Basements
Draft Supplementary Planning Document

Suggested stylistic amendments to make the text more reader-friendly

1. Introduction

Basement developments in the Borough can be afforded more easily and can have a greater adverse impact than elsewhere in most parts of England and Wales. (Inspector’s Report on the Examination of Policy CL7, December 2014)

Background

1.1 The Council adopted Policy CL7: Basements on 21 January 2015 and it forms part of the Local Plan. The policy is based on a robust and extensive evidence base. The Inspector’s report on the policy acknowledged the special character of the Royal Borough and the issues relating to basement development. The Borough has seen an increasing number of basement planning applications; it is largely residential with a dense built environment, very high property values and a high quality historic environment. The associated construction impacts of basement development individually and cumulatively can affect the living conditions in residential neighbourhoods.

1.2 The policy has introduced restrictions on the extent of basement development. It also sets out a number of criteria which seek to manage the impact of basement development on residents, the environment and on the character and appearance of the Borough. It is considered that there are some aspects of the policy where it would be useful to provide further guidance.

Purpose of this document

1.3 This Supplementary Planning Document (SPD) provides more detailed guidance and advice on adopted Core Strategy Policy CL7: Basements. It is designed to help applicants make successful planning applications and for residents to understand the various issues that the Council will consider in assessing planning applications. The SPD includes –

- Information on the importance of pre-application consultation and the role of various regulatory regimes on basement development.
- Design guidance on the extent of basements under gardens and on their external manifestations.
- Further clarity on ‘large sites’ where exceptions may be made to criteria (a) and (b) of Policy CL7.
- Structural Design – this covers what should be included in a Construction Method Statement. This includes special considerations in relation to listed buildings.
• Detailed guidance on minimising construction impacts – this includes guidance on preparing a Construction Traffic Management Plan (CTMP) and keeping noise, vibration and dust to acceptable levels.
• Consideration of various types of flooding including provision of Sustainable Drainage System (SuDS).
• Consideration of the impact on trees as part of basement development.

2. Pre-application Consultation

Applicant Checklist

• Engage with neighbours before submitting the planning application and provide evidence of this with the planning application.

“Local planning authorities have a key role to play in encouraging other parties to take maximum advantage of the pre-application stage. They cannot require that a developer engages with them before submitting a planning application, but they should encourage take-up of any pre-application services they do offer. They should also, where they think this would be beneficial, encourage any applicants who are not already required to do so by law to engage with the local community before submitting their applications (National Planning Policy Framework (NPPF), para 189).”

2.1 The Council offers a pre-application advice service for applicants. Detailed information on the planning advice service is available on the Council's website. As set out in the NPPF, pre-application stage can be used to resolve issues early in the process and has significant potential to improve the efficiency and effectiveness of the planning application system for all parties (NPPF, para 188).

2.2 Applicants should consult with the neighbours living in the vicinity of the site before formalising proposals. Such consultation can improve the outcome of the planning application both for the applicant and the local community.

2.3 The consultation that applicants undertake should be proportionate to the scale of the proposed development and reflect the location. Therefore for a small proposal, such as works to an existing cellar, consulting with the adjoining neighbour who may share a party wall may suffice. For a larger basement, consulting a wider area, including properties that back on to the site and those that are further down the street may be more appropriate. Whilst the basement itself will be contained on a single site, the related construction traffic could affect the whole street for example. Similarly even
modest development in a small mews may cause significant amount of local disruption given the confined nature of the street.

2.4 Appendix 1 explains further the role of various parties in bringing together a basement development and includes the further benefits of early consultation. Also see Appendix 2 for a Compact for Residents.

2.5 When a planning application is submitted the Council will expect evidence to be submitted that the developer has carried out adequate consultation with neighbours.

3. Design Guidance

Applicant Checklist

• Consider not just the garden but any existing open areas such as existing lightwells when calculating the 50% maximum extent.
• Design the basement (adjoining the building) so that the unaffected garden remains in a single area including where the basement is proposed underneath a detached or semi-detached house.
• Study the site and context carefully to establish the suitability of external manifestations especially to the front and side.
• Design any visible external manifestations of the basement so that they are discreetly sited and located preferably close to the existing building.
• In relation to listed buildings consider locating the link to the proposed basement underground (situated in the garden) from an above ground extension (if there is one).

50% Garden Extent

“CL7 (a) – Not exceed a maximum of 50% of each garden or open part of the site. The unaffected garden must be in a single area and where relevant should form a continuous area with other neighbouring gardens. Exceptions may be made on large sites;”

3.1 As stated in the policy the 50% maximum extent will be measured separately for each garden within the site e.g. front, back or side. An existing lightwell with no built structure below can be regarded as forming part of the ‘garden’ or ‘open part’ of the site. The Royal Borough is characterised by terraced houses and in most cases the fronts and back gardens will be clearly separate and the measurements straightforward as shown in figure 1.

3.2 Some basement construction would involve a detached or semi-detached house with no physical separation between the gardens to the front, back and side. In such instances it is preferable to keep the basement close
to the building line and leave a margin that is free of development in each garden as shown in figure 2. Such a configuration could result in a maximum of 50% of the whole garden being utilised with slightly less or more in the front or rear for example (although the extent in each garden should still be close to 50%). The policy objective is to provide significant space free of development to enable natural surface water drainage and a good planting area should be considered. It is important in locating the basement, therefore, that account is taken of leaving the unaffected portion of garden should be connected to other unaffected neighbouring gardens.

**Design of visible (external) manifestations**

“CL7 (g) - not introduce light wells and railings to the front or side of the property where they would seriously harm the character and appearance of the locality, particularly where they are not an established and positive feature of the local streetscape;”

“CL (h) - maintain and take opportunities to improve the character or appearance of the building, garden or wider area, with external elements such as light wells, roof lights, plant and means of escape being sensitively designed and discreetly sited; in the case of light wells and roof lights, also limit the impact of light pollution;”

**Lightwells**

3.3 Most of the Borough is within designated conservation areas. The Council’s duty statutory test in relation to conservation areas is set out in the Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended). Section 72 sets out that in determining planning applications in conservation areas, the Council should pay, “special attention to the desirability of preserving or enhancing the character or appearance of that area.”

3.4 Lightwells are one of the most obvious external elements of a basement. Many streets in the borough are characterised by terraced housing with historic lightwells and railings forming part of the special street character and/or appearance of the conservation area. In contrast there are other streets where the lack of lightwells contributes to the special character and/or appearance of the conservation area.

3.5 The creation of a new lightwell where it could potentially harm the character and appearance of the conservation area will have to be considered in relation to Policy CL7 (g) and (h) and also in relation to the statutory duty stated above. Clearly where lightwells are not part of the established character of the streetscape, the creation of a new lightwell with railings can be incongruous to the context. In such a situation a better design solution would be to locate them to the back of the building where they are likely to have the least visual impact.

3.6 Whether proposed in the front, side or back, the addition of railings and balustrades often makes lightwells more conspicuous. Where the location of
new lightwells is acceptable they can be made more discreet by the use of grilles as opposed to open lightwells with railings. Grilles can be flush with the ground level and be of a discreet colour which helps further in making them less noticeable and visually intrusive.

3.7 Where there are existing front lightwells, the further deepening of these lightwells to provide light to a new basement underneath can have an adverse visual impact and be harmful to the character and appearance of the conservation area.

**Rooflights**

3.8 Rooflights are often proposed as a way of providing natural light to basements in addition to or as an alternative to lightwells. Such artificial features appearing away from the building line in the middle of private gardens can often be visually harmful particularly when illuminated at night and be a source of light pollution. Where they are proposed they should be kept flush with the ground level, be close to the building and be proportionately small as shown in figure 3.

3.9 Sometimes the use of planting or internal blackout blinds are proposed by applicants to mitigate their visual impact. However, planting is not viewed generally as a permanent solution, often changing with the owner and it is difficult if not impossible to enforce. Similarly black out blinds are internal to the building and cannot be enforced through the planning regime. Therefore such measures are not sufficient to mitigate the harmful effects.

**Staircases**

3.10 Basement proposals that include an emergency escape staircase (secondary means of escape) should incorporate these into the design of the proposal. Staircases or associated above ground structures appearing deep in the garden are normally not acceptable and similar to other external manifestations, they should be kept close to the building.

3.11 External staircases, in a similar way to lightwells, can be visually prominent unless they are already a feature of the area. Similar considerations as for lightwells should be taken into account where they are proposed.

**Plant and Machinery**

3.12 Any plant and machinery associated with basements, such as air conditioning units, plant used for swimming pools etc should be incorporated within the design. Ideally any plant and machinery should be located within the building and any external visual impact should be avoided.

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**Basements within the curtilage of Listed Buildings**
3.13 Whilst criterion (f) of the policy precludes excavation underneath a listed building, basements can be constructed within the curtilage of listed buildings. Structural considerations for such basements are set out in Section 5. Proposals affecting listed buildings will be considered in accordance with the tests in the NPPF (criterion e. of Policy CL7) in particular the advice outlined in paragraphs 132 to 134.

3.14 Often the best place to form the link to a basement in the curtilage of a listed building is from any later existing extension that the host building may have. This is because such a configuration is likely to cause the least harm to the original plan-form and historic fabric of the listed building.

4. Large Sites

Applicant checklist

- If any exceptions to criteria (a) and/or (b) of Policy CL7 are proposed, consider if the site bears similar characteristics to those described presented in this section.

4.1 Criteria (a) and (b) of Policy CL7 restrict basements to a maximum of 50% of each garden or open part of the site and to one storey. However, they also state that “exceptions may be made on large sites.” Large sites are explained in the reasoned justification to the policy as follows; “On large sites, basements of more than one storey and greater than half the garden or open part of the site may be permitted in certain circumstances. These will generally be new developments located in a commercial setting or of the size of an entire or substantial part of an urban block1. They should be large enough to accommodate all the plant, equipment and vehicles associated with the development within the site and offer more opportunity to mitigate construction impacts and carbon emissions on site.” (para 34.3.56 Policy CL7, January 2015)

4.2 There is no precise definition of a large site and the Council will consider each case on its own merits. To help explain what is likely to be classified as a large site, the following are examples of recent cases where the Council has decided that sites should be classed as large. The following examples help to explain what is meant by ‘large sites’. The Council has determined planning applications in relation to the sites presented and has considered in each case whether the site could be classed as a ‘large site’ or not. The Council expects sites to bear similar characteristics to the large sites presented below in order to be considered as a ‘large site’. Examples are also provided of sites that the Council did not consider to be large to further aid clarity. Please note that the site boundaries shown indicate the general size and extent of the sites and should not be taken as exact.

4.3 It can be seen that all the examples of large sites shown are over 0.5 hectare in area. This (0.5 hectare) is a useful rule of thumb for the threshold of
a large site, but it is not does not guarantee that a site will be considered large, exact and regard should also be had to the characteristics, form and layout of the site and its surroundings.

Large Sites

Odeon Cinema, High Street Kensington

4.4 Site Characteristics – Commercial location within the Secondary Frontage of Kensington High Street Major Centre.

4.5 Site size – 0.51 hectares, forms a substantial part of an urban block.

4.6 Access – Fronting a major road (Kensington High Street) to the north and another major artery (Earl’s Court Road) to the east. There is an access road to Pembroke Place to the south.

4.7 Construction Impacts – All plant, equipment, vehicles to be accommodated on-site. Traffic is routed through the site with entry from Earl’s Court Road and exit on Kensington High Street. Gantries are proposed over part of the footpath in Earl’s Court Road, Kensington High Street and Pembroke Place.

Chelsea Cinema, King’s Road

4.8 Site Characteristics – Commercial location within the primary Shopping Frontage of King’s Road Major Centre.

4.9 Site size – 0.56 hectares, forms a substantial part of an urban block.

4.10 Access - Fronting King’s Road to the south and Chelsea Manor Street to the west.

4.11 Construction Impacts – Equipment to be accommodated on site. It will involve a bus stop being re-located and the footway closed at Chelsea Manor Street. There are no parking suspensions.

Gordon House, Royal Hospital

4.12 Site Characteristics – Discrete large house set in extensive grounds. It is located in the south west corner of the Royal Hospital site, which provides residential accommodation and care for retired soldiers.

4.13 Site size – 0.79 hectares, forms a substantial part of an urban block.

4.14 Access – Eastern boundary fronts West Road which is a private road, part of the Royal Hospital compound and there is emergency access from Tite Street. It is proposed to have the main access of the completed development from Tite Street.
4.15 Construction Impacts – All plant and equipment is to be accommodated on-site. Construction access will be from West Road through Royal Hospital grounds.

Charles House, 375 Kensington High Street

4.16 Site Characteristics – Commercial location close to Kensington Olympia Station.

4.17 Site size – 1.38 hectares, forms part of a large urban block – one of the four sites in the Warwick Road Planning Brief SPD.

4.18 Access – Fronting Kensington High Street and off Warwick Road

4.19 Construction Impacts – Equipment was accommodated on site for basement and still is as part of the ongoing above ground works

Sites which are not ‘large’

Duke’s Lodge, Holland Park

4.20 Site Characteristics – Residential location to the north-east of Holland Park Metropolitan Open Land. Site bounded by open land to the south, pedestrian / cycle path to the east, highway to the west and Ukrainian Institute (D1) to the north. Site drops approximately 3m at pavement level from south to north.

4.21 Site size – 0.255 hectares. Does not form a substantial part of an urban block.

4.22 Access – Via Holland Park (road) only - a residential street, albeit a wide one. No construction access via pathway to the rear.

4.23 Construction Impacts – 130 week basement and structural work build out, further 90 week fit out. Average approx 15-20 vehicles per day. Seven parking bays suspended for entire work period. Most equipment to be accommodated on site. Loading area / gantry set up at the front of the site on pavement and part of vehicular highway – footway maintained. Construction vehicles would access and exit the site via Holland Park Avenue.

4.24 Sites such as the ones within the red line shown on the aerial photograph below, comprising detached, semi-detached and terraced houses will normally not be considered large sites.

5. Construction Method Statement

Applicant Checklist
• Submit with the planning application a Construction Method Statement (CMS) which follows a sequential process described in figure 4.
• The CMS should be signed by a Chartered Civil Engineer (MICE) or Chartered Structural Engineer (MI Struct. E.).
• The CMS should include a non-technical executive summary setting out clearly the key elements of the report and a clear statement concluding compliance with Policy CL7 (n).
• For listed buildings in addition to all the guidance that normally applies, further guidance in paragraphs 5.14 to 5.22 should also be followed and demonstrated in the CMS.

In most situations the design and construction are technically demanding and should not be underestimated. Problems generally do not arise when the design and construction are thoroughly and fully considered and the interaction between design and construction is properly explored and taken into account.

"CL7 (n) - be designed to safeguard the structural stability of the existing building, nearby buildings and other infrastructure including London Underground tunnels and the highway;"

5.1 Applicants should demonstrate compliance with Core Strategy Policy CL7 criterion (n) (set out above) by submitting a clear Construction Method Statement (CMS). Figure 4 sets out the sequential steps that should be undertaken by the Applicant and the Design Team.

5.2 The CMS must be signed by a Chartered Civil Engineer (MICE) or Chartered Structural Engineer (MI Struct. E.), appointed by the applicant. The Council will rely on the professional integrity of the person signing the CMS to ensure that the construction of the basement can be undertaken safely and will safeguard the structural stability of the existing building and other nearby buildings as required by the policy. The CMS should include a non-technical executive summary setting out clearly the key elements of the report and a clear statement concluding compliance with Policy CL7 (n).

5.3 The Council may choose to consult, at the applicant’s expense, an independent Chartered Structural Engineer with expertise in historic structures may be affected. This would normally be carried out as part of the consideration of the planning application.

**Figure 4 – Steps to be taken to prepare a CMS**

**Actions by applicant**

• Appoint an experienced design team including a Chartered Structural or Civil
Provide an undertaking to retain the Services of a Chartered Engineer for the duration of the project.

Engage in consultation with adjoining owners and others who may reasonably be affected by the proposals.

Undertake to engage a contractor with relevant experience.

**Pre-planning work by design team**

- Carry out a detailed desk study.
- Visually appraise the existing and adjoining building for any signs of historic or ongoing movement.
- Carry out a site investigation to establish ground conditions and any groundwater levels.
- Determine nature of existing foundations.

**Engineering design work**

- Develop detailed scheme design.
- Consider effects on groundwater, drainage, Suds and flooding.
- Consider effects on trees, existing structures and information. [not clear what "information" refers to]
- Show how the basement can be constructed safely.
- Assess ground movements and potential damage category.

**Construction Method Statement (CMS)**

The CMS should provide the following:
- Executive Summary*
- Results of the desk study and site investigations.
- Details of the site investigation including groundwater and monitoring results.
- Details of the structure and foundations of the existing building and relevant adjoining structures.
- An assessment of the impact of the basement on groundwater including cumulative effects.
- Details of surface water and Suds proposals.
- A flood risk assessment.
- A sequence of construction together with a temporary works scheme design.
- An assessment of ground movements and the predicted damage category of surrounding buildings.
- A clear statement that the project complies with Policy CL7 (n).
- An undertaking to retain the Services of a Chartered Engineer for the duration of the project.
- An undertaking to engage a contractor with relevant experience.
Executive Summary

• Include a non-technical executive summary clearly stating that a sequential approach as shown in this flow chart has been followed.
• The executive summary should set out the key elements of the report.
• It should include a clear statement concluding compliance with Policy CL7 (n).

5.4 Applicants should follow the guidance presented in the following paragraphs in preparing a Construction Method Statement. It should be noted that the steps presented below are sequential and this approach should be clear in the CMS.

A. Actions by the Applicant: First steps

5.5 Appoint a design team who have experience in the design of residential basements including a Chartered Structural or Civil Engineer experienced in the design and construction of basements in residential buildings, to design the new basement structure and monitor its construction. The engineers’ brief should include reviewing the contractors’ construction proposals, method statements and temporary works. Evidence of this appointment should be provided in the CMS.

• Undertake to retain the services of the Chartered Engineer or if, for some reason, the Engineers’ appointment is terminated, appoint a replacement Engineer with relevant expertise to continue with the project both as designer and construction monitor.

5.6 Engage in consultation with adjoining owners and nearby residents to explain what is proposed, what the implications for adjoining owners and other residents will be and what mitigation measures are to be put into place. Where neighbours refuse to engage in consultation, provide evidence in the CMS that the relevant information has been provided to them.

• Undertake to engage or provide evidence of engagement of a builder or contractor experienced in the construction of basements similar to that being proposed on the site.

B. Preplanning Work by the Design Team – Desk Study and Site Investigation

B.1 Desk Study
A thorough desk study must be carried and presented in the Construction Method Statement. The desk study should establish at least the following:

a) The site history
b) The age of the property
c) The topography
d) The geology and ground conditions – overall sections should be drawn using information obtained from the site investigation and British Geological Society borehole logs.
e) Rivers and Watercourses, whether existing or old
f) The surface water and ground water regimes
g) Flood risk issues
   o Fluvial flooding
   o Surface water flooding
   o Critical drainage flood areas
   o Groundwater flood potential
h) Underground infrastructure, particularly London Underground Limited assets, Main Drains and Utilities

B.2. Site Investigation

The following site investigations should be carried out. The results of the visual investigation should be presented in the CMS with photographs where appropriate. The results of these physical investigations must be clearly presented in the CMS with accompanying drawings and sketches including plans and sections to show the layout and details of the existing structure and foundations. These should be included in the CMS.

B.2.1 Visual assessment of the existing building and its neighbours and Physical Investigations

A visual assessment of the existing buildings and the adjoining buildings should be undertaken to establish whether there are any historic or ongoing movements and to establish the likely overall condition of the buildings. Past alterations to the host structure and to the structure of adjoining buildings should also be considered. This assessment should inform the feasibility of the basement proposals and be used to determine appropriate engineering design solutions. The visual assessment should extend to looking at buildings in the area generally.

B.2.2 Physical site investigation of ground and groundwater conditions

Borehole Investigation
A site investigation must be undertaken to establish the ground conditions including the geological strata and the presence of the Upper Aquifer. It is particularly important to distinguish between sites where the subsoil is clay and those where it is sand or gravel. The site investigation should be undertaken using boreholes on the application site. Variations in ground conditions can occur within close proximity therefore the borehole investigation should be undertaken at various locations spread across the site.

Where underpinning is proposed in areas where the near surface subsoil is gravel, the depth of the borehole should be up to the London Clay. Where piling is proposed, the depth should be up to the depth of piling and 4 to 5 metres more.

Ground water monitoring should be implemented where the Upper Aquifer is present, so that a thorough understanding of the ground water regime on the site is known and how the level of this relates to the foundations of adjoining and nearby properties.

Trial Pits

Trial pits must be dug on all walls to be underpinned or have piled walls built close to them to establish the details of the existing foundations and their condition. The Engineer needs to decide on how extensive these trial pits need to be.

Opening up of the existing structure may be needed to establish its details and condition if these are important.

For the planning application, the engineering design should be advanced to Detailed Proposals Stage (equivalent to RIBA Stage D) as set out in the Services of ACE (Association of Consultancy and Engineering) Agreement 1: Design, 2009 Edition). Appropriate drawings must be prepared and submitted that describing the detail of the engineering designs, and that illustrate how the construction addresses the following:

- Groundwater
- Drainage
- Flooding
d) Vertical loads
e) Lateral loads
f) Movements
g) Ground Conditions
h) Trees and planting
i) Infrastructure
j) Vaults
k) Existing Structures
l) Adjoining buildings and structures
m) Overall stability (permanent and temporary works)
n) Underpinning (if proposed)
o) Piling (if proposed)
p) Special considerations e.g. cantilevered stone stairs and landings, balconies or other important functions or features in an existing building which need special consideration.

D. Preparation of Construction Method Statement (CMS)

5.16 A The Construction Method Statement is required to accompany the planning application. This statement needs to show how all relevant design issues have been addressed and how these relate to or influence the construction of the basement. No basement design should be undertaken without consideration by the designer as to how it can be constructed. In particular the CMS should clearly contain the following information:-

a) A non-technical executive summary clearly stating that a sequential approach as shown in this flow chart has been followed. It should also set out the key elements of the report and include a clear statement that the project complies with Policy CL7 (n).

b) The Desk Study information and an analysis of the findings in relation to the proposals (see Section B.1 above).

c) The site investigations (see Section B.2 above) with an engineering interpretation of the results.

d) An appraisal of the existing building structure and an understanding of the structural arrangement and condition of the adjoining buildings with particular reference to condition and history of movements. Ongoing movements should be considered.

e) A description of the ground conditions and the measures proposed to deal with any ground instability.

f) A statement on groundwater with relevant proposals to deal with it when the new basement is below the water table level. In such cases, consideration must be given to the possible cumulative effect on the groundwater regime of
the basement with other basements nearby (see B.2.2) on the groundwater regime. Where the groundwater at a site lies close to the underside of existing ground or lower ground floor levels of the building or those of its neighbours, the potential for the new basement to cause a local rise in the water level of the Upper Aquifer must be carefully considered and dealt with in the proposals.

ge) An analysis of the surface water conditions on the site and how surface water will be dealt with when the basement has been constructed, demonstrating how the status quo is maintained without increasing surface water flows into the curtilage of adjoining properties.

hf) A statement on flooding and flood risk taking account of fluvial flooding, surface water flooding and Critical Drainage issues (including sewer flooding) explaining how these are accounted for in the design. Sites within Critical Drainage Areas require a full Flood Risk Assessment (NPPF compliant).

ig) Consideration by the designer as to how the basement structure is likely to be built. This should include the envisaged sequence of construction, temporary propping and the relationship between the permanent and temporary works. In particular, attention must be paid to how the vertical and lateral loads are to be supported and balanced at all stages especially when there is to be load transfer and what must be done to limit movements of the existing structure and adjoining buildings. This should be presented in either written or drawn form. Details of any proposed underpinning or piling should be given.

jh) An assessment of movements expected and a written statement of how these will affect the existing property, adjoining buildings and other adjacent structures. This assessment can be from computer modelling or use empirical means (such as those set out in CIRIA2 C 580 Embedded Retaining Walls: Guidance for Economic Design) with appropriate justification. The assessment needs to cover both short term and long term movements relating to the construction and the performance of the permanent works. The design and construction methodology should aim to limit damage to the existing building on the site and to all adjoining buildings to Category 1 as set out in Table 2.5 of CIRIA report C 580 and should never be more than Category 2. The CMS should explain clearly how this is to be achieved. (Category 1 is 'very slight' up to 1 mm, Category 2 is 'slight' up to 5mm)

ki) The extent of root protection areas and tree protection proposals (see Section 7 below).

lj) Special features, e.g. cantilevered stone stairs and landings, balconies or other important functions or features in an existing building which need special consideration.

m) details of the noise, vibration and dust mitigation measures proposed (see Section 6 below)
nj) Details of any other building or site specific issues which may be affected by the basement proposal should be included.

o) Confirmation of the undertaking to retain the services of a Chartered Engineer and to appoint a replacement Engineer with relevant expertise to continue with the project both as designer and construction monitor, if for some reason, the Engineer’s appointment is terminated.

p) An undertaking to engage or provide evidence of engagement of a builder or contractor experienced in the construction of basements similar to that being proposed on the site (is this a condition? If not, ought this to be differentiated from the undertakings on the chartered engineer and the CCS?) and who is a member of the Considerate Constructor’s Scheme (see Section 6.3 below).

Additional Requirements for CMS in relation to listed buildings

5.174 The CMS related to a listed building should address all the issues set out above which apply to any basement proposals. In addition it should address the following points in detail.

• History of ongoing movement.
• Provide details of any historic fabric which is to be removed – this will include providing a record of the details of the existing structure following site investigations.
• An assessment of the structural impact of the proposals on the listed building.

Background

5.185 Policy CL7 (f) prevents excavation underneath listed buildings. Basement development is allowed generally under the gardens within the curtilage of listed buildings (provided all other requirements are also met) but not beneath the building footprint. In terms of structural design in these instances, the most significant factor to consider is whether or not the listed building and its attached neighbours (whether in a terrace or as a semi-detached pair of houses) have a history of ongoing movement. If there is such a history is the case, a basement under the garden should not be attached to the host property. It may not be acceptable to form an underground link to the existing listed building if this creates a local hard spot locally in the foundations.

5.196 Assuming that a basement is feasible in engineering terms, there are two main issues that must be thought about when considering the design of the basement underneath the garden area. These are:

a) The need to avoid, as far as possible, any disturbance to, or loss of fabric of the listed building.
b) The way in which the access to the basement is arranged from the host property.

The two points are related.

**Minimising disturbance and loss of fabric**

5.207 This can be achieved by positioning the basement away from the adjacent wall(s) of the listed building. The distance of the separation will depend on the proposed form of construction. If a stiff propped contiguous or secant piled wall is used, a structural separation of 1.5 to 2.0m is likely to be sufficient. If the basement is to be built in an open excavation, a much greater separation (possibly up to 5.0m or more) may be needed.

**Arranging the access from the house to the basement**

5.224 Forming a link from the lowest floor of the house to the new basement needs careful consideration.

5.234 If the existing property has a basement or lower ground floor, the connection is likely to be more straightforward in structural engineering terms than if there is no such lower floor.

5.240 Most links will require an internal stair and possibly a lift to the level of the basement, and the construction of a below ground link corridor. It is likely that this will require part of the listed building to be underpinned. If a lift is proposed, a lift without a pit should be considered.

5.254 In this situation, the extent of underpinning and disruption to the existing fabric of the building should be limited to that reasonably required to form the connection. Any access stair should be located to minimise the extent of underpinning required to the listed building. The depths of the underpinning should be stepped in accordance with good engineering practice to avoid sudden changes in founding levels where feasible and the underpinning should be stepped in accordance with good engineering practice to minimise any large discontinuities in the level of the underpinning of the existing foundations.

5.262 The sketches in Appendix 3 show a possible arrangement of an access stair and link corridor to a piled basement in the garden. The basement is positioned several metres from the rear wall of the listed building. The actual details will depend on the spatial arrangement of the listed building. If the basement is beneath the rear garden and the house has a rear extension, it is normally preferable for the link to be formed in the extension. This enables the original fabric and layout of the host building to remain unaltered. In engineering terms, the access stair should be located to minimise the extent of underpinning required to the listed building, and the depths of the underpinning should be stepped to avoid sudden changes in founding levels where feasible.
6. Managing Construction Impacts

**Applicant Checklist**

- When constructing a basement, engage a contractor who is a member of the Considerate Constructors Scheme.
- Submit a draft CTMP with the planning application using the template provided in Appendix 4.
- Submit a Final CTMP using the same template provided in Appendix 4 to discharge the planning condition. This should update the draft CTMP with any necessary changes such as taking account of other on-going schemes close to the start of construction and including the contractor’s name and details.
- At the planning application stage, provide details of noise, vibration and dust mitigation in the Construction Method Statement (in a discrete section) using the guidance provided in this section.
- At the planning application stage, undertake to submit a S61 “Prior Consent’ notice for construction works to Environmental Health before starting construction.
- At the planning application stage, undertake to adhere to the Borough’s Code of Construction Practice (when available) during construction.

6.1 Construction impact is a major cause of public concern in relation to basement development. It is further exacerbated when there is more than one basement development in close proximity or in the same street. The construction impacts relate to construction traffic, parking suspensions, noise, vibration and dust.

6.2 One of the most important objectives of Policy CL7 is to bear down on the volume of excavation in the Borough by restricting the dimensions of basement development, in order to rein-in the overall impact of construction. Criteria (k) and (l) of the policy also aim to mitigate these harmful impacts and this section of the SPD provides more guidance on the subject.

**Considerate Constructors Scheme**

6.3 The Council will require the basement contractor responsible for the development to be a member of the Considerate Constructors Scheme and to display the details of the membership and contact details on the site so that they can be easily read by members of the public. This will be required by attaching a planning condition to the relevant planning permission.

6.4 The Considerate Constructors Scheme has a Code of Construction Practice which applies to all registered sites. The basic tenets of the Code are as follows –

• Care about appearance – Constructors should ensure sites appear professional and well-managed.
• Respect the Community – Constructors should give utmost consideration to their impact on neighbours and the public.
• Protect the Environment – Constructors should protect and enhance the environment.
• Secure everyone’s Safety – Constructors should attain the highest levels of safety performance.
• Value their Workforce – Constructors should provide a supportive and caring working environment.

6.5 Further details about the scheme can be found on the Considerate Constructors Scheme website http://www.ccscheme.org.uk/.

6.6 The Considerate Constructors Scheme website offers advice to those affected by works. This includes the advice that “Any site or company registered with the Scheme should act considerately towards all those who are affected by the work.” The website states -

“Registered sites and companies must adhere to the Code of Considerate Practice, which outlines the Scheme’s expectations and describes those areas that are considered fundamental for registration with the Scheme. Registered sites and companies are expected to deal in a considerate manner with any complaints or concerns resulting from the site’s or company’s activities.

Complaints received by the Scheme will be dealt with by the Scheme’s public liaison officer who will mediate between the complainant and the relevant site or company manager until the matter has been satisfactorily resolved.”

6.7 A registered site is monitored as part of the Scheme. Sites are normally monitored twice, usually one quarter and two thirds of the way through the registration, unless they are of short duration when they receive only one visit.

**Construction Traffic Management Plan**

CL7 (k) “ensure that traffic and construction activity does not cause unacceptable harm to pedestrian, cycle, vehicular and road safety; adversely affect bus or other transport operations (e.g. cycle hire), significantly increase traffic congestion, nor place unreasonable inconvenience on the day to day life of those living, working and visiting nearby;”

6.8 The Borough has the highest household density anywhere in the UK. With people living in such close proximity and given that the very nature of basement development involves large amounts of excavation and the delivery of materials, it is important to manage construction traffic in a way that minimises the impact on the local community. The Borough is also characterised by narrow streets with immense pressure for on-street parking.
making large construction vehicles, the placement of skips and parking suspensions a cause of great concern for residents.

6.9 To help manage these impacts, the Council will require a draft Construction Traffic Management Plan (CTMP) to be submitted with each application for basement development. The purpose of providing a draft CTMP at the outset is to ensure that developers have thought about how construction traffic is to be handled and neighbours of the development can see and comment on the way construction traffic and parking are to be dealt with. However, a condition will also be attached to each relevant planning permission requiring a final CTMP to be submitted and approved by the Council. That is because conditions may have changed between the date of the planning decision and the intended commencement. There is a need to take into account cumulative impacts with other developments. Early engagement with a contractor is advised so that the CTMP is relevant and realistic.

6.10 The CTMP should demonstrate that the proposals comply with criterion (k) of Policy CL7 (above). Both the draft and the final CTMP should be prepared using the template in Appendix 4. The completion of this template, which covers all pertinent construction traffic issues, will result in a comprehensive plan, suitable for consideration. The template is structured as a questionnaire and includes the following issues along with vital guidance and explanatory text for each issue/question.

1. Pre-submission neighbour consultation
2. Routeing of Demolition, Excavation and Construction Vehicles
3. Permitted Construction Traffic Hours
4. Site Access
5. Scheduling
6. Vehicle call up procedure
7. Impact on other Highway Users
8. Parking Suspensions and Highways Licences
9. General Management Issues
10. Programme/ Key Dates

6.11 The CTMP (both draft and final) should take account of the narrow road widths characteristic of the Borough in proposing the type of construction vehicles that would service or access the site on a regular basis bearing in mind parking restrictions. The carriageway should remain operational for other vehicles by keeping a minimum of 3m of the carriageway unobstructed at all times wherever possible.

6.12 The footway must also have a minimum of 1.2m clear for pedestrians and wheelchair users at all times. As stated in the reasoned justification of the policy every effort should be made to locate the building compound and the skip on site or in exceptional circumstances on the highway immediately outside the application site. The number of parking bay suspensions required to carry out the development must be minimised.
6.13 Both the draft and the CTMP (both draft and final) should be in full accordance with other requirements set out in aspects of the planning permission, such as protection of identified root protection areas where there are existing trees on-site, on the street or nearby. Proposed construction traffic should also be arranged to avoid interference with take account of the crown and foliage of the trees on the street or fronts of property.

6.14 It is important that applicants engage with the neighbours likely to be affected by the basement development to ensure that their concerns and views are considered in formulating the CTMP. Local knowledge can be an asset in informing the CTMP. As a draft CTMP will be submitted with the planning application, it will be subject to the normal consultation processes and public scrutiny regarding planning applications. Engaging with neighbours beforehand is likely to result in more favourable outcomes for all parties.

6.15 All CTMPs will be reviewed by the Transport and Highways Department as part of assessing the planning application. The Transport and Streets SPD, which applies to all classes of development, provides further advice on reducing the impact of construction on the highway.

**Noise, Vibration and Dust**

*CL7 (i) “ensure that construction impacts such as noise, vibration and dust are kept to acceptable levels for the duration of works;”*

6.16 The construction of a basement may involve several stages. In broad terms these are: the demolition (normally of the ground floor slab); the excavation; and the formation of the basement itself. The applicants should identify who is likely to be affected by noise, vibration and dust around the site during each of these stages, bearing in mind the guidance in paragraph 2.3 of this SPD.

6.17 Applicants are required to include in a discrete section of their Construction Method Statement (CMS) (see details are set out in Section 5) with the planning application. The CMS sets out the structural details and the processes to be used in the construction of the basement. The mitigation measures that they will take in relation to noise, vibration and dust in order to ensure compliance with criterion (i) of Policy CL7 should be included within the CMS in a discrete section.

6.18 Applicants should address all the processes involved in the construction of their basement and describe mitigation measures to be used to keep noise, vibration and dust to acceptable levels. Guidance on how this can be done is provided in the following paragraphs of this section.

6.19 In addition to the construction processes, construction traffic can also be a source of noise, vibration and dust. Therefore the mitigation measures proposed should be co-ordinated with the details of construction traffic set out in the CTMP. For example on a constrained site, it may not be possible to
accommodate large equipment/ construction vehicles. This may dictate the type of construction method that would be practical on that particular site.

**Environmental Health general requirements**

6.20 The Environmental Health department deals with issues relating to noise, vibration and dust during the practical implementation of basement construction on a day to day basis. Environmental Health have powers under a number of relevant acts, principally the Control of Pollution Act 1974 (COPA) and Environmental Protection Act (1990). Whilst these powers are outside of the planning regime, applicants would be well advised to consider Environmental Health requirements linked to the various stages of the planning application process, as described below, to assist applicants. Further details of what may be required by Environmental Health are set out in Appendix 5.

**Pre-application**

• Guidance on the control of noise and vibration on construction sites is found principally within British Standard 5228-1&2: 2009: Code of practice for noise and vibration control on construction and open sites. Applicants, developers and contractors should familiarise themselves with the advice and recommendations it contains in preparing their proposed mitigation measures.

**Planning application stage**

• Applicants should undertake to apply for a ‘Prior Consent’ for construction works through Section 61 of Control of Pollution Act 1974, in advance of basement works commencing. A S61 Consent will agree and confirm working methods; noise levels and noise mitigation methods; the start and projected end date of works; and community liaison and communications.

**Post planning permission**

• Sites where a S61 Prior Consent is not applied for will be subject to the same controls via the serving of a ‘Notice Imposing Requirements’ under S60 of Control of Pollution Act (COPA) on developers and contractors.

• Where a S61 Prior Consent is not applied for/issued, applicants should notify the Royal Borough’s Noise and Nuisance Team of the date that works on site will commence and their projected duration as soon as this information has been confirmed.

• Applicants should adhere to the Royal Borough’s Noise and Nuisance Team’s Code of Construction Practice (when it becomes available) for minimising noise and vibration.

**Likely construction processes and mitigation**

**Demolition/ Removal of Ground Floor Slab**
6.21 Works frequently involve breaking the ground floor slab using power tools, which can be noisy as well as being a source of vibration.

Mitigation

6.22 The Council expects contractors carrying out demolition works to utilise non-percussive breaking techniques where practicable. Equipment that demolishes structures by crushing, bending, shearing, cutting or hydraulic splitting should be used where this is possible as it generally produces less noise (particularly structure-borne noise) and vibration and has a lower impact on neighbour occupiers. Examples of equipment that should be used include hydraulic and mechanical concrete pulverisers, hand-held concrete crunchers, diamond saw-cutters and drills, and hydraulic bursting equipment.

6.23 Reinforced concrete superstructures should be demolished using equipment fitted with pulveriser/munching attachments. Where practicable, building elements should be detached from a structure and lowered to ground level.

6.24 To avoid noise and vibration transference via connections to adjacent buildings, they can be separated by cutting structural breaks/discontinuities with adjoining premises.

6.25 The breaking-up of concrete and the removal of floor slabs should also be carried out using non-percussive techniques where practicable. Where practicable, ground bearing slabs should be levered from their position and broken up off-site. Where this is not practicable and where the structural transmission of noise and vibration, generated by unavoidable percussive breaking, into adjoining premises is likely, concrete slabs should first be cut around their perimeter to isolate them from the rest of the structure.

6.26 Where the use of percussive breakers is necessary, multiple breakers should be employed in order to minimise the time taken to break concrete and floor slabs. The use of two breakers (rather than one) can halve the time taken to carry out the works while leading to a very small (+3 dB) increase in noise levels. This is unlikely to be perceptible by affected residents. Communication with neighbouring residents prior to concrete breaking is essential so that works can be planned so as to minimise the disturbance to residents as far as practicable.

Excavation

6.27 All basements involve excavation. For single storey basement extensions and where ground conditions permit, this excavation should normally be done manually and does not generate significant noise or vibration. Harder ground conditions may require the use of pneumatic equipment ('air spades', with an associated air compressor) to break-up soil, which can generate significant noise and vibration from both the air tool and associated compressor. For deeper/larger basements it may involve the use of mechanical excavation equipment. Irrespective of the excavation method
used, an electrically-powered conveyor is a common feature which is used to bring the spoil to a skip. This may be a source of noise for adjoining neighbours, particularly if it is not regularly inspected and serviced.

6.28 During excavation a series of lorry movements to and from the site will be necessary to dispose of the spoil. Spoil is often loaded into a skip located on the site (or in exceptional circumstances immediately outside the site); the skips are then removed by lorry when full. Airborne noise from these activities will be heard by occupants of neighbouring dwellings. The number of lorry movements for each basement can be significant.

**Mitigation**

6.29 Where soil conditions necessitate the use of pneumatic breakers or high pressure air ‘spades’ to break-up soil for removal, care must be taken when selecting and siting air compressors to ensure that noise exposure for residents is minimised. Compressors should be located within the site and behind hoarding, and purpose-built acoustic enclosure should be considered.

6.30 The use of mechanical plant may be necessary for the excavation of larger volumes of spoil. These must be switched off when not in use and should be subject to regular maintenance checks and servicing.

6.31 Spoil conveyors should be electrically powered and located as far away from neighbouring properties as practicable, and should be regularly inspected and serviced.

**Concrete Construction**

6.32 Following excavation, concrete construction is normally the major activity. This includes steel fixing, formwork fabrication, and concrete deliveries and pours. In many basement extensions, load bearing and structural support is provided by steelwork columns and beams and supporting internal load bearing walls which may have to be cut to size on site. All of these activities can generate high levels of noise, either continuously or sporadically.

6.33 Construction of a basement in this borough normally involves either underpinning or piling. Bored piled walls can result in ground-borne noise and vibration to be transferred via the party wall to adjoining properties. Reduction of piles to the correct height often involves the unnecessary use of pneumatic breakers, which can have a significant impact on occupiers of adjoining properties.

**Mitigation - Piling**

6.34 Where practicable, the site should be isolated for piling purposes from neighbours by introducing a trench around worksite to remove the transmission path of vibration.
6.35 Non-percussive pile reduction techniques, which significantly reduce noise levels and which in many cases are quicker than traditional pile reduction carried out with percussive breakers, should be used.

6.36 The use of non-percussive pile reduction methods must be considered and robust justification will be required as to why they are unsuitable for a particular site.

Concrete pours

6.37 The size and scale of concrete pours is dictated to a large extent by the design of a building. Care should be taken at an early stage to ensure that the structural design of a development is such that concrete pours can be completed within the permitted hours for noise generating works.

6.38 A contingency period should also be factored in for events such as concrete pump failures, batching plant delays and traffic congestion affecting deliveries. In order for concrete deliveries and concrete pours to be completed within the permitted hours for noise generating works, contractors should have in place a protocol with the concrete supplier and/or concreting subcontractor to ensure that sufficient contingency is allowed, to consider pour size, delivery times and concrete placement, and mix workability so that works do not overrun the permitted hours for noise generating works. This should be co-ordinated with the requirements/questions in the CTMP template which may limit the number of deliveries on-site or the hours during which construction traffic can access the site for example.

Steelwork and reinforcing bars

6.39 All fabrication and cutting of steelwork should take place off-site. Where this is not practicable, contractors should endeavour to carry out any cutting within a mobile acoustic enclosure. Reinforcing bars should be cut to the required lengths prior to site delivery to minimise any necessary site trimming; hydraulic or pneumatic tools should be used in preference to angle grinders when trimming rebar.

Dewatering Pumps

6.40 Where the water table is encountered above the basement formation level, dewatering pumps are normally required to keep the excavations dry during construction. These can also be a source for noise.

Mitigation

6.41 Pumps are often submersed within water and airborne noise is generally of a low level. In all cases, pumps should be located within the basement excavation itself, to maximise screening from neighbouring properties.

Dust
6.42 The entire borough is within an Air Quality Management Area. A number of activities, such as the excavation and removal of spoil (in dry weather), formation of access into existing structures using cutting equipment, localised demolition and concrete breaking, can potentially generate dust.

Mitigation

6.43 To minimise the amount of dust; cutting, grinding and sawing should not be conducted on-site and pre-fabricated material and modules should be brought in where practicable.

6.44 Equipment fitted with dust suppression (water spray) or a dust collection facility should be used.

6.45 Dust suppression equipment (water sprays, ‘Dust Boss’, pressure washers, etc.) should be used during demolition and other activities that could generate substantial levels of dust.

6.46 Stockpiles of sand or similar dust-generating materials should be covered.

6.47 Buildings should be enclosed with suitable scaffold sheeting.

6.48 Skips, chutes and conveyors should be completely covered and, if necessary, completely enclosed to ensure that dust does not escape. Similarly, drop heights should be minimised to control the fall of materials and the impact that results.

6.49 Contact details for the person responsible for dust and emissions generated from the site should be displayed clearly on the site boundary so that local residents and businesses are able to contact the developer and/or contractor to raise any issues that they may have and report complaints.

6.50 Good housekeeping measures (i.e. regular sweeping, cleaning, etc.) should be adopted and implanted by the contractor to ensure that construction sites are in good order.

6.51 Hoardings, fencing, barriers and scaffolding should be regularly cleaned regularly using wet methods, where practicable, to prevent re-suspension of particulates.

6.52 Cement, sand, fine aggregates and other fine powders should be sealed after use and if necessary stored in enclosed or bunded containers or silos. Some materials should be kept damp to reduce the risk of drying out.

6.53 Machinery and dust generating activities should be located away from receptors.

7. Trees
Applicant Checklist

- Carefully consider existing trees on the site, in adjoining properties and on the street when designing a basement.
- Where basement development is likely to affect any tree, the applicant should submit an Arboricultural Impact Assessment (AIA) in accordance with BS 5837 2012 with the planning application.

“CL7 (d) – not cause loss, damage or long term threat to trees of townscape or amenity value;”

7.1 As stated in the reasoned justification to Policy CL7, trees make a much valued contribution to the character of the Borough, and bring biodiversity and public health benefits. Works to, and in the vicinity of, trees, need to be planned and executed with very close attention to detail. As most of the Borough as stated earlier is within conservation areas, there is also a requirement under Section 211 of the Town and Country Planning act 1990 to notify the Council before undertaking any works to trees in a conservation area (this only applies to trees with a stem diameter of 7.5cm or over measured at 1.5m above ground level). There is also a requirement to apply to the Council, in writing, for permission to undertake works to trees subject to a Tree Preservation Order (TPO), whether or not in a conservation area.

7.2 Existing trees on the site, in adjoining properties or on the street should be carefully considered while designing a basement. All applications for basements likely to affect any tree whether on the site itself or outside would need to be accompanied by a full tree survey. The design of the basement should take account of any constraints posed by the trees.

7.3 Where basement development is likely to affect any trees, applicants should submit an Arboricultural Impact Assessment (AIA) in accordance with BS 5837 2012: Trees in relation to design, demolition and construction. This should include the following information –

- A survey of the all trees on, and adjacent to, the site using the guidance in BS 5837 2012: Trees in relation to design, demolition and construction – Recommendations.
- A plan showing all current trees overlain with the footprint of the proposed buildings.
- A list of those trees proposed for removal and those to be retained along with justification.
- An assessment of the impact of the development on the retained trees and those in adjacent gardens or property.
- How retained trees will be protected during the construction phase, taking into account site logistics such as storage of building materials, location of site...
huts, access for piling rigs, removal of spoil from site etc. The CTMP should also take into account any necessary tree protection.

7.4 Further and more detailed information is available in our 2010 Trees and Development SPD.

7.5 An existing dead or dangerous tree on-site which is considered to be of local townscape or amenity value, it will wherever practicable **should be required to be** replaced. In **deciding whether requiring the replacement is needed**, consideration will be given to whether the existing tree was causing significant damage to existing (not proposed) structures and if the same species or another species would be more suitable.

7.6 The Council also has a separate Policy CR6: Trees and Landscape in the Core Strategy which **will** also apply.

8. Flooding

“Policy CE2: Flooding - The Council will require development to adapt to fluvial flooding and mitigate the effects of, and adapt to, surface water and sewer flooding.”

8.1 Flooding can be caused from a number of different sources. By their very nature basements are more susceptible to flooding from all sources. As a result there are different requirements for applicants to demonstrate that flood risk has been considered and risks minimised in their proposals.

**River and Tidal (Fluvial) Flooding**

8.2 The southern boundary of the Borough runs along the River Thames. The Environment Agency prepares flood risk maps which classify flood risk into the following zones – 1 (low probability), 2 (medium probability) and 3 (High probability). These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency’s Flood Map for Planning (Rivers and Sea).

8.3 The River Thames is protected against a 1 in 1000 year fluvial flood event by a combination of the river wall and the Thames Flood Barrier. A small proportion of the Borough is within Flood Zones 2 and 3. Figure 1 in the Royal Borough of Kensington and Chelsea Strategic Flood Risk Assessment (SFRA) (March 2014) shows where they are.

8.4 Self-contained basement dwellings are classed as ‘highly vulnerable’ development in the National Planning Policy Guidance (PPG) and are not permitted in Zone 3. In Zone 2, the ‘exception test’ as set out in para 102 of the NPPF is required to be passed before a self-contained basement can be permitted. In Zone 3, the exception test is required to be passed for ‘more vulnerable’ developments which includes basement extensions.
8.5 Parts of the Borough close to the River Thames are at risk of breach of the river walls in a significant flood event if there was a failure of the Thames Barrier (see SFRA, figures 9 – 11.3.8). Whilst this is a low probability event, all thresholds to new basements in these areas (i.e. the unprotected access points above the enclosing walls and roof slabs) should, where possible, be set to prevent water ingress in the event of breach, ensuring that both access and egress will be safe, particularly if they include living accommodation. Further information is available in the Royal Borough of Kensington and Chelsea Strategic Flood Risk Assessment (March 2014) paragraph 5.4.3 (page 30). Where such levels cannot be achieved, flood management plans can be considered as an alternative approach. These need to deal with safe exit from basements in the event of flooding (among other things).

Surface Water Flooding

8.6 During periods of very heavy rain, rainwater is sometimes unable to soak sufficiently into the ground, partly because of large areas of impermeable paving and roof and also because the ground may already be saturated.

8.7 The Council has produced a Surface Water Management Plan (SWMP), in February 2014 and a Strategic Flood Risk Assessment (SFRA), in March 2014. These provide an indication of the estimated surface water depth and surface water flood hazard rating of different areas. They are based on surface water modelling and have been validated with historic flood records. The maps relate to several events, and figures 3 and 4 of the SFRA show a 1 in 100 year event. These maps give a general indication of flooding in an area rather than being property specific. They give a reasonable indication of above ground flow paths for this surface water flooding and of the areas where surface water flooding might occur in local depressions. This information should be taken into account when designing basement development.

8.8 Surface water flooding can be mitigated through the use of Sustainable Drainage Systems (SuDS). Criterion i of Policy CL7 requires provision of a sustainable drainage system for all basement development and that these should be retained thereafter. Further details on SuDS is provided in Section 9.

Critical Drainage Areas

8.9 The Surface Water Management Plan identifies four Critical Drainage Areas (CDAs) in the Borough. The map of these areas, as well as a list of addresses within the Critical Drainage Areas, is available on the link above.

8.10 A Critical Drainage Area is defined in the Surface Water Management Plan, RBKC (February 2014) para 4.1 as "a discrete geographic area (usually a hydrological catchment) where multiple or interlinked sources of flood risk cause flooding during a severe rainfall event thereby affecting people, property or local infrastructure." In simple terms, in these defined areas, there
could be flooding due to a combination of different sources of flooding such as surface water, ground water and sewers.

8.11 The Council requires a flood risk assessment (FRA) for any basement development within the Critical Drainage Areas.

**Ground Water Flooding**

8.12 The underlying material in the Borough’s geology is London Clay. “Where there are over-lying layers of sands and gravels, there is usually water at the top of the London Clay, known as a perched water table, or the Upper Aquifer (Alan Baxter Report, March 2013).” This is constantly topped up by rain (and burst or leaking water mains). Where the water table meets the surface, groundwater or springs can appear. The Surface Water Management Plan (SWMP) (February 2014) includes a Borough-wide map at Figure 5 which shows the susceptibility to groundwater flooding with reported historic incidents. This map shows that the area with ‘high susceptibility’ lies to the south of the Borough.

8.13 Ground water issues need to be considered in the structural design of basements and further information is presented in Section 5. [refer to actual paragraphs]

**Sewage Flooding**

8.14 Basements are generally below the level of the sewerage network and therefore the gravity system normally used to discharge waste above ground does not work. *During periods of prolonged high rainfall or short duration very intense storms, the main sewers are unable to cope with the storm flows.*

8.15 *During periods of prolonged high rainfall or short duration very intense storms, the main sewers are unable to cope with the storm flows.* The Borough is located at the lower end of the sewer catchment (which extends as far as Camden and Brent). As a result there have been several instances of sewer system backing up and flooding below ground parts of properties in periods of intense rainfall. Properties along Counter’s Creek have reported high levels of sewage flooding historically. Thames Water has been involved in mitigating sewage flooding in existing residential properties in these areas.

8.16 The policy therefore requires all new basements to be protected from sewer flooding through the installation of a suitable (positively) pumped device. Clearly this criterion of the policy will only apply when there is a waste outlet from the basement, as in i.e. a basement that includes toilets, bathrooms, utility rooms etc. Applicants should show the location of the device on the drawings submitted with the planning application.

**Flood Risk Assessment**
8.17 Where a flood risk assessment is required the guidance in the national PPG ID: 7-031 should be followed. PPG ID: 7-068 provides a checklist for site-specific flood risk assessment and should be followed in producing a flood risk assessment.

8.18 In addition the Environment Agency has produced a Flood Risk Standing Advice (FRSA) for Local Planning Authorities. This web based tool may also be useful for applicants preparing a flood risk assessment.

9. Sustainable Drainage Systems (SuDS)

Applicant Checklist
• Include provision of Sustainable Drainage Systems (SuDS) as part of the basement proposal.
• SuDS can be provided by means of 1m of permeable soil over the basement and connecting it to the unaffected part of the garden to ensure drainage.
• If the applicants choose to provide SuDS in other ways they should show its location and dimensions on drawings and submit a report on SuDS.

“CL7 (i) include a sustainable drainage system (SuDS), to be retained thereafter;”

9.1 Since a basement can affect the natural drainage on a site, policy criterion (i) requires the provision of Sustainable Drainage Systems (SuDS) in all basement development. Where planning permission is granted there will normally be a planning condition requiring these to be retained in perpetuity.

9.2 Policy criterion (j) requires a minimum of one metre of soil above any part of the basement beneath a garden. The reasoned justification explains that the 1m of soil can perform two functions – the provision of SuDS and landscaping (see paragraph xx above). If the applicants choose to use the one metre of soil as the SuDS, they should ensure that this is permeable and connected to the unaffected part of the garden to ensure drainage as shown in figure 5.

9.3 If the applicants choose to provide SuDS in other ways they should show its location and dimensions on drawings. The applicant should also submit a report explaining the type of SuDS chosen, how it will work, the amount of surface water run-off that it will mitigate and how it will be maintained.

10. Consolidated Checklist for Applicants

Applicant Checklist
• Engage with neighbours before submitting the planning application and provide evidence of this with the planning application.
• Consider not just the garden but any existing open areas such as existing lightwells when calculating the 50% maximum extent.
• Design the basement (adjoining the building) so that the unaffected garden remains in a single area including where the basement is proposed underneath a detached or semi-detached house.
• Study the site and context carefully to establish the suitability of external manifestations especially to the front and side.
• Design any external manifestations so that they are discreetly sited and located preferably close to the existing building.
• In relation to listed buildings consider locating the link to the proposed basement (situated in the garden) from an above ground extension (if there is one).
• If any exceptions to criteria (a) and (b) of Policy CL7 are proposed (large sites), consider if the site bears similar characteristics to those described in Section 4.
• Submit a Construction Method Statement (CMS) with the planning application which follows the sequential process described in figure 4.
• The CMS should be signed by a Chartered Civil Engineer (MICE) or Chartered Structural Engineer (MI Struct. E.).
• The CMS should include a non-technical executive summary setting out clearly the key elements of the report and a clear statement concluding compliance with Policy CL7 (n).
• For listed buildings, in addition to all the guidance that normally applies, the further guidance in paragraphs 5.14 to 5.20 should also be followed and this should be demonstrated in the CMS.
• When constructing a basement engage a contractor who is a member of the Considerate Constructors Scheme.
• Submit a draft CTMP with the planning application using the template provided in Appendix 4.
• Submit a Final CTMP using the same template provided in Appendix 4 to discharge the planning condition. This should update the draft CTMP with any necessary changes such as taking account of other similar construction projects likely to be ongoing during the construction close to the start of construction. It should also include the contractors name and details.
• At the planning application stage, provide details of noise, vibration and dust mitigation in the Construction Method Statement (in a discrete section) using the guidance provided in Section 6.
• At the planning application stage, undertake to submit a S61 ‘‘Prior Consent’’ notice for construction works to Environmental Health before starting construction.
• At the planning application stage, undertake to adhere to the Borough’s Code of Construction Practice (when available) during construction.
• Carefully consider existing trees on the site, in adjoining properties and on the street when designing a basement.
• Where basement development is likely to affect any tree, applicants should submit an Arboricultural Impact Assessment (AIA) in accordance with BS 5837 2012 with the planning application.
• Establish if the site is likely to be affected by any source of flooding as set out in Section 8
• Submit a flood risk assessment if required (see Table 1).
• Where required, prepare the flood risk assessment using the checklist provided in the national Planning Policy Guidance (PPG).
• Include provision of Sustainable Drainage Systems (SuDS) as part of the basement proposal.
• SuDS can be provided by means of 1m of permeable soil over the basement and connecting it to the unaffected part of the garden to ensure drainage.
• If the applicants choose to provide SuDS in other ways they should show its location and dimensions on drawings and submit a report on SuDS.

Appendices

Appendix 1: Role of Various Parties

“When contemplating basement construction on a site of an existing residential building, it is important that the overall situation is considered so that feasibility is judged not simply on a spatial brief, but also on the basis of adjoining ownership, planning policy and technical feasibility, taking account of the constraints that will influence the planning, design and construction of the proposed project.” (Alan Baxter and Associates, RBKC Feb 2014)

1. Planning is only one part in the process of creating a new basement. In reality there are a number of parties as shown in figure A.1. The applicant/owner has the biggest responsibility as the instigator of the development. Clearly it is the owner of a property who conceives the idea of a basement development and the onus is on the applicant/owner or their agent making the application to propose a development that is right for the site. The impact on neighbours should be considered right at the outset and addressed as far as possible in the design and implementation of the scheme.

2. When contemplating basement construction on the site of an existing residential building, it is important that the overall situation is considered so that feasibility is judged not simply on a spatial brief, but also on the basis of adjoining ownership, planning policy and technical feasibility, taking account of the constraints that will influence the planning, design and construction of the proposed project.

3. Dialogue with neighbours is essential to getting the right development. Early neighbour engagement can help address the genuine concerns of neighbours and may result in fewer objections at the application stage. Engagement with neighbours should be an iterative process starting at the conception stage and carrying on throughout well into the implementation of the scheme.

4. Planning plays a role in ensuring that the right development goes on site. [what does this mean?] The adopted Policy CL7 ensures that the scale of development is controlled and a number of other criteria are met to enable sustainable development. There could also be other planning policies in the Core Strategy that apply depending on site location and other constraints. [The purpose of this para is mysterious and it should be omitted or redrafted]
5. The following flowchart shows the role of different parties at the different stages of basement development.

Appendix 2: A compact for residents

1. Given the issues highlighted by residents relating to basement development, the Council has made a number of commitments to ensure development takes place in a positive manner with the least disruption to residents. However, as pointed out earlier Council departments are only part of the picture and it is important that applicants and resident organisations also make some commitments.

Residents’ Checklist [redraft proposed]

• Get as much information as possible from the owner/applicant/site manager about the programme and likely duration of works.
  
• Understand temporary impacts – construction traffic, noise, vibration, dust.

• Understand likely permanent visual/other impacts likely on your property.

• How the temporary and permanent impacts could be minimised.

• Discuss any particular issues such as if you work from home on certain days.

• Get planning alerts on planning applications of interest by signing up to ‘My RBKC’ on the Council’s website.

• Comment on planning applications in writing keeping to material planning issues within consultation deadline.

• Ensure that the Party Wall surveyor (paid for by applicants) is experienced in basement development.

• Contact planning enforcement if the development is in breach of the approved drawings or any attached planning conditions.

Council’s Role

• The Council will ensure consultation is undertaken with adjoining neighbours on the planning application.

• Information submitted with the planning applications will be available on the Council’s website to view and comment.

• Continue to make applications to approve CTMPs available on-line.

• Notify people registered to receive alerts on My RBKC.

• During implementation of a planning permission investigate any complaints and take action where expedient.