



building on success

Basements Policy Formulation Report

Partial Review of the Core Strategy



THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

February 2014

Regulation 19, Town and Country Planning (Local Planning) (England) Regulations 2012

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1. Introduction

- 1.1 Basement development is an increasingly popular form of development in the Royal Borough of Kensington and Chelsea. There were 46 planning applications in 2001, increasing to 182 in 2010, 307 in 2012 and 450 in 2013. Basement development in recent years has been the subject of concern from residents. Basements have given rise to issues about noise and disturbance during construction, the management of traffic, plant and equipment, and concerns about the structural stability of nearby buildings. Kensington and Chelsea is a predominantly residential Borough with a very high population density. Given the dense urban environment, these concerns have been heightened by the growth in the number of planning applications for basements.
- 1.2 The Core Strategy Policy CL2 (g) adopted in 2010 sets out the Council's existing policy on basement development. The Council also has a Supplementary Planning Document (SPD) on Subterranean Development which was adopted in 2009. In response to the concerns raised by residents, the Council started a review of the planning policy on basements in early 2012.

2. Purpose of this document

- 2.1 The Council has taken account of a range of issues in formulating the Publication policy. This document sets out a summary of each of the parameters/ processes undertaken by the Council to formulate the Publication policy on basements. These include:
- Higher order policies set out in the National Planning Policy Framework (NPPF) March 2012 and in the London Plan.
 - Evidence – the policy is based on an appropriate and proportionate evidence base.
 - Consultation, which has been undertaken in accordance with the Council's Statement of Community Involvement and the Town and Country Planning (Local Planning) (England) Regulations 2012 (the Regulations).
 - Sustainability Appraisal of the policy undertaken throughout its preparation.
 - An Equalities Impact Assessment undertaken throughout its preparation.

3. Planning Policy Context

National Planning Policy Framework

- 3.1 The Government introduced the National Planning Policy Framework (NPPF) in March 2012. The NPPF sets out the Government's planning policies for England and how these are expected to be applied. The underlying tenet in the NPPF is that the planning system should

contribute to the achievement of sustainable development (para 6, NPPF).

- 3.2 Page 2 of the NPPF under the heading Sustainable Development states *“International and national bodies have set out broad principles of sustainable development. Resolution 42/187 of the United Nations General Assembly defined sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The UK Sustainable Development Strategy Securing the Future set out five ‘guiding principles’ of sustainable development: living within the planet’s environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.”*
- 3.3 One of the five guiding principles in the UK Sustainable Development Strategy Securing the Future referred to in the NPPF is Using Sound Science Responsibly. This principle is about *“Ensuring policy is developed and implemented on the basis of strong scientific evidence, whilst taking into account scientific uncertainty (through the precautionary principle) as well as public attitudes and values.”*
- 3.4 In accordance with the above the Publication policy is based on strong scientific evidence presented in brief in section 4 below. It is also clear that there is a degree of uncertainty over what is likely to be the long-term impact of this type of development. Therefore the precautionary principle is also important in formulating the policy together with public attitudes and values.
- 3.5 Paragraph 7 of the NPPF sets out the three dimensions of sustainable development: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles. Para 8 of the NPPF states that *“these roles should not be undertaken in isolation, because they are mutually dependent. Economic growth can secure higher social and environmental standards, and well-designed buildings and places can improve the lives of people and communities. Therefore, to achieve sustainable development, economic, social and environmental gains should be sought jointly and simultaneously through the planning system. The planning system should play an active role in guiding development to sustainable solutions.”*
- 3.6 Para 9 of the NPPF states that *“Pursuing sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people’s quality of life, including (but not limited to): replacing poor design with better design and improving the conditions in which people live, work, travel and take leisure.”* These positive improvements as set out in the NPPF are considered to be directly related to the basements publication policy. The policy is clearly about development of the ‘highest quality’ and one

of the underlying objectives is to improve the living conditions of the Borough's residents.

- 3.7 Plans and decisions need to take local circumstances into account (para 10, NPPF). The basements publication policy takes account of local circumstances and is a bespoke policy for the Royal Borough.
- 3.8 The Council developed sixteen Sustainability Appraisal objectives (SA Objectives) within its initial SEA/SA Scoping report for the Local Development Framework (LDF) in 2005. The sustainability appraisal objectives include objectives relating to the three strands of sustainable development: social, environmental and economic. The basement policy has been subject to a Sustainability Appraisal throughout its preparation with each strand of the policy appraised against the sustainability appraisal objectives. The details of the SA process are set out below in section 5. The various strands of the Publication policy are compatible with the sustainability appraisal objectives.
- 3.9 At the heart of the NPPF is a **presumption in favour of sustainable development**. For plan-making this includes *“Local Plans should meet objectively assessed needs, with sufficient flexibility to adapt to rapid change, unlessspecific policies in this Framework indicate development should be restricted”* (para 14, NPPF).
- 3.10 Para 53 of the NPPF is one such paragraph which indicates where development should be restricted. It states *“Local planning authorities should consider the case for setting out policies to resist inappropriate development of residential gardens, for example where development would cause harm to the local area.”*
- 3.11 Annex 2: Glossary of the NPPF sets out the definition of previously developed land. Private residential gardens are excluded from the definition of previously developed land. Therefore the Publication policy limits the extent of basements into the garden. Evidence presented in section 4 below indicates that extensive development of gardens as a result of basements can harm the character of the Borough.
- 3.12 The basement publication policy requires that basement development should not cause harm to the significance of heritage assets. This is in-line with paras 126 of the NPPF. The Council also has duties under Planning (Listed Buildings and Conservation Areas) Act 1990. For listed buildings the local planning authority should have *“special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses”*. For conservation areas the local planning authority should give special attention to *“the desirability of preserving or enhancing the character or appearance of that area”* (our emphasis).
- 3.13 The plan-form of listed buildings and their foundations are considered to be part of their special architectural or historic interest. The Publication policy therefore precludes basements underneath listed buildings. It also requires applicants to demonstrate that there is no

harm to the special architectural and historic interest of the listed building when proposed in the garden.

- 3.14 Para 109 of the NPPF states that *“the planning system should contribute to and enhance the natural and local environment by (including but not limited to): preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability;”*.
- 3.15 Para 120 of the NPPF states *“To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.”*
- 3.16 The draft policy is therefore requiring basements to *“be designed to minimise damage to and safeguard the structural stability of the application building, nearby buildings and other infrastructure including London Underground tunnels and the highway”*. However, as stated in the NPPF if a site is affected by land stability issues the responsibility lies with the developer/ owner not the Council.

The London Plan

- 3.17 The London Plan is part of the Borough’s Development Plan and policies in the Local Plan should comply with the London Plan.
- 3.18 London Plan Policy 3.5 states *“Boroughs may in their LDFs introduce a presumption against development on back gardens or other private residential gardens where this can be locally justified”*.
- 3.19 Reasoned justification to Policy 3.5 states that *“back gardens play important roles in addressing many of these policy concerns, as well as being a much cherished part of the London townscape contributing to communities’ sense of place and quality of life.”* The London Plan Housing SPG, November 2012 (para 1.2.18) further amplifies the roles that gardens play including
- *“defining local context and character including local social, physical, cultural, historical, environmental and economic characteristics,*
 - *Providing safe, secure and sustainable environments and play spaces,*
 - *Supporting biodiversity, protecting London’s trees, ‘green corridors and networks’, abating flood risk and mitigating the effects of climate change including the ‘heat island’ effect, and*

- Enhancing *the distinct character of suburban London.*”
- 3.20 Para 1.2.22 of the London Plan Housing SPG (Nov 2012) further states *“Gardens can clearly be very much part of form, function and structure which warrants respect and protection.”*
- 3.21 The Council’s visual evidence on the impact of basements shows that basement development can alter the character of gardens and have the potential to adversely impact on the roles defined in the London Plan Housing SPG. Therefore it is reasonable to expect a significant proportion of gardens to be kept free of any development to allow their natural character to be maintained.
- 3.22 Para 1.2.25 of the London Plan Housing SPG (Nov 2012) states *“Where subterranean extensions to existing dwellings pose planning policy (as opposed to enforcement/regulation) issues, boroughs are advised to consider the bearing of such development on London Plan policies addressing sustainable design and construction (5.3), retrofitting (5.4), overheating and cooling (5.9), flood risk (5.12), sustainable drainage (5.13), construction and demolition waste (5.18), water use and supplies (5.15), trees (7.12) and biodiversity (7.18/19).*
- 3.23 The policies referred to in the London Plan SPG are either covered by other policies in the Council’s Core Strategy or the basement policy complies with them as follows:
- Policy 5.3: Sustainable Design and Construction – one of the issues the basement policy is seeking to address is the disproportionate construction impact of basements. The policy requires consideration of these issues at the design stage. The requirements for a Basement Impact Assessment which would be set out in the revised Basements SPD will provide further details on this. The policy will also contribute to minimising the impact of development on climate change. This will be through limiting the extent of basements and requiring upgrades to the original building to which the basement relates.
 - Policy 5.4: Retrofitting – The BREEAM Domestic Refurbishment requirements to upgrade the building related to the basement development complies with this policy.
 - Policy 5.9: Overheating and Cooling – basements themselves are considered to be well insulated, surrounded by ground on all sides and are unlikely to be exposed to extremes of temperature resulting in overheating or cooling. Restricting the scale of basements both in terms of extent under the garden and number of storeys would reduce the need and/or scale of mechanical cooling/ heating systems.
 - Policy 5.12: Flood Risk – Policy CE2 of the Core Strategy deals specifically with flood risk.

- Policy 5.13: Sustainable Drainage – the draft policy has a specific requirement for sustainable urban drainage systems to reduce the volume and flow of surface water run-off.
- Policy 5.18: Construction and Demolition Waste – the BREEAM requirements are set out in the Publication policy. This requires that 80% of the construction waste is recycled.
- Policy 5.15: Water use and supplies – the BREEAM requirements include considerations of water use.
- Policy 7.12: Trees – Publication policy protects existing trees of amenity value. The Core Strategy includes Policy CR6 relating to trees.
- Policy 7.18/19 Biodiversity – is linked to designated sites. Core Strategy Policy CE4 specifically deals with biodiversity. Limiting the extent of basements under gardens will help reduce impact on biodiversity.

3.24 In addition Policy 5.1: Climate Change Mitigation and Policy 5.2: Minimising Carbon Dioxide Emissions of the London Plan are also considered relevant.

3.25 Policy 5.1: Climate Change mitigation states that boroughs should develop detailed policies that help reduce carbon dioxide reductions in London. Policy 5.2 requires development proposals to make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy: (1) Be lean – use less energy (2) Be clean – supply energy efficiently and (3) Be Green – use renewable energy. Policy 5.2 (E) also states *“The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.”* A separate note has been prepared by the Council titled Carbon Offsetting, February 2014 which concludes that neither of the options – offsetting off-site or taking cash in lieu are realistic in this Borough.

3.26 Para 5.16 of the reasoned justification to Policy 5.2 states that the first step in the above hierarchy should be met through adopting sustainable design principles outlined in Policy 5.3: Sustainable Design and Construction. Para 5.25 in support of Policy 5.3 states that *“...where practicable those with a high embodied energy should be avoided.”* Basements are constructed using large amounts of concrete which has a high carbon embodiment. The carbon emissions of basements are greater than those of above ground developments per square metre over the building’s life cycle^{1 2}. Limiting the size of basements will

¹ Life Cycle Carbon Analysis of Extensions and Subterranean Development in RBK&C, Eight Associates, February 2014

² Life Cycle Analysis (LCA) is a methodology for assessing the environmental performance

therefore limit carbon emissions and contribute to mitigating climate change.

4. Evidence Base

4.1 The following documents support the formulation of the policy:

4.2 **Basements Development Data, RBKC, February 2014** – shows a significant increase in the number of applications with a basement element, with 46 cases in 2001 increasing to 450 in 2013. It includes maps showing a high concentration of planning permissions in residential areas of the Borough. Some of the permissions are concentrated within a relatively small area with several properties in a single street. Basements are generally complicated and challenging engineering projects particularly when constructed under existing buildings. The residential densities in the Royal Borough are one of the highest in the country. This can result in construction impacts experienced by residents for prolonged periods of time affecting their living conditions. This is more so when more than one basement is being constructed in the same street or within a small area. Therefore there is a need for a bespoke policy to manage the development of basements in the Borough.

4.3 **Royal Borough of Kensington and Chelsea Monitoring Report, December 2013 (Chapter 2)** – Chapter 2 of the Borough's 2013 monitoring report presents the character of the Borough. It states that the Royal Borough is the smallest and also the second most densely populated Borough in London. The population density of the Borough is 131 persons per hectare.

4.4 **Royal Borough of Kensington and Chelsea, Population and Household Density, February 2014** – presents information from the 2011 Census which shows that the Borough has the second highest population density amongst all other local authorities in England and Wales. The population density of the Royal Borough is 13,086 residents per sq km (The mean for England and Wales is 371 residents per sq km). The household density in the Borough is also extremely high with 6,478 households per sq km compared to an average of 155 households per sq km in England and Wales.

4.5 Clearly the paper demonstrates that the Royal Borough has extremely high population and household densities. If this is considered along with the special historic character of the Borough and the fine grained streets that characterise residential areas it is also apparent that construction impacts are experienced by residents at very close quarters. Given the growing trend of basement development as presented in the Basements Data Report it is prudent that construction impacts are proactively minimised to protect the living conditions in residential neighbourhoods.

of a product (i.e. building) over its life cycle.

- 4.6 **Urban Design Strategy – Draft SPD, Background Report, RBKC (Urban Initiatives), July 2006 (Relevant Extract)** – presents a character analysis of the Borough. It includes the historic development of the Borough. In section 4.4 it indicates that *“In most areas of the Borough the urban street block is the dominant development form. In some of these blocks the inner courtyards are built over. Depending on building height these very compact development patterns result in medium to high dense areas. Parts of Notting Hill, Kensington, South Kensington and North Chelsea are of a higher to high density with plot ratios well above 2:1.”* Figure 9 also shows the predominantly residential character of the Borough. Figure 13 shows the extent of conservation areas in the Borough highlighting its special character.
- 4.7 **Basement Surveys (Aug/ Sep 2012)** – The Council undertook specific surveys on basement issues in August/September 2012. The full results are available on the Council’s website. Questionnaires were sent to:
- Owners of properties where a basement has been granted planning permission in the last four years;
 - The neighbours of properties with basement permissions; and
 - Residents’ associations.
- 4.8 There were too few responses to the Owners’ Survey to be able to draw any conclusions.
- 4.9 About 8,000 neighbours questionnaires were sent out. There was a 17% response rate (1,254 responses). The questionnaire was a simple “tick box” questionnaire to allow for statistical analysis.
- About a quarter of respondents held the view that the basement had had a negative impact on the property or its garden.
 - About half noticed an impact upon their property.
 - Between 50-60% felt that the impacts of noise, traffic, dust and vibration had not been kept within reasonable limits.
 - Around 10-15% experienced a worsening in drainage, flooding, damp or vermin either during or after construction.
 - About a third of respondents had party wall agreements, with one in five reporting that the agreement had not been adhered to.
- 4.10 There were 127 responses to the Residents’ Association Survey. This was sent to all associations, and also made available on the web. This asked the same questions as the residents’ survey, but also provided space for qualitative responses. A summary of key finding is as follows:

- About a third of basements were reported to be more than one storey deep.
- Around a quarter reported that the basement had a negative impact on the property, rising to over a third in relation to the garden.
- Half of the respondents had entered into party wall agreements, with over half being unhappy with the outcome.
- Between 50-70% reported problems with issues during construction such as noise, dust, traffic and vibration.
- About 10-20% noticed changes in relation to damp, drainage, flooding and vermin, during and after construction.

- 4.11 **Basement Works – The Impacts on Residents, RBKC, February 2014** – sets out noise and vibration issues related to basements. It highlights that even when best practice is followed, the impact on adjoining properties can be substantial. Appendix 4 includes a map which shows sites where complaints were directly linked to basement construction. It shows that over 900 properties are likely to be affected by noise and vibration from 53 basement development sites.
- 4.12 **Residential Basement Study Report, Alan Baxter and Associates, March 2013** – considers a range of issues in relation to residential basements in the Royal Borough. These include the topography, geology, groundwater, structural and civil engineering considerations, the Party Wall Act, sustainability and construction issues. Section 13 of the report includes recommendations for basement design and construction. The report also sets out the work that should be done/ submitted with the planning application for proposals involving basements.
- 4.13 While the whole report is pertinent to basement development in the Borough the most relevant recommendations in relation to policy formulation are as follows.
- 4.14 Para 8.4 sets out the various functions performed by the subsoil below existing buildings and the need for planning policy to evolve to protect these functions. Para 8.6(h) – depth of the proposed new basements states that multiple basement levels are very much more challenging and complex.
- 4.15 Para 9.2.6.2 states that it would be beneficial for the adjoining buildings if basements that are only in the gardens are designed and built so that they are structurally independent of the structures of the adjoining houses. Para 9.2.7.3 recommends consideration of differential movement when a basement is constructed in the garden and partly under an existing building. These paragraphs are relevant to the Council's approach to basements in the gardens of listed buildings. The Council attaches great significance to the importance of preserving the

listed buildings in the Borough. Indeed the Council has a duty to have special regard to the desirability of preserving the listed building or its setting or any features of special architectural or historic interest which it possesses as set out in the Planning (Listed Buildings and Conservation Areas) Act 1990. Making extensive changes to part of the foundations of a listed building pose both structural risks and harm to the building's historic integrity. The Publication policy therefore requires basement development to demonstrate that there is no harm to the special architectural and historic interest of the listed building when proposed in the garden.

- 4.16 Section 9.3 is relevant in relation to the land instability issues mentioned in the NPPF (see paras 2.11-2.13 above).
- 4.17 Para 9.6.5 and 9.6.6 relate to the need to protect basements from sewer flooding and recommend using a pumped system.
- 4.18 Para 9.7.6 states that there should be a limit on how much of the garden can have a basement underneath to allow for flexibility in planting and surface water drainage. Paras 9.8.3 and 9.8.4 indicate that as a rule of thumb a minimum of 25% of the garden is sufficient to drain surface water when the sub soil is gravel and between 25% and 50% when the subsoil is clay. Para 9.8.6 states that another factor that needs to be considered when limiting the size is the ability to plant large trees.
- 4.19 Para 12.2 states that *“basement projects tend to go on for much longer than projects which involve works only to the above ground elements”*. Para 12.5 states that *“construction of basements underneath existing buildings is a slow process”*.
- 4.20 Para 13.2.4 recommends that *“Because basement construction projects are slow and generally more extensive in their scope than above-ground extension or alteration projects, it is reasonable to expect that there should be special measures put in place to mitigate the effects of the construction activities on the public and neighbouring residents. Noise and vibration limits should be set and checked during the works by monitoring. Vehicle movements in residential streets must be controlled and limited together with disruption to pedestrians, cyclists and drivers using the street and parking on it.”* The limits on scale being imposed by the Publication policy will help reduce the construction impacts of large basement developments.
- 4.21 Section 13.3 of the document makes specific recommendations. These include (but are not limited to) 13.3.3 *“The depth of underpinning party walls of semi-detached or terraced houses should generally be limited to 4m below the underside of the foundations of the party walls. Deeper basements should be avoided or else formed using piled walls if feasible.”*

- 4.22 **Case Studies of basement excavation in relation to programme and vehicle movements, Alan Baxter and Associates, January 2014** – examines 12 case studies involving basements of different sizes including those deeper than a single storey. The time taken for basement excavation seems to relate more closely to the site constraints rather than volume of excavation. Figure 4 of the report shows that two storey basements generally seem to take longer to construct than single storey basements. Therefore construction impacts will generally be experienced by people living in the area for prolonged period of time. There is a correlation between the volume of excavation and the number of lorry movement as shown in Figure 7 and Figure 8. The report shows that deeper larger basements will lead to a greater increase in lorry movements linked with excavation. This will have a negative impact on the living conditions in the densely built up residential neighbourhoods of the Royal Borough.
- 4.23 **Basements Visual Evidence, RBKC, February 2014** – shows that gardens with basements underneath generally appear artificial with a sterile appearance compared to the informal leafy character that was present before. Gardens with basements below also seem to have reduced planting. The cumulative impact of a large number of basements can change the character of the gardens in the Borough and have implications for biodiversity in the longer term. This will fundamentally change the character of the Borough, especially in conservation areas where there is an obligation to preserve or enhance the character or appearance of the area.
- 4.24 **Basements Visual Evidence: External Manifestations, RBKC, February 2014** – presents the potential external visual manifestations of basements through a series of photographs collated on-line. It concludes that basement developments can manifest themselves externally and that planning policy is needed to address this issue. If these issues are not considered carefully at the planning stage, given the numbers of basement applications, there is a potential that the character or appearance of the residential areas of the Borough can be harmed.
- 4.25 **Basements in Gardens of Listed Buildings, Alan Baxter and Associates, February 2014** – sets out issues that should be considered when basements are sited within the gardens of listed buildings. It states that minimising disturbance and loss of fabric to the listed building can be achieved by positioning the basement away from the adjacent wall(s) of the listed building. It states *“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.”* It further considers arranging the access from the house to the basement and recommends careful consideration from an engineering point of view of how this could be achieved.

- 4.26 The note also states “The most significant factor to consider is whether or not the listed building and its attached neighbours (in a terrace or as a semidetached pair of houses) have a history of ongoing movement. If this is the case, a basement under the garden may not be possible because forming the link from the existing listed building to the basement under the garden is likely to create a hard spot locally in the foundations of the listed building, leading to differential settlement problems.
- 4.27 **London Terrace Houses 1660 – 1860, English Heritage, 1996** – is particularly relevant as many residential areas of the Borough are characterised by terraced houses. As stated in section 4 of the Urban Design Strategy – Draft SPD, Background Report, RBKC (Urban Initiatives), July 2006 “*Large parts of the Borough are characterised by a coherent and fine grained historic street pattern with an outstanding building stock primarily from the Georgian, Victorian and Edwardian period that comprise of semi-detached and terraced town houses and mansion blocks.*” Indeed the terraced character of Kensington is mentioned in this English Heritage document itself (pg 3). The document describes the common special interest of London terrace houses including “*the plan form and general treatment of interiors. The majority of London terrace houses conform to a limited number of closely related plan forms with a consistent hierarchy between front and back rooms and with the principal rooms located almost universally on the ground and first floors (see Fig 1, 2 and 3);*”
- 4.28 The document also includes a section on structural alterations (pg 6). This is in relation to listed buildings and advises against major structural interventions in listed buildings. It states that “*The structural integrity and fabric of a listed building should always be carefully preserved, and an integrated rather than elemental approach adapted to its repair.*”
- 4.29 The Publication policy therefore precludes excavation underneath a listed building and when proposed in the garden of a listed building requires applicants to demonstrate that there is no harm to the special architectural and historic interest of the listed building.
- 4.30 Whilst the guidance is titled “London Terrace Houses” it is considered that the concepts and advice apply equally to listed semi-detached and detached houses.
- 4.31 **Trees and Basements, RBKC, February 2014** – includes examples of sites where tree roots have been found in this Borough much deeper than 1m. It states (para 2.3) that “*we cannot accept the notion that roots are always going to be confined to the top metre of soil due to the various physical constraints that exist.*” It also highlights that BS 5837 2012 revision states that (para 3.1) “*RBKC does not support tunnelling beneath the Root Protection Area (RPA) of trees to construct basements as we cannot be sure what affect this type of construction practice will have on soil structure and the health and stability of the*

tree/s above.” The Council is taking a precautionary approach and restricting any tunnelling underneath trees.

- 4.32 **London Garden City? From green to grey; observed changes in garden vegetation structure in London, 1998 – 2008** – London Wildlife Trust, the GLA and Greenspace Information for Greater London (GiGL) commissioned this research project to establish the current use of London gardens and identify key land use changes over a period of 5-10 years. This report highlights the biodiversity that is supported by urban gardens. It also finds that there has been a loss of garden green space in London over the study time period between (1996 – 1998 and 2006 -2008) (Chart 1.3, 1.4 and 1.5). Whilst this loss is London wide and generally not related to basement development, the report highlights the importance of back gardens as a resource for biodiversity and vegetation. As shown in the Basements Visual Evidence, RBKC, February 2014 in this Borough basements are resulting in a loss of vegetation and change of character in back gardens. It should also be noted that as opposed to hard paving gardens, basements underneath gardens are fairly irreversible. Therefore very large or badly sited basements do not represent sustainable development as defined in the NPPF. Map 1 and 3 also show the Royal Borough along with other Central London Boroughs with the least access to rich garden, open space landscape, nature and gardens compared to outer London Boroughs. Map 4 shows the Royal Borough amongst the boroughs where large areas are highlighted as focus areas for climate adaptation measures in gardens. This supports the evidence that more garden space should be protected in the Borough in its natural form.
- 4.33 **The potential impact of basement excavation on biodiversity, RBKC, February 2014** – This paper highlights that gardens play an important part in maintaining biodiversity in urban areas. It looks at the biodiversity impact of excavating gardens to create basements as a result of the existing policy which allows basements under a maximum of 85% of gardens. It notes that during construction when almost the entire garden has been excavated the short-term consequence would be the removal of habitat for micro-organisms, invertebrates, birds, reptiles, amphibians and small mammals. It also states that *“these impacts may not seem significant if considered for 1 property out of ten in a local area. However, if more than 4 properties out of ten undertook large-scale basement excavations at a similar time, then the cumulative impacts on local biodiversity could become significant.”* Post construction it highlights that large mature trees are fundamental for proper ecosystem functioning, biodiversity and future resilience. It notes that 1m of soil may not be sufficient to support large trees (also supported by Trees and Basements, RBKC, February 2014).
- 4.34 **Life Cycle Carbon Analysis of Extensions and Subterranean Development in RBKC, Eight Associates, February 2014** – compares the carbon footprint of above ground extensions, single storey and two or more storey basements through the building’s life cycle using a number of case studies. The report concludes that

“Projects which include subterranean extensions in dwellings are generally characterised by a more carbon intense building life cycle (pg 3).” The report looked at embodied carbon, construction carbon and operational carbon. For embodied carbon it concluded among other things (pg 3) – *“Single storey basements are likely to be 55% more carbon intense than above ground extensions and multi-storey basements are likely to be 61% more carbon intense than above ground extensions. Multi storey basements are likely to have carbon intensity for the materials used around 12% higher than single storey basements.”* For construction carbon (pg 3) *“Single storey basements are likely to have 57% more carbon emissions during this stage than above ground extensions. Multi storey basements the carbon emissions can be 70% higher than the carbon emissions of construction works for above ground extension”.* For operational carbon (pg 4) *“Extensions mostly have negative operational carbon emissions i.e. they reduce the carbon emissions of the existing dwelling on a metre square basis. The multi-storey basements have the highest operational carbon emissions, 9% higher than single storey basements.”*

- 4.35 A sensitivity analysis was undertaken which looked at using recycled aggregates and concluded that *“the embodied carbon results over 60 years are likely to be reduced by approximately 19% for single storey basements and by approximately 23.5% for multi storey basements.”* However both single storey and multi-storey basements even with the use of recycled concrete were found to be significantly more carbon intense than above ground development. This analysis also looked at the impacts of upgrading existing dwellings on carbon reductions. This work shows that *“Above ground extensions can achieve a carbon payback in less than 7 years with the Intermediate refurbishment. However, even if multi storey basements were to utilise advanced retrofit measures, the carbon saving would not be enough to compensate for the embodied and construction carbon over 60 years.”*
- 4.36 Limiting the size of basements to a maximum of 50% of the garden and a single storey will therefore limit carbon emissions and contribute to mitigating climate change.
- 4.37 **Evidence Base for Basement Sustainability Policy, Eight Associates, July 2013** – recommends the BREEAM domestic refurbishment “very good” to upgrade residential buildings linked with basement development including a minimum standard of “excellent” in the energy section and a minimum of 80% of credits in the waste category. The recommendation takes account of the historic character of the buildings in the Borough and is set at a level that should not require invasive upgrades to the fabric of the buildings.

5. Sustainability Appraisal

- 5.1 Under the Planning and Compulsory Purchase Act 2004 (PCPA), Local Authorities must undertake a Sustainability Appraisal (SA) for

Development Plan Documents (DPDs). SA is therefore a statutory requirement for Local Plans along with strategic environmental assessment (SEA).

- 5.2 The Government's approach is to incorporate the requirements of the SEA Directive into a wider SA process that considers economic and social as well as environmental effects.
- 5.3 The Council recognises that the 2010 Core Strategy (and, therefore, the associated SA/SEA) did include the consideration subterranean development. However, the original scoping took place in 2005 and, therefore, requires updating to ensure the current context and environmental baseline is taken into account for the subsequent SA/SEA.
- 5.4 **SA/SEA Scoping Report Addendum (April 2012)** – The purpose of the SA/SEA scoping report addendum was to ensure that this review of the policies relating to basement extensions comply with the requirements of the SEA Directive 2001/42/EC and the Environmental Assessment of Plans and Programmes Regulations 2004. The SA/SEA Scoping report was related to Stage A of the process and set out the context, baseline, sustainability issues, SA framework and consulted on the scope. The report included the 16 sustainability objectives developed as part of the initial SEA/SA for the Core Strategy, which would be used to assess the compatibility of the policy as it progresses. The consultation on the SA/SEA scoping report took place alongside the Basements Issues Consultation.
- 5.5 SA/SEA of the Draft Policy (Dec 2012) – In line with the requirements of the SEA Directive (2001/42/EC) and the Planning and Compulsory Purchase Act (2004) (as amended), the draft policy was subject to a SEA/SA. Statutory consultees were consulted on the Scoping Report Addendum and their feedback was taken into consideration in the preparation of this report.
- 5.6 The SA/SEA examined the compatibility of the proposed policy options with the SA Objectives. The report also appraised the aims of a number of alternative options against the SA Objectives. This included specific consideration of the “business as usual” scenario. The preferred policy and the various options are likely to have a positive relationship with the majority of the SA objectives. The Council considered that the potential negative impact on SA Objectives 3 (To support a diverse and vibrant local economy to foster sustainable economic growth), 9A (Prioritise development on previously developed land) and 13 (To aim that the housing needs of the Royal Borough's residents are met) are unlikely to be significant and to be outweighed by the considerable benefits of the other SA objectives associated with the successful implementation of the policy.
- 5.7 **SA/SEA of the Second Draft Policy (March 2013)** – The Council consulted on a second draft of the policy as significant changes were proposed following the first consultation. The SA/SEA was an update of

the initial SEA/SA, to take account to the proposed amendments to the draft policy. The Council recognised that one of the effects of the proposed policy may be to reduce the scale of basement development which is carried out within the Borough. A reduction in construction could, in theory at least, have a negative relationship with SA objectives 3 (Fostering economic growth), 9a (Previously developed land), and 13 (Housing needs).

- 5.8 It is, however, the Council's view that the proposed policy is not curtailing basement development altogether. It is more likely that the result will be to reduce the scale of basements or to otherwise mitigate their impact. Furthermore, the Council also considers that other ambitions, such as ensuring the amenity of local people, or protecting the character of an area, should outweigh any marginal negative implications associated with a reduction in the scale of basements permitted. The policy was considered largely compatible with the SA Objectives
- 5.9 **SA/SEA of the Publication Policy (July 2013)** – This was the SA/SEA of the Publication policy which was consulted on in July/September 2013. The policy had not changed in substance from the previous round of consultation. However, a number of changes were made to improve the clarity of the policy and the text.
- 5.10 The final SA/SEA indicates that there is unlikely to be any negative impact on the economy as a result of the policy (para 4.7, 4.16 of SA). This is because although the policy reduces the scale of development, it does not stop development altogether. Much of the success of the Borough relates to its attractive built form. Unsuitable extensions 'sterilising' entire gardens or posing risks to the structure of buildings could harm this built form and in turn have a negative impact on the economy. Furthermore, the Council also considers that other ambitions, such as ensuring the amenity of local people, or protecting the character of an area, should outweigh any marginal negative implications associated with a reduction in the scale of basements permitted. It was also considered that a well designed basement extension will increase the value of a property with related gains to the economy. Any impact linked with the construction stage is temporary while increase in property values is a permanent impact. Such an approach of balancing economic, environmental and social issues is supported in the NPPF (see para 3.5 above)
- 5.11 The policy was considered to have a potential negative impact on SA Objective 9a (prioritise development on previously developed land) (para 4.17 of SA). However, the impact (if any) would be marginal. While gardens are not considered previously developed land in the NPPF, extensions within a certain limit are permitted in gardens by the General Permitted Development Order (as amended). Basements when designed appropriately can be less visually intrusive than above ground developments and provide benefits associated with enlarging and improving accommodation.

- 5.12 The policy will have a positive/ no significant impact on all the other SA objectives.
- 5.13 **SA/SEA of the Publication Policy (February 2014)** – This is the SA/SEA of the Publication policy which was consulted on in February 2014. The policy has been amended since the previous round of consultation. However, the changes were not of such significance so as to have resulted in a change to the conclusions in the SA. The conclusions remain that the preferred option to adopt the policy would be unlikely to have any negative impacts. The policy is therefore considered to continue to be largely compatible with the SA Objectives.

6. Options considered and rejected before consulting on the draft policy

- 6.1 Following the Issues consultation (April/May 2012) and targeted surveys (Aug/Sep 2012) of owners of properties with a basement permission, their neighbours and residents associations, a range of options were considered by the Council before progressing to the next stage of consultation on the 'preferred' draft policy. These options were presented in Appendix B of the Basements: Draft Policy for Public Consultation and Other Matters (Dec 2012) document. These were also subjected to a Sustainability Appraisal as presented in the SEA/SA document produced in December 2012. These are reproduced below:

Option 1: Not amend the existing policy

- 6.2 The Core Strategy was adopted in December 2010. Whilst the intervening period has seen the whole scale re-writing of government guidance through the National Planning Policy Guidance this does not render the existing policy out of date.
- 6.3 However, two further years of basement construction across the Borough have highlighted that the policies (and associated procedures) have not always have been as effective as intended. In addition research commissioned by the Council illustrates that some provisions of the existing policy should be updated. There has been a significant rise in the numbers of planning applications with 46 in 2001 and 307 in 2012. It was, therefore, considered timely to review the policies used and the procedures associated with their effective implementation.

Option 2: Resist the creation of basements within the curtilage of a listed building

- 6.4 The Council will resist the creation of a basement beneath a listed building as such proposals, in all but in the most exceptional cases, harm the historic integrity, scale and layout of the original building. The same cannot necessarily be said for the excavation within the garden of a listed building. If sensitively designed, it is possible that the integrity and character of the listed building will not be harmed.
- 6.5 This option was rejected during the first round of consultation but has been re-considered by the Council. It was originally concluded in light

of the risks highlighted in the Alan Baxter and Associates report (see para 4.15 above) to preclude basements from the gardens of listed building with exceptions for large gardens. The exception would only apply if the basement could be constructed without causing extensive change to the foundation of the listed building by being sited substantially away from the listed building.

Option 3: Resist all basement development within a conservation area

- 6.6 The Council is of the view that basement development will not necessarily have a detrimental impact on the character and/or appearance of the conservation area in which it lies. Proposals must therefore be assessed on their merits, and a “blanket” ban would not be appropriate.

Option 4: Resist demolition which is carried out to assist in the implementation of a basement development

- 6.7 The Courts have made it clear that it is only “substantial demolition” in a conservation area that requires consent. As such it is beyond a Local Planning Authority’s remit to resist all demolition within a conservation area. The Council has the appropriate policies in place to assess applications for demolition when consent is required. Policy CL3 of the adopted Core Strategy remains relevant, stating that the Council will resist substantial demolition unless it can be demonstrated that the part of the building which is the subject of demolition makes no positive contribution to the character or appearance of the area, and if a scheme of redevelopment has been approved.
- 6.8 Planning permission is not usually required for any demolition outside of a conservation area, unless relating to a listed building.

Option 5: Set a limit of, for example 50%, as to the extent of development beneath a garden which will be permitted, because of visual impact/ the lost opportunity for tree planting in the future.

- 6.9 The limit of excavation beneath a garden proposed within the draft policies relates largely to the need for effective sustainable urban drainage. It also takes account of the provision of undeveloped space that may be suitable for mature trees in the future. As such the limit is not concerned primarily, with the direct visual impact of the external parts of a basement such as light wells and staircases but the Council choosing to control the undesirable “urbanising” effect of such features by requiring sensitive design and a location near the rear of the building. Ultimately a qualitative assessment will be made by the Council as to what the impact of roof lights and the like will have upon the property, its garden and upon the wider area.
- 6.10 Following the issues consultation it was considered that an alternative approach would be to introduce a figure with the inference that the

visual impact any basement (be this direct or indirect) is likely to be acceptable as long as, for example, 50% of the garden remains undeveloped. This approach has the benefit of offering a degree of clarity for both those who want a basement and those living in the vicinity. There was however a concern that light wells and other such features may be permitted where the “rule” is met, but where the impact is harmful.

- 6.11 In the first round of consultation the Council proposed setting the limit on the extent underneath the garden to a maximum of 75%. This was based on the ‘rule of thumb’ recommendation in the Alan Baxter and Associates (ABA) report. However, the ABA report also states that a further restriction should be considered to allow a sufficient area for planting.
- 6.12 The Council undertook further research on the visual impact of basements (see para 4.23 and 4.24 above). It was concluded that a substantial area of the garden should be kept free of basement development. This would help protect the character and function of gardens, allow flexibility in planting and natural surface water drainage. There would also be biodiversity benefits with this approach. Protecting private gardens from inappropriate development is supported in the NPPF and the London Plan.
- 6.13 Therefore a second round of consultation with the following changes/ preferred options was undertaken for a 6 week period in March/May 2013:
- Reducing the maximum extent of basements into the garden from 75% to 50%.
 - Depth of basements - More clarity was provided in the reasoned justification that an additional storey would not be allowed underneath an existing basement (lower ground floors are not regarded as basements). A general height of the single storey was provided as 3-4 m floor to ceiling height with small additional allowance for swimming pools where relevant.
 - Exceptions to the extent and depth would apply for larger comprehensively planned sites.
 - Basements in the gardens of listed buildings were precluded with the exception for large sites.
 - Sewer Flooding – a new requirement to fit all basements with a positively pumped device to protect from sewer flooding was added.

7. Consultation

- 7.1 A separate report titled Basements Summary of Consultation, February 2014 has been produced. This report sets out details of all the consultation that has been undertaken in formulating the policy in chronological order. It includes a section under each consultation stage

that explains how people's comments were taken into account. Further reports on consultations setting out all the comments made during each formal consultation and the Council's response to the comments have also been produced.

- 7.2 The Council undertook a Publication consultation on the soundness of the policy from 9 July 2013 to 3 September 2013. A large volume of representations were received to this consultation. Whilst in the Council's view the policy as proposed was sound, it was considered that it would be helpful for the examination process if the evidence base was made even more clear. As a result the Council has undertaken and commissioned further work into the different issues relating to the policy. The Council is therefore undertaking another Publication consultation in to the soundness of the policy. This would enable all stakeholders to consider the additional evidence.

8. Basements, Screening Assessment

- 8.1 A screening assessment of the publication policy has been undertaken in accordance with the Habitats Directive to assess if it is likely to affect European sites. The two relevant European sites are Richmond Park and Wimbledon Common. The assessment concludes that the publication policy is not likely to affect these European sites.

9. Equalities Impact Assessment

The Council has undertaken an Equalities Impact Assessment (EqIA) of the Publication policy. EqIA was undertaken at every stage of policy development and the report published on the Council's website. The EqIA shows that the Publication policy is likely to have a neutral or positive impact on the range of equality issues.