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

11 Flooding

KEY MESSAGES

All developments are required to prevent or mitigate against flooding

All developments are expected to manage drainage and surface water

There is a hierarchy you should follow when designing a sustainable drainage system

11.1 Camden has few permeable surfaces and a very high population density. As a result it is deemed to have a high risk of surface water flooding, which is likely to be increased by further growth and intensification of the built environment as well as the increasing risk of heavy rainfall due to climate change. Surface water flooding is caused when the existing water infrastructure (drains and sewers) cannot cope with heavy rainfall.

11.2 Map 5 in the Camden Core Strategy (and Map 2 in Development Policies) shows the parts of the borough that have experienced surface water flooding in the past and identifies the areas which are at risk of surface water flooding in the future. The location of development can impact the way that water flows around and underneath new and existing structures. Therefore all developments need to consider the risk of flooding. Especially developments within the identified areas, which must be designed to prevent causing additional pressure on adjoining sites and the sewer system.

11.3 Legislation has been introduced in the Floods and Water Management Act setting up a potential additional approval system for drainage plans. No further details are currently available on the specific requirements to support the Act.

WHAT DOES THE COUNCIL EXPECT?

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

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

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

How to reduce the risk of flooding

Surface water

11.4 Every urban surface should be considered as a rainfall collector, allowing water to pass through to a drainage layer below or flow to a soakage area so that water volumes do not build up to cause problems downstream. Therefore, the design of drainage is very important. Poorly designed and maintained drainage can lead to surface water flooding caused by heavy rainfall. It needs to be able to cope with the heaviest of rainfall expected over the buildings lifetime (this is around 60 years for commercial development and 100 years for residential development) and also help reduce and slow the amount of run-off leaving a site.

11.5 The best way to deal with heavy rainfall and a traditional pipe drainage system is to introduce new areas for water to soak into the ground. Sustainable Drainage Systems (SUDS) provide a way to manage surface water in a way which mimics the natural environment. SUDS help reduce the amount of surface water leaving a site and can slow down the rate water flows. It also helps improve water quality by filtering out contaminants. SUDS can provide broader benefits, including the capture and re-use of water by linking into a rainwater or grey water harvesting system. They can also provide green, landscaped areas offering recreation and habitat for wildlife.

WHAT DOES THE COUNCIL EXPECT?

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

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

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

The SUDS hierarchy

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

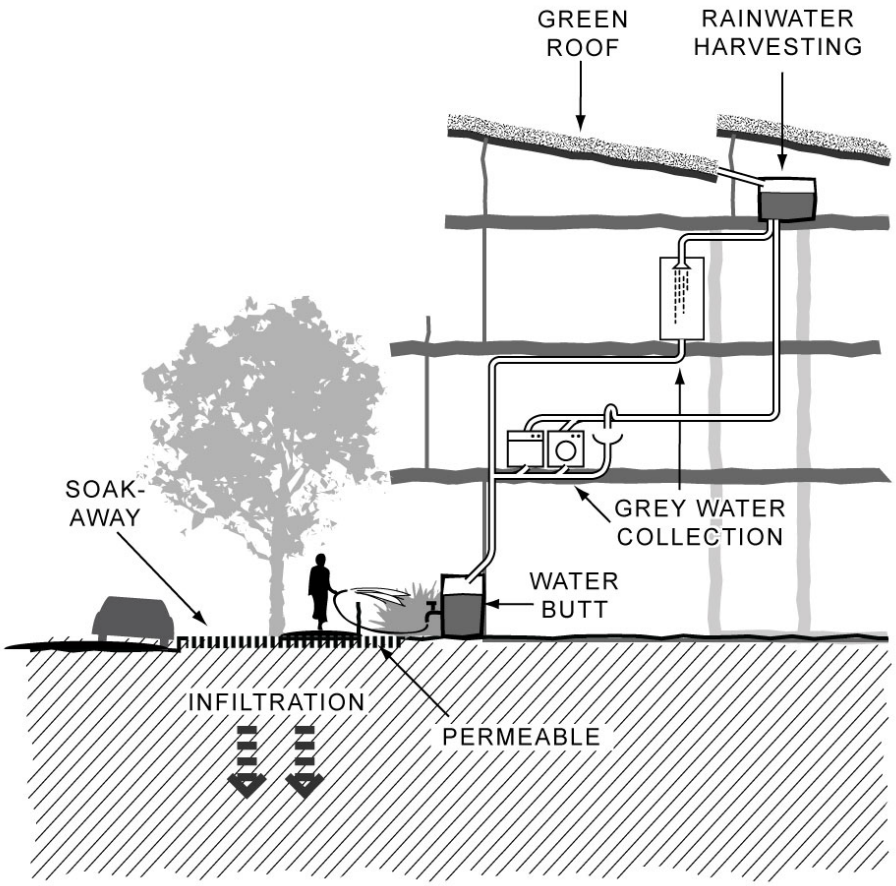
help to stop flash flooding during periods of heavy rainfall.

1. Use infiltration techniques - porous and permeable surfaces which allow water to soak (infiltrate) directly into the subsoil, rather than flowing over the top. This method is particularly appropriate on London Clay (in the North of the borough) where infiltration is slow. A layer of material needs to be laid between the clay and the uppermost surface to act as a storage/drainage channel. The use of permeable surfaces in urban SUDS design is critical because space is at a premium in Camden and permeable pavements and surfaces are one technique which does not require any additional land to function effectively.
2. Collect and store (also known as attenuation) rainwater in ponds or open water features for gradual release - SUDS can be designed to hold storm water in ponds or specially designed wetland areas so that it can then be released more slowly into the ground or sewer. This is generally suitable for larger sites and those up stream of areas at risk of flooding)
3. Collect and store rainwater in tanks or sealed water features for gradual release - where sites are constrained, with no natural landscaping or open areas, tanks can be installed which store water so that it can then be released more slowly into the ground or existing sewer.
4. discharge rainwater direct to a watercourse
5. discharge rainwater to a surface water sewer/drain
6. discharge rainwater to the combined sewer

11.7 All the above can be incorporated into the landscaping on a site or development. For example green open space, verges and green roofs can be designed to filter and store rainwater, thus reducing pressure on drainage systems during heavy rainfall. Trees also reduce surface water runoff. For more information, please see section 10 of this guidance on brown roofs, green roofs and green walls and section 5 on Landscape design and trees in CPG1 Design for more information.

11.8 Figure 10 below shows all the different types of SUDS, from rain water harvesting, green roofs, porous surfaces, vegetation to ponds, reed beds and rivers.

Figure 9. Sustainable Urban Drainage System



Ground water

11.9 The geology in the northern parts of the borough is gravel and silt on top of a layer of clay. Water can travel through the gravel and silt, but the rate of infiltration slows when it reaches the clay layer. This results in an area where ground water is likely to collect. This geology has resulted in the formation of springs, wells and the chain of ponds on Hampstead Heath. The flow of water through the ground is important in order to maintain the local wells and ponds. It is essential that development, especially subterranean development, does not stop or significantly alter the direction of this underground flow of water.

11.10 Ground water must be considered when development involves below ground excavation and construction. New underground structures can alter the flow of groundwater as it needs to change its course to flow around the new structure. This can cause water to collect or pool upstream which may result in flooding of nearby areas or buildings.

11.11 More information on geology and hydrology in the borough can be found in the Camden Hydrological and Geological Study 2010. We also have further guidance on basement development in CPG4 Basements and lightwells.

Basements

11.12 The Council will require all applications for basement and underground developments to be accompanied by an assessment of the scheme's impact on drainage, flooding, groundwater conditions and structural stability, as appropriate.

11.13 The Council will also require a site-specific flood risk assessment with applications for basements on streets identified as being 'at risk' from surface water flooding, unless it can be demonstrated that the scale of the scheme is such that there is no, or minimal, impact on drainage conditions. See map Core Strategy Map 5 (also DP Map 2). We also have further guidance on basement development in CPG4 Basements.

11.14 In line with Development Policy DP27, the Council will not allow habitable rooms and other sensitive uses for self contained basement flats and other underground structures in areas at risk of flooding.

How to reduce the impact of flooding

11.15 Developments should be designed so that they can cope with flooding. This can be done by carefully considering design and layout, for example by locating the most vulnerable uses in lower risk parts of the development, ensuring buildings do not block key flood routes and by raising floor levels.

11.16 Flood proofing measures can also be designed into developments to reduce flood damage. The Environment Agency has prepared advice on how you can plan to reduce flood damage and reduce the amount of flood water that enters your building. See the Further Information section below for details.

Further information

Environment Agency	Provides a range of guidance on SUDS, including planning advice www.environment-agency.gov.uk Guidance on how to reduce flood damage www.environment-agency.gov.uk/homeandleisure/floods/105963.aspx Guidance on how to keep flood water out of a building www.environment-agency.gov.uk/homeandleisure/floods/106769.aspx
CIRIA	Provide a range of advice and publications on SUDS, including the SUDS Manual, Sustainable Drainage Systems – design manual for England and Wales and Sustainable Water Management in Schools www.ciria.org.uk/suds
Interpave -	Provide technical guidance on the construction of permeable concrete block paving www.interpave.org
Living roofs	Provides information on the role of green roofs in SUDS www.livingroofs.org
LB Camden Strategic Flood Risk Assessment	Carried out to inform the preparation of Boroughs Local Plan. The SFRA presents the most up to date flood risk information in the borough. http://www.camden.gov.uk/ccm/cms-service/download/asset?asset_id=3245094

13 Biodiversity

KEY MESSAGES

Proposals should demonstrate:

- how biodiversity considerations have been incorporated into the development;
- if any mitigation measures will be included; and
- what positive measures for enhancing biodiversity are planned.

13.1 Development can harm biodiversity directly by destroying or fragmenting habitat, or indirectly by altering local conditions for species. Conversely, sensitively designed developments can increase connectivity between urban habitat patches, and contribute to landscape scale conservation and enhancement of biodiversity.

13.2 Biodiversity is integral to the planning process and we will expect it to be fully incorporated into the design and construction stages. In principle, all development activity should have minimal impacts on biodiversity and enhance it wherever possible.

13.3 It is essential that the development process, from demolition to construction, is undertaken in an appropriate manner to avoid harm to biodiversity. This guidance sets out:

- What species are protected;
- What are our priority species and habitats;
- How to protect biodiversity in the development process;
- Habitat provision, enhancement, creation and restoration; and
- Management and monitoring.

When does this guidance apply?

13.4 This guidance applies to all development sites. Sites already designated or adjacent to sites designated for their biodiversity value or that form part of a green corridor should receive special attention proportionate to the weight afforded by these designations. These include sites which are identified in the LDF and designated as:

- Sites of Special Scientific Interest (SSSI),
- Sites of Nature Conservation Importance (SNCI) and
- Local Nature Reserves (LNR)
- Habitat corridors and Habitat Corridor – missing links

13.5 Sites of Metropolitan Importance for nature conservation and the Blue Ribbon Network are identified by the Mayor of London. An indicative map is contained in the London Plan.

13.6 It is also important to conserve and improve land outside designated areas as these areas support biodiversity networks through connecting, stepping stone and buffering qualities. Opportunities to improve biodiversity must be considered in all developments.

What species are protected?

13.7 Certain species are protected under UK or European Legislation. Natural England provides a list of protected species as well as legislative and policy guidance relating to protected species and the planning system: www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/default.aspx

13.8 National advice for protected species www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/default.aspx

13.9 The protection given to species under UK and EU legislation is irrespective of the planning system. It is the applicant's responsibility to ensure that any activity on a site (regardless of the need for planning consent) complies with the appropriate wildlife legislation.

13.10 Applicants should note that Paragraph 98 of ODPM Circular 06/2005 states that 'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat'.

13.11 Paragraph 99 states 'It is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the proposed development is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision'.

13.12 Certain development activities within the vicinity of protected species and their habitats require a licence from Natural England. Developers are strongly advised to contact the Natural England Wildlife Management and Licensing Service to discuss any protected species issues.

What are the priority habitats and species?

The Natural Environment and Rural Communities Act 2006

13.13 Section 40 of the Natural Environment and Rural Communities Act 2006 imposes a duty on public bodies "to have regard" to the conservation of biodiversity in England, when carrying out their normal functions. Under Section 41 of the same Act the Secretary of State has published a list of species of flora and fauna and habitats considered to be of principal importance in the conservation of biodiversity. Whilst we will give specific consideration to the species and habitats on this list when planning for biodiversity and assessing planning applications, we will also take seriously our duty to conserve all biodiversity. The full list can

be found on the Natural England web-site www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx

The Camden Biodiversity Action Plan

13.14 The Camden Biodiversity Action Plan (BAP) provides a framework for improving biodiversity. There are species and habitats identified as priorities in national, regional or borough Biodiversity Action Plans that although may not have legal protection, are still a material consideration in planning, and we will take into account in the planning process.

13.15 The Camden's BAP contains a number of targets and actions that we will consider in the protection and enhancement of biodiversity in Camden.

Where to find the Biodiversity Action Plans:

- UK Biodiversity Action Plan Priority Habitat Descriptions www.ukbap.org.uk/library/UKBAPPriorityHabitatDescriptionsfinalAllhabitats20081022.pdf#TO
- The London Biodiversity Action Plan www.lbp.org.uk/londonhabspp.html
- Camden Biodiversity Action Plan www.ukbap-reporting.org.uk/plans/lbap.asp

How will we protect biodiversity in the development process?

13.16 We will use a 'five-point approach' to planning decisions for biodiversity, based on the five following principles – information, avoidance, mitigation, compensation and new benefits. (based on Royal Town Planning Institute Good Practice Guide - 'Planning for Biodiversity')

Camden's 'five-point approach' to planning decisions for biodiversity

1. Information – We will require appropriate information at the outset on habitats and species and the impact of development on them;
2. Avoidance – Developments should avoid adverse effects to wildlife and habitats as far as reasonably possible;
3. Mitigation - Where avoidance is not possible, biodiversity impacts should be reduced as far as reasonably possible. We may use conditions or planning obligations/agreements to achieve this;
4. Compensation - Appropriate replacement and compensation will be required, where, exceptionally development that is harmful to biodiversity is permitted;
5. New benefits - In all cases, opportunities should be taken to enhance on-site biodiversity, or within the locality or borough, to provide new benefits for wildlife, for example, by habitat creation or enhancement.

Before the design stage

13.17 Developments are to consider the quality of the existing biodiversity and the potential for enhancement as any site or building may have important biodiversity or contain nature conservation features. This should be done by carrying out a habitat and ecology survey.

Requirement for ecological surveys

13.18 Ecological surveys carried out in accordance with this guidance are expected to be submitted upfront with any planning application, and will be used to assess the impact of the development on biodiversity, within the site, the locality, or where appropriate, on the regional or national resource. The paragraph below provides details of the recommended level of information to be provided.

When in the development process is a survey to be done?

13.19 Ecological surveys are to be carried out prior to the design stage. Information for the development site and wider area is to be obtained from, but not limited to:

- London Environmental Records Centre
- appropriate statutory or non-statutory conservation organisations e.g. London Bat Group

13.20 A habitat survey is to identify important habitat features, including BAP Priority Habitats. Whilst the presumption is not to lose any areas of BAP priority habitat in particular, other habitats are also valuable. The scale and detail of the surveys should be in proportion to the size of the proposed development and likelihood of protected species using the site. The aim is to characterise important habitats and species, the presence of any protected species, and the extent that they may be affected by the proposed development. This information is to also inform the design and form of the development.

What developments need to carry out a survey?

13.21 For Protected Species - Table 1 in the Appendices sets out when a survey and assessment is required. For Designated sites and priority habitats - Table 2 in the Appendices sets out when a survey and assessment is required.

What needs to be included in a survey?

13.22 The level of scope and detail required is outlined in the Appendices. Optimal times to carry out surveys are provided in Figure 1 in the Appendices.

Who should carry out the survey?

13.23 Protected species such as bats, may be found throughout Camden in buildings, or in structures and using features for foraging or commuting,

and it may not appear immediately obvious that a protected species may be found on site or impacted upon by the proposed development. Developers are to employ the services of a professional ecological consultant. The Institute of Ecology and Environmental Management provides a commercial directory search of their membership directory at http://www.ieem.net/ieemdirectory.asp. The Council's Nature Conservation Section can advise on the scope of survey work required.

The design stage

13.24 This is arguably the most critical time in the development process to ensure that nature conservation opportunities and constraints are identified and taken account of. The aim should be to create ecologically orientated and sustainable development. During the design stage the biodiversity value of developments can be improved significantly if the design and management of buildings and landscaping elements is more explicitly geared towards nature.

LIGHTING

Lighting can have particular negative impacts on biodiversity. Unnecessary lighting should be avoided. Where lighting may harm biodiversity timers or specific coloured lighting will be required to minimise any disturbance.

13.25 Proposals should demonstrate how biodiversity considerations have been incorporated into the development, if any mitigation measures will be included, and what positive measures for enhancing biodiversity are planned. Where there are significant features of nature conservation value on site the Council will seek to secure, retain and enhance these features. All developments (major and minor) can contribute to a robust functioning ecosystem by providing a well-connected system of habitats, and the design stage is the perfect time to achieve this. A built structure or landscaping elements has the potential to impact on biodiversity and ecology, and developers must consider how to minimise any adverse effect upon both biodiversity and ecology. Developers must also consider how a built structure and any landscaped elements can deliver wider ecological benefits and enhancements at this stage.

13.26 Some species range a long way from their "core" habitat and there is a risk that species may be left isolated in a highly urban and fragmented landscape such as Camden with no access to suitable foraging areas or water. Developers may therefore be required to retain and enhance foraging areas or routes (e.g. for bats) or carry out other provisions that contribute towards conservation of the species on or off-site.

The construction planning phase

13.27 The nature conservation value of a site and its surrounding area will also need to be protected during the construction phase. A list of measures to ensure the nature conservation interest is protected is given below. The list is not to be considered exhaustive.

13.28 Measures to protect the nature conservation interest during the construction phase

- Timing of development to avoid disturbance to species such as birds in the breeding season;
- Use of protective fencing to preserve important ecological areas and reduce direct damage by fencing off storage areas and areas for construction huts, and carefully planning and limiting and their placement;
- Planning vehicular movements to minimise the impact on ecologically sensitive areas and reduce soil compaction;
- In ecologically sensitive areas keep disruptive elements such as light, noise and human presence to a minimum;
- Implement measures to protect water courses and ground water from pollution;
- For sites of high nature conservation value, or its adjoining sites a construction management plan to protect biodiversity during the construction phase may be requested and secured by legal agreement or planning condition prior to the commencement of works on the site.

Post-construction

13.29 Where a site has been identified has having nature conservation importance, maintenance and monitoring may be required once the development has been completed. The management and maintenance of areas of nature conservation value that are to be retained, enhanced or created on a development site are essential to ensure these areas of nature conservation attain their full potential. A long term management plan should outline the conservation objectives, the means of monitoring habitats and species, and describe the practical maintenance measures that may be needed. Implementation of the management plan is likely to be a contractor's responsibility and should be considered at the tender evaluation stage. Maintenance and monitoring may be secured by way of a legal agreement or planning condition.

13.30 Where appropriate, the Council will seek a legal agreement where on site biodiversity aims are unlikely to be met through the use of a condition attached to a planning permission.

Habitat provision, enhancement, creation and restoration

13.31 In line with policy and guidance, opportunities should be sought for the incorporation of biodiversity into developments and for habitat creation or enhancing existing habitats in any development proposal. It is not a case of one size fits all. This list is not exhaustive and developers are encouraged to follow this guidance and think creatively to fully integrate biodiversity into design.

Best practice examples of habitat provision, enhancement, creation and restoration

Design Area	Design Opportunities	Details
Roofs	Green roofs Brown roofs Roof gardens and terraces	Green roofs are intentionally vegetated roof surfaces. Typically, they can be intensive on a deep growing medium (150-400mm), or extensive on shallower growing medium (60-200mm) or any transition between the two. In all cases consideration will need to be given to type of habitat desired. Other than the traditional sedum matting, green roofs can provide a varied profile comprising mosaics of bare ground with very early pioneer communities on nutrient-poor substrates e.g. locally sourced aggregate, through to more established open grasslands with herbs, or even trees and scrub and ponds. Green roofs should not be seen as an automatic substitute for ground level landscaping. Consideration should first be given to ground level landscaping for biodiversity. Further information can be found at: http://livingroofs.org/
	Artificial roost	Artificial roosts for bats can be incorporated into conversions or within new development such as a roof void by providing suitable access. Products are available to aid bat roosting potential or access to potential roost spaces such as bat access tiles.
	Bird and Bat boxes	The type of box, its location, and surroundings will depend on the species the box is intended for. You will need to take into account ecological requirements of the target species: position, aspect, height, obstructions, cleaning and maintenance, whether a single or colonial species, and whether surroundings suitable for commuting and/or foraging. It is preferable to install boxes into the fabric of the building as this provides longevity. There are numerous bird and bat boxes specifically designed for brickwork. Example: Swift boxes installed in brickwork Swift boxes should be sited on a north, north west or west aspect out of the sun and heat which can harm the chicks. They should be installed at a height of at least 6 to 7m, preferably under the shelter of the eaves or overhanging roofs. A 5 metre drop, clear of obstructions provides clear airspace for high speed entry and egress. Several boxes

		together will assist the formation of swift colonies.
Buildings	Walls Green/living walls	Living walls are typically composed of climbing plants. They provide opportunities for wildlife such as habitat for insects and spiders, which in turn will be food for insect-eating birds and bats, and if sufficiently dense provide can provide nesting habitat for birds. They can also reduce fragmentation of habitats by forming a link between ground level landscaping and green roofs. Climbers can adhere directly to brick and stone, but where it is desirable to encourage growth away from the building facade a network of trellises and wires can be used.
	Lighting	Artificial lighting has significant impacts on animals and insects, disrupting activities such as the search for food and mating behaviour. Where lighting is necessary, take into account: type of lamp (low pressure sodium lamps or high pressure sodium preferred), aim to avoid light spillage using hoods, cowls etc., the height of lighting column should be as short as possible, light levels should be as low as possible, and timing of lighting to provide some dark periods. The Bat Conservation Trust in association with the Institution of Lighting Engineers (ILE) has produced a guidance document 'Bats and Lighting in the UK'
Outdoor Space	Sustainable Urban Drainage Systems (SUDs)	SUDs can help to slow down the runoff rate and store water on a temporary basis, reducing the impact of urbanisation on flooding, and provide a habitat for wildlife. Examples include the use of constructed wetlands, such as ponds, reed beds, planted swales, and detention basins.
	Ponds/reed beds	Ponds and reed beds can have significant wildlife value. Ponds can be constructed using concrete, butyl liners or puddled clay. It is better that they are designed using methods such as rainwater harvesting as this can be fed directly into a pond, as topping up with mains water adds nutrients to the pond and can lead to algal blooms.
Landscaping and planting.	General Planting	Retaining and planting native plants of UK or local origin will not only help to maintain the integrity of ecosystems close to the development, but will also increase biodiversity within the development itself. Planting of trees, bushes, forbs and grass

		can be used to complement natural vegetation. Only native/local provenance species to be planted on sites adjacent to or within specified distance of a SNCI and should reflect or complement the species composition of the SNCI where possible. Peat-free products only should be used in planting schemes.
	Wildflower meadows/areas of long grass	Wildflower rich grassland or meadows reflecting natural communities of local soil types can be created, or restored, in areas of greenspace. These habitats need ongoing management to maintain their biodiversity interest. It is expected that a management plan and provision for ongoing management is provided as part of any development proposal. Areas of amenity grassland of are of limited value for biodiversity.
	Tree, shrub and understorey planting.	Depending on the scale of planting proposed, this encompasses single trees to small areas of scrub, and even woodland. Where possible, it is desirable to plant native species reflecting natural communities of local soil types. If possible establish a graded canopy down from large trees to smaller, dense lower shrubs, to field and ground layer. However, the urban environment is highly modified by people and the value of non-native plants with high species associations is also recognized.
	Hedgerows	Hedgerows comprised of native species reflecting natural communities of local soil types are by far the best for wildlife. Climbers such as honeysuckle and bramble can be integrated into hedgerows. Existing native species hedgerows should be as far as possible retained, or replaced. Even low species rich hedgerows may form commuting routes for species such as bats.
	Flower planting for birds and insects	Choose plants likely to attract wildlife. Any planting scheme will need ongoing management to maintain its' biodiversity interest. It is expected that a management plan and provision for ongoing management is provided as part of any development proposal. Natural England's Gardening with Wildlife in Mind provides a searchable list of native and non-native plants that benefit wild species at http://www.plantpress.com/wildlife/home.php

	Retention of ecologically important habitats	Where there is remnant natural vegetation on site, the aim should be to maintain these areas. Loss or damage to these areas should be kept to a minimum.
	Hard surfaces	Hard surfaces should be kept to a minimum in new schemes. Permeable materials should be used. This will encourage insects and reduce run-off. Soil sealing on site should be kept to a minimum. Any runoff should be directed onto vegetated area. Run-off that is high in pollution and certain nutrients can pollute ponds and waterways, altering their biodiversity.
	Deadwood	Deadwood habitats can be integrated creatively into a development, such as monoliths with coronet cuts to provide habitat for deadwood specialists such as fungi and wood boring beetles.
	Orchards	Traditional orchards are hotspots for biodiversity supporting a wide range of wildlife. Traditional fruit and nut varieties are preferred. These features will require on-going management. It is expected that a contaminated land assessment is provided by the applicant if the produce is for consumption.
	Herbicide and pesticide use	Herbicide and pesticide use should be avoided and alternative control methods used, except when controlling invasive species.

Habitat Suitability Maps

13.32 Where the nature of the development provides opportunities for habitat creation, this should contribute to habitat creation targets in the BAP. Developers should contact the Nature Conservation Section, who will advise on the choice of habitat by reference to the Habitat Suitability Maps developed by GiGL and LBP. The role of the site in buffering or connecting neighbouring or nearby open space should also be taken into consideration as part of this process, as should the habitat composition of such open space.

13.33 In cases where the site is not covered by the Habitat Suitability Maps (i.e. not existing open space), large-scale habitat creation should reflect the landscape character of the area, as identified in Natural England's London's Natural Signatures project www.naturalengland.org.uk/regions/london/ourwork/londonnaturalsignatures.aspx

Management and monitoring

13.34 The management and maintenance of areas of nature conservation value that are to be retained, enhanced or created on a development site is essential to ensure these areas of nature conservation attain their full potential. A long term management plan should outline the conservation objectives, the means of monitoring habitats and species, and describe the practical maintenance measures that may be needed. Implementation of the management plan is likely to be a contractor's responsibility and should be considered at the planning application stage.

Compensation

13.35 Where, exceptionally, damage or loss to natural habitats is unavoidable and or inadequate mitigation proposed, compensatory measures will be required. This may involve new habitat creation or habitat enhancement, a contribution towards meeting the objectives of the Camden Biodiversity Action Plan or improvements to the Boroughs biodiversity. The Council will seek to use planning conditions and planning legal agreements to achieve this.

Further information

Natural England Wildlife Management and Licensing Service	provides advice on wildlife management and issues licences www.naturalengland.org.uk/ourwork/regulation/wildlife/default.aspx
Livingroofs.org	Independent UK Resource For information on Green Roofs www.livingroofs.org

Biodiversity Appendices

13.36 Extra information on biodiversity surveys

- In general, it is expected that all surveys and baseline ecological information collected from the site must be submitted at the planning application stage.
- A desk study and site walkover surveys must be carried out on all Major Developments to identify the ecological characteristics of a site and any significant impacts. This will also inform whether further ecological surveys are necessary to be submitted with any planning application. Surveys may be required on smaller developments where protected species or priority BAP species or habitat are likely to be present - refer to tables and information below for guidance;
- Developers are expected to carry out a protected species survey where desktop surveys show protected species in the vicinity.
- Surveys must be carried out by suitably qualified and experienced persons e.g. Member of IEEM;
- Surveys must be carried out using recognised survey methodology and following good practice guidelines i.e. in suitable weather conditions, at an appropriate time and of appropriate duration and frequency, and at the correct period of the year;
- Habitat surveys must be to an appropriate level of detail e.g. Extended Phase I Habitat Survey with Target Notes, to characterise the nature conservation interest of the site;
- The survey data should be used to inform the design and form of the development, and any recommendations for management afterwards.
- An assessment must be provided of the likely effects of development, and the magnitude of their potential impact of the development on nationally, regionally and locally important habitats and species recorded on site or in the locality;
- The assessment should identify measures to be taken to avoid impacting on those important species and habitats, either directly or indirectly, on site and in the locality, during demolition and construction operations;
- Survey data will be considered valid for a period of 1 Year after which re-surveys may be required;
- If the level of detail provided is deemed inadequate then additional surveys will be required;
- The results of site surveys must be made available to the London Environmental Records Centre (Greenspace Information for Greater London).

Local Requirement for Protected Species: Criteria and Indicative Thresholds (Trigger List) for when a Survey and Assessment is required

Proposals for Development That Will Trigger a Protected Species Survey	Species likely to be affected and for which a survey wil be required							
	Bats	Badgers	Breeding Birds	Plants	Hedgehogs	Reptiles	Amphibians	Notable Invertebrate
Proposed development which includes the modification, conversion, demolition or removal of buildings and structures (especially roof voids) involving the following: ▪ all buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water; ▪ pre-1960 detached buildings and structures within 200m of woodland and/or water; ▪ pre-1914 buildings within 400m of woodland and/or water; ▪ pre-1914 buildings with gable ends or slate roofs, regardless of location; ▪ all tunnels, mines, kilns, ice-houses, adits, military fortifications, air raid shelters, cellars and similar underground ducts and structures; ▪ all bridge structures, aqueducts and viaducts (especially over water and wet ground).	● ● ● ● ●		● ● ● ● ●					
Proposals involving lighting of churches and listed buildings Proposals involving flood lighting of green space within 50m of woodland, water, field hedgerows or lines of trees with obvious connectivity to woodland or water.	● ●		● ●				●	●
Proposals affecting woodland, or field hedgerows and/or lines of trees with obvious connectivity to woodland or water bodies.	●	●	●	●			●	●
Proposed tree work (felling or lopping) and/or development affecting: ▪ old and veteran trees that are older than 100 years; ▪ trees with obvious holes, cracks or cavities, ▪ trees with a girth greater than 1m at chest height;	● ● ●		● ● ●					● ● ●
Major proposals within 500m of a pond or Minor proposals within 100m of pond (Note: A major proposals is one that is more than 10 dwellings or more than 0.5 hectares or for non-residential development is more than 1000m^2 floor area or more than 1 hectare)	●						●	●
Proposals affecting or within 200m of rivers, streams, canals, lakes, or other aquatic habitats.	●		●	●			●	●
Proposals affecting 'derelict' land (brownfield sites), allotments and railway land.		●	●	●	●	●	●	●
Proposed development affecting any buildings, structures, feature or locations where protected species are known to be present *.	●	●	●	●	●	●	●	●
Major proposals within 500m of Hampstead Heath or Minor proposals within 100m of Hampstead Heath (Note: A major proposals is one that is more than 10 dwellings or more than 0.5 hectares or for non-residential development is more than 1000m^2 floor area or more than 1 hectare)	●		●	●	●	●	●	
Table adapted from version produced by ALGE 2007, Validation of Planning Applications *Confirmed as present by either a data search (for instance via the local environmental records centre) or as notified to the developer by the local planning authority, and/or by Natural England, the Environment Agency or other nature conservation organisation.	Bats	Badgers	Breeding Birds	Plants	Hedgehogs	Reptiles	Amphibians	Notable Invertebrates

Exceptions for when a full species survey and assessment may not be required

a) Following consultation by the applicant at the pre-application stage, the LPA has stated in writing that no protected species surveys and assessments are required.

b) If it is clear that no protected species are present, despite the guidance in the above table indicating that they are likely, the applicant should provide evidence with the planning application to demonstrate that such species are absent (e.g. this might be in the form of a letter or brief report from a suitably qualified and experienced person, or a relevant local nature conservation organisation).

c) If it is clear that the development proposal will not affect any protected species present, then only limited information needs to be submitted. This information should, however, (i) demonstrate that there will be no significant affect on any protected species present and (ii) include a statement acknowledging that the applicant is aware that it is a criminal offence to disturb or harm protected species should they subsequently be found or disturbed.

In some situations, it may be appropriate for an applicant to provide a protected species survey and report for only one or a few of the species shown in the Table above e.g. those that are likely to be affected by a particular activity. Applicants should make clear which species are included in the report and which are not because exceptions apply.

Local Requirements for Designated Sites and Priority Habitats:

Criteria (Trigger List) for When a Survey and Assessment are Required

1. Designated sites (as shown on the Council's Proposals Map)

Nationally designated sites

- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)

Regionally and locally designated sites

- Local Sites (e.g. Site of Nature Conservation Importance)
- Local Nature Reserve (LNR)

2. Priority habitats (Habitats of Principal Importance for Biodiversity under S.41 of the NERC Act 2006)

- Arable Field Margins
- Ancient and/or species-rich hedgerows
- Lowland heathland
- Lowland dry acid grassland

- Lowland meadows (e.g. species-rich flower meadows)
- Lowland mixed deciduous woodland
- Lowland Beech and Yew Woodland
- Open Mosaic Habitats on Previously Developed Land
- Ponds
- Reed beds
- Traditional Orchards

3. Other biodiversity features

(as identified by the Local Biodiversity Partnership - see paragraph 84 ODPM Circular 06/2005)

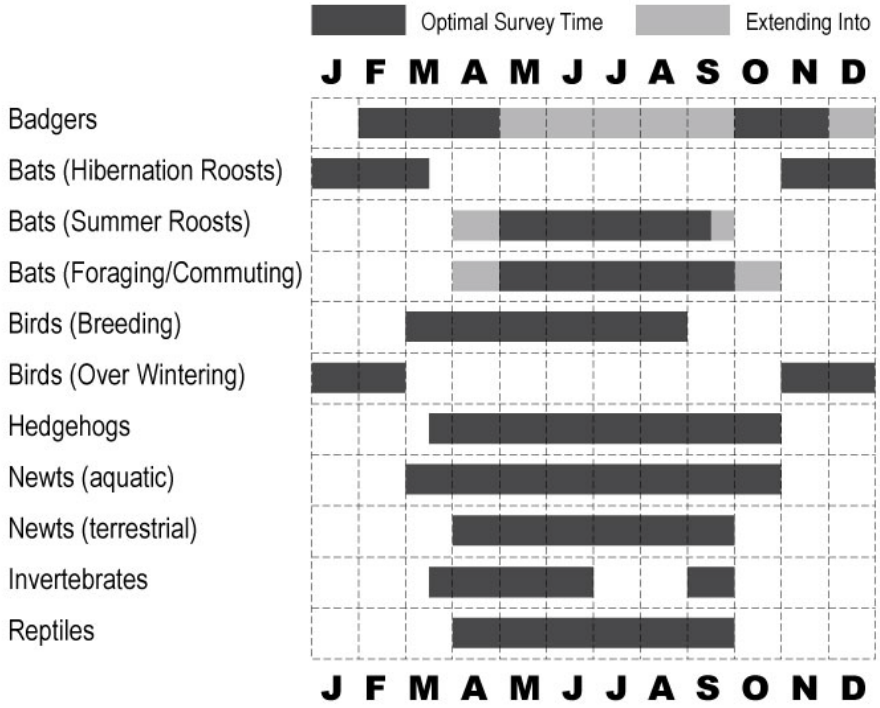
- Waterways and wetlands (e.g. canals, lakes, reservoirs, ponds, aquifer fed fluctuating water bodies)
- Woodland, Hedgerows and Trees (e.g. secondary woodland and scrub, mature/veteran Trees, deadwood habitats)
- Parks, Open Space and Private Gardens (e.g. urban green space, parks, allotments, orchards, flower-rich road verges, canal sides, wildlife gardens)
- The Built Environment (e.g. previously developed land, railsides and churchyards and cemeteries)

Exceptions When a Full Survey and Assessment May Not Be Required

International and National Sites: A survey and assessment will not be required where the applicant is able to provide copies of pre-application correspondence with Natural England, where the latter confirms in writing that they are satisfied that the proposed development will not affect any statutory sites designated for their national or international importance.

Regional and Local Sites and Priority Habitats: A survey and assessment will not be required where the applicant is able to provide copies of pre-application correspondence with the Local Planning Authority's ecologist (where employed), or ecological advisor and/or the local Wildlife Trust that they are satisfied that the proposed development will not affect any regional or local sites designated for their local nature conservation importance or any other priority habitats or listed features.

Figure 10. Ecological survey seasons



Points to note regarding surveys are as follows:

- For certain species and habitats surveys can be carried out at any time of year, but for other species, particular times of year are required to give the most reliable results, as indicated in Figure 11
- Surveys conducted outside of optimal times (Figure 11) may be unreliable. For certain species (e.g. Great Crested Newt) surveys over the winter period are unlikely to yield any useful in formation. Similarly negative results gained outside the optimal period should not be interpreted as absence of a species and further survey work maybe required during the optimal survey season. This is especially important where existing surveys and records show the species has been found previously on site or in the surrounding area. An application may not be valid until survey information is gathered from an optimum time of year.
- Species surveys are also very weather dependent so it may be necessary to delay a survey or to carry out more than one survey if the weather is not suitable, e.g. heavy rain is not good for surveying for otters, as it washes away their spraint (droppings). Likewise bat surveys carried out in wet or cold weather may not yield accurate results.
- Absence of evidence of a species does not necessarily mean that the species is not there, nor that its habitat is not protected (e.g. a bat roost is protected whether any bats are present or not).

- Local Biological / Environmental Records Centre may have useful existing information and records.
- Competent ecologists should carry out any surveys. Where surveys involve disturbance, capture or handling of a protected species, then only a licensed person can undertake such surveys (e.g. issued by Natural England). Surveys should follow published national or local methodologies. Further details may be found in the Local Authority's SPD for Biodiversity or on the following web sites:
- IEEM at: www.ieem.org.uk/Publications.htm - Guidelines for Survey Methodology
- Natural England: http://www.naturalengland.org.uk/publications/default.htm