



Our ref: LT RSP 2 RBKC 34.3.59

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Dear Simon

RBKC publication planning policy arboricultural input

Proposed planning policy CL7 a

Not exceed a maximum of 50% of each garden. The unaffected garden must be in a single area and where relevant should form a continuous area with other neighbouring gardens. Exceptions may be made on large comprehensively planned sites;

Council justifications that could relate to policy CL7 1

34.3.50 A basement development next door has an immediacy which can have a serious impact on the quality of life, whilst the effect of multiple excavations in many streets can be the equivalent of having a permanent inappropriate use in a residential area with long term harm to residents' living conditions. There are also concerns over the structural stability of adjacent property, character of rear gardens, sustainable drainage and the impact on carbon emissions. For all these reasons the Council considers that careful control is required over the scale, form and extent of basements.

34.3.51 The policy therefore restricts the extent of basement excavation under gardens to no more than half the garden and limits the depth of excavation to a single storey in most cases. The extent of basements will be measured as gross external area (GEA).

34.3.54 The townscape of the Borough is urban and tightly developed in character. However, rear gardens are often a contrast, with an informal picturesque and tranquil ambience, regardless of their size. Whilst basements can preserve the remaining openness of the townscape compared with other development forms, it can also introduce a degree of artificiality into the garden area and restrict the

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range of planting. Retaining at least half of each garden will enable natural landscape and character to be maintained, give flexibility in future planting (including major trees), support biodiversity and allow water to drain through to the 'Upper Aquifer'. 'Garden' is the private open area to the front, rear or side of the property, each assessed separately, and includes unpaved or paved areas such as yards. This policy takes into account the London Plan and the Mayor of London's Housing SPG both of which emphasise the important role of gardens. The National Planning Policy Framework (NPPF) also supports local policies to resist inappropriate development of residential gardens and excludes private gardens from the definition of previously developed land.

34.3.55 Keeping the unexcavated area of a garden in a single area and adjacent to similar areas in other plots allows better drainage, and continuity of larger planting supporting biodiversity. In back gardens this area will usually be the end of the garden furthest from the building.

34.3.60 Trees make a much valued contribution to the character of the Borough, and bring biodiversity and public health benefits. Works to, and in the vicinity of, trees, need to be planned and executed with very close attention to detail. All applications for basements likely to affect trees either on-site or nearby must be accompanied by a full tree survey and tree protection proposal for the construction phase. Core Strategy Policy CR6 Trees and Landscape will also apply.

Council response to my comments to second draft planning policy

if to the rear the unexcavated area of the garden should normally be at the end of the garden, where it will be adjacent to similar areas in other plots, allowing for better drainage and larger planting.

The growing medium available to trees in an urban environment is different from that in open woodland or grassland where there is generally significantly fewer constraints on root growth. This Borough has a very dense urban environment and tree roots, small and large, have been found much deeper than 1 metre, as acknowledged in the response "roots tend to elongate more in poor soils that are often found in urban gardens". The urban environment provides many constraints to root growth and it may not be conducive to the long term growth and survival of trees to limit the depth of available soil to only 1 metre in back gardens. It is not expected that forest scale trees will be planted too close to the building and the policy does require the natural garden area to be at the end of the garden.

The Council endorses the policy 'right place right tree'.

As noted in the response there are other reasons for the restrictions on the extent in addition to planting.

Opinion

I write at your request in response to the above proposed planning policy CL7 a, the justifications in the proposed planning policy document that seem to relate to this policy and with regard to the comments made in relation to my comments to the second draft planning policy, all of which are shown above.

For the record I state that I am a Registered Consultant and Fellow of the Arboricultural Association, a Chartered Forester, Environmentalist and Surveyor with a Masters Degree in Arboriculture and 25 years experience of the landscape industry - including the Forestry Commission and Agricultural Development and Advisory Service. I am also Chairman of the UK & I Regional Plant Appraisal Committee, inaugurated to promote international standards of valuation in arboriculture.

I start by reiterating the main points that I made in my previous letter to you dated 24th April 2013, namely that:

1. The undulation of a garden over a basement is not restricted in any way. A garden over a

basement can be as undulating as desired now and at any time into the future.

2. Ground of one metre depth over a concrete basement roof does not restrict the range of planting in any way, including major trees.
3. Any major tree grown in the UK can reach maturity and live for a normal life span in 600mm of fertile soil. One metre is more than adequate.
4. One metre of soil is more than adequate to structurally support any major tree grown in the UK.

Further to this, having read the revised policy, the associated reasoned justification and the Council's response to my previous comments to the 2nd draft policy I make the following points.

There is little justification for any garden basement, which has one metre of well-drained top soil placed over the basement roof to be limited in size in any way with regard to tree planting, horticultural planting, greenification or biodiversity. In fact quite the contrary:

According to Natural England, English soils vary from a few centimetres to a metre or more in depth. Although they are young in a world context, they represent about 10,000 years of ecological processes and human modification. Consequently, soil is regarded as a non-renewable resource because it cannot be re-created except within the context of geological timescales. From my viewpoint, the stipulation of a 1m-soil covering for basements is not only luxurious, but wasteful and contrary to Local Agenda 21 (sustainable use of resources).

Urban soil, as the Council has quite rightly mentioned in their response to my previous comments, is often poor quality and detrimental to healthy tree growth. The soil that would be placed on top of any garden basement would be prime soil, far better indeed than the original soil that it will have replaced in every case that I can think of across the borough. So, far from having a negative impact on tree growth, garden basements, with one metre of soil on top, will be a boon to the leafy, green character of the borough's gardens, promoting healthy tree growth above that which would be found in most gardens with their inherently poor soils. At any rate, there is no justification in portraying the impacts of development as unduly negative. Clearly, from a more balanced perspective, there are benefits to be had from basement development; the provision of topsoil and new planting are two of them.

On the subject of taproots and the occurrence of roots at greater than one metre depth, it is well-documented that tree roots are opportunist and will exploit new niches as they become available and attractive to them. Thus, some tree species (mostly of flood plain origin) growing on shallow soil over heavy clay can exploit deeper fissures that open in the clay in times of severe drought, when the upper horizons are desiccated. As stated above, planning necessitates the provision of luxuriant stores of premium top soil on the site to a greater depth than would normally be expected, rich in organic matter and nutrients and less prone to desiccation at such depths. Thus, the privileged roots need not beguile us with their adaptive ability to exploit tortuous nooks and crannies in their otherwise hardened struggle for existence. Indeed, as previously stated, roots in good soil tend to ramify more and elongate less: their roots become more compact and fibrous. Such a root pattern is generally desirous in urban situations, where the more erratic and opportunistic rooting patterns are more readily associated with damage to infrastructure (e.g. drains and foundations). The question must be asked, does this council wish to reserve garden space for the promotion of opportunistic exploitation of soil water reserves at depth by flood plain species (oak, elm, poplar, willow) next to and below vulnerable building foundations? The issue of taproots does not concern arboriculturalists in this country, as these normally wither and die as the sapling grows. I am surprised that anyone has brought the issue up at all. For the benefit of those expressing concern over taproots, I attach a West Sussex County Council primer for its tree wardens on tree roots.

I provide again the figure 1 from Harris' which had been omitted from display on the Council's Consultation Responses on Second Draft Basements Policy July 2013. I enclose it for completeness and hope that it will see the light of day this time around.

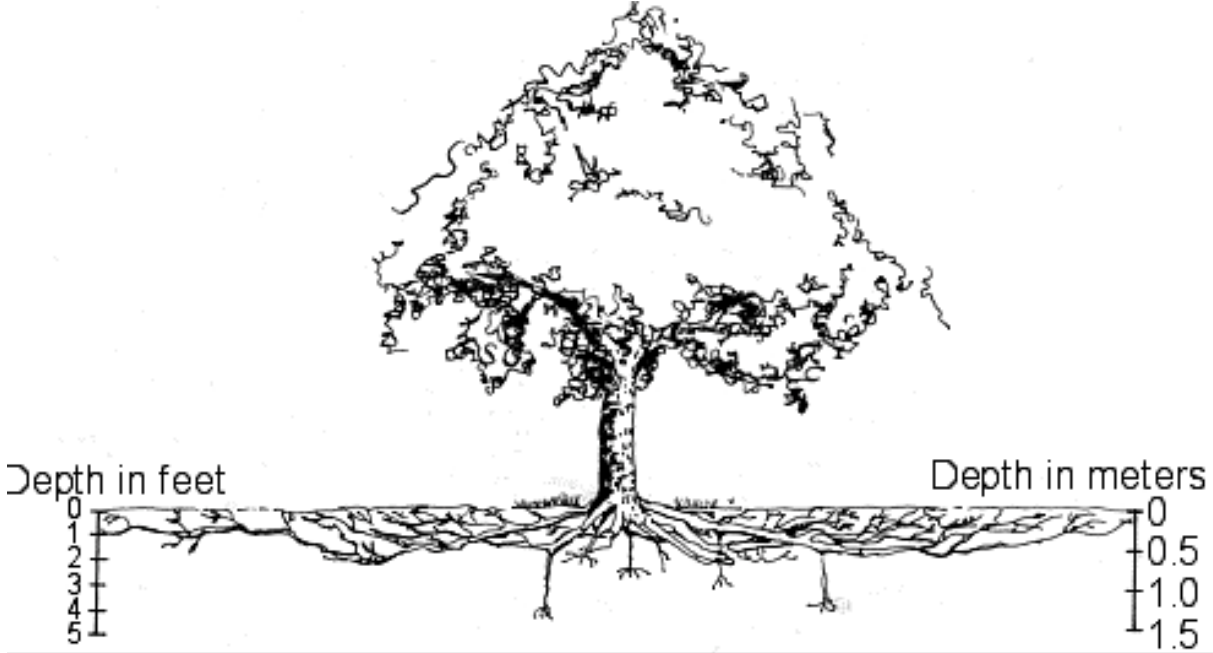


Fig.1: in mature trees the tap root is either lost or reduced in size. The vast majority of the root system is composed of horizontally oriented lateral roots

It is my opinion that garden basements with one metre of good quality top soil place on their roofs, from an arboricultural and horticultural perspective will:

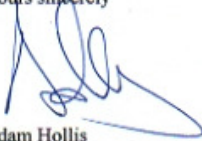
1. Have no detrimental effect on the character of rear gardens.
2. Have no intrinsic reason to cause an appearance of artificiality or restrict the range of planting.
3. Have no negative effect on the natural landscape or character of a rear garden or decrease the extent to which these can be maintained.
4. Not decrease the flexibility in future planting including of major trees.
5. Not decrease herbivorous biodiversity
6. Not decrease the continuity of larger planting.

Existing trees are, quite rightly, fully protected by extant regulation, namely by Tree Protection Orders and automatic protection in Conservation Areas. The size of garden basement allowed by policy will have no effect on the trees so protected. They will continue to enjoy full protection and will be unaffected by policy that allows larger garden basements.

In summary, I conclude that there is no arboricultural or horticultural reason to restrict the size of garden basements at a planning policy level, provided that a healthy covering of good quality topsoil is a requirement.

Please let me know, if I can be of further assistance in the matter.

Yours sincerely



Adam Hollis
MSc Arb F Arbor A MIC For HND Hort
Chartered Forester
Fellow & Registered Consultant of Arboricultural Association

1. Harris RW et al 2004; Arboriculture Fourth Edition, Prentice Hall, NJ, America
2. West Sussex County Council

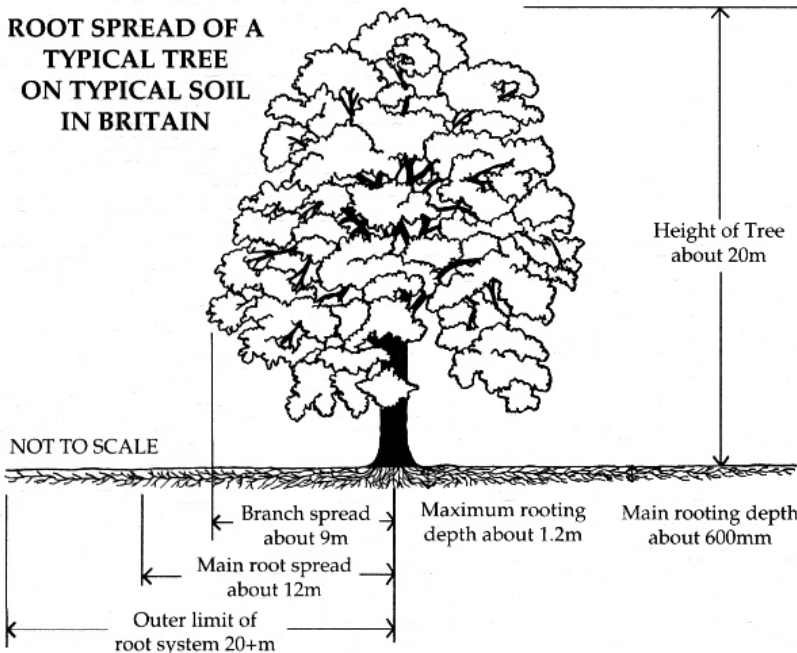
TREE ROOTS

In the Broadleaf we seem to talk extensively about the physiology of trees above ground so we thought it was about time to go underground and have a look at root systems.

Popular belief seems to be that the roots of large trees penetrate to a dept of several metres and that the deep roots are referred to as 'tap roots' or 'anchor roots'.

In most climatic and soil conditions in the British Isles this is far from true. Tree roots need to obtain water, nutrients and oxygen from the soil and these elements are usually most readily available near to the ground surface. For this reason a trees roots are normally found in the top 600mm of soil.

ROOT SPREAD OF A TYPICAL TREE ON TYPICAL SOIL IN BRITAIN



However, on poorly drained clay soils where rainfall is higher than average, the entire root system can be in the upper 300mm of soil. Correspondingly, where the weather is drier, roots will occasionally penetrate as far as four or five metres into the ground in order to gain moisture from a low water table although this is not a common occurrence.

All roots contribute to both the stability and moisture of trees although the uptake of water and nutrients takes place mainly through very fine **root hairs** (or rootlets) at the ends of the smallest woody roots. Every Spring roots grow millions of these tiny hairs, each of which is a single cell. They only last one or two months and are then replaced, and every Autumn they all die.

Tap roots are a feature of some tree seedlings (eg. oaks) which tend to send down a single

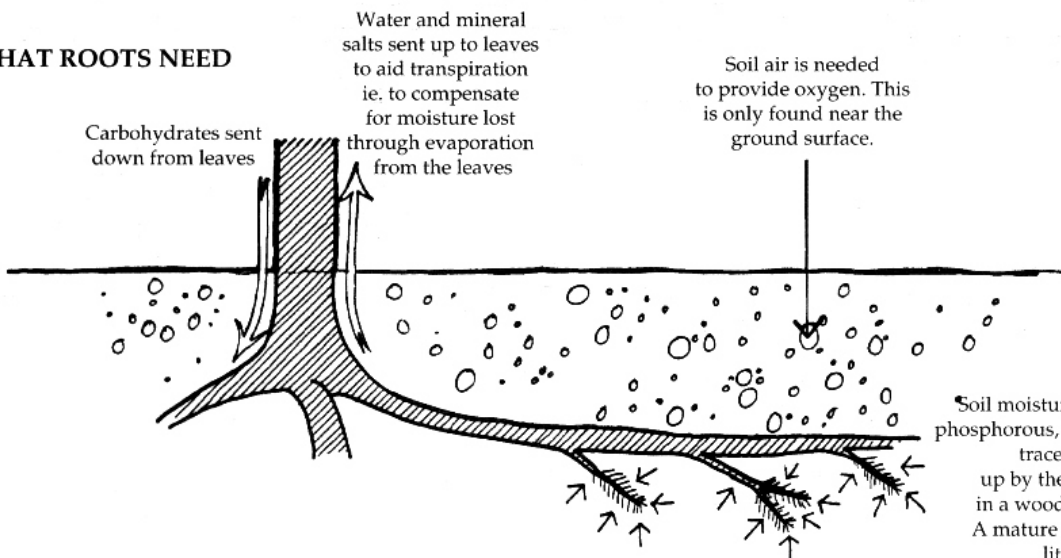
main root. As the tree grows, however, the tap root does not continue to develop – the main direction of root growth is lateral. A mature oak tree will therefore not be a scaled up version of an oak seedling, but will have a differently shaped root system.

The roots of most tree species develop rapidly, sub-dividing, and most of the roots are relatively thin (25mm or less) until they are within two or three metres of the main stem.

Very few investigations seem to have been done into the extent of **root spread** although it is clear that this varies depending on climate, soil, tree species etc. It is generally though that roots usually extend further than a trees' branches and that root spread is roughly the same as the height of the tree.

The largest root system ever recorded was on a Finnish Pine tree with a total root length of 50km and over five million tips!

WHAT ROOTS NEED



Soil moisture and nutrients (potassium, phosphorous, iron, calcium, magnesium and trace elements) are picked up by the roots - 85% of rain water in a wood is absorbed by tree roots. A mature tree can soak up over 1400 litres of water / day!