Camden Planning Guidance

Basements

March 2018

Camden

CONTENTS

1. Introduction

What is Camden Planning Guidance?

1.1. The Council has prepared this Camden Planning Guidance (CPG) on Basements to support the policies in the Camden Local Plan 2017. This guidance is therefore consistent with the Local Plan and forms a Supplementary Planning Document (SPD) which is an additional "material consideration" in planning decisions.

1.2. This document should be read in conjunction with and within the context of the relevant policies in the Camden's Local Plan 2017.

1.3. This document was adopted in March 2018 and replaced Camden Planning Guidance 4: Basements and Lightwells (July 2015).

Basements in Camden

1.4. With a shortage of development land and high land values in the borough the development of basements is a popular way of gaining additional space in homes without having to relocate. Basements are also a typical feature of the Central London part of Camden and used for various purposes including commercial, retail and leisure uses, servicing and storage. However, while basement developments can help to make efficient use of the borough's limited land, they have the potential to cause harm to the amenity of neighbours, affect the stability of buildings, cause drainage or flooding problems, or damage the character of areas and the natural environment.

Defining basements

1.5. The introduction to Policy A5 of the Local Plan states:

"When this policy refers to basement development this includes basements, lightwells and other underground development. …

A basement is a floor of a building which is partly or entirely below ground level. A ground or lower ground floor with a floor level partly below the ground level (for example on a steeply sloping site) will therefore generally be considered basement development. (Camden Local Plan paragraph 6.109)"

1.6. Whether a storey of a building should be considered a basement in applying Policy A5 of Camden's Local Plan is a matter of fact and degree and the Council will consider each scheme on its merits.

1.7. When identifying a basement the Council will generally consider that a basement is a floor that is predominantly under the prevailing ground level of the site.

1.8. Where a building is located on sloping land and there is a change in level across a site, a storey which is accessed at ground level at one side of the site (with no steps or ramp) will generally not be considered a basement, unless the site has been excavated to allow access to that floor.

What does this guidance cover?

1.9. This guidance gives detailed advice on how we will apply planning policies when making decisions on new basement development or extensions to existing basement accommodation.

1.10. Policy A5 of the Camden Local Plan requires applicants to consider a scheme's impact on local drainage and flooding and the potential effects on neighbouring properties including on groundwater conditions and ground movement. Section 3 of this guidance document sets out how basement impact assessments need to provide evidence on these matters.

1.11. This guidance supports policy A5 Basements in Camden's Local Plan. Other relevant policies in the Local Plan include:

- A1 Managing the impact of development
- D2 Heritage
- CC3 Water and flooding
- A3 Biodiversity

1.12. Please note that there are other matters outside of the scope of this guidance that applicants should address when proposing new basement development. These include design, heritage, sustainability and the water environment. The Council's approach to these, and other issues, is set out in the Local Plan and Camden Planning Guidance.

When does this guidance apply?

1.13. This guidance applies to all developments in Camden that propose a new basement or other underground development, or an extension to existing basement or other underground development. Underground developments may include ground or lower ground floors where excavation is required, for example when a ground floor is extended further into sloping land requiring excavation.

Article 4 Direction for basement development

1.14. To manage the impacts of basement developments across the borough the Council has made a non-immediate Article 4 Direction which removes permitted development rights for basement development. The Article 4 direction came into force on 1 June 2017.

1.15. Previously under 'permitted development' rights planning permission was generally not required for a basement that is built entirely underneath a property and does not extend beyond it, for example, underneath the garden or surrounding land.

1.16. The Article 4 direction removed this right so that all basement or lightwell excavations in the borough will need planning permission and will be assessed against the Council's planning policies. The Article 4 Direction applies to the whole of the London Borough of Camden. Further information can be found here: Camden website - Article 4 Directions.

Neighbourhood Planning

1.17. Many areas in Camden have neighbourhood plans or are in the process of developing them. Some neighbourhood plans have local policies on basement development. Basement development schemes should comply with policies in relevant neighbourhood plans as well as Local Plan policies (in particular policy

A5 on basements) and this guidance. To identify if your property is affected by a neighbourhood plan please visit: Camden website - Neighbourhood Planning

Basements and lightwells

KEY MESSAGES

- Basement development must not cause harm to:
  - neighbouring properties;
  - the structural, ground, or water conditions of the area;
  - the character and amenity of the area; and
  - the architectural character and heritage significance of the building and area.
- The siting, location, scale and design of basements must have minimal impact on, and be subordinate to, the host building and property.
- Basement development must be no more than one storey deep and must not exceed 50% of the garden of the property.
- Applicants will be required to submit information relating to the above within a Basement Impact Assessment (BIA) which is specific to the site and particular proposed development.
- In some instances the Council will require a Basement Construction Plan to be provided.
- The Council strongly encourages applicants to use the Council's BIA proforma to ensure that all aspects of this assessment are addressed.
- To ensure the right people are engaged in the preparation of a BIA, the Council has published a 'Scope of Services' document.
- BIAs will require expert independent verification funded by the applicant. Applicants should use the Council's BIA proforma in preparing BIAs.
- An Article 4 Direction covers the whole of the London Borough of Camden meaning that all basement development requires planning permission.

Planning and design considerations

1.18. Basements schemes should take place in a way that ensures they:

- do not harm neighbouring properties including not placing occupiers at risk or have any significant effects on the stability or bearing capacity of adjacent land generally;
- do not harm the water environment including avoid adversely affecting drainage, run-off, or ground permeability;
- avoid cumulative impacts including impacts on the structural stability or the water environment in the local area, including flooding;
- do not harm the recognised architectural character of buildings and surrounding areas, including gardens and nearby trees, and that conservation area character is preserved or enhanced;
- conserve the biodiversity value of the site; and
- achieve sustainable development.

Summary flowchart

1.19. Basement development is a complex and technical process and developers need to be aware of the major tasks when planning to excavate a basement. The flowchart below has been produced to assist in this process.

FIGURE 1: Summary flowchart for basement developments

Preliminary stage

Read the policy[1] and guidance[2] and determine the limits to a basement on your property.

Engage an engineer[3] to prepare BIA using pro-forma and Scope of Services[4] & using scoping/screening flow charts[5].

Complete BIA audit form parts A, B[6].

Undertake utilities audit.

Consult with neighbours

Planning Application submission

Basement Impact Assessment and supporting docs

Plans, elevations and sections

Marked up site plan against (f)-(m)[1]

Existing and proposed floor plans, elevations,sections

Show lightwells and window dimensions (+soil depth) on sections.

If the proposed works to the basement extend to the front and rear of the property show the distance between basement and boundary on plans and sections.

Completed BIA audit form[6]

Draft Construction Management Plan[7]

References

[1] Local Plan Policy A5 basements

[2.] Camden Planning Guidance on basements

[3.] Engineering qualifications on para 4.7

[4.] BIA pro-forma and Scope of Services available from: www.camden.gov.uk/basements

[5.] scoping/screening flow charts - refer to Section 4 of this document.

[6.] BIA audit forms available from: www.camden.gov.uk/basements

[7.] Construction Management Plan pro-forma available from: www.camden.gov.uk/basements

[8.] Approval in principle, see para 6.10

[9.] Basement Construction Plans see para 4.38

Planning application assessment	Basement Impact Assessment Follow BIA pro-forma and Scope of Services[4] Initial independent audit by Campbell Reith ⇩ Additional information / modifications to scheme ⇩ Final independent audit by Campbell Reith. Consult with neighbours. Refine Construction Management Plan[7]. Arrange Approval in Principle (if adjacent to the highway)[8].

Section 106 / after determination	Construction Management Plan[7]
	Approval in Principle (if adjacent to the highway)[8]
	Basement Construction Plan (if required)[9] Maintain engineer on site
	Engage with neighbours throughout construction

2. Basement size and design

2.1. Often with basement development, the only visual features are lightwells, skylights, or pavement lights, with the bulk of the development concealed wholly underground, away from public view. However, just as overly large extensions above the ground level can dominate a building, contributing to the over-development of a site, an extension below ground can be of an inappropriate scale.

SKYLIGHT

A window, dome, or opening in the roof or ceiling, to admit natural light.

LIGHTWELL

An opening within or next to a building that allows natural light to reach basement windows that would otherwise be obscured.

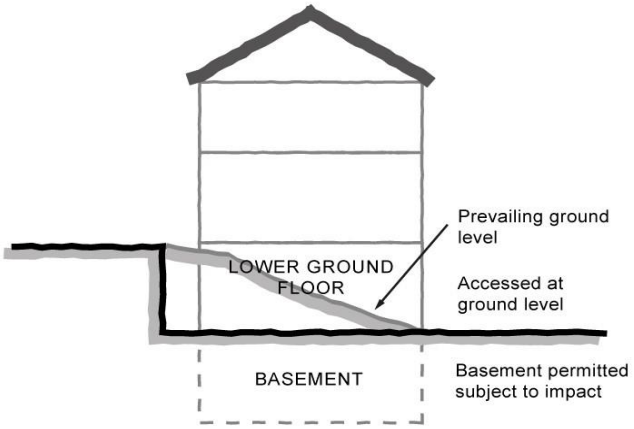
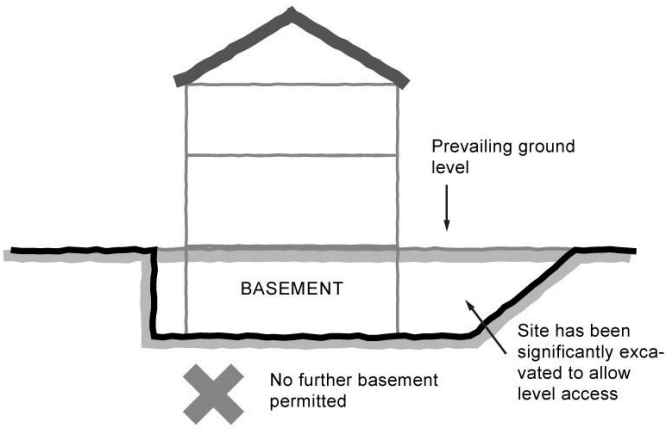
2.2. Larger basements can have a greater impact on the water environment by reducing the area for water to runoff and soak away. Basement development that extends below garden space can also reduce the ability of that garden to support trees and other vegetation leading to poorer quality gardens, a loss in amenity and the character of the area, and potentially a reduction in biodiversity.

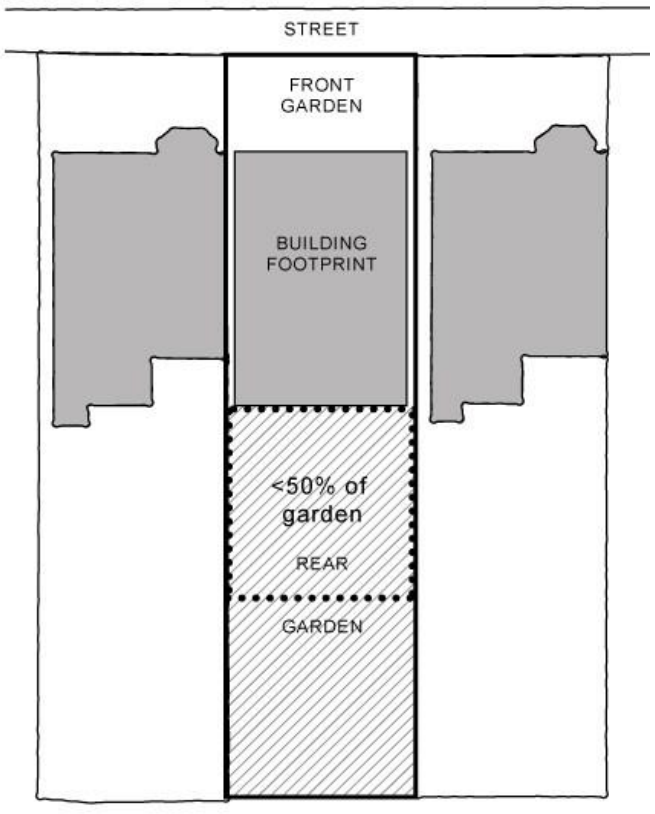
2.3. Larger basement developments also require more extensive excavation resulting in longer construction periods, and greater numbers of vehicle movements to remove spoil. These extended construction impacts can have a significant impact on adjoining neighbours through disturbance through noise, vibration, dust, and traffic, and parking issues.

2.4. Local Plan Policy A5 on basements limits the size of basement developments. The section below lists the relevant criteria from Policy A5 accompanied by diagrams to show how these criteria apply.

TABLE 1: Policy A5 Basements, criteria f. to m. regarding the size of basement developments

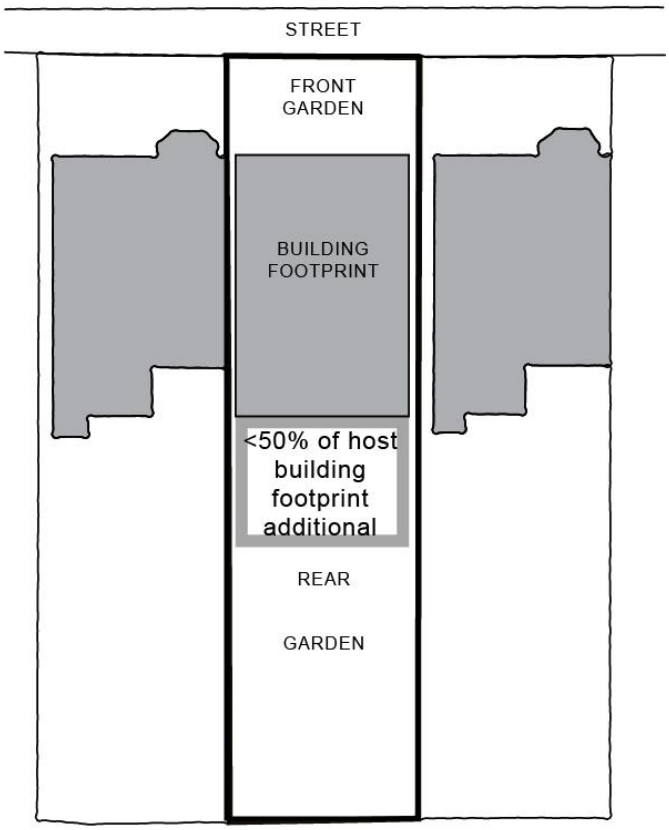
Policy A5	Guidance and diagrams
"The siting, location, scale and design of basements must have minimal impact on, and be subordinate to, the host building and property. Basement development should:…	A basement development that does not extend beyond the footprint of the original building and is no deeper than one full storey below ground level is often the most appropriate way to extend a building below ground.

f. not comprise of more than one storey;	The Council considers a single storey for a basement to be approximately 3 to 4 metres in height. The requirement for storey heights to be no more than 3-4 metres refers to the total depth of the excavation (the external dimensions). Where appropriate we will allow a proportion of the basement to be deeper to allow development of swimming pools. Allowance of this addition depth will only be appropriate where it does not harm the neighbouring properties or the structural, ground, or water conditions of the area, and where the additional depth is required for a swimming pool and it not being used for any other purposes.
g. not be built under an existing basement;	Refer to paragraph 1.4, above, for details on basement definitions. **Sloping and excavated sites** Where a building is located on sloping land and there is a change in level across a site, a floor which is accessed at ground level at one side of the site (with no steps or ramp) will generally not be considered a basement, unless the site has been significantly excavated to allow access to that floor as shown in Figure 2, below. **FIGURE 2: Sloping sites**  **FIGURE 3: Excavated sites** 

	Lower ground floors Storeys built partially below ground are common in Camden, in particular in historic buildings. To be considered a lower ground floor and not a basement the storey must typically: • Have a significant proportion above the prevailing ground level, • Be accessible from the outside of the building at the front and rear of the property, • Form part of the original fabric of a building, and • Form part of the character of the area.
h. not exceed 50% of each garden within the property;	This criterion applies to the front garden, the rear garden and gardens to the side of the property individually, rather than calculated as an aggregated garden area for the whole property. This criterion applies to gardens as they currently exist and not the gardens of the proposed development. The unaffected garden must be in a single area and where relevant should form a continuous area with other neighbouring gardens. Sufficient margins should be left between the site boundaries and any basement construction to sustain growth of vegetation and trees. **FIGURE 4: Criterion h**  Unaffected Garden: the area of garden under which no basement has been developed. For example wildlife corridors can exist at the very rear of property boundaries. It may be desirable to ensure that basements are not constructed along the rear boundary of properties in this instance.

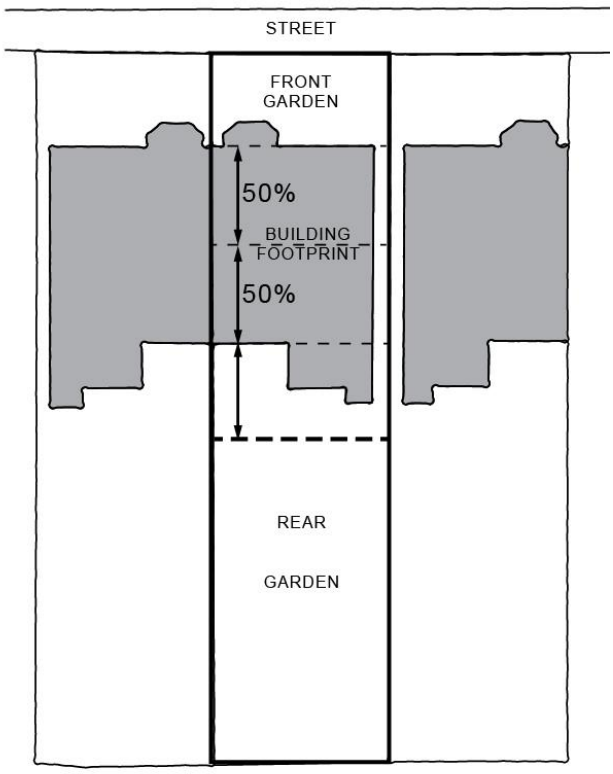
i. be less than 1.5 times the footprint of the host building in area;

FIGURE 5: Criterion i.



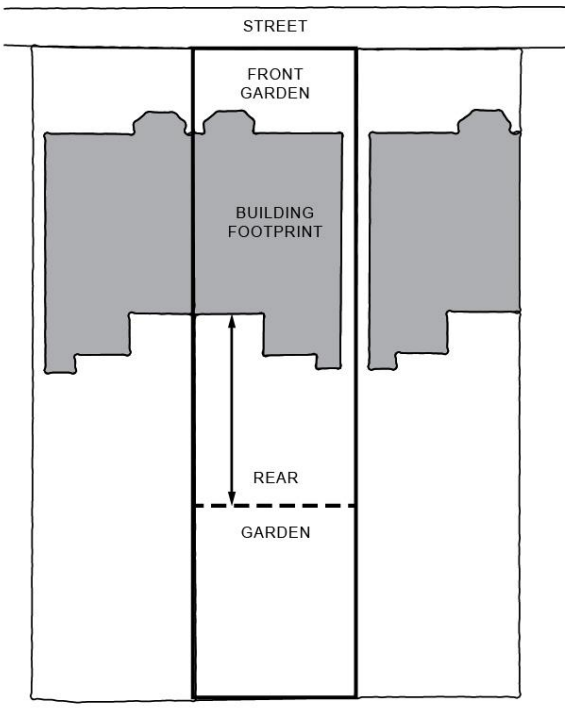
j. extend into the garden no further than 50% of the depth of the host building measured from the principal rear elevation;

FIGURE 6: Criterion j.



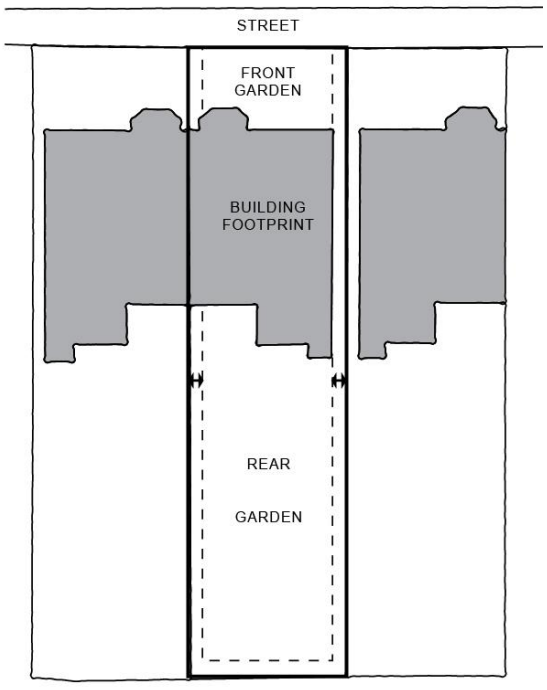
k. not extend into or underneath the garden further than 50% of the depth of the garden;

FIGURE 7: Criterion k.



l. be set back from neighbouring property boundaries where it extends beyond the footprint of the host building; and

FIGURE 8: Criterion l.



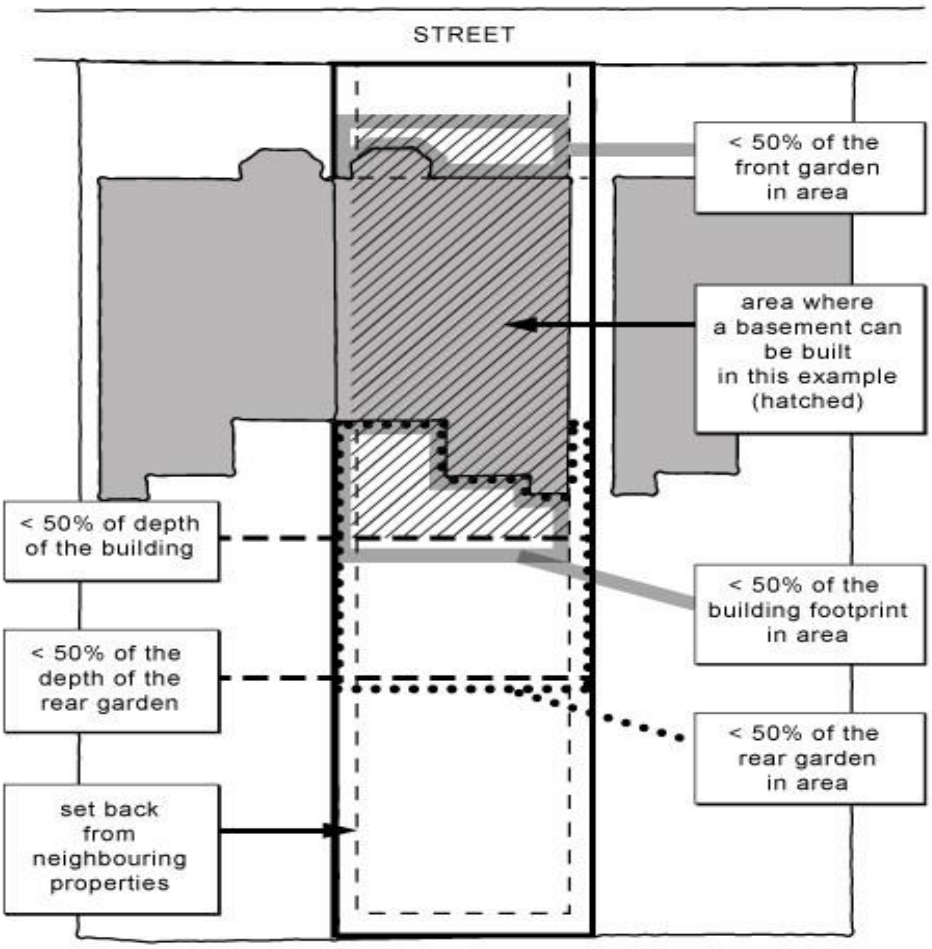
The policy objective is to provide significant space free from basement development to enable water drainage and area for planting. How this unaffected area is connected to neighbouring properties should be considered.

Providing a setback to neighbouring properties will generally not be required where built form or a basement on the neighbouring property extends up to the property boundary.

m. avoid the loss of garden space or trees of townscape or amenity value	In accordance with Local Plan policy A3 on biodiversity the Council will expect developers to follow the principles and practice set out in 'British Standard 5837:2012 (or as subsequently updated) Trees in relation to design, demolition and construction - Recommendations' To find out more information on trees including identifying which trees are protected by a Tree Preservation Order visit www.camden.gov.uk/trees
Exceptions to f. to k. above may be made on large comprehensively planned sites."	For the purposes of this policy, large comprehensively planned sites are: • new major developments, for example schemes which comprise 1000sq m additional non-residential floorspace or 10 or more additional dwellings; • large schemes located in a commercial setting; or developments the size of an entire or substantial part of an urban block.. (Local Plan para 6.133)

2.5. The criteria of policy A5 must be considered together, therefore the area where a basement may be developed is the smallest of these areas. The diagram below shown all of the considerations together.

FIGURE 9: All criterion of Policy A5 of the Local Plan



Skylights

2.6. Where a basement extension under part of the front or rear garden is considered acceptable, the inclusion of skylights designed within the landscaping of a garden will not usually be acceptable, as illumination and light spill from a skylight can harm the appearance of a garden setting.

Habitable rooms

2.7. Local Plan Policy A5 on basements states that the Council will not permit basement schemes which include habitable rooms and other sensitive uses in areas prone to flooding. Outside of these areas, where basement accommodation is to provide living space (possibly for staff), it will be subject to the same standards as other housing in terms of space, amenity and sunlight. Suitable access should also be provided to basement accommodation to allow for evacuation. Further guidance is contained in the Camden Planning Guidance on Housing.

Basement walls, windows, and doors

2.8. The development of a basement and the introduction of light wells may result in an area of exposed basement wall and will usually mean new window or door openings. Any exposed area of basement development to the side or rear of a building will be assessed against the guidance in CPG1 Design (refer to section 4 on extensions, alterations and conservatories). In general, this expects that any exposed area of basement:

- is subordinate to the building being extended;
- respects the original design and proportions of the building, including its architectural period and style; and
- minimises the loss of garden space.

2.9. Any visible basement wall should not dominate the original building due to its size.

2.10. In number, form, scale and pane size, basement windows should relate to the façade above. They should normally be aligned to the openings above and be of a size that is clearly subordinate to the higher level openings so as not to compete with the character and balance of the original building. On the street elevation, and on certain rear elevations where there is a distinguishable pattern to the fenestration, the width and height of windows should be no greater than those above.

FAÇADE

The face or front of a building.

FENESTRATION

The arrangements of windows in a building.

Lightwells

2.11. The building stock in Camden is varied. Some areas contain basements developments that include front lightwells taking up part, or all, of the front garden. Other areas do not have basements or lightwells that are visible from the street. The presence or absence of lightwells helps define and reinforce the prevailing character of a neighbourhood.

2.12. Where basements and visible lightwells are not part of the prevailing character of a street, new lightwells should be discreet and not harm the architectural character of the host building, or the character and appearance of the surrounding area, or the relationship between the building and the street. For example lightwells may need to be covered by a grille, have no railing, and be of an size appropriate to the host building and garden.

2.13. In situations where lightwells are not part of the established street character, the characteristics of the front garden or forecourt will help to determine the suitability of lightwells.

2.14. In plots where the depth of a front garden is quite long, basement lightwells are more easily concealed by landscaping and boundary treatments, and a substantial garden area can be retained providing a visual buffer from the street. In these situations new lightwells that are sensitively designed to maintain the integrity of the existing building may be acceptable, subject to other design requirements and environmental considerations.

2.15. In plots where the front garden is quite shallow, a lightwell is likely to consume much, or all, of the garden area. This is likely to be unacceptable in streets where lightwells are not part of the established character and where the front gardens have an important role in the local townscape.

2.16. Excessively large lightwells will not be permitted in any garden space.

2.17. A lightwell to the side or rear of a property is often the most appropriate way to provide a means of providing light to a new or extended basement development, and can often provide a link to the rear garden. Lightwells to the side or rear of a property should be set away from the boundary to a neighbouring property.

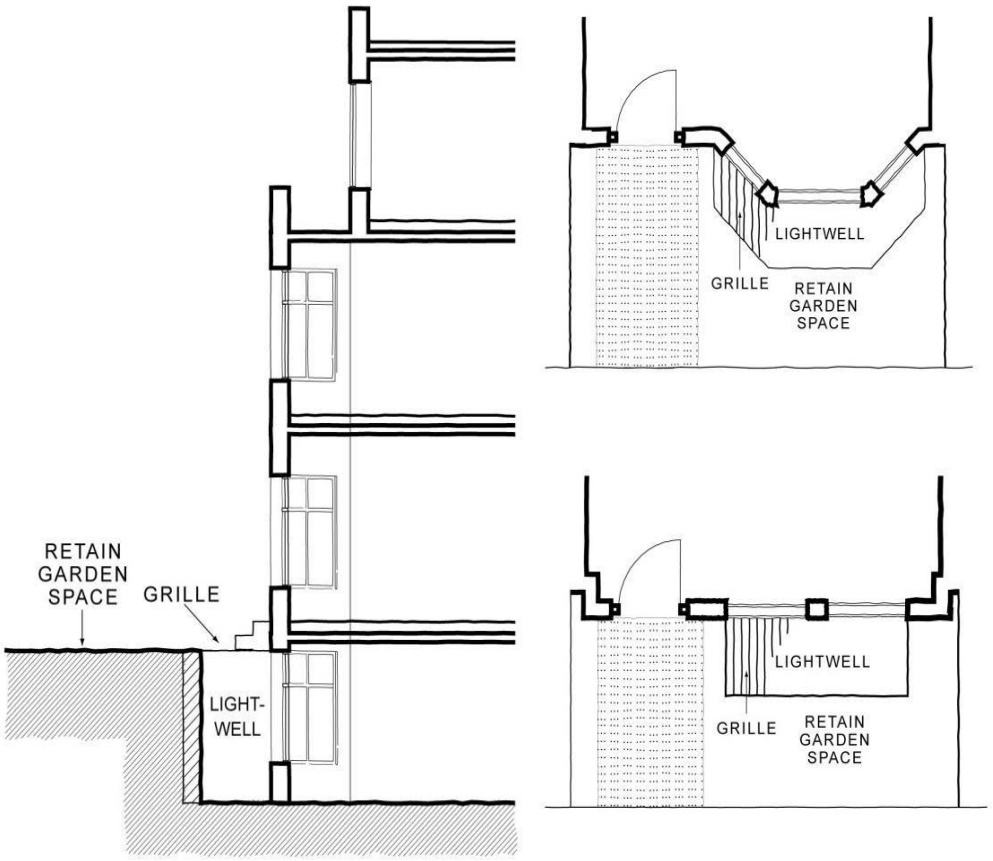
2.18. Applicants should check with Building Control at an early stage how their basement proposal incorporates a means of escape and whether this has been properly considered with regard to the size of the lightwell.

Railings, grilles and other lightwell treatments

2.19. In order to comply with Building Regulation standards, lightwells should be secured by either a railing (1,100mm high) or a grille. In gardens that front a street, railings can cause a cluttered appearance to the front of the property and can compete with the appearance of the front boundary wall, or obscure front windows. This is particularly the case in shallow gardens. Where front light wells are proposed, they should be secured by a grille which sits flush with the natural ground level, rather than railings (refer to Figure 10 on the following page). In certain publicly accessible locations grilles should be locked to prevent lightwells being misused (e.g. for casual sleeping or drug use). In most cases metal is the preferred material for grilles and railings. Glass railings or grilles are unlikely to be acceptable.

2.20. Railings will be considered acceptable where they form part of the established street scene, or would not cause harm to the appearance of the building or the surrounding area.

FIGURE 10: Lightwells and railings



2.21. The lowering of the natural ground level to the rear of the property should be minimised as much as is practicable.

Conservation areas and listed buildings

2.22. In the case of listed buildings, applicants will be required to consider whether basement and underground development preserves the existing fabric, structural integrity, layout, interrelationships and hierarchy of spaces, and any features that are architecturally or historically important. Where the building is listed, new basement development or extensions to existing basement accommodation will require listed building consent, even if planning permission is not required. The acceptability of a basement extension to a listed building will be assessed on a case-bycase basis, taking into account the individual features of the building and its special interest. Applicants should contact the Council at the earliest opportunity to discuss such proposals. Enquiries of this type can be answered through the duty planning service:

Link to Duty Planer contact details

LISTED BUILDING CONSENT

This is legally required in order to carry out any works to a Listed Building that will affect its special value. This is necessary for any major works, but may also be necessary for minor alterations and even repairs and maintenance. Listed Building Consent may also be necessary for a change of use of the property.

2.23. As with all basement schemes, the Council will need to be satisfied that effective measures will be taken during demolition and construction works to ensure that damage is not caused to the listed building and any buildings it directly adjoins. Poor demolition and construction methods can put neighbouring properties at risk and so can have considerable effects on the character and appearance of heritage buildings and conservation areas.

2.24. The Council will expect the submission of a management plan for demolition and/or construction where basement works are proposed in conservation areas or adjacent to a listed building. Further guidance on this is set out in the section on construction management plans in Camden Planning Guidance on Amenity.

3. Trees, landscape and biodiversity

3.1. Policy A5 of the Local Plan on basements ensures that basements are not built underneath excessive proportions of the gardens of properties. Applicants should also be mindful of the need to preserve or enhance the garden area for trees, other vegetation, and to support biodiversity. Sufficient margins should be left between the site boundaries and any basement construction to enable natural processes to occur and for vegetation to grow naturally. These margins should be wide enough to sustain the growth and mature development of the characteristic tree species and vegetation of the area. The Council will seek to ensure that gardens maintain their biodiversity function for flora and fauna and that they are capable of continuing to contribute to the landscape character of an area so that this can be preserved or enhanced.

GREEN ROOF

A roof that has vegetation growing on it, which can help improve visual appeal, reduce the environmental impact of the building and create habitat for native flora and fauna.

DETENTION POND

A stormwater management facility that is designed to protect against flooding by storing water for a limited period of time.

3.2. Basement developments should provide an appropriate proportion of planted material to allow for rain water to be absorbed and/or to compensate for the loss of biodiversity caused by the development. This will usually consist of a green roof or detention pond on the top of the underground structure. It will be expected that a minimum of 1 metre of soil be provided above basement development that extends beyond the footprint of the building, to enable garden planting and to mitigate the effect on infiltration capacity. The use of sustainable urban drainage systems (SUDS) is sought in all basement developments that extend beyond the footprint of the original building. For further guidance on SUDS, please see Camden Planning Guidance on Water and flooding.

3.3. Consideration should be given to the existence of trees on or adjacent to the site, including street trees and the required root protection zone of these trees. Camden Planning Guidance on design sets out the evidence that the Council requires with respect to the protection of trees, including tree surveys and arboricultural method statements.

ROOT PROTECTION ZONE

The area around the base or roots of the tree that needs to be protected from development and compaction during construction to ensure the survival of the tree.

3.4. To find out more information on trees including identifying which trees are protected by a Tree Preservation Order visit www.camden.gov.uk/trees .

4. Assessing the impact of basement development

4.1. The Council will only permit basements and other underground development where the applicant can demonstrate it will not cause harm to the built and natural environment and local amenity, including to the local water environment, ground conditions and biodiversity. Addressing these issues may require the submission of a variety of information to provide us with a basis for determining applications. The level of information required is set out in Local Plan Policy A5 Basements and this guidance will be commensurate with the scale, location and complexity of the scheme.

Basement impact assessments

4.2. This information must be contained within a Basement Impact Assessment (BIA) which is specific to the site and particular proposed development. Basement Impact Assessments should be submitted with the other details at planning application stage. To assist applicants in preparing BIAs the Council has produced a proforma. Applicants and engineers are not required to use this document as an actual template, but, in order to ensure that all aspects of the BIA requirements have been addressed (and the requirements of Policy A5 met), the Council strongly encourages adopting the headings provided by the proforma and including information on all relevant topics under those headings. Use of non-standard formats may result in delay or additional costs associated with the independent audit. The proforma is available to download from the Council's website at camden.gov.uk/basements. Most BIAs will need to be independently audited, further details on this process are set out below in paragraph 4.36 below.

4.3. The BIA will include the following stages:

- Stage 1 - Screening;
- Stage 2 - Scoping;
- Stage 3 - Site investigation and study;
- Stage 4 - Impact assessment; and
- Stage 5 - Review and decision making.

4.4. The purpose of a BIA is to enable the Council to 'assess whether any predicted damage to neighbouring properties and the water environment is acceptable or can be satisfactorily ameliorated by the developer' as stated in Local Plan policy A5 on basements.

4.5. Each of these stages is explained in full in this section. Please also refer to Chapter 6 of the Camden Geological, Hydrogeological and Hydrological Study, which is available on the Camden Council website. All the technical analysis and recommendations in this guidance are taken from the Study which should be treated as the evidence base and technical advice for this guidance and will be used when we are checking BIA reports.

4.6. We will expect a 'non technical summary' of the evidence that applicants have gathered against each stage of the BIA. This should be presented in a format which can be fully understood by those with no technical knowledge.

4.7. At any stage in the process experienced engineering professionals who hold qualifications relevant to the matters being considered, should be engaged undertaking the BIA process. The Council has prepared a 'Scope of Services' which provides guidance on the engineering input likely to be required to

complete a BIA (this can be downloaded from the Council's website at camden.gov.uk/basements). This will assist applicants when engaging the services of engineers. The Council will only accept the qualifications set out in the following table:

Qualifications required for assessments

Surface flow and flooding	A Hydrologist or a Civil Engineer specialising in flood risk management and surface water drainage, with either: • The "CEng" (Chartered Engineer) qualification from the Engineering Council; or a Member of the Institution of Civil Engineers ("MICE"); or • The "C.WEM" (Chartered Water and Environmental Manager) qualification from the Chartered Institution of Water and Environmental Management.
Subterranean (groundwater) flow	A Hydrogeologist with the "CGeol" (Chartered Geologist) qualification from the Geological Society of London.
Land stability	A Civil Engineer with the "CEng" (Chartered Engineer) qualification from the Engineering Council and specialising in ground engineering; A Member of the Institution of Civil Engineers ("MICE") and a Geotechnical Specialist as defined by the Site Investigation Steering Group; or A Chartered Member of the Institute of Structural Engineers with some proof of expertise in engineering geology. With demonstrable evidence that the assessments have been made by them in conjunction with an Engineering Geologist with the "cGeol" (Chartered Geologist) qualification from the Geological Society of London.

Stage 1 - Screening

4.8. The first stage of the BIA is the identification of any matters of concern which should be investigated. Screening is a process of determining whether or not a full BIA is required. All basement proposals should be subjected to the screening stage of a BIA to identify the matters relevant to assessment of local flooding and/or neighbour amenity and structural risks.

4.9. In order to assist in identifying what issues are relevant to a proposed scheme we have developed a series of screening flow charts over the following pages of this guidance, covering three main issues:

- Groundwater flow (see Paragraphs 4.44 to 4.46);
- Land stability (see Paragraphs 4.47 to 4.49); and
- Surface flow and flooding (see Paragraphs 4.50 to 4.54).

4.10. We will expect applicants to identify how these issues impact on neighbouring properties and the natural environment.

4.11. At the screening stage the applicant will need to set out clearly why or why not a full BIA is required. This will need to include an assessment against the flowcharts later in the section and be presented along with the information set out at the end of Paragraph 233 of the Camden Geological, Hydrogeological and Hydrological Study.

4.12. Where a respondent answers "yes" or "unknown" to any of the questions in the flowcharts these matters will need further investigation. "No" answers will require written justification.

Stage 2 - Scoping

4.13. The scoping stage of the BIA requires applicants to identify the potential impacts of the proposed scheme as set out in chapter 5 of the Camden Geological, Hydrogeological and Hydrological Study which are shown by the screening process to need further investigation. Applicants should use this stage to identify the potential impacts for each of the matters of concern identified in the previous screening stage, this may require some preliminary data collection and field work. Appendix F of the Camden Geological, Hydrogeological and Hydrological Study provides guidance on linking the potential impacts to the screening flowcharts. A conceptual ground model is often a useful of carrying out the scoping stage as it can include the known and suspected features on, below and adjacent to a proposed site. (refer to Section 6.3.3 and Figure 28 in the Camden Geological, Hydrogeological and Hydrological Study for further details and an example).

4.14. During the scoping stage the applicant should enter pre-consultation or set up a working group with local residents and amenity groups who may be impacted by a proposed basement in order to fully understand and address the concerns of local residents. The Council will expect consultation with local residents on all basement developments unless the proposed construction work is minimal and will have a negligible effect on the adjoining or nearby properties as evidenced by the applicant to the satisfaction of the Council.

4.15. The scoping stage should build on the information obtained for the screening stage. When doing work for scoping stage, it is most likely that there will need to be some works under Stage 3 of the BIA – Site investigation and study

Stage 3 – Site investigation and study

4.16. The third stage of the BIA – site investigation – is undertaken to develop an understanding of the site and its immediate surroundings. The degree of investigation will vary depending upon the matters of concern identified in the screening and scoping stages, and therefore will be dependent on the location of the proposed basement within the borough, its size and setting in relation to existing development on the site and its relationship to adjacent properties and nearby features of importance. This information must be site specific.

4.17. The BIA site investigation comprises several stages, including:

- Desk study, including site walkover;
- Field investigation, including intrusive investigation;
- Monitoring;

- Reporting; and
- Interpretation.

4.18. Each of these stages should examine both the site of the proposed basement scheme and beyond the site boundary.

4.19. Section 7 of the Camden Geological, Hydrogeological and Hydrological Study sets out in further detail how this investigation should be carried out.

4.20. Appendix G of the Camden Geological, Hydrogeological and Hydrological Study provides typical contents lists for reporting these stages of the site investigation and we will be looking for submissions that contain comparable content.

Stage 4 – Impact assessment

4.21. This stage is concerned with evaluating the direct and indirect implications of the proposed project. Essentially this involves a comparison between the present situation (the baseline) with the situation as it would be with the basement in place (i.e. constructed). Therefore the BIA should describe, quantify and then aggregate the effects of the development on those attributes or features of the geological, hydrogeological and hydrological environment which have been identified (in the scoping stage) as being potentially affected. Section 7 of the Camden Geological, Hydrogeological and Hydrological Study provides more detail on what is required at this stage.

4.22. The recommendations in Section 7 on boreholes and trial pits set out the thorough, up to date and professional methodologies of subsurface investigation and analysis, which the Council will expect. It is important to recognise as stated in Paragraph 287 and 288 of the Camden Geological, Hydrogeological and Hydrological Study that Local Plan policy A5 on basements is particularly concerned with the potentially significant impact a development can have beyond the site boundary. Where permission is not given by adjacent landowners for structural surveys or subsurface investigations to be carried out, the undetermined structural conditions and ground conditions beyond the site boundary should be identified as a risk and assessed and mitigated against accordingly.

4.23. Hydrogeological processes are subject to seasonal and longer term cyclical influences. Measurements taken at one particular time may not indicate how conditions might be in one or six months from that time.

4.24. Monitoring of groundwater levels in areas where it is more likely to be present over a period of time is therefore necessary. Please refer to paragraphs 291 to 294 of the Camden Geological, Hydrogeological and Hydrological Study for more detail on monitoring periods.

4.25. The BIA will comprise a factual report and an interpretative report. This is explained in more detail in Section 7 of the Camden Geological, Hydrogeological and Hydrological Study. The interpretative report will have three sections:

- detailed site geology;
- the geotechnical properties of the ground; and
- an engineering interpretation of the implications of the ground conditions for the development of the site.

4.26. Appendix G3 of the study sets this out in more detail from which it should be noted that it must contain details of the retaining wall design for the basement

excavation. It is essential for the Council to make the assessment called for by policy A5 on basements and to be able to consider, if planning approval is to be given, how the terms of any planning conditions or planning agreements should be drafted.

4.27. The engineering interpretation will require calculations of predicted ground movements and structural impact to be provided. Examples of these calculations are given in appendix D of the Camden Geological, Hydrogeological and Hydrological Study. The sides of excavation always move to some extent no matter how they are supported. The movement will typically be both horizontal and vertical and will be influenced by the engineering properties of the ground, groundwater level and flow, the efficiency of the various support system employed during the underpinning and the efficiency or stiffness of any support frames used.

4.28. If the identified consequences are not acceptable, mitigation should be incorporated into the proposed scheme and the new net consequences determined. For example, where there is predicted structural damage to neighbouring property, or where water ingress to neighbouring gardens or properties is predicted to be damaging to residential amenity. Any proposed mitigation measures should be described in the BIA report with details of how they reduce and/or alter the impact of the proposed basement on the surrounding environment. Mitigation measures which may be included in basement development proposals include (but are not limited to):

- Controlled or adequate drainage;
- High permeability corridors;
- Underpinning of neighbouring structures; and
- Setting the basement in from property boundaries.

Burland Scale

4.29. Where a BIA identifies risk of damage to properties by subsidence this risk should be described using the Burland Scale. The Burland Scale methodology has been adopted for projects internationally and has been used by the Building Research Establishment and the Institution of Structural Engineers, London. The classification system of the scale is based on the ease or repair of visible damage. Subsidence is only one element in the many potential impacts assessed in a BIA and other methods will be employed when describing these other impacts.

4.30. In the Burland Scale the damage to properties caused by subsidence may be considered in three broad categories:

(i) visual appearance or aesthetics,
(ii) serviceability and function, and
(iii) stability.

4.31. Burland Scale categories 0, 1, and 2 refer to (i) aesthetic damage, category 3 and 4 relate to (ii) serviceability and function, and 5 represents damage which relates to stability.

FIGURE 11: Burland Scale

Category of damage	Description of typical damage	Approximate crack width (mm)	Limiting tensile strain ε_{lim} (per cent)
0 Negligible	Hairline cracks of less than about 0.1 mm are classed as negligible	<0.1	0.0-0.05
1 Very slight	Fine cracks that can easily be treated during normal decoration. Perhaps isolated slight fracture in building. Cracks in external brickwork visible on inspection	<1	0.05-0.075
2 Slight	Cracks easily filled. Redecoration probably required. Several slight fractures showing inside of building. Cracks are visible externally and some repointing may be required externally to ensure weathertightness. Doors and windows may stick slightly.	<5	0.075-0.15
3 Moderate	The cracks require some opening up and can be patched by a mason. Recurrent cracks can be masked by suitable lining. Repointing of external brickwork and possibly a small amount of brickwork to be replaced. Doors and windows sticking. Service pipes may fracture. Weathertightness often impaired.	5-15 or a number of cracks > 3	0.15-0.3
4 Severe	Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Windows and frames distorted, floor sloping noticeably. Walls leaning or bulging noticeably, some loss of bearing in beams. Service pipes disrupted.	15-25 but also depends on number of cracks.	>0.3
5 Very severe	This requires a major repair involving partial or complete rebuilding. Beams lose bearings, walls lean badly and require shoring. Windows broken with distortion, Danger of instability.	Usually > 25 but depends on number of cracks	

Damage Category Chart (CIRIA C580)

4.32. In line with policy A5 on basements the Council will ensure that harm is not caused to neighbouring properties by basement development. Burland states that it is a major objective of design and construction to maintain a level of risk to buildings no higher than category 2, where there is only risk of aesthetic damage to buildings (see Burland, J. "The assessment of the risk of damage to buildings due to tunnelling and excavations", Imperial College London, 1995). However the Council considers that neighbouring residential properties are particularly sensitive to damage, where relatively minor internal damage to a person's home can incur cost and considerable inconvenience to repair and redecorate.

4.33. Policy A5 on basements states that applicants must therefore demonstrate in the Basement Impact Assessment that the basement scheme has a risk of damage to neighbouring properties no higher than Burland Scale 1 'very slight'.

Cumulative impacts of basement development

4.34. The cumulative effect of the incremental development of basements in close proximity, particularly when these are large, can potentially create a significant impact. Therefore Basement Impact Assessments must identify neighbouring basements and make the assessment considering all nearby basements. Both existing and planned (with planning permission) underground development must be included in this assessment. To ensure cumulative impacts are considered Basement Impact Assessments must respond to the issues raised in paragraph 168 to 174 of the Camden Geological, Hydrogeological and Hydrological Study.

Stage 5 – Review and decision making

4.35. The final stage of the BIA is undertaken by LB Camden and consists of an audit of the information supplied by the applicant and a decision on the acceptability of the impacts of the basement proposal. Section 8 of the Camden Geological, Hydrogeological and Hydrological Study outlines in more detail what Council officers will be looking for, as a minimum.

Independent verification of basement impact assessments

4.36. In order to provide the Council with greater certainty over the potential impacts of proposed basement development, we will expect an independent verification of Basement Impact Assessments to be funded by the applicant. Independent verification will be required in the following circumstances:

- Where a scheme requires applicants to proceed beyond the Screening stage of the Basement Impact Assessment (i.e. where a matter of concern has been identified which requires the preparation of a full Basement Impact Assessment);
- Where the proposed basement development is located within an area of concern regarding slope stability, surface water or groundwater flow; or
- For any other basement applications where the Council feels that independent verification would be appropriate (e.g. where conflicting evidence is provided in response to a proposal).

4.37. This independent verification will be commissioned by the Council.

Basement construction plans

4.38. In some circumstances the Council may require a basement construction plan secured through a Section 106 Agreement. The Council may require provision of a basement construction plan when the proposed development involves excavation or construction that if improperly undertaken could cause damage to neighbouring properties. In most instances this will be on larger and more complex basement schemes and where excavation is close to neighbouring buildings and structures or involve listed buildings.

4.39. A basement construction plan sets out detailed information to demonstrate how the design and construction of the basement has been prepared in order to minimise the impacts on neighbouring properties and the water environment, and provides a programme of

measures to be undertaken by the owner to with the objective of minimise the impact on the structural integrity of neighbouring properties and sensitive structures such as the public highway.

4.40. A basement construction plan should contain:

- a method statement detailing the proposed method of ensuring the safety and stability of neighbouring properties throughout the construction phase including temporary works sequence drawings,
- appropriate monitoring including details of risk assessment thresholds and contingency measures,
- detail demonstrating that the basement has been designed using evidence of local factors including ground conditions, the local water environment and the structural condition of neighbouring properties, in order to minimise the impact on them.
- provision to retain at the property throughout the construction phase a suitably qualified engineer from a recognised relevant professional body to monitor, inspect, and approve the permanent and temporary basement construction works, and
- measures to ensure the ongoing maintenance and upkeep of the basement.

4.41. The basement construction plan should ensure that:

- a suitably qualified and experienced engineer has agreed the design,
- the modelling of ground conditions and water environment is appropriately conservative; and
- best endeavours are undertaken to prevent any impact on the structural integrity of the neighbouring properties.

4.42. Prior to final submission to the Council for approval, basement construction plans will need to be certified by a suitably qualified and experienced engineer who is independent of the design team. The certification will need to be funded by the applicant.

Principal impacts of basements in Camden

4.43. This section sets out the principal impacts that basement development can have upon the built and natural environment, and neighbour amenity. Each of these impacts should be considered when undertaking the Basement Impact Assessment, particularly stages 1 and 2: Screening and Scoping (see Paragraphs 4.8 to 4.15 of this CPG).

GROUNDWATER FLOW

The movement of water that travels and seeps through soil and rock underground.

HYDROGEOLOGY

The study of groundwater moving through soils and rock formations.

Groundwater flow

4.44. Basement development may affect groundwater flows, and even though the displaced water will find a new course around the area of obstruction this may

have other consequences for nearby properties, trees, etc. Given the nature of the ground in many higher parts of the borough, or those where streams once flowed, basement development may have the potential to divert or displace groundwater which can cause a rise in groundwater and cause flooding, upstream of the development, whilst immediately downstream the groundwater level may decline, which may affect wells, springs and ponds. Figure 23 of the Camden Geological, Hydrogeological and Hydrological Study sets out diagrammatically the potential impacts.

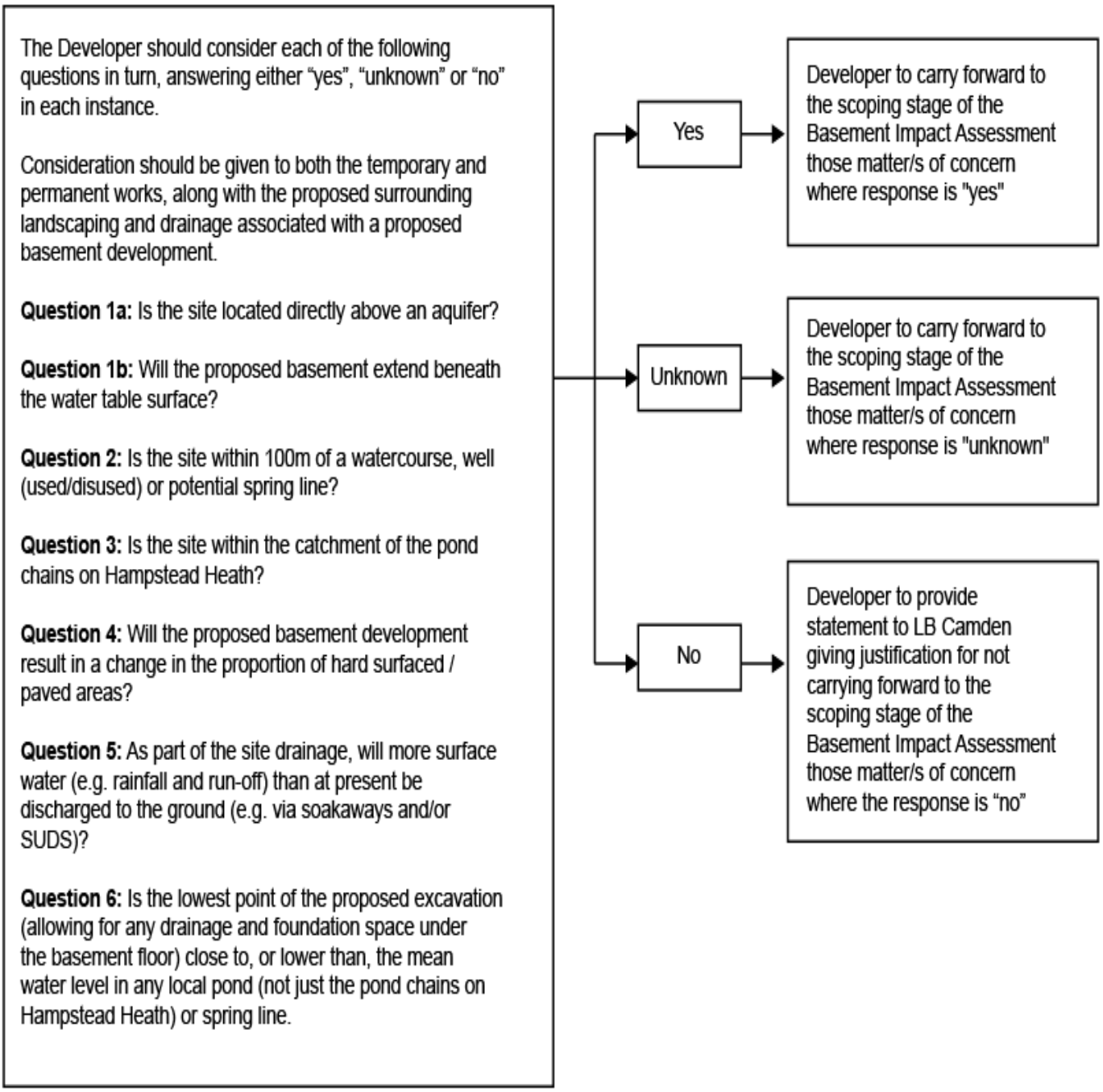
4.45. Applicants should consider the flowchart below to determine whether or not to carry forward to the scoping stage of the Basement Impact Assessment. Where certain factors are present or proposed, for example geological setting, proximity to Hampstead Heath Ponds catchment, or an intention to undertake dewatering as part of the site works, this flowchart will identify that a hydrogeological assessment will be required. If this is the case, it should be prepared by:

- A Hydrologist with the "CGeol" (Chartered Geologist) qualification from the Geological Society of London; and
- A Fellow of the Geological Society of London.

4.46. The Camden Geological, Hydrogeological and Hydrological Study contains a number of maps and plans relevant to groundwater flow, including:

- Figures 2 and 3 showing geology for the whole borough;
- Figure 4 which shows the geology for Hampstead Heath;
- Figure 5 showing the geology for the south of the borough;
- Figure 11 which maps the water courses within and around the borough; and
- Figure 14 which identifies Hampstead Heath surface water catchments and drainage.

FIGURE 12: Subterranean (ground water) flow screening chart



SUBTERRANEAN (GROUND WATER) FLOW SCREENING CHART

NOTES AND SOURCES OF INFORMATION

Question 1: In LB Camden, all areas where the London Clay does not outcrop at the surface are considered to be an aquifer. This includes the River Terrace Deposits, the Claygate Member and the Bagshot Formation. The location of the geological strata can be established from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.

Additionally, the Environment Agency (EA) "Aquifer Designation Maps" can be used to identify aquifers. These can be found on the "Groundwater maps" available on the EA website (www.environmentagency.gov.uk) follow "At home & leisure" > "What's in Your Backyard" > "Interactive Maps" > "Groundwater".

Knowledge of the thickness of the geological strata present and the level of the groundwater table is required. This may be known from existing information (for example nearby site investigations), however, it may not be known in the early stages of a project. Determination of the water table level may form part of the site investigation phase of a BIA.

Question 2: Watercourses, wells or spring lines may be identified from the following sources:

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbols may be present: W; Spr; water is indicated by blue colouration. (check the key on the map being used)
- British Geological Survey maps (e.g. 1:10,000 scale, current and earlier editions). Current maps will show indicative geological strata boundaries which are where springs may form at the ground surface; of relevance are the boundary between the Bagshot Formation with the Claygate Member and the Claygate Member with the London Clay. Note that the boundaries are indicative should be considered to be accurate to ±50m. Earlier geological maps (e.g. the 1920's 1:10560 scale) maps show the location of some wells.
- Aerial photographs
- "Lost Rivers of London" by Nicolas Barton, 1962. Shows the alignment of rivers in London and their tributaries.
- The British Geological Survey (BGS) GeoIndex includes "Water Well" records. See www.bgs.ac.uk and follow "Online data" > "GeoIndex" > "Onshore GeoIndex".
- The location of older wells can be found in well inventory/catalogue publications such as "Records of London Wells" by G. Barrow and L. J. Wills (1913) and "The Water Supply of the County of London from Underground Sources" by S Buchan (1938).
- The Environment Agency (EA) "Source Protection Zone Maps" can be used to identify aquifers. These can be found on the "Groundwater maps" available on the EA website (www.environment-agency.gov.uk) follow "At home & leisure" > "What's in Your Backyard" > "Interactive Maps" > "Groundwater".
- The EA hold records of licensed groundwater abstraction boreholes. LB Camden is within the North East Area of the

- Thames Region. Details can be found on the EA website.
- LB Camden Environmental Health department may hold records of groundwater wells in the Borough.

Where a groundwater well or borehole is identified, it will be necessary to determine if it is extending into the Lower Aquifer (Chalk) or the Upper Aquifer (River Terrace Deposits, Bagshot Formation, Claygate Member etc.). It is water wells extending into the Upper Aquifer which are of concern with regard to basement development.

Question 3: Figure 14 in the attached study, (prepared using data supplied by the City of London Corporation's hydrology consultant, Haycocks Associates) shows the catchment areas of the pond chains on Hampstead Heath.

Question 4: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement.

Question 5: This will be specific to the proposed development and will be a result of the chosen drainage scheme adopted for the property.

Question 6: The lowest point will be specific to the proposed development. Knowledge of local ponds may be taken from

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbols may be present: W; Spr; water is indicated by blue colouration. (check the key on the map being used)
- Aerial photographs

Land stability

LAND STABILITY

Steep areas and a change in geological ayers can have vulnerable land stability.

4.47. The Council will expect all basement development applications to provide evidence that the structural stability of adjoining or neighbouring buildings is not put at risk. In the first instance applicants should consider the screening flowcharts to determine whether to progress to the scoping stage of the Basement Impact Assessment. If so, it should be prepared by:

- A Civil Engineer with the "CEng" (Chartered Engineer) qualification from the Engineering Council and specialising in ground engineering;
- A Member of the Institution of Civil Engineers ("MICE") and a Geotechnical Specialist as defined by the Site Investigation Steering Group; or
- A Chartered Member of the Institute of Structural Engineers with some proof of expertise in engineering geology, with demonstrable evidence that the assessments have been made by them in conjunction with an Engineering Geologist with the "cGeol" (Chartered Geologist) qualification from the Geological Society of London.

4.48. For listed buildings, or properties adjoining or adjacent to listed buildings, we will require a structural stability report before we validate applications.

4.49. The Camden Geological, Hydrogeological and Hydrological Study contains a number of maps and plans relevant to land stability, including:

- Figures 2 and 3 showing geology for the whole borough;
- Figure 4 which shows the geology for Hampstead Heath;
- Figure 5 showing the geology for the south of the borough;
- Figure 11 which maps the water courses within and around the borough;
- Figure 16 which is a land stability slope angle map; and
- Figure 17 which outlines areas of significant landslide potential.

FIGURE 13: Slope stability screening flowchart

The Developer should consider each of the following questions in turn, answering either "yes", "unknown" or "no" in each instance.

Consideration should be given to both the temporary and permanent works, along with the proposed surrounding landscaping and drainage associated with a proposed basement development.

Question 1: Does the existing site include slopes, natural or manmade, greater than 7°? (approximately 1 in 8)

Question 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)

Question 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)

Question 4: Is the site within a wider hillside setting in which the general slope is greater than 7°? (approximately 1 in 8)

Question 5: Is the London Clay the shallowest strata at the site?

Question 6: Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained? (Note that consent is required from LB Camden to undertake work to any tree/s protected by a Tree Protection Order or to tree/s in a Conservation Area if the tree is over certain dimensions).

Question 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?

Question 8: Is the site within 100m of a watercourse or a potential spring line?

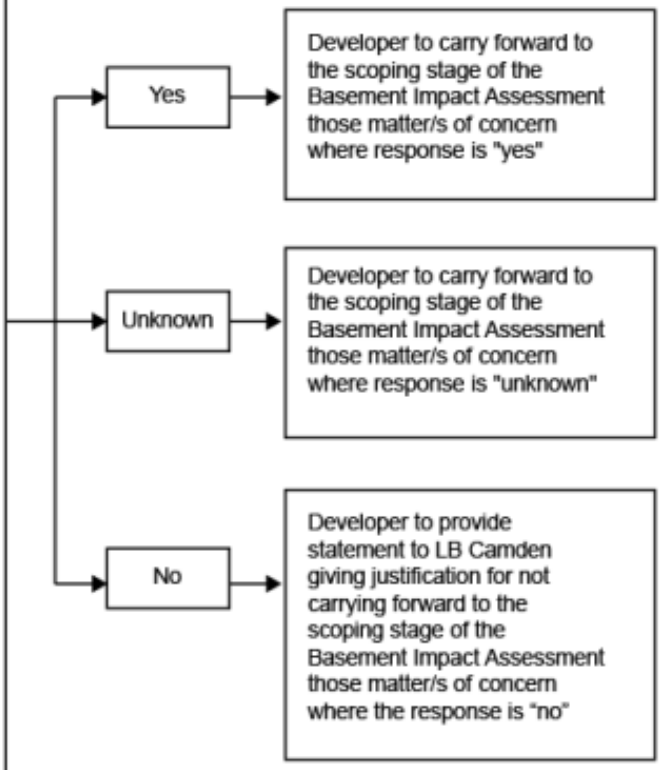
Question 9: Is the site within an area of previously worked ground?

Question 10: Is the site within an aquifer? If so, will the proposed
basement extend beneath the water table such that dewatering may be required during construction?

Question 11: Is the site within 50m of the Hampstead Heath ponds?

Question 12: Is the site within 5m of a highway or pedestrian right of way? Question 13: Will the proposed basement significantly increase the
differential depth of foundations relative to neighbouring properties?

Question 14: Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?



SLOPE STABILITY SCREENING FLOWCHART

NOTES AND SOURCES OF INFORMATION

Question 1, 3 & 4: The current surface slope can be determined by a site topographical survey. Slopes may be estimated from

1:25,000 OS maps, however in many urban areas such maps will not show sufficient detail to determine surface slopes on a property-byproperty scale, just overall trends. With regard to slopes associated with infrastructure, e.g. cuttings, it should be ensured that any works do not impact on critical infrastructure.

Question 2: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement.

Question 5: The plan footprint of the outcropping geological strata can be established from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.

Question 6: this is a project specific determination, subject to relevant Tree Preservation Orders etc.

Question 7: this can be assessed from local knowledge and on-site observations of indicative features, such as cracking, Insurance firms may also give guidance, based on post code. Soil maps can be used to identify high-risk soil types. Relevant guidance is presented in BRE Digest 298 "Low-rise building foundations: the influence of trees in clay soils" (1999); BRE Digest 240 "Low-rise buildings on shrinkable clay soils: part 1" (1993); and BRE Digest 251 "Assessment of damage in low- rise buildings" (1995).

Question 8: Watercourses or spring lines may be identified from the following sources:

- Local knowledge and/or site walkovers
- Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). If features are marked (they are not always) the following symbol may be present "Spr"; water is indicated by blue colouration. (check the key on the map being used)
- Geological maps will show indicative geological strata boundaries which are where springs may form at the ground surface; of relevance are the boundary between the Bagshot Formation with the Claygate Member and the Claygate Member with the London Clay. Note that the boundaries are indicative should be considered to be accurate to ±50m at best. British Geological Survey maps (e.g. 1:10,000 scale, current and earlier editions).
- Aerial photographs
- "Lost Rivers of London" by Nicolas Barton, 1962. Shows the alignment of rivers in London and their tributaries.

Question 9: Worked ground includes, for example, old pits, brickyards, cuttings etc. Information can be gained from local knowledge and/or site walkovers, and from historical Ordnance Survey maps (at 1:25,000 or 1:10,000 scale, or better) and British Geological Survey maps (at 1:10,000 scale, current and earlier editions). Earlier geological maps (e.g. the 1:10560 scale series from the 1920s) include annotated descriptions such as "old pits", "formerly dug", "brickyard" etc.

Question 10: In LB Camden, all areas where the London Clay does not outcrop at the surface are considered to be an aquifer.

This includes the River Terrace Deposits, the Claygate Member and the Bagshot Formation. The general footprint of the geological strata can be assessed from British Geological Survey maps (e.g. 1:50,000 and 1:10,000 scale). Note that the boundaries are indicative and should be considered to be accurate to ±50m at best.

The Environment Agency (EA) Aquifer Designation Maps can be used to identify aquifers. These are available from the EA website (www.environment-agency.gov.uk), by clicking on 'At home & leisure' > 'What's in Your Backyard' > 'Interactive Maps' > 'Groundwater'. Details are required of the thickness of the geological strata present and the level or depth of the groundwater table. This may be known from existing information (for example nearby site investigations); however, it may not be known in the early stages of a project. Determination of the water table level may form part of the site investigation phase of a BIA and may require specialist advice to answer. Depth of proposed development is project specific.

Question 11: From local knowledge and/or site walkovers, and from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). In relation to the stability and integrity of the pond structures and dams, the guidance of a Panel Engineer should be sought. (Details of Panel Engineers can be found on the Environment Agency website: http://www.environmentagency.gov.uk/ business/sectors/64253.aspx). Duty of care needs to be undertaken during any site works in the vicinity of the ponds.

Question 12: From local knowledge and/or site walkovers, and from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale). Any works should not impact on critical infrastructure.

Question 13: From local knowledge and/or site walkovers. May find some details on neighbouring properties from searches of LB Council databases, e.g. planning applications and/or building control records.

Question 14: From local knowledge and/or site walkovers, from Ordnance Survey maps (e.g. 1:25,000 or 1:10,000 scale) and directly from those responsible for tunnels (e.g. TfL or Network Rail). Any works should not impact on critical infrastructure.

Surface flow and flooding

4.50. While nowhere in the borough is identified by the Environment Agency as being flood prone from rivers or the sea, there are still parts that are identified as being subject to localised flooding from surface water. This is caused during times of heavy rainfall when the local combined sewer system is unable to deal with the volume and rate of flow. Detailed modelling suggests that areas of West Hampstead, Hampstead Town and South Hampstead are at a higher risk of surface water floods, with some risk in Highgate and Gospel Oak.

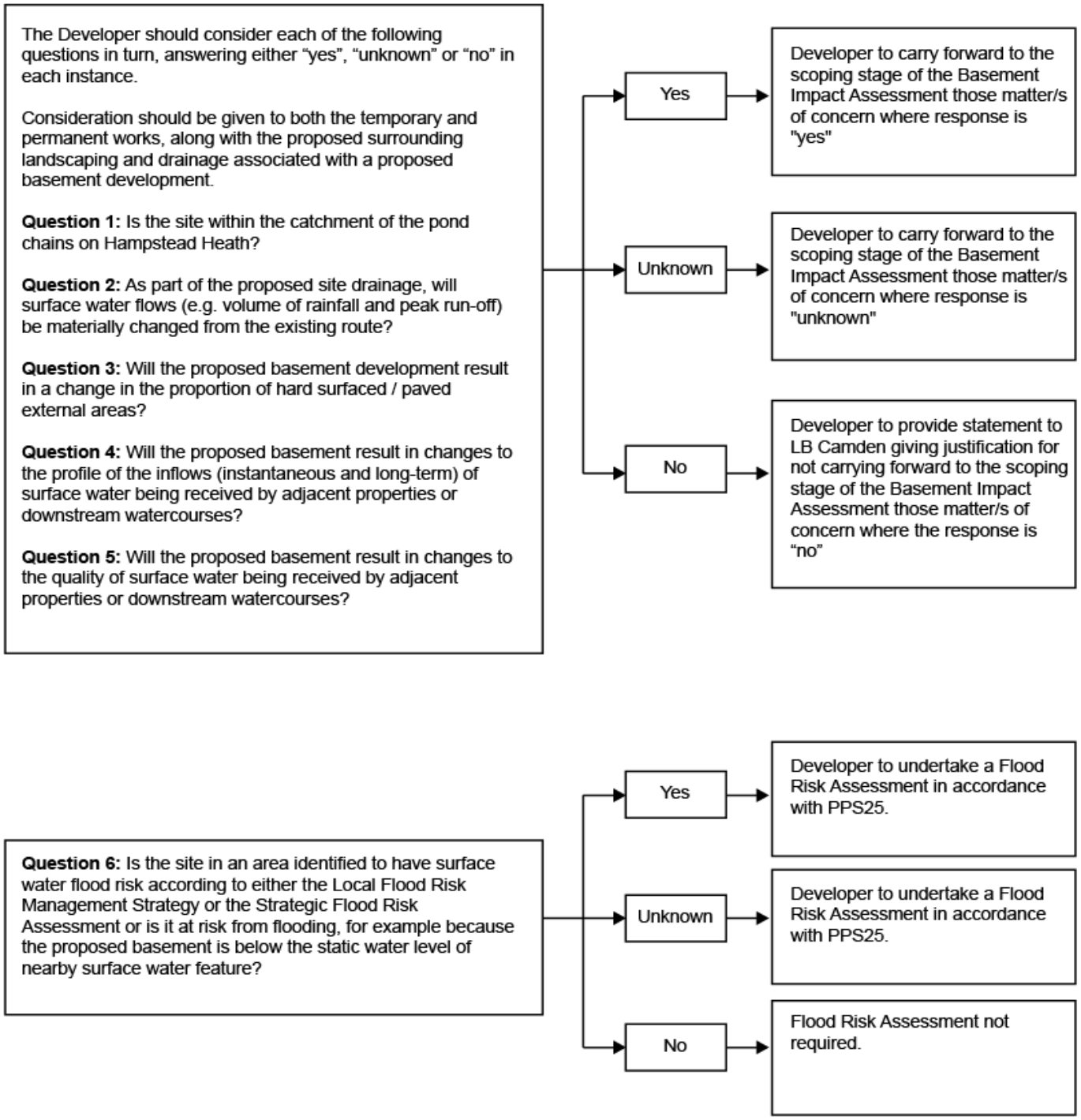
4.51. All applications for a basement extension within flood risk areas identified in the LB Camden Flood Risk Management Strategy or in any future updated Strategic Flood Risk Assessment will be expected to include a Flood Risk Assessment. In line with Local Plan policy A5 on basements, the Council will not allow habitable rooms and other sensitive uses for self contained basement flats and other underground structures in areas at risk of flooding.

4.52. Applicants should consider the flowchart below to determine whether to proceed to the scoping stage of the Basement Impact Assessment and whether a Flood Risk Assessment should be undertaken as part of this. For surface flow and flooding issues the Basement Impact Assessment should be undertaken by a Hydrologist or a Civil Engineer specialising in flood risk management and surface water drainage, with either:

- The “CEng” (Chartered Engineer) qualification from the Engineering Council; or a Member of the Institution of Civil Engineers (“MICE); or
- The “C.WEM” (Chartered Water and Environmental Manager) qualification from the Chartered Institution of Water and Environmental Management.

4.53. Figure 14 within the Camden Geological, Hydrogeological and Hydrological Study identifies Hampstead Heath surface water catchments and drainage.

FIGURE 14: Surface flow and flooding screening flowchart



SURFACE FLOW AND FLOODING SCREENING FLOWCHART

NOTES AND SOURCES OF INFORMATION

Question 1: Figure 14 in the Camden geological, hydrogeological and hydrological study (prepared using data supplied by the City of London Corporation's hydrology consultant, Haycocks Associates) shows the catchment areas of the pond chains on Hampstead Heath

Question 2: This will be specific to the proposed development and will be a result of the proposed landscaping of areas above and surrounding a proposed basement. The developer should provide documentation of discussion with Thames Water to confirm that the sewers have capacity to receive any increased wastewater flows.

Question 3: This will be specific to the proposed development and will be a result of the chosen drainage scheme adopted for the property

Question 4: This will be specific to the proposed development and will be a result of the proposed landscaping and chosen drainage scheme adopted for the property. SUDS will be required to compensate any increases in peak flow.

Question 5: This will be specific to the proposed development and will be a result of the proposed landscaping and chosen drainage scheme adopted for the property. SUDS will be required to compensate any increases in peak flow.

Question 6: The principles outlined in the NPPF and the Planning Practice Guidance should be followed to ensure that flood risk is not increased.

4.54. Basement development should not displace ground water or surface water flow so it causes flooding on nearby sites or those further away. The Council will require an adequate drainage plan and has a preference for the use of Sustainable Urban Drainage Systems (SUDS). Only where this cannot be achieved should surface/ground water be discharged to combined sewers (refer to the chapter on water efficiency in the Camden Planning Guidance on Water and flooding and Local Plan Policy CC3 Water and flooding).

SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS)

Low environment impact approaches to drain away dirty water and surface water run-off through collection, storage, and cleaning before allowing it to be released slowly back into the environment, thereby preventing flooding, pollution and contamination of groundwater.

5. Impacts on neighbours from demolition and construction

5.1 The demolition and construction phases of a development have the potential to harm the amenity of neighbours, and this is particularly so for basement development. Although this is temporary, demolition and construction can to create noise, vibration, dust, air and light pollution, and can last for lengthy periods of time.

Considerate Constructors Scheme

5.2. Full care and consideration should be given to neighbouring properties, as the works can be particularly intrusive to immediate neighbours. All construction and demolition processes are expected to be in accordance with the Considerate Constructors Scheme standards. Construction and demolition processes are also expected to conform to the ICE Demolition Protocol (www.ice.org.uk) and should have regard to the Guide for Contractors working in Camden, Feb 2008, which is available the Camden Council website and to the GLA's best practice guidance document The Control of Dust and Emissions from Construction and Demolition (https://www.london.gov.uk/file/18750/).

CONSIDERATE CONSTRUCTORS SCHEME

Aims to ensure that contractors carry out their operations in a safe and considerate manner, with due regard to local residents and businesses, passing pedestrians and road users.

DEMOLITION PROTOCOL

Provides a framework for sustainability in construction, demolition and refurbishment projects.

Construction management plans

5.3. The Council will generally require a construction management plan for basement developments to manage and mitigate the greater construction impacts of these schemes. Construction management plans will generally be required for schemes on constrained sites, in conservation areas, on sites adjacent to a listed building, or in other areas depending on the scale of the development and the conditions of the site. Construction management plans should cover the following:

- provisions for phasing;
- provisions for site management, safety, and supervision,
- management of construction traffic and parking;
- management of noise, vibration, dust, and waste;
- provisions to ensure stability of buildings and land;
- provisions for monitoring movement, and
- provisions for a construction working group (for projects where there will be a need for ongoing consultation with the affected neighbours through the construction phase e.g. long, complex projects).

5.4. Construction management plans should take into consideration other developments taking place in the local area with a view to minimising the combined effects of construction works. The Council encourages applicants to inform and engage with affected neighbours at an early stage.

5.5. In considering applications, the Council will ensure that schemes minimise the harmful impacts of construction on the building and on local amenities. Construction management plans should consider the recommendations from the Camden Geological, Hydrogeological and Hydrological Study. See the Camden Planning Guidance on Amenity more information on Construction Management Plans.

Working hours – noisy construction and Saturday working

5.6. Noise and other disturbance to neighbours caused by basement construction is a serious concern in the borough. Working hours in Camden are set by the Guide for Contractors Working in Camden and Camden's Minimum Requirements for Construction Management Plans (CMPs) . The working hours are:

- Mondays to Fridays - 8am to 6pm
- Saturdays - 8am to 1pm
- Sundays and Bank Holidays - No noisy work

5.7. The Minimum Requirements for Construction Management Plans document states that the working hours are Camden's standard times. However, the times incorporated into a CMP should be specific to the site and related to the type of work being carried out. It notes there may be occasions where the times should be shorter and with break out/rest periods. In areas where there is a post examination Neighbourhood Plan developers should follow any recommendations on construction working hours for basement development set out in that Plan. You can check if your site in a neighbourhood plan area on the Camden Policies Map or through the link below:

LB Camden website: Neighbourhood Planning

5.8. In all other areas, when developing construction management plans for basements developers should consult with the neighbours affected by basement development. As part of this consultation developers should ask affected neighbours as to whether they would like to restrict noisy working on Saturdays. Limiting working hours on Saturdays will allow people to enjoy a noise free weekend but will increase the overall length of the construction period. Where affected neighbours would like no noisy construction work to take place on Saturday developers should agree to this as part of their construction management plan.

Processing and monitoring fees

5.9. Please note that processing and monitoring fees apply for Section 106 agreements.

See Camden Planning Guidance on Developer Contributions for further details and LB Camden website on Planning Obligations.

Sustainable construction

5.10. As part of an application for a basement development, applicants will be required to describe within their Design and Access Statement how the development has considered materials, resources and energy. This statement should explain how the use of sustainable materials has been considered and applied in the proposal, and the reasons for the choices that are made. The statement should also detail which existing materials on the site are to be re-used as part of the development or made available for re-use elsewhere, and the measures to improve the energy efficiency of the development. Further guidance is provided within the Camden Planning Guidance on Energy efficiency and adaptation (see sustainability assessment tools).

DESIGN AND ACCESS STATEMENT

A report supporting a planning application that justifies the design principles and concepts of the scheme, and explains how issues relating to access have been dealt with. The level of detail depends on the scale and complexity of the application.

6. Other permits and requirements

Building regulations

6.1. A Building Regulations application is required when converting an existing basement to habitable use, excavating a new basement or extending an existing basement. Due to the nature of the work, in which different problems can arise, it is advised that the "deposit of plans route" is adopted to obtain building regulation approval. This is the most widely known procedure and involves you submitting plans which show full details of the work. These plans are then checked for compliance with the Building Regulations and, if satisfactory, an Approval Notice is issued.

BUILDING REGULATIONS APPLICATION

The Building Regulations apply to most 'buiding work' and theres a need to make an application to the Council's Building Control team or an approved inspector before proceeding. Further details are available from the Building Control section of the Council's website.

6.2. The Council recommends that you follow the full plans procedure unless the work is of a very minor nature. The Full Plans procedure gives greater protection to the building owner.

6.3. As part of the application it will be necessary to submit a full site investigation and a consulting civil or structural engineers report on the investigation and development proposals.

6.4. Building Regulations are set out by various technical parts (A-P) and the principal requirements include the following:

- Part A Structure
- Part B Fire Safety
- Part C Site preparation and resistance to contaminants and moisture
- Part E Resistance to passage of sound
- Part F Ventilation
- Part H Drainage
- Part J Combustion appliances
- Part K Protection from falling collision and impact
- Part L Conservation of fuel and power
- Part M Access and use of building
- Part P Electrical safety

6.5. The above are available to be viewed on the Department for Communities and Local Government website www.communities.gov.uk. Additional guidance can be obtained from the Approved Document: Basements for Dwellings 2nd edition 2004 (although superseded this provides the framework for satisfying the building regulations).

Highway licence

6.6. If there is a need to put a skip or building material on the public highway, or erect a scaffold, hoarding or gantry an application for a license under the Highways Act will be needed. Applicants will also need to obtain the consent of the appropriate highway authority if their proposal involves any work under any part of the highway or footway. The Council is the highway authority for most streets in the Borough, although for some major roads Transport for London is the highway authority. For more information about the highway authority or licensing matters, please visit the Council's website at the links below.

- Transport and street (general page) – www.camden.gov.uk/ccm/navigation/transport-and-streets/
- Skip licenses
- Parking suspensions
- Applications to place building materials on the highway

Approval in principle

6.7. If the basement construction is immediately adjacent to the public highway or in close proximity to the edge of the public highway, then an Approval in Principle will have to be submitted to the Council. In the first instance, email structuresworks@camden.gov.uk outlining the nature of the proposed structure and to provide outline drawings which clearly show the extent of the structure relative to the public highway. An Engineer from the Camden's Structures Team will then make contact to arrange a meeting and explain the process further.

Party wall award

6.8. For most basement developments applicants will need a party wall award (sometimes referred to as party wall agreements) with their neighbour(s). This includes when excavation is:

- within 3 metres of a neighbouring structure;
- would extend deeper than that structure's foundations; or
- within 6 metres of the neighbouring structure and which also lies within a zone defined by a 45 degree line from that structure.

6.9. The Council is not itself involved in Party Wall awards, but a guidance note explaining the procedures can be found on the Council's website or from the Planning Portal website www.planningportal.gov.uk.

Security for expenses

6.10. The Party Wall Etc. Act 1996 allows adjoining owners to request the building owner to provide a bond or insurances to provide security in the event of a dispute. The money remains the building owner's throughout but can be drawn upon to pay for rebuilding or repair in certain circumstances. Given the complex nature of some basement development the Council encourages applicants to proactively offer this security for expenses to owners of nearby properties both in party wall awards and also when the scheme would not trigger the need for a party wall award.

6.11. The Council strongly recommends that Party Wall agreements are concluded prior to the applicant seeking the Council's approval of the Basement Construction Plan (BCP). This allows for the specific issues relating to the construction programme to be established, meaning neighbours are better informed before entering into a Party Wall agreement in connection with the proposed basement scheme.

Freeholder permission

6.12. Most residential leases will require some form of landlord permission for improvements and alterations. This is also the case for leasehold Housing Revenue Account (HRA) property, where permission from Camden's Housing Department is required for any improvements and alterations, including basement development. Further information for leaseholders can be found here:

LB Camden website – Leaseholders

Flooding and positively pumped devices (PPDs)

6.13. As sewers are designed to surcharge to just below cover level, basement and other subterranean development is at risk of flooding with sewage. In accordance with advice from Thames Water and to protect against flooding the Council will ensure that all basement and other subterranean development is protected from sewer flooding by the installation of a positive pumped device.