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TREE CONSULTANCY

Representations relating to the RBKC proposal to partially review the Core Strategy Policy CL7 on Basements

Prepared by
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Summary

In August 2013, on behalf of Cranbrook Basements, I made representations relating to the tree aspects of the proposed planning policy changes to Core Policy CL7, published for comment by RBKC in July 2013. The consultation documents consisted of the Alan Baxter *Residential Basement Study Report* and the RBKC *Basements Publication Planning Policy*. I concluded that RBKC's approach to the tree matters was seriously flawed in that it relied on the Alan Baxter Report to provide professional tree advice, which was provided without any identified tree credentials to do so. This failure to disclose such an obvious limitation was grossly misleading, creating the impression that the tree analysis should be given the same weight as the engineering analysis, when the reality was that it deserved nothing like that status.

More specifically, I identified three main areas where the lay analysis of the tree issues was flawed because there was no credible evidential support for:

1. changing the maximum basement area coverage of gardens from the current limit of 85% down to 50%;
2. the RBKC position that a depth of soil of 1m above basements will not sustain substantial mature trees; and
3. the RBKC position that excavating beneath existing trees is not acceptable

In response to those representations, RBKC has now published two further documents, along with other supporting investigations, that are the subject of the further representations in this Report. This consultation exercise was to seek representations on the soundness of the current proposals.

My analysis identified that there was little substantive change from the previous documents. Indeed, there still remain multiple reasons why the approach and the conclusions presented by RBKC on the matter of basements near trees is unsound. RBKC has not provided any compelling evidence or credible reasoning to justify its position that a new upper limit of basement coverage of 50% of the garden area is now necessary, compared to the existing 85% rule; or that that such an approach with a 1m depth of soil above will not sustain substantial mature trees; or that excavating beneath existing trees is not acceptable.

In the absence of such evidence and explanations, my opinion is that the proposed policy revision is not sound and needs reworking to accurately and reliably reflect the current state of knowledge on these matters.

1 INTRODUCTION

1.1 Instruction

I am instructed by Cranbrook Basements to make representations relating to two documents that the Royal Borough of Kensington and Chelsea (RBKC) have published to seek expressions of views on their soundness. These documents are:

1. A paper called *Trees and Basements Partial Review of the Core Strategy*, dated February 2014
2. B*asements Publication Planning Policy Partial Review of the Core Strategy* dated February 2014, which includes Policy CL7

From the preamble set out before each document, my understanding is that the second document will be published and the first document is a supporting paper to justify the content of the second, but there is no clear explanation on whether that will be published. For that reason, my representations on the first paper include suggested modifications to the wording in case it is proposed to publish it as a formal document.

In support of the tree issues and the impact of basements on local character, RBKC references two internally produced documents:

1. *Basements Visual Evidence, Feb 2014*
2. *Basements Visual Evidence: External Manifestations, Feb 2014*

I specifically reference the reliability of this information in this Report.

1.2 Qualifications and experience

These representations are presented drawing on my experience and qualifications in forestry, biology and arboriculture, and I enclose a summary in Appendix 1. I have extensive experience in the strategic and practical management of trees, especially in an urban context, from more than 30 years of working as a contractor and consultant in southern England. I have specialist expertise in the management of tree risk, in the assessment and management of heritage trees, and in the assessment and management of trees in a planning context.

1.3 Relevant background information

I was originally instructed to review the proposed planning policy changes published for comment by RBKC in July 2013, which comprised of the Alan Baxter *Residential Basement*

Study Report and the RBKC *Basements Publication Planning Policy*. I commented on these two documents in my letter of 28th August 2013, our reference 13134-Letter1-280813-JB, included as Appendix 2.

In that letter I concluded that the approach to the tree matters adopted by RBKC was seriously flawed in that it relied on the Alan Baxter Report to provide professional tree advice, which was provided without any identified tree credentials to do so. In effect, the Alan Baxter Report was introduced as a professional piece of work written by professionals, whereas the reality was that the authors had no tree credentials to make any technical claims relating to trees. This failure to disclose such an obvious limitation was grossly misleading, creating the impression that the tree analysis should be given the same weight as the engineering analysis, when the reality was that it deserved nothing like that status.

Unfortunately, it seems that little regard has been placed on those concerns expressed by me and other interested parties, and the current documents retain a number of the significant flaws found in the first, hence the need to include my original representations as Appendix 2.

1.4 BS 5837

One of the most misleading propositions from RBKC relates to the section of *BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations* dealing with basements, and I enclose the relevant extract as Appendix 3.

2 REPRESENTATIONS

2.1 General

In the context of the detail set out in my letter in Appendix 2, it seems reasonable to question the soundness of the overall approach to this whole review process taken by RBKC on the basis that the mindset that was adopted in the initial review, i.e. identifying the preferred position and then tailoring the evidence and its interpretation to support that position, seems to have unreasonably influenced the current document. RBKC did not publish any expert analysis of its position regarding trees in the original review, but instead relied on incorrect and inappropriate lay assessment relating to trees in the Alan Baxter Report, attempting to dress it up as a reasonable and balanced analysis. That mindset seems to have persisted into the current documents, and I explain why I consider that is the case in the following more detailed analysis. Such a mindset is not generally considered reasonable, balanced, professional or sound, and that is why I draw attention to it.

2.2 A paper called *Trees and Basements Partial Review of the Core Strategy*, dated February 2014

Paragraph reference	Content text	Representation
3.2	*"The 2012 revision states that "it might be technically possible to form the excavation by undermining the soil beneath the RPA." Equally, it might not be technically possible to form an excavation under a tree without the tree becoming unstable."*	This is an unreasonable and unbalanced interpretation, seemingly made here to add weight and justification to the unsound statement in the policy document at 34.3.59 and its associated footnote 12. It does not automatically follow that there is an equal chance that it might not be technically possible, as this statement implies. I am not an engineer, and so this point would need to be verified by an appropriate expert, but my understanding and experience is that, in principle, excavation can be carried out beneath anything without significant disturbance if the appropriate precautions are taken. Of course, there will be extremes, where this cannot be applied, but this is likely to be the exception rather than the rule. "*Equally*" is the misleading word here. It is clear from a review of the full wording of the BS on this matter (Appendix 3, para 7.6) that this is a matter for careful evaluation on a site by site basis, and it is unsound to portray this reference in the way that RBKC are implying in the selective extract at 3.2. A more appropriate and sound wording for the second sentence might be: "*This is a technically challenging construction activity and applicants must demonstrate that any excavation under a tree can be formed without adversely affecting the health or stability of that tree.*"
5.1	*"However, the proposal to restrict basement extensions to 50% of the garden footprint would assist in providing adequate soil volumes for trees to establish and grow healthily whilst maintaining and enhancing the green landscape."*	This wording heavily implies that this is the only way to achieve a green landscape, and anything more than a 50% basement footprint compromises this objective, which seems unreasonable and unsound. Indeed, in its current Trees and Development SPD, RBKC states at 2.2.1.1 (bullet point 2) that up to a maximum of 85% coverage is its requirement (Appendix 4), which seems sound and reasonable. The issue that RBKC seems to be trying to articulate in this sentence relates to access to rooting volume because that is a very important determining factor affecting whether trees will grow to their full potential. Where an adequate rooting volume is demonstrably limited beyond the site, then a limitation to the extent of basement cover may be appropriate. However, there are often situations where roots do extend beyond property boundaries, as specifically acknowledged and highlighted by RBKC in the case studies referenced in Appendix 1 of the document, that clearly record roots extending well beyond walls and fences. In those instances, any type of formulaic basement footprint calculation may be unnecessarily and unreasonably restrictive. A more appropriate and sound wording for this might be: "*Where boundary obstructions to root growth beyond the site is identified, it may be appropriate to restrict the footprints of basement extensions, to assist in providing adequate soil volumes for trees to establish and grow healthily whilst maintaining and enhancing the green landscape. However, if there is the opportunity for roots to grow beyond property boundaries, then onerous restrictions may be unnecessary.*"
5.2	*"It is clear that not restricting soil depth and tunnelling beneath the RPA of trees in the highly built up environment of RBKC represents a genuine threat to the borough's current and future tree stock. RBKC see no*	This is a grossly misleading statement that is unsound because it is not based on any well-reasoned arguments, published research or credible practical evidence. The phrase '*genuine threat*' creates the impression that it is almost inevitable that the threat will materialise, which has not been proven in any way. Furthermore, the use of the word '*heritage*' evokes images of trees of special interest

Paragraph reference	Content text	Representation
	merit putting at risk its fine heritage of trees to facilitate the construction of basements."	under threat, and that is unreasonably emotive language to describe a situation where the majority of trees are not special at all for heritage reasons. My estimation is that a very large proportion of the trees in RBKC do not qualify as special for heritage reasons, evidenced by the small number that are on any heritage tree lists as of heritage significance. A more appropriate and sound wording for this might be: "*Restricting the soil volume available for new trees may adversely affect their ability to achieve their full growth potential. Additionally, tunnelling beneath existing trees is a challenging technical operation and may adversely affect tree health and stability if not undertaken with proper planning and care. The specific requirements will vary on a site by site basis, and applicants will be expected to demonstrate that their proposals will not compromise any existing trees of acknowledged importance or the opportunity for new trees to achieve their full growth potential.*"

2.3 B*asements Publication Planning Policy Partial Review of the Core Strategy* dated February 2014, which includes Policy CL7

Paragraph reference	Content text	Representation
34.3.55	*"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 range of planting[4]."*	I am not aware of any published research evidence to support the contention that basements restrict the range of planting. As I showed in Enclosure 3 of my letter in Appendix 2, there are examples of large species mature trees growing in soil depths of about 1m. Indeed, I also know that is the case from recent work we did in the refurbishment of Leicester Square, where many of the mature plane trees are growing in soils of less than 1m depth, although they may have access to deeper soils in places. This statement is not sound because it is potentially misleading, a situation that could be resolved by removing the last six words.
34.3.55	*"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[5] and allow water to drain through to the 'Upper Aquifer[6 7]."*	This sentence is not sound in that it is misleading through implying that if basement footprints exceed 50% of a garden area, then that will compromise the potential future planting of major trees. That is clearly not true and not supported by any published research evidence. Indeed, as I explain in the point above, there is an abundance of observational evidence to show that major tees can survive and thrive on limited soil depths. The contention that there is reliable evidence to justify the limitation of basement footprints to 50% of the garden area is unsound because it is contrary to a substantial existing body of professional knowledge and contrary to the previous RBKC limit of 85% (Appendix 4).
34.3.59	*"All applications for basements likely to affect trees[12] 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."*	This statement in isolation is acceptable and not unsound. However, the use of the footnote is unsound because it is grossly misleading in that it effectively hides the bracketed reference (discussed in detail in the next point) from this main body text. The content of that bracketed statement is of immense importance and yet it is hidden away from obvious view, making it easy to miss at this consultation stage. It is a primary controlling statement relating to the extent of basements and as such, it should not be tucked away in a footnote.

Paragraph reference	Content text	Representation
Footnote 12	*"[12] Works to trees should be carried out in accordance with BS 5837 2012 (with the exception that tunnelling underneath the root protection area should not be undertaken) and the Council's Trees and Development SPD."*	The statement in the brackets is unsound because it comes directly after the reference to BS 5837 and yet it is at odds with the advice given in that reference. For clarification, I reference the full text of BS 5837 on this matter in Appendix 3. There is no technical evidence to support this statement and it is contrary to the thrust of the BS 5837 recommendations. Furthermore, from the examples I produce in Enclosure 2 of my letter in Appendix 2, there is substantial evidence that excavation beneath trees can be tolerated and does not automatically result in their demise, as implied throughout the RBKC document.
Policy CL7a	*"a. not exceed a maximum of 50% of each garden or open part of the site. The unaffected garden must be in a single area and where relevant should form a continuous area with other neighbouring gardens."*	From a tree perspective, this is potentially unsound because RBKC have argued in the supporting explanations that in excess of this will compromise the ability for new trees to achieve their full potential. There is no evidence to substantiate this position, and if Policy CL7a is based on the tree issues, then it is unsound. RBKC has not produced any compelling evidence that a reduction from the existing 85% limit is justified in tree terms, and in the absence of such evidence, unless there are other valid reasons to reduce the figure, then my position is that 85% remains a sound and reasonable limit.
Policy CL7d	*"not cause the loss, damage or long term threat to trees of townscape or amenity value;"*	There is an inconsistency between this wording and the wording of Policy CR6a (Appendix 5) and yet they deal with a very similar matter, i.e. the loss of trees. The proposed wording of CL7d could reasonably be interpreted as applying to any tree because there is no qualifier to the value; in principle, all trees have some value and so it could apply to any and every tree, which cannot reasonably be its intended purpose. This is recognised in the existing Policy CR6a, where four reasons why the loss of a tree are listed, with reason iii identifying that trees of "*little or no amenity value*" can be validly exempt from protection. This tension between the two sets of wording makes the proposed wording unsound. A more appropriate and sound wording for this might be to adopt the existing wording in Policy CR6a: "*not cause the loss, damage or long term threat to trees unless:* • *the tree is dead, dying or dangerous;* • *the tree is causing significant damage to adjacent structures;* • *the tree has little or no amenity value;* • *felling is for reasons of good arboricultural practise.*".

2.4 *Basements Visual Evidence, Feb 2014* & *Basements Visual Evidence: External Manifestations, Feb 2014*

These documents introduce a series of aerial images over an extended timeframe for a number of sites where basements have been or are being constructed. There is no similar comparison of these gardens with others that have not had basements or any attempt to identify why trees have been lost. However, the analysis does recognise the substantial limitations that must be applied to such a superficial review. As far as I can tell, the main conclusion from the review seems to be that basements have resulted in trees being lost and not replaced or appropriate new trees not being planted.

Whilst this approach is a means of attempting to draw conclusions on the impacts of basements, it is so superficial and crude that it does not deserve to be given significant weight when assessing the tree impact of basements for the following reasons:

1. **Unscientific:** This approach is simply a selection of sites that bear no understandable or rigorous relationship with the full population of sites in RBKC. For example, there is no comparison with the total number of sites or the total number of basements, which removes the ability to place any quantitative significance on the findings.
2. **Tree losses for other reasons:** It is quite often the case that trees near buildings or in small gardens are lost over time through reasons other than basement activity. Such situations include poor health, hazard, nuisance or inconvenience. These are all valid reasons for tree removals and, in the absence of any analysis to the contrary, could have been the cause for much of the tree loss. In particular, inconvenience is a common cause of tree loss and I pull out one example, 62 Addison Road, to illustrate that point; the tree near the buildings totally dominates them and much of the adjacent rear garden areas, and its removal for this reason could have accounted for what seems to have been the loss of the tree.
3. **Poor scale of tree planting or no tree planting:** One of the main conclusions from the analysis seems to be about the scale and quality of tree planting after development. Local Authorities have a duty to impose planning conditions for the planting of new trees and have effective mechanisms to enforce those conditions. If there is poor or no tree planting on a site, then the blame must fall squarely with RBKC for either not placing an effective planning condition on the consent or not enforcing an existing planning condition. That is not the basement construction that is the cause of poor quality landscapes, it is RBKC.

To some extent, RBKC does acknowledge some limitations of this approach in these reference documents, but that does not seem to reasonably, fairly, or soundly extend to the way these are referenced in the main consultation documents. I specifically reference 34.3.55, which references these documents to justify that statements that basements can "*introduce a degree of artificiality into the garden area and restrict the range of planting*". This seems unreasonable and I ask that this is considered carefully.

3 CONCLUSIONS

My above analysis identifies multiple reasons why the approach and the conclusions presented by RBKC on the matter of basements near trees is unsound. RBKC has not provided any compelling evidence or credible reasoning to justify its position that a new

upper limit of basement coverage of 50% of the garden area is now necessary, compared to the existing 85% rule; or that that such an approach with a 1m depth of soil above will not sustain substantial mature trees; or that excavating beneath existing trees is not acceptable. In the absence of such evidence and explanations, my opinion is that the proposed document is not sound and needs reworking to accurately and reliably reflect the current state of knowledge on these matters.

Jeremy Barrell **BSc FArborA DipArb CBiol FICFor FRICS**

Appendix 1: Qualifications and experience of Jeremy Barrell

1 **Formal qualifications:** I have an Honours Degree in Environmental Forestry (1978). I am a Fellow of the Institute of Chartered Foresters (1996) and a Fellow of the Royal Institution of Chartered Surveyors (2008). I am a Fellow (1989) and Registered Consultant (1994) of the Arboricultural Association (AA). I was an AA Approved Contractor from 1984–1995. I am a Chartered Forester (1980), a Chartered Biologist (1993), a Chartered Surveyor (2008) and hold the Royal Forestry Society's Professional Diploma in Arboriculture (1990). I am a Law Society `Checked' expert witness and a founding member of the Institute of Expert Witnesses. In 2001, I was honoured with the AA Award for services to Arboriculture and, in 2010, I become the American Society of Consulting Arborists' first Registered Consulting Arborist resident in the UK.

2 **Practical experience:** On leaving University in 1978, I joined the Forestry Commission as a Field Surveyor and began my tree contracting business in 1980. For the next 15 years, I developed this contracting business, leaving it in 1995 to concentrate full-time on consultancy. Barrell Tree Consultancy (www.barrelltreecare.co.uk) is now a well-established advisory practice, with a focus on the legal and planning aspects of tree management.

3 **Professional experience:** I have been dealing with tree hazard assessment throughout my career. Between 1993 and 1996, I was a DoE tree preservation order (TPO) appeal inspector reporting to the Secretary of State. This involved impartially assessing a whole range of tree management issues, including TPO administration and subsidence damage. I have had a long career acting as an expert witness, from Magistrates Courts to the High Court. Most recently, I was the expert for the successful Claimant in *Poll v Bartholomew* (2005), and the successful Defendants in *Atkins v Scott* (2008) and *Micklewright v Surrey County Council* (2010). I also acted for the Defendant in the recent failed criminal prosecution, where the Woodland Trust was acquitted in *HMA v The Woodland Trust*. A summary of my expert witness experience can be downloaded from www.barrelltreecare.co.uk/case-studies/barrell-legal-cases.PDF. In 2009, I attended and passed the LANTRA Professional Tree Inspection course, which is the premier tree inspection accreditation scheme in the UK.

4 **Continuing professional development:** I regularly lecture all over the world and have written more than 70 papers and articles on tree management (www.barrelltreecare.co.uk/resources.php), including acting as the guest contributor on arboriculture for the Horticulture Week *Opinion* column since 2009. I specialise in developing tree assessment methods that are published on a dedicated website at www.TreeAZ.com. I was on the panel that produced BS 5837 (2005) and I was recently involved in producing and promoting the new BS 8545 (2014) *Trees: from nursery to independence in the landscape – Recommendations*.

A summary of presentations that I have given, papers and articles that I have written and continuing professional development events I have attended are listed below:

Table 1: Presentations given at conferences, seminars and workshops

Date	Event	Paper content
05/03/14	Barchams & AA BS 8545 roadshow presentation	Planting new trees
27/02/14	Winchester City Council Planning Department	Trees and planning
12/02/14	Ontario ISA Chapter Conference	Keynote on the future for arborists

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Date	Event	Paper content
12/02/14	Ontario ISA Chapter Conference	Trees and basements
12/02/14	Ontario ISA Chapter Conference	Heritage trees
12/02/14	Ontario ISA Chapter Conference	Trees and construction
10/09/13	AA Conference, Exeter	Tree risk management
25/06/13	ISA Ask the experts	Duty of care update
24/05/13	LTOA Tree risk management	Duty of care update
8/05/13	RICS SW Planning Update	Trees and planning
25-26/03/13	AA Aspiring Consultants' Workshop	Professional practice
21/03/13	Moulton College students	Tree consultancy
1/03/13	SW AA Branch meeting	Trees and development
23/01/13	ICF Higher Education Institute meeting in Manchester	Consultancy education
5/12/12	NFDC NFNPA Planning update	Trees and planning
21/11/12	Petersfield Rural Practice Update	Duty of care
14/11/12	Barcham trees and law, and heritage trees	Risk and heritage trees
19/10/12	Toronto Risk and Heritage Tree Workshop	Risk and heritage trees
18/10/12	Toronto Tree Assessment Workshop	Trees and planning
17/10/12	ISA Prairie Chapter Presentation in Canmore, Alberta	Professionalism
16/10/12	ISA Prairie Chapter Keynote in Canmore, Alberta	Managing construction sites in the UK
15/10/12	ISA Prairie Chapter Workshop in Canmore, Alberta	Heritage trees and report writing
12/10/12	Vancouver Risk and Heritage Tree Workshop	Risk and heritage trees
11/10/12	Vancouver Tree Assessment Workshop	Trees and planning
9/07/12	Arun DC Planning update	Trees and planning
23-24/04/12	AA Aspiring Consultants' Workshop	Professional practice
18/04/12	RICS SW CPD day - Bristol	Trees and the law
2/03/12	LTOA NTSG discussion day - London	The future of tree risk management
22/02/12	RICS NE CPD day - Newcastle	Trees and climate change
25/01/12	RICS evening update - Crawley	Trees and climate change
14/12/11	RICS evening update - Reigate	Trees and structural damage
10/11/11	RICS NW CPD day - Leeds	Trees and climate change
3/11/11	AA Midland Branch Seminar – NTSG and beyond	Duty of care
2/11/11	RICS NE CPD day – Manchester	Trees and climate change
20/10/11	Barchams trees and the law seminar	Duty of care
19/09/11	AA Conference, Warwick	Tree risk management
2/08/11	Auckland City Council, Auckland	Heritage tree assessment
26/07/11	ISA International Conference, Sydney	Trees and the law
16/06/11	RICS London – SE Region CPD day at Gatwick	Trees and climate change
23/05/11	RICS London - CPD day	Trees and climate change
9/05/11	RICS evening update - Oxford	Trees and climate change
20/04/11	RICS evening update - London	Duty of care
8/03/11	CLA Update - Surrey	Duty of care
2/03/11	RICS NW CPD day - Manchester	Trees and structural damage
2/03/11	RICS NW CPD day - Manchester	Trees and planning
16/02/11	RICS NE CPD day - Newcastle	Trees and structural damage
16/02/11	RICS NE CPD day - Newcastle	Trees and planning
22-23/11/10	AA Aspiring Consultants' Workshop	Professional practice
19/11/10	Lancashire Valuation event	Trees and the law
17/11/10	RICS NW CPD day - Leeds	Trees and structural damage
17/11/10	RICS NW CPD day - Leeds	Trees and planning
4/11/10	RICS NW CPD day - Knutsford	Trees and structural damage
4/11/10	RICS NW CPD day - Knutsford	Trees and planning
29/09/10	RICS London HQ CPD evening meeting	Trees and planning
18/08/10	Invited presentation to the NTSG on its draft document	Duty of care
16/06/10	RICS NW CPD day - York	Duty of care
8/06/10	RICS NW CPD day - Chester	Duty of care
3/06/10	CPD Foundation evening meeting, London	Duty of care
27/05/10	RICS SE CPD day - Gatwick	Trees and climate change
26/05/10	RICS NW CPD day - Newcastle	Duty of care
20/05/10	Elmbridge Borough Council	Trees and climate change
19/05/10	Urban Design Group, London	Trees and climate change
11/05/10	Yorkshire Tree Officers' Group	Duty of care
21/04/10	RICS Sussex CPD evening meeting	Trees and climate change
31/03/10	Hampshire County Council Surveyors	Trees and subsidence

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Date	Event	Paper content
16/03/10	Rushmoor Borough Council	Trees and climate change
4/03/10	Norwich City Council	Trees and climate change
2/03/10	RICS Hampshire CPD evening meeting	Trees and subsidence
16/02/10	Trees on construction sites, Ohio, USA	Trees on construction sites
15/02/10	Keynote conference presentation, Ohio, USA	The future of arboriculture
14/02/10	TreeAZ workshop in Ohio, USA	Tree assessment
26/01/10	Hampshire Tree Officers' Forum	Research on urban trees
22/01/10	Southampton City Council	Trees and climate change
15/01/10	Reading Borough Council	Trees and climate change
17/11/09	RICS Yorkshire and Humber CPD day	Duty of care
3/11/09	RICS Northwest CPD day	Duty of care
28/10/09	LTOA canopy cover review	Trees and climate change
22/09/09	AA Conference, Exeter	Trees and climate change
16/09/09	Hampshire County Council Surveyors	Trees and the law
15/07/09	Barcham Trees one-day seminar	Trees and climate change
24/06/09	Havant Borough Council	Trees and climate change
9&10/06/09	AA Aspiring Consultants' Workshop	Professional practice
4/06/09	SE RICS CPD	Law and planning
19/05/09	Yorkshire Tree Officers Group	Trees and climate change
5/05/09	ISAAC Conference, NSW, Australia	Trees and development
4/05/09	ISAAC Conference, NSW, Australia	Professional practice
3/03/09	Wessex RICS CPD	Law and planning
23/01/09	Surrey Tree Officers Group	Trees and climate change
4/12/08	East Hants District Council	Trees and climate change
8/10/08	East Anglian AA branch subsidence seminar	Trees and subsidence
1/10/08	WWF Sustainable Cities and Communities, Geneva	Trees in climate adaptation
15/09/08	AA Conference in Canterbury	Trees and climate change
25/07/08	ISA international conference, St Louis	TreeAZ
10/07/08	TEP canopy cover seminar, RGS, London	Trees and climate change
19&20/06/08	AA Aspiring Consultants' Workshop	Professional practice
2/06/08	CPD presentation to London Surveyors, Westminster	Update on trees and the law
15/05/08	AA Consultants' Training Day, Birmingham	Poll case
26/03/08	Wessex Tree Officers Group, Bristol	Trees and development
18/03/08	Flooding, water and the landscape Conference	Trees and climate change
22/02/08	Southampton City Council	Urban Canopy Initiative
30/10/07	London Tree Officers' Association	Trees and development
4/09/07	AA Conference in Warwick	Urban air conditioning
12&13/04/07	AA Aspiring Consultants' Workshop	Professional practice
20/03/07	NATO meeting at Barcham Trees	Trees and development
17/10/06	Joint ICF and Hampshire Tree Officer Group meeting	Trees and development
2/10/06	AA Conference in York	Professionalism and BS 5837
12/09/06	Thames Valley Tree Officer Group	Trees and development
17/08/06	Treefest at Coles Nursery in Leicester	Urban tree planting strategies
May 2006	Series of eight workshops in Australia	Report writing/development sites
6/04/06	AA Report Writing Workshop	Report writing
23/11/05	ICF SE Region AGM and meeting	Future of the ICF
17/11/05	Meeting of Victoria Tree Officers, Melbourne	Arboriculture in the UK
16/11/05	Melbourne Arborists Discussion Group	BS 5837
15/11/05	Parramatta tree officers meeting	Arboriculture in the UK
9/11/05	Report Writing Workshop, Auckland, New Zealand	Report writing
7/11/05	Report Writing Workshop, Christchurch, New Zealand	Report writing
8/08/05	ISA International Conference, Tennessee	The psychology of writing
17/05/05	AA Report Writing Workshop	Report writing
5/11/04	New Zealand National Conference, Queenstown	The psychology of writing
3/11/04	Trees on development sites workshop in New Zealand	Development sites
22/04/04	AA Report Writing Workshop	Report writing
29/11/03	New Zealand National Conference, Tauranga	TreeAZ
5/08/03	ISA International Conference, Montreal	TreeAZ
21/05/03	AA Midland Branch Seminar	Tree issues
14/11/02	AA Report Writing Workshop	Report writing
6/11/02	Merrist Wood College PDA Course	TreeAZ
9/10/02	Midland Tree Officers Association	TreeAZ

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Date	Event	Paper content
17/09/02	AA Conference at Cambridge	TreeAZ
18/04/02	AA Strategic Tree management Seminar	BS5837 Update
		TPOs & SULE
12/03/02	AA Report Writing Workshop	Report writing
19–20/04/01	NAAA Conference in Sydney	Report writing
		SULE
		SULE practical workshops
18/09/00	AA Conference at Exeter	Report writing
17/11/99	AA Report Writing Workshop	Report writing
22/10/99	Gaydon AA Seminar on Risk Management	Risk Management
29/09/99	Canterbury AA Seminar on Subsidence	Report writing for subsidence reporting
30/04/99	AA Report Writing Workshop	Report writing
25/03/99	AA Report Writing Workshop	Report writing
8/01/99	AA Report Writing Workshop	Report writing
27/01/98	AMIUG seminar on report writing	Report writing for mortgage reporting
2–21/04/98	Study Tour of NZ and Australia to present two workshops, one on report writing and one on climbing techniques in each country	Report writing & climbing techniques and participating in skills competitions
16/06/98	AA Seminar on Tree Assessment	SULE
20/11/98	AA Report Writing Workshop	Report writing
16/10/97	ISA AGM speaking on report writing	Report writing
09/96	ISA Hilton Head Conference (USA)	SULE
31/05/96	Morton Arboretum Conference (USA)	SULE
9/07/96	Presenting at OCA SPG Course in Reading	Managing trees on development sites
26/09/95	2nd European Congress in Versailles (France)	Diagnosis of tree defects
17/05/95	Surveyors talk at Romsey	Trees and subsidence
7/02/95	SULE talk at Bury St Edmunds	SULE
11/02/94	Talk on trees to residents association in Poole	Tree management
13/07/93	LTOA SULE talk	SULE
6/07/93	SULE talk at South Wales AA Branch	SULE
23/06/93	ISVA/RICS Southampton	Trees and subsidence
10/06/93	RTPI Chorley	Managing trees on development sites
05/93	1st European Congress in Llanstein (Germany)	Tree management in the UK

Table 2: Technical papers and articles

(Download copies at www.barrelltreecare.co.uk/resources.php)

Year	Paper/article
2014	*Barrell on … Reversing council tree-planting failures.* Horticulture Week Opinion (February 2014)
2013	*Barrell on … Heritage trees.* Horticulture Week Opinion (November 2013)
	Tree inspections: a simpler alternative to the present complication and confusion. The AA Arb Magazine (Autumn 2013)
	Barrell on … Ash: a risk management time bomb. Horticulture Week Opinion (August 2013)
	Strategic tree risk management from the duty holders' perspective Article 3/3 for Arboriculture Australia's The Bark (Winter 2013)
	Barrell on … Chinese expo prepared on a bigger stage. Horticulture Week Opinion (June 2013)
	Trees under siege RICS Property Journal (May 2013)
	Barrell on … we must all act to support conservation. Horticulture Week Opinion (March 2013)
	Extreme consulting; is being an expert witness for you? Article 2/3 for Arboriculture Australia's The Bark (Summer 2012)
	Decision-making for arborists: How to get it right and sleep tight on windy nights. Article 6/6 for ISA Arborist News (February 2013)
	Barrell on … Will standard spark a marketing frenzy? Horticulture Week Opinion (January 2013)
2012	*Barrell on … The inherent dangers of monocultures.* Horticulture Week Opinion (November 2012)
	Tree Management within the Context of a Wider Legal Framework. Article 5/6 for ISA Arborist News (October 2012)
	Reversing the Trend of Urban Deforestation in the UK. Sitelines – The Journal of Landscape Architecture in British Columbia (October 2012)
	Barrell on … Green assets a perfect Olympics backdrop. Horticulture Week Opinion (August 2012)
	Court Appearances: The Arborist as Expert Witness. Article 4/6 for ISA Arborist News (August 2012)
	Barrell on … A tree group lesson in real consultation. Horticulture Week Opinion (15 June 2012)
	Extreme consulting: Is being an expert witness for you? Article 3/6 for ISA Arborist News (June 2012)
	NTSG: an alternative view! The AA Arb Magazine (Summer 2012)
	Professionalism in a commercial world. Article 2/6 for ISA Arborist News (April 2012)

Appendix 1: Qualifications and experience of Jeremy Barrell

Year	Paper/article
	Barrell on … Follow London lead on tree strategy. Horticulture Week Opinion (30 March 2012)
	Arboricultural consultancy in Britain. Article 1/6 for ISA Arborist News (February 2012)
	Barrell on … guides to tree risk show stark contrast. Horticulture Week Opinion (20 January 2012)
	Balancing tree benefits against tree security; the duty holder's dilemma. Paper accepted by the Arboricultural Journal, but publication delayed until Spring 2012.
2011	*Tree risk is not always a numbers game*. Horticulture Week Opinion.
	Tree risk management: the duty holder's perspective. Article 4/4 in The AA Arb Magazine.
	Safety in numbers; the 1:10,000 Time bomb. Paper presented at the 2011 AA Conference, Warwick.
	Extreme consulting; is being an expert witness for you? Article 3/4 in The AA Arb Magazine.
	Responses vital for best trees standard. Horticulture Week Opinion.
	Trees and structural damage. Supplementary Information Note to accompany the BTC 2011 RICS presentation series.
	Professionalism in a commercial world. Article 2/4 in The AA Arb Magazine.
	Boris Johnson's vision for trees. Horticulture Week Opinion.
	Saving forests for the nation. Horticulture Week Opinion.
	Arboriculture: lifestyle or profession? Article 1/4 in The AA Arb Magazine.
	Trees and structural damage. Supplementary Information Note to accompany the BTC 2011 RICS presentation series.
2010	*Reforming urban tree management.* Horticulture Week Opinion.
	A positive way to make a difference. Horticulture Week Opinion.
	The protection of trees. RICS Land Journal.
	Jeremy Barrell explains how profit still trumps sustainability in the US. ICF News.
	Responsibility for risk. RICS Residential Property Journal.
	A better standard for tree survival. Horticulture Week Opinion.
	Preparing for climate change; integrating trees into community adaptation strategies. Supplementary Information Note to accompany the BTC 2010 RICS presentation series.
	Turning car parks green. Horticulture Week Opinion.
	The emerging duty of care in England relating to trees; a practitioner's perspective. Supplementary information Note to accompany the BTC 2010 RICS presentation series.
	Life on the bright side of climate change. TCIA magazine, USA.
	Strong leadership and need to talk. Horticulture Week Opinion.
2009	*Being shown up by the US.* Horticulture Week Opinion.
	Climate adaptation; the future for Arboriculture? Paper presented at the 2009 AA Conference, Exeter.
	The need for a tree framework. Horticulture Week Opinion.
	Local lessons for Parliament. Horticulture Week Opinion.
	DR AS 4970: Lessons from the UK experience. Proceedings of the ISAAC Conference in Newcastle, NSW, Australia.
	Extreme consulting: what it takes to be a successful tree expert witness. Proceedings of the ISAAC Conference in Newcastle, NSW, Australia.
	To fell or not to fell; that is The tree management question! ISA Arborist News.
	Bring the trees to the people, not the other way round! Horticulture Week Opinion.
2008	*Standards for Arboriculture.* Horticulture Week Opinion.
	The UK urban canopy initiative; what is it, why is it important and what we can all do to make a difference? Paper for the TEP XI Seminar on climate change.
	Professionalism; traditional values in a modern world Article in ICF News.
	Climate change and trees Article in the AA Newsletter, Issue 141.
	Urban deforestation; it's here and it's going to hurt! Paper presented at Sheffield Hallam University Conference Flooding and Water Management in the Landscape 2008.
2006	*Traditional urban tree planting strategies; time for change?* Article for essentialARB Issue 17.
	The evolution of SULE to TreeAZ. Article for ISAAC Newsletter.
	Axeman to Expert Witness; is it possible? Article for Australian ArborAge.
	Forestry and Arboriculture – allegiance or alliance? Article in ICF News.
	BS 5837 (2005): Six months on – success or failure? Article in AA Newsletter Issue 132.
2005	*TreeAZ: An international framework for tree assessment* - Paper presented at ISA International Conference, Montreal, 2003 (Unpublished).
	A vision for Arboriculture. Article in essentialARB Issue 15.
2004	*Tree assessment and managing trees on construction sites; a workshop manual*. Workshop Manual supporting a one day workshop.
	The British Sub-Standard 5837; is it too late? Article in NATO Newsletter.
	The British Sub-Standard 5837; where did it all go wrong? Article in essentialARB Issue 13
	Fastigiate trees: fools' gold or a winning strategy? Article in essentialARB Issue 13
	Trees and light: Arboriculture emerging from the shadows! Article in essentialARB Issue 12.
	Keeping trees on development sites; is it possible? Article in essentialARB Issue 11.
2003	*TreeAZ: An international framework for tree assessment.* Article in essentialARB Issue 10.
	Planning ahead. Article in essentialARB Issue 9.

Appendix 1: Qualifications and experience of Jeremy Barrell

Year	Paper/article
	Tree assessment on development sites: The future of the Profession in the balance. Article in essentialARB Issue 8.
2002	*Axeman to expert witness - is it possible?* Article in essentialARB Issue 6.
	Taking the Profession forward. Article in essentialARB Issue 5.
2001	*SULE: Its use and status into the New Millennium.* Paper presented to the NAAA Conference in Sydney in April 2001.
2000	*Streamlining tree related subsidence claims management; the tree perspective*. The Loss Adjuster, Manfield House, 1 Southampton Street, London WC2R 0LR.
	Quality Control in Report Writing and its Implications for the Arboricultural Profession. (Unpublished)
1998	*Increase profits; take trees seriously*. Construction South magazine
	Writing professional reports; a workshop manual. Workshop Manual supporting a one-day workshop.
1996	*Pre-development tree assessment*. Proceedings of the International Conference on Trees & Building Sites in Chicago, 143–155. International Society of Arboriculture, Champaign, IL.
1995	*The Methodology employed to assess the condition of three trees within the grounds of the Palace of Versailles*. Presented jointly by Dr David Lonsdale, John Dolwin and Jeremy Barrell and published in the Proceedings of the second European ISA Conference in Versailles, France. International Society of Arboriculture, Champaign, IL.
1994	*Innovations in practical arboriculture*. Proceedings of the Swansea AA Conference. AA, Ampfield House, Romsey, Hants.
1993	*Arboriculture in the UK*. Proceedings of the First European ISA Conference in Llanstein, Germany. International Society of Arboriculture, Champaign, IL.
	Pre-planning Tree Surveys: *SULE is the Natural Progression*. Arboricultural Journal 17, 33–46

Table 3: Seminars, courses and workshops attended

Date	Event summary
12-14/02/14	Ontario Chapter ISA conference
29-30/01/14	Study tour to Lyon looking at urban forestry issues
13/12/13	BSI meeting for BS 8545
11/12/13	i-Tree meeting at City Hall, London
19/11/13	BSI meeting for BS 8545
22/10/13	BSI meeting for BS 8545
17/09/13	Visit to Amsterdam to see and discuss heritage trees
12/09/13	Visit to Bartlett labs in Reading
9–11/09/13	AA Conference, Exeter
23/08/13	Adobe Acrobat Pro Training
25/06/13	ISA Ask the experts day at Kew
15/06/13	Wokingham Ancient Tree Group meeting
31/05/13	BSI meeting for BS 8545
24/05/13	LTOA Tree risk management - London
16/05/13	AA Standards Day – Acting as an expert witness
8/05/13	RICS SW update, Exeter
26/02/13	BSI meeting for BS 8545
23/01/13	ICF Higher Education Institute meeting in Manchester
10/01/13	BSI meeting for BS 8545
21/11/12	RICS Rural Practice update, Petersfield
15–17/10/12	ISA Prairie Chapter Conference, Canmore, Alberta
19/09/12	Internal Barrell Treecare Training Day on Tree Assessment at Poole
3–4/09/12	AA Conference, Reading
26/07/12	BSI meeting for BS 8545
11/07/12	Barchams Orjan Stal and Bjorn Embren on planting in urban streets
20/06/12	Barchams Big Barn event with Ed Gilman on planting and pruning research
18/05/12	BSI meeting for BS 8545
15/05/12	CIRIA planting mature trees working group meeting
10/05/12	AA Standards Day – Trees and criminal law
18/04/12	RICS SE CPD day – Bristol
23/03/12	BSI meeting for BS 8545
22/03/12	Northampton risk management seminar
15/03/12	Launch of CIRIA book on planting mature trees
2/03/12	LTOA NTSG The future of tree risk management discussion day - London
22/02/12	RICS NE CPD day – Newcastle
19/01/12	BSI meeting for BS 8545
9/12/11	Professional Solutions: Preparing to give oral evidence in court
9/12/11	Professional Solutions: Successful communication at experts' meetings
17/11/11	Barchams veteran trees seminar with Ted Green and David Lonsdale
3/11/11	AA Midland Branch Seminar –Leicester

Appendix 1: Qualifications and experience of Jeremy Barrell

Date	Event summary
2/11/11	RICS NE CPD day – Manchester
20/10/11	Barchams trees and the law seminar with Charles Mynors
4/10/11	LTOA Veteran tree day at Windsor Great Park with Ted Green
18–20/09/11	AA Conference, Warwick
17–19/07/11	ISA international conference, Sydney
8/06/11	GRaBS climate change day in Regents Park, London
3/06/11	BSI meeting for BS 8545
12/04/11	AA Standards Day – BS 5837 update and feedback
19/04/11	Barchams Philip van Wassanaer urban tree management update
12/04/11	DeepRoot SUDS presentation - London
07/04/11	Meeting with Luke Bennett in Sheffield
21/03/11	BSI BS 8545 meeting
16/03/11	ICF assessors update day - Edinburgh
8/03/11	CLA Update - Surrey
2/03/11	RICS NW CPD day - Manchester
16/02/11	RICS NE CPD day - Newcastle
04/01/11	BSI BS 8545 meeting
6–8/12/10	ASCA Conference – Florida, USA
5/12/10	ASCA Practice as an expert witness – Florida, USA
17/11/10	RICS NE CPD day - Leeds
3/11/10	RICS NW CPD day - Knutsford
05/10/10	BSI BS 8545 meeting
23/09/10	LTOA climate change
13–15/09/10	AA Conference, Manchester
2/07/10	Bond Solon report writing for expert witnesses run through RICS
29/06/10	Bond Solon expert witness familiarisation run through RICS
24/06/10	TEP Seminar on Avenues and Boulevards at Kew
9/06/10	Barchams Gary Watson tree root update all day
27/05/10	RICS SE general practice update
26/05/10	RICS NW rural practice update
13/05/10	AA Standards Day – Acting as an expert witness
3/03/10	EcoBuild at Earls Court and manning the TDAG stand 2–4pm
14–16/02/10	Ohio ISA Chapter Conference, Ohio, USA
27/01/10	Urban tree research conference Steering Group meeting
19/11/09	TEP Seminar on Climate Change at RGS in London
17/11/09	RICS Yorkshire and Humber CPD day
10/11/09	Assessor at ICF interviews for Chartered status in Edinburgh
3/11/09	RICS Northwest CPD day
30/09/09	Barchams: In search of the supertree
21–23/09/09	AA Conference, Exeter
17–19/06/09	LANTRA Professional tree inspection course, Surrey
4/06/09	SE RICS CPD – One day of presentations about land use and planning
14/05/09	AA Standards Day – Birmingham
4&5/05/09	ISAAC Conference, NSW, Australia
21/04/09	Wealden District Council Ancient Tree Survey day of presentations
3/11/08	LTOA Safety seminar at LB Merton
22/10/08	RICS CPD talk on habitat regulations
8/10/08	East Anglian AA branch subsidence seminar
1–2/10/08	WWF Sustainable Cities & Communities conference, Geneva
25/09/08	CAVAT training day, Essex
15–18/09/08	AA Conference, Canterbury
25–27/07/08	ISA international conference, St Louis
24/07/08	Tree inspection workshop, St Louis
10/07/08	TEP canopy cover seminar, RGS, London
29/05/08	Tree Management for Public Safety - London
21/05/08	Mattheck workshop on Tree Engineering at Hatfield
16/05/08	LTOA Joint Mitigation Protocol launch at LB Southwark
15/05/08	AA Consultants' Training Day, Birmingham
8/05/08	Designing with Trees at Kew
19/03/08	HSE Safety Awareness Day, New Forest
27/02/08	Innovate & Green, Earls Court
22/11/07	Brush up your English course by Plain Words

Appendix 1: Qualifications and experience of Jeremy Barrell

Date	Event summary
18/10/07	Tree Council Review Group for Helliwell valuation
12/09/07	Tree Council Review Group for Helliwell valuation
3-5/09/07	AA Conference in Warwick
17/04/07	AA CPD day at Windsor
16/03/07	Tree Council Review Group for Helliwell valuation
7/03/07	QTRA update at High Wycombe
20–23/02/07	ASCA Consulting Academy in Sacramento, USA
22/11/06	ICF & Ancient Tree Forum meeting in Tiverton
2-4/10/06	AA Conference in York
15/09/06	Treework Environmental Practice risk assessment seminar in London
5/09/06	QTRA hazard risk assessment course in Guildford
17/08/06	Treefest at Coles Nursery on nursery production in Leicester
22/02/06	EWI expert witness conference in London
24/01/06	ODPM High Hedges Legislation update in Birmingham
10–12/11/05	New Zealand National Conference in Auckland
10–11/10/05	CTLA tree valuation seminar with Scott Cullen in Bath
19–21/09/05	AA Conference in Exeter
8/08/05	ISA International Conference in Nashville, USA
12/05/05	Basic tree climbing and aerial rescue update training
2/03/05	RICS Expert witness course in Birmingham
28/02/05	ICF/RICS merger meeting at FC, Alice Holt
5/11/04	New Zealand National Conference in Queenstown
9–11/07/04	Tree hazard assessment in London
20–22/09/04	AA Conference
20/04/04	BRE training day on daylight issues in London
28/11/03	The Expert Witness Conference 2003 in London
29–31/10/03	New Zealand National Conference in Tauranga
17–18/10/03	Successful Expert Practice by Society of Expert Witnesses in Bristol
15–17/09/03	AA Conference in Northampton
4–6/08/03	ISA Conference in Montreal, Canada
14/04/03	CTLA seminar on tree valuation by Scott Cullen in York
21/01/03	BSI meeting for BS 5837 Review Group
14/01/03	Sun Alliance TreeRAT seminar in London
20/11/02	BSI meeting for BS 5837 Review Group
16–18/09/02	AA Conference in Cambridge
29/08/02	Kew Gardens visit to inspect mycorrhizae treatments
3/07/02	Cooper-Clarke special surfacing
1/05/02	BSI meeting for BS 5837 Review Group
23/04/02	BRE training day on daylight issues in London
9/10/01	RICS Expert Witness Course in London
19/09/01	TRA shading and daylight seminar in London
10–12/09/01	AA Conference in Lancaster
9/05/01	Arboriculture in planning: a tree centred approach workshop
29/03/01	Amenity valuation of trees workshop by Rodney Helliwell in Cheltenham
14/03/01	NATO special surfaces: Installation of hard surfaces under trees workshop in London
18–20/09/00	AA Conference in Exeter
10/05/00	NATO subsidence seminar in Chester
24/05/00	BCTGA meeting in Oxford
12/02/00	PHC Seminar in Ruislip
14/05/99	BCTGA meeting in Torbay
26/05/99	Kew Seminar on mycorrhizae
24/06/99	Visit to Alba Trees in Scotland
19/07/99	Christmas tree pest and diseases meeting in France
6–8/09/99	AA Conference
29/09/99	Attending Canterbury AA Seminar on Subsidence and presenting paper
22/10/99	Attending Gaydon AA Seminar on Risk Management and presenting paper
27/10/99	ICF meeting in Bath
8/01/98	ISA Conference meeting in Birmingham
2–21/04/98	Study Tour of NZ and Australia to take in Kauri and Eucalyptus Forests and present two workshops, one on report writing and one on climbing techniques in each country
11/05/98	Subsidence seminar in London
5/06/98	EWI Course of Basic Law in London

Appendix 1: Qualifications and experience of Jeremy Barrell

Date	Event summary
16/06/98	AA Seminar on Tree Assessment and presenting paper on SULE
1–4/08/98	ISA Conference in Birmingham and ISA World Tree Climbing Championships
23/10/98	BPRO How to be a Confident Trainer Seminar in London
24/02/97	Report writing seminar in London with Academy of Experts
29/04/97	LTOA meeting in London
15/05/97	BCTGA meeting in Worcester
29/05/97	AA Midlands Branch subsidence seminar in Walsall
3/07/97	Pryor Seminars Business Writing Course in Guildford
1–6/07/97	ISA World Tree Climbing Championships and Conference in USA
20/08/97	BPRO seminar on Confident Presenting in London
8–10/09/97	AA Conference in Exeter
16/10/97	ISA AGM speaking on report writing
22/10/97	Report Caveat seminar in Leicester by Tree Life
7/11/97	EWI Conference in London
20/11/97	British Geological Survey course by Tree Life in London
21/11/97	BPRO workshop on Business Grammar in London
28/02/96	AA Commercial Committee meeting in London
21/05/96	OCA Mortgage report writing course in Liverpool
23/05/96	DoE meeting to review David Lonsdale's book
13/06/96	BCTGA meeting in Kent
9/07/96	Presenting at OCA SPG Course in Reading
6/08/96	LTOA meeting on mortgage reports in Kensington
10–12/09/96	AA Conference and Skills Competition in Exeter
2/10/96	ISA expert witness seminar in Birmingham
8/11/96	EWI Conference in London
18/11/96	Shigo talk in Birmingham
20/11/96	Shigo talk in Birmingham
22/11/96	Shigo talk in Birmingham
25/01/95	AA Merrist Wood evening talk on BS 3998 Revision
7/02/95	SULE talk at Bury St Edmunds + attending rest of meeting
19/05/95	BPRO Proof Reading Course in London
27/05–4/06/95	Attending 3 day Conference on tree roots and Buildings at the Morton Arboretum, Chicago, USA
12/06/95	Carrying out field investigations for talk in September in Versailles, France
10–13/08/95	Attending 3 day ISA Conference in Hilton Head, USA
4–7/09/95	AA Conference in Lancaster
27–30/09/95	Attending 3 day ISA European Conference in Versailles, France
19/01/94	AA Review Group meeting
21/01/94	FASTCo meeting at Merrist Wood
2/02/94	AA SE Branch discussion panel at Merrist Wood
11/02/94	Talk on trees to residents association in Poole including preparation
24/02/94	AA Planning Seminar at BIC
16/04/94	ISA AGM and technical seminar on certification
9/05/94	ISA Mattheck workshop at Hillier Arboretum
27/05/94	French technical seminar in Montpellier, France
28/05/94	Shigo presentation and technical discussions in Montpellier, France
6–8/09/94	AA Conference
25/06/93	BCTGA Meeting at Yattendon
7–9/09/93	AA Conference
30/09/93	DoE training day for writing reports
8/10/93	ISA Tree Hazard Evaluation Workshop in Southampton
15–17/11/93	Chainsaw certification
19/11/92	Helliwell Amenity Valuation Workshop
1988	Three-day Tree Biology Workshop with Shigo in Meyerscough College
1987	One-day Tree Biology Seminar with Shigo in St Louis Botanic Gardens
1985	ISA Conference, Milwaukee

Appendix 2: Barrell Tree Consultancy letter of 28th August 2013, reference 13134-Letter1-280813-JB

barrell
TREE CONSULTANCY

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Mr K O'Connor
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LONDON W6 7BA

28 August 2013

Our Ref: **13134-Letter1-280813-JB.docx**

Dear Mr O'Connor

Re: Tree comments on the Royal Borough of Kensington and Chelsea proposed planning policy changes relating to basements

You have instructed me to review the proposed planning policy changes recently published for comment by the Royal Borough of Kensington and Chelsea (RBKC), and to advise on the reliability of the tree related information. I have seen the Alan Baxter *Residential Basement Study Report* reissued in March 2013 and the RBKC *Basements Publication Planning Policy* dated July 2013, and I focus on these two documents.

I provide this advice based on my experience and qualifications in forestry, biology and arboriculture, a summary of which is included as Enclosure 1. Barrell Tree Consultancy is one of the largest planning based tree consultancy practices in the UK, with six Chartered professionals dealing with 400–500 projects a year. The bulk of these deal with trees in a planning context, with a significant proportion of our work centred around the London Boroughs. More details of our Practice credentials can be reviewed at www.barrelltreecare.co.uk/about-us.php.

Dealing first with the Alan Baxter Report, I have carefully studied it and note that, although there are specific and detailed comments on tree issues, there is no record of that advice being verified by a qualified tree professional or of the author having any tree-related credentials. This reduces the weight that can be given to the tree related content to that of a lay-person, rather than a tree professional. In the context that the report is introduced as a professional piece of work written by professionals, the failure to clearly set out this obvious limitation is grossly misleading, creating the impression that the tree analysis should be given the same weight as the engineering analysis, when the reality is that it has nothing like that status.

More specifically, I identify the following content in that report that could be reasonably considered as misleading as follows:

Appendix 2: Barrell Tree Consultancy letter of 28th August 2013, reference 13134-Letter1-280813-JB

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Report reference	Content	Comment
9.7.1	*"British Standard 5837, 2012 (Trees in relation to design, demolition and construction) suggests that basements should not be constructed within a distance of twelve times the diameter of the trunk of a tree."*	This is a grossly misleading statement and I reference 7.6.1 of BS 5837 to support this point: *"Where it is proposed to form subterranean structures, e.g. basement extensions, within the RPA, it is essential to avoid excavating down through the rootable soil if trees are to be retained. In some cases, it might be technically possible to form the excavation by undermining the soil beneath the RPA."* BS 5837 makes no reference to the depth that RPAs might extend to and so that is a matter for arboricultural interpretation and judgment for each individual set of circumstances. Indeed, BS 5837 provides specific guidance on soil assessment at 4.3.1: *"A soil assessment should be undertaken by a competent person to inform any decision relating to:* • *the root protection area (RPA);* • *tree protection;* • *new planting design; and* • *foundation design to take account of retained, removed and new trees."* BS 5837 has considered the matter of basements near trees and the advice is that it is feasible if an informed assessment of the circumstances is carried out. It is difficult to see how this advice can be reasonably interpreted as suggesting that basements should not be constructed within RPAs.
9.7.2	*"It may be acceptable for a basement to be partially under the canopy of a tree but the method of construction adopted should not damage the tree and this needs careful consideration at the planning stage."*	Again this is misleading because the word 'partially' is used to create the impression that there is some limitation on how far under trees a basement could extend. There is no credible or widely published reference that limits this aspect. Provided that the rootable soil volume remains undisturbed, in principle, all the area beneath any tree could be undermined with no adverse impact on the tree. The supporting evidence for this is the numerous examples of mature trees being successfully moved around the world with stabilised root balls (See examples in Enclosure 2 to illustrate this point). If tree canopies could only be partially undermined, then it would not be possible to successfully move mature trees, which is patently not the case. There is a significant body of industry experience and circumstantial evidence to refute the contention that there is some sort of limitation on the extent that basements could extend beneath the canopies of trees.

Appendix 2: Barrell Tree Consultancy letter of 28th August 2013, reference 13134-Letter1-280813-JB

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Report reference	Content	Comment
9.7.4	*"Basements which extend under trees or Root Protection Areas[2] at any depth should not be permitted even though it may be possible to demonstrate that it is technically feasible."* [2] The root protection area (RPA) is defined in BS5837:2012 as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.	This is the personal opinion of the author and not supported by any technical tree-related reference that I am aware of. What makes this particular statement even more misleading is the inappropriate reference to BS 5837, which does not support the opinion, but is presented as though it does. As the extract opposite correctly explains, RPAs deal with areas and is a tool, not an absolute measure. It was never designed to take specific account of variations in rooting depth. The most relevant recommendation from BS 5837 that explains this point in context rather than the selection opposite is in 4.6.2 and 4.6.3 as follows: *"**4.6.2** The RPA for each tree should initially be plotted as a circle centred on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution.* ***4.6.3** Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:* *a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);* *b) topography and drainage;* *c) the soil type and structure;* *d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management."* There is nothing in these BS 5837 recommendations that support the author's lay opinion.
9.7.6	*"In addition to requiring basements built outside the footprint of buildings to have a depth of topsoil with appropriate water retention and drainage arrangements for the cultivation of gardens, there has to be a limit on how much of a garden can have basement construction beneath it. This is to ensure that trees can be planted to replace existing species that die and also to provide a hydraulic connection between the surface and the perched water table, so that rainwater can enter the ground to*	Whilst the thrust of this paragraph is acceptable, i.e. that sufficient rootable soil volume should be retained to allow existing and future trees to survive and thrive, the idea that "*there has to be a limit on how much of a garden can have basement construction beneath it.*" is an uninformed opinion that is not supported by any technical or factual evidence. There are numerous examples of trees growing over structures in shallow rooting depths and thriving into maturity. An obvious one is the underground line passing beneath Embankment Gardens (See images in Enclosure 3) where mature plane trees are growing on soil depths of about 1m.

Appendix 2: Barrell Tree Consultancy letter of 28th August 2013, reference 13134-Letter1-280813-JB

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Report reference	Content	Comment
	maintain the current status quo within the groundwater regime of the Borough."	In principle and practice, there is no reason why basements could not occupy a full garden area and have no adverse impact on present or future trees, provided sufficient rootable soil volume is secured. However, this would need to be assessed in the context of depth of soil above the basement roof, i.e. the greater the garden coverage, the more depth that is likely to be required. There is no tree-related technical evidence to support the contention that *"there has to be a limit on how much of a garden can have basement construction beneath it."*.
9.8.1	*"The size of basements built outside the footprint of an existing house has to be limited for the following reasons* *a) ...* *b) Large tree and shrub planting to maintain the character of the gardens and landscape of residential areas within the Borough."*	Again, this is the lay opinion of an author with no tree credentials. There is no evidence to support or reasons to justify the limitation of basement areas outside a building footprint because it limits large tree and shrub planting. As for the point above, provided there is sufficient rootable soil depth, which is a matter to be assessed on a site-by-site basis, trees do not provide a defensible constraint on basement garden coverage.
9.8.6	*"The other factor that will need to be considered in limiting the size of a basement under a garden is the requirement to retain the ability to plant large trees. This requires areas of gardens to be kept clear of construction. In most cases a 3m strip at the rear of the garden will be sufficient to allow trees to grow, but this may depend on the nature of the garden and of the trees themselves. Where there are large gardens, a much wider strip or further areas should be left without subterranean construction beneath them to allow for extensive tree planting."*	Again, this is a lay statement clumsily dealing with issues beyond the author's area of expertise. It is simply not correct to imply or state that tree planting and growth will be affected by basement coverage without referencing the depth of rootable soil. Provided a sufficient depth of soil is available, in principle, any tree would be able to grow anywhere over the top of a basement. There is also no obvious link between garden size and the width of any strip, assuming that a strip is necessary in the first place, which it is not. There is also no explanation why the strip has to be at the rear; why not at the sides? This is a poorly constructed and reasoned statement that is not worthy of any significant weight.
13.3.5	*"The requirement that provision be made for large tree and shrub planting to maintain the character of gardens in the Borough may further restrict the area of gardens which can be built under."*	This statement is set in the context of site conditions that should influence the extent of basements beneath gardens. As explained above, it is not the case that the requirement for large tree planting may restrict the area of gardens that can be built under. As the area of basement coverage increases, it is the rootable volume of soil that becomes critical, not a simplistic measure of area.
14.8	*"The location of existing trees and their species on or within 6m of the site and a description of the existing garden and*	For trees off the site, BS 5837 recommends at 4.2.4 c): *"the position of trees with an estimated stem diameter of 75mm or more that overhang the site or are located*

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Report reference	Content	Comment
	paved areas of the building and adjacent properties"	*beyond the site boundaries within a distance of up to 12 times their diameter;".* Surely, this is the appropriate reference and the distance could realistically be up to 15m?

Turning to the RBKC *Basements Policy Draft*, I have the following comments:

Draft reference	Content	Comment
34.3.54	*"The desirability to maintain 'green and leafy' gardens, flexibility to plant major trees together with the recommendations in the ABA report regarding drainage indicate substantial proportion of the garden should remain free of any development."*	For the reasons set out above, the ABA report advice on tree matters is flawed and should not be given any significant weight in the matter of influencing the proportion of gardens that should remain free of basement development.
34.3.54	*"Retaining at least half of each garden area will enable natural landscape and character to be maintained, give flexibility in future planting (including major trees), support biodiversity."*	This statement is misleading relating to trees. There is no demonstrable need to leave any proportion of a garden free of basement development in order to enable flexibility in planting trees if an appropriate depth of rootable soil is retained.
Footnote 13, Page 7 (RBKC Basements Publication Planning Policy July 2013)	*"[13] Works should be carried out in accordance with BS 5837 2012 (with the exception that tunnelling underneath the root protection area should not be undertaken) and the Council's Trees and Development SPD."*	This statement is fair except for the inclusion of the phrase "*tunnelling underneath*", which cannot be supported by any technical reference. There is substantial evidence that even the biggest trees can tolerate and survive this type of activity.
Appendix B 34.3.62	*"BS 5837 2012 indicates that tunnelling under trees can be an option. Whilst feasible, it will put the tree at risk, and the Council does not judge the benefits that may be gained from a larger basement outweigh the benefits of minimising the disturbance and risk to protected trees. This approach will therefore not be permitted."*	There is no published evidence that tunnelling under trees will automatically put them at risk. Indeed, there is plenty of practical evidence from around the world that this is not the case. RBKC appear to have based this position on lay opinion from the ABA report. If that is the case, then this should be reviewed in the context of balanced advice from professional arboriculturists.

My review of these two documents has identified an apparent failure of RBKC, through ABA, to seek professional advice on the tree issues, which has resulted in a misleading position based on lay opinion to influence the emerging policy. Whilst I do not at all suggest that my opinions represent a definitive or final position on any of the flaws exposed above, I regularly deal with precisely these matters, which places me very well to present a realistic analysis of the issues. In that context, I offer my view on the main issues, based on my experience and awareness of appropriate technical references.

There is no evidence that I am aware of to confirm or prove that tunnelling under trees automatically affects their health or stability. Indeed, there is plenty of evidence that this can be done and it is done on a regular basis in the context of moving mature trees, which is the only practical reality check that we have. Of

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course, if it is not done with appropriate care and proper planning, then harm will arise, but that does not mean it cannot be achieved if the proper controls are in place. Such controls are available within the planning system and are used on a daily basis to effectively protect trees on construction sites.

It seems that the issue has been wrongly focused on whether it can be done; it can be and there is no evidence that a reasonable default is that it cannot be. Instead, the issue would have been better focused on the depth of rootable soil that is necessary to support existing trees and new trees. Of course, there is no generic or formulaically derived answer to this because of the great variability of soil conditions and individual tree growth characteristics. However, there is plenty of evidence that large trees can adapt to survive on very thin layers of soil. Furthermore, it is a matter of sensible interpretation that if there are no roots at a location in a soil profile then, provided the rootable soil is undisturbed, whatever happens beyond that is unlikely to affect adjacent trees. It may well be that depths greater than 1m are needed in some circumstances, but that would not preclude development beneath the rootable soil depth. There is no question that to build successfully beneath trees is technically challenging, but there is no evidence to support the position that it cannot be done or that it is inappropriate.

In the face of this lack of evidence that it cannot be done, it seems more appropriate to adopt a stance of placing the burden on the applicant to prove it can be done rather than dismissing the possibility outright. In this context, the onus would be on the applicant to provide the investigation details and the supporting technical analysis to demonstrate that the project is feasible. This is no different to planning for any above-ground development near trees, where careful excavations to identify the location of important roots is routinely used to inform the precise extent of new development.

For these reasons, where trees are an issue, I would favour a presumption to refuse unless it can be reasonably demonstrated that a proposal is feasible and there will be no significant adverse impact on retained trees or future tree planting. It would then be down to the experts to analyse the specific circumstances of each site and make the case, which seems much more appropriate than an outright ban based on poorly informed opinion.

If required, I would be happy to provide further clarifications on any of these points and attend any forum necessary to probe the depth of the opinions I have set out above.

Yours sincerely

Jeremy Barrell **BSc FArborA DipArb CBiol FICFor FRICS**

Enclosures:
1: Brief qualifications and experience of Jeremy Barrell
2: Images of tree moving
3: Images of trees in Victoria Embankment Gardens, Westminster

Appendix 2: Barrell Tree Consultancy letter of 28th August 2013, reference 13134-Letter1-280813-JB

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Enclosure 1: Brief qualifications and experience of Jeremy Barrell

1 **Formal qualifications:** I have an Honours Degree in Environmental Forestry (1978). I am a Fellow of the Institute of Chartered Foresters (1996) and a Fellow of the Royal Institution of Chartered Surveyors (2008). I am a Fellow (1989) and Registered Consultant (1994) of the Arboricultural Association (AA). I was an AA Approved Contractor from 1984–1995. I am a Chartered Forester (1980), a Chartered Biologist (1993), a Chartered Surveyor (2008) and hold the Royal Forestry Society's Professional Diploma in Arboriculture (1990). I am a Law Society `Checked' expert witness and a founding member of the Institute of Expert Witnesses. In 2001, I was honoured with the AA Award for services to Arboriculture and, in 2010, I become the American Society of Consulting Arborists' first Registered Consulting Arborist resident in the UK.

2 **Practical experience:** On leaving University in 1978, I joined the Forestry Commission as a Field Surveyor and began my tree contracting business in 1980. For the next 15 years, I developed this contracting business, leaving it in 1995 to concentrate full-time on consultancy. Barrell Tree Consultancy (www.barrelltreecare.co.uk) is now a well-established advisory practice, with a focus on the legal and planning aspects of tree management.

3 **Professional experience:** I have been dealing with tree hazard assessment throughout my career. Between 1993 and 1996, I was a DoE tree preservation order (TPO) appeal inspectors reporting to the Secretary of State. This involved impartially assessing a whole range of tree management issues, including TPO administration and subsidence damage. I have had a long career acting as an expert witness, from Magistrates Courts to the High Court. Most recently, I was the expert for the successful Claimant in *Poll v Bartholomew* (2005), and the successful Defendants in *Atkins v Scott* (2008) and *Micklewright v Surrey County Council* (2010). I also acted for the Defendant in the recent failed criminal prosecution, where the Woodland Trust was acquitted in *HMA v The Woodland Trust*. A summary of my expert witness experience can be downloaded from www.barrelltreecare.co.uk/case-studies/barrell-legal-cases.PDF. In 2009, I attended and passed the LANTRA Professional Tree Inspection course, which is the premier tree inspection accreditation scheme in the UK.

4 **Continuing professional development:** I regularly lecture all over the world and have written more than 70 papers and articles on tree management (www.barrelltreecare.co.uk/resources.php), including acting as the guest contributor on arboriculture for the Horticulture Week *Opinion* column since 2009. I specialise in developing tree assessment methods that are published on a dedicated website at www.TreeAZ.com. I was on the panel that produced BS 5837 (2005) and I am currently involved in producing the new BS 8545 on tree production and planting.

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Enclosure 2: Images of tree moving

The first three images provided by Adam Tom from Brisbane of moving a fig in 2004, which still survives today. Note the depth of the undercut of the whole root system to move it to a new location, which is no different in principle to excavating a basement beneath the tree.

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Enclosure 2: Images of tree moving

The image below is another fig moved by Adam Tom in Brisbane. I took the photo in 2009 and the tree had been moved about six years previously. Although the circumstances of individual trees will vary, this series of images demonstrates that, in principle, trees can tolerate disturbance beneath them as long as the rootable volume of soil remains undisturbed.

Appendix 2: Barrell Tree Consultancy letter of 28th August 2013, reference 13134-Letter1-280813-JB

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Enclosure 3: Images of trees in Victoria Embankment Gardens, Westminster

A number of the mature plane trees in Victoria Embankment Gardens, Westminster, are growing in less than 1m of soil directly above the Circle line tube that runs beneath. There are many other examples of mature trees surviving and thriving on shallow depths of soil. It is indefensible to state that this is not the case in principle, although the circumstances of individual trees will vary.

Appendix 3: Extract from BS 5837

BS 5837:2012

BSI Standards Publication

Trees in relation to design, demolition and construction – Recommendations

raising standards worldwide™

Appendix 3: Extract from BS 5837

minimize adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer. In shrinkable soils, the foundation design should take account of the risk of indirect damage (see **A.1.4**).

7.5.2 Root damage can be minimized by using:

- piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600 mm;
- beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

7.5.3 Where a slab for a minor structure (e.g. shed base) is to be formed within the RPA, it should bear on existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

7.5.4 Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface). In such cases, a specialist irrigation system should also be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take account of any effect on the load-bearing properties of underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from the building control authority prior to this approach being relied on.

7.5.5 Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for temporary ground protection given in **6.2.3**. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored pile or screw pile.

7.6 Subterranean construction within the RPA

7.6.1 Where it is proposed to form subterranean structures, e.g. basement extensions, within the RPA, it is essential to avoid excavating down through rootable soil if trees are to be retained. In some cases, it might be technically possible to form the excavation by undermining the soil beneath the RPA.

7.6.2 The following factors should be taken into account, in light of site-specific and specialist arboricultural, engineering and geotechnical advice:

- the future growth potential of the tree;
- the minimum depth of overburden (i.e. that overlying the roof of the proposed structure) required for retention in situ to ensure the survival of the tree and its stability against the wind;
- the potential for vibration-induced granular flow within the retained overburden, caused by the undermining process, to destabilize the tree through reduced root adhesion;
- the mass of the tree and of the retained overburden;

Appendix 3: Extract from BS 5837

- the potential for ponding (i.e. perched water table) and the need for a drainage/runoff control system;
- the potential for adverse affects on local soil hydrology, and the possible impact of these on tree health.

7.7 Underground and above-ground utility apparatus

7.7.1 Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.

7.7.2 Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing should be drawn up in conjunction with the project arboriculturist. In such cases, trenchless insertion methods should be used (see Table 3), with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected in accordance with **7.2.2**, excavation using hand-held tools (see **7.2.1**) might be acceptable for shallow service runs.

NOTE The suitability of these for differing applications is summarized in Table 3.

Table 3 **Trenchless solutions for differing utility apparatus installation requirements**

Method	Accuracy	Bore dia. [A]	Max. sub. [B] length	Applications	Not suitable for
	mm	mm	m		
Microtunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway undercrossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1 200	150	Pressure pipes, cables including fibre optic	Gravity-fall pipes, e.g. drains and sewers [C]
Pipe ramming	≈150	150 to 2 000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling [D]	≈50 [E]	30 to 180 [F]	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5 m

[A] Dependent on strata encountered.

[B] Maximum subterranean length.

[C] Pit-launched directional drilling can be used for gravity fall pipes up to 20 m subterranean length.

[D] Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.

[E] Substantial inverse relationship between accuracy and distance.

[F] Figures given relate to single pass: up to 300 mm bore achievable with multiple passes.

Appendix 4: Extract from RBKC Trees and Development SPD

Trees and Development

Supplementary Planning Document
Local Development Framework
Adopted April 2010

THE ROYAL BOROUGH OF
KENSINGTON
AND CHELSEA

Appendix 4: Extract from RBKC Trees and Development SPD

2.1 Initial Consideration

2.1.1 All survey information and the Tree Constraints Plan should be given to the developer's design team who can then logically design the development in relation to the existing tree cover.

2.2 Subterranean Development

2.2.1 The Council recognises the risk to privately and publicly owned trees in the Borough from subterranean development and has made specific provisions to protect trees and their growing medium from this type of development. These measures have also been incorporated in the Councils 'Subterranean Development SPD'

2.2.1 Soil above subterranean developments

2.2.1.1 The Council will require the following for basement proposals under gardens:

- A minimum of 1m of soil above the top cover of the basement;
- No more than 85% coverage of the garden space (between the boundary walls and existing building), with the remainder of the space used for drainage, planting and 'tree pits'; and
- The provision of drainage technology to facilitate the movement of water over and around the basement, to ensure it does not collect on the top of the basement and to facilitate sustainable urban drainage systems.

2.2.2 Tree Pits

2.2.2.1 In cases where the removal of trees is permitted, the Council will require that they are replaced either above the subterranean development within the curtilage of the property, or through the use of 'tree pits' either as part of the structure or adjacent to the new basement.

2.2.3 Subterranean development under public footways

2.2.3.1 The Council will prohibit the use of space below public footways for subterranean developments. This is to protect the planting location and rooting area of existing and potential street trees and to protect existing services, including access to them for maintenance by statutory undertakers.

2.3 New Tree Planting

2.3.1 Section 197 of the Town and Country Planning Act 1990 places a duty on the Local Planning Authority to secure the planting of new trees. RBKC will secure the planting of new trees in locations where they will complement the surrounding architecture and the local landscape. We will seek to ensure that the species of tree planted is suitable for each location.

2.3.2 The following factors should be considered when planning a tree planting scheme:

- Adequate space should be allowed for planted trees to reach their mature height and spread without causing nuisance to built structures and their occupants.
- Predicted mature height and spread, crown density, propensity to shed honeydew, seeds or fruit etc. Wherever possible, large forest canopy tree species should be specified.
- Suitability of planting positions in proximity to adjacent constructions, such as walls and buildings, to avoid the risk of structural damage occurring as trees grow and mature.
- Suitability of new trees within the built environment. They should complement the surrounding architecture, the historic environment and the local landscape in the long term. For example, formal terraced buildings require suitable formal planting; more irregular and varied planting may be more appropriate in a less formal built environment.
- Criteria other than potential size should be taken into consideration when choosing species – for example, colour of backdrop. A silver birch would not be clearly visible against a light background.
- Suitability of tree species in relation to potential changes in climate, such as drought and predicted future increases in temperature.
- To enable trees to reach their optimum size, a sufficient soil volume should be available to the root system. The soil type, including

Appendix 5: RBKC Policy CR6

Trees and Landscape

33.3.29 Trees and landscaping are considered an important aspect of any development as have the potential to improve quality of life within the Borough and contribute to its high quality character. The Borough has approximately 7,000 street trees and approximately 500 Tree Preservation Orders. Trees on private open space, such as those located within residential gardens can also contribute to the public realm.

33.3.30 Although trees provide amenity, wildlife habitat and biodiversity values, there may be occasions where a tree may need to be felled, particularly if it is likely to cause serious damage to property or injury to people. Most commonly the tree will not have to be removed in its entirety – just the limbs causing the potential danger. Good planning when selecting a tree will ensure the long-term function of the site and the trees longevity, and can avoid unnecessary felling.

33.3.31 There is a growing awareness that trees and landscaping provide a positive contribution to biodiversity and habitats for wildlife.They also help to address climate change issues and are important for human mental health. Designing landscaping so that it is compatible with its intended purpose and function allow for optimised visual and physical benefit.

33.3.32 Street trees and trees in general are an important element of the urban environment and provide contrast to the built environment. Street trees are not only attractive and add to the character of the townscape but also act as noise and wind barriers and filter out pollution. The Council takes great pride in its strong tradition of managing street trees, being the first Council in London to employ

Arboricultural Officers.

33.3.33 Development, particularly during construction or demolition can have a negative impact on the health of trees. However, protective measures can be implemented to ensure harmony between trees and development.

Appendix 5: RBKC Policy CR6

Policy CR 6

Trees and landscape

The Council will require the protection of existing trees and the provision of new trees that compliment existing or create new, high quality green areas which deliver amenity and biodiversity benefits.

To deliver this the Council will:

a. resist the loss of trees unless:
   - i. the tree is dead, dying or dangerous;
   - ii. the tree is causing significant damage to adjacent structures;
   - iii. the tree has little or no amenity value;
   - iv. felling is for reasons of good arboricultural practise.

b. resist development which results in the damage or loss of trees of townscape or amenity value;

c. require where practicable an appropriate replacement for any tree that is felled;

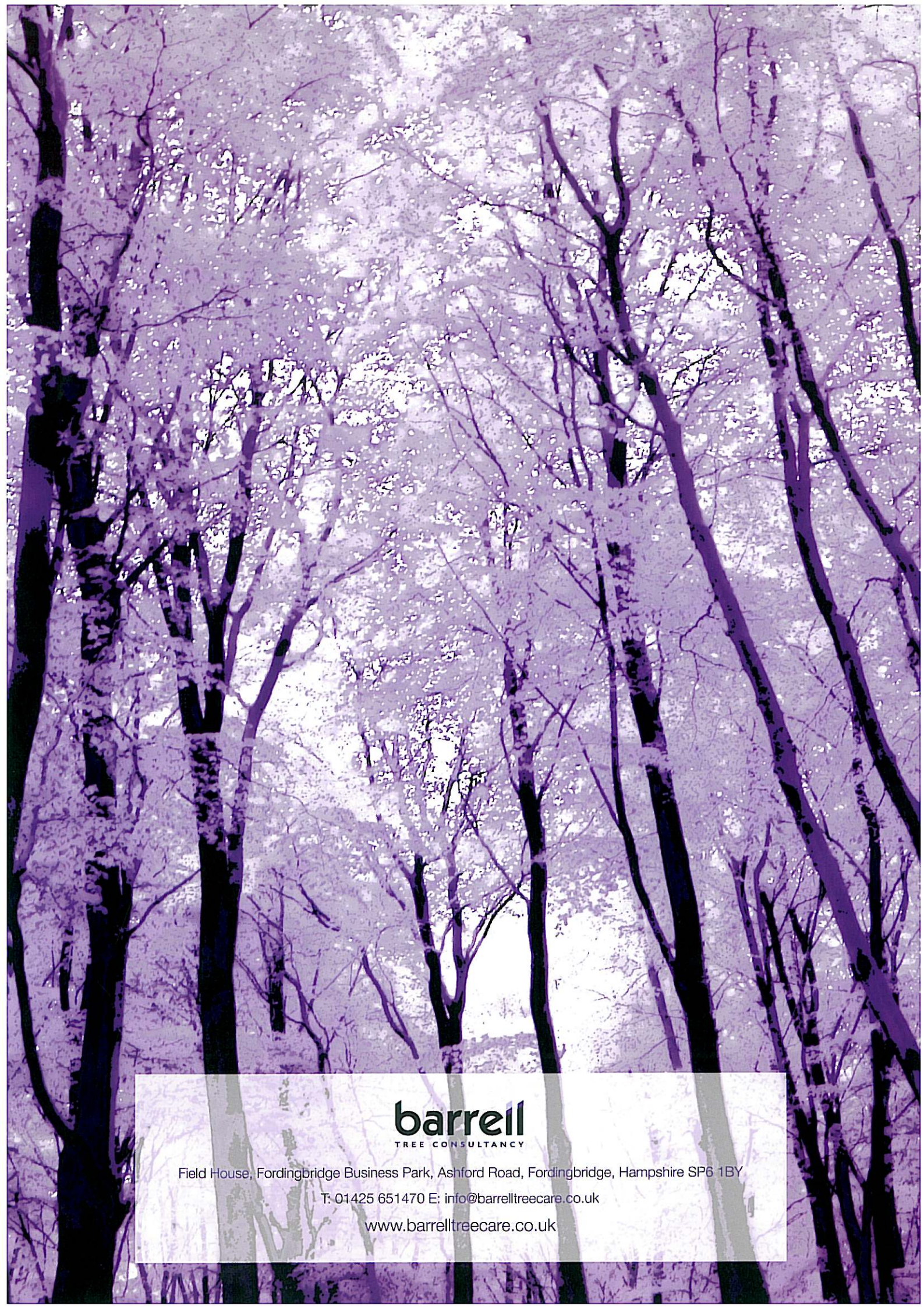
d. require that trees are adequately protected throughout the course of development;

e. require new trees to be suitable species for the location and to be compatible with the surrounding landscape and townscape

f. require landscape design to:
   - i. be fit for purpose and function;
   - ii. be of a high quality and compatible with the surrounding landscape, and townscape

character;
   - iii. clearly defined as public or private space;
   - iv. optimise the benefit to wildlife habitat;

g. serve Tree Preservation Orders or attach planning conditions to protect trees of townscape or amenity value that are threatened by development.



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