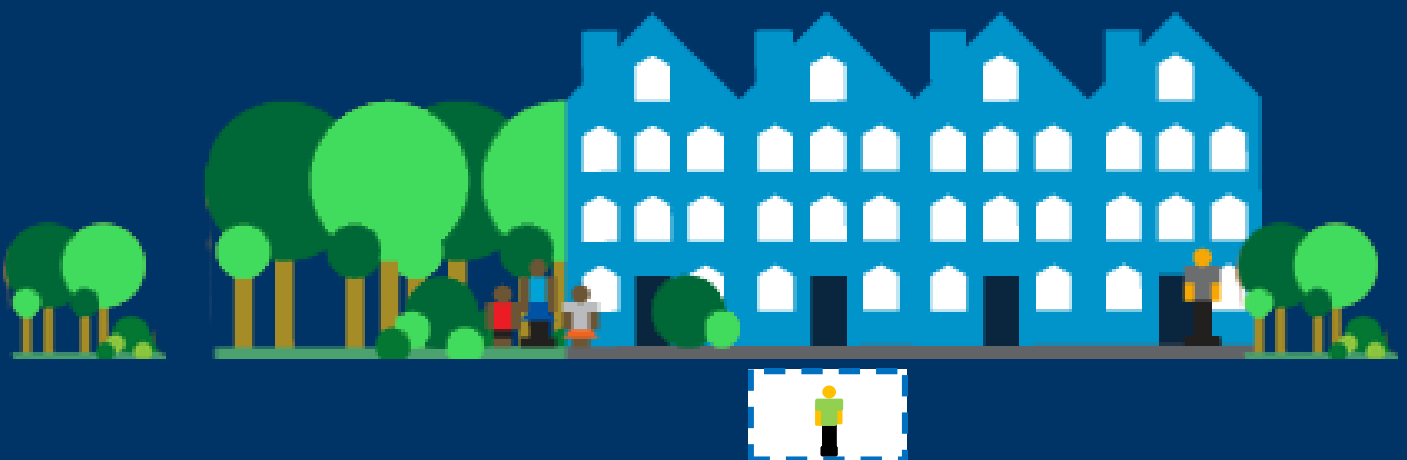


BASEMENT DEVELOPMENT

SUPPLEMENTARY PLANNING DOCUMENT

JANUARY 2016



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1 INTRODUCTION

- 1.1.** In the same way as for above-ground development, there is a suite of planning policies to be taken into account in the consideration of a proposal involving basement development. Together these policies provide the policy context under which applications involving basement development are assessed in Islington. This SPD does not create new policy; but interprets and provides further guidance based on Islington's existing adopted Development Plan policies and will be an important material consideration in helping the council to make decisions on such planning applications.
- 1.2.** The SPD is intended to provide clarity for planning officers and developers, as well as any other interested stakeholders with regard to planning applications for basement development. This ensures that the SPD is consistent with the National Planning Policy Framework (NPPF) paragraph 153. The SPD was subject to a public consultation process over the summer of 2015, and pre-consultation process over the previous winter, undertaken in accordance with the statutory consultation requirements.
- 1.3.** This document will be used in the assessment of any planning application which involves the excavation for the creation of new or additional subterranean/basement floor space. Whilst this guidance is primarily for applicants proposing a basement extension to an existing residential property or for those likely to be affected by such a development, the general principles will also be relevant for a range of sites including infill residential development, commercial development, or for large scale redevelopment adjoining or in close proximity to residential or other sensitive sites/areas. It is appropriate for all developments that propose subterranean excavation to create floorspace to address the requirements of this SPD as a part of any planning application made to the council.



Figure 1: Relationship between Supplementary Planning Documents and Islington Development Plan and Local Plan

2 BACKGROUND

- 2.1.** As seen in other Central London boroughs, development constraints coupled with high levels of development pressure and high land values has given rise to an increasing level of subterranean development occurring in order to achieve highly valuable additional floor space within existing homes, and similarly in new construction. This trend is now being echoed in Islington.
- 2.2.** The increasing density of development in Central London together with changing market expectations is creating a new context for subterranean development in the capital, and with it a new set of planning issues to be considered. Unlike above-ground development, which traditionally has minimal impact on ground conditions and when removed the site can be restored to its (near) pre-development state, subterranean basements, particularly when greater than one storey in depth, can permanently and irreversibly alter ground conditions.
- 2.3.** Basements have been a typical feature found in some parts of Islington, either as a traditional feature of certain architectural styles, or more recently within buildings designed for mixed use, commercial, retail and other uses in the southern part of the borough. Properties containing original basement features in Islington were historically single storey basements contained within the building footprint or part thereof, with the exception of light wells in some instances. The recent trend for excavation under residential gardens and under existing basements has no known historic precedent in Islington.
- 2.4.** As Islington is a densely developed borough with the majority of land in residential use and is predominantly comprised of terraced building stock with gardens at the front and rear, the cumulative impacts of developing whole gardens as basements would be significant.
- 2.5.** Whilst basement development has specific issues unique to this form of construction, they cannot be considered in isolation from other planning issues, and are subject to policies in the same regard as above ground development. Notwithstanding this, there is a need for specific guidance on subterranean development to provide ease of use by developers, safeguard against potential environmental and amenity impacts and ensure consistency of decision making.

3 PLANNING POLICY CONTEXT

- 3.1.** In the same way as for above-ground development, there is a suite of planning policies to be taken into account in the consideration of a proposal involving basement development. These include, the London Plan, Islington Core Strategy (2011), Development Management Policies (2013) and supplementary planning guidance contained in Table 1.
- 3.2.** Together these policies provide the policy context under which applications involving basement development are assessed in Islington. In general, all forms of development are required to be of high quality and make a positive contribution to the local character and distinctiveness of an area, be sustainable, adaptable and incorporate inclusive design principles.
- 3.3.** Given the importance of open space and private open space (i.e. gardens) to Islington in terms of green infrastructure, the consideration of the cumulative impact of loss of open space (due to basement extensions in particular) needs to be considered strategically. The strategic nature of this issue is echoed in the Mayor's updated Sustainable Design and Construction Supplementary Planning Guidance (2014), which states:
- "Where there is pressure for basement developments, boroughs should consider whether there are any particular local geological or hydrological issues that could particularly effect their construction, and adopt appropriate policies to address any local conditions...when planning a basement development, developers should consider the geological and hydrological conditions of the site and surrounding area, proportionate to the local conditions, the size of the basement and lightwell and the sensitivity of adjoining buildings and uses, including green infrastructure (pg 25).*
- 3.4.** In order to facilitate a comprehensive assessment of individual and cumulative impact of any basement development and ensure these are minimised, the council has prepared this supplementary planning document.

Table 1: Planning policies and guidance most relevant to basement development in Islington

London Plan (updated 2015).	<p>3.5 Quality and design of housing developments</p> <p>5.3 Sustainable design and construction</p> <p>5.12 Flood risk management</p> <p>5.13 Sustainable drainage</p> <p>5.14 Water quality and wastewater infrastructure</p> <p>7.6 Architecture</p> <p>7.13 Safety, security and resilience to emergency</p> <p>7.19 Biodiversity and access to nature</p> <p>7.21 Trees and woodlands</p>
Mayor's Sustainable Design & Construction SPG (2014)	2.2 Basements and Lightwells
Islington Core Strategy (2011)	<p>CS15 Open Space and Infrastructure – (A)</p> <p>CS10 Sustainable Design – (D) & (E)</p> <p>CS 9 Protecting and enhancing Islington's built and historic environment – (B)</p>
Islington Development Management Policies (2013)	<p>DM 2.1 Design – (A)</p> <p>DM 2.2 Inclusive Design</p> <p>DM 2.3 Heritage – (B)</p> <p>DM 3.3 Residential conversions and extensions – (B)</p> <p>DM 3.7 Noise and Vibration</p> <p>DM 3.4 Housing standards (only when creating new unit)</p> <p>DM 6.3 Protecting open space - (E)</p> <p>DM 6.5 Landscaping, trees and biodiversity - (A) & (B)</p> <p>DM 6.6 Flood prevention (only applies to majors or minor new residential units)</p> <p>DM 7.1 Sustainable design and construction - (A) & (D)</p>

4 WHAT IS BASEMENT DEVELOPMENT?

- 4.1.** Basement development includes any excavation to form new or additional floorspace under the ground level (subterranean) of an existing property or within its curtilage and under its garden. It also includes basements which are part of new build development.
- 4.2.** Most basement developments will require planning permission but there may be certain circumstances where basement development may be 'permitted development' under the General Permitted Development Order 2015.
- 4.3.** Permitted development rights (PD rights) relate to single family dwelling houses and are not applicable to flats, apartments or maisonettes. PD rights do not remove the requirement for [Listed Building Consent](#), the legal requirement to preserve [trees located within a Conservation Area](#) or those subject to a [Tree Preservation Order](#). For clarification as to whether a development satisfies the conditions of Permitted Development, an application for a [Lawful Development Certificate](#) should be submitted to council with the appropriate documentation, after which a formal decision will be made.
- 4.4.** Other statutory legislation, secondary legislation and regulations, guidance and codes of practice cover different aspects of basement development and must be considered in parallel to planning considerations during design development. These include (but are not limited to):
- Building Regulations
 - Highways Act
 - Party Wall Act
 - Environmental Health (e.g. Control of Pollution Act, Environmental Protection Act)
 - Housing Act
 - Utility providers such as Thames Water
 - Transport for London and London Underground
 - Freeholder permission
- 4.5.** Whilst the SPD is aimed at promoting best practice in terms of basement development in the borough, the remit of planning does not extend to matters controlled under Building Regulations or other non-planning legislation, regulations or other consenting regimes. This is consistent with the approach set out in paragraph 122 of the National Planning Policy Framework (NPPF).

BASEMENT DEVELOPMENT IS...
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5 APPLYING FOR PLANNING PERMISSION

- 5.1.** The council offers a [Pre-application Advice Service](#) for all applicants. Due to the complexity of issues to be considered and the potentially contentious nature of many basement applications, applicants are advised to consult with the council at the earliest opportunity.
- 5.2.** It is recommended that applicants engage with neighbours at an early stage, giving interested parties sufficient information to enable them to properly consider the proposal. Neighbours will be formally notified as a part of a planning application for basement development, therefore it is advisable that applicants engage with adjoining neighbours, as well as wider neighbouring properties as commensurate to the specifics of the site, and the scale of the basement proposed.
- 5.3.** For information regarding the planning application process please visit the Council's [planning application process](#) webpage. For application forms and for application submission online, please visit the [planning portal](#) webpage.
- 5.4.** The Local Validation List will be updated to reflect the informational requirements of this SPD. A summary of the specific informational requirements in support of a planning application for basement development is contained in Appendix A.

6 SITE INVESTIGATIONS TO INFORM DESIGN

- 6.1.** It is important that thorough site and desk-based investigations are undertaken and used to inform the design process of any basement development from the outset. These are key to identifying any potential risks, limiting factors, and specific design considerations to be taken into account and responded to in any basement design.
- 6.2.** Given the density of buildings in the borough, and predominance of narrow terraced properties, there is potential for significant impacts to occur both in a building under which excavation is taking place and neighbouring buildings, i.e. impacts are not necessarily restricted to those immediately abutting the site.
- 6.3.** The NPPF states that planning should ensure that development is suitable for its site, taking into account ground conditions and land instability, and ensure that adequate site investigation information, prepared by a competent person, has been presented to demonstrate these impacts have been understood, including any cumulative impacts.
- 6.4.** Structural stability is a material consideration for the Local Planning Authority insofar as the requirement to consider the potential risk and effects a proposal may have upon property, infrastructure and the public, as set out in Planning Practice Guidance. For clarity, this does not require the council to approve a technical solution for a development proposal, but rather to confirm that these issues have been sufficiently evaluated and responded to in a design and ensure that this process has been undertaken by a suitably qualified and experienced professional.
- 6.5.** For all basement development a **Structural Method Statement (SMS)** must be submitted (in accordance with the SMS requirements in Appendix B) in support of any such application, and this must be signed and endorsed by a Chartered Civil Engineer or Chartered Structural Engineer with relevant experience, appointed by the applicant.
- 6.6.** Types of investigations that should be used to inform the design process include:
- site history
 - site survey (existing buildings and other structures)
 - underlying geology
 - groundwater level
 - current and historic watercourses
 - areas of archaeological interest (archaeological priority areas and scheduled monuments)
 - existing trees
 - underground infrastructure (e.g. utilities, services, tunnels and drains)
 - listed buildings in proximity to the site
 - constructed and/or consented schemes with basements in proximity to the site

KEY PRINCIPLE

Basements must be designed to safeguard the structural stability of the existing building, nearby buildings, trees and any infrastructure.

INFORMATION REQUIREMENTS

Submit a Structural Method Statement (SMS) and a Construction Management Plan (CMP) with any planning application for a basement development endorsed by a suitably qualified person(s).

6.7. In some instances it may be pertinent to undertake physical site investigations as well as survey and desk-based investigations. These instances may include (but are not limited to):

- site contains a listed buildings or is in proximity to a listed building
- site contains existing tree(s), or basement comes within the Root Protection Area or canopy area of a tree on an adjoining site
- site where basement may come into contact with (or close to) an Upper Aquifer
- site falls within an area identified as Groundwater Protection Zones (see link to EA mapping in Appendix D)
- site falls within an area identified as at risk of groundwater flooding
- sites fall within an archaeological priority area
- site contains or is within close proximity to contaminated land

6.8. The SMS should contain the findings of early site investigations, and clearly articulate how these findings have influenced the design that is proposed. At each stage of the design and construction process a suitably qualified person with relevant experience in the construction of basements relevant to the type of basement (i.e. residential or large scale commercial) proposed should be appointed and retained by the applicant as both a designer and construction monitor. The person(s) undertaking this work must hold qualifications and experience relevant to the matters being considered. This should be:

Chartered Civil Engineer	Holding full chartered membership (MICE) with Institute of Civil Engineers
Chartered Structural Engineer	Holding full chartered membership (MStructE) with Institute of Structural Engineers

6.9. A non-technical summary of the SMS is expected to be provided in a format which can easily be understood by those with no technical knowledge and allow meaningful conclusions to be drawn from the outcomes of the report. Further detail on the recommended contents of a SMS is contained within Appendix B.

6.10. For all basement developments, the certifying professional endorsing the SMS must be retained (or replaced with a suitably qualified person with relevant experience) throughout the duration of construction, to ensure that the necessary expertise is available to inform decision making throughout the construction process. A planning condition will be imposed on any planning permission issued to this effect.

6.11. The Council may choose to consult (at the expense of the applicant) an independent suitably qualified person to undertake an independent assessment for specific cases where substantive conflicting information has been presented to the Council, or where there are any particularly sensitive buildings, trees or other structures within proximity of the site.

7 DESIGN CONSIDERATIONS

7.1. Extent of basement development within a site

- 7.1.1. The extent of basement development appropriate for a site will be influenced by a number of factors such as site context; proportion of site already developed; proximity to listed buildings; hydrogeology of the site; topography; green infrastructure functions of the site including biodiversity; and the location of trees and shrubs. These factors need to be taken into account early in the design process and must inform design solutions where appropriate.
- 7.1.2. Areas of basement should respond to the scale, function and character of the site and its surrounds. Where large basement extensions are proposed, the resulting intensity of basement use may be out of keeping with the domestic scale, function and character of its context.
- 7.1.3. Whilst modest basement extensions can in some circumstances be an effective way of creating additional floor space, the development of private open space to achieve additional floor area can give rise to a number of adverse impacts unless designed sensitively.
- 7.1.4. Open space including private residential gardens contribute greatly to Islington's character as well as providing vital green infrastructure functions for the borough such as reducing surface water flood risk, providing important habitat and ecological connectivity, and contributing to the borough's biodiversity, urban cooling and adaptation to climate change. Private open spaces make up a significant proportion of Islington's open space. The piecemeal loss of these spaces due to incremental development such as large outbuildings and extensive basements within gardens has serious potential implications for the borough.
- 7.1.5. As set out in Policy DM6.3, development of private open spaces is not permitted where there would be a significant individual or cumulative loss of open space/open aspect and/or where there would be a significant impact on amenity, character and appearance, biodiversity, ecological connectivity, cooling effect and/or flood alleviation effect.
- 7.1.6. The council must therefore consider the cumulative impacts of basement development across the borough and balance the potential site-specific benefits basements can provide (i.e. additional floorspace) against those wider cumulative impacts set out in Policy DM6.3. For this reason, the SPD sets out borough-wide guidance addressing the extent of basement development within individual sites that will ensure there is not an unacceptable cumulative loss of private open space (and associated impacts) when viewed at borough level.

KEY PRINCIPLE

All basement development will need to be appropriate and proportionate to its site and context.

POLICY BASIS

Applications will be considered taking into account Islington's Core Strategy Policies CS15 (Open space and Infrastructure), CS10 (Sustainable Design), CS9 (Protecting and enhancing Islington's built and built and historic environment), Development Management Policies DM 6.3 (Protecting open space), DM 6.5 (Landscaping, trees and biodiversity), DM6.6 (Flood prevention), DM2.3 (Heritage). The Mayor's Sustainable Design and Construction SPG is also relevant.

Residential basement extensions

- 7.1.7. For extensions to existing residential basements or the creation of new basement areas underneath and/or within the curtilage of an existing dwelling, the majority of original open area of the site should be retained, and the total area of basement beyond the original footprint must be subordinate to the original footprint of the dwelling.

Design indicator

DI.1 A basement and/or other structures should cumulatively occupy less than 50% of the original garden/unbuilt upon area, and be smaller in area than the original footprint of the dwelling, *whichever the lesser*.

- 7.1.8. The maximum extent will be measured separately for each garden/unbuilt upon area within the site, e.g. front, back or side. As Islington is largely characterised by terraced houses, in most cases the front and rear gardens will be clearly defined and measurements straight forward as shown in Figures 2 and 3.
- 7.1.9. The remaining garden area/unbuilt upon area of the site should be designed to maximise garden and amenity functionality, providing useable amenity space and supporting biodiversity enhancement, to protect the garden setting and contribute to local character. In considering the design of a basement that extends into a garden/unbuilt upon area, a proposal should avoid fragmentation of spaces to deliver cohesive, useable and functional private open space.
- 7.1.10. The location of all basements should take account of leaving the unaffected portion of garden connected to other unaffected gardens and open space immediately adjoining the site, to ensure connectivity of these spaces is protected. Particularly for sites with side gardens, basements should be kept close to the existing dwelling, and where possible (for larger sites) margins should be left between basements and adjoining sites. This allows for space to enable natural surface water drainage and lateral ground water movement to occur between sites.
- 7.1.11. Figure 2 demonstrates how to calculate the maximum extent of basement for a terraced house with a long garden. Figure 3 demonstrates how to calculate the maximum extent of basement in a terraced house with a small garden.

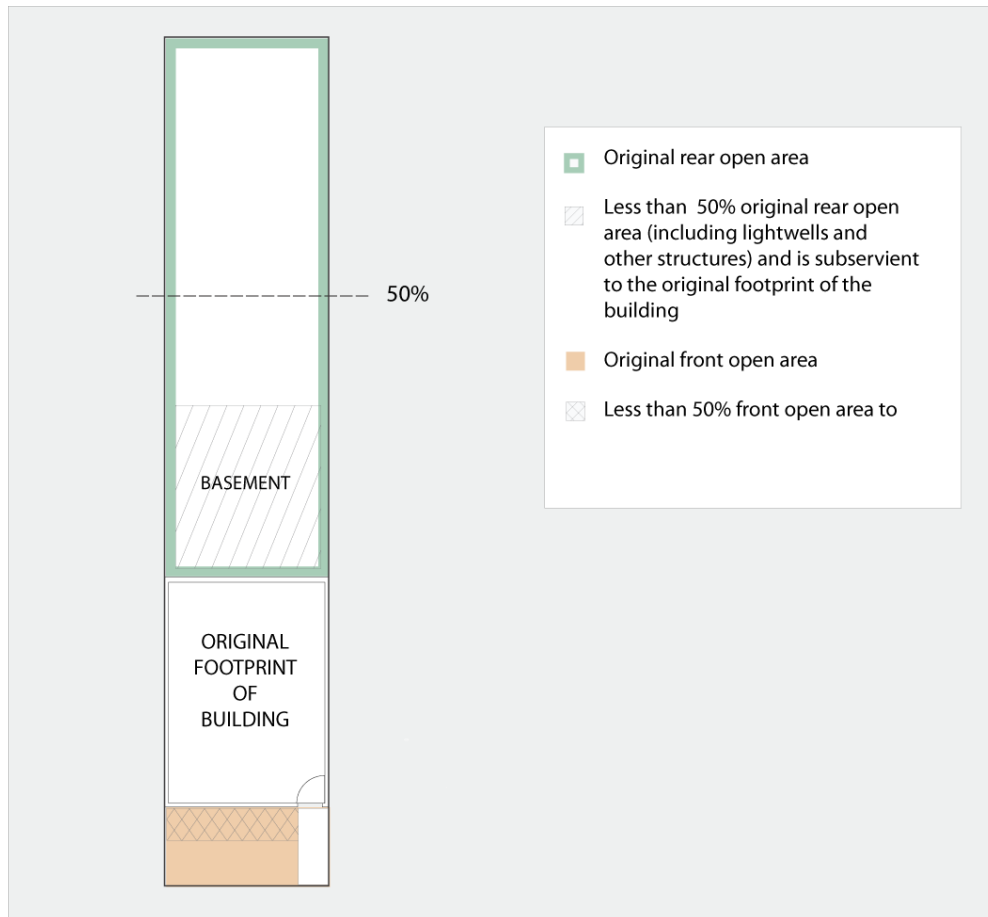


Figure 2 (above): How to calculate the extent of basement beyond the original footprint of a building with a large/long garden

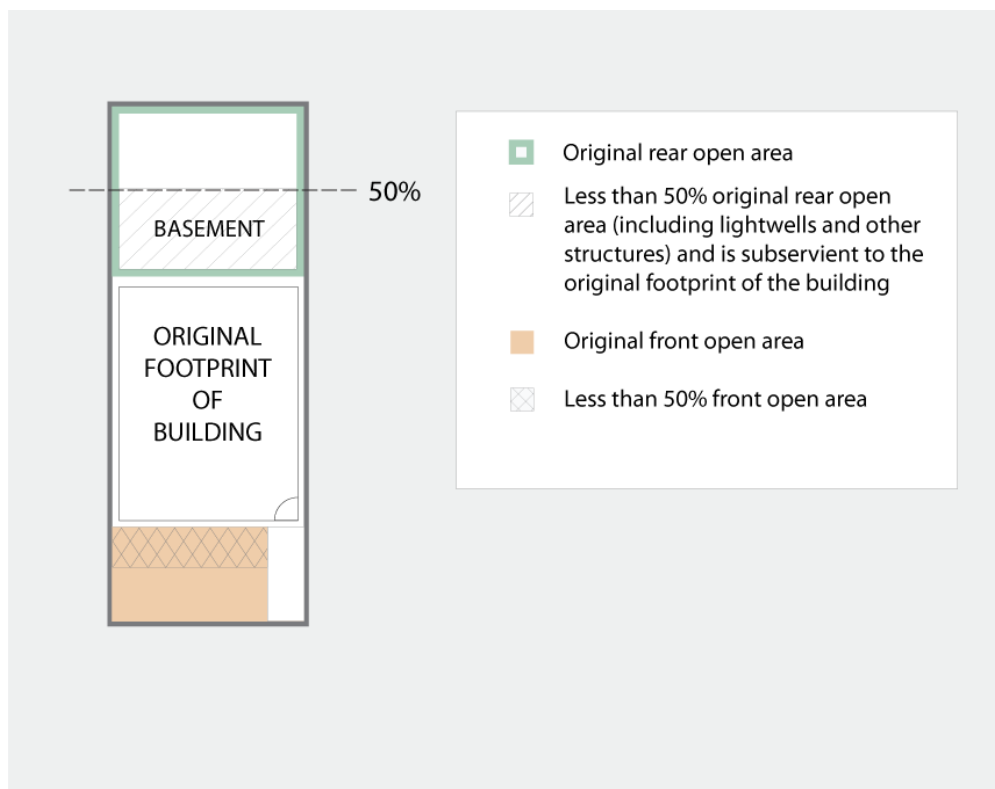


Figure 3 (above): How to calculate the maximum extent of basement beyond the original footprint of a building with a small garden

Residential infill developments

- 7.1.12. For infill residential development, the scale and extent of basement within a site should respond to the site context and the prevailing scale of development in the area. Basements should be proportionate, subordinate to the above ground building element, and reflect the character of its surrounds. The proportion of the site that is built upon/under to the proportion unbuilt upon when compared with surrounding buildings is of particular importance to achieving a compatible scale of development on infill sites. For the avoidance of doubt, both in terms of depth and footprint of basement, all other relevant design of the SPD will apply to infill developments and will have a bearing on the acceptability of a proposed basement design.
- 7.1.13. Diagrams provided at figures 4 and 5 below illustrate the relationship between an infill site and the surrounding development pattern, and a potential scale of basement development that may be appropriate for the site context. Note, these diagrams are purely for illustrative purposes, and do not in any way represent an approved site layout.
- 7.1.14. The siting of buildings and any associated basements should protect and enhance existing landscaped areas within the site, particularly where they contribute to the character of an area (DM Policy 6.3 and 6.5). The inclusion of generous deep soil landscape and drainage margins that can support mature soft landscaping and sustainable drainage will be required, and should occupy sufficient area to ameliorate any impacts the proposal will have on the character of the locality in terms of building scale as well as appearance such as a leafy aspect. Unless demonstrated to be otherwise, the presence of existing hardstanding is not considered a barrier to providing adequate landscaping and drainage within a design. For further guidance on character and appearance, landscaping and sustainable drainage see sections 7.3, 7.5 and 7.6 below.
- 7.1.15. The above principles will be applied in all residential infill development cases regardless of whether or not the site is built on, or is covered by buildings/structures that would be removed in order to enable the redevelopment of the site.

Commercial and mixed use redevelopment sites

- 7.1.16. On commercial and mixed use redevelopment schemes with proposed basements, the extent of basement development should be commensurate to the site context and building design. Sites within commercial areas such as the Central Activities Zone often contain buildings built to boundary. Any basement component of the scheme should be designed to avoid adverse impacts to sensitive sites, building, trees and other structures that may be affected by the construction of the proposed development. Areas of landscaping proposed should be designed as deep soil landscaping with natural drainage and no basement or other impermeable structure underneath.
- 7.1.17. In order to ensure consistency and safeguard against potential adverse impacts, commercial and other redevelopment sites must take into account and respond to the issues covered by this guidance and submit the appropriate documentation required in support of any planning application.

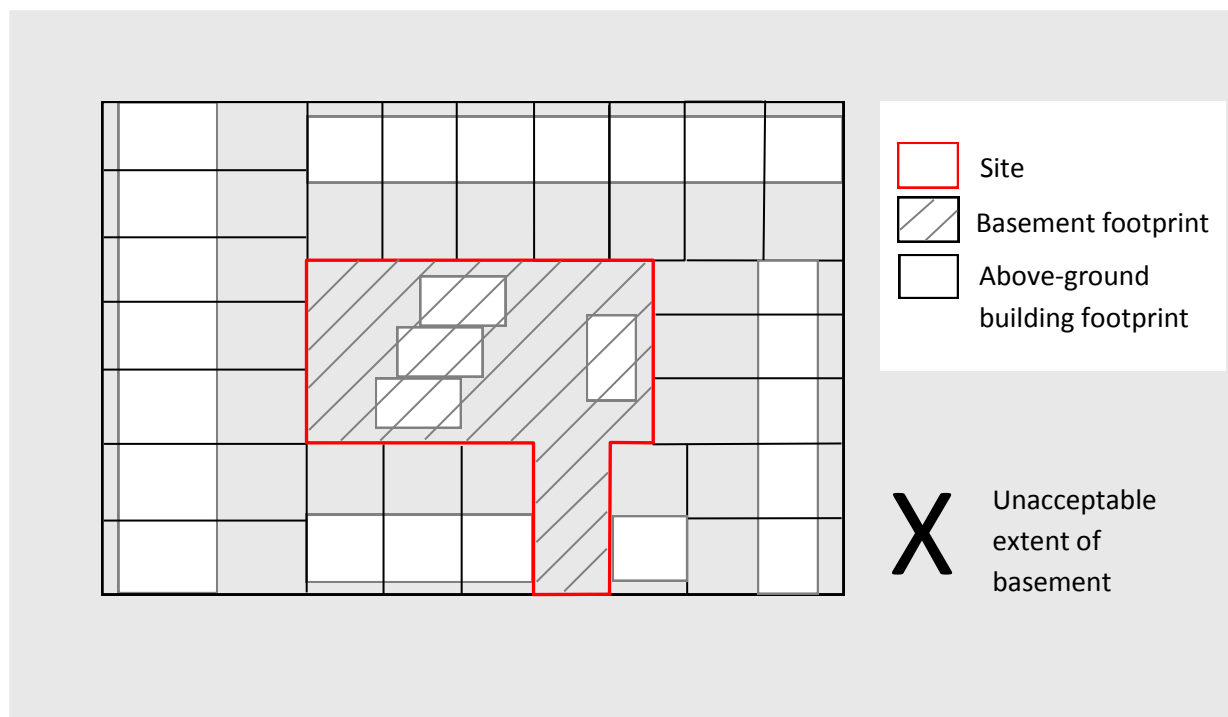


Figure 4 (above): Diagram showing 100% site coverage at basement level which does not reflect the prevailing scale of development in the area, and is not subordinate to the above ground element.

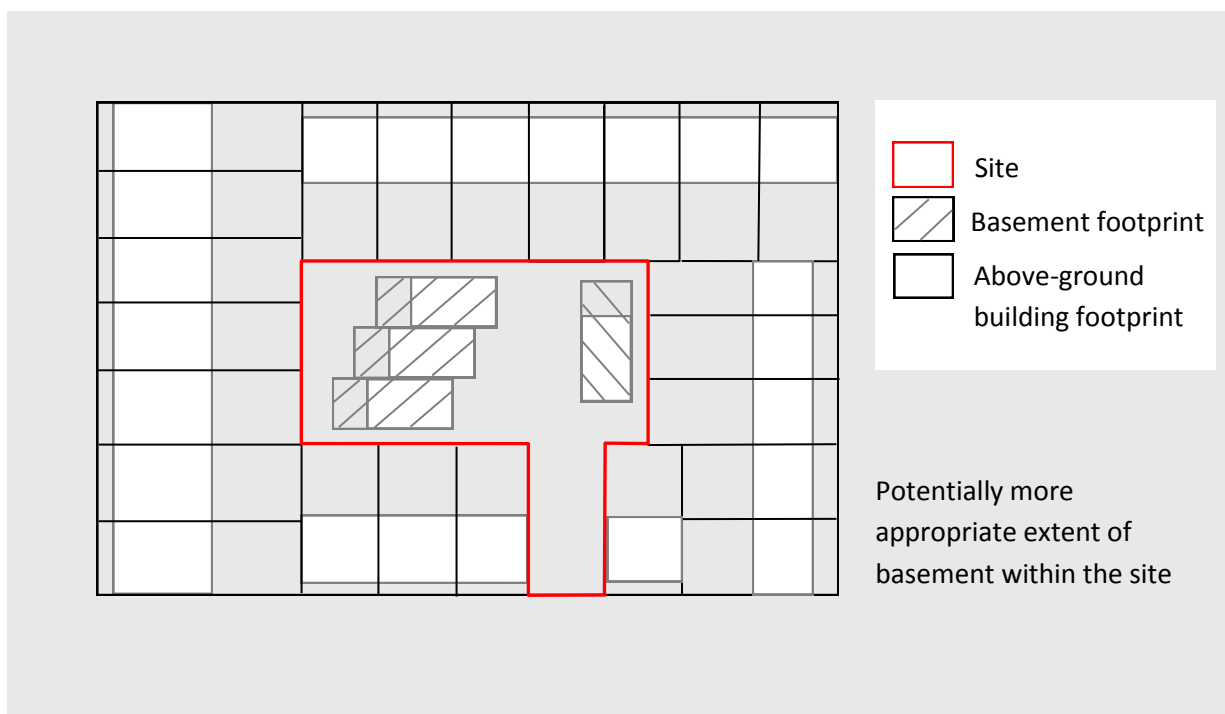


Figure 5 (above): Diagram showing a more appropriate scale of basement beyond the above-ground footprint of the proposed buildings, which better reflects the site coverage of the surrounding development pattern and allows adequate space for meaningful landscaping and natural drainage to be incorporated.

7.2. Depth of basement development

7.2.1. The depth of a basement will inherently affect the impacts associated with basement construction. These issues include the amount of excavation waste from a proposal, increased potential to cause ground movement, potentially longer construction times, decreased levels of natural light and ventilation to basement spaces, increased chances of coming into contact with groundwater and energy-intensive construction techniques.

7.2.2. In taking a balanced and precautionary approach, basements should generally not exceed 1 storey in depth, and not exceed 3m floor to ceiling height. For clarity, a basement extension below an existing basement/lower ground floor (that is not an original feature of the building) would result in a two storey basement and will be resisted.

7.2.3. In limited circumstances, for example a major commercial redevelopment site or a detached residential house with generous distances to adjoining properties, it may be acceptable to have a basement greater than one storey in depth if robustly demonstrated via detailed evidence that there would be no significant impact upon the hydrogeology or the structural stability of buildings, trees and other structures, and the design complies with all other relevant guidance in this SPD. As part of that evidence, it is likely that physical site investigations will need to be undertaken such as boreholes to establish robust site-specific data.

KEY PRINCIPLE

Basement development should be proportionate in scale to the above ground portion of building, not unduly intensify the use of a site, or cause significant environmental harm.

POLICY BASIS

Core Strategy Policy CS 9 (Protecting and enhancing Islington's built and historic environment), DM Policy 2.1 (Design), DM Policy 6.3 (Open space), DM Policy DM Policy 7.1 (Sustainable design and construction), Islington Urban Design Guide, Mayor's Sustainable Design and Construction SPG.

Design indicators

DI.2 A basement should not involve excavation of more than one (1) storey below the lowest original habitable floor level.

DI.3 The height of a basement should not exceed 3m floor to ceiling height.

7.2.4. Figure 6: shows the depth of basement and maximum floor to ceiling height.



Figure 6: Maximum 1 storey depth, with floor to ceiling height no greater than 3m.

7.3. Character and appearance

- 7.3.1. As basement development in most instances involves changes to existing structures or the introduction of new above ground structures in their design, there is the potential for impact on both the character and appearance of a locality. The inclusion of lightwells, railings, steps, plant, roof lights and other forms of lighting need to be sensitively designed to ensure they do not contribute to visual clutter, introduce alien features into the landscape, or interrupt the prevailing streetscape/garden rhythm.

Lightwells

- 7.3.2. If a lightwell is being introduced or modified, the most discreet location will generally be to the rear of the property. Lightwells should be modest in scale and be located immediately next to the rear elevation (or side if applicable).
- 7.3.3. For front gardens, basement design should integrate sympathetically with the existing elevation and front threshold. Where a lightwell will impact on an established front garden or open area that is characteristic of the street or terrace, the majority if not all of the front area should be retained.
- 7.3.4. Where the location of a lightwell is otherwise acceptable, the use of grilles in place of open lightwells with railings can provide a more discreet intervention, unless these features are characteristic of an area. Grilles should be constructed flush with the ground level, and designed to be visually unobtrusive through the use of discreet colours and materials, and to allow light to penetrate into the basement.
- 7.3.5. Figure 7 is an example of a lightwell that is flush with ground level, does not introduce excessive visual clutter and allows light to penetrate the room below.

KEY PRINCIPLE

Design of basements and associated structures must be of a high quality and should respect and respond positively to existing buildings; streetscape and the wider context; surrounding heritage assets; and locally distinctive patterns of development and landscape.

POLICY BASIS

Core Strategy Policy CS 9 (Protecting and enhancing Islington's built and historic environment), DM Policy 2.1 (Design), DM Policy 6.3 (Open Space) and the Islington Urban Design guide.



Figure 7 (left): Photo showing a flush lightwell that allows light to penetrate to the floor below



Figure 8 (above): Photo showing an inappropriate location for roof lights in a garden

Rooflights

- 7.3.6. Where rooflights are proposed, they should be kept flush with the ground level, be close to the building, proportionately small, and sympathetic with the host building. Rooflights that are located away from the building line such as in the middle of private gardens can be visually harmful and when illuminated from below can result in light spillage and are generally unacceptable.

Other structures

- 7.3.7. Other associated external manifestations of basements such as stairs, retaining structures and railings should be sensitively designed and discreetly sited so as to minimise the fragmentation of spaces, not contribute to visual clutter, or detract from the prevailing streetscape and/or garden pattern.

Garden setting

- 7.3.8. Whilst the predominant Islington townscape is urban and densely developed in character, the presence of gardens and open space/open aspect is equally as significant to the built form, not least due to the visual relief and contrast they provide, and the leafy green aspect that is created.

- 7.3.9. The removal of established vegetation in gardens for the construction of basements can significantly affect the character and appearance of an area, and must be safeguarded against.
- 7.3.10. Where basements are located within gardens and open areas of a site, they should be designed to integrate into the garden area, using appropriate materials, landscaping and other finishes to minimise the disruption to these spaces, and protect established planting where possible.
- 7.3.11. Materials should be of high quality, be robust, sustainable and appropriate to their context. See [Islington Urban Design Guide Supplementary Planning Document](#) for further design guidance.

Design indicators

DI.4 Lightwells and other external manifestations should be modest in size, discreetly located, and designed to protect and enhance the character and appearance of the area.

DI.5 Basements should be designed to preserve existing gardens, and should reinforce the visual relief soft landscaping between buildings provides.

7.4. Basements in proximity to trees

- 7.4.1. Basements, like above ground development, can have a direct or indirect impact upon the survival of trees within the borough. Proposals involving basements under gardens or unbuilt on areas are of particular concern to the Council for a range of reasons, not least their impact upon trees and viability of replacement planting.
- 7.4.2. Under Islington's Development Management Policies, developments are required to minimise any impacts on trees, shrubs and other significant vegetation, including through the provision of sufficient space for crowns and root systems of existing and proposed trees and their future growth.
- 7.4.3. Given the levels of excavation and ground disturbance involved in subterranean development, developments in proximity to trees will need to be carefully considered.
- 7.4.4. Of concern is:
- removal of trees to facilitate construction
 - loss of roots to retained trees
 - loss of rooting volume for retained trees which may be detrimental to their long term health or stability or prevent them achieving their desired canopy potential
 - limited remaining rooting volumes following cut and cover which may preclude meaningful replacement planting
- 7.4.5. Potential post-construction arboricultural impacts to the basement structure must be considered during the design, construction and post development. Trees are a material consideration and the constraints imposed by the existing tree stock should inform the design of the basement. In order for this to be demonstrated the applicant must:
- assess the existing tree cover
 - retain trees of merit/ amenity value on-site, justify any removals and mitigate any proposed losses
 - determine and minimise the impact of the proposed design on retained trees including neighbouring trees
 - protect retained trees during construction
 - provide mitigation for:
 - tree loss/ canopy cover
 - root loss/ rooting volume to retained trees
 - appropriate soil volumes for planting and
 - natural drainage
- 7.4.6. For this reason, the recommendations within British Standard 5837:2012 (*Trees in relation to design, demolition and construction*, or relevant standard when updated) should be followed.

KEY PRINCIPLE

Design of basements and associated structures should carefully consider and protect existing trees on a site, in adjoining sites and on the street.

POLICY BASIS

Core Strategy Policy CS 15 (Open space and green infrastructure), DM Policy 2.1 (Design), DM Policy 6.5 (Landscaping, trees and biodiversity), London Plan Policy 7.19, 7.20 and 7.21, and the Islington Tree Policy.

For reference to applicable guidance and standards see *Sources of Information* at Appendix F.

- 7.4.7. Where construction or construction activities fall within the Root Protection Area (RPA) of existing trees on or adjoining the site, the basement should be designed to avoid any short term (as a result of construction) or long term (due to altered growing conditions) impacts on retained tree survival.
- 7.4.8. An **Arboricultural Report** is required to be submitted at application stage for any basements that will potentially impact upon an existing tree (within the canopy or the RPA) or have a negative impact upon any retained trees. The report should include the following:
- survey of all trees on, and adjacent to the site
 - plan showing existing tree constraints overlain with the footprint of the proposed buildings
 - list of trees proposed for removal and those to be retained along with justification for removal
 - assessment of the impact of the development on the retained trees on and in adjacent sites
 - 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.
- 7.4.9. It is likely that any application that will adversely impact upon the long term survival of trees and shrubs will be unacceptable. In cases where the removal of trees can be robustly justified, the council will usually require them to be replaced within the curtilage of the property, with the aim of replacing the canopy cover lost. Species selection should conform to the 'right tree, right place' principle.
- 7.4.10. Excavations beneath existing medium-large trees will be resisted as the impact of tunnelling close beneath trees has not been researched and the negative effects from the loss of roots, rooting volume and changes in soil conditions are unknown and may lead to them becoming structurally unsafe and removed.

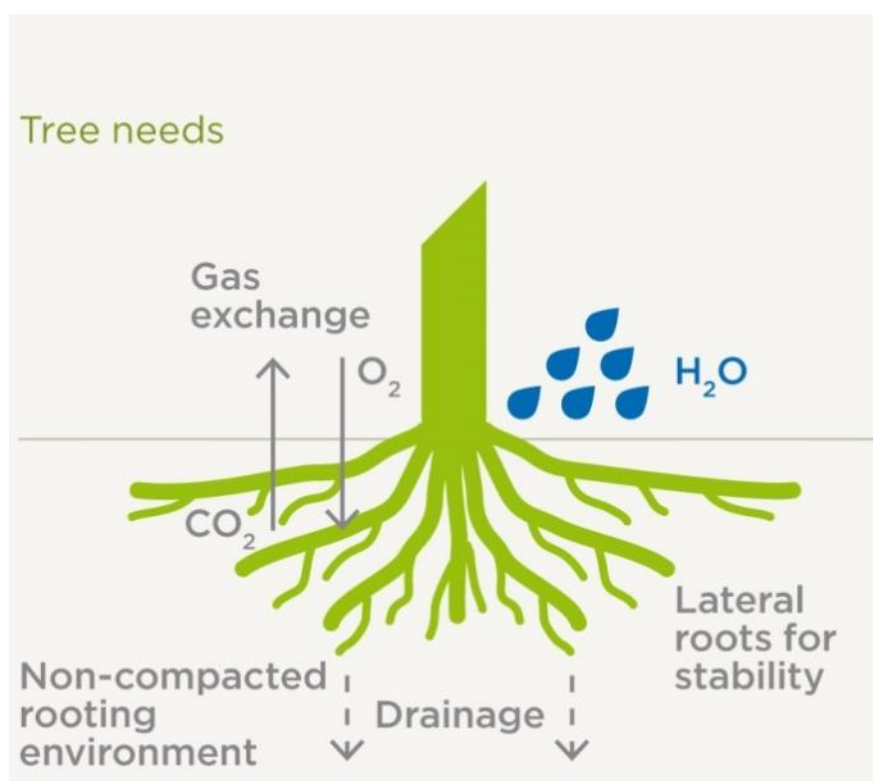


Figure 9: Diagram showing basic needs for tree survival (Source: Trees and Design Action Group, 2014).

Replacement planting

- 7.4.11. Rooting constraints, such as party walls, underpinning, service runs and retaining structures can impact upon the amount of replacement rooting volume available for large excavations. The rooting volume may affect the ability of a tree to attain its canopy potential or reach maturity, therefore the scope of replacement trees to be used may be restricted, and if repeated across the borough, could see a change in tree composition and overall loss of canopy cover.
- 7.4.12. Potential impacts to the basement by root encroachment can occur such as direct damage due to annual growth as well as the indirect damage to tree health due to moisture extraction. There are also potential issues with increased lateral and vertical loading from growing trees post construction. These potential issues should be carefully considered during the design of any basement within site containing (or adjoining sites containing) trees.
- 7.4.13. Rooting volumes for proposed planting should be:
- sufficient to mitigate canopy cover losses
 - allow meaningful planting
 - allow natural drainage
 - be linked where possible
- 7.4.14. In general, the following 'rule of thumb' according to tree size (as defined by *The Benefits of Large Species Trees in Urban Landscapes a Costing, Design and Management Guide*, CIRIA, 2012) for soil volumes should be applied (and is illustrated in Figure 10):
- small trees (ultimate height of 5 -8m): a minimum of 10 m³
 - medium trees (ultimate height of 8 -15m): a minimum of 20 m³
 - large trees (ultimate height of 15m+): a minimum of 30 m³
- 7.4.15. Rooting depths should be a minimum of 1m for small trees, 2m for medium trees and 3m for large trees to allow for adequate anchorage and hydrology during weather events (heavy rain/ water logging, drought conditions/ soil moisture deficit) to support tree health.
- 7.4.16. Rooting volumes should be linked between trees and landscaped areas where possible to further enhance the accessible rooting volume available to tree(s).

Design indicators

DI. 6 Where basement comes within proximity to existing trees on the site and/or adjoining sites, trees should be retained and the basement should be designed to avoid any adverse impacts upon those trees. An Arboricultural Report should be submitted in accordance with BS 5837:2012 for any such application.

DI.7 Trees proposed on a site should be provided with sufficient rooting volumes and access to deep soil areas to ensure their long term survival and ability to reach maturity.

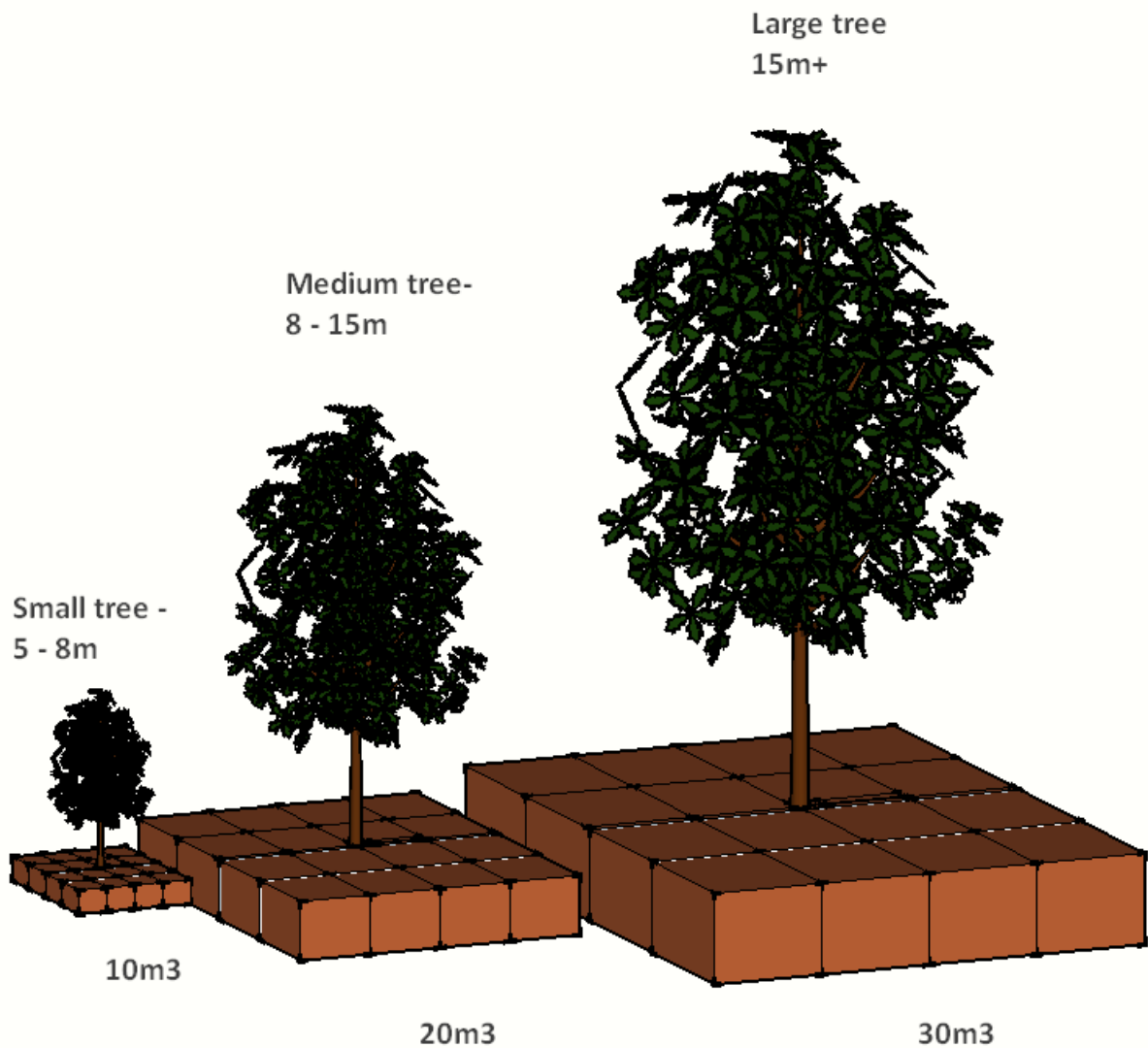


Figure 10: Diagram of root volumes for small, medium and large trees.

7.5. Landscaping, biodiversity and green infrastructure

7.5.1. The highly urbanised nature of the borough combined with the existing open space place increasing value on the contribution of private gardens and the ecosystem services they provide. Gardens collectively form the largest area of greenspace in the borough, and provide important habitat for wildlife as well as act as wildlife corridors between habitats.

7.5.2. Gardens also play a significant role in the borough's resilience and response to the effects of climate change, particularly in urban areas. For example in Islington, the effects of climate change will be amplified due to its densely built nature; the likelihood of flooding will be increased and local temperatures will be raised as a result of the "urban heat island effect". In addition, garden spaces allow rainwater to be absorbed and penetrate the ground surface, reducing the amount of surface water runoff, and maintaining sub soil moisture levels. Subterranean development can potentially have a significant impact on these functions.

7.5.3. Private garden land also contributes to the local context and verdant character of an area, as described in Section 7.3 of this document.

7.5.4. Unlike surface paving which can be easily removed, basements by their nature are permanent fixtures or very difficult to remove/remediate therefore likely to exist throughout the lifetime of the building and beyond. This means that the loss of infiltration/planting ability of a garden will go from temporary to permanent state, with it raising serious cumulative concerns regarding the continuing functions private open spaces will be able to provide.

7.5.5. Basements should be designed to protect trees and the garden setting, protect and enhance biodiversity value, and ensure surface water drainage is maintained. To achieve this, adequate depth of soil volume must be provided above any basement that extends further than 3m as measured from the original footprint of the building. Any lightwells, stairs and other structures should be located within the first 3m of the original footprint of building, to minimise disruption to the garden/open area.

7.5.6. Where a basement is proposed to extend beyond the footprint of the original dwelling (unless purely to construct a modest sized lightwell), a Landscape Plan should be provided at an appropriate level of detail relevant to the scale of development proposed, and must address the relevant considerations outlined in Appendix 12 of Development Management Policies 2013.

7.5.7. Landscaping should be designed to create attractive spaces that contribute to the character of an area, maximise the permeable surfacing of the site and enhance its biodiversity value. Planting should be sustainable and adaptable to change in climate conditions in the same way that

KEY PRINCIPLE

Design of basements and associated structures should protect, enhance and sustain existing landscaping, biodiversity value and ecological connectivity of a site and its surrounds.

POLICY BASIS

Core Strategy Policy CS 15 (Open space and green infrastructure), DM Policy 2.1 (Design), 6.3 (Open space) DM 6.5 (Landscaping, trees and biodiversity), London Plan Policies 7.20, Islington Environmental Design SPD and the Mayors Sustainable Design and Construction SPG.

unconstrained landscaping would be, and therefore capable of surviving dry periods (potentially drought conditions) without supplementary watering.

- 7.5.8. For this reason, it is therefore important that soil above any basement (unless within 3m of the original footprint as shown in Figure 11) be directly connected with deeper soil beyond the basement in order to draw upon those resources in harsh conditions. Similarly, adequate natural drainage is required in order to ensure the soil above a basement does not become waterlogged in times of high rainfall to prevent any adverse effect on planting within this space. This is illustrated in Figure 12.
- 7.5.9. The provision of a drainage layer with a minimum depth of 200mm above any basement that extends beyond the footprint of a building should be provided to ensure surface water drainage is adequately dealt with in conjunction with the unbuilt upon areas/drainage margins/areas of natural drainage. This is illustrated in Figures 11 and 12.
- 7.5.10. Where tree planting is proposed (or where trees exist on the site), consideration should be given to ground conditions such as drainage patterns, moisture levels, access to nutrients, and any impact the presence of a basement underneath may have in this regard (see section 7.4 of this document for further guidance).

Design indicators

DI. 8 Proposals should provide satisfactory landscaping, maximise permeability, biodiversity value and sustainable drainage through the provision of soft landscaping and permeable surfacing, and appropriate planting.

DI.9 Unless within 3m of the original rear wall, any basement extending beyond the original footprint of a building should incorporate a minimum of 1m of soil plus 200mm drainage above the top cover of the basement. For particularly constrained sites, or where large trees are proposed, soil depth of up to 1.5m should be provided.

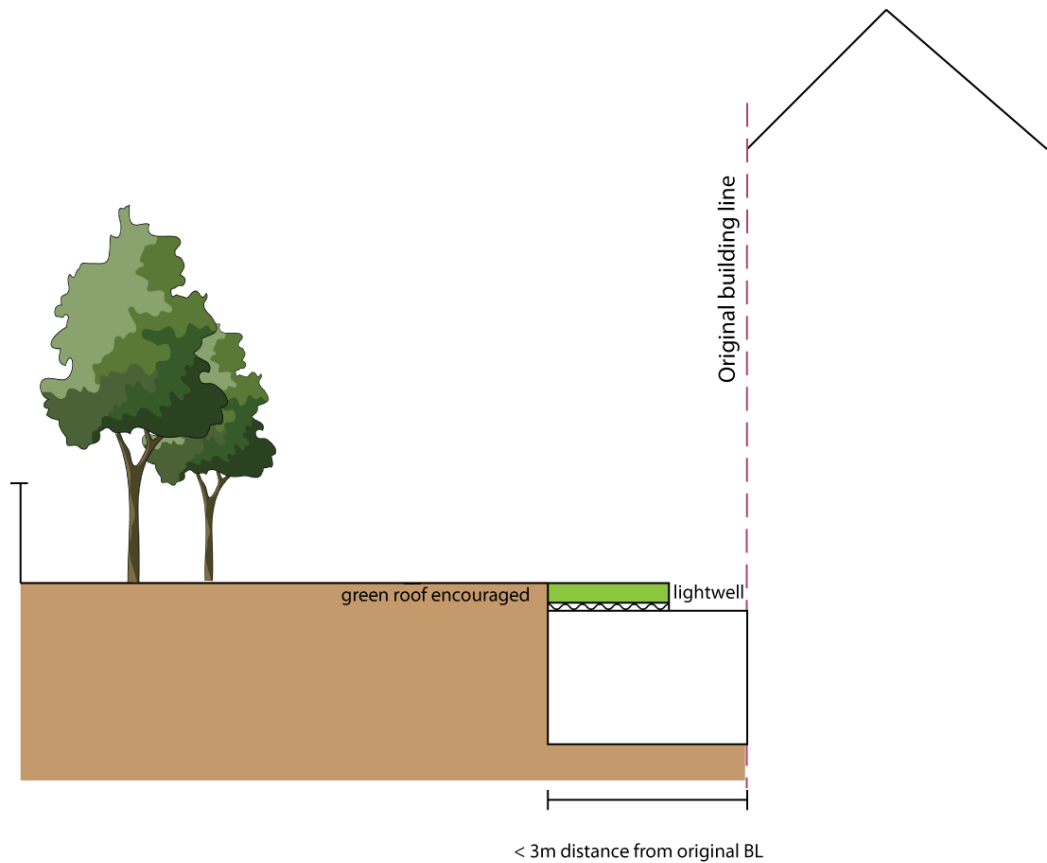


Figure 11: Diagram showing depth of soil above a basement less than 3m from the original rear wall, with lightwell and greenroof.

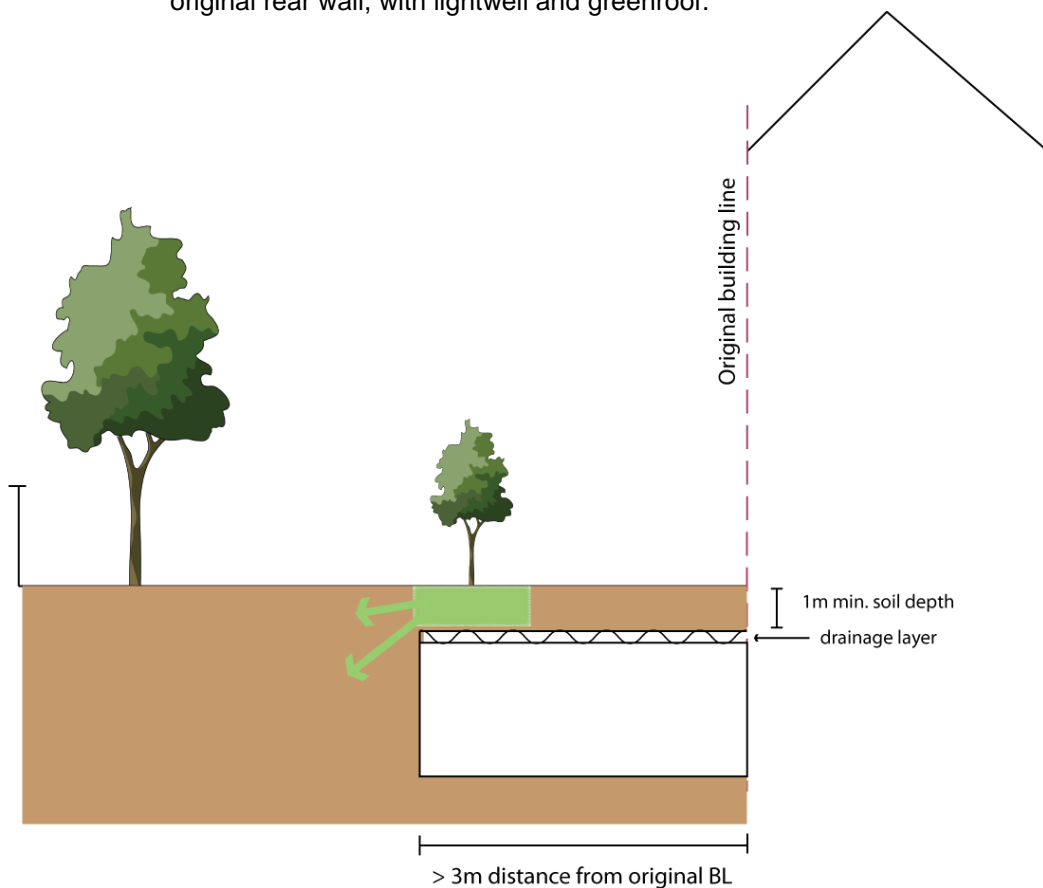


Figure 12: Diagram showing depth of soil above a basement greater than 3m from the original rear wall, and showing connection of replacement landscaping

7.6. Flood risk

- 7.6.1. The dominant surface water flood mechanism in Islington is pluvial flooding where water from a heavy rainstorm is not able to drain into the ground due to the high density of buildings and hard surfaces in the Borough. Due to the low lying nature of basements, they are considered to be vulnerable to surface water flooding partly due to potential egress issues (particularly a risk to self-contained residential basements).
- 7.6.2. Therefore, Flood Risk Assessments and associated drainage and access details are required to be submitted with any basement planning application that falls within a Local Flood Risk Zone (LFRZ), or within an area at risk of flooding from other sources (see Appendix D for Local Flood Risk Zones and Appendix F for links to Environment Agency Flood Mapping).
- 7.6.3. It is important that the design and construction of a basement is informed by investigations into all sources of flooding. Site investigations should include consideration of the following:
- groundwater
 - fluvial (rivers and historic watercourses)
 - pluvial (foul, surface water or combined)
 - reservoirs
 - private drains on or adjacent to the property
 - highway drainage
 - culverted watercourses
- 7.6.4. Areas within Islington that are vulnerable to ground water flooding are identified in Appendix E. If, as a result of site investigations, there is a risk a proposed basement may come into contact with groundwater, impacts should be assessed, monitored and addressed by the structural or civil engineer inputting into the basement design, and be reflected in the submitted Structural Method Statement.
- 7.6.5. New self-contained basements within LFRZs will be generally resisted due to their vulnerability to flood risk. For basements where access to upper levels exists, applications will be required to demonstrate that flood risk has been minimised through appropriate design.
- 7.6.6. Basements may also be more susceptible to sewer flooding and this should be considered by the employed structural or civil engineer. As a minimum, it is recommended that all drainage connections from basements to sewers are fitted within one way valve to prevent sewers surcharging into basements in high flow periods. Thames Water also recommend that all basements are fitted with a 'positive pumped device' (or equivalent reflecting technological advances) as this will assist in directing the flow of sewage away from the basement building, should sewer flooding occur.
- 7.6.7. In addition to flood risk posing a design issue for basements, the introduction of impermeable structures within previously permeable surfaces (i.e. gardens) can affect off-site surface water flood risk within a catchment due to changes in flow paths, and an increase in run off volumes. It

KEY OBJECTIVE

Basement development should be located to avoid areas of existing flood risk, be designed to minimise risk from flooding within the site and not contribute to flooding elsewhere.

POLICY BASIS

Core Strategy Policies CS 10 (Sustainable Design), Development Management Policies DM 6.6 (Flooding), Islington Environmental Design SPD and the Major's Sustainable Design and Construction SPG.

is important that these considerations are properly investigated through design development, and sufficient provision is made for the control and infiltration of surface water at source.

- 7.6.8. In addition, changes to surface water movements and volumes can have direct adverse impacts on nearby properties, such as localised flooding, as well as indirect impacts such as contributing to wider surface water flooding risks by reducing the amount of water able to penetrate to the water table.
- 7.6.9. Where a basement is proposed to extend beyond the footprint of a building, the development will need to demonstrate no net increase in surface water discharge from the site, and employ sustainable drainage techniques and generous drainage margins to protect/improve the infiltration capacity of the site and prevent localised flooding or contribution to wider surface water and groundwater flood risk. See section 7.5 for further design requirements for sustainable drainage.

Design indicators

DI.10 Basement development should be designed to minimise the risk of flooding to a development, ensure the development will not significantly increase the risk of flooding to adjoining properties or to contribute to wider flood risk within the catchment.

DI.11 Basement development should be designed to achieve no net increase in surface water runoff as a result of the proposal, and where applicable incorporate sustainable drainage techniques and generous drainage margins.

7.7. Sustainable design and quality of accommodation

- 7.7.1. Islington's Core Strategy Policy CS10 Sustainable Design seeks *'to minimise Islington's contribution to climate change and ensure the borough develops in a way which respects environmental limits and improves quality of life'*. Developments are required to promote sustainable design through minimising their CO₂ emissions, maximising passive design and reducing the impact of construction through sustainable use of materials.
- 7.7.2. Given the nature of subterranean development, it is fundamentally different in its embodied energy and performance in terms of energy efficiency to that of above-ground development. The embodied energy involved in the construction of basements can be considerable with energy intensive construction operations, combined with the embodied energy of structural materials required (in particular steel and concrete).
- 7.7.3. Basements can also have higher operational energy demands due to reduced opportunities for natural lighting and ventilation. In addition, the often energy-intensive use of basement spaces such as pools and gyms, as well as the potential need for pumping of groundwater and foul water (due to the depth of these structures in relation to existing invert levels) also contribute to higher energy demand profiles.
- 7.7.4. For these reasons, basements should be designed to achieve best practice sustainable design, particularly in terms of passive design, daylighting, natural ventilation, energy efficiency, and material use.
- 7.7.5. Applications for basement development should submit a Sustainable Design and Construction (SDC) Statement addressing the following issues and demonstrate how the proposed design promotes sustainable design best practice, including:
- passive design measures including optimising the use of natural ventilation, lighting and passive cooling
 - energy efficiency of any artificial lighting, pumps and plant
 - sustainable drainage (see section 7.5 for specific requirements)
 - sustainable material sourcing including potential for re-use and recycled content and avoiding high embodied carbon content
 - water sensitive design including water recycling and water conservation measures
- 7.7.6. Basements should be designed to provide adequate levels of natural daylighting for the intended use, and maximise natural ventilation over mechanical ventilation.

KEY OBJECTIVE

Basement development should be designed to achieve best practice sustainable design standards during the design, construction and operation of a development, and be designed to achieve a high level of residential amenity.

POLICY BASIS

Core Strategy Policies CS 10 (Sustainable Design), Development Management Policies DM 2.1 (Design), DM3.3 (Residential conversions and extensions), DM 3.4 (Housing Standards), DM7.1 (Sustainable Design and Construction), DM 7.2 (Energy Efficiency and carbon reduction in minor schemes), DM7.5 (Heating and cooling), Islington Environmental Design SPD, Major's Sustainable Design and Construction SPG.

- 7.7.7. Where large amounts of concrete are proposed as the only practical structural solution, the feasibility of using low-impact responsibly-sourced concrete and reinforcement should be submitted, and where feasible its use over more carbon-intensive concretes should be maximised. Feasibility assessment for the inclusion of low impact concrete should be provided as part of the SDC Statement submitted with a planning application proposing a basement.
- 7.7.8. Where basements spaces are proposed to house energy-intensive uses such as pools, saunas, gyms and similar uses, best practice energy efficiency products should be used. Basements should also reduce potable water demand through water efficient equipment such as through the use of water re-circulation, water recycling and water recovery systems.
- 7.7.9. Where a basement is proposed as an extension to an existing building/house, applicants are encouraged to apply energy efficiency measures to the existing parts of the building in addition to providing energy efficient design of the proposal, to help offset the increased operational energy use of the building.
- 7.7.10. The use of subterranean areas as habitable spaces without adequate consideration of residential amenity can result in sub-standard quality of accommodation, and undesirable development outcomes. In particular, the internal layout of rooms, access to natural daylight and sunlight, natural ventilation and adequate outlook, greatly influence the amenity of future occupants. Accommodation should also be sufficiently flexible to meet the diverse and changing needs of those occupants. These factors should be used to inform any basement design in accordance with DM Policies 3.3 and 3.4.

Design indicators

DI. 12 A Sustainable Design and Construction Statement should be submitted with any application for basement development demonstrating maximisation of passive design and operational efficiency at a level of detail commensurate to the scale of the proposal.

DI.13 Basements should maximise the use of recycled, low impact and sustainably-sourced materials, including by maximising materials rated on the BRE Green Guide.

8 BASEMENT DEVELOPMENT IN CONSERVATION AREAS

8.1. Conservation Areas (CAs) are areas identified (and designated by a Local Planning Authority) as an area of special architectural or historic interest, which deserves careful management to protect that character. Islington currently has 41 designated conservation areas covering approximately 50% of the borough.

8.2. Basement development and associated structures may affect the character and appearance of a conservation area. Applications for basement development within a CA should have regard to applicable Conservation Area Design Guidelines, Development Management Policy DM2.3 and the Islington Urban Design Guide.

8.3. [Conservation Area Design Guidelines](#) provide detailed guidance on each individual conservation area in the borough and include character appraisals, management proposals and guidance which seeks to actively manage change within Islington's CAs so that their significance is conserved and enhanced. These guidelines will be referred to when assessing the suitability of a proposed design for the local area.

KEY OBJECTIVE

Development should make a positive contribution to Islington's local character and distinctiveness, be of high quality contextual design and conserve and enhance a Conservation Area's significance.

POLICY BASIS

Development Management Policies DM 2.3 Conservation Areas, DM 6.3 Open Space, Islington Urban Design Guide, Islington's Conservation Area Design Guidelines.

8.4. In addition to the design considerations applicable to all basement development outlined in the above sections, basements within CAs should be designed to:

- not add visual clutter, such as additional railings, rooflights, lightwells, staircases
- protect and enhance gardens, open areas and open aspect
- maintain and repair prevailing garden level of an area and avoid undue cut and fill outside of the building footprint
- protect trees and other established planting

8.5. For properties within CAs, residential gardens make a substantial positive contribution to the significance, setting, character and appearance of the heritage assets. Disruption of these spaces should be minimised as far as possible, such as locating rooflights and lightwells close to the original building and minimising the amount of cut and fill (change to prevailing garden levels) unless it is demonstrated that there is no harmful impact arising from a change in prevailing level due to site specific circumstances.

8.6. Infilling of front lightwells to properties in CAs will generally be resisted. The deepening of existing front lightwells to provide light to a basement will not be supported when these works have a negative visual impact and harm the character and appearance of the CA. Any proposed front lightwell or alteration to a lightwell should be excavated to no lower than the original lower ground floor, where one exists.

Design indicators

DI.14 Basements within gardens of properties within a Conservation Area should not alter the prevailing garden level, and should minimise any cut and fill within these areas.

DI.15 A basement design should demonstrate how regard has been given to the applicable Conservation Area Guidelines including how actions suggested in the guidelines have been incorporated insofar as possible.

9 LISTED BUILDINGS

- 9.1.** In addition to the design considerations applicable to all basement development outlined in the previous sections, basements underneath and/or within the curtilage of listed buildings must be carefully sited and designed so as not to harm the special architectural or historic interest of the listed building or its setting.
- 9.2.** Listed Building Consent will be required for new basements or extensions to existing basements to listed buildings even where planning permission is not required.
- 9.3.** Most of Islington's listed buildings are Georgian or Victorian terraced townhouses or semi-detached houses. Townhouses were designed with a clear hierarchy of floor levels with larger principal rooms at ground and first floor levels with generous floor to ceiling heights and extensive decorative detailing. Upper and basement storeys generally have less generous floor to ceiling heights and minimal decoration. In most cases the front and rear gardens are separate and have clearly defined functions and roles in relation to the building itself. Given this strict hierarchy of spaces, additional storeys beneath a listed building will generally be resisted.
- 9.4.** Given the size and configuration of many of the listed buildings in Islington, listed buildings will often be unable to accommodate basements, due to the effect of the development on the building's special architectural and/or historical interest. Restrictions may include site dimensions, or previous later development on the site. The Council will assess each application on a case-by-case basis.
- 9.5.** Design features that may otherwise be acceptable in a basement proposal may not be acceptable to a listed building or within its curtilage. Key design considerations for development to a listed building or within its curtilage, in addition to those applicable in the previous sections of this guidance, include:
- floor hierarchy and hierarchy of spaces including floor to ceiling heights
 - plan form, historic layout and circulation patterns of the original building
 - impact on significant historic fabric including footings and boundary walls
 - relationship of basement /basement extension to original building
 - scale of the building and its relationship to the surrounding area, particularly the rear garden
 - setting of the listed building including gardens, trees and landscaping

KEY OBJECTIVE

Basement developments within the curtilage of a listed building should preserve and enhance the significance of the listed building(s) and be of good quality contextual design.

POLICY BASIS

Core Strategy Policy CS9, Development Management Policies DM 2.1 and 2.3, Finsbury Local Plan (Area Action Plan for Bunhill and Clerkenwell), London Plan Policy 7.8, NPPF 12.

Planning Practice Guidance, Historic England Advice Notes (2015), Conservation Principles (English Heritage 2008), and the London Terrace Houses 1660-1860 (English Heritage) are also relevant material considerations.

- 9.6.** The creation of new basement extensions underneath listed buildings, or works that involve the removal of fabric of heritage significance will be resisted. In sites with generous gardens it may be acceptable to construct a modest basement extension close to the original building, provided it is structurally and visually independent of the original building and does not harm the heritage significance of the listed building, including its garden setting.
- 9.7.** The lowering of floor levels to existing historic basements can harm the special architectural or historic interest of a listed building by virtue of detrimental impact on the historic fabric, floor hierarchy and plan form. Therefore, the lowering of an historic basement will only be considered where all of the following points are met:
- no underpinning is required i.e. development is retained above footings
 - no significant harmful impact to fabric of heritage significance is demonstrated
 - floor to ceiling heights remain sufficiently subservient to principal floor levels
- 9.8.** In order to preserve the historic circulation pattern, hierarchy of floor levels and historic structure/fabric any connection between the original house and the basement to provide access to a basement should happen outside the body of the original host building, not within it, and should not involve any underpinning of the original building. Often the best place to form this access link is from any later existing extension the building might have or a newly created extension (subject to it being of appropriate design and scale).
- 9.9.** Excavation or disruption to fabric to construct spiral wine cellars will not be acceptable in the original part of listed buildings given the harm to the heritage significance of the basement floor level, although they may be acceptable in non-original extensions subject to assessment against key design considerations.
- 9.10.** Plant and machinery should be located within the extension and any external visual impact should be minimised.
- 9.11.** The choice of materials for any proposed rooflights/lightwells should appropriately and sensitively reflect the materials characteristic to the listed building itself, and roof lights or lightwells should be subdivided as a means of minimising the visual impact of these new features in the garden setting.
- 9.12.** The impact of a proposal on nearby listed buildings and terraces will be assessed on the scale of any harm to the listed building and its setting.

Design indicators

DI.16 Basement extensions underneath listed buildings or original vaults, or extensions that involve the removal of fabric of heritage significance or interventions that disrupt the floor hierarchy of a building will not generally be acceptable.

DI.17 Where a basement is proposed within the curtilage of a listed building, the basement and any associated above-ground structure(s) should establish a subservient relationship to the original listed building and not substantially harm the special architectural or historic interest of the listed building or its setting.

Protecting features of heritage significance during construction

- 9.13.** Ideally a contractor or consultant that has experience of working with historic structures should be involved in the design and construction of a basement involving a listed building.
- 9.14.** If permission is granted for basement development for a listed building, details of how features of heritage significance will be protected during the construction process will be required to be clearly set out in the CMS.

Glossary

- **Biodiversity:** The diversity, or variety, of plants, animals and other living things in a particular locality. It encompasses habitat diversity and genetic diversity.
- **Character:** Individual distinctiveness created from a combination of natural and built elements with historic, socio-economic and other factors.
- **Conservation Areas:** Areas are designated under the Planning (Listed Buildings and Conservation Areas) Act 1990, primarily by local authorities, for their special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Conservation Area guidelines have been produced to guide development decisions in each area.
- **Core Strategy:** The Core Strategy is a Development Plan Document (DPD) setting out the long-term spatial vision for the local planning authority area and the spatial objectives and strategic policies to deliver that vision.
- **Deep landscaping:** Soft landscaping that does not overlie a built structure.
- **Development:** The carrying out of building, engineering, mining or other operations in, on, over or under the land; or the making or any material change of use of any buildings or other land as defined by the Town and Country Planning Act 1990 as amended. Unless it is defined under the Act as 'permitted development', planning permission is required for the carrying out of any development of land.
- **Embodied energy:** The sum of energy/carbon inputs to a material/product over its lifetime, from the point of extraction and manufacture, to delivery, use and disposal.
- **Green infrastructure:** A network of connected, high quality, multi-functional open spaces, corridors and the links in between that provide multiple benefits for people and wildlife.
- **Green roofs:** Green roofs are vegetated layers that sit on top of the conventional roof surfaces of a building, which can support a wide range of plant life. Green roofs can create or improve biodiversity, contribute to minimising flood risk, improve thermal efficiency and improve the microclimate.
- **Landscape Plan:** A plan showing the design and layout of all outdoor areas within the curtilage of a development.
- **Listed building:** A building of special architectural or historic interest, as listed under s1 of the Planning (Listed Buildings and Conservation Areas) Act 1990. Listed buildings are graded under Historic England classification to show their relative importance, with Grade I buildings being of exceptional interest, Grade II* being particularly important buildings of more than special interest.
- **Local Flood Risk Zone:** As defined by Council's surface water flood mapping.
- **Local Plan:** A Development Plan Document or collection of Development Plan Documents.
- **Major development:** Defined by the Town and Country Planning DMPO (Development Management Procedure Order) as amended – includes development involving 10 or more dwelling houses or buildings where the floorspace to be created is 1000 sqm metres or more.
- **Minor development:** Development involving less than 10 dwelling houses or buildings where the floor space to be created is less than the 1000 sqm metres (see also definition of major development above).
- **Open space:** Refers to private and public open space.
- **Private open space:** Land within the curtilage of an existing property, including gardens, amenity space and other grounds with a value due to their open aspect, amenity value, positive impact on the character and appearance of the site and/or surroundings, and/or biodiversity/ecological value. Private Open Space has a positive impact on climate change, including through a cooling effect, and also has a positive impact on drainage and air quality.
- **Supplementary Planning Documents:** Supplementary Planning Documents provide supplementary information to support the policies in Development Plan Documents. They do not form part of the Development Plan and are not subject to independent examination, but do form a material consideration.
- **Sustainable Urban Drainage (SUDS):** A means of managing surface water runoff close to where it falls and mimic natural drainage as closely as possible.

- **Urban Heat Island Effect:** Localised heating of the urban micro-climate due to the density of built development (buildings and roads absorb more solar radiation than green space and vegetation) and associated man-made heat sources. This can make central London up to eight degrees Celsius warmer than the Green Belt on hot summer nights.

Acronyms

- **CO₂:** Carbon dioxide
- **DPD:** Development Plan Document
- **GLA** Greater London Authority
- **GPDO** General Permitted Development Order 2015
- **NPPF:** National Planning Policy Framework 2012
- **SPD** Supplementary Planning Document
- **SPZ:** Source Protection Zone
- **SUDS** Sustainable Urban Drainage

APPENDIX A - VALIDATION REQUIREMENTS

For planning permission the following validation requirements apply to basement development:

All basement development

- **Existing and proposed plans and drawings** – as per local validation list.
- **Design and Access Statement** – if applicable.
- **Sustainable Design and Construction Statement** (or section within Design and Access Statement for smaller scale developments).
- **Arboricultural report** – if trees in proximity to site.
- **Structural Method Statement (SMS)**.
- **Archaeological assessment** – if site within Archaeological Priority Area or Scheduled Monument and SMS concludes the proposals are likely to affect important archaeological remains.
- **Contaminated Land Assessment** – if applicable.
- **Flood Risk Assessment** – where applicable.
- Plus any additional validation requirements applicable to a specific development contained in the [Islington Local Validation Requirements](#) list.

Via planning condition

- **Construction Management Plan (CMP)**.

Where basements extend beyond the footprint of a building

In addition to the above requirements, basements that extend beyond the footprint of a building must provide:

- **Detailed site survey plan** showing the full site (to boundary), calculation of the area (m²) of any garden/unbuilt upon areas (as per original footprint of building) location any structures (stairs, retaining walls, sheds etc.) and the relationship to adjoining sites (relative levels).
- **Biodiversity Survey** – for sites likely to impact on biodiversity or within or adjacent to Sites of Importance for Nature Conservation.
- **Landscape Plan** in accordance with Appendix 12 of [Development Management Policies](#) as commensurate to the scale of the development (**as updated from time to time**)
- **Sustainable Drainage Strategy** and plan(s).

For Listed Building Consent

The requirements for Listed Building consent are contained in the Local Validation List, and include (but are not limited to):

- **Heritage Statement** - The scope and degree of detail necessary will vary according to the particular circumstances of each application. Applicants are advised to discuss proposals through the pre-application process.

APPENDIX B - Guidance on Structural Method Statements (SMS)

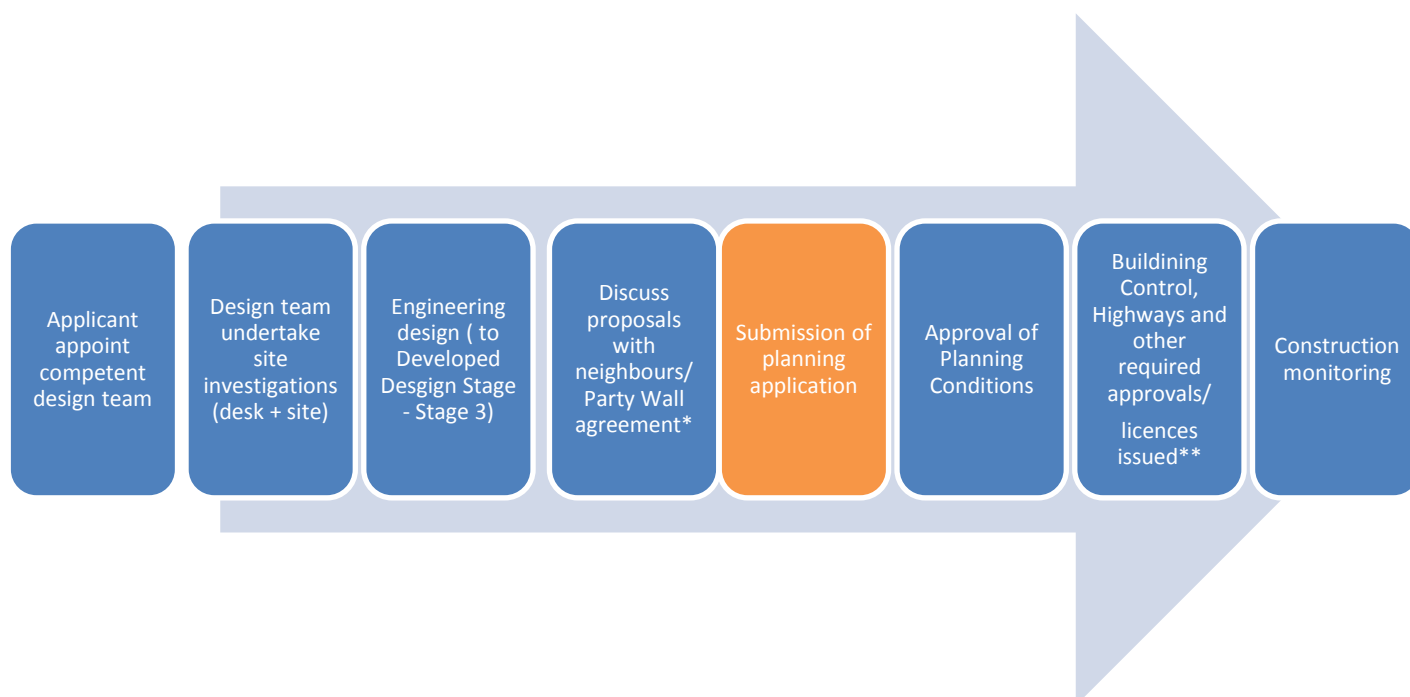
Who should prepare the SMS?

The SMS must be signed by a chartered Civil Engineer (MICE) or Chartered Structural Engineer (MIStruct.E), appointed by the Applicant. Details of the qualifications and experience of the person signing the SMS should be clearly stated within the SMS.

The Council will rely upon the professional integrity of the qualified and experienced person signing the SMS to ensure that the basement development can be undertaken safely and will safeguard the structural stability of the existing building and other nearby buildings.

The Council may choose to consult (at the expense of the applicant) an independent suitably qualified person to undertake an independent assessment for specific cases where substantive conflicting information has been presented to the Council, or where there are any particularly sensitive buildings, trees or other structures are within proximity of the site. The decision to seek a third party independent assessment will be at the discretion of the Local Planning Authority, and will only be sought in limited circumstances with clear justification.

Recommended design process



* Recommended

** Runs parallel to planning permission and are not a planning requirement

Contents of Structural Method Statement

The SMS should be submitted in the form of a report and supporting drawings. The level of detail will depend on the site context, site constraints and the scale of the basement, which is a matter of professional judgement made by the qualified person(s) signing the statement.

The Association of Specialist Contractors (ASUC) provides *Guidelines on Safe and Efficient Basement Construction Directly Below or Near to Existing Structures* (link contained in Appendix F). It is recommended that the qualified person(s) undertaking the design and construction work have previous experience working in this specific field, and have regard to industry guidance and adopt best practice.

Desk study

A thorough desk study should be undertaken and findings clearly set out in the SMS, to ascertain:

- the site history
- age of the property and any known damage to the property/terrace (e.g. recorded bomb damage)
- visual site survey (existing buildings and other structures)
- underlying geology
- topography
- current and historic water courses
- groundwater level
- flooding from all sources
- trees areas of archaeological interest (archaeological priority areas and scheduled monuments)
- listed buildings in proximity to the site
- underground infrastructure (utilities, services, drains and tunnels)
- other consented or constructed basements in proximity to the site (to identify potential cumulative impacts)

An appraisal of the existing structure including drawings to detail the arrangement of existing structures to be affected by the proposal should be provided.

A clear statement with the SMS must be included setting out the extent to which site surveys (such as visual surveys) were conducted and include clear justification and reasoning as to why the investigations were limited to the area surveyed. For example, in some circumstances it may be appropriate to survey the building on the site and those immediately adjoining the site, and in others it may be appropriate to survey more widely. The decision as to the extent of survey should be clearly set out and reasoned.

Site investigations

The need for physical site investigations such as trial pits will be depend on site conditions identified through the desk study and site surveys (see Section 6 for instances where these may be necessary). If physical investigations are not considered to be required to inform the design, the rationale should be clearly set out in the SMS.

Should physical site investigations be undertaken, these must be clearly set out and their findings explained.

Design

For planning application submission the engineering design should be advanced to Developed Design Stage (RIBA Stage 3). The SMS should convey a clear design process that demonstrates how the proposed design responds to findings of the site-specific survey and investigations undertaken and specifically how designers have addressed:

- ground conditions and ground water
- existing trees and infrastructure
- drainage
- flooding
- vertical and lateral loads
- movements
- integrity of existing structures (including adjoining buildings and wider where relevant)

The SMS should include outline of the proposed structural engineering general arrangement and details such as drawings of underpinning, piled wall etc.

The statement should include an assessment of both short and long term effects of movement expected to the property, the adjoining properties and adjacent properties. Damage should be limited to a maximum of Category 2 as set out in the Construction Industry Research and Information Association (CIRIA) Report 580 'Embedded Retaining Walls' (or as updated).

Construction monitoring

The SMS should set out how the construction of the basement will be overseen by the relevant and suitably qualified persons, particularly for key structural phases. A condition will be imposed on any consent issued (for basement development) requiring that the certifying professional (or replaced with a suitably qualified person with relevant experience) endorsing the SMS is retained for the duration of construction.

APPENDIX C – Guidance on Construction Management Plan (CMP)

The London Borough of Islington has developed a Code of Construction Practice for developers and contractors as guidance on good environmental practice to tackle the possible effects of construction (including air pollution, noise and vibration, traffic congestion, dust and contamination of land and water). It will be a condition of any planning permission granted for basement development that construction shall be in accordance with this code.

In order to agree the most appropriate plan of construction works for a specific site, a Construction Management Plan must be submitted to and approved by the Local Planning Authority prior to any works commencing on site (by way of Approval of Details against a planning condition). The following information is provided for guidance purposes only, as the level of detail and content should be commensurate to the scale of the construction to be undertaken.

Due to the extent of excavation required for many basement development proposals, the most appropriate code of construction practice to reference will be *the Code of Construction Practice for Construction Sites* (link contained in Appendix F) as the Council's guidance for *Small –scale construction work and home improvements* doesn't cover the full range of impacts associated with this type of development. Applicants and/or their contractors are also encouraged to sign up to the Considerate Constructors Scheme.

Construction Management Plan must include:

Proposed programme of works

Details on the likely duration of works should be provided with the CMP, including a total timeline for the project. Within the timeline it should clearly set out the major phases of works, and identify which phases are likely to involve noisy works and/ or vibration.

It is recommended that the timetable of works be discussed with neighbours as best practice.

Site Manager/liaison officer details

The applicant will need to appoint a liaison officer (LO) responsible for communication between the Council and the site, neighbours and other relevant parties. Contact details of the LO must be outlined in the CMP and clearly displayed on the site including a 24hr emergency contact.

The LO should also be made aware of and ensure compliance with any conditions attached to the relevant planning permission and notify the relevant council staff of any changes that affect those conditions should this occur during the course of the work.

Hours of work

Noisy construction works are only permitted to be carried out between the hours of:

- 8am - 6pm, Monday to Friday
- 8am – 1pm, Saturday

Including deliveries and ancillary operations.

No audible building works to be carried out on Sundays or public holidays, without prior written consent from the council's Pollution team.

Compliance with these hours of work should be clearly stated in the CMP.

If the site or the approved access route comes within proximity to a school, construction and delivery vehicles should not arrive or depart the site during school starting and leaving times which are between 8.30 to 9.30am and 3.00 to 4.30pm. A commitment to this effect should be included in the CMP.

Access arrangements for vehicles and material storage

The CMP should include details on the access, parking, and traffic management and delivery arrangement throughout the construction phase of the development. This should include:

- identification of construction vehicle routes
- how construction related traffic would turn into and exit the site (including appropriate traffic management)
- the method of demolition and removal of material from the site
- the parking of vehicles of site operatives and visitors
- loading and unloading of plant and materials
- storage of plant and materials used in constructing the development
- the erection and maintenance of security hoarding
- wheel washing facilities where applicable
- measures to control the emission of dust and dirt during construction
- a scheme for recycling/disposing of waste resulting from demolition and
- construction works

It should be noted that separate approvals under Section 179 of the Highways Act should be sought for excavations or works adjacent to or under the highway. Licencing for hoardings, scaffolding and similar obstructions will be required.

Noise, air quality and vibration control

In terms of noise and controlling vibration, Council will expect applicants to use 'best practicable means' at all times. The CMP should confirm the applicant has contacted the Council's Pollution team and is aware of all the requirements in relation to acceptable levels of noise and vibration (under various legislation including the Control of Pollution Act 1974). The CMP must set out how noise and vibration will be addressed, and implement the recommendations and good practice as shown in British Standard (BS) 5228: Noise and Vibration Control on Construction and Open Sites: 2009. Developers should also consider submitting an application to the council under Section 61 of the Control of Pollution Act 1974.

The whole borough has been declared an 'air quality management area' for nitrogen dioxide (NO₂) and particulate matter (PM₁₀), construction sites in Islington are a major contributor to local air pollution and are monitored by the Construction Impacts Monitoring Officer (CIMO).

The CMP should detail best practical means that will be taken to reduce air pollution as a result of construction works including dust, smoke, odour and emissions. The CMP should have regard to the Mayor's guidance on *The Control of Dust and Emissions During Construction and Demolition* ([link](#))

contained in Appendix F). Further information about low emission construction practice can be found at <http://www.llecp.org.uk/>

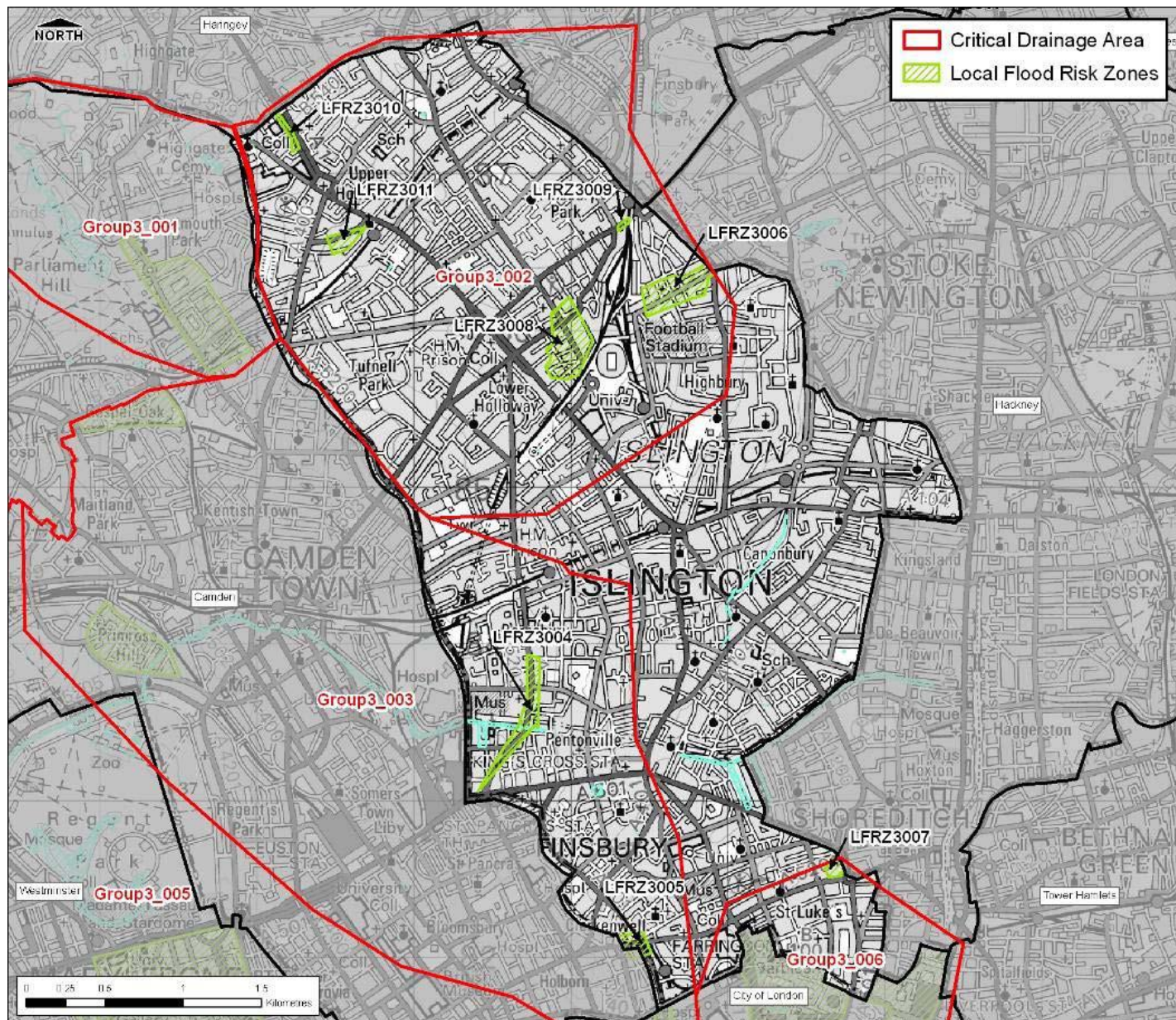
Works affecting a listed building and/or trees

The CMP should identify any trees to be retained on or adjoining the site and set out what measures will be put in place to protect these from damage.

If basement development is permitted to a listed building, a statement and drawings where necessary will be required detailing how spoil will be moved on and off site, how the historic interior will be protected and if any fabric is to be temporarily removed, how it will be removed, protected and reinstated.

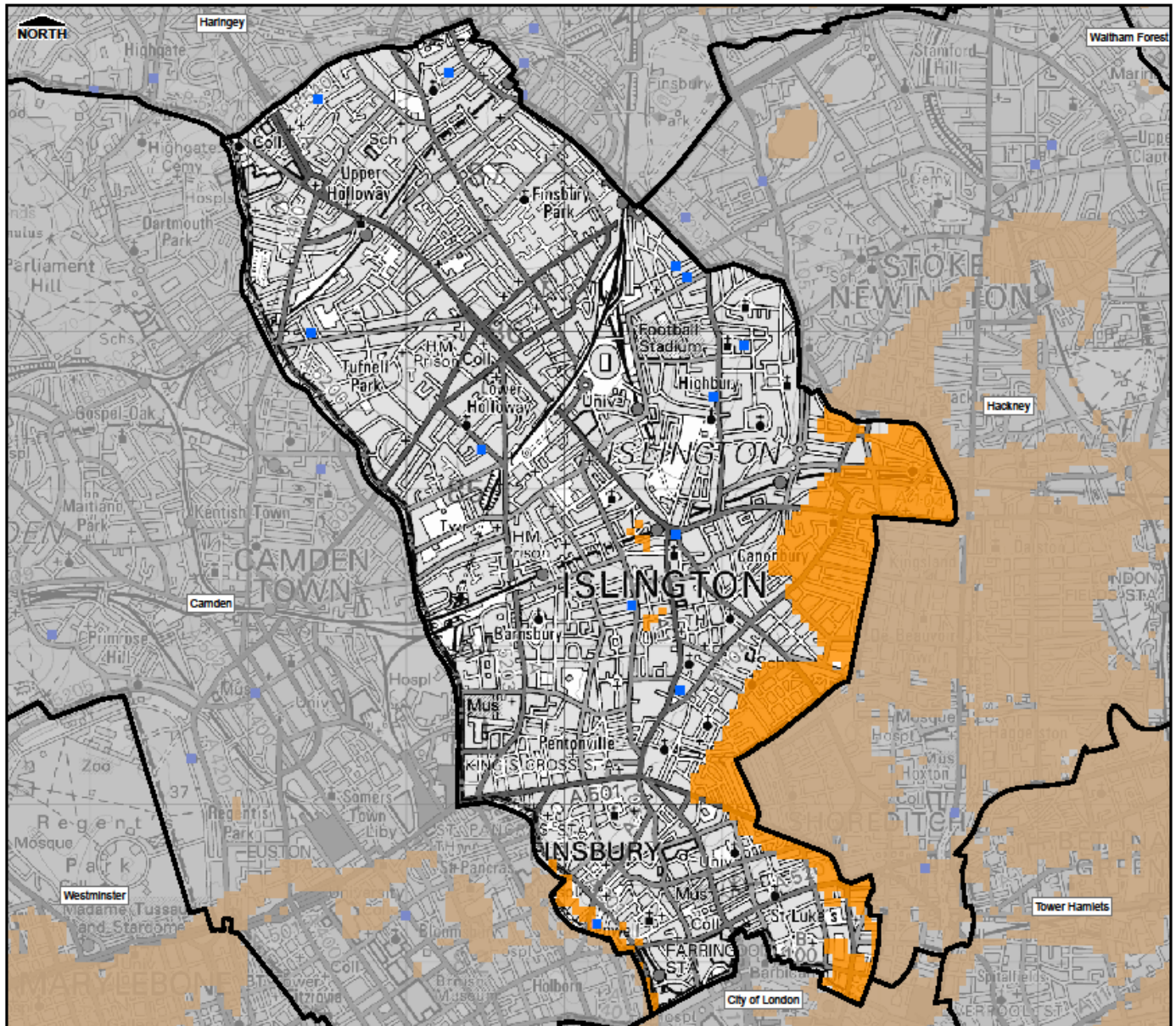
APPENDIX D: Local Flood Risk Zones and Critical Drainage Areas

Local Flood Risk Zones (LFRZs) in green, Critical Drainage Areas in red



APPENDIX E: Areas with increased potential for elevated groundwater

Permeable superficial deposits in orange, EA records of groundwater flooding in blue.



APPENDIX F - Sources of information

Site conditions

Archaeological Priority Areas and Scheduled Monuments for Islington – see appendix 7 of Development Management Policies 2013.

[http://www.islington.gov.uk/publicrecords/library/Planning-and-building-control/Publicity/Public-consultation/2012-2013/\(2012-10-03\)-Development-Management-Policies-Submission.pdf](http://www.islington.gov.uk/publicrecords/library/Planning-and-building-control/Publicity/Public-consultation/2012-2013/(2012-10-03)-Development-Management-Policies-Submission.pdf)

Environment Agency - Ground water protection zones

<http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=531500.0&y=181500.0&topic=groundwater&ep=map&scale=5&location=London,%20City%20of%20London&lang=en&layerGroups=default&distance=&textonly=off#x=531948&y=184052&lg=1,10,&scale=8>

Islington Preliminary Flood Risk Assessment

[http://www.islington.gov.uk/publicrecords/library/Planning-and-building-control/Information/Advice-and-information/2012-2013/\(2012-08-09\)-Preliminary-flood-risk-assessment.pdf](http://www.islington.gov.uk/publicrecords/library/Planning-and-building-control/Information/Advice-and-information/2012-2013/(2012-08-09)-Preliminary-flood-risk-assessment.pdf)

Trees and landscaping

Forestry Commission England – The Case for Trees in Development and Urban Planning

<http://www.forestry.gov.uk/forestry/infd-88nfn2>

Natural England's Green Infrastructure Guidance

<http://publications.naturalengland.org.uk/publication/35033>

NHBC – Building Near Trees

<http://landscape-masonry.co.uk/pdf/layout%204-2.pdf>

Trees & Design Action Group – Trees in Hard Landscapes

<http://www.tdag.org.uk/trees-in-hard-landscapes.html>

Trees & Design Action Group – The Canopy

<http://www.tdag.org.uk/the-canopy.html>

Trees & Design Action Group – Trees in the Townscape

<http://www.tdag.org.uk/trees-in-the-townscape.html>

Construction

ASUC Plus - Guidelines on safe and efficient basement construction directly below or near to existing structures

[http://www.citb.co.uk/documents/about-us/what%20we%20do/development%20fund%20info/asuc%20basement%20guidelines\[1\].pdf](http://www.citb.co.uk/documents/about-us/what%20we%20do/development%20fund%20info/asuc%20basement%20guidelines[1].pdf)

Greater London Authority – The Control of Dust and Emissions during Construction and Demolition

https://www.london.gov.uk/sites/default/files/Dust%20and%20Emissions%20SPG%208%20July%202014_0.pdf

London Borough of Islington- Code of Construction Practice

[http://www.islington.gov.uk/publicrecords/library/Environmental-protection/Information/Leaflets/2006-2007/\(2006-09-21\)-Code-of-Practice-for-Construction-Sites.pdf](http://www.islington.gov.uk/publicrecords/library/Environmental-protection/Information/Leaflets/2006-2007/(2006-09-21)-Code-of-Practice-for-Construction-Sites.pdf)