting the appropriate type of green/brown roof or wall type will depend on a number of factors including:
- the type of building
  - cost
  - maintenance
  - weight of the roof or wall
  - provision of amenity space
  - provide visual interest to surrounding building occupants
  - habitat creation
  - reduction of rain water run off
  - reduction of heating and cooling energy usage of a building
  - water conservation and recycling
  - space for food production (see section 14 of this guidance on urban food production).

### **What will the Council consider when assessing applications?**

- 10.10 All developments should aim to incorporate green or brown roofs and green walls. Careful consideration needs to be given to the design of the roofs and any blank walls to enable the incorporation of these features and the need to access these areas for maintenance.
- 10.11 The Council will expect green or brown roofs and green walls to be provided in areas with low levels of vegetation, such as town centres and Central London, which are both more likely to feel the effects of climate change and developments where occupiers will be susceptible to overheating such as schools and offices. (See Camden Core Strategy policy CS15 - *Protecting and improving our parks and open spaces and encouraging biodiversity*).
- 10.12 The assessment of planning applications incorporating green/brown roofs and green walls will be made based on appropriateness for the site, the degree to which the chosen design objectives are met by the proposal and sustainable maintenance. Where green roofs are to be accessible for amenity purposes potential overlooking and loss of



privacy to adjoining properties will also be assessed (See the Overlooking, privacy and outlook section of the CPG6 Amenity)

- 10.13 The most appropriate green or brown roof and green wall should be incorporated into a development. We will consider the following factors when determining the most appropriate form of roof and wall:

- the loss of any biodiversity habitat on the site and the surrounding area;
- the existing need for habitat on the site and surrounding area;
- whether the site is overlooked;
- whether the site is an area that has historically suffered from surface water flooding;
- the amount of external heat generated by the development;
- whether the roof is to be accessible;
- the location of mechanical plant;
- the inclusion of areas of blank wall;
- access to walls and roofs;
- where being retro-fitted, the weight of the new roof or wall; and
- the amount of irrigation and maintenance required.

**WHAT INFORMATION WILL THE COUNCIL EXPECT?**

- a statement of the design objectives for the green or brown roof or green wall
- details of its construction and the materials used, including a section at a scale of 1:20
- planting details, including details of the planting technique, plant varieties and planting sizes and densities.
- a management plan detailed how the structure and planting will be maintained

**Further information**

The Environment Agency	The EA has a green roof toolkit that can be used to help you determine what solution is best for your development <a href="http://www.environment-agency.gov.uk/business/sectors/91967.aspx">www.environment-agency.gov.uk/business/sectors/91967.aspx</a>
"Living Roofs: Promoting green roofs, roof terraces and roof gardens across London"	GLA document which highlights the significant role that the roof space on buildings have to play in providing amenity space, increased biodiversity and improved building performance in terms of energy conservation and SUDS.
LivingRoofs.org	Provides detailed information on all the types of green and brown roofs as well as case studies, articles and research. <a href="http://www.LivingRoofs.org">www.LivingRoofs.org</a>
National Centre of Excellence for green roofs	This website has a wide range of information on green roofs, including best practice, guidance, research and case studies. <a href="http://www.greenroofcentre.co.uk">www.greenroofcentre.co.uk</a>

# 11 Flooding

## KEY MESSAGES

All developments are required to prevent or mitigate against flooding  
All developments are expected to manage drainage and surface water  
There is a hierarchy you should follow when designing a sustainable drainage system

- 11.1 Camden has few permeable surfaces and a very high population density. As a result it is deemed to have a high risk of surface water flooding, which is likely to be increased by further growth and intensification of the built environment as well as the increasing risk of heavy rainfall due to climate change. Surface water flooding is caused when the existing water infrastructure (drains and sewers) cannot cope with heavy rainfall.
- 11.2 Map 5 in the Camden Core Strategy (and Map 2 in Development Policies) shows the parts of the borough that have experienced surface water flooding in the past and identifies the areas which are at risk of surface water flooding in the future. The location of development can impact the way that water flows around and underneath new and existing structures. Therefore all developments need to consider the risk of flooding. Especially developments within the identified areas, which must be designed to prevent causing additional pressure on adjoining sites and the sewer system.
- 11.3 Legislation has been introduced in the Floods and Water Management Act setting up a potential additional approval system for drainage plans. No further details are currently available on the specific requirements to support the Act.

## WHAT DOES THE COUNCIL EXPECT?

Developments must not increase the risk of flooding, and are required to put in place mitigation measures where there is known to be a risk of flooding.

Within the areas shown on Core Strategy Map 5 (Development Policies Map 2) we will expect water infrastructure to be designed to cope with a 1 in 100 year storm event in order to limit the flooding of, and damage to, property.

All sites in Camden over one hectare or 10,000sq m require a Flood Risk Assessment in line with the National Planning Policy Framework. The assessment should be site specific and concentrate on the management of surface water run-off, and / or ground water where applicable, and should address the amount of impermeable surfaces resulting from the development and the potential for increased flood risk both on site and elsewhere within the catchment. These must be prepared by a suitably qualified professional and should be submitted with a planning application.

## How to reduce the risk of flooding

### Surface water

- 11.4 Every urban surface should be considered as a rainfall collector, allowing water to pass through to a drainage layer below or flow to a soakage area so that water volumes do not build up to cause problems downstream. Therefore, the design of drainage is very important. Poorly designed and maintained drainage can lead to surface water flooding caused by heavy rainfall. It needs to be able to cope with the heaviest of rainfall expected over the buildings lifetime (this is around 60 years for commercial development and 100 years for residential development) and also help reduce and slow the amount of run-off leaving a site.
- 11.5 The best way to deal with heavy rainfall and a traditional pipe drainage system is to introduce new areas for water to soak into the ground. Sustainable Drainage Systems (SUDS) provide a way to manage surface water in a way which mimics the natural environment. SUDS help reduce the amount of surface water leaving a site and can slow down the rate water flows. It also helps improve water quality by filtering out contaminants. SUDS can provide broader benefits, including the capture and re-use of water by linking into a rainwater or grey water harvesting system. They can also provide green, landscaped areas offering recreation and habitat for wildlife.

#### WHAT DOES THE COUNCIL EXPECT?

All developments are expected to manage drainage and surface water on-site or as close to the site as possible, using Sustainable Drainage Systems (SUDS) and the hierarchy set out below.

The Council will expect plans and application documents to describe how water will be managed within the development, including an explanation of the proposed SUDS, the reasons why certain SUDS have been ruled out and detailed information on materials and landscaping.

The Council will expect developments to achieve a greenfield surface water run-off rate once SUDS have been installed. As a minimum, surface water run-off rates should be reduced by 50% across the development.

### The SUDS hierarchy

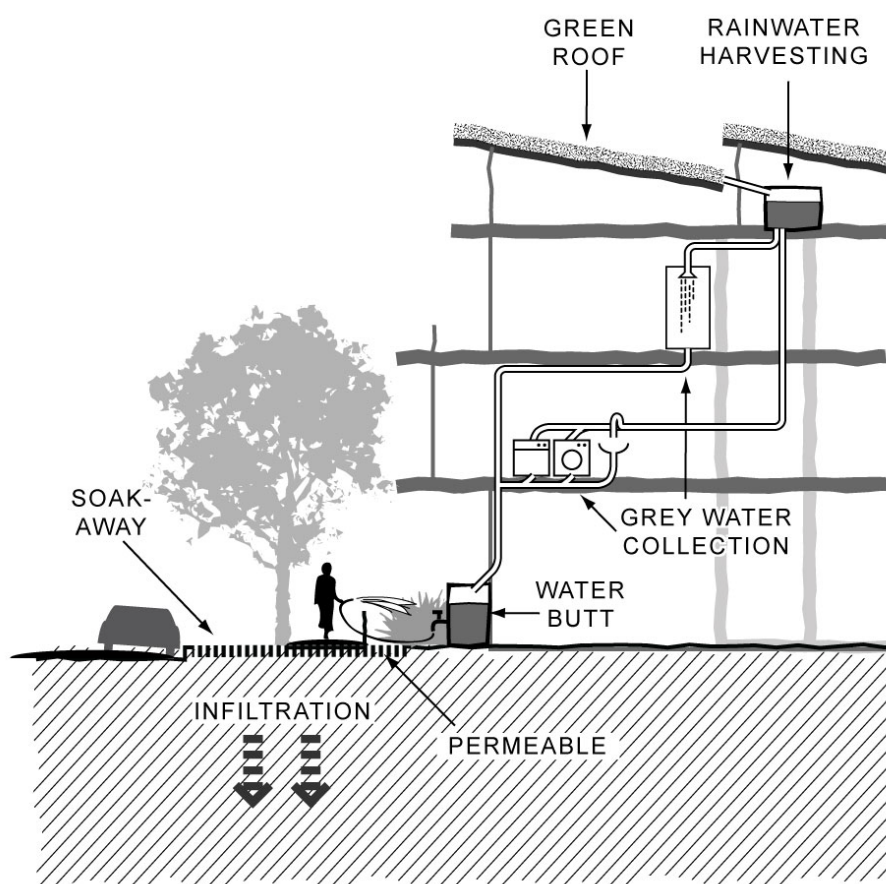
- 11.6 Surface water should be managed as close to its source as possible. The following hierarchy should be followed when considering which SUDS techniques to use. store rainwater for later use - use rainwater tanks or water butts to collect rain/storm water so that it can be re-used. See section 6 of this guidance for more information on grey water and rainwater harvesting systems. This will



help to stop flash flooding during periods of heavy rainfall.

1. Use infiltration techniques - porous and permeable surfaces which allow water to soak (infiltrate) directly into the subsoil, rather than flowing over the top. This method is particularly appropriate on London Clay (in the North of the borough) where infiltration is slow. A layer of material needs to be laid between the clay and the uppermost surface to act as a storage/drainage channel. The use of permeable surfaces in urban SUDS design is critical because space is at a premium in Camden and permeable pavements and surfaces are one technique which does not require any additional land to function effectively.
  2. Collect and store (also known as attenuation) rainwater in ponds or open water features for gradual release - SUDS can be designed to hold storm water in ponds or specially designed wetland areas so that it can then be released more slowly into the ground or sewer. This is generally suitable for larger sites and those up stream of areas at risk of flooding)
  3. Collect and store rainwater in tanks or sealed water features for gradual release - where sites are constrained, with no natural landscaping or open areas, tanks can be installed which store water so that it can then be released more slowly into the ground or existing sewer.
  4. discharge rainwater direct to a watercourse
  5. discharge rainwater to a surface water sewer/drain
  6. discharge rainwater to the combined sewer
- 11.7 All the above can be incorporated into the landscaping on a site or development. For example green open space, verges and green roofs can be designed to filter and store rainwater, thus reducing pressure on drainage systems during heavy rainfall. Trees also reduce surface water runoff. For more information, please see section 10 of this guidance on brown roofs, green roofs and green walls and section 5 on Landscape design and trees in CPG1 Design for more information.
- 11.8 Figure 10 below shows all the different types of SUDS, from rain water harvesting, green roofs, porous surfaces, vegetation to ponds, reed beds and rivers.



**Figure 9. Sustainable Urban Drainage System**

### Ground water

- 11.9 The geology in the northern parts of the borough is gravel and silt on top of a layer of clay. Water can travel through the gravel and silt, but the rate of infiltration slows when it reaches the clay layer. This results in an area where ground water is likely to collect. This geology has resulted in the formation of springs, wells and the chain of ponds on Hampstead Heath. The flow of water through the ground is important in order to maintain the local wells and ponds. It is essential that development, especially subterranean development, does not stop or significantly alter the direction of this underground flow of water.
- 11.10 Ground water must be considered when development involves below ground excavation and construction. New underground structures can alter the flow of groundwater as it needs to change its course to flow around the new structure. This can cause water to collect or pool upstream which may result in flooding of nearby areas or buildings.
- 11.11 More information on geology and hydrology in the borough can be found in the Camden Hydrological and Geological Study 2010. We also have further guidance on basement development in CPG4 Basements and lightwells.

### **Basements**

- 11.12 The Council will require all applications for basement and underground developments to be accompanied by an assessment of the scheme's impact on drainage, flooding, groundwater conditions and structural stability, as appropriate.
- 11.13 The Council will also require a site-specific flood risk assessment with applications for basements on streets identified as being 'at risk' from surface water flooding, unless it can be demonstrated that the scale of the scheme is such that there is no, or minimal, impact on drainage conditions. See map Core Strategy Map 5 (also DP Map 2). We also have further guidance on basement development in CPG4 Basements.
- 11.14 In line with Development Policy DP27, the Council will not allow habitable rooms and other sensitive uses for self contained basement flats and other underground structures in areas at risk of flooding.

### **How to reduce the impact of flooding**

- 11.15 Developments should be designed so that they can cope with flooding. This can be done by carefully considering design and layout, for example by locating the most vulnerable uses in lower risk parts of the development, ensuring buildings do not block key flood routes and by raising floor levels.
- 11.16 Flood proofing measures can also be designed into developments to reduce flood damage. The Environment Agency has prepared advice on how you can plan to reduce flood damage and reduce the amount of flood water that enters your building. See the Further Information section below for details.



**Further information**

Environment Agency	<p>Provides a range of guidance on SUDS, including planning advice  <a href="http://www.environment-agency.gov.uk">www.environment-agency.gov.uk</a></p> <p>Guidance on how to reduce flood damage  <a href="http://www.environment-agency.gov.uk/homeandleisure/floods/105963.aspx">www.environment-agency.gov.uk/homeandleisure/floods/105963.aspx</a></p> <p>Guidance on how to keep flood water out of a building  <a href="http://www.environment-agency.gov.uk/homeandleisure/floods/106769.aspx">www.environment-agency.gov.uk/homeandleisure/floods/106769.aspx</a></p>
CIRIA	<p>Provide a range of advice and publications on SUDS, including the SUDS Manual, Sustainable Drainage Systems – design manual for England and Wales and Sustainable Water Management in Schools  <a href="http://www.ciria.org.uk/suds">www.ciria.org.uk/suds</a></p>
Interpave -	<p>Provide technical guidance on the construction of permeable concrete block paving  <a href="http://www.interpave.org">www.interpave.org</a></p>
Living roofs	<p>Provides information on the role of green roofs in SUDS  <a href="http://www.livingroofs.org">www.livingroofs.org</a></p>
LB Camden Strategic Flood Risk Assessment	<p>Carried out to inform the preparation of Boroughs Local Plan. The SFRA presents the most up to date flood risk information in the borough.  <a href="http://www.camden.gov.uk/ccm/cms-service/download/asset?asset_id=3245094">http://www.camden.gov.uk/ccm/cms-service/download/asset?asset_id=3245094</a></p>



## 12 Adapting to climate change

### KEY MESSAGE

All development should consider how it can be occupied in the future when the weather will be different

The early design stage is the most effective time to incorporate relevant design and technological measures.

- 12.1 In Camden the changing climate is likely to mean we will experience warmer, wetter winters with more intense rainfall and local flooding events. It will also bring hotter drier summers which will potentially increase the number of days we experience especially poor air quality. Hotter summers will also increase the demand for our open space, water and the use of electricity for mechanical cooling e.g. air conditioning.
- 12.2 Sections 1 to 11 have concentrated on climate change mitigation measures which are aimed at minimising the impact of human activity on the climate (e.g. by minimising carbon emissions). However, it is also important to think about how we will adapt to a changing climate, so this section is about responding to the unavoidable changes in climate that are already occurring. Adaptation recognises both risks and opportunities arising from climate change and the need to plan for them now.
- 12.3 Policy CS13 expects developments to be designed to consider the anticipated changes to the climate, especially developments vulnerable to heat and in those locations susceptible to surface water flooding.
- 12.4 Policy DP22 requires development to be resilient to climate change by ensuring schemes include appropriate adaptation measures.

### WHAT WILL THE COUNCIL EXPECT?

All development is expected to consider the impact of climate change and be designed to cope with the anticipated conditions.

### How to adapt to warmer temperatures

- 12.5 Plants and vegetation - Plants can have evaporative cooling effects. Improving the boroughs network of green spaces, parks, trees, and green roofs and walls will have a significant cooling effect.
- 12.6 Shading - Planting, shading and special glazing, such as triple glazing with filters that remove some of the suns harmful UV rays, can be used to reduce the heat from the sun. European style shaded squares and seating areas can also be used to provide cover during intense periods of heat / sunshine. Large, shade providing trees also provide cool, shady areas during summer.

**Insulation**

- 12.7 Materials should be selected to prevent penetration of heat, including the use of reflective building materials as well as green roofs and walls. Appropriate levels of glazing, which facilitates natural daylighting but prevents excessive overheating should also be considered.

**Water cooling**

- 12.8 Innovative use can be made of water for cooling, including by using ground or surface water. See sections 3 and 4 on energy efficiency and section 6 on renewable energy for more information.

**Natural Ventilation**

- 12.9 Instead of using air conditioning, buildings should be designed to enable natural ventilation and the removal of heat using fresh air. The use of plant equipment that expels hot air increasing the local outdoor air temperature.

**Thermal materials**

- 12.10 Materials with high thermal storage or mass capacity, particularly where it is exposed, can be used to absorb heat during hot periods so that it can dissipate in cooler periods, usually using ventilation.

**Orientation**

- 12.11 Buildings should be orientated as far as possible to reduce excessive solar gain and facilitate natural ventilation.

**'Cool' surfaces**

- 12.12 Certain materials on roadways or large parking areas can increase surface reflectivity (though it is important to avoid glare problems) or increase rainfall permeability to encourage the cooling effect of evaporation. Porous cool pavements offer the additional benefit of rainwater infiltration at times of heavy rain. Networks of 'cool roofs' made of light coloured materials can reduce solar heat gain and the need for mechanical cooling.

**How to adapt to heavier rainfall****Sustainable Drainage Systems (SUDS)**

- 12.13 SUDS reduce the quantity of water leaving a site, limiting both the volume and rate of runoff during heavy rainfall and storms. They do this by using mechanisms to capture, filter and store rainwater on site (See section 11 on Flooding for more information on SUDS).

**Green space**

- 12.14 Green open space, verges and green roofs can be designed to filter and store rainwater, thus reducing pressure on drainage systems during heavy rainfall. Trees also reduce surface water runoff.

**How to adapt to drier summers****Plants and vegetation**

- 12.15 Selecting drought resistant or low water use plants will greatly reduce water demands associated with landscape. This is sometimes known as xeriscaping.

**Water efficient fixtures and fittings**

- 12.16 These can significantly reduce demand for water and will become increasingly important for high density developments. (See the section on Water conservation and flooding for more information on minimising water consumption).

**Re-using water**

- 12.17 Collecting rainwater from roofs and other surfaces for reuse (for example in flushing toilets or irrigation) or recycling greywater from sinks or showers reduces water use. By reducing the amount of water entering the drains, water reuse also reduces the risk of surface water flooding.

**How to adapt to changing ground conditions**

- 12.18 During longer, hotter summers shrinkable clay soils are likely to dry out, making buildings and service pipes vulnerable to cracking. Wetter winters will contribute to risks of 'heave' where ground swells.
- Plants and trees - Trees can prevent shrinking and heave as they retain moisture in the soil.
  - Structural stability - Stronger retaining walls and fences with good drainage or use of vegetation can prevent surface erosion. Careful choice and placement of trees should avoid building subsidence where soils swell after heavy rainfall and shrink in hot, dry conditions.
  - SUDS – Use of SUDS techniques, such as surfaces which allow water to flow through and ponds, which increase infiltration of water into the ground, can reduce subsidence caused by drying out of soils (See section 11 on Flooding for more information on SUDS).
  - Foundation design - Foundations should be designed to be strong enough and extend downward below the zone that may be affected by seasonal variations in moisture content. Other measures include underpinning with concrete supports that extend under existing foundations into more stable soils and infilling of foundations.

## Climate change and the historic environment

- 12.19 Many historic buildings have withstood climatic changes in the past, but we need to make sure they are protected from the impacts of a changing climate in the future. Many of the adaptation measures above can be used in the historic environment. However, the character of historic features and the potential for their damage and loss should always be taken into account when adaptation measures are being planned and executed.
- 12.20 These climate-change proposals should avoid harm to historic character and fabric, as assessed against the Planning (Listed Buildings and Conservation Areas) Act 1990 and PPS5. Please see English Heritage's Climate Change and the Historic Environment (2008) for further detail on climate change issues.
- 12.21 See section 4 on Energy efficiency: existing buildings of this guidance and section 2 on Heritage in CPG1 Design for more guidance on Camden's historic environment.

## Further information

London Climate Change Partnership	Provides a checklist to help establish how developments can best adapt to climate change
"Adapting to Climate Change: A Checklist for Development"	<a href="http://www.climatesoutheast.org.uk">www.climatesoutheast.org.uk</a>
Chartered Institution of Building Services Engineers	Provides guidance on how to change and adapt buildings to be more sustainable and adapt to future climatic conditions. Their website has a number of guidance notes including: CIBSE TM36 – "Climate Change and the Indoor Environment: Impacts and Adaptation" <a href="http://www.cibse.org">www.cibse.org</a>
UK Climate Impacts Programme	Helps organisations to adapt to climate change <a href="http://www.ukcip.org.uk">www.ukcip.org.uk</a>

## 13 Biodiversity

### KEY MESSAGES

Proposals should demonstrate:

- how biodiversity considerations have been incorporated into the development;
- if any mitigation measures will be included; and
- what positive measures for enhancing biodiversity are planned.

- 13.1 Development can harm biodiversity directly by destroying or fragmenting habitat, or indirectly by altering local conditions for species. Conversely, sensitively designed developments can increase connectivity between urban habitat patches, and contribute to landscape scale conservation and enhancement of biodiversity.
- 13.2 Biodiversity is integral to the planning process and we will expect it to be fully incorporated into the design and construction stages. In principle, all development activity should have minimal impacts on biodiversity and enhance it wherever possible.
- 13.3 It is essential that the development process, from demolition to construction, is undertaken in an appropriate manner to avoid harm to biodiversity. This guidance sets out:
- What species are protected;
  - What are our priority species and habitats;
  - How to protect biodiversity in the development process;
  - Habitat provision, enhancement, creation and restoration; and
  - Management and monitoring.

### When does this guidance apply?

- 13.4 This guidance applies to all development sites. Sites already designated or adjacent to sites designated for their biodiversity value or that form part of a green corridor should receive special attention proportionate to the weight afforded by these designations. These include sites which are identified in the LDF and designated as:
- Sites of Special Scientific Interest (SSSI),
  - Sites of Nature Conservation Importance (SNCI) and
  - Local Nature Reserves (LNR)
  - Habitat corridors and Habitat Corridor – missing links
- 13.5 Sites of Metropolitan Importance for nature conservation and the Blue Ribbon Network are identified by the Mayor of London. An indicative map is contained in the London Plan.

- 13.6 It is also important to conserve and improve land outside designated areas as these areas support biodiversity networks through connecting, stepping stone and buffering qualities. Opportunities to improve biodiversity must be considered in all developments.

### **What species are protected?**

- 13.7 Certain species are protected under UK or European Legislation. Natural England provides a list of protected species as well as legislative and policy guidance relating to protected species and the planning system: [www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/default.aspx](http://www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/default.aspx)
- 13.8 National advice for protected species [www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/default.aspx](http://www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/default.aspx)
- 13.9 The protection given to species under UK and EU legislation is irrespective of the planning system. It is the applicant's responsibility to ensure that any activity on a site (regardless of the need for planning consent) complies with the appropriate wildlife legislation.
- 13.10 Applicants should note that Paragraph 98 of ODPM Circular 06/2005 states that 'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat'.
- 13.11 Paragraph 99 states 'It is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the proposed development is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision'.
- 13.12 Certain development activities within the vicinity of protected species and their habitats require a licence from Natural England. Developers are strongly advised to contact the Natural England Wildlife Management and Licensing Service to discuss any protected species issues.

### **What are the priority habitats and species?**

#### **The Natural Environment and Rural Communities Act 2006**

- 13.13 Section 40 of the Natural Environment and Rural Communities Act 2006 imposes a duty on public bodies "to have regard" to the conservation of biodiversity in England, when carrying out their normal functions. Under Section 41 of the same Act the Secretary of State has published a list of species of flora and fauna and habitats considered to be of principal importance in the conservation of biodiversity. Whilst we will give specific consideration to the species and habitats on this list when planning for biodiversity and assessing planning applications, we will also take seriously our duty to conserve all biodiversity. The full list can

be found on the Natural England web-site

[www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx](http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx)

### **The Camden Biodiversity Action Plan**

- 13.14 The Camden Biodiversity Action Plan (BAP) provides a framework for improving biodiversity. There are species and habitats identified as priorities in national, regional or borough Biodiversity Action Plans that although may not have legal protection, are still a material consideration in planning, and we will take into account in the planning process.
- 13.15 The Camden's BAP contains a number of targets and actions that we will consider in the protection and enhancement of biodiversity in Camden.

Where to find the Biodiversity Action Plans:

- UK Biodiversity Action Plan Priority Habitat Descriptions  
[www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitats20081022.pdf#TO](http://www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitats20081022.pdf#TO)
- The London Biodiversity Action Plan  
[www.lbp.org.uk/londonhabspp.html](http://www.lbp.org.uk/londonhabspp.html)
- Camden Biodiversity Action Plan  
[www.ukbap-reporting.org.uk/plans/lbap.asp](http://www.ukbap-reporting.org.uk/plans/lbap.asp)

### **How will we protect biodiversity in the development process?**

- 13.16 We will use a 'five-point approach' to planning decisions for biodiversity, based on the five following principles – information, avoidance, mitigation, compensation and new benefits. (based on Royal Town Planning Institute Good Practice Guide - 'Planning for Biodiversity')

#### **Camden's 'five-point approach' to planning decisions for biodiversity**

1. Information – We will require appropriate information at the outset on habitats and species and the impact of development on them;
2. Avoidance – Developments should avoid adverse effects to wildlife and habitats as far as reasonably possible;
3. Mitigation - Where avoidance is not possible, biodiversity impacts should be reduced as far as reasonably possible. We may use conditions or planning obligations/agreements to achieve this;
4. Compensation - Appropriate replacement and compensation will be required, where, exceptionally development that is harmful to biodiversity is permitted;
5. New benefits - In all cases, opportunities should be taken to enhance on-site biodiversity, or within the locality or borough, to provide new benefits for wildlife, for example, by habitat creation or enhancement.

### **Before the design stage**

- 13.17 Developments are to consider the quality of the existing biodiversity and the potential for enhancement as any site or building may have important biodiversity or contain nature conservation features. This should be done by carrying out a habitat and ecology survey.

### **Requirement for ecological surveys**

- 13.18 Ecological surveys carried out in accordance with this guidance are expected to be submitted upfront with any planning application, and will be used to assess the impact of the development on biodiversity, within the site, the locality, or where appropriate, on the regional or national resource. The paragraph below provides details of the recommended level of information to be provided.

### **When in the development process is a survey to be done?**

- 13.19 Ecological surveys are to be carried out prior to the design stage. Information for the development site and wider area is to be obtained from, but not limited to:
- London Environmental Records Centre
  - appropriate statutory or non-statutory conservation organisations e.g. London Bat Group
- 13.20 A habitat survey is to identify important habitat features, including BAP Priority Habitats. Whilst the presumption is not to lose any areas of BAP priority habitat in particular, other habitats are also valuable. The scale and detail of the surveys should be in proportion to the size of the proposed development and likelihood of protected species using the site. The aim is to characterise important habitats and species, the presence of any protected species, and the extent that they may be affected by the proposed development. This information is to also inform the design and form of the development.

### **What developments need to carry out a survey?**

- 13.21 For Protected Species - Table 1 in the Appendices sets out when a survey and assessment is required. For Designated sites and priority habitats - Table 2 in the Appendices sets out when a survey and assessment is required.

### **What needs to be included in a survey?**

- 13.22 The level of scope and detail required is outlined in the Appendices. Optimal times to carry out surveys are provided in Figure 1 in the Appendices.

### **Who should carry out the survey?**

- 13.23 Protected species such as bats, may be found throughout Camden in buildings, or in structures and using features for foraging or commuting,



and it may not appear immediately obvious that a protected species may be found on site or impacted upon by the proposed development. Developers are to employ the services of a professional ecological consultant. The Institute of Ecology and Environmental Management provides a commercial directory search of their membership directory at <http://www.ieem.net/ieemdirectory.asp>. The Council's Nature Conservation Section can advise on the scope of survey work required.

### **The design stage**

- 13.24 This is arguably the most critical time in the development process to ensure that nature conservation opportunities and constraints are identified and taken account of. The aim should be to create ecologically orientated and sustainable development. During the design stage the biodiversity value of developments can be improved significantly if the design and management of buildings and landscaping elements is more explicitly geared towards nature.

#### **LIGHTING**

Lighting can have particular negative impacts on biodiversity. Unnecessary lighting should be avoided. Where lighting may harm biodiversity timers or specific coloured lighting will be required to minimise any disturbance.

- 13.25 Proposals should demonstrate how biodiversity considerations have been incorporated into the development, if any mitigation measures will be included, and what positive measures for enhancing biodiversity are planned. Where there are significant features of nature conservation value on site the Council will seek to secure, retain and enhance these features. All developments (major and minor) can contribute to a robust functioning ecosystem by providing a well-connected system of habitats, and the design stage is the perfect time to achieve this. A built structure or landscaping elements has the potential to impact on biodiversity and ecology, and developers must consider how to minimise any adverse effect upon both biodiversity and ecology. Developers must also consider how a built structure and any landscaped elements can deliver wider ecological benefits and enhancements at this stage.
- 13.26 Some species range a long way from their "core" habitat and there is a risk that species may be left isolated in a highly urban and fragmented landscape such as Camden with no access to suitable foraging areas or water. Developers may therefore be required to retain and enhance foraging areas or routes (e.g. for bats) or carry out other provisions that contribute towards conservation of the species on or off-site.

### **The construction planning phase**

- 13.27 The nature conservation value of a site and its surrounding area will also need to be protected during the construction phase. A list of measures to ensure the nature conservation interest is protected is given below. The list is not to be considered exhaustive.

- 13.28 Measures to protect the nature conservation interest during the construction phase
- Timing of development to avoid disturbance to species such as birds in the breeding season;
  - Use of protective fencing to preserve important ecological areas and reduce direct damage by fencing off storage areas and areas for construction huts, and carefully planning and limiting and their placement;
  - Planning vehicular movements to minimise the impact on ecologically sensitive areas and reduce soil compaction;
  - In ecologically sensitive areas keep disruptive elements such as light, noise and human presence to a minimum;
  - Implement measures to protect water courses and ground water from pollution;
  - For sites of high nature conservation value, or its adjoining sites a construction management plan to protect biodiversity during the construction phase may be requested and secured by legal agreement or planning condition prior to the commencement of works on the site.

#### **Post-construction**

- 13.29 Where a site has been identified as having nature conservation importance, maintenance and monitoring may be required once the development has been completed. The management and maintenance of areas of nature conservation value that are to be retained, enhanced or created on a development site are essential to ensure these areas of nature conservation attain their full potential. A long term management plan should outline the conservation objectives, the means of monitoring habitats and species, and describe the practical maintenance measures that may be needed. Implementation of the management plan is likely to be a contractor's responsibility and should be considered at the tender evaluation stage. Maintenance and monitoring may be secured by way of a legal agreement or planning condition.
- 13.30 Where appropriate, the Council will seek a legal agreement where on site biodiversity aims are unlikely to be met through the use of a condition attached to a planning permission.

#### **Habitat provision, enhancement, creation and restoration**

- 13.31 In line with policy and guidance, opportunities should be sought for the incorporation of biodiversity into developments and for habitat creation or enhancing existing habitats in any development proposal. It is not a case of one size fits all. This list is not exhaustive and developers are encouraged to follow this guidance and think creatively to fully integrate biodiversity into design.

### Best practice examples of habitat provision, enhancement, creation and restoration

Design Area	Design Opportunities	Details
Roofs	Green roofs Brown roofs Roof gardens and terraces	Green roofs are intentionally vegetated roof surfaces. Typically, they can be intensive on a deep growing medium (150-400mm), or extensive on shallower growing medium (60-200mm) or any transition between the two. In all cases consideration will need to be given to type of habitat desired. Other than the traditional sedum matting, green roofs can provide a varied profile comprising mosaics of bare ground with very early pioneer communities on nutrient-poor substrates e.g. locally sourced aggregate, through to more established open grasslands with herbs, or even trees and scrub and ponds. Green roofs should not be seen as an automatic substitute for ground level landscaping. Consideration should first be given to ground level landscaping for biodiversity. Further information can be found at: <a href="http://livingroofs.org/">http://livingroofs.org/</a>
	Artificial roost	Artificial roosts for bats can be incorporated into conversions or within new development such as a roof void by providing suitable access. Products are available to aid bat roosting potential or access to potential roost spaces such as bat access tiles.
	Bird and Bat boxes	The type of box, its location, and surroundings will depend on the species the box is intended for. You will need to take into account ecological requirements of the target species: position, aspect, height, obstructions, cleaning and maintenance, whether a single or colonial species, and whether surroundings suitable for commuting and/or foraging. It is preferable to install boxes into the fabric of the building as this provides longevity. There are numerous bird and bat boxes specifically designed for brickwork.  Example: Swift boxes installed in brickwork Swift boxes should be sited on a north, north west or west aspect out of the sun and heat which can harm the chicks. They should be installed at a height of at least 6 to 7m, preferably under the shelter of the eaves or overhanging roofs. A 5 metre drop, clear of obstructions provides clear airspace for high speed entry and egress. Several boxes

		together will assist the formation of swift colonies.
Buildings	Walls Green/living walls	Living walls are typically composed of climbing plants. They provide opportunities for wildlife such as habitat for insects and spiders, which in turn will be food for insect-eating birds and bats, and if sufficiently dense provide can provide nesting habitat for birds. They can also reduce fragmentation of habitats by forming a link between ground level landscaping and green roofs. Climbers can adhere directly to brick and stone, but where it is desirable to encourage growth away from the building facade a network of trellises and wires can be used.
	Lighting	Artificial lighting has significant impacts on animals and insects, disrupting activities such as the search for food and mating behaviour. Where lighting is necessary, take into account: type of lamp (low pressure sodium lamps or high pressure sodium preferred), aim to avoid light spillage using hoods, cowls etc., the height of lighting column should be as short as possible, light levels should be as low as possible, and timing of lighting to provide some dark periods.  The Bat Conservation Trust in association with the Institution of Lighting Engineers (ILE) has produced a guidance document 'Bats and Lighting in the UK'
Outdoor Space	Sustainable Urban Drainage Systems (SUDs)	SUDs can help to slow down the runoff rate and store water on a temporary basis, reducing the impact of urbanisation on flooding, and provide a habitat for wildlife. Examples include the use of constructed wetlands, such as ponds, reed beds, planted swales, and detention basins.
	Ponds/reed beds	Ponds and reed beds can have significant wildlife value. Ponds can be constructed using concrete, butyl liners or puddled clay. It is better that they are designed using methods such as rainwater harvesting as this can be fed directly into a pond, as topping up with mains water adds nutrients to the pond and can lead to algal blooms.
Landscaping and planting.	General Planting	Retaining and planting native plants of UK or local origin will not only help to maintain the integrity of ecosystems close to the development, but will also increase biodiversity within the development itself. Planting of trees, bushes, forbs and grass

		<p>can be used to complement natural vegetation.</p> <p>Only native/local provenance species to be planted on sites adjacent to or within specified distance of a SNCI and should reflect or complement the species composition of the SNCI where possible.</p> <p>Peat-free products only should be used in planting schemes.</p>
	Wildflower meadows/areas of long grass	Wildflower rich grassland or meadows reflecting natural communities of local soil types can be created, or restored, in areas of greenspace. These habitats need ongoing management to maintain their biodiversity interest. It is expected that a management plan and provision for ongoing management is provided as part of any development proposal. Areas of amenity grassland of are of limited value for biodiversity.
	Tree, shrub and understorey planting.	Depending on the scale of planting proposed, this encompasses single trees to small areas of scrub, and even woodland. Where possible, it is desirable to plant native species reflecting natural communities of local soil types. If possible establish a graded canopy down from large trees to smaller, dense lower shrubs, to field and ground layer. However, the urban environment is highly modified by people and the value of non-native plants with high species associations is also recognized.
	Hedgerows	Hedgerows comprised of native species reflecting natural communities of local soil types are by far the best for wildlife. Climbers such as honeysuckle and bramble can be integrated into hedgerows. Existing native species hedgerows should be as far as possible retained, or replaced. Even low species rich hedgerows may form commuting routes for species such as bats.
	Flower planting for birds and insects	<p>Choose plants likely to attract wildlife. Any planting scheme will need ongoing management to maintain its' biodiversity interest. It is expected that a management plan and provision for ongoing management is provided as part of any development proposal. Natural England's Gardening with Wildlife in Mind provides a searchable list of native and non-native plants that benefit wild species at <a href="http://www.plantpress.com/wildlife/home.php">http://www.plantpress.com/wildlife/home.php</a></p>

	Retention of ecologically important habitats	Where there is remnant natural vegetation on site, the aim should be to maintain these areas. Loss or damage to these areas should be kept to a minimum.
	Hard surfaces	Hard surfaces should be kept to a minimum in new schemes. Permeable materials should be used. This will encourage insects and reduce run-off. Soil sealing on site should be kept to a minimum. Any runoff should be directed onto vegetated area. Run-off that is high in pollution and certain nutrients can pollute ponds and waterways, altering their biodiversity.
	Deadwood	Deadwood habitats can be integrated creatively into a development, such as monoliths with coronet cuts to provide habitat for deadwood specialists such as fungi and wood boring beetles.
	Orchards	Traditional orchards are hotspots for biodiversity supporting a wide range of wildlife. Traditional fruit and nut varieties are preferred. These features will require on-going management. It is expected that a contaminated land assessment is provided by the applicant if the produce is for consumption.
	Herbicide and pesticide use	Herbicide and pesticide use should be avoided and alternative control methods used, except when controlling invasive species.

### Habitat Suitability Maps

- 13.32 Where the nature of the development provides opportunities for habitat creation, this should contribute to habitat creation targets in the BAP. Developers should contact the Nature Conservation Section, who will advise on the choice of habitat by reference to the Habitat Suitability Maps developed by GiGL and LBP. The role of the site in buffering or connecting neighbouring or nearby open space should also be taken into consideration as part of this process, as should the habitat composition of such open space.
- 13.33 In cases where the site is not covered by the Habitat Suitability Maps (i.e. not existing open space), large-scale habitat creation should reflect the landscape character of the area, as identified in Natural England's London's Natural Signatures project  
[www.naturalengland.org.uk/regions/london/ourwork/londonnaturesignatures.aspx](http://www.naturalengland.org.uk/regions/london/ourwork/londonnaturesignatures.aspx)

## Management and monitoring

- 13.34 The management and maintenance of areas of nature conservation value that are to be retained, enhanced or created on a development site is essential to ensure these areas of nature conservation attain their full potential. A long term management plan should outline the conservation objectives, the means of monitoring habitats and species, and describe the practical maintenance measures that may be needed. Implementation of the management plan is likely to be a contractor's responsibility and should be considered at the planning application stage.

## Compensation

- 13.35 Where, exceptionally, damage or loss to natural habitats is unavoidable and or inadequate mitigation proposed, compensatory measures will be required. This may involve new habitat creation or habitat enhancement, a contribution towards meeting the objectives of the Camden Biodiversity Action Plan or improvements to the Boroughs biodiversity. The Council will seek to use planning conditions and planning legal agreements to achieve this.

## Further information

Natural England Wildlife Management and Licensing Service	provides advice on wildlife management and issues licences <a href="http://www.naturalengland.org.uk/ourwork/regulation/wildlife/default.aspx">www.naturalengland.org.uk/ourwork/regulation/wildlife/default.aspx</a>
Livingroofs.org	Independent UK Resource For information on Green Roofs <a href="http://www.livingroofs.org">www.livingroofs.org</a>

## Biodiversity Appendices

### 13.36 Extra information on biodiversity surveys

- In general, it is expected that all surveys and baseline ecological information collected from the site must be submitted at the planning application stage.
- A desk study and site walkover surveys must be carried out on all Major Developments to identify the ecological characteristics of a site and any significant impacts. This will also inform whether further ecological surveys are necessary to be submitted with any planning application. Surveys may be required on smaller developments where protected species or priority BAP species or habitat are likely to be present - refer to tables and information below for guidance;
- Developers are expected to carry out a protected species survey where desktop surveys show protected species in the vicinity.
- Surveys must be carried out by suitably qualified and experienced persons e.g. Member of IEEM;
- Surveys must be carried out using recognised survey methodology and following good practice guidelines i.e. in suitable weather conditions, at an appropriate time and of appropriate duration and frequency, and at the correct period of the year;
- Habitat surveys must be to an appropriate level of detail e.g. Extended Phase I Habitat Survey with Target Notes, to characterise the nature conservation interest of the site;
- The survey data should be used to inform the design and form of the development, and any recommendations for management afterwards.
- An assessment must be provided of the likely effects of development, and the magnitude of their potential impact of the development on nationally, regionally and locally important habitats and species recorded on site or in the locality;
- The assessment should identify measures to be taken to avoid impacting on those important species and habitats, either directly or indirectly, on site and in the locality, during demolition and construction operations;
- Survey data will be considered valid for a period of 1 Year after which re-surveys may be required;
- If the level of detail provided is deemed inadequate then additional surveys will be required;
- The results of site surveys must be made available to the London Environmental Records Centre (Greenspace Information for Greater London).



## Local Requirement for Protected Species: Criteria and Indicative Thresholds (Trigger List) for when a Survey and Assessment is required

Proposals for Development That Will Trigger a Protected Species Survey	Species likely to be affected and for which a survey will be required							
	Bats	Badgers	Breeding Birds	Plants	Hedgehogs	Reptiles	Amphibians	Notable Invertebrate
Proposed development which includes the modification, conversion, demolition or removal of buildings and structures (especially roof voids) involving the following: <ul style="list-style-type: none"> <li>all buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water;</li> <li>pre-1960 detached buildings and structures within 200m of woodland and/or water;</li> <li>pre-1914 buildings within 400m of woodland and/or water;</li> <li>pre-1914 buildings with gable ends or slate roofs, regardless of location;</li> <li>all tunnels, mines, kilns, ice-houses, adits, military fortifications, air raid shelters, cellars and similar underground ducts and structures;</li> <li>all bridge structures, aqueducts and viaducts (especially over water and wet ground).</li> </ul>	• • • • • •		• • • • • •					
Proposals involving lighting of churches and listed buildings Proposals involving flood lighting of green space within 50m of woodland, water, field hedgerows or lines of trees with obvious connectivity to woodland or water.	• •		• •				•	•
Proposals affecting woodland, or field hedgerows and/or lines of trees with obvious connectivity to woodland or water bodies.	•	•	•	•			•	•
Proposed tree work (felling or lopping) and/or development affecting: <ul style="list-style-type: none"> <li>old and veteran trees that are older than 100 years;</li> <li>trees with obvious holes, cracks or cavities,</li> <li>trees with a girth greater than 1m at chest height;</li> </ul>	• • •		• • •					• • •
Major proposals within 500m of a pond or Minor proposals within 100m of pond (Note: A major proposals is one that is more than 10 dwellings or more than 0.5 hectares or for non-residential development is more than 1000m <sup>2</sup> floor area or more than 1 hectare)	•						•	•
Proposals affecting or within 200m of rivers, streams, canals, lakes, or other aquatic habitats.	•		•	•			•	•
Proposals affecting 'derelict' land (brownfield sites), allotments and railway land.		•	•	•	•	•	•	•
Proposed development affecting any buildings, structures, feature or locations where <u>protected species are known to be present</u> *.	•	•	•	•	•	•	•	•
Major proposals within 500m of Hampstead Heath or Minor proposals within 100m of Hampstead Heath (Note: A major proposals is one that is more than 10 dwellings or more than 0.5 hectares or for non-residential development is more than 1000m <sup>2</sup> floor area or more than 1 hectare)	•		•	•	•	•	•	
Table adapted from version produced by ALGE 2007, Validation of Planning Applications  *Confirmed as present by either a data search (for instance via the local environmental records centre) or as notified to the developer by the local planning authority, and/or by Natural England, the Environment Agency or other nature conservation organisation.	Bats	Badgers	Breeding Birds	Plants	Hedgehogs	Reptiles	Amphibians	Notable Invertebrates

### **Exceptions for when a full species survey and assessment may not be required**

- a) Following consultation by the applicant at the pre-application stage, the LPA has stated in writing that no protected species surveys and assessments are required.
- b) If it is clear that no protected species are present, despite the guidance in the above table indicating that they are likely, the applicant should provide evidence with the planning application to demonstrate that such species are absent (e.g. this might be in the form of a letter or brief report from a suitably qualified and experienced person, or a relevant local nature conservation organisation).
- c) If it is clear that the development proposal will not affect any protected species present, then only limited information needs to be submitted. This information should, however, (i) demonstrate that there will be no significant affect on any protected species present and (ii) include a statement acknowledging that the applicant is aware that it is a criminal offence to disturb or harm protected species should they subsequently be found or disturbed.

In some situations, it may be appropriate for an applicant to provide a protected species survey and report for only one or a few of the species shown in the Table above e.g. those that are likely to be affected by a particular activity. Applicants should make clear which species are included in the report and which are not because exceptions apply.

### **Local Requirements for Designated Sites and Priority Habitats:**

Criteria (Trigger List) for When a Survey and Assessment are Required

#### **1. Designated sites (as shown on the Council's Proposals Map)**

Nationally designated sites

- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)

Regionally and locally designated sites

- Local Sites (e.g. Site of Nature Conservation Importance)
- Local Nature Reserve (LNR)

#### **2. Priority habitats (Habitats of Principal Importance for Biodiversity under S.41 of the NERC Act 2006)**

- Arable Field Margins
- Ancient and/or species-rich hedgerows
- Lowland heathland
- Lowland dry acid grassland

- Lowland meadows (e.g. species-rich flower meadows)
- Lowland mixed deciduous woodland
- Lowland Beech and Yew Woodland
- Open Mosaic Habitats on Previously Developed Land
- Ponds
- Reed beds
- Traditional Orchards

### 3. Other biodiversity features

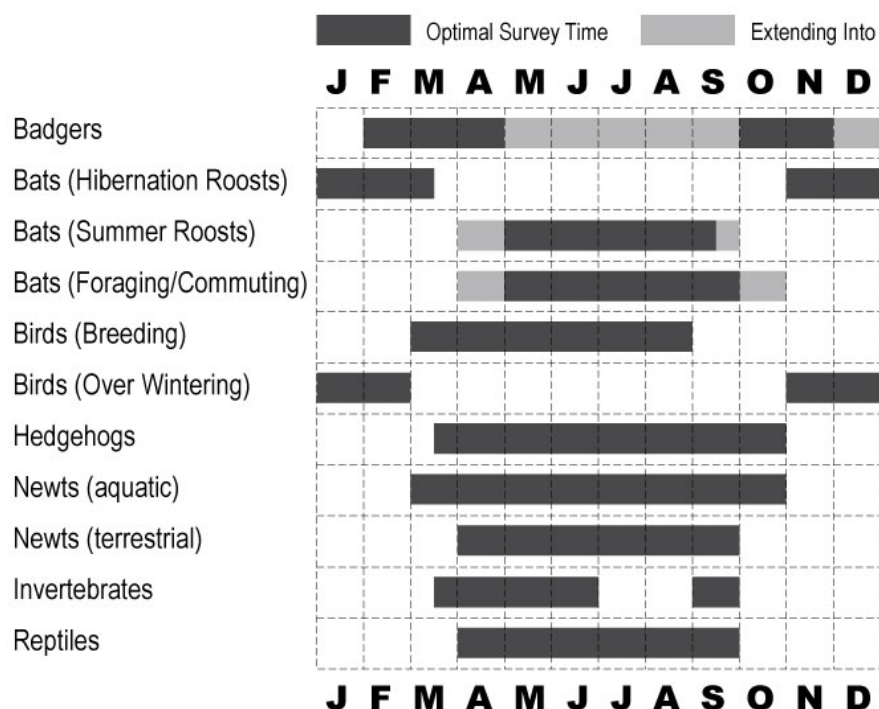
(as identified by the Local Biodiversity Partnership - see paragraph 84 ODPM Circular 06/2005)

- Waterways and wetlands (e.g. canals, lakes, reservoirs, ponds, aquifer fed fluctuating water bodies)
- Woodland, Hedgerows and Trees (e.g. secondary woodland and scrub, mature/veteran Trees, deadwood habitats)
- Parks, Open Space and Private Gardens (e.g. urban green space, parks, allotments, orchards, flower-rich road verges, canal sides, wildlife gardens)
- The Built Environment (e.g. previously developed land, railsides and churchyards and cemeteries)

### Exceptions When a Full Survey and Assessment May Not Be Required

**International and National Sites:** A survey and assessment will not be required where the applicant is able to provide copies of pre-application correspondence with Natural England, where the latter confirms in writing that they are satisfied that the proposed development will not affect any statutory sites designated for their national or international importance.

**Regional and Local Sites and Priority Habitats:** A survey and assessment will not be required where the applicant is able to provide copies of pre-application correspondence with the Local Planning Authority's ecologist (where employed), or ecological advisor and/or the local Wildlife Trust that they are satisfied that the proposed development will not affect any regional or local sites designated for their local nature conservation importance or any other priority habitats or listed features.

**Figure 10. Ecological survey seasons**

Points to note regarding surveys are as follows:

- For certain species and habitats surveys can be carried out at any time of year, but for other species, particular times of year are required to give the most reliable results, as indicated in Figure 11
- Surveys conducted outside of optimal times (Figure 11) may be unreliable. For certain species (e.g. Great Crested Newt) surveys over the winter period are unlikely to yield any useful information. Similarly negative results gained outside the optimal period should not be interpreted as absence of a species and further survey work may be required during the optimal survey season. This is especially important where existing surveys and records show the species has been found previously on site or in the surrounding area. An application may not be valid until survey information is gathered from an optimum time of year.
- Species surveys are also very weather dependent so it may be necessary to delay a survey or to carry out more than one survey if the weather is not suitable, e.g. heavy rain is not good for surveying for otters, as it washes away their spraint (droppings). Likewise bat surveys carried out in wet or cold weather may not yield accurate results.
- Absence of evidence of a species does not necessarily mean that the species is not there, nor that its habitat is not protected (e.g. a bat roost is protected whether any bats are present or not).

- Local Biological / Environmental Records Centre may have useful existing information and records.
- Competent ecologists should carry out any surveys. Where surveys involve disturbance, capture or handling of a protected species, then only a licensed person can undertake such surveys (e.g. issued by Natural England). Surveys should follow published national or local methodologies. Further details may be found in the Local Authority's SPD for Biodiversity or on the following web sites:
- IEEM at: [www.ieem.org.uk/Publications.htm](http://www.ieem.org.uk/Publications.htm) - Guidelines for Survey Methodology
- Natural England:  
<http://www.naturalengland.org.uk/publications/default.htm>









## 14 Local food growing

### KEY MESSAGES

We encourage food to be grown wherever possible and suitable  
Rooftops and shared spaces such as gardens and parks provide opportunities for food growing

- 14.1 Local food growing in Camden encompasses a range of activities including back garden food growing, roof top gardening allotment cultivation, community gardening projects, bee keeping, planting orchards and fruit trees on public land, city farms, urban fringe farms and market gardens.
- 14.2 Cultivating land and growing food can help to improve the health of residents because it requires physical activity and promotes healthy eating. It can also help to improve air quality as people travel smaller distances to access fresh produce.
- 14.3 The Council encourages food growing where ever it is possible and suitable. This includes at ground level, on roofs in the form of green roofs and as part of green walls.
- 14.4 The Council is involved in a number of food growing initiatives. These are outlined in the Council's Food Growing Strategy.



### Where is food growing appropriate?

- 14.5 The incorporation of infrastructure for growing food is particularly appropriate to the design of housing, developments providing food retail

and restaurant outlets, hospitals and schools either on roof tops or within surrounding space.

- 14.6 Roof tops provide a particular resource in respect of local food growing. Roof gardens for food growing offer the same benefits as other types of green roofs. Storm water and grey water recycling can be incorporated into the management and maintenance of these roofs. They also provide a means of direct recycling of a buildings food waste when composting systems are incorporated into their design. Roof tops for greenhouses and aquaponic systems – where plants are grown without soil, also provide a similar range of opportunities to integrate recycling water and food waste systems into the design they can incorporate recycled heat waste from buildings. Providing the infrastructure for food production on roof tops will depend on the relative priority of other objectives and benefits associated with green roofs. See section 9 in this guidance for more information on green roofs.



- 14.7 We will expect development proposals consider the opportunities for food growing. If food growing is appropriate, the necessary infrastructure should be successfully incorporated the into building and site design
- 14.8 The Council may use Section 106 agreements to secure space for food growing where appropriate. Contributions may also be sought where there are opportunities to fund local food growing initiatives.

### Where are the food growing projects in Camden?

#### CASE STUDIES

A vineyard has been planted for commercial purposes by Alara Foods on wasteland close to its warehouses near Kings Cross. The company has also planted a Forest Garden behind its warehouses and installed three beehives.

Acorn House restaurant, in the Kings Cross area, has developed a roof garden growing herbs, vegetables and fruits to supply the restaurant with fresh seasonal produce.

**Further information**

Healthy and sustainable food strategy	<p>Good Food for Camden: the healthy and sustainable food strategy (2009-2012). It aims to:</p> <ul style="list-style-type: none"> <li>• improve health and reduce health inequalities</li> <li>• achieve environmental sustainability</li> <li>• enhance community engagement</li> <li>• build the local economy</li> <li>• support cultural diversity</li> </ul>
Capital Growth	<p>Capital Growth offers practical advice and support to communities that want to grow their own food, including getting access to land, and runs the Edible Estates competition to find the best community food growing projects on London's housing estates.</p> <p><a href="http://www.capitalgrowth.org">www.capitalgrowth.org</a></p>
Other	<p>Images of multifunctional urban design and planning data associated with incorporating hydroponic green houses on the roof tops of residential and industrial buildings can be seen at <a href="http://www.brightfarmssystem.com">www.brightfarmssystem.com</a></p> <p>There are many local and international examples of the different types of urban food production that can be seen via the Sustain and City Farmer websites:</p> <p><a href="http://www.sustainweb.org">www.sustainweb.org</a>  <a href="http://www.cityfarmer.org">www.cityfarmer.org</a></p> <p>An example of roof tops allotments incorporated into the design of an apartment block can be seen at <a href="http://www.onebrighton.co.uk">www.onebrighton.co.uk</a></p>



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