Camden Planning Guidance

Design

London Borough of Camden

CPG 1

July 2015

Camden

CPG1 Design

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.

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 an 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. 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 in 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).

3 Heritage

KEY MESSAGES

Camden has a rich architectural heritage and we have a responsibility to preserve, and where possible, enhance these areas and buildings.

- We will only permit development within conservation areas that preserves and enhances the character and appearance of the area
- Our conservation area statements, appraisals and management plans contain more information on all the conservation areas
- Most works to alter a listed building are likely to require listed building consent
- Historic buildings can and should address sustainability and accessibility

3.1 This section provides guidance on our identified heritage assets (which include conservation areas, listed buildings and registered parks and gardens), including what they area and the implications of their status and designation. This section also sets out details on how historic buildings can address sustainability.

3.2 This section sets out further guidance on how we will apply Core Strategy Policy CS14 Promoting high quality places and conserving our heritage and Development Policy DP25 Conserving Camden's Heritage.

When does this apply?

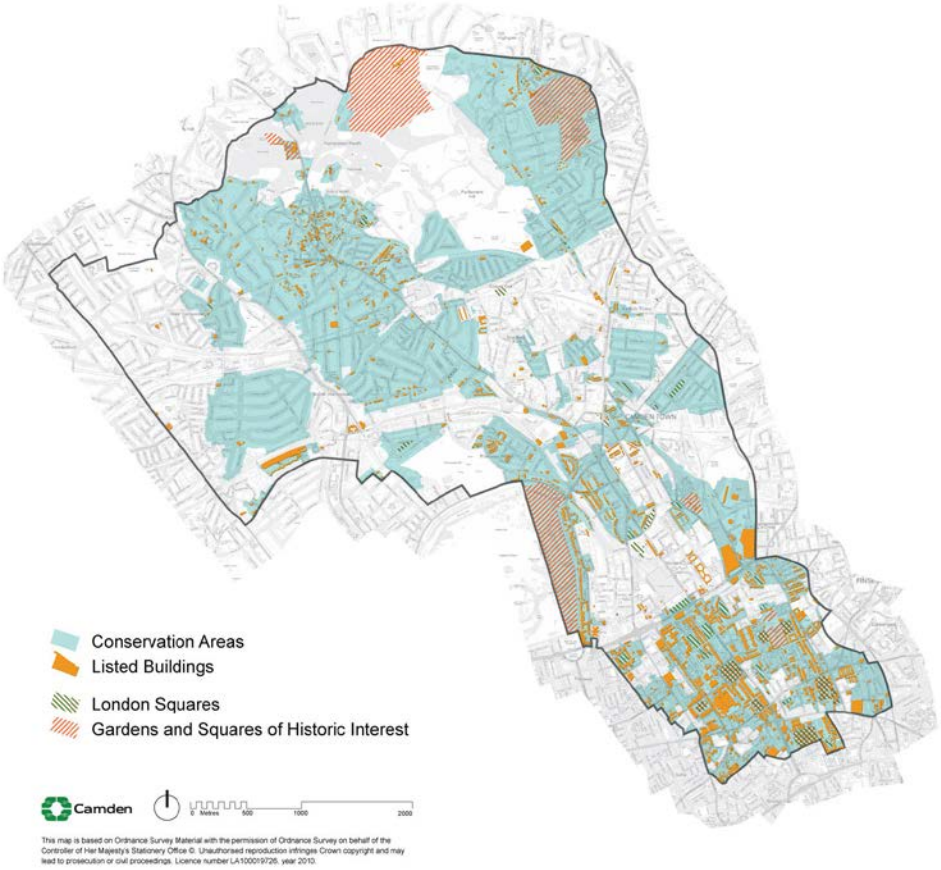
3.3 This guidance applies to all applications which may affect any element of the historic environment and therefore may require planning permission, or conservation area or listed building consent.

Conservation Areas

What is a conservation area?

3.4 A conservation area is defined in the Planning (Listed Buildings and Conservation Areas) Act 1990 as an area of special architectural or historic interest, the character or appearance of which it is desirable to preserve and, where possible, enhance. PPS5 identifies conservation areas as “heritage assets” and requires that proposals in conservation areas are assessed for their impacts on their historic significance. There are 39 conservation areas in Camden, which vary greatly in appearance, size, character and style and these are identified on the LDF Proposals Map.

Figure 1. Conservation Areas



3.5 Conservation area designation is a way to recognise the importance of the quality of an area as a whole, as well as giving some protection to individual buildings within it. Conservation areas are not designated to stop all future development or change but to ensure that change is managed to conserve the historic significance of the area as a whole.

3.6 Conservation area designation is shown on the proposals map and further information on heritage is available on the 'Conservation and Design' section of the Council's website www.camden.gov.uk and on English Heritage's website www.english-heritage.org.uk.

Effects of conservation area status

3.7 We will only permit development within conservation areas, and development affecting the setting of conservation areas, that preserves and enhances the character and appearance of the area (see Planning Policy Statement 5 (PPS5), policy HE8).

3.8 The Council has greater control over building work in conservation areas, including demolition, materials and detailed design. Planning permission may be required for alterations or extensions that would not normally need planning permission elsewhere, such as minor roof

alterations, dormer windows, renewable energy installations or installation of a satellite dish.

Renewable energy technology

Renewable energy technologies generate energy from natural resources such as sunlight, wind, rain and heat in the ground, which are naturally replenished.

Demolition in conservation areas

3.9 Conservation Area Consent is required to demolish or substantially demolish a building over 115 cubic metres or a structure such as a wall over 1 metre high that adjoins a highway, or more than 2 metres high elsewhere. When determining your application we will follow the guidance in PPS5, Core Strategy policy CS14 and Development Policy DP24 as well as that in our conservation area statements, appraisals and management plans (see below). It is an offence to totally or substantially demolish a building or structure in a conservation area without first getting consent from us and we would not normally allow their demolition without substantial justification, in accordance with criteria set out in government guidance PPS5 – Planning for the Historic Environment.

Trees

3.10 Planning legislation makes special provision for trees in conservation areas. Prior to pruning or felling a tree in a conservation area you must provide the Council six weeks notice in writing. All trees that contribute to the character and appearance of a conservation area should be retained and protected. For further information on trees, please see Landscape Design and Trees chapter in this CPG.

Article 4 directions

3.11 A range of minor changes can be made to buildings without the need to apply for planning permission as these have a general permission through planning legislation. These changes are known as permitted development. However, the character of a conservation area depends on the presence of specific original details and where these are lost the historic interest and attractive character of the area deteriorates.

3.12 In these situations we can issue an Article 4 direction through Article 4 of the Town and Country Planning (General Permitted Development) Order 1995 (as amended). This removes permitted development rights and means a planning application has to be made for minor works that usually do not need one.

3.13 Further information on Article 4 directions, including where they apply in Camden is available on the 'Advice and help with planning applications' section of the Council's website www.camden.gov.uk and English Heritage has published Guidance on making Article 4 Directions, available at www.english-heritage.org.uk/publications/guidance-on-making-article-4-directions/

Conservation area statements, appraisals and management plans

3.14 We have published a series of conservation area statements, appraisals and management plans that set out our approach to preserving and enhancing the historic significance of each individual conservation area. Many of these conservation area statements are available for download on our website.

3.15 Conservation area statements, appraisals and management plans help guide the design of development in conservation areas and we take these into account when assessing planning applications.

3.16 Each conservation area statement, appraisal or management plan contains the following:

- A summary of the location and the historical development of an area;
- A description of its character;
- An outline of the key issues and development pressures that are currently of concern;
- The key policy framework for that particular conservation area, and specific guidance for it;
- An identification of heritage assets and elements of the wider historic environment which give an area its historic significance; and
- An identification of sites and features that have a negative impact on the conservation area, or where an opportunity exists for enhancement of the area by redevelopment of a building or site.

Listed Buildings

What is a listed building?

3.17 A listed building is defined in the Planning (Listed Buildings and Conservation Areas) Act 1990 as a structure or building of special architectural or historic interest. These are included on the Statutory List of Buildings of Architectural or Historic Interest managed by English Heritage. Listed buildings are identified as heritage assets within the LDF and the Council is required to assess the impact that proposals to a listed building, or within their setting, may have on the historic significance of the building.

3.18 Listed buildings are graded according to their relative importance as either Grade I, Grade II* or Grade II. Grades I and II* are considered of outstanding architectural or historic interest and are of particularly great importance to the nation's heritage. The majority of listed buildings (about 94% nationally) are Grade II. However, the statutory controls on alterations apply equally to all listed buildings irrespective of their grade and cover the interior as well as the exterior and any object or structure fixed to or within their curtilage.

Listing description

The listing description contains details of a listed building's address, history, appearance and significance. These help to identify what it is about the building that gives it its special historic interest.

3.19 Further information on listed buildings in Camden is available on our website www.camden.gov.uk

How can I alter a listed building?

3.20 Most works to alter a listed building are likely to require listed building consent and this is assessed on a case by case basis, taking into

account the individual features of a building, its historic significance and the cumulative impact of small alterations. The listing description is not intended to be exhaustive and the absence of any particular feature in the description does not imply that it is not of significance, or that it can be removed or altered without consent. Listed status also extends to any object or structure fixed to the listed building, and any object or structure within its curtilage which forms part of the land. You should contact the Council at the earliest opportunity to discuss proposals and to establish whether listed building consent is required.

3.21 Some 'like for like' repairs and maintenance do not require listed building consent. However, where these would involve the removal of historic materials or architectural features, or would have an impact on the special architectural or historic interest of the building, consent will be required. If in doubt applicants should contact the Council for advice.

3.22 In assessing applications for listed building consent we have a statutory requirement to have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. We will consider the impact of proposals on the historic significance of the building, including its features, such as:

- original and historic materials and architectural features;
- original layout of rooms;
- structural integrity; and
- character and appearance.

3.23 We will expect original or historic features to be retained and repairs to be in matching material. Proposals should seek to respond to the special historic and architectural constraints of the listed building, rather than significantly change them.

3.24 Applications for listed building consent should be fully justified and should demonstrate how proposals would affect the significance of a listed building and why the works or changes are desirable or necessary. In addition to listed building consent, some proposals may also require planning permission. These applications should be submitted together and will be assessed concurrently.

3.25 It is a criminal offence to undertake unauthorised works to a listed building, even if you are not aware the building is listed, and could result in prosecution and fine or imprisonment (or both).

3.26 Some works that are required in order to comply with the Building Regulations (e.g. inclusive access, energy efficiency) may have an impact on the historic significance of a listed building and will require listed building consent.

Inclusive access to listed buildings

3.27 It is important that everyone should have dignified and easy access to and within historic buildings, regardless of their level of mobility. With

sensitive design, listed buildings can be made more accessible, while still preserving and enhancing the character of the building.

3.28 Further guidance is available in CPG4 Protecting and improving quality of life (Access for all chapter) and in the English Heritage publication "Easy Access to Historic Buildings" www.english-heritage.org.uk

How can historic buildings address sustainability?

3.29 We recognise the role that the historic environment can play in reducing the impact of climate change. For example, reusing existing buildings could avoid the material and energy cost of new development. There are many ways to improve the efficiency and environmental impact of historic buildings, for example improving insulation, draught-proofing and integrating new energy-saving and renewable-energy technologies. We will seek to balance achieving higher environmental standards with protecting Camden's unique built environment (in accordance with LDF Core Strategy policies CS13 Tackling climate change through promoting higher environmental standards and CS14 Promoting high quality places and conserving our heritage) and PPS5 policy HE.1.

3.30 More detailed guidance on how to modify buildings without compromising their significance is contained within CPG3 Sustainability (Energy efficiency: new buildings, Energy efficiency: existing buildings, Renewable energy, Climate change adaptation, Water efficiency, Flooding and Sustainable use of materials). For further information see the links at the end of this chapter.

Planning obligations relating to heritage assets

3.31 Many of the potential impacts of development on historic buildings and in archaeological priority and conservation areas can be covered through design and by conditions on the planning permission, for example the

need to carry out surveys or the storage and restoration of artefacts. Some objectives for building and area conservation or archaeology are unlikely to be satisfactorily controlled by a condition or in such cases and where impacts are off-site, or involve a particularly sensitive or complex programme of works, involving phasing, the Council may require implementation of these measures through a Section 106 Agreement.

Further information

Planning Policy Statement 5 (PPS5)	The Government's national policies on the historic environment are set out in: • Planning Policy Statement (PPS) 5 Planning for the historic environment – CLG, 2010 If you want guidance implement this national policy, it is provided in: • PPS5, Planning for the Historic Environment, The Government's Statement on the Historic Environment for England, and The Historic Environment Planning Practice Guide
English Heritage	www.englishheritage.org.uk Guidance on heritage assets: • Guidance on Conservation Area Appraisals, 2006 – English Heritage; • Guidance on Management of Conservation Areas, 2006 – English Heritage; • Climate Change and the Historic Environment (2008); and • Heritage at Risk Register - English Heritage http://risk.english-heritage.org.uk/2010.aspx Guidance on sustainability measures in heritage buildings: • Energy Conservation in Traditional Buildings • Climate Change and the Historic Environment There is also an online resource dedicated to climate change and the historic environment, available at: • www.englishheritage.org.uk/climatechangeandyourhome Guidance on accessibility: • Easy access to Historic Buildings, 2012 • Easy access to Historic Landscapes, 2013
Energy Saving Trust	www.est.org.uk

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 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.

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

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.

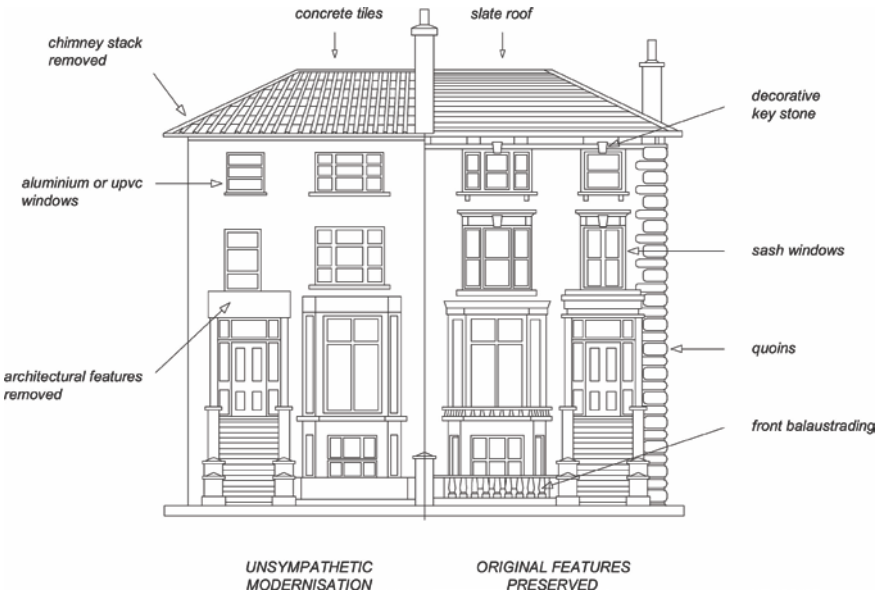
External pipework

- 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:

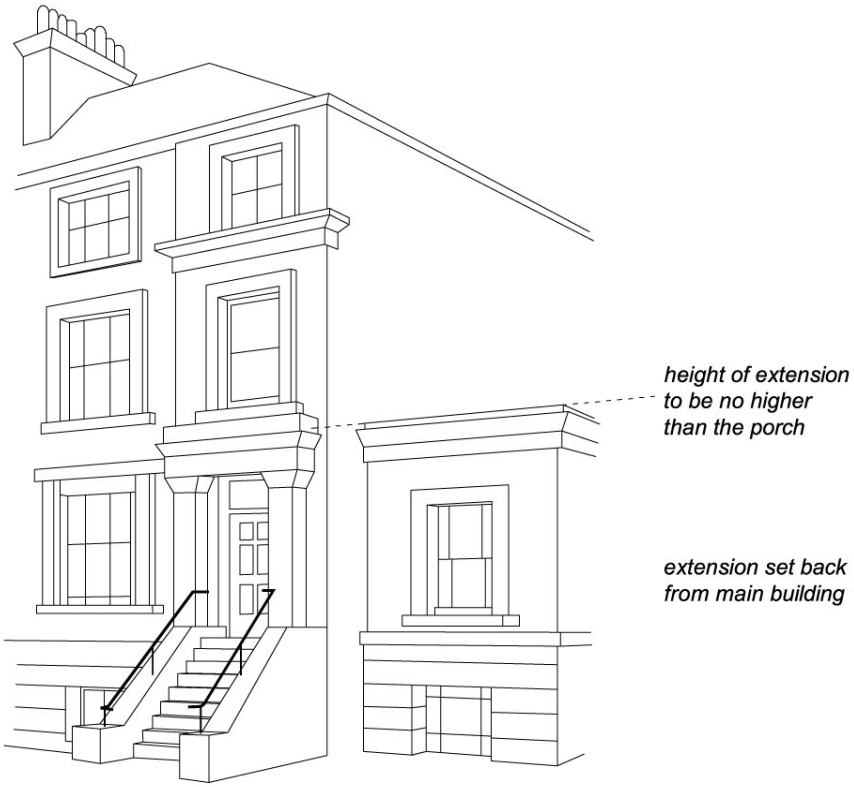
- be no taller than the porch; and
- set back from the main building.

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).

Guidance on standards for waste storage

10.7 This section provides detailed guidance on the requirements for both internal and external recycling and waste facilities to ensure designs allow sufficient space for the storage of recyclable material and waste in developments. To encourage occupants to recycle, internal storage areas should be designed into each unit of a new development. This will enable occupants to segregate their waste into refuse and recyclables, and store it temporarily, until it can be transferred to external bins.

Residential development of 6 dwellings or fewer

Space requirements

10.8 Residential development of 6 dwellings or fewer are usually serviced by a kerbside recyclables and waste collection. The designs for recycling and waste facilities need to provide sufficient internal and external storage areas for each unit, ensuring:

- that internal space is provided for recycling and refuse storage, comprising adequate space for a recycling receptacle (typically a green reusable box or bag), food waste caddy, and waste bin for non-recyclables. Kitchens and utility rooms are generally the most appropriate locations;
- there is external storage for mixed (commingled) recyclables, organic kitchen waste and non-recyclable waste, providing space for the following:
    - a free-standing 140l or 240l wheelie bin for the storage of commingled recycling;
    - a free-standing kitchen waste caddy;
    - seasonal storage of garden waste i.e. in large hessian sacks;
    - a free-standing receptacle for the storage of refuse (should the developer or resident wish to purchase one, as the Council does not currently provide containers for refuse);
    - for details of container dimensions please see Figure 13, below.

Residential development of 7 dwellings or more

10.9 Collection services for developments with 7 or more residential dwellings vary depending on the individual circumstances of the premises. For this type of development a kerbside collection is preferred, where possible. For external storage requirements, the guidance for residential development of 6 or fewer units should be used.

10.10 Where communal facilities are required (i.e. the dwellings will share central recycling and refuse bins), the following steps should be followed:

10.11 The table below can be used to calculate the total volume of all waste and recycling generated in a week:

Size of household	**Number in development**	**Projected Weekly Waste per household**	**Waste produced from all households**
Studio / one bedroom	A	100 litres	A x 100 = W litres
Two bedroom	B	170 litres	B x 170 = X litres
Three bedroom	C	240 litres	C x 240 = Y litres
Total Weekly Waste Arising			W+X+Y = Z litres

10.12 If there are more than six households in a block of flats we recommend the use of bulk bins. The standard Eurobins we use have a capacity of 1,100 or 1,280 litres. The minimum required can be calculated as below:

$$\text{Number of bulk bins required} = \frac{\text{(Z) litres (from Table 1)}}{\text{1,100 litres (volume of bulk bin)}}$$

10.13 Provision of bins should at least be split equally between refuse and recycling including provision for food waste – e.g. if a building requires 4.5 x 1,100l bins, 2 should be for refuse and 2 for dry recycling, plus a 660l bin for food waste.

Space requirements

10.14 Internal storage: Bulk bins must be placed on smooth impervious material that is 100 mm thick to withstand the weight. If multiple bins are needed they are better kept in an enclosure. This discourages non-residents from using the bins and also improves the aesthetics of the development. The dimensions of bulk bins are given in the table below.

Figure 13. Storage containers and dimensions

Container Type	Use	External dimensions mm (H x W x D)
55l green box	Storage of mixed dry recycling by households without space for a wheelie bin. Can be stored internally or externally, collected from the kerbside.	350 x 390 x 585
45l reusable green bag	Storage of mixed dry recycling by households without space for a wheelie bin. Can be stored internally or externally, collected from the kerbside	350 x 300 x 450
7l kitchen caddy	Internal storage of food waste. Contents are then transferred to a larger outdoor caddy or communal food waste bin.	252 x 252 x 229
23l kitchen caddy	External storage and collection of food waste by households with a kerbside collection	405 x 320 x 400
90l white sack	Seasonal external storage of compostable garden waste	450 x 450 x 450
140l wheelie bin	External storage and collection of mixed dry recycling by households with a kerbside collection.	1070 x 580 x 550
240l wheelie bin	External storage and collection of mixed dry recycling by households with a kerbside collection	1070 x 580 x 740
500l Eurobin	Communal external storage and collection of food recycling for households with communal collections	1145 x 1305 x 745
1100l Eurobin	Communal external storage and collection of mixed dry recycling and refuse for households with communal collections	1370 x 1260 x 990

(NB: This list, including the bin dimensions, is subject to change. It is only to be used for preliminary design purposes)

10.15 Residents should not be expected to carry their waste more than 30 metres in the horizontal distance from their front door to the bin store.

10.16 The enclosure or chamber should be large enough to allow clearance of 150 mm between each bin and the walls.

10.17 There should be space in front of the bins to allow residents to easily access the bins when depositing waste.

10.18 If multiple bins are used then there should be sufficient space to rotate the bins in between collections.

10.19 The walls should be made from an impervious, non-combustible material that ideally has a fire resistance of one hour when tested to BS 476-21.

10.20 If a gate or door is added to the enclosure or chamber it should be metal, hardwood or softwood clad with metal. Ideally it should have a fire resistance of 30 minutes when tested to BS 476-22. The door frame should allow clearance of 150 mm either side of the bin, when it is being pulled out for collection. The door frame should be rebated into the reveals of the opening. There should be a latch or clasp to hold the door open while the collection process takes place.

10.21 Arrangements should be made for the cleansing of the bin stores with water and disinfectant. A hose union tap should be installed for the water supply. Drainage should be by means of trapped gully connected to the foul sewer. The floor of the bin store area should have a suitable fall (no greater than 1:20) towards the drainage points.

10.22 If the chambers are inside the building they should have a light. The lighting should be a sealed bulkhead fitting (housings rated to IP65 in BS EN 60529:1992).

10.23 Internal bin chambers should have appropriate passive ventilators to allow air flow and prevent unpleasant odours. The ventilation must be fly and vermin proofed and near to either the roof or floor, but away from the windows of dwellings.

Access for collections

10.24 Collectors should not have to cart a bulk bin more than 10 metres from the point of storage to the collection vehicle.

10.25 The gradient of any path that the bulk bins have to be moved on should ideally be no more than 1:20, with a width of at least 2 metres, and the surface should be smooth.

10.26 If the storage area is raised above the area where the collection vehicle parks, then a dropped kerb is needed to safely move the bin to level of the collection vehicle.

10.27 The roadway the vehicle parks on should be able to accommodate the weight and size of a 26 tonne vehicle.

Non-residential and commercial buildings

10.28 Occupiers of commercial premises are legally obliged to make an arrangement with either the Council or a licensed waste carrier for the collection of the waste produced from the premises.

10.29 The volume of waste generated and thus the number and type of containers that a commercial development requires is ultimately dependent on the use of the building. Further information can be found on the Council's website: http://camden.gov.uk/ccm/content/environment/waste-and-recycling/commercial-waste/duty-of-care.en

10.30 Where an extension or change of use to an existing property is proposed, this may result in the removal of existing container storage areas, typically, to the rear of a property. This may be acceptable provided that an alternative storage area is designated as part of the proposed development, in line with this guidance. For external storage requirements, Figure 14: External Storage Requirements should be used.

Space requirements

- Internal collection and storage points should always be considered for all types of waste to maximise the amount of recyclable material.
- External storage must be provided in most cases. As a guide, approximately one cubic metre storage space is required for every 300-500sq m of commercial space (includes both recyclable and non-recyclable waste). Storage space must be designed to accommodate bins to hold this amount of waste, separated, and should be designed in consultation with the waste collection contractor.
- Waste and recyclables from residential and commercial components of a development must be stored separately, but they should be stored using the same container type to facilitate ease of collection.
- For a summary of external waste storage requirements see Figure 14

RESTAURANTS AND FOOD WASTE

Special consideration must be given to the location and nature of external storage areas. The volume of waste generated is generally high and has a high biodegradable content, therefore can potentially cause nuisance from odour, visual blight, and through attraction of vermin and scavengers. Storage of such waste should be in solid receptacles which ameliorate negative environmental impacts

Since 1st January 2006 developments that generate food waste have had to comply with the requirements of the Animal By-Products Regulations 2005. The Regulations place controls on the collection, handling, transport, storage and disposal of animal by-products, which includes catering waste. This may have implications for the design of the building and the waste containers required. Further information on The Animal By-Products Regulations 2005 should be sought from DEFRA – www.defra.gov.uk/animalh/by-prods/default.htm

Location Requirements

10.31 The table below summarises the key external storage requirements. In particular, the first six features apply to all developments regardless of size and type of units.

Figure 14. External storage requirements

	External storage area features:	**Less than 6 residential units**	**7 or more residential units**	**Non-residential (commercial) Development**
1	Should not be located near ground storey windows. They should be located within 10 metres of an external access.	✓	✓	✓
2	External storage areas and collection points must be as close as possible to, and preferably within 10 metres of, a place suitable for a collection vehicle to stop.	✓	✓	✓
3	Storage facilities must be at or near street level, and should be accessible via appropriately sized and graded ramps to allow bins to be wheeled to and from the collection point easily.	✓	✓	✓
4	Must be safe for users by being well lit and visible from public vantage points and nearby dwellings / tenancies.	✓	✓	✓
5	Should be unroofed, unless they are fully enclosed and secured (ideally inaccessible to animals).	✓	✓	✓
6	Should be accessible for collection purposes and not impede pedestrian or vehicular access on public thoroughfares or to and from buildings.	✓	✓	✓
7	Should be located as close to the front property boundary as possible, preferably behind the front boundary wall, without detracting from the street scene.		✓	
8	Consideration should be given to the: • allocation of additional external storage space in the future, e.g. additional bins, • composting facilities - in residential development with a garden or landscaping, • provision of onsite storage for bulky waste (i.e. furniture) items and potential opportunities for re-use of these items.		✓	
9	Should be in an enclosed chamber that can be accessed from outside the building.			✓
10	Large developments in areas that are deficient in recycling banks (“bring”) facilities will be expected to incorporate these facilities onsite for use by the general public - must be located in secure and easily accessible communal areas,		✓	✓

Additional Requirements

10.32 Applicants must provide details of storage for waste and recyclables in a proposed development as part of their application. These should be shown on the plans or in the application documents, where possible, and will form part of the approval

10.33 For schemes that create 7 or more dwellings, or includes a non-residential component, the applicant must consult Camden's Planning Department prior to making an application to determine the best means of storage and collection for the development. A statement describing the proposed waste storage and collection arrangements should be provided with the application.

10.34 For large proposals, or for proposals with complex waste separation or collection arrangements, a management plan might be required as a condition of approval.

10.35 Consideration should also be given to materials and finishes, and lighting of waste enclosures, to ensure that they are safe and secure, and do not present a fire hazard. These are dealt with in the Building Regulations.

Further information

Camden Street Environment Services	Applicants are advised to contact Camden Street Environment Services in the first instant prior to making an application to determine the appropriate means of storage and collection required for a proposal Address: Roy Shaw Centre 3-5 Cressy Road London NW3 2ND 020 7974 6914/5 www.camden.gov.uk/waste
Waste storage requirements	Waste Storage : A Guide for Developers of Commercial and Residential Premises in the London Borough of Camden, Camden Street Environment Services BS 5906 2005 Waste management in buildings – Code of practice, British Standards
Assistance with the identification of an appropriate company to deal with recyclable waste from the proposed development	Waste recycling www.wasterecycling.org.uk For free environmental guidance for small and medium-sized enterprises, see Environment Agency (NetRegs) www.environment-agency.gov.uk/netregs/default.aspx

Camden Planning Guidance

Housing

CPG 2

London Borough of Camden

July 2015

Camden

CPG2 Housing

1 Introduction

What is Camden Planning Guidance?

1.1 We have prepared this Camden Planning Guidance (CPG) 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 formally adopted CPG2 Housing on 6 April 2011 following statutory consultation. The Camden Planning Guidance documents (CPG1 to CPG8) replace Camden Planning Guidance 2006.

1.2 This document (CPG2 Housing) has been subject to two updates:

- 4 September 2013 following statutory consultation in November to December 2012, and
- 17 July 2015 following statutory consultation in March to April 2015.

Details on these updates and the consultation process are available at camden.gov.uk/cpg.

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

Housing in Camden

1.4 A key priority for the Council is to ensure that everyone has the opportunity to live in a decent home at a price they can afford in a community where they want to live. Camden is a very popular place to live, which means that average house prices are high and that the demand for affordable housing far outstrips supply.

1.5 The Local Development Framework seeks to make full use of Camden's capacity for housing to establish a plentiful supply and broad range of homes. In addition to meeting or exceeding Camden's housing targets, the Local Development Framework seeks to ensure that new homes are built to a high standard and provide well-designed accommodation that meets the needs of a range of occupiers.

What does this guidance cover?

1.6 This guidance provides information on all types of housing development within the borough. It provides specific guidance on:

- Affordable housing
- Student housing
- Residential Space standards
- Lifetime homes and wheelchair housing
- Development involving net loss of homes

1.7 It highlights the Council's requirements and guidelines which support the Local Development Framework policies:

- CS1 – Distribution of growth
- CS5 – Managing the impact of growth and development
- CS6 – Providing quality homes
- CS14 – Promoting high quality places and conserving our heritage
- DP1 – Mixed use development
- DP2 – Making full use of Camden's capacity for housing
- DP3 – Contributions to the supply of affordable housing
- DP4 – Minimising the loss of affordable housing
- DP5 – Homes of different sizes
- DP6 – Lifetime homes and wheelchair housing
- DP7 – Sheltered housing and care homes for older people
- DP8 – Accommodation for homeless people and vulnerable people
- DP9 – Student housing, bedsits and other housing with shared facilities
- DP26 – Managing the impact of development on occupiers and neighbours

4 Residential development standards

KEY MESSAGE

Development should provide high quality housing that provides secure, well-lit accommodation that has well-designed layouts and rooms.

4.1 This guidance relates to Camden Core Strategy policies CS5 – *Managing the impact of growth and development*, CS6 – *Providing quality homes* and CS14 – *Promoting high quality places and conserving our heritage* plus Camden Development Policy DP26 – *Managing the impact of developers on occupiers and neighbours*. In addition, homes of all tenures should meet lifetime homes standards in accordance with Development Policy DP6 and the CPG on Lifetime homes and wheelchair housing.

TENURE

Describes the ownership of a home and the relationship between a household and their home i.e. owner-occupied, shared ownership, private rented, social rented, etc.

4.2 The '**Access for all**' section in CPG6 **Amenity** sets out the Council's approach to providing buildings and spaces that are accessible to everyone. Reference should also be made to the **Design Excellence** section of CPG1 **Design** and to other sections of CPG2 **Housing**.

4.3 The space standards in this guide are minimum requirements and should not be taken as maxima. Housing which exceeds the minimum standards will always be encouraged.

4.4 This guidance applies to planning applications involving the provision of residential accommodation and residential conversions, extensions and change of use. In cases involving residential conversions of listed buildings a sensitive and imaginative approach to achieving these standards may need to be taken.

MAYOR'S HOUSING SPG

The Mayor has prepared a draft replacement housing SPG. The Mayor's draft SPG supports the emerging replacement London Plan, which makes provision for residential standards to be applied across all tenures of development. Both the draft replacement London Plan and the draft replacement Housing SPG are expected to be adopted in autumn 2011.

In addition, we anticipate that housing with public subsidy in London will have to comply with the Mayor's London Housing Design Guide from April 2011 (published in interim form in August 2010). The Mayor is seeking to adopt the London Housing Design Guide standards for all housing tenures in London through the London Plan.

4.5 Camden's Core Strategy indicates that we will seek a range of self-contained homes to meet identified dwelling size priorities. These

priorities are set out in detail in our Development Policies document – see particularly policy DP5 and paragraph 5.4.

Guidance on residential development standards

General principles

4.6 All residential developments in the Borough are required to be designed and built to create high quality homes:

- All newly created dwellings for households of 2 or more people should be self-contained (applies to homes in Use Class C3, but does not apply to care homes for elderly or vulnerable people, student housing, bedsits, or other Houses in Multiple Occupation (HMOs)).
- Each dwelling should have its own secure private entrance which leads either directly from the street or off a common entrance hall – the number of entrances off one corridor should be limited.

SELF-CONTAINED

Accommodation with its own kitchen, bathroom and toilet for the sole use of occupants behind a separate front door.

HOUSES IN MULTIPLE OCCUPATION (HMO)

HMOs are flats or houses permanently occupied by more than one household, where each household does not have exclusive access to all cooking, washing and toilet facilities behind a locked front door.

Layout

4.7 There should usually be a permanent partition between eating and sleeping areas. Kitchens and living rooms that are permanently separated are preferable. However, combined kitchen and living areas are considered acceptable as long as the floor area is sufficient to allow for the greater range of activities that will take place in them.

Rooms

- All rooms should be able to function for the purpose for the purpose for which they are intended.
- They should have an adequate size, shape, door arrangement, height, insulation for noise and vibration and natural lighting and ventilation.
- They should lead off a hallway or lobby so that it is possible to access any habitable room without passing through another habitable room, although Building Regulations Part B - Fire Safety allow inner rooms provided they meet certain criteria.

HABITABLE ROOM

A room that is capable of being used as primary living space. Generally consists of living rooms, dining rooms, large kitchen/diners and large bedrooms

Flexible construction/layout

4.8 In addition, wherever practical dwellings should be designed to enable greater flexibly in construction design so that they can be capable of some form of extension or adaptation in order to accommodate changing lifestyles and family needs or other social use.

4.9 For example design features that could be considered, include:

- open plan layouts or generic layouts/floor plans;
- avoiding load bearing internal walls;
- easily accessible services and utilities e.g. a central accessible core or accessible floor/ceiling cavity.
- For further examples see: By design urban design in the planning system: towards better practice: www.communities.gov.uk/publications/planningandbuilding/bydesignurban by DETR (2000) (accessed April 2011).

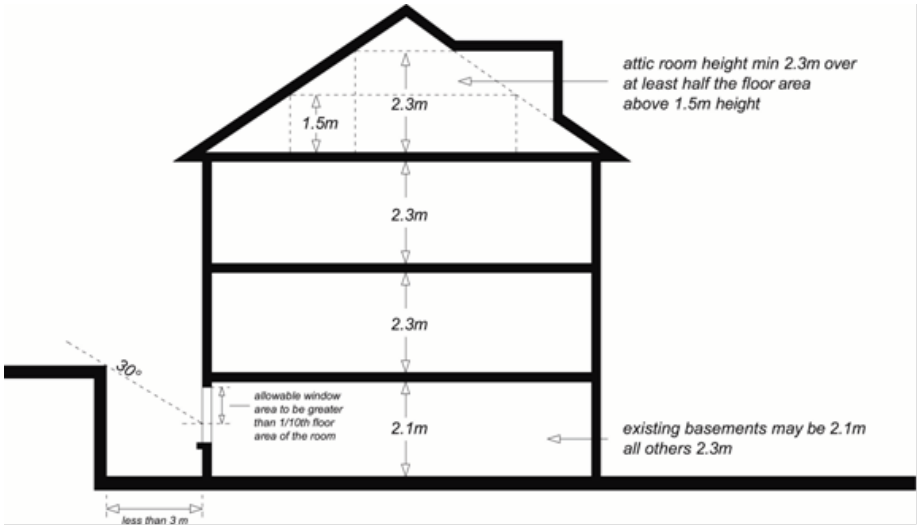
Internal space standards

Ceiling heights

4.10 All habitable rooms should have minimum headroom of 2.3 metres. The exceptions are habitable rooms in existing basements, which may have 2.1 metres headroom, and habitable rooms in attics which should have a minimum room height of 2.3 metres over at least half of the floor area (not including any floor space where the ceiling height is less than 1.5 metres). See Figure 9.

4.11 Any floor area where the ceiling height is less than 1.5 metres will not count towards the habitable floorspace. We will also consider the suitability of floor to ceiling heights in relation to context of building and how size or windows and floor to ceiling heights impact design. Please also refer to CPG1 **Design** (see particularly the sections on '**Design Excellence**' and '**Roofs, terraces and balconies**') and CPG4 **Basements**.

Figure 9. Ceiling heights and natural light for basements



Space and room sizes

4.12 Although planning cannot control the precise internal layout of individual proposals, it is important to ensure that dwellings are capable of providing a suitable layout and adequate room sizes that reflect the use and type of accommodation. The Council will be flexible in the application of these guidelines in order to respond to site-specific circumstances.

4.13 The Council has set minimum space standards to ensure rooms are large enough to take on varying uses. Space standards relate to the occupancy of a home rather than number of bedrooms and the developer will be required to state the number of occupants each dwelling has been designed to accommodate. The occupancy of housing at the time of its first occupation is not a reliable prediction of future levels of occupancy over the lifetime of a home. The only sensible assessment of occupancy is therefore the designed level of occupancy.

4.14 The overall internal floorspace in new self-contained dwellings (excluding communal lobbies and staircases) should normally meet or exceed the minimum standards set out in the following table.

Number of Persons	1	2	3	4	5	6
Minimum floorspace (sq m)	32	48	61	75	84	93

4.15 For dwellings designed for more than 6 people, allow approximately 10sq m. per extra person. In order to successfully to provide ease of movement and storage space for wheelchair users, the council will normally wheelchair housing dwellings to exceed the minimum floorspace standards. Please also refer to the section on ‘Lifetime homes and wheelchair housing’ in this CPG document.

4.16 The Council will expect bedrooms to meet or exceed the following minimum sizes:

- First and double bedrooms - 11.0 sq m
- Single bedrooms - 6.5 sq m

4.17 The Council's Private Sector Housing Team has produced specific minimum standards for Houses in Multiple Occupation (HMO's) and hostels which includes guidance on room sizes and facilities. Schemes for bedsits, shared houses and flats and hostels should be prepared with reference to these standards. These can be viewed on Camden's website www.camden.gov.uk/housing (see Private Sector Housing/ Private Housing Standards pages).

4.18 Self-contained homes providing a floorspace below the minimum standards may be considered in exceptional circumstances, for example to reduce the cost of Intermediate Housing to the occupier, however their acceptability will depend on other aspects of the development proposed. Sympathetic consideration may be given where a proposal meets a number of the criteria below:

- Dwellings are targeted at, and affordable to, groups identified by the Borough as being in need.
- External amenity space is provided
- A limited number of dwellings are accessed from each entry point and corridor (ideally 8 or fewer, unless controlled by a concierge or a CCTV system allowing clear facial identification).
- Security controlled access is provided where a larger number of units are accessed from one point.
- Where cluster flats are provided in response to a demonstrable demand (i.e. there are good indications that properties will not be hard to let to the targeted tenants), a limited number of flats are clustered into each dwelling (ideally 8 or fewer) (cluster flats are bedsits with a communal kitchen/eating area).
- A laundrette or communal laundry is provided (sufficient to cater for forecast resident demand at periods of peak usage) where individual dwellings cannot accommodate a washing machine - subject to keeping service and management charges at an acceptable level. The Council will take into account any existing commercial laundrettes that would be convenient for residents.

Storage and utility spaces

4.19 All accommodation should have sufficient internal storage space to meet the likely needs and requirements of potential occupiers. Dwelling layouts should make suitable provision:

- for washing machines and drying clothes;
- a storage cupboard with a minimum floor area of 0.8 sq m should be provided for 1- and 2-person dwellings;
- for each additional occupant, a minimum of 0.15 sq m storage area should be provided;

- storage for bicycles and prams should also be provided, located at the ground or lowest level of the dwelling, preferably accessed from a hall or lobby area;
- for waste and recycling bins, reference should also be made to the section '**Waste and Recycling Storage**' in CPG1 **Design**.

Daylight, sunlight and privacy

4.20 Residential developments should maximise sunlight and daylight, both within the new development and to neighbouring properties whilst minimising overshadowing or blocking of light to adjoining properties. Maximising sunlight and daylight also helps to make a building energy efficient by reducing the need for electric light and meeting some of the heating requirements through solar gain. The orientation of buildings can maximise passive solar gain to keep buildings warm in winter and cool in summer.

PASSIVE SOLAR GAIN

Design to optimise the amount of the suns energy that heats and lights a building naturally.

4.21 All habitable rooms should have access to natural daylight. Windows in rooms should be designed to take advantage of natural sunlight, safety and security, visual interest and ventilation. Developments should meet site layout requirements set out in the Building Research Establishment (BRE) Site Layout for Daylight and Sunlight – A Guide to Good Practice (1991).

4.22 Overall the internal layout design should seek to ensure the main living room and other frequently used rooms are on the south side and rooms that benefit less from sunlight (bathrooms, utility rooms) on the north side. Kitchens are better positioned on the north side to avoid excessive heat gain.

Minimum requirements:

4.23 In particular the following minimum requirements need to be met to avoid the unacceptable loss of daylight and/or sunlight resulting from a development, including new build, extensions and conversions. For example:

- Each dwelling in a development should have at least one habitable room with a window facing within 30 degrees of south in order to make the most of solar gain through passive solar energy;
- Rooms on south facing walls should always have windows, south facing windows and walls should be designed, sized and/or shaded in summer to prevent overheating. Appropriate shading might be achieved by:
  - mature deciduous trees located so as to shade the structure
  - eaves or overhangs that protect from sun that is high in the sky only

  - external shutters or blinds that can be operated by the occupant;
- External shading should be provided for western facing windows and outdoor spaces to minimise overheating in summer. Deciduous trees provide the best shade for this purpose;
- Windows on north facing walls should be sized to prevent heat loss but allow sufficient daylight;
- All habitable rooms, including basements, must have an external window with an area of at least 1/10 of the floor area of the room;
- An area of 1/20 of the floor area of the room must be able to be opened to provide natural ventilation;
- Windows to atriums will be acceptable as external windows in exceptional circumstances only;
- Passive ventilation should be favoured where possible and mechanically assisted ventilation should be silent in operation.

4.24 For further guidance reference should be made to 'The Code for Sustainable Homes' which provides technical guidance on designing for adequate internal daylighting and requires daylight levels to be calculated using the BRE assessment method. Reference should also be made to CPG3 **Sustainability**.

Privacy and security

4.25 House and flat developments should be arranged to safeguard the amenity and privacy of occupiers and neighbours.

- New development, extensions, alterations and conversions should not subject neighbours to unacceptable noise disturbance, overlooking or loss of security.
- Developments should seek to improve community safety and crime prevention. This may include:
  - designing developments so that open spaces are overlooked by windows, avoiding dark secluded areas and buildings face onto streets.
  - obtaining Secured by Design certification – please refer to the '**Designing safer environments**' section of CPG1 **Design**.

Basements

4.26 All rooms within a basement should be able to function for the purpose of which they are intended. They should have an adequate size, shape, door arrangement, and height, insulation from noise and vibration, and access to natural lighting, ventilation and privacy (similar to the standards set out above). Four key considerations are set out here.

- Natural light - to ensure that adequate natural light is provided to habitable rooms, walls or structures (including the sides of lightwells) should not obstruct windows by being closer than 3 metres. Where

this is not achievable, a sufficient proportion of the glazing should be above the point on the window(s) from which a line can be drawn at 30° above the horizontal to pass the top of obstruction. The glazed area above the point should total not less than 10% of the floor area of the room. See Figure 9.

- Forecourt parking – nearby vehicles can also restrict light to basements, and consideration should be given to any further obstruction from vehicles parked on the forecourt that may present a barrier to light serving basement windows.
- Means of escape - basements should be provided with either a door or suitably sized window allowing access to a place of safety that gives access to the external ground level, or with a protected escape route within the building leading to a final exit at ground level.
- Lightwells - stairs, ladders and gates in any railings around a lightwell that are required for means of escape should be designed to be as discreet as possible and should have regard to the character of the building and surrounding area.

4.27 Further detailed guidance on basements is contained within CPG4 **Basements**.

Noise and soundproofing

4.28 The layout and placement of rooms within the building should be carefully considered at an early stage in the design process to limit the impact of external noise on bedrooms and living rooms. The impact of noise should also be considered in the placement of private external spaces. Detailed guidance is provided in the '**Noise and vibration**' section of CPG6 **Amenity** and . The following requirements must be met.

- Internal layouts of dwellings should be designed to reduce the problem of noise disturbance between adjoining properties by using 'vertical stacking', i.e. placing living room above living room and bedrooms above bedrooms etc.
- Bedrooms should not be placed above, below or next to potentially noisy rooms, circulation areas of adjacent dwellings or noisy equipment, such as lifts.
- Windows should be located away from busy roads and railway lines/tracks to minimise noise and pollution and vibration.
- The layout of adjacent dwellings and the location of lifts, plant rooms and circulation spaces should seek to limit the transmission of noise to sound sensitive rooms within dwellings.
- Party walls and floors of flats created by conversion must be adequately soundproofed.
- All housing should be built with acoustic insulation and tested to current Building Regulations standards, but acoustic insulation should not be relied upon as the only means of limiting noise.

- Minimum levels of soundproofing are set out in the Building Regulations Part E - Resistance to the passage of sound. Levels of sound insulation above the minimum are encouraged.
- Further advice is given in the London Plan SPG on Sustainable Design and Construction

Outdoor amenity space

4.29 Outdoor residential amenity space can be provided in the form of private garden space, balconies, terraces, roof gardens or as communal amenity space. Where practical the following requirements should be met.

Private outdoor amenity space:

- All new dwellings should provide access to some form of private outdoor amenity space, e.g. balconies, roof terraces or communal gardens.
- Private gardens should be allocated to family dwellings.
- Where provided, gardens should receive adequate daylight, even in the winter.
- The access to private amenity space should be level and should be from the main living space.
- Balconies should have a depth of not less than 1.5 metres and should have level access from the home.
- Balconies and terraces should be located or designed so that they do not result in the loss of privacy to existing residential properties or any other sensitive uses.
- Balconies should preferably be located next to a dining or living space and should receive direct sunlight (they can be designed to project from main building line or be recessed).

4.30 In some instances, it is accepted that existing buildings may not be able to provide balconies or roof terraces, however, external amenity space i.e. access to communal gardens should still be provided where possible. See CPG1 **Design** for further guidance on '**Roofs, terraces and balconies**'.

Communal amenity space:

- Space should meet the requirements of the occupiers of the building and be wheelchair accessible. For example, if there are a large proportion of family units, child and young person's facilities should be included in the communal space. The council will use the Mayor of London's 'Providing children's and young people's play and informal recreation SPG' (March 2008) when calculating requirements: http://static.london.gov.uk/mayor/strategies/sds/spg-children-recreation.jsp (accessed April 2011).
- Space should be well designed so that residents have a sense of ownership of the space, which will encourage its use.

- Space should be located sensitively so that it is overlooked by surrounding development and secure for residents.
- Space should be designed to take advantage of direct sunlight.
- Space should be designed to minimise disturbance to occupiers and neighbours, e.g. by being sheltered from busy roads, by being located in the rear of the buildings, back to back, behind perimeter blocks or in courtyards.
- Landscaping and facilities provided for the space should be of a high quality and have suitable management arrangements in place.

Further information

GLA Housing Design Guide	The Mayor's London Housing Design Guide from April 2011 (August 2010) provides detailed guidance on housing design in London http://www.london.gov.uk/who-runs-london/mayor/publications/housing/london-housing-design-guide (accessed April 2011)
Lifetime Homes and Wheelchair Housing Standards	In addition to the above residential standards, most residential schemes will also need to meet specific requirements for Lifetime Homes and Wheelchair Housing Standards: • For further guidance on how to meet Camden's requirements refer to CPG on Lifetime homes and wheelchair housing. • For good practice guidance specifically on Lifetime Homes www.lifetimehomes.org.uk
Daylight and Sunlight	For good practice advice on overshadowing and providing daylight and sunlight to buildings, refer to the widely used BRE Report "Site Layout Design for Daylight and Sunlight; a guide to good practice". It provides specific guidance on: • Providing good daylighting and sunlighting within a new development • Safeguarding sunlight and daylight within existing buildings nearby • Protection of daylighting of adjoining land for future development • Passive solar site layout • Sunlighting of gardens and amenity areas
Sustainability	The Council will require all that all buildings are designed to be sustainable, thus reference should also be made to CPG3 **Sustainability**, in particular, the 'Code for Sustainable Homes' sub-section in 'Sustainability assessment tools'.

5 Lifetime Homes and Wheelchair Housing

KEY MESSAGES

- All residential development should meet the 16 criteria that form the Lifetime Homes standards.
- The standards will be applied flexibly to existing buildings, but applicants should justify failure to meet any of the criteria.
- 10% of market housing development should meet wheelchair housing standards, or should meet the 13 key Habinteg wheelchair housing criteria so that they can be easily adapted to meet wheelchair housing standards.
- 10% of affordable housing development should be designed, built and fitted out to meet Wheelchair Housing standards in full.

What does this section cover?

5.1 This section provides advice on how proposals can made be accessible to all by incorporating "lifetime home" standards and creating wheelchair accessible homes. It supplements Camden Development Policies policy DP6 – *Lifetime homes & wheelchair housing*, as well as DP29 – *Improving Access* and Camden Core Strategy policy CS6 - *Providing quality homes*.

5.2 In line with policy DP6 all new residential development will be expected to meet the following standards.

LIFETIME HOMES

All housing developments should meet lifetime homes standards. A lifetime home is an ordinary home incorporating 16 design features for accessible living. These make homes easier to occupy for the entire life cycle of a household, whether its members are young, old, healthy or ill.

WHEELCHAIR HOUSING

A minimum of 10% of new housing should either meet wheelchair housing standards, or be easily adapted to meet them. Wheelchair housing provides independence and quality of life for wheelchair users and should be tailor-made for their specific needs.

5.3 In addition, the following building regulations should be considered where appropriate:

- Part M of the Building Regulations (2004 edition) – this sets minimum requirements for building standards in public buildings and new dwellings only.
- BS 8300: 2009: Design of buildings and their approaches to meet the needs of disabled people – good practice guidance that covers non-domestic buildings and details on specific building types.

5.4 This planning guidance is applicable to all development. It applies equally to new build, refurbished, converted, extended and altered

premises. It should also be read in conjunction with the Council's 'Camden Wheelchair Housing Design Brief 2010'.

5.5 The application of Lifetime Homes and Wheelchair Housing Standards varies depending on the type of dwelling as follows (see also Development Policy DP6 and supporting paragraphs 6.7 to 6.9):

- Lifetime Homes standards apply to all developments of self-contained housing (but does not apply to hotels or student housing);
- Wheelchair Housing Standards apply to all developments providing 10 or more self-contained homes and to student housing;
- both sets of standards apply to housing in mixed-use developments as well as purely residential developments;
- both sets of standards apply to new build development, conversions, reconfigurations and changes of use; and
- the requirements will be applied flexibly to take account of the circumstances of existing buildings, particularly those that are listed. English Heritage has produced guidance on "Easy Access to Historic Buildings".

What is the guidance on Lifetime homes?

5.6 Lifetime homes are ordinary homes built incorporating 16 design features for accessible living. These features ensure a good level of accessibility from the outset, but they also allow a dwelling to be easily adapted for even higher levels of accessibility in the future should the need arise eg to cater for raising young children and declining mobility in old age.

5.7 Lifetime homes standards are not designed specifically for disabled people or wheelchair users but allow for accessibility features to be easily incorporated at a later date if needed. There are separate Wheelchair Housing standards to guide the design of homes to meet the specific needs of people who are long-term wheelchair users (see paragraph 5.15)

5.8 By planning for accessibility at the earliest stage, the Lifetime Homes features can be incorporated into the design of a dwelling without significant additional cost and can result in major cost savings to the building's occupants in the long run (for a discussion of cost benefits and savings of Lifetime Homes, refer to 'Costing Lifetime Homes' by the Joseph Rowntree Foundation.)

5.9 The table on the following pages gives key features of the 16 criteria forming the Lifetime Homes standards. These came into effect on 5 July 2010. We advise developers to refer to www.lifetimehomes.org.uk for additional and detailed guidance on how specific requirements can be met, and also for news of any future revisions.

Lifetime Homes – Features

LIFETIME HOMES CRITERIA	KEY OBJECTIVES	DETAILED CRITERIA
1. Parking (width or widening capability)	Provide, or enable by cost effective adaptation, parking that makes getting into and out of the vehicle as convenient as possible for the widest range of people (including those with reduced mobility and/or those with children). General Note: Criterion 1 is not relevant to developments that do not contain any parking provision (for specific requirements refer to **Camden Development Policy – DP18 Parking standards** and limiting the availability of car parking - which specifically discourages on-site parking).	a) 'On plot' (non-communal) parking: Where a dwelling has car parking within its individual plot (or title) boundary, at least one parking space length should be capable of enlargement to achieve a minimum width of 3300mm. b) Communal or shared parking: Where parking is provided by communal or shared bays, spaces should be provided with a width of 3300mm and in accordance with the specification given in Appendix 2 on page 65 or www.lifetimehomes.org.uk.
2. Approach to dwelling from parking (distance, gradients and widths)	Enable convenient movement between the vehicle and dwelling for the widest range of people, including those with reduced mobility and/or those carrying children or shopping.	The distance from the car parking space of Criterion 1 to the dwelling entrance (or relevant block entrance or lift core), should be kept to a minimum and be level or gently sloping. The distance from visitors parking to relevant entrances should be as short as practicable and be level or gently sloping.
3. Approach to all entrances	Enable, as far as practicable, convenient movement along other approach routes to dwellings (in addition to the principal approach from a vehicle required by Criterion 2) for the widest range of people.	The approach to all entrances should preferably be level or gently sloping, and in accordance with the specification given at www.lifetimehomes.org.uk
4. Entrances	Enable ease of use of all entrances for the widest range of people. Note: For the purpose of requirements d) and e) of this Criterion, main entrances are deemed to be: the front door to an individual dwelling, the main communal entrance door to a block of dwellings, plus any other entrance door associated with the approach route from parking required by Criterion 2.	All entrances should: a) Be illuminated b) Have level access over the threshold; and c) Have effective clear opening widths and nibs as specified given at www.lifetimehomes.org.uk d) In addition, main entrances should also: e) Have adequate weather protection* f) Have a level external landing.*
5. Communal stairs and lifts	Enable access to dwellings above the entrance level to as many people as possible.	a) Communal Stairs Principal access stairs should provide easy access in accordance with the specification given at www.lifetimehomes.org.uk, regardless of whether or not a lift is provided. b) Communal Lifts Where a dwelling is reached by a lift, it should be fully accessible in accordance with the specification given at www.lifetimehomes.org.uk Note: provision of a lift is not a Lifetime Homes requirement, but is recommended where dwellings are not entered at the same level as the main block entrance.
6. Internal doorways and hallways	Enable convenient movement in hallways and through doorways.	Movement in hallways and through doorways should be as convenient to the widest range of people, including those using mobility aids or wheelchairs, and those moving furniture or other objects. As a general principle, narrower hallways and landings will need wider doorways in their side walls. The width of doorways and hallways should conform to the specification given at www.lifetimehomes.org.uk.
7. Circulation Space	Enable convenient movement in rooms for as many people as possible.	There should be space for turning a wheelchair in dining areas and living rooms and basic circulation space for wheelchair users elsewhere.

Lifetime Homes – Features (continued)

LIFETIME HOMES CRITERIA	KEY OBJECTIVES	DETAILED CRITERIA
8. Entrance level living space	Provide accessible socialising space for visitors less able to use stairs.	A living room / living space should be provided on the entrance level of every dwelling (see Appendix 1 on page 65 or www.lifetimehomes.org.uk for definition of 'entrance level'). Note: Entrance level generally means the storey containing the entrance door to the individual dwelling. It may refer to the first storey that contains a room (habitable or non-habitable) if the entrance door leads directly to an 'easy-going' stair.
9. Potential for entrance level bed-space	Provide space for a member of the household to sleep on the entrance level if they are temporarily unable to use stairs	In dwellings with two or more storeys, with no permanent bedroom on the entrance level, there should be space on the entrance level that could be used as a convenient temporary bed-space (see Appendix 1 on page 65 or www.lifetimehomes.org.uk for definition of 'entrance level').
10. Entrance level toilet and shower drainage	Provide an accessible toilet and potential showering facilities for: a) any member of the household using the temporary entrance level bed space of Criterion 9, and: b) visitors unable to use stairs.	Where an accessible bathroom, in accordance with Criterion 14, is not provided on the entrance level of a dwelling, the entrance level should have an accessible toilet compartment, with potential for a shower to be installed – as detailed in the specification given at (see Appendix 1 on page 65 or www.lifetimehomes.org.uk for definition of 'entrance level')
11. Toilet and bathroom walls	Ensure future provision of grab rails is possible, to assist with independent use of toilet and bathroom facilities.	Walls in all bathrooms and toilet compartments should be capable of firm fixing and support for adaptations such as grab rails.
12. Stairs and potential through-floor lift in dwelling	Enable access to storeys above the entrance level for the widest range of households.	The design within a dwelling of two or more storeys should incorporate both: a) Potential for stair lift installation; and b) A suitable identified space for a through-the–floor lift from the entrance level to a storey containing a main bedroom and a bathroom satisfying Criterion 14.
13. Potential for fitting of hoists and bedroom / bathroom relationship	Assist with independent living by enabling convenient movement between bedroom and bathroom facilities for a wide range of people.	Structure above a main bedroom and bathroom ceilings should be capable of supporting ceiling hoists and the design should provide a reasonable route between this bedroom and the bathroom.
14. Bathrooms	Provide an accessible bathroom that has ease of access to its facilities from the outset and potential for simple adaptation to provide for different needs in the future.	An accessible bathroom, providing ease of access in accordance with the specification given at www.lifetimehomes.org.uk should be provided in every dwelling on the same storey as a main bedroom.
15. Glazing and window handle heights	Enable people to have a reasonable line of sight from a seated position in the living room and to use at least one window for ventilation in each room.	Windows in the principal living space (typically the living room), should allow people to see out when seated. In addition, at least one opening light in each habitable room should be approachable and usable by a wide range of people – including those with restricted movement and reach. Note: In kitchens areas or bathrooms with only one window situated behind kitchen units or bathroom fittings, the requirement for a potential clear approach space to that window need not apply. However, the window handle height/control requirement remains applicable. Any other window within the kitchen area or bathroom, not behind fittings, is required to satisfy both the approach and window handle/control height requirements.
16. Location of service controls	Locate regularly used service controls, or those needed in an emergency, so that they are usable by a wide range of household members - including those with restricted movement and limited reach.	Service controls should be within a height band of 450mm to1200mm from the floor and at least 300mm away from any internal room corner.

APPENDIX 1 - DEFINITION OF 'ENTRANCE LEVEL' FOR THE PURPOSE OF LIFETIME HOMES CRITERIA

The entrance level of a dwelling for the purposes of the Lifetime Homes Criteria is generally deemed to be the storey containing the main entrance door as defined by Criterion 4. This will usually be the ground floor of a house, or the storey containing the entrance door of a flat approached a communal hall, stair, or lift.

Where there are no rooms (habitable or non-habitable) on the storey containing the main entrance door (e.g. most flats over garages, some flats over shops, some duplexes and some townhouses), the first storey level containing a habitable or non-habitable room can be considered the 'entrance level' if this storey is reached by an 'easy going' stair with maximum risers 170mm, minimum goings 250mm, and a minimum width of 900mm measured 450mm above the pitch line.

APPENDIX 2 - COMMUNAL CAR PARKING MANAGEMENT PLANS

Where communal parking is provided, the Council may require a Parking Management Plan to ensure that adequate parking space is available for disabled people. The parking management plan should include a mechanism to ensure that the supply and demand of wider bays / blue badge bays are regularly monitored and provision reviewed, to ensure that provision equates to any change in the demand from disabled residents and visitors and that the bays are effectively enforced to stop abuse by non blue badge holders. The needs of residents who occupy a home designated for wheelchair users and any residents who hold a blue badge and occupy any other home should be addressed.

Key requirements for lifetime homes standards:

5.10 As the Building Regulations do not currently require dwellings to be built to lifetime homes standards it is necessary to check compliance at the planning application stage. Therefore planning applications for new housing are expected to include information in the design statement and access statement showing how the proposed development addresses the 16 Lifetime Homes Criteria. Information on access statements can be found in the '**Access for all**' section of CPG6 **Amenity**.

5.11 Applicants should specifically submit a schedule setting out how each of the 16 criteria will be met. Plans should particularly include sufficient detail of the following key internal space criteria, such as:

- 6 - Internal doorways and hallways
- 7 - all necessary circulation space within and between rooms
- 8 - an entrance level living space
- 9 – potential for an entrance level space that can be used as a bed-space
- 10 - entrance level toilet and shower drainage at entrance level
- 12 – stairs and potential through-floor lift in dwelling
- 14 - an accessible bathroom

5.12 In the case of conversion of an existing building or other circumstances of a development may mean it may not be possible for new homes to meet all 16 criteria. In this case, the development should still seek to meet Lifetime Homes Standards as far as possible to maximise accessibility and demonstrate to the Council's satisfaction why it is not possible to meet particular criteria.

5.13 Applicants should include a schedule within the design and access statement for their development that sets out:

- how each of the 16 Lifetime Homes criteria will be met;
- identifying any Lifetime Homes criteria that will not be met;
- demonstrating that these criteria cannot be met, or otherwise justifying failure to meet them.

5.14 The Council will expect developments involving listed buildings to incorporate accessible features. English Heritage has produced guidance on "Easy Access to Historic Buildings". This guidance document should be referred to for further advice.

What is the guidance on wheelchair housing?

5.15 In addition to requiring residential development to meet Lifetime Homes standards above, policy DP6 requires a minimum of 10% of all new housing designed to be suitable for permanent occupation by wheelchair users or be easily adapted to meet them. Wheelchair housing standards go significantly beyond Lifetime Homes standards, which do not provide for permanent wheelchair occupation.

5.16 The 10% requirement will be applied individually to each tenure within a given development scheme (ie applied to each affordability category whether market housing, social rented housing or intermediate affordable housing).

5.17 We may agree to increase the percentage of social rented wheelchair homes and decrease the percentage of intermediate affordable wheelchair homes (or vice versa) where this will better enable us to meet the needs of identified future occupiers.

For market housing:

5.18 We will encourage the provision of fully fitted out Wheelchair Housing, but will accept provision of 10% homes designed to be easily adaptable to meet the standards.

5.19 New homes that are capable of being easily adaptable should incorporate the key space criteria set out in the Habinteg Wheelchair Housing Design Guide (see Figure 10 below) and ensure that any fittings and fixtures required at a later date can be easily provided without enlarging or structurally altering the home.

For affordable housing:

5.20 The 10% wheelchair requirement should be designed, built and fitted out to meet Wheelchair Housing standards in full. These affordable homes should comply with the Camden Wheelchair Housing Design Brief 2010 produced by the Council.

5.21 As far as possible, the Council will seek to identify future occupiers of affordable wheelchair housing and seek to ensure that it is tailored to their needs.

5.22 The Council's Housing Partnerships Team should be consulted for any specific design requirements required to meet the needs of future occupiers of affordable wheelchair housing (see Further Information at the end of this guidance).

5.23 The Council may use its affordable housing fund to support the creation of fully-fitted out affordable wheelchair housing.

Habinteg Wheelchair Housing Design Guide:

5.24 All wheelchair housing should be designed in accordance with the standards set out in the nationally recognised Habinteg Wheelchair Housing Design Guide (WHDG).

5.25 The standards include guidance for main entrances, doors, hallways, storage space, bedroom space, windows, etc. Below are the 13 key space criteria relating to the internal layouts of individual dwellings. The main entrances and common parts should be designed in accordance with the relevant guidance (WHDG p30 & 31)

Figure 10. Summary of the 13 key Habinteg wheelchair housing criteria

1. Dwellings should normally be designed on one level storey. Where a dwelling is arranged in two or more floors a vertical rise lift serving all floors must be provided. (WHDG p63)
2. The entrance door to the dwelling should provide a minimum clear opening width of 800mm (when accessed head on) or 825mm (when the approach is not head on). It should be weather protected and lit and be provided with a 300mm clear space to the leading edge (pull side of the door) and a 200mm clear space on the push side. (WHDG p36)
3. The entrance hallway requires a manoeuvring space 1500 x 1800mm (enabling an occupier to open and close the door and turn into the living space) (WHDG p37 & 44)
4. A space to store and charge an electric wheelchair should be provided as an extension to the circulation space of the dwelling. Care should be taken to ensure that storage of the chair does not restrict the minimum clear effective width of any corridor. Consideration should be given to how the facility is accessed and used. To guarantee sufficient manoeuvring space an overall space of 1100 x 1700mm should be provided. (WHDG p45)
5. All halls and corridors (facilitating 90º turns) should have a clear unobstructed width of at least 1200mm and internal door clear opening widths of at least 800mm. To facilitate a 180º turn a corridor with of 1500mm is required. (WHDG p57)
6. All internal doors require a 300mm clear space to the leading edge (pull side of the door) and a 200mm clear space on the push side. (WHDG p58)
7. A 1500 x 1800mm turning circle should be provided in the kitchen. (WHDG p7)
8. In all bedrooms a 1200 x 1200mm clear space should be provided to one side of the bed, 1000mm circulation is required to the other sides and the foot of each bed. In single bedrooms access to one side of the bed is acceptable. All furniture and window controls should be reachable and usable. (WHDG p88)
9. In all bathrooms space should be provided to facilitate frontal, side and oblique transfer to the toilet. The bathrooms and toilets should normally have outward opening doors or provide a clear space of 1100mm between the door swing and any fixture or fitting. (WHDG p78)
10. All bathrooms should provide a 1500 x 1500mm square manoeuvring space, clear of all fittings (WHDG p78)
11. In all bathrooms a drainage gully and services to facilitate the installation of a level entry shower (1000 x 1000mm) should be provided. (WHDG p85)
12. A clear ceiling-track hoist route (suitably constructed and with a ready power supply) should be provided between the bathroom and the main bedroom (WHDG p80 & 15)
13. Windows should be able to opened from a seated position. Controls should be located no higher that 1000mm above finished floor level and suitable for use by people with limited manual dexterity (WHDG p99)

For the latest edition of these standards, please refer to: “Wheelchair housing design guide” edited by Stephen Thorpe and available from Habinteg Housing Association: www.habinteg.org.uk/pages/whdg.html (available from BREbookshop.com ISBN 1860818978)

Key requirements for wheelchair housing standards

5.26 Planning applications will need to show which units are wheelchair accessible and how they are wheelchair accessible or how they can be easily adapted to be suitable for wheelchair users. Full wheelchair housing standards should be met within affordable housing and will be negotiated within market housing on a case by case basis.

5.27 Applications for planning permission should show full details of how 10% of homes will comply with wheelchair housing standards or, in the case of market housing, design features that ensure than 10% of homes are easily adaptable to meet the standards.

5.28 Plans should identify all wheelchair housing (or homes easily adaptable to the standards) and applications should include drawings setting out how the 13 key space criteria identified in Figure 10 will be met.

5.29 Applicants should include a schedule within the design and access statement for their development that sets out:

- how each of the 13 key space criteria will be met;
- identifying any key space criteria that will not be met;
- demonstrating that these criteria cannot be met, or otherwise justifying failure to meet them.

5.30 In the case of conversion of an existing building, we will apply the 10% requirement flexibly to take into account any constraints that would prevent the inclusion of entrances and internal spaces suitable for a wheelchair user.

5.31 For further design guidance on wheelchair housing please refer to the Mayor of London's SPG: 'Accessible London – Achieving an Inclusive Environment' (April 2004) - http://static.london.gov.uk/mayor/strategies/sds/accessible_london.jsp (accessed April 2011).

Additional considerations

Requirements in other residential buildings

5.32 In general, mobility difficulties and the need to provide for wheelchair users should be considered in the design of all forms of housing. The type of provision will need to be individually tailored to suit the nature of the facility and the likely needs of future occupiers.

5.33 In relation to student housing there is no requirement to meet Lifetime Homes standards, however, 10% of student bedrooms/ study flats (together with supporting communal spaces) are expected to meet wheelchair standards. Suitable design layouts are included in Approved Document M (known as Part M) of the Building Regulations.

Key building regulation requirements

5.34 The accessibility of accommodation should be considered whether the proposal is for new build, conversions or refurbishments.

5.35 Part M of the Building Regulations sets minimum accessibility requirements for building standards in new residential dwellings and is required in addition to Lifetime Homes and wheelchair accessible housing standards being met. They apply at the Building Regulation approval stage and, as such, are not a matter for consideration in the planning process.

5.36 BS 8300:2009 'Design of buildings and their approaches to meet the needs of disabled people – Code of Practice' (BSI) provides good practice guidance for various types of non-domestic buildings.

5.37 For further information on part M of the Building Regulations or BS 8300:2009 please contact the Council's Building Control Service or refer to the regulations on the Department for Communities and Local Government's website: www.communities.gov.uk/planningandbuilding/buildingregulations/

Securing lifetime homes and wheelchair housing through conditions and legal agreements

5.38 Homes need to satisfy specific layout and space criteria in order to meet Lifetime Homes and Wheelchair Housing Standards. If homes are not designed to meet these criteria from the outset, it may not be possible to accommodate the necessary spaces within the envelope of the dwelling as proposed. Consequently, if submitted applications do not show dwellings that meet Lifetime Homes and Wheelchair Housing Standards, they cannot be secured by condition.

5.39 Conditions may be used exceptionally in connection with Lifetime Homes Standards where:

- constraints of an existing building will prevent layout and space criteria from being met
- key layout and space criteria can clearly be met by the proposed housing, but other Lifetime Homes criteria have not demonstrably been met by submissions with the planning application.
  In each case, a condition may be used to secure submission of additional details of how specific Lifetime Homes criteria will be met before the development is implemented.

5.40 Development policy DP6 requires the provision of the 10% affordable wheelchair housing to be designed, built and fitted out to meet wheelchair housing standards in full. It will always be secured through a planning obligation (also known as a section 106 agreement or legal agreement). In most cases, the terms will specify:

- all wheelchair housing in the development

- which wheelchair housing will be social rented and which will be intermediate affordable housing
- arrangements to ensure that affordable wheelchair housing is fully fitted out to the agreed specifications, including payment of a bond where appropriate
- arrangements to ensure that affordable wheelchair housing is completed and fully fitted out to an acceptable timescale.

5.41 In some cases the terms may also specify:

- arrangements for submission of revised or additional plans or schedules where key space criteria have not demonstrably been met by submissions with the planning application;
- arrangements to ensure that affordable wheelchair housing can be viewed by potential occupiers before it is fitted out;
- arrangements to ensure that affordable wheelchair housing is available to wheelchair users in the future.

5.42 Provision of 10% wheelchair housing (or easily adaptable market housing) in market schemes is required but often future occupiers will be unknown until after the homes have been fitted out - under Development policy DP6 it may be exceptionally secured through a planning obligation where submissions with the planning application do not demonstrate that 10% of market homes meet the key space criteria. In such cases, the terms will specify:

- arrangements for submission of revised or additional plans or schedules showing that 10% of market homes meet key space criteria;
- arrangements to ensure that wheelchair housing is completed to the agreed specifications.

Further information

Lifetime Homes www.lifetimehomes.org.uk
Mayor's guidance at http://www.london.gov.uk/strategy-policy/accessible-london-achieving-inclusive-environment (see Mayor's Priorities - Planning - Accessible London: Achieving an Inclusive Environment - July 2011): SPG 'Accessible London: Achieving an Inclusive Environment' (April 2004) 'Lifetime Homes – case study examples' (September 2006) Best Practice Guidance 'Wheelchair Accessible Housing' (September 2007)
Housing Supplementary Planning Guidance (Mayor of London, November 2012) http://www.london.gov.uk/who-runs-london/mayor/publications/planning/housing-supplementary-planning-guidance (see Mayor's Priorities - Planning – Supplementary Planning Guidance)
London Housing Design Guide (Mayor of London, August 2010) www.london.gov.uk/who-runs-london/mayor/publications/housing/london-housing-design-guide (accessed April 2011)
Building Regulations 2010 Approved Document M - Access to and Use of Buildings (known as Part M)
British Standard BS 8300:2009+A1: 2010 Design of buildings and their approaches to meet the needs of disabled people – Code of Practice (BSI)
British Standard BS 9999:2008 Code of Practice for Fire Safety in the Design, Management and Use of Buildings (BSI)
Camden Council Housing Adult and Social Care 'Camden Wheelchair Housing Design Brief 2013' http://www.camden.gov.uk/ccm/content/housing/housing-policy-and-strategies/camden-wheelchair-design-guide/camden-wheelchair-design-guide.en

Camden Planning Guidance

Sustainability

CPG 3

London Borough of Camden

July 2015

Camden

CPG1 Sustainability

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.

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

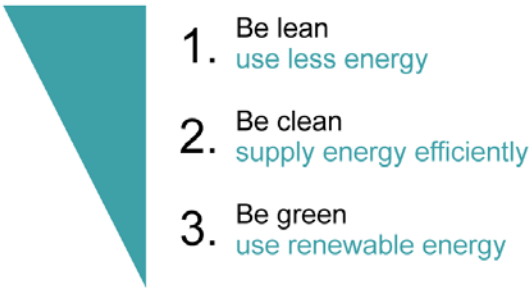
2.1 Buildings in Camden account for 88% of Camden's overall carbon dioxide emissions. These emissions result from the energy used within buildings. Therefore the Council encourages all buildings to be as energy efficient as possible. Our approach is to implement the energy hierarchy as set out in policy 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 - *Tackling climate change through promoting higher environmental standards* – sets out Camden's overarching approach to environmental sustainability.
Camden Development Policies	Policy DP22 - *Promoting sustainable design and construction* – 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 www.london.gov.uk/sites/default/files/guidance-energy-assessments-28-sep-10.pdf
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 www.planningportal.gov.uk

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.

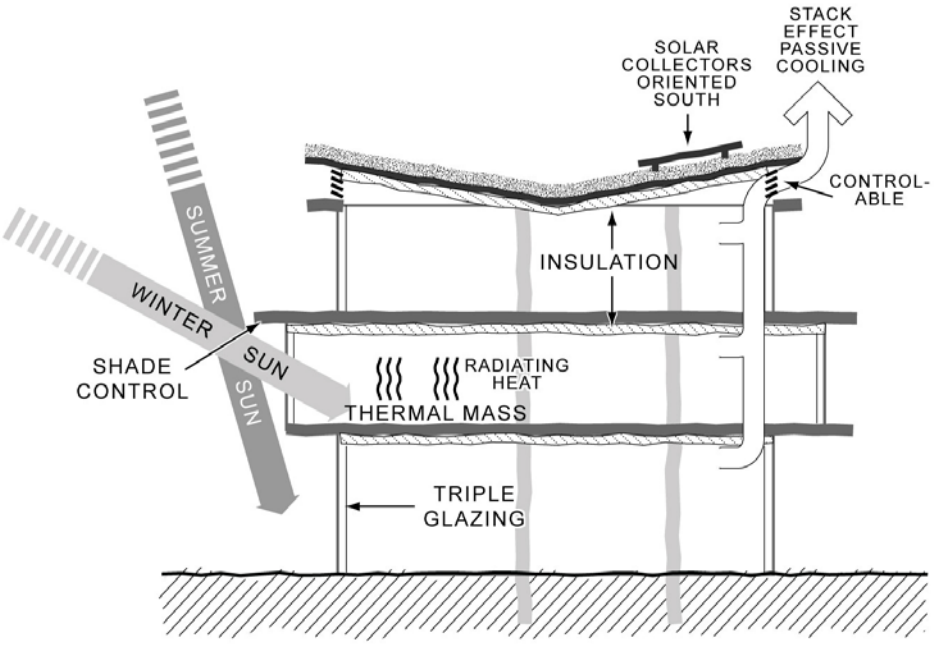
> **Cold bridging**
>
> Cold bridging occurs on a surface where one material looses heat faster than other, for example, through a concrete frame or a metal nail.

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 (m3/m2/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 (m3/h.m2 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/m2.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 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

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/m2/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/m2/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

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 www.energysavingtrust.org.uk
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. www.tcpa.org.uk
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: www.planningportal.gov.uk
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. www.zerocarbonhub.org

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.

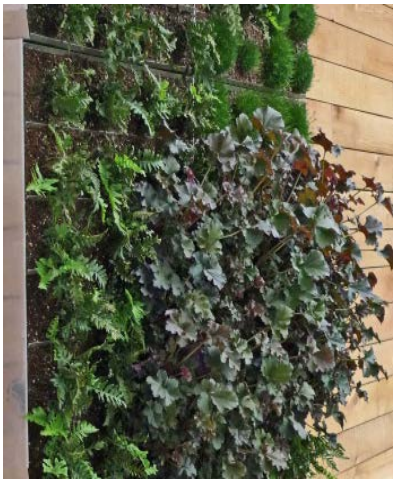
3. Green roofs for biodiversity:

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 www.environment-agency.gov.uk/business/sectors/91967.aspx
"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. www.LivingRoofs.org
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. www.greenroofcentre.co.uk