



Landmark Trees

ARBORICULTURAL IMPACT ASSESSMENT REPORT FOR:

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London
NW8 6BU

INSTRUCTING PARTY:

SHH Architecture & Interior Design
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Ref: SHH/28AVE/AIA/01b

Date: 15th March 2021

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DOCUMENT HISTORY

Revision	Status	Comments	Date
Rev 0	Approved	For External Issue	21/02/2020
Rev a	DRAFT	For Internal Review (Client / Design Team)	14/01/21
Rev b	Approved	For Full Application	15/03/21

1. SUMMARY

- 1.1 The existing site is a residential property with substantive rear garden containing a number of trees potentially constraining development. The proposal includes a basement extension into the rear garden.
- 1.2 There are 95 trees on the property and adjoining land outside of the application boundary that are within close proximity to the development and need to be assessed. These are judged mostly moderate and low-quality trees, but with high quality trees T's 55, 56, 60, 77, 80, 89, 102 and G104 as standout high quality specimens. All trees are material constraints on development, but these latter require particular consideration. At the other end of the spectrum, six trees are recommended for felling, T90 in particular requires prompt attention regardless of development as poor-quality specimens.
- 1.3 The report has assessed the impacts of the development proposals and concludes there would be at most a low impact on the resource: a small portion of trees will be removed or pruned to facilitate construction. Those removed have more collective than individual specimen value, such that their loss could be mitigated with new planting, bringing its own benefits to a relatively unmanaged resource. Similarly, though pruning here is to serve development, if undertaken to best practice, the scale envisaged should not be altogether untoward in an occupied site.
- 1.4 Whilst the default position is that structures be located outside the Root Protection Area* (RPA) of trees to be retained, there are some modest encroachments that could not be avoided in the design of the scheme. The report has demonstrated that the tree(s) can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with the RPA; the report also proposes a series of mitigation measures to improve the soil environment that is used by the tree for growth. Net impacts are assessed therefore as being low.
- 1.5 Notwithstanding the above assurances, the report sets out a series of recommendations prior and during construction that will ensure impacts to trees are minimised. These are detailed in sections 6.3 and 8 of this report.
- 1.6 In conclusion, the proposal, through following the above recommendations, will have no, or very limited, impact on the existing trees and is acceptable.

* British Standards Institute: Trees in relation to design, demolition and construction BS 5837: 2012 HMSO, London

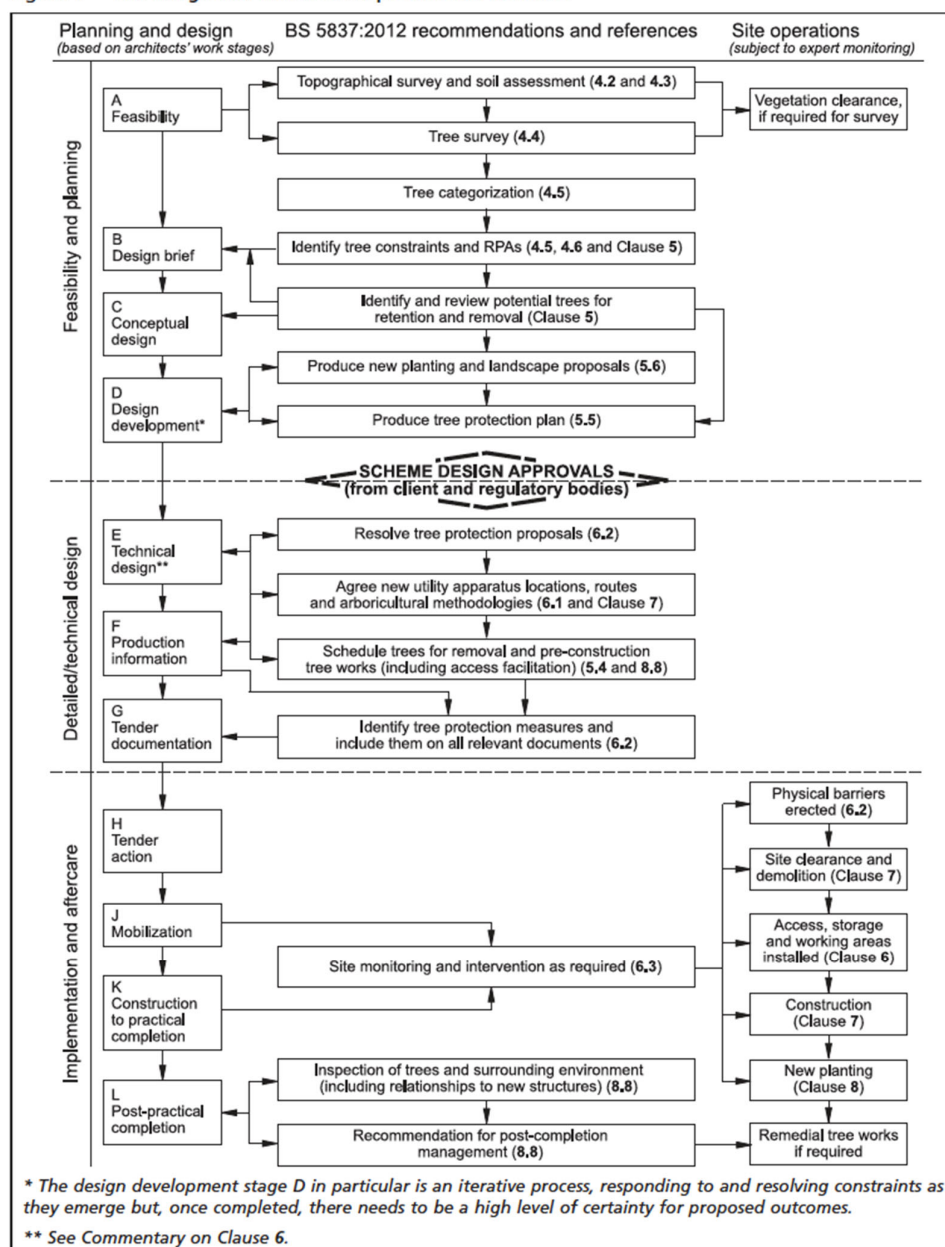
2. INTRODUCTION

2.1 Terms of Reference

- | | |
|-------|---|
| 2.1.1 | This Arboricultural Impact Assessment report has been prepared by Landmark Trees (LT) on behalf of Vinay Mahtani ('the Applicant'), to support a full planning application submitted to the London Borough of Camden ('LBC'). |
| 2.1.2 | <p>The application relates to the construction of a new residential family home in the same location as the original 19th century large mansion house, which was demolished during the 1960s. Specifically, full planning permission is sought for:</p> <p><i>"The proposal is to erect a two-storey dwelling with a mansard storey plus basement in the same location as the original 19th century house, which was demolished during the 1960s. A soft landscaped driveway and turning circle will replace the dilapidated dirt road on the site's south side to provide vehicular access to the new dwelling and a servicing route for emergency service vehicles. The existing tennis court will be upgraded and remain in its current location and a series of small outbuildings are proposed including a pool pavilion, tennis pavilion and a garage."</i></p> |
| 2.1.3 | <p>This report will assess the impact on trees and their constraints, identified in our survey. Although the proposals were known at the time of the survey, Landmark Trees endeavour to survey each site blind, working from a topographical survey, wherever possible, with the constraints plan informing their evolution. The purpose of the report is to provide guidance on how trees and other vegetation can be integrated into construction and development design schemes. The overall aim is to ensure the protection of amenity by trees which are appropriate for retention.</p> |

- 2.1.4 Trees are a material consideration for a Local Planning Authority when determining planning applications, whether or not they are afforded the statutory protection of a Tree Preservation Order or Conservation Area. British Standard BS 5837:2012 Trees in Relation to Design, Demolition and Construction sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and new developments. The Standard recommends a sequence of activities (see Fig.1 overleaf) that starts in the initial feasibility and design phase (RIBA Stage 2 'Concept Design') with a survey to qualify and quantify the trees on site and establish the arboricultural constraints to development (above- and below-ground) to inform the design in an iterative process, and continues with an assessment of the arboricultural impacts of the final design and measures to mitigate such impacts should they be negative. Detailed technical specifications for mitigation and protection measures are devised in the design phase that follows (RIBA Stage 3-4 'Developed and Technical design'), and the sequence ends with the Implementation and Aftercare phase (RIBA Stages 5-7) with the implementation of those measures once planning permission is granted, guided by Arboricultural Method Statements (RIBA Stage 4-5, 'Technical Design and Construction) and professional guidance where appropriate.
- 2.1.5 **This report is produced to support the Design Team to the Scheme Design Approvals stage in the process chart overleaf.**

Figure 1 The design and construction process and tree care



2.2 Drawings Supplied

- 2.2.1 The drawings supplied by the client and relied upon by Landmark Trees in the formulation of our survey plans are:
- Existing site survey: 27286_01-05_PES_REVA
- Proposals: (860)004_PL03 Site Plan - Proposed

2.3 Scope & Limitations of Survey

- 2.3.1 As Landmark Trees' (LT) arboricultural consultant, Kim Dear surveyed the trees on site on 21st January and 13th February 2020, recording relevant qualitative data in order to assess both their suitability for retention and their constraints upon the site, in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations [BS5837:2012].
- 2.3.2 Our survey of the trees, the soils and any other factors, is of a preliminary nature. The trees were SURVEYED on the basis of the Visual Tree Assessment method expounded by Mattheck and Breloer (The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994). LT have not taken any samples for analysis and the trees were not climbed but inspected from ground level.
- 2.3.3 The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development. Tree surveys undertaken after a detailed design has been prepared can identify significant conflicts: in such cases, the nature of and need for the proposed development should be set against the quality and values of affected trees. The extent to which the design can be modified to accommodate those trees meriting retention should be carefully considered. Where proposed development is subject to planning control, a tree survey should be regarded as an important part of the evidence base underpinning the design and access statement
- 2.3.3 A tree survey is generally considered invalid in planning terms after 2 years, but changes in tree condition may occur at any time, particularly after acute (e.g. storm events) or prolonged (e.g. drought) environmental stresses or injuries (e.g. root severance). Routine surveys at different times of the year and within two - three years of each other (subject to the incidence of the above stresses) are recommended for the health and safety management of trees remote from highways or busy access routes. Annual surveys are recommended for the latter.
- 2.3.4 The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

2.4 Survey Data & Report Layout

- 2.4.1 Detailed records of individual trees are given in the survey schedule in Appendix 1. General husbandry recommendations are distinguished at Appendix 2 from minimum requirements to facilitate development which form part of the planning application at Appendix 3. The former may still be relevant to providing a safe site of work, of course. Planning considerations notwithstanding, we trust these necessary recommendations are passed on to relevant parties with due diligence and the trees to be managed appropriately.
- 2.4.2 A site plan identifying the surveyed trees, based on the Instructing Party's drawings / topographical survey is provided in Part 3 of this report. This plan also serves as the Tree Constraints Plan with the theoretical Recommended Protection Areas (RPA's), tree canopies and shade constraints, (from BS5837: 2012) overlain onto it. These constraints are then overlain in turn onto the Instructing Party's proposals to create a second Arboricultural Impact Assessment Plan in Part 3. General observations, discussion, conclusions and recommendations follow, below.

3.0 SITE CHARACTERISTICS

3.1 Property Description & Planning Context



Photograph 1: Aerial view of application site (Source: Google Maps)

- | | |
|-------|--|
| 3.1.1 | This property is located on the eastern side of Avenue Road between Radlett Place and Rudgwick Terrace. It comprises a substantial plot that formerly contained a mansion house. A gatehouse and tennis court are still present. |
| 3.1.2 | The site is relatively level throughout. |
| 3.1.3 | LB Camden do not provide an online list of Tree Preservation Orders but a search of the sites planning history reveals that a number are present. Details of which trees are protected can be obtained by emailing planning@camden.gov.uk . We also understand the site stands within the Elworthy Conservation Area, which will affect the subject trees: it is a criminal offence to prune, damage or fell such trees without permission from the local authority. |
| 3.1.4 | Relevant local planning policies comprise Policy 7.21 of the London Plan 2016 and Policies A3, A5, D1 and D2 of the Camden Local Plan (adopted 3rd July 2017). |

3.2 Soil Description

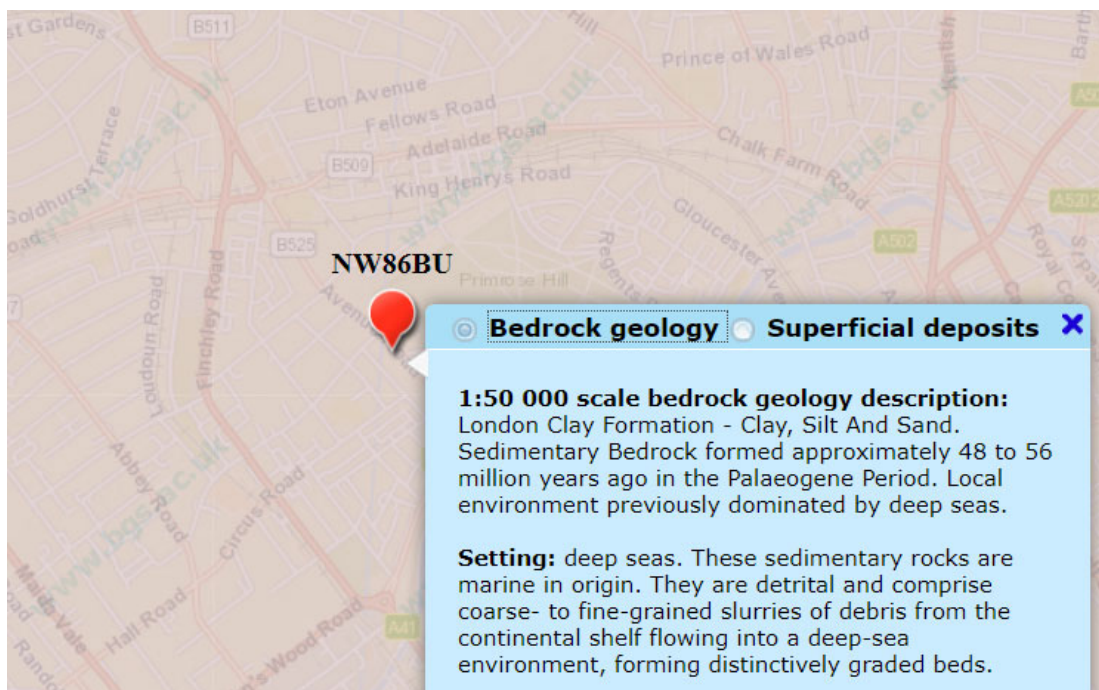


Figure 2: Extract from the BGS Geology of Britain Viewer

- 3.2.1 In terms of the British Geological Survey, the site overlies the London Clay Formation (see indicated location on Fig.1 plan extract below). The associated soils are generally, highly shrinkable clay; e.g. slowly permeable seasonally waterlogged fine loam over clay. Such highly plastic soils are prone to movement: subsidence and heave. The actual distribution of the soil series are not as clearly defined on the ground as on plan and there may be anomalies in the actual composition of clay, silt and sand content.
- 3.2.2 Clay soils are prone to compaction during development with damage to soil structure potentially having a serious impact on tree health. The design of foundations near problematic tree species will also need to take into consideration subsidence risk. Further advice from the relevant experts on the specific soil properties can be sought as necessary.

3.3 Subject Trees

- | | |
|-------|--|
| 3.3.1 | Of the 95 surveyed trees, 8 are category* A (High Quality), 19 are category* B (Moderate Quality), 3 are category B/C (Moderate / Low Quality), 54 are category C (Low Quality), 1 is category C/U (Low / Poor Quality) and 10 are category U (Poor Quality). |
| 3.3.2 | There are a wide range of tree species found on site including cypresses, cherries, dogwood, sorbus, oaks, thorns, saucer magnolia, willows, cabbage tree, holly, false acacia, laburnum, willows, common lime, purple plum, sycamore, palms, horse chestnut, weeping beech, weeping ash, cedars, Austrian pine, common ash, silver birch, London plane and various fruit trees. |
| 3.3.3 | In terms of age demographics there are predominantly early mature specimens present with a few semi-mature and mature trees present. |

*page 9 of: [British Standards Institute: Trees in relation to design, demolition and construction BS 5837: 2012 HMSO, London](#)

- | | |
|-------|--|
| 3.2.4 | Full details of the surveyed trees can be found in Appendix 1 of this report. |
| 3.2.5 | There are recommended works for 26 trees. These are listed in Appendix 2 but particular attention is drawn to the recommendation to fell T90 urgently. |

4.0 DEVELOPMENT CONSTRAINTS

4.1 Primary Constraints

- 4.1.1 A tree's primary constraint on development is the physical space it occupies or requires above and below ground on a given site. The current canopy spreads and heights are noted in our survey; allowance for further growth and broader aspects of juxtaposition are considered under secondary impacts below. With regard to root spread, BS5837 defines the Root Protection Area (RPA) 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.
- 4.1.2 The individual RPA's are calculated in the Tree Schedule in Appendix 1 to this report, or rather the notional radius of that RPA, based on a circular protection zone. The prescribed radius is 12-x stem diameter at 1.5m above ground level, except where composite formulae are used in the case of multi-stemmed trees.
- 4.1.3 Circular RPA's are appropriate for individual specimen trees grown freely, but where there is ground disturbance, the morphology of the RPA can be modified to an alternative polygon, as shown in the diagram below (Figure 2). Alternatively, one need principally remember that RPA's are area-based and not linear – notional rather than fixed entities.

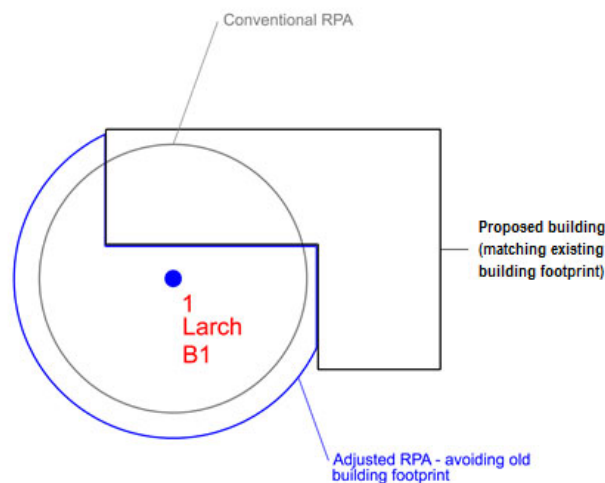


Figure 3– Generic BS 5837 RPA Adjustments (for fictitious site)

- 4.1.4 In BS5837, paragraph 4.6.2 states that RPA's should reflect the morphology and disposition of the roots; 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.

4.1.5 **No *a priori* modifications have been made in this instance, though further investigations are recommended, where the proposals encroach / come near RPA and their modification could have a bearing on the impact assessment.**

4.1.6 In addition to these quantitative assessments, the quality of trees will also be a consideration: Category U trees are discounted from the planning process in view of their limited service life. Again, Category C trees would not normally prevent development individually, unless they provide some particular (screening) function. Nonetheless, they remain material constraints.

4.1.7 At paragraph 5.1.1. BS5837: 2012 notes that “Care should be exercised over misplaced tree preservation; attempts to retain too many or unsuitable trees on a site are liable to result in excessive pressure on the trees during demolition or construction work, or post-completion demands on their removal.”

4.1.7 Only moderate quality trees and above are significant material constraints on development. However, low quality trees comprise a constraint in aggregate, in terms of any collective loss / removal, where replacement planting is generally considered appropriate.

4.1.8 In this instance, the high and moderate quality trees present have the potential to pose significant constraints to the development of the site.

4.2 Secondary Constraints

4.2.1 The second type of constraint produced by trees that are to be retained is that the proximity of the proposed development to the trees should not threaten their future with ever increasing demands for tree surgery or felling to remove nuisance shading (Figure 3), honeydew deposition or perceived risk of harm.

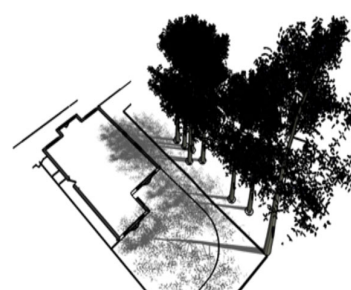


Figure 3 –
Generic Shading Constraints

4.2.2 The shading constraints are crudely determined from BS5837 by drawing an arc from northwest to east of the stem base at a distance equal to the height of the tree, as shown in the diagram opposite. Shade is less of a constraint on non-residential developments, particularly where rooms are only ever temporarily occupied.

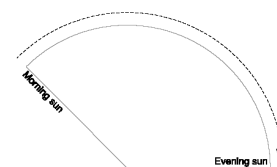


Figure 4 – Shading Arc

4.2.3 This arc (see Figure 4) represents the effects that a tree will have on layout through shade, based on shadow patterns of 1x tree height for a period May to Sept inclusive 10.00-18.00 hrs daily.

4.2.4 Assuming that they will be retained, all of the trees on site have the potential to provide a variety of secondary constraints, including shading, organic deposition and the potential need to maintain crown clearance in the future. The trees along the southern boundary of the site are most likely to give rise to shading constraints. The significance of these constraints will vary depending on the location and proximity to the proposed re-development which is considered below (in Sections 5 & 6). As specified by BS5837, this section (4) of the report considers only the site as it is, not in the light of pending proposals.

Note: Sections 5 & 6 below will now assess the impacts of the proposals upon constraints identified in Section 4 above. Table 1 in Section 5 presents the impacts in tabular form (drawing upon survey data presented in Appendices 1 & 2). Impacts are presented in terms of whole tree removal and the effect on the landscape or partial encroachment (% of RPA) and its effect on individual tree health. Section 6 discusses the table data, elaborating upon the impacts' significance and mitigation.

Table 1: Arboricultural Impact Assessment

(Impacts assessed prior to mitigation and rated with reference to Matheny & Clark (1998))

Hide irrelevant

Show All Trees

Ref: SHH/28AVE/AIA

B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
U	23	False Acacia	Path Construction within RPA	m ² N/A %	Mature	Poor	Moderate	Low	Low	No-dig construction
C/u	25	False Acacia	Path Construction within RPA	m ² N/A %	Mature	Moderate	Moderate	Low	Low	No-dig construction
U	34	Hawthorn, Common	Felled to Facilitate Development	m ² N/A %	Mature	Moderate	N/A	N/A	Very Low	New planting / landscaping
C	38	Willow, corkscrew	Path Construction within RPA	m ² N/A %	Early Mature	Normal	Moderate	Low	Low	No-dig construction
B/c	39	Lime, Common	Bicycle & Bin Store Construction within RPA	m ² N/A %	Early Mature	Normal	Good	Very Low	Very Low	Low-invasive foundation design
C	44	Cypress, Leyland	Felled to Facilitate Development	m ² N/A %	Mature	Moderate	N/A	N/A	Low	New planting / landscaping
C	45	Plum, Purple	Felled to Facilitate Development	m ² N/A %	Early Mature	Moderate	N/A	N/A	Low	New planting / landscaping

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(Impacts assessed prior to mitigation and rated with reference to Matheny & Clark (1998))

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B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
U	46	Sycamore	Felled to Facilitate Development	m ² N/A %	Early Mature	Moderate	Poor	N/A	Very Low	New planting / landscaping
U	48	Sycamore	Felled to Facilitate Development	46.4 m ² 16.02 %	Post-Mature	Poor	N/A	N/A	Very Low	New planting / landscaping
C	51	Holly	Felled to Facilitate Development	m ² N/A %	Mature	Normal	N/A	N/A	Low	New planting / landscaping
C	54	Palm, Chusan	Felled to Facilitate Development	m ² N/A %	Early Mature	Normal	N/A	N/A	Low	New planting / landscaping
A	55	Sycamore	Drive Construction within RPA	m ² N/A %	Mature	Normal	Moderate	Low	Low	No-dig construction
A	56	Chestnut, Horse	Drive Construction within RPA	m ² N/A %	Mature	Normal	Moderate	Very Low	Very Low	No-dig construction
B	57	Chestnut, Horse	Drive Construction within RPA	m ² N/A %	Early Mature	Normal	Moderate	Low	Low	No-dig construction

Table 1: Arboricultural Impact Assessment

(Impacts assessed prior to mitigation and rated with reference to Matheny & Clark (1998))

Hide irrelevant

Show All Trees

Ref: SHH/28AVE/AIA

B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
B	58	Beech, weeping	Felled to Facilitate Development	m ² N/A %	Early Mature	Normal	N/A	N/A	Medium	No-dig construction
B/c	59	Ash, weeping	Felled to Facilitate Development	m ² N/A %	Mature	Normal	N/A	N/A	Medium / Low	New planting / landscaping
A	60	Sycamore	Drive Construction within RPA	m ² N/A %	Mature	Normal	Moderate	Low	Low	No-dig construction
U	61	Cedar	Felled to Facilitate Development	m ² N/A %	Semi-mature	Dead	N/A	N/A	Very Low	No-dig construction
B	62	Cypress, Leyland	Tennis Court Upgrading within RPA	m ² N/A %	Mature	Normal	Moderate	Low	Low	No-dig construction
C	63	Cypress, Leyland	Tennis Court Upgrading within RPA	m ² N/A %	Mature	Moderate	Moderate	Low	Low	No-dig construction
B	64	Chestnut, Horse	Tennis Court Upgrading within RPA	m ² N/A %	Early Mature	Normal	Moderate	Low	Low	No-dig construction

Table 1: Arboricultural Impact Assessment

(Impacts assessed prior to mitigation and rated with reference to Matheny & Clark (1998))

Hide irrelevant

Show All Trees

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B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
B/c	G65	Cypress, Leyland	Tennis Court Upgrading within RPA	m ² N/A %	Semi-mature	Normal	Moderate	Low	Low	No-dig construction
C	75	Apple	Tennis Court Upgrading within RPA	m ² N/A %	Mature	Moderate	Moderate	Low	Low	No-dig construction
B	76	Pine, Austrian	Building Construction within RPA Tennis Court Upgrading within RPA	7.2 m ² 12.99 %	Early Mature	Normal	Moderate	Low	Low	Low-invasive foundation design No-dig construction
A	77	Oak, English	Building Construction within RPA	4.9 m ² 4.33 %	Mature	Normal	Moderate	Very Low	Very Low	Low-invasive foundation design
B	78	Pine	Building Construction within RPA Tennis Court Upgrading within RPA	10.4 m ² 19.88 %	Early Mature	Normal	Moderate	Low	Low	Low-invasive foundation design No-dig construction
A	80	Ash, Common	Building Construction within RPA Tennis Court Upgrading within RPA	m ² N/A %	Mature	Normal	Moderate	TBC	TBC	Low-invasive foundation design No-dig construction
C	81	Cherry, Japanese	Felled to Facilitate Development	m ² N/A %	Early Mature	Normal	N/A	N/A	Low	New planting / landscaping

Table 1: Arboricultural Impact Assessment

(Impacts assessed prior to mitigation and rated with reference to Matheny & Clark (1998))

Hide irrelevant

Show All Trees

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B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
B/c	84	Elder Box	Paving Installation within RPA	m ² N/A %	Mature	Normal	Moderate	Very Low	Very Low	No-dig construction
C	85	cedar blue	Felled to Facilitate Development	m ² N/A %	Early Mature	Normal	N/A	N/A	Low	New planting / landscaping
A	89	Sycamore	Path Construction within RPA Wall Construction within RPA	m ² N/A %	Early Mature	Normal	Moderate	Low	Low	No-dig construction Low-invasive foundation design
U	90	Ash	Felled to Facilitate Development	m ² N/A %	Post-Mature	Dead	N/A	N/A	N/A	New planting / landscaping
B	91	Sycamore	Felled to Facilitate Development	m ² N/A %	Mature	Normal	N/A	N/A	Medium	New planting / landscaping
C	92	Oak, Holm	Felled to Facilitate Development	m ² N/A %	Semi-mature	Normal	N/A	N/A	Low	New planting / landscaping
C	93	Apple, Cultivated	Felled to Facilitate Development	m ² N/A %	Mature	Normal	N/A	N/A	Low	New planting / landscaping

Table 1: Arboricultural Impact Assessment

(Impacts assessed prior to mitigation and rated with reference to Matheny & Clark (1998))

Hide irrelevant

Show All Trees

Ref: SHH/28AVE/AIA

B.S. Cat.	Tree No.	Species	Impact	Tree / RPA Affected	Age	Growth Vitality	Species Tolerance	Impact on Tree Rating	Impact on Site Rating	Mitigation
C	94	Cypress, Lawson	Felled to Facilitate Development	m ² N/A %	Semi-mature	Normal	N/A	N/A	Low	New planting / landscaping
B	96	Chestnut, Horse	Building Construction within RPA	0.4 m ² .35 %	Mature	Normal	Moderate	Very Low	Very Low	Airspade / manual excavation
C	G97	Cypress, Lawson	Felled to Facilitate Development	m ² N/A %	Semi-mature	Normal	N/A	N/A	Low	New planting / landscaping
B	112	Holly	Drive Construction within RPA	m ² N/A %	Early Mature	Normal	Moderate	Medium	Low	No-dig construction
C	115	Hawthorn, Common	Felled to Facilitate Development	m ² N/A %	Young	Normal	N/A	N/A	Low	New planting / landscaping
C	117	Birch	Wall Construction within RPA	m ² N/A %	Semi-mature	Normal	Moderate	Low	Low	Low-invasive foundation design

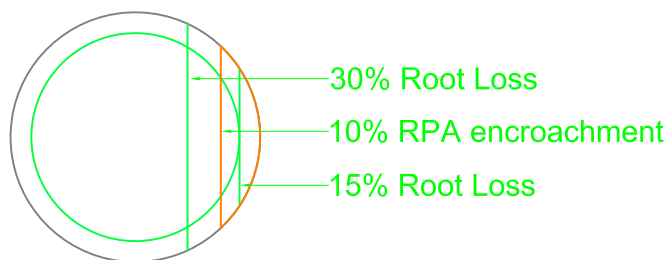
6.0 ARBORICULTURAL IMPLICATIONS

6.1 Rating of Primary Impacts

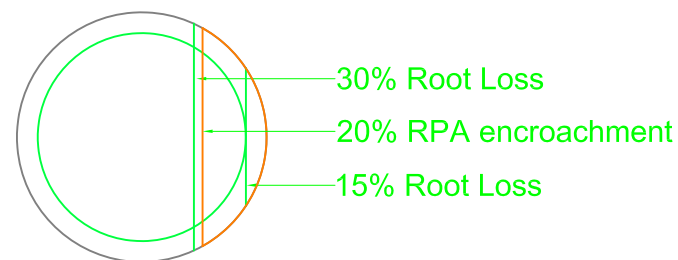
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| 6.1.1 | <p>The principal impacts in the current proposals are the removal of the 19 trees / groups listed in Table 1. In terms of resource management, these comprise a relatively small portion of the whole and must be viewed in the light of the removals recommended in the interests of sound husbandry. Those removed generally have more collective (Category C) than individual specimen value (Category A & B), exceptions being T's 58 and 91. Overall though their loss could be mitigated with new planting, bringing its own benefits of enrichment and diversification to a relatively unmanaged and subsisting resource. Similarly, though pruning of T55 and T89 is required here to serve development, undertaken to best practice, the scale envisaged should not be altogether untoward in a more managed and occupied site. The immediate reduction in canopy cover through felling and / or pruning is therefore is rated as a low impact unlikely to harm either the resource or the wider conservation area.</p> |
| 6.1.2 | <p>Further impacts to retained trees comprise the encroachments of the RPA of 9 trees by proposed new hard surfacing, 3 trees by the tennis pavilion, 1 tree by the pool house, 1 tree by the bicycle and bin stores and 8 trees by the upgrading of the tennis court. Impacts from hard surfacing (including the tennis court) can be readily mitigated with the use of a no-dig construction methodology while the encroachments from the new buildings range from 0.2% to 20% with appropriate constructional variances recommended in each instance.</p> |
| 6.1.3 | <p>In our view, the tree(s) are of a species, age and condition sufficient to remain viable in the circumstances, given that the area lost to encroachment can be compensated for elsewhere, contiguous with the RPA, and provided the series of mitigation measures outlined below are followed to both reduce the immediate impact of working methods and also improve the soil environment that is used by the tree for growth. Supervision and monitoring of such measures will also be essential. Subject to these provisos the net impacts are assessed as being low.</p> |

6.1.4 There is no set RPA encroachment that is immediately permissible. However, at para 5.3.a of BS5837, the project arboriculturist is charged with demonstrating that the tree(s) will remain viable in the instance of RPA encroachment. Whilst there is little research on RPA encroachment itself, there have been various commonly cited studies of root severance (see overleaf). Whilst the RPA is not coextensive with the wider root system, one can make some correlations after Thomas (2014): in average (sic) conditions, a straight line tangential with a tree's canopy would transect 15% of the root system, for another mid-way to the trunk that figure would be 30%. In the current cases, **the impacts are mostly below these two parameters** as can be seen in Plan 2 in the Appendix or where more irregular in profile, can be gleaned from the percentage RPA encroachments in Table 1. There is no precise correlation between % RPA and root impairment or loss. However, in our experience, most RPA tend to exceed the free-grown canopy spread a little (c. x 1.2 -1.5), suggesting by reference to both Thomas and Fig. 5a - 5c overleaf, RPA encroachments marginally understate the percentage root loss. The informal 20% RPA threshold may equate to c. 30% root loss, and 10% RPA encroachment to c. 20% root loss. The assumptions made here are relatively crude and apply more to open grown trees but are nonetheless illustrative.

RPA: 5m

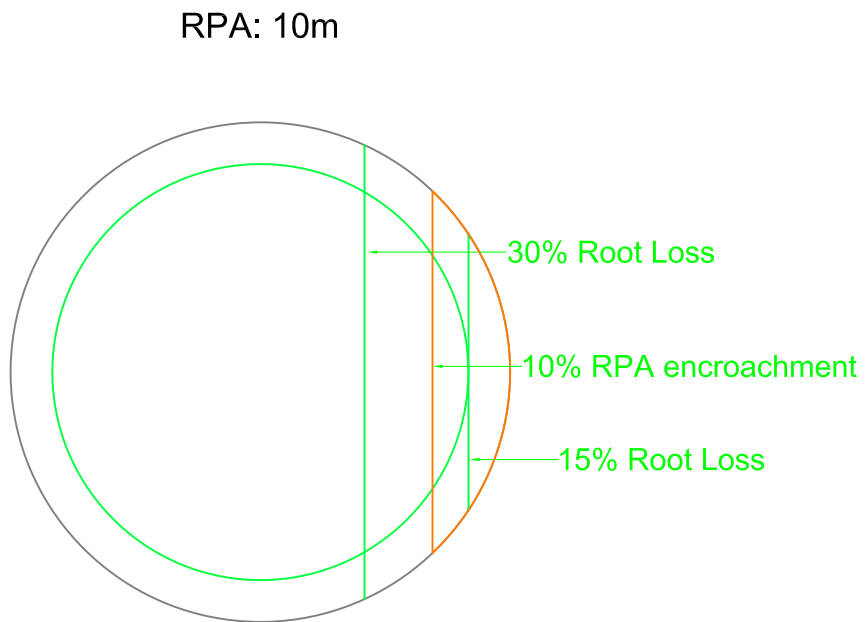


Area 7.98 sq.m. (10.0%)

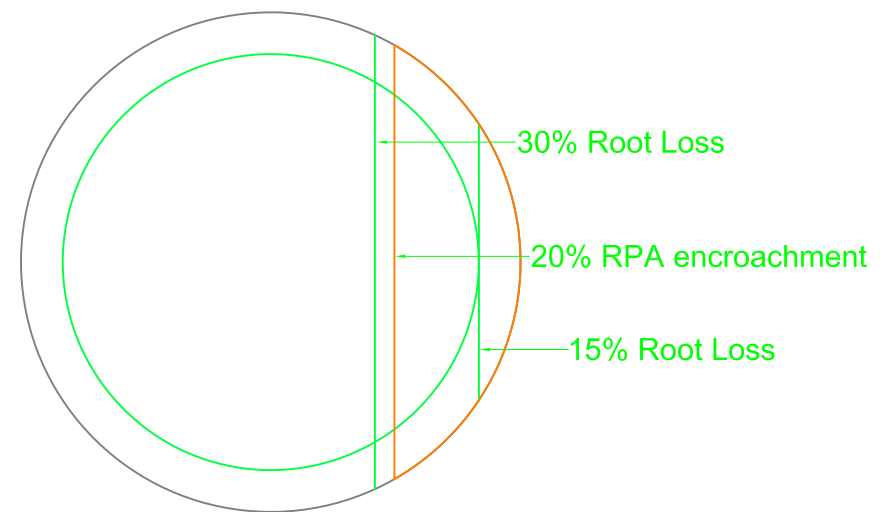


Area 15.96 sq.m. (20.0%)

Figure 5a: approximate correlation between RPA encroachment and actual root loss on a free-grown tree of 5m RPA radius (after Thomas (2014))



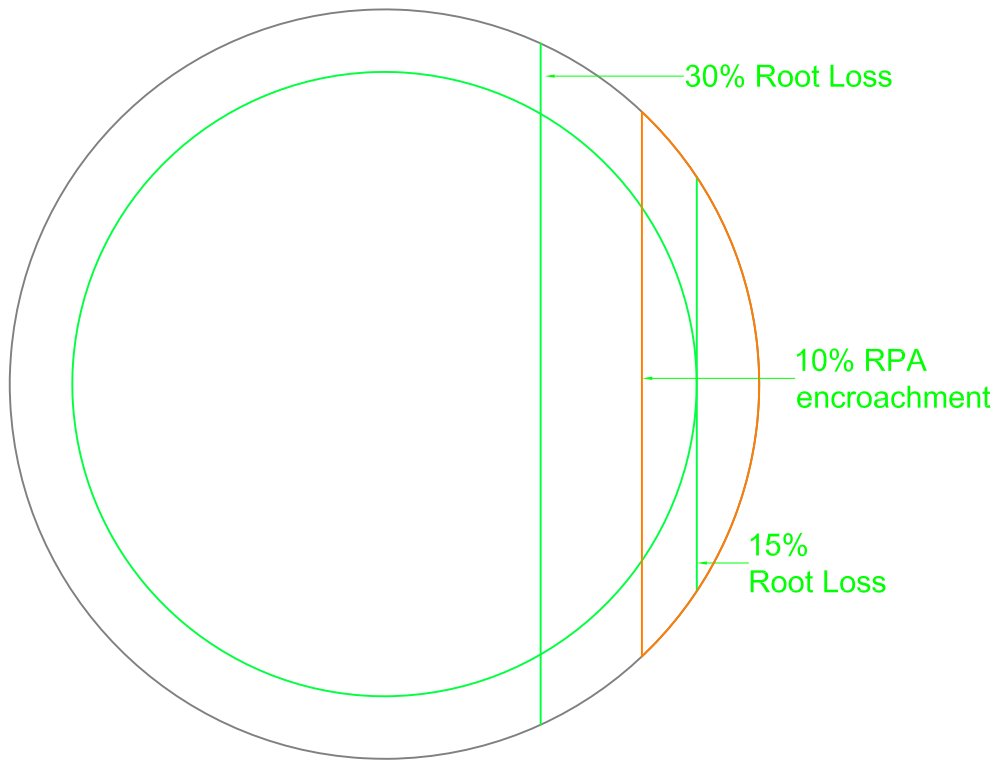
Area 31.17 sq.m. (10.0%)



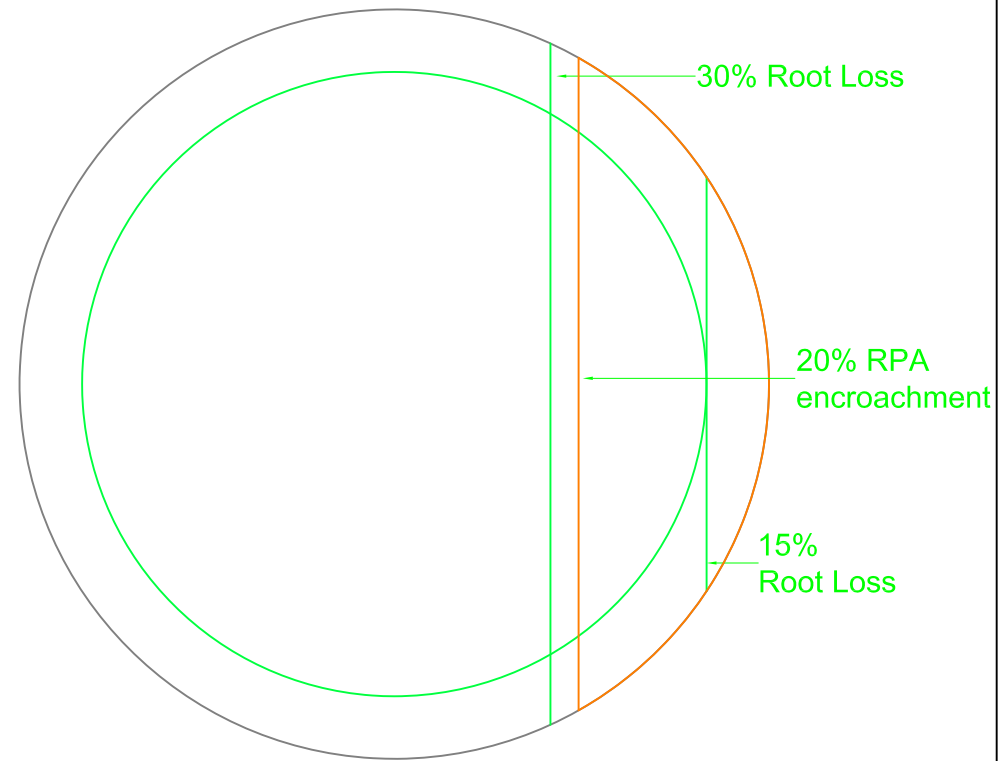
Area 62.33 sq.m. (20%)

Figure 5b: approximate correlation between RPA encroachment and actual root loss on a free-grown tree of 10m RPA radius (after Thomas (2014))

RPA: 15m



Area 70.7 sq.m. (10.0%)



Area 141.4 sq.m. (20.0%)

Figure 5c: approximate correlation between RPA encroachment and actual root loss on a free-grown tree of 15m RPA radius (after Thomas (2014))

- 6.1.5 Published references suggest healthy trees tolerating up to 30-50% root severance in general (Coder, Helliwell and Watson in CEH 2006). **"In practice 50% of roots can sometimes be removed with little problem**, provided there are vigorous roots elsewhere. Inevitably, this degree of root loss will temporarily slow canopy growth and even lead to some dieback" (Thomas 2014). Clearly, it is not the purpose of this report to sanction impacts to test a tree's physiological tolerance, where the guidance recommends the avoidance of impact / RPA encroachment as the default position. However, it has not proved possible at the design stage to avoid such encroachment altogether, and in that regard, the project arboriculturalist has determined that the retained trees can remain viable in the scheme before planning.
- 6.1.6 The trees in question are shown in Table 1 above to be healthy specimens of species with a good resistance to development impacts, and of an age quite capable of tolerating these limited impacts. Nor do the site characteristics suggest specific soil anomalies (e.g. heavy clay) having a bearing on such considerations, provided appropriate measures (e.g. ground protection) are taken.
- 6.1.7 As per BS5837 recommendations (at 5.3.a), the above assessment demonstrates that the tree(s) can remain viable and as per the equivalent hatching in Plan 2 of the Appendices that the area(s) lost to encroachment can be compensated for elsewhere. The guide also recommends (at 5.3.b) the arboriculturalist propose a series of mitigation measures (to improve the soil environment that is used by the tree for growth). These are provided at 6.3 below.

6.2 Rating of Secondary Impacts

- 6.2.1 The juxtaposition of the new dwelling to the retained tree stock means that there will only be limited secondary impacts of honeydew / litter deposition and partial shade. The sycamore T89 is assessed as being the specimen that will give rise to the greatest secondary impacts however, the cutting back of the crown for constructional clearance and the already relatively high crown height mean that neither nuisance from shading or a need to maintain crown clearance are likely to become onerous.

6.3 Mitigation of Impacts

- 6.3.1 The replanting scheme will offer considerable enhancement and replaces mainly low-quality trees. Replacement trees will have the advantage of being specifically selected for the proposed site, healthy and fit-for-purpose. Naturally regenerated trees and saplings tend to be of pioneer / opportunist species (ash and sycamore) which can cause problems for infrastructure, springing up in unsuitable locations. Design can provide for a diverse range of native and ornamental species that will compliment rather than conflict with the proposals, so providing a more sustainable long-term resource for the future. A selection of tree species and cultivars for open and constricted sites is provided in Appendix 4

- 6.3.2 RPA encroachments of >5% area are shown in Plan 2 compensated for elsewhere on contiguous land. Soft ground within the unaffected parts of those RPAs will be treated with a 75mm layer of mulch to be maintained in place for the duration of construction activities.

- 6.3.3 The tennis pavilion encroachments will require the use of specialised foundation techniques, such as mini-piling or pad and raised beam. The foundation pits within the RPA should be trial-excavated by hand using a double-headed spade ("shove-holer") or similar to minimise breadth of hole required for inspection.

- 6.3.4 The limits of excavation within the RPA of T96 will be undertaken manually; any roots encountered will be cleanly pruned back to an appropriate junction with a sharp pruning saw or secateurs. Roots larger than 25mm diameter may only be cut in consultation with an arboriculturalist.

- 6.3.3 The driveway and new hard surfacing encroachment will require a no-dig construction technique, using a cellular confinement system with no fines aggregate for the sub-base. The degree of encroachment (>20% of RPA) means that a permeable paving surface (e.g. gravel or block paving) is required. The finished section is likely to be 150mm above grade, depending on final specification, which will need to be factored into the overall finished site levels. The cellular confinement system with a temporary hard surface (e.g. road stone) can be used for site access during construction and the surface material replaced on completion of construction.
- 6.3.4 The replacement tennis court surface will require a no-dig construction technique, either using a cellular confinement system with no fines aggregate for the sub-base or simply building upon the existing sub-base without disturbing the ground below. Choice of construction method will initially depend upon root penetration within the existing sub-grade. The key principle is not to excavate in the presence of roots and to provide a porous surface to promote healthy soil water relations for future root growth. A further consideration in the use of a more expensive cellular confinement system or similar, may be the claimed reduction in risk of possible future slab / surface displacement by roots of trees growing in paved areas.
- 6.3.5 Nuisance deposition can be further mitigated with routine maintenance, light pruning / deadwooding and the fitting of filtration traps on guttering (see Figure 5 below).
- 6.3.6 The shading impacts can be mitigated by building design, with the provision of dual aspect windows and choice of room layout. Some minor crown reduction may be necessary, but not such as to impose a burden of frequent, repetitive management.

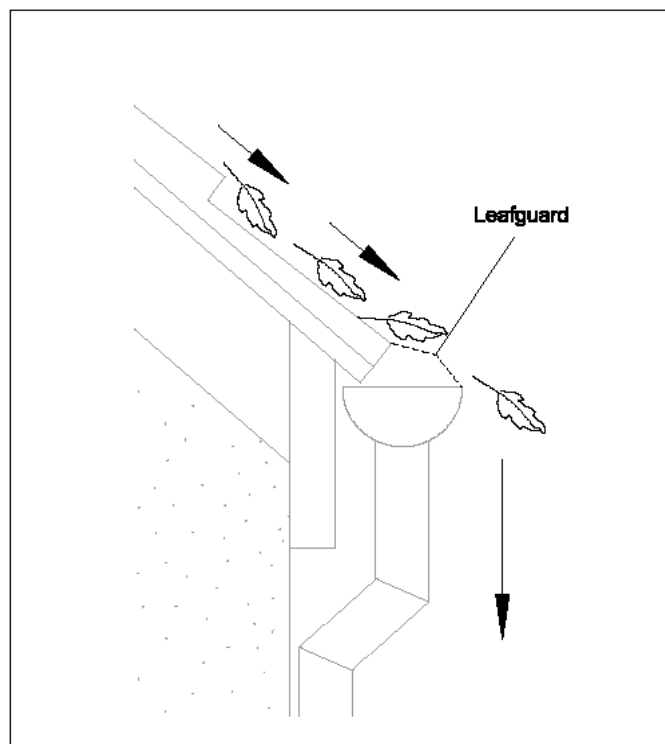


Figure 5: Filtration traps, as shown above, could be fitted on the gutters which can easily be maintained at 2-3m above ground.

7.0 CONCLUSION

- 7.1 The potential impacts of development are all relatively low in terms of both quality of trees removed and also RPA encroachments of trees retained. In the latter case, the report has demonstrated as per BS5837 paragraph 5.3.1 (a) that the tree(s) can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA; the report also proposes as per paragraph 5.3.1 (b) a series of mitigation measures to improve the soil environment that is used by the tree for growth.
- 7.2 The full potential of the impacts can thus be largely mitigated through design and precautionary measures. These measures can be elaborated in Method Statements in the discharge of planning conditions.
- 7.3 The species affected are generally tolerant of root disturbance / crown reduction and the retained trees are generally in good health and capable of sustaining these reduced impacts.
- 7.4 The trees that are recommended for felling are of little individual significance, such that their loss will not affect the visual character of the area.
- 7.5 Therefore, the proposals will not have any significant impact on either the retained trees or wider landscape thereby complying with Policy 7.21 of the London Plan 2016 and Policies A3, A5, D1 and D2 of the Camden Local Plan (adopted 3rd July 2017). Thus, with suitable mitigation and supervision the scheme is recommended to planning.

8.0 RECOMMENDATIONS

8.1 Specific Recommendations

- 8.1.1 Tree works recommendations in Appendix 2 are not part of the current application, but requirements of general maintenance that will need to be applied for (subject to para. 3.3 of this report and any other relevant constraints in planning or leasehold) by the client separately. Consent for the current planning application does not impart any consent for the Appendix 2 maintenance works. Please note, though, the owner and / or manager of a property have a duty to maintain a safe site of work and to protect occupiers of the surrounding land / members of the public from tree hazards. Works recommended in this report should be enacted in a timely fashion by the relevant party regardless of the progress of the development.
- 8.1.2 Recommendations for works required to facilitate development are found in Appendix 3 and a selection of columnar tree species cultivars for constricted sites provided in Appendix 4. Any tree removals recommended within this report should only be carried out with local authority consent.
- 8.1.3 Excavation and construction impacts within the RPA's of trees identified in Table 1 above, will need to be controlled by method statements specifying mitigation methods suggested in para 6.3 above and by consultant supervision as necessary. These method statements can be provided as part of the discharge of conditions.
- 8.1.4 Replace felled trees with native ornamental nursery stock under current best practice; i.e. conforming to and planted in accordance with the following:

- BS8545: 2014 Code of Practice for Trees from Nursery to Landscape
- BS 3936-1: 1992 Nursery stock. Specification for trees and shrubs; and
- BS 5236:1975 Cultivation and Planting of Trees in the Advanced Nursery Stock Category.
- All replacement stock should be planted and maintained as detailed in BS 4428:1989 (Section 7): Recommendations for General Landscape Operations.

8.2 General Recommendations for Sites Being Developed with Trees

- | | |
|-------|--|
| 8.2.1 | Any trees which are in close proximity to the proposed development should be protected with a Tree Protection Barrier (TPB). Protective barrier fencing should be installed immediately following the completion of the tree works, remaining in situ for the entire duration of the development unless otherwise agreed in writing by the Council. It should be appropriate for the intensity and proximity of the development, usually comprising steel, mesh panels 2.4m in height ('Heras') and should be mounted on a scaffolding frame (shown in Fig 2 of BS5837:2012). The position of the TPB can be shown on plan as part of the discharge of conditions, once the layout is agreed with the planning authority. The TPB should be erected prior to commencement of works, remain in its original form on-site for the duration of works and be removed only upon full completion of works. |
| 8.2.2 | A TPB may no longer be required during soft landscaping work but a full arboricultural assessment must be performed prior to the undertaking of any excavations within the RPA of a tree. This will inform a decision about the requirement of protection measures. It is important that all TPBs have permanent, weatherproof notices denying access to the RPA. |
| 8.2.3 | The use of heavy plant machinery for building demolition, removal of imported materials and grading of surfaces should take place in one operation. The necessary machinery should be located above the existing grade level and work away from any retained trees. This will ensure that any spoil is removed from the RPAs. It is vital that the original soil level is not lowered as this is likely to cause damage to the shallow root systems. |
| 8.2.4 | Any pruning works must be in accordance with British Standard 3998:2010 Tree work [BS3998]. |
| 8.2.5 | Where sections of hard surfacing are proposed in close proximity to trees, it is recommended that "No-Dig" surfacing be employed in accordance with BS5837:2012 and 'The Principles of Arboricultural Practice: Note 1, Driveways Close to Trees, AAIS 1996 [APN1]'. |
| 8.2.6 | If the RPA of a tree is encroached by underground service routes then BS5837:2012 and NJUG VOLUME 4 provisions should be employed. If it is deemed necessary, further arboricultural advice must be sought. |
| 8.2.7 | Numerous site activities are potentially damaging to trees e.g. parking, material storage, the use of plant machinery and all other sources of soil compaction. In operating plant, particular care is required to ensure that the operational arcs of excavation and lifting machinery, including their loads, do not physically damage trees when in use. |

- 8.2.8 To enable the successful integration of the proposal with the retained trees, the following points will need to be taken into account:
- 1) Plan of underground services.
 - 2) Schedule of tree protection measures, including the management of harmful substances.
 - 3) Method statements for constructional variations regarding tree proximity (e.g. foundations, surfacing and scaffolding).
 - 4) Site logistics plan to include storage, plant parking/stationing and materials handling.
 - 5) Tree works: felling, required pruning and new planting. All works must be carried out by a competent arborist in accordance with BS3998.
 - 6) Site supervision: the Site Agent must be nominated to be responsible for all arboricultural matters on site. This person must:
 - be present on site for the majority of the time;
 - be aware of the arboricultural responsibilities;
 - have the authority to stop work that is causing, or may cause harm to any tree;
 - ensure all site operatives are aware of their responsibilities to the trees on site and the consequences of a failure to observe these responsibilities;
 - make immediate contact with the local authority and/or a retained arboriculturalist in the event of any tree related problems occurring.
- 8.2.9 These points can be resolved and approved through consultation with the planning authority via their Arboricultural Officer.
- 8.2.10 The sequence of works should be as follows:
- i) initial tree works: felling, stump grinding and pruning for working clearances;
 - ii) installation of TPB for demolition & construction;
 - iii) installation of underground services;
 - iv) installation of ground protection;
 - v) main construction;
 - vi) removal of TPB;
 - vii) soft landscaping.

9.0 COMPLIANCE: Trees and the Planning System

- 9.1 Under the UK planning system, local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for proposed development. The potential effect of development on trees, whether statutorily protected (e.g. by a tree preservation order or by their inclusion within a conservation area) or not, is a material consideration that is taken into account in dealing with planning applications. Where trees are statutorily protected, it is important to contact the local planning authority and follow the appropriate procedures before undertaking any works that might affect the protected trees.
- 9.2 The nature and level of detail of information required to enable a local planning authority to properly consider the implications and effects of development proposals varies between stages and in relation to what is proposed. Table B.1 provides advice to both developers and local authorities on an appropriate amount of information. The term “minimum detail” is intended to reflect information that local authorities are expected to seek, whilst the term “additional information” identifies further details that might reasonably be sought, especially where any construction is proposed within the RPA.
- 9.3 This report delivers information appropriate to a full planning application and to these specific proposals as per BS5837 Table B.1 below, providing both minimum details and further additional material in the form of general tree protection recommendations and constructional variation.

Table B.1 Delivery of tree-related information into the planning system

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions)	Existing and proposed finished levels
	Tree retention/removal plan (finalized)	Tree protection plan
	Retained trees and RPAs shown on proposed layout	Arboricultural method statement – heads of terms
	Strategic hard and soft landscape design, including species and location of new tree planting	Details for all special engineering within the RPA and other relevant construction details
Reserved matters/ planning conditions	Arboricultural impact assessment	
	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method	Arboricultural site monitoring schedule
	Dimensioned tree protection plan	Tree and landscape management plan
	Arboricultural method statement – detailed	Post-construction remedial works
	Schedule of works to retained trees, e.g. access facilitation pruning	Landscape maintenance schedule
	Detailed hard and soft landscape design	

10.0 REFERENCES

- Barlow JF & Harrison G. 1999. Shade By Trees, Arboricultural Practice Note 5, AAIS, Farnham, Surrey.
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- Centre for Ecology & Hydrology. 2006. Tree Roots in the Built Environment, HMSO, London.
- Helliwell R (1980) Provision for New Trees; Landscape Design; July/August issue
- International Society of Arboriculture (ISA). 1994. The Landscape Below Ground. ISA, Champaign, Illinois. USA.
- Lonsdale D 1999. Research for Amenity Trees No.7: Principles of Tree Hazard Assessment and Management, HMSO, London.
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- Mattheck C. & Breloer H. 1994. Research for Amenity Trees No.2: The Body Language of Trees, HMSO, London.
- Thomas P, 2000 & 2014. Trees: Their Natural History, Cambridge University Press, Cambridge.
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Landmark Trees

Caveats

This report is primarily an arboricultural report. Whilst comments relating to matters involving built structures or soil data may appear, any opinion thus expressed should be viewed as qualified, and confirmation from an appropriately qualified professional sought. Such points are usually clearly identified within the body of the report. It is not a full safety survey or subsidence risk assessment survey. These services can be provided but a further fee would be payable. Where matters of tree condition with a safety implication are noted during a survey they will of course appear in the report.

A tree survey is generally considered invalid in planning terms after 2 years, but changes in tree condition may occur at any time, particularly after acute (e.g. storm events) or prolonged (e.g. drought) environmental stresses or injuries (e.g. root severance). Routine surveys at different times of the year and within two - three years of each other (subject to the incidence of the above stresses) are recommended for the health and safety management of trees remote from highways or busy access routes. Annual surveys are recommended for the latter.

Tree works recommendations are found in the Appendices to this report. It is assumed, unless otherwise stated ("ASAP" or "Option to") that all husbandry recommendations will be carried out within 6 months of the report's first issue. Clearly, works required to facilitate development will not be required if the application is shelved or refused. However, necessary husbandry work should not be shelved with the application and should be brought to the attention of the person responsible, by the applicant, if different. Under the Occupiers Liability Act of 1957, the owner (or his agent) of a tree is charged with the due care of protecting persons and property from foreseeable damage and injury.' He is responsible for damage and/or nuisance arising from all parts of the tree, including roots and branches, regardless of the property on which they occur. He also has a duty under The Health and Safety at Work Act 1974 to provide a safe place of work, during construction. Tree works should only be carried out with local authority consent, where applicable.

Inherent in a tree survey is assessment of the risk associated with trees close to people and their property. Most human activities involve a degree of risk, such risks being commonly accepted if the associated benefits are perceived to be commensurate.

Risks associated with trees tend to increase with the age of the trees concerned, but so do many of the benefits. It will be appreciated, and deemed to be accepted by the client, that the formulation of recommendations for all management of trees will be guided by the cost-benefit analysis (in terms of amenity), of tree work that would remove all risk of tree related damage.

Prior to the commencement of any tree works, an ecological assessment of specific trees may be required to ascertain whether protected species (e.g. bats, badgers and invertebrates etc.) may be affected.



Landmark Trees

PART 2 – APPENDICES

APPENDIX 1

TREE SCHEDULE

Botanical Tree Names

Acacia, False (Robinia)	: Robinia Pseudoacacia	Holly, Common/English	: Ilex aquifolium
Apple	: Malus sp	Laburnum, Common	: Laburnum anagyroides
Apple, Crab	: Malus sylvestris	Lime, Common	: Tilia x europea
Ash, Common	: Fraxinus excelsior	Magnolia, Saucer	: Magnolia x soulangeana
Ash, Claret	: Fraxinus excelsior 'Pendula'	Oak, English	: Quercus robur
Beech, Common	: Fagus sylvatica 'Pendula'	Palm, Chusan	: Trachycarpus fortunei
Beech, Copper	: Fagus sylvatica f. purpurea	Pear, Callery	: Pyrus calleryana
Birch, Silver	: Betula pendula	Pear, Common	: Pyrus communis
Cabbage Tree	: Cordyline australis	Pear, Chanticleer	: Pyrus calleryana
Cedar	: Cedrus spp	'Chanticleer'	
Cherry	: Prunus spp	Pine, Austrian	: Pinus nigra
Cherry, Wild cherry /Gean	: Prunus avium	Pine, Scots	: Pinus sylvestris
Chestnut, Horse	: Aesculus hippocastanum	Plane, London	: Platanus acerifolia
Cockspur	: Crataegus prunifolia	Plum, Purple	: Prunus cerasifera 'Nigra'
Cypress, Lawson	: Chamaecyparis lawsonia	Strawberry Tree	: Arbutus unedo
Cypress, Leyland	: Cupressus x leylandii	Sycamore	: Acer pseudoplatanus
Dogwood	: Cornus spp	Willow, Corkscrew	: Salix matsudana
Elder, box	: Acer negundo	Willow, Goat	: Salix caprea
Hawthorn, Common	: Crataegus monogyna		

Notes for Guidance:

1. Height describes the approximate height of the tree measured in metres from ground level.
2. The Crown Spread refers to the crown radius in meters from the stem centre and is expressed as an average of NSEW aspect if symmetrical.
3. Ground Clearance is the height in metres of crown clearance above adjacent ground level.
4. Stem Diameter (Dm) is the diameter of the stem measured in millimetres at 1.5m from ground level for single stemmed trees. BS 5837:2012 formula (Section 4.6) used to calculate diameter of multi-stemmed trees. Stem Diameter may be estimated where access is restricted and denoted by '#'.
5. Protection Multiplier is 12 and is the number used to calculate the tree's protection radius and area
6. Protection Radius is a radial distance measured from the trunk centre.
7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak), Dead (dead or dying tree).
8. Structural Condition - Good (no or only minor defects), Fair (remediable defects), Poor - Major defects present.
9. Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
10. B.S. Cat refers to (British Standard 5837:2012 section 4.5) and refers to tree/group quality and value; 'A' – High, 'B' - Moderate, 'C' - Low, 'U' - Unsuitable for retention. The following colouring has been used on the site plans:
 - High Quality (A) (Green),
 - Moderate Quality (B) (Blue),
 - Low Quality (C) (Grey),
 - Unsuitable for Retention (U) (Red)
11. Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
12. Useful Life is the tree's estimated remaining contribution in years.



Site: 28-30 Avenue Road

Date: 21/01/20 & 13/02/20

Appendix 1

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: SHH/28AVE/AIA

BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
1	Cypress, Lawson	10	2111	1.5	210	Semi-mature	2.5	Normal	Good	C	2	40+	Remote survey only (RS)
2	Cypress, Lawson	8	1211	1.5	91	Young	1.1	Normal	Poor	U		<10	Remote survey only (RS) Collapsing multi-stem sparse to north
3	Cherry, Japanese	8	4222	3.0	225	Semi-mature	2.7	Normal	Good	C	2	20+	
4	Cherry, Japanese	8	5223	3.5	300	Semi-mature	3.6	Normal	Good	C	2	20+	Remote survey only (RS)
5	Cherry, Wild (Gean)	6	1.5	2.0	90	Young	1.1	Normal	Good	C	2	20+	Perhaps a little close to building
8	Dogwood	4	0221	2.0	120	Semi-mature	1.4	Normal	Fair	C	2	40+	Poor Form



Site: 28-30 Avenue Road
Date: 21/01/20 & 13/02/20

Appendix 1

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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
9	Cherry, Wild (Gean)	6	2222	2.5	150	Semi-mature	1.8	Normal	Good	C	2	20+	
g10	Sorbus species	4	1111	2.5	45	Young	0.5	Normal	Fair	C	2	>40	group 4 newly planted staked specimens
11	Oak, Holm	11	3344	2.0	320	Semi-mature	3.8	Normal	Good	B	2	40+	A tree with insignificant defects
12	Hawthorn, Common	4	2111	0.5	85	Young	1.0	Normal	Good	C	2	40+	replaced smoke bush
13	Cypress, Lawson	8	1.5	0.5	210	Semi-mature	2.5	Normal	Good	C	2	40+	
14	Cypress, Lawson	10	2222	0.5	300	Semi-mature	3.6	Normal	Good	B	2	40+	



Site: 28-30 Avenue Road

Date: 21/01/20 & 13/02/20

Appendix 1

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: SHH/28AVE/AIA

BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
15	Magnolia, Saucer	6	3331	2.5	180	Early Mature	2.2	Normal	Fair	C	2	20+	Lost co-dominant stem
G16	cypress	3	2111	0.5	150	Semi-mature	1.8	Normal	Fair	C	2	40+	group 6 cypress, fig and shrubs
17	Willow, Goat	11	6645	2.5	500	Mature	6.0	Normal	Fair	C	2	20+	Pollarded at 3-4m
18	Cabbage Tree	5	1	3.0	200	Mature	2.4	Normal	Good	C	2	20+	
19	Holly	3.5	2002	1.5	200	Mature	2.4	Moderate	Poor	U		<10	Honey fungus at base
20	Oak, Holm	9	4223	3.0	290	Semi-mature	3.5	Normal	Fair	C	2	>40	Suppressed by nearby tree



Site: 28-30 Avenue Road

Date: 21/01/20 & 13/02/20

Appendix 1

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: SHH/28AVE/AIA

BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
21	Palm	6	0111	4.5	140	Semi-mature	1.7	Moderate	Fair	C	2	10+	Suppressed by T23
23	False Acacia	15	1453	6.0	690	Mature	8.3	Poor	Poor	U		<10	Decay in stem 0-6m, cavity opening at base, wood pecker Deadwood/ dieback through out crown
24	False Acacia	16	3445	3.5	490	Mature	5.9	Moderate	Fair	C	2	10+	Deadwood throughout crown, Honeyfungus- see 25 Included bark in main fork Minor decay/ bleeding on lower stem
25	False Acacia	16	5545	3.0	470	Mature	5.6	Moderate	Fair	C/u	2	10+	Honeyfungus, Minor deadwood Lost co-dominant secondary limb SW 5m Minor decay/ bleeding on lower stem
26	Cherry, Wild (Gean)	17	8778	2.5	700	Mature	8.4	Moderate	Fair	B	2	20+	Possible Ganoderma bracket emerging SW? Shallow mower Included bark in primary forks Taps solid
G28	Laburnum	6	2	2.0	220	Semi-mature	2.6	Normal	Fair	C	2	20+	leans North, cut back from house



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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
34	Hawthorn, Common	8	1333	2.5	400	Mature	4.8	Moderate	Poor	U		<10	Decayed husk of a stem Significant lean South
38	Willow, corkscrew	14	4355	4.5	283	Early Mature	3.4	Normal	Fair	C	2	20+	Weak primary fork at base
39	Lime, Common	17	5543	3.0	385	Early Mature	4.6	Normal	Fair	B/c	2	20+	Weak primary fork at 1.5m
44	Cypress, Leyland	12	3211	3.0	350	Mature	4.2	Moderate	Fair	C	2	20+	Range 200-400 dm, N remnant of x 2 rows Topped at 10m 10 stems, raised soil level.
45	Plum, Purple	5	5233	3.0	220	Early Mature	2.6	Moderate	Fair	C	2	10+	Sprawling habit, canker in N stem Poor pruning positioned at other end of g44
46	Sycamore	13	3222	6.5	550	Early Mature	6.6	Moderate	Poor	U		<10	Decay in stem and base, pollarded Kretzschmaria fungus



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
48	Sycamore	8	2352	2.5	800	Post-Mature	9.6	Poor	Poor	U		<10	Decayed pollard, ganoderma at base, Flammulina on stem with squirrel damage Squirrel damaged / dead eccentric regrowth
49	Holly	7	2333	1.0	281	Early Mature	3.4	Moderate	Fair	C	2	20+	Suppressed by nearby tree Deadwood (Minor), multi stem with crossing branches
G50	Cypress, Leyland	11	3	2.0	300	Semi-mature	3.6	Normal	Fair	C	2	40+	group of 4
51	Holly	8	3222	1.5	410	Mature	4.9	Normal	Fair	C	2	40+	
52	Cherry, Wild (Gean)	7	5233	2.5	277	Semi-mature	3.3	Normal	Poor	U		20+	Semi- collapsed tree with weak fork Bleeding canker & deadwood
53	Holly	7	2243	1.5	367	Early Mature	4.4	Normal	Fair	C	2	20+	Pollarded at 2-3 m Poor form



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
54	Palm, Chusan	6	0.5	3.0	200	Early Mature	2.4	Normal	Good	C	2	20+	
55	Sycamore	20	8748	5.0	780	Mature	9.4	Normal	Good	A	2	40+	Fused branches bracing primary fork Slightly leaning to W
56	Chestnut, Horse	20	4655	3.0	840	Mature	10.1	Normal	Fair	A	2	40+	Asymmetry (significant) Decayed wound E base, substantial but occluded
57	Chestnut, Horse	15	5244	2.0	500	Early Mature	6.0	Normal	Fair	B	2	40+	Swept upper stem to N
58	Beech, weeping	14	8237	3.0	525	Early Mature	6.3	Normal	Fair	B	2	20+	Substantial decay in S limb wound 4 m south
59	Ash, weeping	15	8143	3.5	600	Mature	7.2	Normal	Poor	B/c	2	20+	Lost co-dominant limb on S stem with wood pecker hole at 3m Significant asymmetry to B with cavities in pruning wounds woodpecker damage, needs climbing inspection



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
60	Sycamore	21	9574	4.5	895	Mature	10.7	Normal	Fair	A	2	40+	Daldinia decay fungi on branches brackets at 3.5 m south
61	Cedar	10	3	2.0	230	Semi-mature	2.8	Dead	Poor	U			Dead
62	Cypress, Leyland	16	4333	2.0	580	Mature	7.0	Normal	Good	B	2	40+	
63	Cypress, Leyland	14	4222	2.0	400	Mature	4.8	Moderate	Fair	C	2	10+	Main stem ripped out at 3m, large wound Laterals have taken lead with weak attachment
64	Chestnut, Horse	12	3542	3.5	390	Early Mature	4.7	Normal	Fair	B	2	20+	Future specimen, acute fork, naturally braced Gradually root N
G65	Cypress, Leyland	10	2	1.0	250	Semi-mature	3.0	Normal	Good	B/c	2	20+	Close to building Overgrown 12 trees, close spaced



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
66	Sycamore	17	5544	6.0	500	Early Mature	6.0	Normal	Fair	B	2	20+	Remote survey only (RS) Restricted rooting in tarmac, ivy clad, historically topped/
67	Lime, Common	16	4344	4.0	500	Early Mature	6.0	Normal	Fair	B	2	20+	Remote survey only (RS) Restricted rooting, -- ivy clad, historically topped/ tipped
68	Lime, Common	18	5455	4.0	525	Early Mature	6.3	Normal	Fair	B	2	20+	Remote survey only (RS) Restricted rooting, -- ivy clad, historically topped/ tipped
72	Sycamore	18	4233	4.0	550	Mature	6.6	Moderate	Fair	C	2	10+	Ivy smothered Low live crown ratio
73	Cherry, Wild (Gean)	12	1424	2.0	320	Early Mature	3.8	Moderate	Fair	C	2	10+	Ivy smothered Low live crown ratio
74	Holly	8	2322	1.0	189	Early Mature	2.3	Moderate	Fair	C	2	10+	Ivy smothered Low live crown ratio



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
75	Apple	5	4223	1.0	255	Mature	3.1	Moderate	Fair	C	2	10+	Topped at 2.5m
76	Pine, Austrian	11	3433	2.5	350	Early Mature	4.2	Normal	Good	B	1	40+	stubs
77	Oak, English	18	8786	2.0	500	Mature	6.0	Normal	Good	A	2	40+	Ivy clad 3 low branches from 3m
78	Pine	11	3433	2.0	340	Early Mature	4.1	Normal	Good	B	1	40+	Ivy clad
79	Cockspar	7	1222	2.0	150	Semi-mature	1.8	Moderate	Fair	C	2	40+	Ivy clad
80	Ash, Common	21	7877	3.5	850	Mature	10.2	Normal	Fair	A	2	40+	Ivy clad Ganoderma decay fungi on stem decay detect



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
81	Cherry, Japanese	5	4224	1.5	200	Early Mature	2.4	Normal	Fair	C	2	20+	Mower damage to surface roots
G82	Cypress, Lawson	9	1111	1.0	150	Early Mature	1.8	Normal	Fair	C	2	20+	Vertical lateral X 3
83	Apple, Crab	6	3211	3.0	200	Early Mature	2.4	Moderate	Fair	C	2	20+	Suppressed Decay in stem
84	Elder Box	15	5666	2.0	540	Mature	6.5	Normal	Fair	B/c	2	40+	Early decay in primary wounds, erratic habit Natural bracing
85	cedar blue	8	1222	1.0	295	Early Mature	3.5	Normal	Fair	C	2	20+	Suppressed by nearby tree
89	Sycamore	16	5456	5.0	550	Early Mature	6.6	Normal	Good	A	2	40+	



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
90	Ash	17	5345	5.0	840	Post-Mature	10.1	Dead	Poor	U	3	<10	Substantial basal decay/ cavity collapsed into t91
90a	Magnolia, Saucer	8	4454	2.0	300	Mature	3.6	Normal	Good	B	2	20+	
90b	Magnolia, Saucer	6	2323	2.5	200	Early Mature	2.4	Normal	Good	B	2	20+	
91	Sycamore	15	5641	4.0	620	Mature	7.4	Normal	Fair	B	2	40+	has t90 hung up in crown, needs climbing inspection of damage
92	Oak, Holm	7	4351	1.5	250	Semi-mature	3.0	Normal	Fair	C	2	40+	Topiary leans south
93	Apple, Cultivated	6	3422	2.0	200	Mature	2.4	Normal	Fair	C	2	20+	



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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
94	Cypress, Lawson	8	1211	1.0	150	Semi-mature	1.8	Normal	Fair	C	2	20+	
96	Chestnut, Horse	12	4535	4.0	500	Mature	6.0	Normal	Good	B	2	20+	Ivy clad
G97	Cypress, Lawson	4	1111	0.0	90	Semi-mature	1.1	Normal	Fair	C	2	20+	group planted as hedge with arch
98	Birch, Silver	11	1533	3.0	280	Early Mature	3.4	Normal	Good	C	2	40+	leans north
99	Birch, Silver	14	3554	3.0	430	Mature	5.2	Normal	Good	B	2	20+	Cup fork at 2.5m Deadwood (Minor)
100	Birch, Silver	5	3413	2.0	210	Semi-mature	2.5	Moderate	Fair	C	2	10+	Suppressed Lost leader



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
101	Leylandi	11	3433	2.0	400	Mature	4.8	Normal	Good	C	2	20+	
102	Plane, London	20	9899	6.0	1100	Mature	13.2	Normal	Fair	A	2	40+	Remote survey only (RS) Crown reduced
103	Pear, common	4	1222	2.0	130	Semi-mature	1.6	Normal	Good	C	2	20+	
G10 4	Plane, London	20	7	6.0	950	Mature	11.4	Normal	Fair	A	2	40+	Remote survey only (RS) Crown reduced
105	Cherry, Japanese	5	4242	3.0	335	Mature	4.0	Normal	Fair	C	2	10+	Poor form, knotted growth Remote survey only (RS)
G10 6	Pear, callaway	6	0.5	1.5	80	Young	1.0	Normal	Good	C	2	40+	X 8



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BS5837 Tree Constraints Survey Schedule

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
107	Cherry, Japanese	6	2	1.5	151	Semi-mature	1.8	Moderate	Fair	C	2	10+	Ivy clad Remote survey only (RS)
108	Lime	15	3	3.0	600	Mature	7.2	Normal	Fair	B	2	40+	Remote survey only (RS) Entry wounds
109	Cherry	4	4221	2.5	173	Early Mature	2.1	Poor	Poor	U			
G110	Pear, Chanticleer	5	1	1.5	100	Young	1.2	Normal	Good	C	2	40+	
111	Cherry	4	3244		300	Early Mature	3.6	Moderate	Fair	C	2	10+	
112	Holly	9	4	3.0	450	Early Mature	5.4	Normal	Good	B	2	40+	



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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Stem Diamete	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
113	Strawberry Tree	5	2	1.5	184	Mature	2.2	Normal	Good	C	2		
114	Laburnum	8	2	2.0	200	Semi-mature	2.4	Normal	Fair	C	2	40+	Suppressed by nearby tree
115	Hawthorn, Common	7	2	4.0	106	Young	1.3	Normal	Fair	C	2	20+	
116	Cherry, Wild (Gean)	8	2315	3.0	120	Semi-mature	1.4	Normal	Fair	C	2	40+	
117	Birch	5	1524		120	Semi-mature	1.4	Normal	Fair	C	2	40+	

APPENDIX 2

RECOMMENDED TREE WORKS

Notes for Guidance:

Husbandry 1 - Urgent (ASAP), 2 - Standard (within 6 months), 3 - Non-urgent (2-3 years)

- CB - Cut Back to boundary/clear from structure.
- CL# - Crown Lift to given height in meters.
- CT#% - Crown Thinning by identified %.
- CR#% - Crown Reduce by given maximum % (of outermost branch & twig length)
- DWD - Remove deadwood.
- Fell - Fell to ground level.
- FInv - Further Investigation (generally with decay detection equipment).
- Pol - Pollard or re-pollard.
- Mon - Check / monitor progress of defect(s) at next consultant inspection which should be <18 months in frequented areas and <3 years in areas of more occasional use. Where clients retain their own ground staff, we recommend an annual in- house inspection and where practical, in the aftermath of extreme weather events.
- Svr Ivy / Clr Bs - Sever ivy / clear base and re-inspect base / stem for concealed defects.



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Appendix 2

Recommended Tree Works

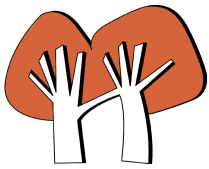
Surveyor(s): Kim Dear

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Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works		Comments/ Reasons
17	Willow, Goat	C	11	2.5	6645	POL	Re-pollard within 3-4 yrs	Pollarded at 3-4m Recommended husbandry 3
19	Holly	U	3.5	1.5	2002	Fell		Honey fungus at base Recommended husbandry 3
23	False Acacia	U	15	6.0	1453	Fell		Decay in stem 0-6m, cavity opening at base, wood pecker Deadwood/ dieback through out crown Recommended husbandry 2
24	False Acacia	C	16	3.5	3445	Mon	FINV	Deadwood throughout crown, Honeyfungus- see 25 Included bark in main fork Minor decay/ bleeding on lower stem Recommended husbandry 2
25	False Acacia	C/u	16	3.0	5545	FInv	Option to fell	Honey fungus, Minor deadwood Lost co-dominant secondary limb SW 5m Minor decay/ bleeding on lower stem Recommended husbandry 2
26	Cherry, Wild (Gean)	B	17	2.5	8778	FInv		Possible Ganoderma bracket emerging SW? Shallow mower damaged roots. Included bark in primary forks Taps solid Recommended husbandry 2



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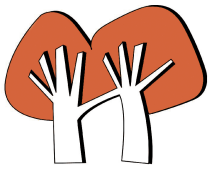
Appendix 2

Recommended Tree Works

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Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
34	Hawthorn, Common	U	8	2.5	1333	POL 5m	Decayed husk of a stem Significant lean South Recommended husbandry 2
38	Willow, corkscrew	C	14	4.5	4355	Fell	Weak primary fork at base Recommended husbandry 3
46	Sycamore	U	13	6.5	3222	FInv Option to fell	Decay in stem and base, pollarded Kretzschmaria fungus Recommended husbandry 2
48	Sycamore	U	8	2.5	2352	FInv, remove dead limb and reduce to shrub height or option to fell	Decayed pollard, ganoderma at base, Flammulina on stem with squirrel damage Squirrel damaged / dead eccentric regrowth Recommended husbandry 2
52	Cherry, Wild (Gean)	U	7	2.5	5233	Fell	Semi- collapsed tree with weak fork Bleeding canker & deadwood Recommended husbandry 2
55	Sycamore	A	20	5.0	8748	CL	Fused branches bracing primary fork Slightly leaning to W Recommended husbandry 2



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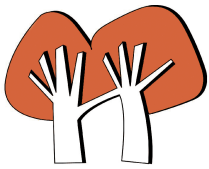
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Recommended Tree Works

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Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
56	Chestnut, Horse	A	20	3.0	4655	FInv	Asymmetry (significant) Decayed wound E base, substantial but occluded Recommended husbandry 2
57	Chestnut, Horse	B	15	2.0	5244	Mon	Swept upper stem to N Recommended husbandry 3
58	Beech, weeping	B	14	3.0	8237	CR CL Reduce S limb 1-2m to subordinate to N limb	Substantial decay in S limb wound 4 m south Recommended husbandry 2
59	Ash, weeping	B/c	15	3.5	8143	CL	Lost co-dominant limb on S stem with wood pecker hole at 3m Significant asymmetry to B with cavities in pruning wounds woodpecker damage, needs climbing inspection Recommended husbandry 2
61	Cedar	U	10	2.0	3	Fell	Dead Recommended husbandry 2
72	Sycamore	C	18	4.0	4233	Svr Ivy	Ivy smothered Low live crown ratio



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Appendix 2

Recommended Tree Works

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Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
73	Cherry, Wild (Gean)	C	12	2.0	1424	Svr Ivy	Ivy smothered Low live crown ratio
74	Holly	C	8	1.0	2322	Svr Ivy	Ivy smothered Low live crown ratio
77	Oak, English	A	18	2.0	8786	Svr Ivy	Ivy clad 3 low branches from 3m Recommended husbandry 2
78	Pine	B	11	2.0	3433	Svr Ivy	Ivy clad Recommended husbandry 2
80	Ash, Common	A	21	3.5	7877	FInv Reinspect	Ivy clad Ganoderma decay fungi on stem decay detect Recommended husbandry 2
81	Cherry, Japanese	C	5	1.5	4224	Svr Ivy Reinspect	Mower damage to surface roots



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Recommended Tree Works

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Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works		Comments/ Reasons
84	Elder Box	B/c	15	2.0	5666	CB	2m Cut back from cedar	Early decay in primary wounds, erratic habit Natural bracing Recommended husbandry 2
90	Ash	U	17	5.0	5345	Fell	Urgent	Substantial basal decay/ cavity collapsed into t91 Recommended husbandry 1

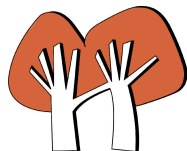
APPENDIX 3

RECOMMENDED TREE WORKS TO FACILITATE DEVELOPMENT (See Table 1)

Notes for Guidance:

- RP - Pre-emptive root pruning of foundation encroachments under arboricultural supervision.
- CB - Cut Back to boundary/clear from structure.
- CL# - Crown Lift to given height in meters.
- CT#% - Crown Thinning by identified %.
- CCL - Crown Clean (remove deadwood/crossing and hazardous branches and stubs)*.
- CR#% - Crown Reduce by given maximum % (of outermost branch & twig length)
- DWD - Remove deadwood.
- Fell - Fell to ground level.
- FInv - Further Investigation (generally with decay detection equipment).
- Pol - Pollard or re-pollard.
- Mon - Check / monitor progress of defect(s) at next consultant inspection which should be <18 months in frequented areas and <3 years in areas of more occasional use. Where clients retain their own ground staff, we recommend an annual in- house inspection and where practical, in the aftermath of extreme weather events.
- Svr Ivy / Clr Bs - Sever ivy / clear base and re-inspect base / stem for concealed defects.

*Not generally specified following BS3998:2010



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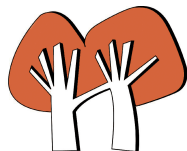
Appendix 3

Recommended Tree Works To Facilitate Development

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Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
44	Cypress, Leyland	C	12	3.0	3211	Fell	Range 200-400 dm, N remnant of x 2 rows Topped at 10m 10 stems, raised soil level. To facilitate development
45	Plum, Purple	C	5	3.0	5233	Fell	Sprawling habit, canker in N stem Poor pruning positioned at other end of g44 To facilitate development
46	Sycamore	U	13	6.5	3222	Fell	Decay in stem and base, pollarded Kretzschmaria fungus To facilitate development
48	Sycamore	U	8	2.5	2352	Fell	Decayed pollard, ganoderma at base, Flammulina on stem with squirrel damage Squirrel damaged / dead eccentric regrowth To facilitate development
51	Holly	C	8	1.5	3222	Fell	To facilitate development
54	Palm, Chusan	C	6	3.0	0.5	Fell	To facilitate development



Landmark Trees

Site: 28-30 Avenue Road

Date: 21/01/20 & 13/02/20

Appendix 3

Surveyor(s): Kim Dear

Ref: SHH/28AVE/AIA

Recommended Tree Works To Facilitate Development

Hide irrelevant

Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
58	Beech, weeping	B	14	3.0	8237	Fell	Substantial decay in S limb wound 4 m south To facilitate development
59	Ash, weeping	B/c	15	3.5	8143	Fell	Lost co-dominant limb on S stem with wood pecker hole at 3m and cavity 2m evident. Significant asymmetry to B with cavities in pruning wounds woodpecker damage, needs climbing inspection To facilitate development
61	Cedar	U	10	2.0	3	Fell	Dead Recommended husbandry 2
81	Cherry, Japanese	C	5	1.5	4224	Fell	Mower damage to surface roots To facilitate development
89	Sycamore	A	16	5.0	5456	CB 2m	To facilitate development
90	Ash	U	17	5.0	5345	Fell	Substantial basal decay/ cavity collapsed into t91 To facilitate development



Landmark Trees

Site: 28-30 Avenue Road

Date: 21/01/20 & 13/02/20

Appendix 3

Surveyor(s): Kim Dear

Ref: SHH/28AVE/AIA

Recommended Tree Works To Facilitate Development

Hide irrelevant

Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
91	Sycamore	B	15	4.0	5641	Fell	has t90 hung up in crown, needs climbing inspection of damage To facilitate development
92	Oak, Holm	C	7	1.5	4351	Fell	Topiary leans south To facilitate development
93	Apple, Cultivated	C	6	2.0	3422	Fell	To facilitate development
94	Cypress, Lawson	C	8	1.0	1211	Fell	To facilitate development
G97	Cypress, Lawson	C	4	0.0	1111	Fell	group planted as hedge with arch To facilitate development
85	cedar blue	C	8	1.0	1222	Fell	Suppressed by nearby tree To facilitate development

APPENDIX 4: TREE SELECTION FOR URBAN LOCATIONS

Table A4.1: Small Ornamental Tree Species

Common Name	Species	(Columnar Form for discrete usage)
Hawthorn	<i>Crataegus monogyna</i>	Stricta
Cockspur	<i>Crataegus prunifolia</i>	Splendens
Cherry	<i>Prunus x hillieri</i>	Spire
Bird cherry	<i>Prunus padus</i>	Albertii
Rowan / Mountain ash	<i>Sorbus aucuparia</i>	Cardinal Royal
Swedish whitebeam	<i>Sorbus intermedia</i>	Brouwers
B. whitebeam	<i>Sorbus x thuringiaca</i>	Fastigiata

Table A4.2: Medium Specimen Tree Species

Common Name	Species	(Columnar Form for discrete usage)
Chinese red bark birch	<i>Betula albosinensis</i>	Fascination
Mongolian lime	<i>Tilia mongolica</i>	
Hornbeam	<i>Carpinus betulus</i>	Fastigiata Frans Fontaine
Turkish hazel	<i>Corylus column</i>	
Maidenhair tree	<i>Ginkgo biloba</i>	
Pride of India	<i>Koelreuteria paniculata</i>	Fastigiata
European larch	<i>Larix decidua</i>	Sheerwater Seedling
Tulip tree	<i>Liriodendron tulipifera</i>	Fastigiata

Table A4.3: Larger Specimen Tree Species

Common Name	Species	(Columnar Form for discrete usage)
English oak	<i>Quercus robur</i>	f. Koster
American elm	<i>Ulmus americana</i> Princeton	
Cedar of Lebanon	<i>Cedrus libani</i>	

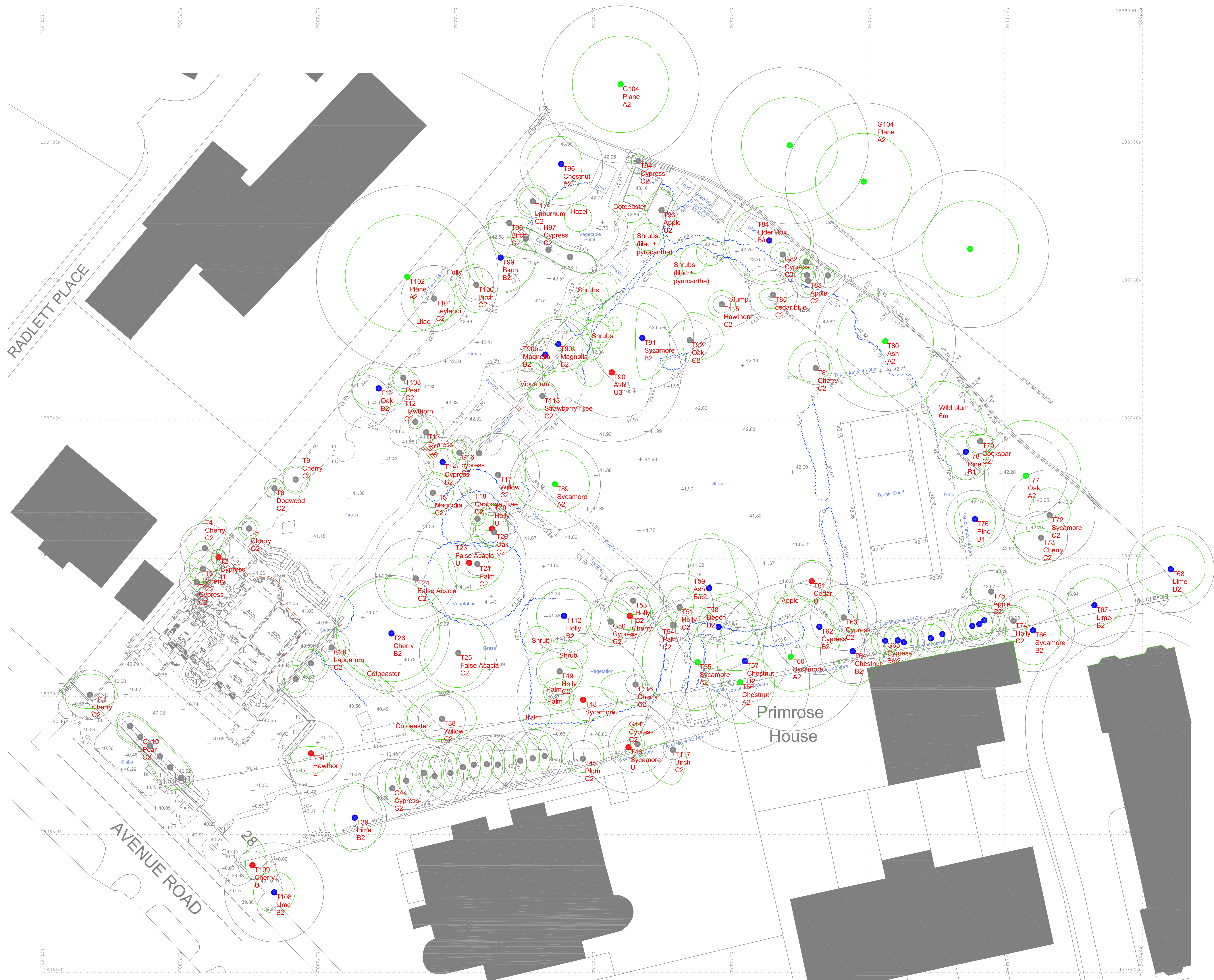


Landmark Trees

PART 3 – PLANS

PLAN 1

TREE CONSTRAINTS PLAN



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NOTE:
This survey is of a preliminary nature. The trees were inspected from the ground only on the basis of the Visual Tree Assessment method. No samples were taken for analysis. No decay detection equipment was employed. The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

Branch spread in metres is taken at the four cardinal points to derive an accurate representation of the crown.

Root Protection Areas (RPA) are derived from stem diameter measured at 1.5 m above adjacent ground level (taken on sloping ground on the upslope side of the tree base).

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Site: 28-30 Avenue Road 1:200@ A0
Drawing Title: Tree Constraints Plan February 2020

Key:

- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention

Legend:

- Crown Spread
- Shading Arc
- Tree Number
- Species
- Category
- Root Protection Area

PLAN 2

ARBORICULTURAL IMPACT ASSESSMENT PLAN (S)

