Landmark Trees

ARBORICULTURAL IMPACT ASSESSMENT REPORT

& OUTLINE METHOD STATEMENT:

14 Greenaway Gardens

London

NW3 7DH

INSTRUCTING PARTY:

Danylo Knysh

14 Greenaway Gardens

London

NW3 7DH

REPORT PREPARED BY

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MSc ARB MICFor FArbor A MRICS C Env

Ref: DKS/14GRW/AIM/01a

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PART 1: MAIN TEXT

PART 2 - APPENDICES

PART 3 - PLANS

DOCUMENT HISTORY

Revision	Status	Comments	Date
Rev 0	DRAFT	For Internal Review (Client / Design Team)	1/3/21
Rev 01a	Proofed	For External Issue	4/3/21

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 the demolition of the existing summer house and removal of a swimming pool to create a sunken terrace.

1.2 There are 69 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 T29 as a standout high quality specimen although investigation of decay in its stem / roots is recommended. All trees are material constraints on development, but this latter (subject to the decay detection findings) requires particular consideration. At the other end of the spectrum, one or two trees, T34 requires removal regardless of development.

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 the proposed amendments. Those removed have entirely more collective than individual specimen value, such that their loss could readily be mitigated with new planting, bringing its own benefits to a relatively unmanaged resource.

1.4 Whilst the default position is that groundworks 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 also details the tree protection measures and demolition / construction methodologies required to ensure that the full potential of the impacts are minimised.

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 Danylo Knysh ('the Applicant'), to support a full planning application submitted to the London Borough of Camden ('LBC').

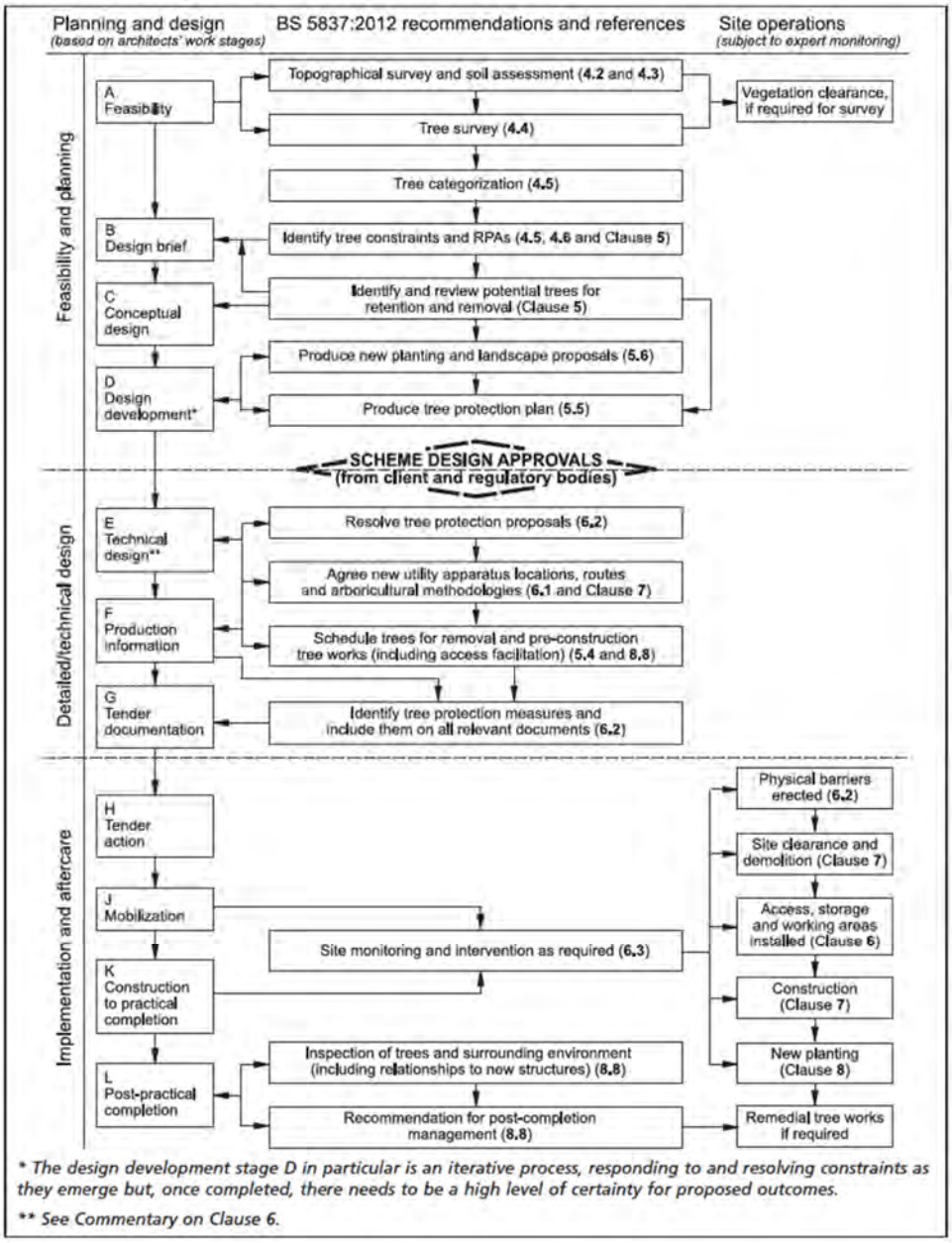
2.1.2 The application relates to the removal of the existing summer pavilion in its entirety and re-wilding of that area. Additionally, it is also proposed to remove the redundant swimming pool from the rear garden and create a sunken terrace and to remove the mound of earth that sits between the lawn and the existing swimming pool to allow the lawn to continue to run back up to the edge of the new terrace / old swimming pool

2.1.3 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.

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



** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See Commentary on Clause 6.*

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: 37915_01-07_PES Proposals: 0202_A - WIP Site Plan - Proposed & Demolition

2.3 Scope & Limitations of Survey

2.3.1	As Landmark Trees' (LT) arboricultural consultant, Kim Dear surveyed the trees on site on 25th September 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 with summerhouse on right of 'T' crossbar and swimming pool in centre

3.1.1	No 14 Greenaway Gardens is located in one of the prime residential streets of Hampstead, North London. A detached family house with an impressive, double volume entrance hall set behind a Queen Anne style classical façade of early 20th century. The house is sited within secure walled boundary and carriage 'in and out' driveway with substantial landscaped gardens to the rear with a tennis court, swimming pool and adjoining summer house.
3.1.2	The site is relatively level throughout.
3.1.3	We are not aware of the existence of any Tree Preservation Orders, but understand the site stands within the Redington Frognal 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, D1 and D2 of the Camden Local Plan (adopted 3rd July 2017).

3.2 Soil Description

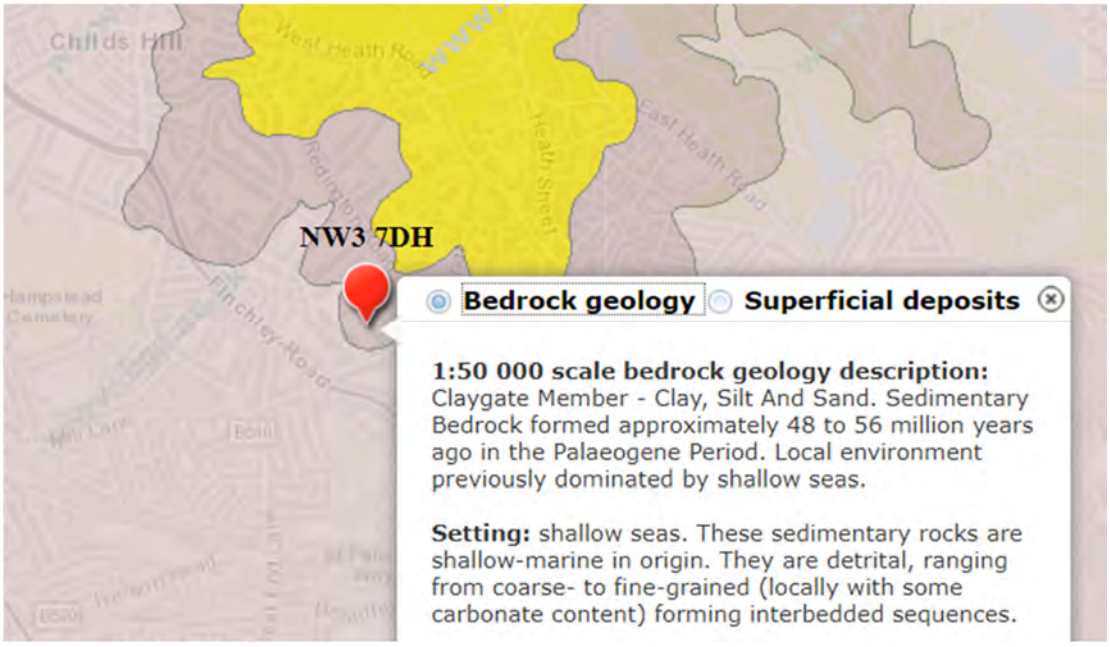


Figure 2: Extract from the BGS Geology of Britain Viewer

3.2.1	In terms of the British Geological Survey, the site overlies the Claygate Member / Beds (see dark area on plan extract above). As the youngest part of the London Clay, they form a transition between the clay and the sandier Bagshot Beds above (shown in yellow). Unlike the Bagshot Beds, more typical of Hampstead Heath, 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.
3.2.2	The actual limits of soil series are not as clearly defined on the ground as on plan and there may be anomalies between them. Further advice from the relevant experts on the specific soil properties can be sought as necessary.
3.2.3	Clay soils are prone to compaction during development. Damage to soil structure can have a serious impact on tree health. Design of foundations near problematic tree species will also need to take into consideration subsidence risk.

3.3 Subject Trees

3.3.1	Of the 69 surveyed trees, 1 is category* A (High Quality), 15 are category* B (Moderate Quality), 52 are category C (Low Quality) and 1 is category U (Poor Quality).
3.3.2	The tree species found on the site comprise holly, crab apple, limes, common ash, eucalyptus, guelder rose, Japanese maple, laburnum, sycamore, Leyland cypress, English oak, western red cedar, hybrid poplar, Lawson cypress, bay, fig, southern magnolia, hawthorn and silver birch.
3.3.3	In terms of age demographics there is a broadly even mix of semi-mature, early mature and mature specimens present with a few young trees and 1 post-mature tree present.

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

3.3.4	Full details of the surveyed trees can be found in Appendix 1 of this report.
3.3.5	There are recommended works for 2 on-site trees (T29 and T34). These are listed in Appendix 2.

Photograph 2: Summer house and surrounding hard surfacing to be removed

Photograph 3: Swimming pool and surrounding hard standing to be removed

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.

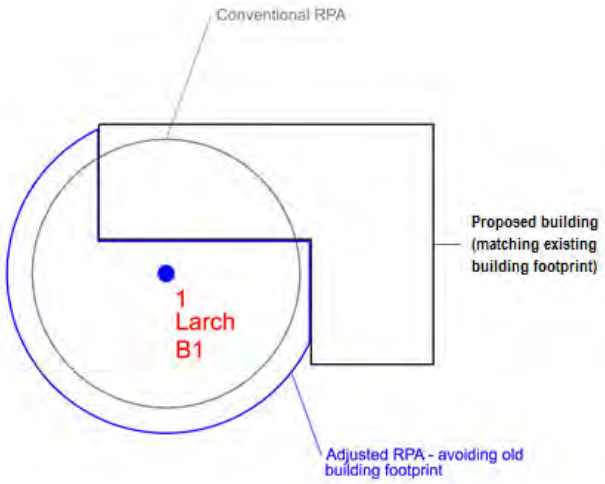


Figure 3– Generic BS 5837 RPA Adjustments (for fictitious site)

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 priroi* modifications have been made in this instance, although further investigations have shown little / no rooting in the affected areas of the garden.**

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, whilst the high and moderate trees have the potential to pose significant constraints on development of the site, the existing built infrastructure means these constraints are likely to be limited in practice.

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.

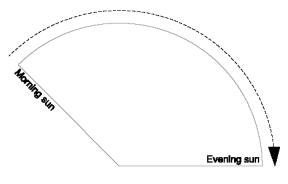


Figure 4 – Shading Arc

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, the orientation of the on-site trees will ensure that shading constraints are minimal, with leaf deposition and honey-dew likely to be as it is today. 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.

5.0

Table 1: Arboricultural Impact Assessment

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

Hide irrelevant | Show All Trees

Ref: DKS/14GRW/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	17	Sycamore	Level Changes within RPA Swimming Pool & Hard Surfacing Removal within RPA	17.4 m^2 10.68 %	Mature	Normal	Moderate	Low	Low	Airspade / manual excavation Light plant / mini-rigs only & from outside RPA
A	29	Oak, English	Swimming Pool Removal within RPA Patio Demolition within RPA	m^2 N/A %	Post-Mature	Moderate	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
C	g30	Western Red Cedar	Swimming Pool Removal within RPA Patio Demolition within RPA	m^2 N/A %	Semi-mature	Moderate	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
B	31	Poplar, Hybrid	Patio Demolition within RPA	m^2 N/A %	Mature	Normal	Moderate	Very Low	Very Low	Light plant / mini-rigs only & from outside RPA
B	32	Poplar, Hybrid	Patio Demolition within RPA	m^2 N/A %	Mature	Normal	Moderate	Very Low	Very Low	Light plant / mini-rigs only & from outside RPA
C	33	Sycamore	Patio Demolition within RPA	m^2 N/A %	Semi-mature	Moderate	Moderate	Very Low	Very Low	Light plant / mini-rigs only & from outside RPA
U	34	Sycamore	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Semi-mature	Moderate	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA

5.0

Table 1: Arboricultural Impact Assessment

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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
C	35	Sycamore	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Early Mature	Normal	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
C	36	Sycamore	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Semi-mature	Normal	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
C	37	Sycamore	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Mature	Normal	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
C	38	Sycamore	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Early Mature	Normal	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
C	39	Sycamore	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Early Mature	Normal	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
B	52	Holly	Building Demolition within RPA Patio Demolition within RPA	m^2 N/A %	Mature	Normal	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA
C	g54	Holly	Building Demolition within RPA	m^2 N/A %	Early Mature	Moderate	Moderate	Low	Low	Light plant / mini-rigs only & from outside RPA

5.0

Table 1: Arboricultural Impact Assessment

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

Hide irrelevant | Show All Trees

Ref: DKS/14GRW/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	56	Holly	Felled to Facilitate Development	m^2 N/A %	Early Mature	Normal	N/A	N/A	Low	New planting / landscaping
C	57	Magnolia, Southern	Felled to Facilitate Development	m^2 N/A %	Semi-mature	Moderate	N/A	N/A	Low	New planting / landscaping
C	58	Magnolia, Southern	Felled to Facilitate Development	m^2 N/A %	Semi-mature	Moderate	N/A	N/A	Low	New planting / landscaping
C	59	Cypress, Lawson	Felled to Facilitate Development	m^2 N/A %	Mature	Normal	N/A	N/A	Low	New planting / landscaping
C	60	Hawthorn, Common	Level Changes within RPA	5.5 m^2 7.6 %	Mature	Moderate	Moderate	Very Low	Very Low	Airspade / manual excavation
C	62	Cypress, Lawson	Felled to Facilitate Development	m^2 N/A %	Semi-mature	Moderate	N/A	N/A	Low	New planting / landscaping
B	67	Birch, Silver	Felled to Facilitate Development	m^2 N/A %	Mature	Normal	N/A	N/A	Medium	New planting / landscaping

5.0

Table 1: Arboricultural Impact Assessment

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

Hide irrelevant | Show All Trees

Ref: DKS/14GRW/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	g68	Bay, Laurel	Felled to Facilitate Development	m^2 N/A %	Semi-mature	Moderate	N/A	N/A	Low	New planting / landscaping
C	69	Fig	Felled to Facilitate Development	m^2 N/A %	Early Mature	Normal	N/A	N/A	Low	New planting / landscaping

6.0 ARBORICULTURAL IMPLICATIONS

6.1 Rating of Primary Impacts

6.1.1 The principal impacts in the current proposals are the removal of T's 56, 57, 58, 59, 62, 67, 68 and 69. In terms of resource management, these comprise a relatively small portion of the whole. Those removed generally have entirely more collective (Category C) than individual specimen value (Category A & B) with the only exception that category B T67, such that their loss could readily be mitigated with new planting, bringing its own benefits of enrichment and diversification to a relatively unmanaged and subsisting resource. The immediate reduction in canopy cover through felling is therefore is rated as a low impact unlikely to harm either the resource or the wider conservation area.

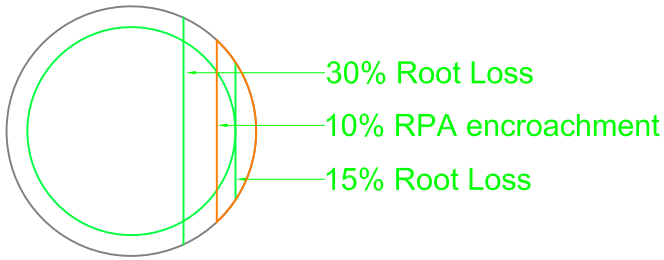
6.1.2 Further impacts to retained trees comprise the encroachments of the RPAs T17 and T60 by the excavation proposed to rationalise levels between the lawn and proposed sunken terrace while the removal of the summerhouse, swimming pool and hard surfacing around both will take place within the RPA of some 14 further trees (see Table 1 for details).

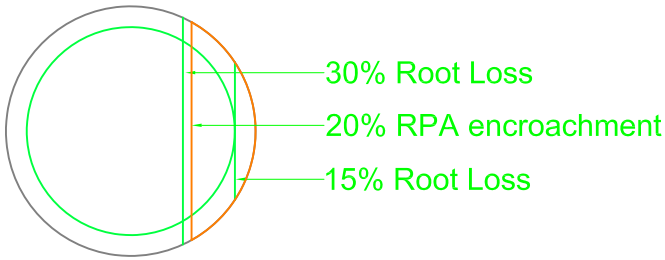
6.1.3 In our view, the removal of the summerhouse, swimming pool and hard surfacing will result in betterment to the adjacent trees, provided the works are carried out in a controlled manner as detailed in Section 8.

6.1.4 With regard to the groundworks within the RPAs of T17 and T60, the encroachments comprise 11% and 8% of the respective total areas and in the case of T17, trial pit findings indicate the impact will be significantly less than is indicated on plan. Thus, 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.

6.1.5	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 would be below the lower of 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))

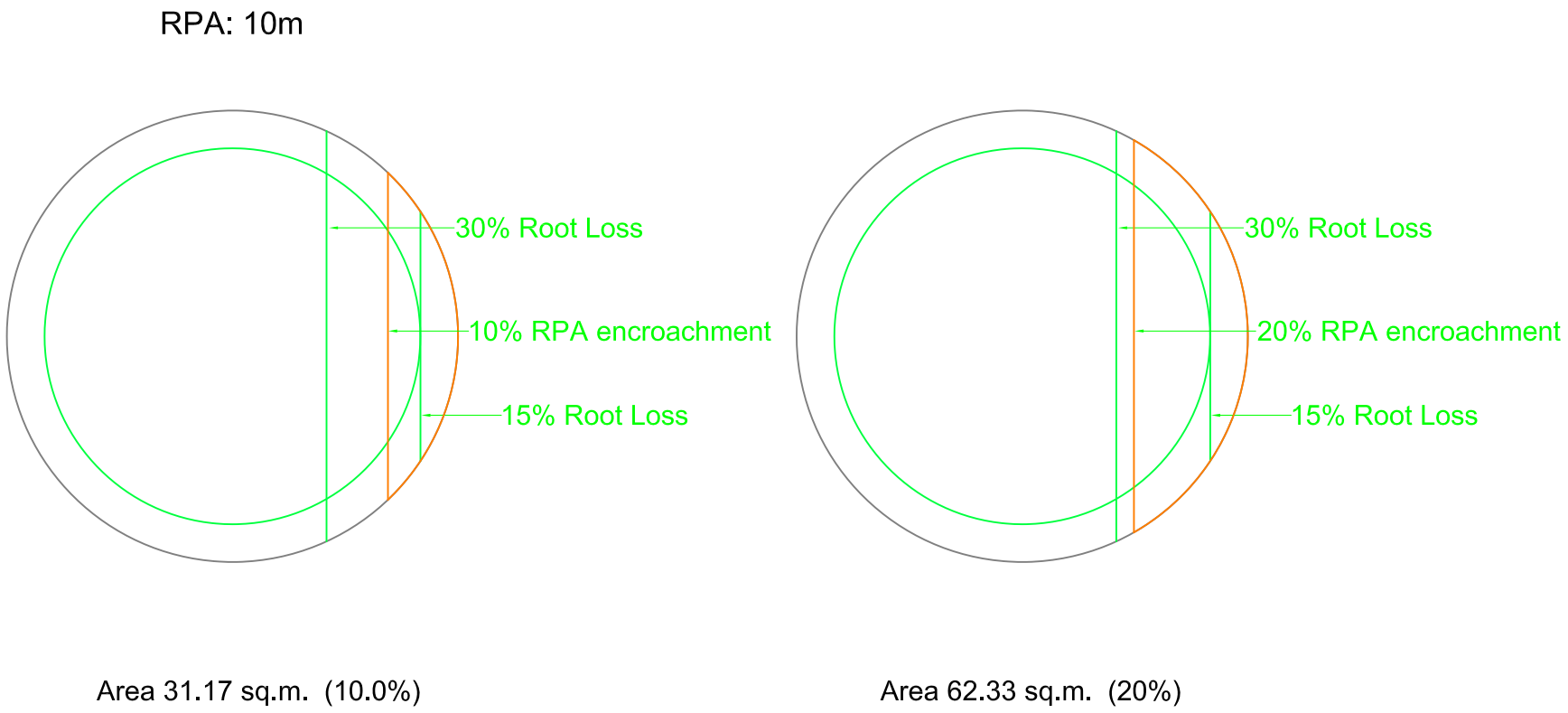


Figure 5b: approximate correlation between RPA encroachment and actual root loss on a free-grown tree of 10m RPA radius (after Thomas (2014))

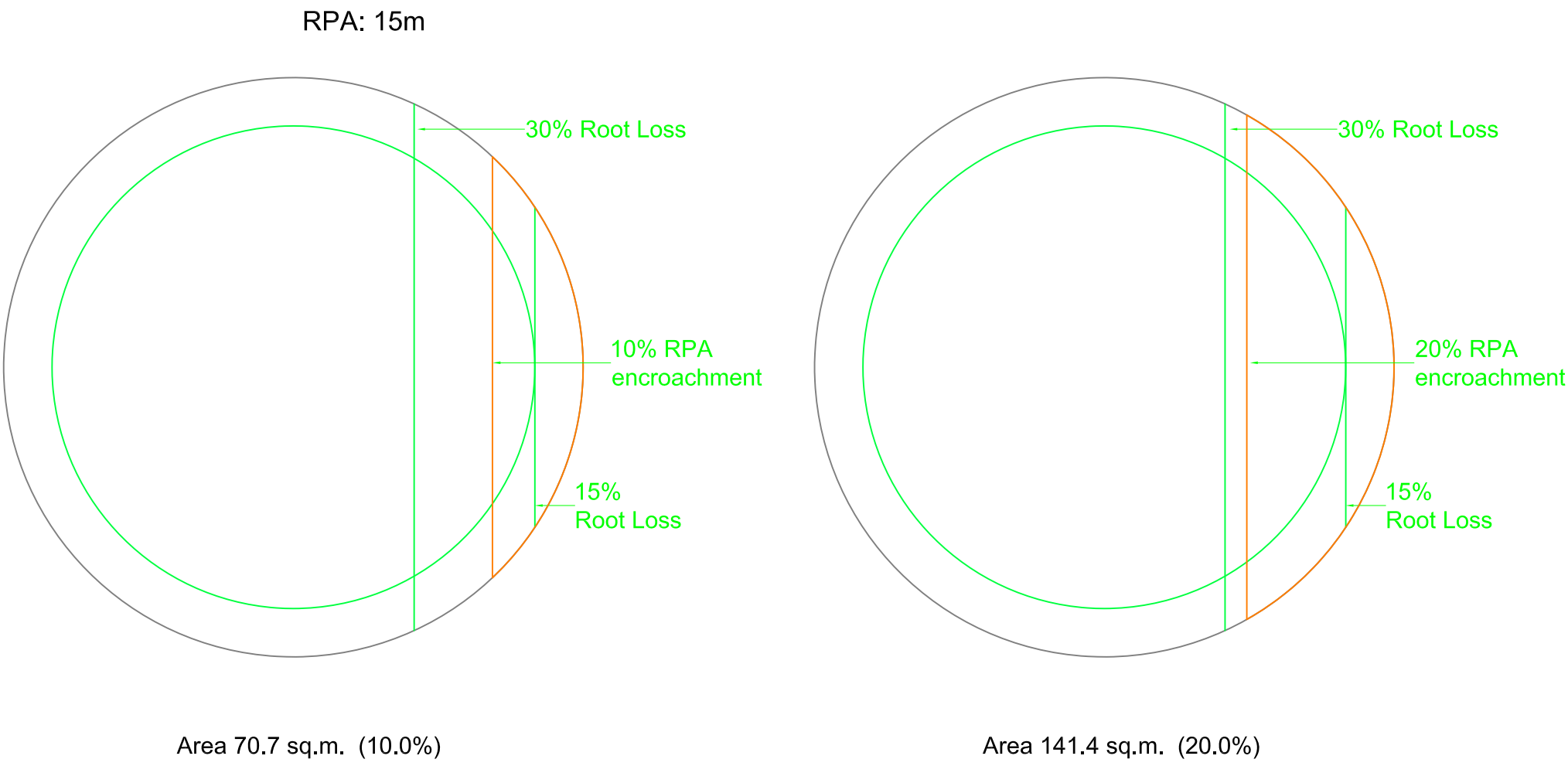


Figure 5c: approximate correlation between RPA encroachment and actual root loss on a free-grown tree of 15m RPA radius (after Thomas (2014))

6.1.6	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.
6.1.7	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.
6.1.8	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 arboriculturist 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 nature of the proposals means that secondary impacts will be lower than the existing arrangement and are therefore not of concern.

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 the RPAs of T17 and T60 will be treated with biochar or similar to improve rooting conditions therein.

6.3.3 All plant and vehicles engaged in demolition works should either operate outside the RPA, or should run on a temporary surface designed to protect the underlying soil structure. The demolition of the building should proceed inwards in a “pull down” fashion.

6.3.4 Hard surfacing can be lifted with caution by a skilled machine operator again working away from the trees with the sub-base to be removed being first broken up using hand held power tools before being removed by light plant using toothless buckets.

6.3.5 The limits of excavation within the RPAs of T17 and T60 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.

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, 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.

9.0 METHOD STATEMENT

9.1 Outline Method Statement (to be read in conjunction with Tree Protection Plan)

9.1.1 This outline method statement has been prepared in support of a planning application regarding development at 14 Greenaway Gardens, London NW3 7DH. The statement will address the precautions that will be undertaken to protect the trees on and around this site during the proposed works.

9.1.2 This section of the report lays down the methodology for any proposed works that may have an effect upon the retained trees. It is essential within the scope of any contracts related to the development proposals that this method statement is observed and adhered to. It is recommended that this section form part of the work schedule and specification issued to the building contractors and can be used to form part of the contract.

9.1.3 Copies of this method statement and the Tree Protection Plan (see Part 3) will be available for inspection on site. The developer will inform the local planning authority within twenty-four hours if the arboricultural consultant is replaced.

9.2 Sequence of Works

9.2.1 The sequence of works should be as follows:

i) initial tree works: felling and stump grinding for working clearances;
ii) installation of TPB and ground protection for demolition;
iii) excavation of earth mound;
iv) demolition of summerhouse and swimming pool;
v) removal of hard surfacing;
vi) removal of TPB & ground protection;
vii) soft landscaping;

9.2.2 On this site, a site manager will be nominated to be responsible for all arboricultural matters on site. A pre-commencement site briefing/meeting between the site manager and arboricultural consultant will be held (see Table 1 below). The site manager's details will be issued to the London Borough of Camden in the minutes / site monitoring report for this meeting. During this meeting all the tree protection methods below will be studied and familiarization with requirements of this AMS. The site manager will also:

- be present on site for the majority of the time;
- have the authority to stop any work that is causing, or has the potential to cause harm to any tree;
- be responsible for ensuring that all site operatives are aware of their responsibilities toward trees on site and the consequences of the failure to observe these responsibilities;
- make immediate contact with the Arboricultural consultant in the event of any tree related problems occurring, whether actual or potential, in accordance with a tree protection protocol (see below).

9.2.3 At this stage, the nominated Key Personnel are as follows:

Adam Hollis Tel: 0207 851 4544
Arboricultural Consultant
Landmark Trees
info@landmarktrees.co.uk

9.3 Site Supervision

9.3.1 Landmark Trees are to be retained as Arboricultural Consultants responsible for site monitoring for the duration of the development. As noted above Adam Hollis MSc (Arb) is the key contact, with monitoring occasionally undertaken by James Bell Tech Cert. (subject to any new staff intake). Site monitoring will be undertaken by a qualified and experienced arboriculturalist at pre-determined and agreed time intervals as indicated in Table 1 below. In addition to specific task monitoring, it is recommended that general tree protection monitoring be undertaken periodically based intensity of site operations, coordinated where practical with the visits detailed in Table 1.

9.3.2 Routine visits will generally be unannounced. However, the arboriculturalist will also visit subject to advance notification and agreement to supervise any agreed works within the RPA, in accordance with table 1 below.

9.3.3 A tree protection protocol for contingencies will be integrated into the site induction process at a pre-commencement meeting involving the developer, the arboricultural consultant, the site manager and the Council tree officer as appropriate. The protocol will be that, in the event of any unplanned incursion / accident / spillage within the RPA, the site agent should notify (by telephone) the retained arboricultural consultant immediately. The consultant will provide advice and attend site as soon as possible. This may require the stoppage of all or part of the works in the vicinity of the tree. The consultant will notify the LPA Tree Officer of the nature and extent of damage, the mitigation strategy and likely prognosis. The contact details of the LPA Tree Officer are:

Nick Bell Tel: 0207 974 4444
Tree and Landscape Officer
London Borough of Camden
nick.bell@camden.gov.uk

9.3.4 The site monitoring sheet in Appendix 3 will be used to provide photographic evidence, indicate the remedial action required and timescales for remediation completion. The consultant and officer will further liaise as necessary (perhaps meeting on site) until the officer is satisfied that protection measures are again satisfactory. The action in response to incidents will be commensurate with and appropriate to the nature of any such incident. Any breach of the stipulated timescale for remediation will trigger a further monitoring report.

9.3.5 Supervision will not require the arboriculturalist to be present throughout all operations to ensure tasks are carried out as per the approved methodology, but certainly, during the key elements of proposed (and any other unplanned) incursions into the protection areas (subject to LPA agreement and for whatever reasons) to ensure the arboricultural objectives were met. However, where tasks are ongoing, provided the arboriculturalist is satisfied, and after an appropriate briefing, the supervision may be reduced to telephone and email contact between the site manager and Arboricultural consultant.

9.3.6 The Local Authority will be accorded free access to the site subject to H&S requirements; as noted at 1.6.3, any problems will be reported directly to Arboricultural consultant, who will then visit the site and make recommendations to the developer on how best to rectify the situation and ensure implementation. As noted in Table 1 below, a final sign-off visit will be carried out at the end of the development and a formal letter sent to both the client and Westminster City Council indicating an end to the monitoring period. It is the client's duty to notify LT that the project has been completed, in order to facilitate such an inspection.

9.3.7 Landmark Trees will be instructed to provide the above monitoring. In the absence of routine payment (as per our business terms), routine monitoring will cease (temporarily or permanently) and the London Borough of Camden will be informed of the cessation of monitoring. The client will also reserve the right to dismiss Landmark Trees and replace with another arborist, but must inform the London Borough of Camden.

Table 1: Site Monitoring Visits

Supervision Visit No:	Details	Lead-in time required by LT	Action
Visit 1: Pre-Development Site Inspection	• To include Site Agent briefings (S.1.5) prior to commencement of demolition / groundworks. • To confirm position of protective fencing and that it has been erected in accordance with AMS and Tree Protection Plan. • To check any pre-demolition/construction ground protection is in place. • To check any tree works have been undertaken in accordance with this AMS • Determine if further tree work is required and seek required permission if necessary. • To check site facilities/access are in accordance with the AMS.		Issue a brief report with findings to Architect, Tree Officer and Main Contractor within 5 days of site supervision visit (Site Monitoring Sheet in Appendix 5).
Visit 2: Demolition of existing structure / landscaping	• Attend any demolition activities where supervision is prescribed by the AMS to ensure work is undertaken in accordance with its specification. • Date to be confirmed following formal project planning. • 2 weeks prior notice required.		As per Visit 1.
Visit 3: Groundworks within RPA	• Attend any excavation within RPA's where arboricultural supervision is prescribed by the AMS to ensure work is undertaken in accordance with its specification. • Date to be confirmed following formal project planning. • 2 weeks prior notice required.		As per Visit 1.
Ongoing Monitoring Visits	• Periodically during entire project. • Visits will be based on intensity of site operations, but at a minimum of monthly visits. • Attend site at least once per month to confirm protective measures are still in place / can be removed at appointed times. Ensure attendance is timed for any other key elements of proposed (and any other unplanned) incursions into the protection areas. • Pre-start landscape meeting with main contractor to confirm ongoing tree protection measures.		As per Visit 1.
Final Site Visit - Completion of construction phase supervision visit (S.5)	After it has been confirmed that the construction phase is complete, allow removal of temporary protective fencing and ground protection. Specify any remedial work if necessary.		As per Visit 1 and provide signed arboricultural checklist (see Appendix 5)

9.4 Pre- Development Site Preparation

9.4.1	The pruning works must be in accordance with British Standard 3998:2010 Tree work and any other prevailing good professional practice. Specific works recommended to facilitate development are the removal of trees T56, T57, T58, T59 and T62. These specific works to facilitate development and any other husbandry works are listed in Appendices 2 and 3.
9.4.2	The retained trees should be protected with the Tree Protection Barriers (TPB) as shown on the Tree Protection Plan (TPP) in Part 3. It is anticipated that this TPB will comprise a mixture of Heras panels and other fencing to be determined based upon the proximity to demolition activities.
9.4.3	These TPBs are to be erected before any work commences on site, is to remain 'in situ' undamaged for the duration of all work or each phase, and only to be removed once all work is completed. If any work is deemed necessary prior to the erection of fencing a Landmark Trees representative should be informed to enable their presence to oversee the work being carried out.
9.4.4	The only other exception is the completion of soft landscaping but if any excavations, however minor, are to be carried out as part of soft landscaping within RPAs, an arboricultural assessment must be carried out beforehand and any arboricultural protection measures incorporated. The TPBs should carry waterproof warning notices denying access within the RPA.
9.4.5	The Tree Protection Plan in Part 3 illustrates where the protective fencing will be located to form the boundary of the Construction Exclusion Zone (CEZ). The CEZ is an exclusion zone and suitable steps will be taken to prevent access by pedestrians and vehicles and the storage of any works materials and equipment will be located outside of the CEZ.
9.4.6	Extant areas of RPA that cannot be fenced off and therefore lie outside the CEZ must be protected with fit-for-purpose ground protection. The location and type of ground protection is shown in the Tree Protection Plan in Part 3.
9.4.7	Upon completion of the tree works and installation of the protection measures, the standard of work can be checked by the retained arboricultural consultant who can then liaise with the local authority. If there are any amendments to either the tree works or additional protection measures, they will be agreed at this meeting and confirmed in writing.

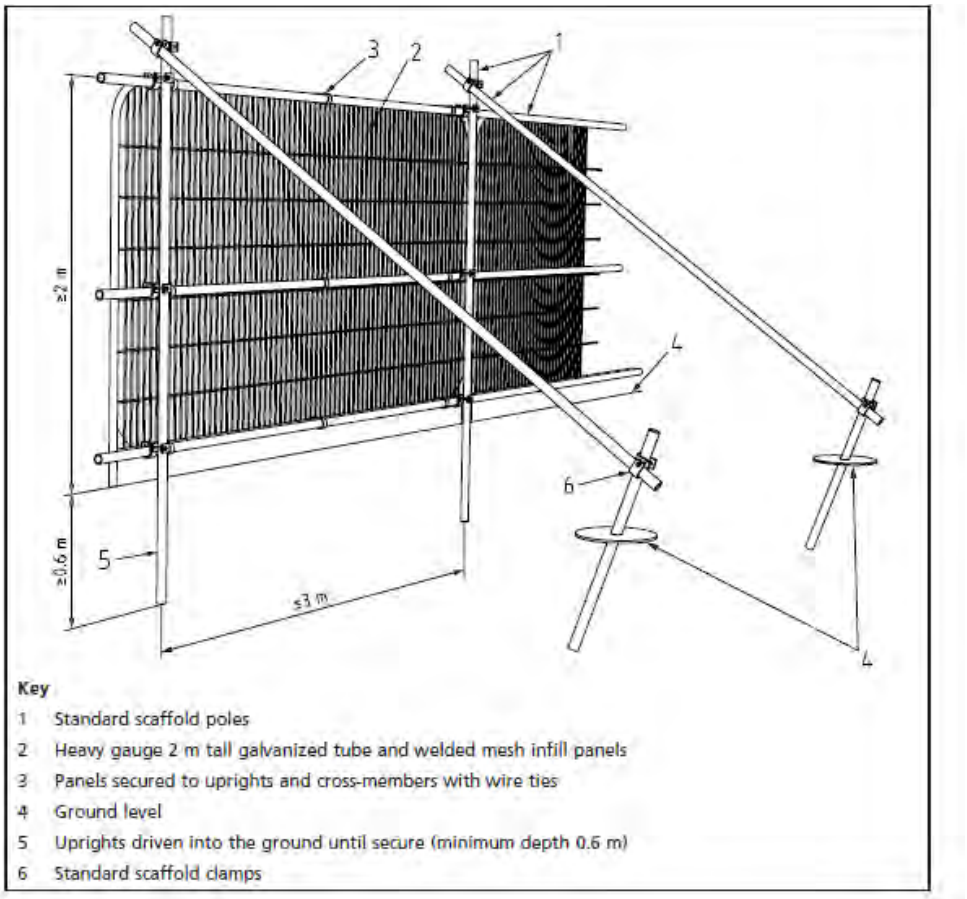


Fig. 1 Tree Protection Barrier Specification
(Source: Figure 2 from BS5837 - Default specification for protective barrier)

9.5 Development Phase

9.5.1 The following general precautions will apply:

- No fires shall be made on any part of the site, or within 20m of any tree to be retained.
- No spilling or pouring of fuels, oils, solvents, tar shall be made on any part of the site.
- No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10 metres of the trunk of a tree that is to be retained.
- No spillage or discharge of wet mortar or concrete shall be made on any part of the site.
- No storage of materials shall be made within the protective fences.
- No breaching or moving of the protective fences without the approval of an arboriculturist.
- Alterations in levels within the tree protection fence areas shall be avoided.

9.5.2 The procedures for dealing with variations and incidents are detailed in S.9.2 and S.9.3.

9.5.3 Access to the rear garden will be gained through the garage whose rear wall will be removed to permit this. Conveyors will be installed through the garage to move spoil from the rear arden to a skip situated on the front drive.

9.5.4 Delivery lorries will be excluded from RPA by the tree protection fencing and ground protection. Adequate allowance will be made for vehicle heights and ground clearance, where the tree canopy overhangs the access route. Any further pruning for working clearances must be discussed first with the arboriculturalist; once agreed in principle these works should be approved by the appropriate tree officer and approved in writing by the LPA.

9.5.5 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.

9.6 Routing & Installation of Services

9.6.1 No service installation is required.

9.7 Changes in Grade

9.7.1	The outer limits of the mound of soil between the swimming pool and house to be removed shall be manually excavated to the required depth or 1m depth whichever is shallowest in conjunction with pre-emptive root pruning under arboricultural supervision. In the unlikely event of discovering roots >25mm diameter, they may only be cut in consultation with the retained arboriculturalist and with the approval of the Local Authority Tree Officer.

9.8 Demolition Measures

Detailed method statements and risk assessments will be obtained from all specialist subcontractors involved in the new build and these will be scrutinised by the site agent to ensure the AMS requirements have been considered therein.

9.8.1	All plant and vehicles engaged in demolition works (removals only) will either operate outside the RPA, or work from within the existing built structure and reinforced hard standing, near trees. It will be necessary to undertake demolition of the summerhouse inwards within the footprint of the existing building (often referred to as “top down, pull back”).
9.8.2	Should levels of dust build-up on trees occur, it may be necessary to seek the advice of Landmark Trees on remedial measures, e.g. hose down the tree(s) immediately following any significant accumulation of dust.
9.8.3	The swimming pool will be broken up using hand held tools only before light plant removes the resulting spoil to the conveyor belt system.
9.8.4	Following removal of the summerhouse and swimming pool, the hard surfacing surrounding them and its sub-base will be broken up using hand-held power tools before being removed by light plant using a toothless bucket working away from trees. This work is to be carried out under arboricultural supervision and the discovery of any significant roots (>25mm diameter) within the sub-base will necessitate the manual removal of the sub-base around them. Exposed sub-base / soil will not be left open to vehicular access, but boarded over for temporary pedestrian access only until the replacement topsoil is introduced.

9.9 Removal of Ground Protection & Post Construction Landscaping & Treatment

9.9.1	The tree protection may be removed upon completion of the construction phase and when all drainage and service runs have been installed and any site machinery has been removed from the RPA.
9.9.2	Any further landscaping works should avoid the changing of ground levels or deep digging. Heavy machinery should not be used in the vicinity of the retained tree.
9.9.3	If herbicides are to be used they should be appropriate to their purpose and not in such a way as to damage the retained tree or vegetation; they must be applied by a suitably qualified person i.e. a holder of a recognised 'certificate of competence'.
9.9.4	Ideally, the retained trees should remain in a shrub area as this reduces the chances of compaction and disturbance of root systems.
9.9.5	Any new planting schemes adopted should consider aspects of the site such as current design, layout and future use. Consideration should also be given to the soil type, climate and overall character of the landscape.

9.10 Completion

9.10.1	Following completion of the works listed above, a Landmark Trees consultant will meet with a local authority representative and agree upon any remedial works deemed necessary.
9.10.2	A separate LT post-development tree inspection (with specific reference to the retained tree) is recommended to facilitate a constructive meeting. Any works agreed in this meeting will be confirmed in writing and will be performed to BS 3998: 2010 Tree Works.
9.10.3	It is recommended that, in due course, acceptance of the recommendations in this report is demonstrated by, for example, the architect specifying in writing to the building contractor that tree care conditions apply in execution of the contract, and by an estimate or written undertaking from the contractor to the architect demonstrating that the practical aspects of tree protection recommendations have been priced in to the job.
9.10.4	If conflicts between any part of a tree and the building arise in the course of development these can often be resolved quickly and at little cost if a qualified arboriculturist is consulted promptly. Lack of such care is often apparent quickly and decline and death of such trees can spoil design aims and can of course affect saleability, and reflects lack of best practice. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

10.0 COMPLIANCE: Trees and the Planning System

10.1 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.

10.2 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.

10.3 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
	Arboricultural impact assessment	
Reserved matters/ planning conditions	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	

11.0 REFERENCES

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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

Apple, Crab	: Malus sylvestris	Laburnum, Common	: Laburnum anagyroides
Ash, Common	: Fraxinus excelsior	Lime, Large-leaved	: Tilia platyphyllos
Bay, Laurel	: Laurus nobilis	Magnolia, Southern	: Magnolia grandiflora
Birch, Silver	: Betula pendula	Maple, Japanese	: Acer palmatum
Cypress, Lawson	: Chamaecyparis lawsonia	Oak, English	: Quercus robur
Cypress, Leyland	: Cupressus × leylandii	Poplar, Hybrid	: Populus spp
Eucalyptus	: Eucalyptus spp	Rose, Guelder	: Viburnum opulus
Fig, Common	: Ficus carica	Sycamore	: Acer pseudoplatanus
Hawthorn, Common	: Crataegus monogyna	Western Red Cedar	: Thuja plicata
Holly, Common/English	: Ilex aquifolium		

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.

Landmark Trees

Site: 14 Greenaway Gardens

Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: DKS/14GRW/AIA

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	Holly	8	2222	2.0	380	Early Mature	4.6	Moderate	Fair	C	2	10+	trifurcated
2	Apple, Crab	9	3332	3.0	435	Early Mature	5.2	Moderate	Fair	C	2	10+	
3	Holly	8	2111	2.0	125	Young	1.5	Moderate	Fair	C	2	10+	Suppressed by nearby tree
4	Lime, Large-leaved	5	2211	2.0	200	Semi-mature	2.4	Moderate	Fair	C	2	20+	Pollarded
5	Lime, Large-leaved	4.5	2122	2.0	300	Semi-mature	3.6	Moderate	Fair	C	2	20+	Pollarded
6	Holly	4	0.5,111	1.5	130	Young	1.6	Moderate	Fair	C	2	10+	A sparser than normal canopy

Landmark Trees

Site: 14 Greenaway Gardens

Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

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Surveyor(s): Kim Dear

Ref: DKS/14GRW/AIA

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
7	Holly	4	11,0.5,1	1.5	95	Young	1.1	Normal	Fair	C	2	20+	
8	Holly	5	1.5,111	0.5	125	Young	1.5	Normal	Fair	C	2	20+	
9	Ash, Common	8	2332	3.0	140	Young	1.7	Normal	Good	C	2	>40	
10	Holly	5	1112	2.0	163	Semi-mature	2.0	Moderate	Fair	C	2	20+	
11	Lime, Large-leaved	5.5	1122	2.0	400	Early Mature	4.8	Moderate	Fair	C	2	20+	Pollarded
12	Lime, Large-leaved	5	1111	1.5	210	Semi-mature	2.5	Moderate	Fair	C	2	20+	

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
13	Eucalyptus	9	4544	3.5	550	Mature	6.6	Normal	Good	B	2	20+	against boundary, ivy
g14	Guelder Rose	2	1111	1.5	60	Semi-mature	0.7	Normal	Fair	C	2	10+	shrub rose group 3.
15	Maple, Japanese	4	2233	1.0	150	Mature	1.8	Normal	Good	B	2	10+	
16	Laburnum	3.5	1111	1.5	85	Young	1.0	Moderate	Fair	C	2	10+	
17	Sycamore	14	4545	3.5	600	Mature	7.2	Normal	Fair	B	2	20+	Deadwood (minor) throughout crown Remote survey only (RS) bifurcated at 2.5m, minor cavity
18	Sycamore	19	6766	5.0	781	Mature	9.4	Normal	Good	B	2	20+	Remote survey only (RS) occluding cavity to south

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
g19	Cypress, Leyland	8	2222	1.5	350	Early Mature	4.2	Moderate	Fair	C	2	10+	group of 10 in neighbours garden
20	Ash, Common	20	3756	5.0	490	Early Mature	5.9	Normal	Good	B	2	20+	Deadwood (minor) throughout crown leans South west
21	Ash, Common	21	3516	5.5	472	Early Mature	5.7	Normal	Fair	B	2	20+	Ivy clad Remote survey only (RS) leans west
22	Ash, Common	20	5244	5.5	400	Early Mature	4.8	Moderate	Fair	C	2	20+	Ivy clad Remote survey only (RS)
g23	Sycamore	8	2332	1.0	300	Semi-mature	3.6	Moderate	Fair	C	2	10+	group syc, laurel, cypress behind tennis court
24	Sycamore	16	4556	4.0	566	Early Mature	6.8	Normal	Fair	B	2	20+	

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
25	Sycamore	15	7765	4.0	650	Mature	7.8	Normal	Good	B	2	20+	Deadwood (minor) throughout crown bifurcated at 1.5 m
g26	Cypress, Leyland	12	2222	0.5	350	Mature	4.2	Normal	Fair	C	2	20+	group of 5 as boundary
27	Sycamore	22	5667	7.5	856	Mature	10.3	Normal	Fair	B	2	20+	Ivy clad Remote survey only (RS) in neighbours garden, hanging deadwood
28	Sycamore	19	2634	6.0	450	Early Mature	5.4	Normal	Fair	C	2	20+	growing against concrete wall
29	Oak, English	17	10,10,9, 10	1.5	1440	Post-Mature	17.3	Moderate	Fair	A	3	10+	Honey fungus at base Dying back (lead stem /centre) major deadwood
g30	Western Red Cedar	9	3323	1.0	250	Semi-mature	3.0	Moderate	Fair	C	2	20+	group 4 thuja and yew

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
31	Poplar, Hybrid	21	9,10,8,10	5.0	600	Mature	7.2	Normal	Fair	B	2	20+	Ivy clad Pollard (Old) needs ivy clearing to allow full assessment
32	Poplar, Hybrid	20	10,9,10,4	4.0	600	Mature	7.2	Normal	Fair	B	2	20+	Ivy smothered Leaning (slightly) needs ivy removing to allow assessmemt
33	Sycamore	15	4033	4.0	380	Semi-mature	4.6	Moderate	Fair	C	2	20+	
34	Sycamore	15	3132	3.0	280	Semi-mature	3.4	Moderate	Poor	U		<10	Basal cavity
35	Sycamore	15	3535	4.0	466	Early Mature	5.6	Normal	Fair	C	2	20+	Leaning (slightly)
36	Sycamore	17	4343	5.0	594	Semi-mature	7.1	Normal	Fair	C	2	20+	Leaning (slightly)

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
37	Sycamore	17	6554	4.5	735	Mature	8.8	Normal	Fair	C	2	20+	Included bark in main stem unions soil excavation into root plate, fox set
38	Sycamore	15	5252	4.0	350	Early Mature	4.2	Normal	Fair	C	2	20+	leans North east
39	Sycamore	15	2657	4.0	525	Early Mature	6.3	Normal	Fair	C	2	20+	Ivy clad leans South west
40	Holly	8	3233	1.0	180	Semi-mature	2.2	Normal	Good	C	2	20+	
41	Holly	7	1322	1.0	140	Semi-mature	1.7	Moderate	Fair	C	2	10+	Suppressed by nearby tree
42	Sycamore	18	5546	4.0	512	Early Mature	6.1	Normal	Fair	B	2	20+	Ivy clad one stem already removed

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
43	Sycamore	14	1232	4.5	300	Semi-mature	3.6	Moderate	Fair	C	2	20+	Ivy clad Suppressed by nearby tree
44	Sycamore	12	1211	4.5	250	Semi-mature	3.0	Moderate	Fair	C	2	20+	Ivy clad Suppressed by nearby tree
45	Sycamore	13	1323	5.0	385	Semi-mature	4.6	Moderate	Fair	C	2	20+	Ivy clad
46	Cypress, Lawson	6	3233	1.0	190	Early Mature	2.3	Normal	Fair	C	2	20+	
47	Bay, Laurel	5	2.5,3.5, 2.5,3.5	1.0	300	Early Mature	3.6	Normal	Fair	C	2	10+	Remote survey only (RS) multi stemmed in neighbours property
48	Holly	5	1111	1.0	90	Young	1.1	Normal	Fair	C	2	20+	

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

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
49	Fig	2	2113	0.5	100	Young	1.2	Moderate	Fair	C	2	10+	
50	Cypress, Lawson	5	3222	1.0	150	Semi-mature	1.8	Normal	Fair	C	2	10+	
51	Sycamore	17	5889	4.0	800	Mature	9.6	Normal	Good	B	2	20+	compost piled at base
52	Holly	9	3323	1.0	460	Mature	5.5	Normal	Good	B	2	20+	Suppressed by nearby tree
53	Sycamore	9	6133	3.5	300	Semi-mature	3.6	Normal	Fair	C	2	20+	leans north
g54	Holly	6	2211	1.0	200	Early Mature	2.4	Moderate	Fair	C	2	10+	collapsed and intertwined holly as boundary

Landmark Trees

Site: 14 Greenaway Gardens

Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: DKS/14GRW/AIA

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
55	Holly	9	2322	1.5	250	Early Mature	3.0	Normal	Fair	C	2	20+	Ivy clad
56	Holly	6.5	2222	0.5	265	Early Mature	3.2	Normal	Good	C	2	20+	
57	Magnolia, Southern	6	1311	2.0	200	Semi-mature	2.4	Moderate	Poor	C	2	<10	Basal cavity
58	Magnolia, Southern	6	3332	1.0	200	Semi-mature	2.4	Moderate	Fair	C	2	10+	
59	Cypress, Lawson	10	2323	1.0	514	Mature	6.2	Normal	Fair	C	2	20+	
60	Hawthorn, Common	9	3331	4.5	400	Mature	4.8	Moderate	Fair	C	2	20+	Decay in trunk Ivy clad

Landmark Trees

Site: 14 Greenaway Gardens

Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: DKS/14GRW/AIA

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
61	Holly	8	2333	2.5	269	Mature	3.2	Normal	Fair	C	2	20+	multi stem, leans into shed
62	Cypress, Lawson	2	1222	1.0	160	Semi-mature	1.9	Moderate	Fair	C	2	10+	leaning
63	Cypress, Lawson	9	2222	1.5	230	Early Mature	2.8	Normal	Fair	C	2	20+	Suppressed by nearby tree
g64	Bay, Laurel	7	2232	0.0	200	Semi-mature	2.4	Normal	Fair	C	2	10+	growing as large combined bank
65	Bay, Laurel	6	2202	1.0	141	Semi-mature	1.7	Moderate	Fair	C	2	10+	
66	Cypress, Lawson	8	3211	1.5	300	Early Mature	3.6	Normal	Fair	C	2	20+	

Landmark Trees

Site: 14 Greenaway Gardens

Date: 25/09/20

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Kim Dear

Ref: DKS/14GRW/AIA

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
67	Birch, Silver	12	4355	3.0	500	Mature	6.0	Normal	Good	B	2	20+	
g68	Bay, Laurel	7	3122	0.5	424	Semi-mature	5.1	Moderate	Fair	C	2	10+	
69	Fig	6	4.5,4,3.5,4	1.0	165	Early Mature	2.0	Normal	Fair	C	2	10+	multi stem against garage

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.

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

Appendix 2

Recommended Tree Works

Hide irrelevant
Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
29	Oak, English	A	17	1.5	10,10,9, 10	FInv DWD Carry out decay detection on main stem	Honey fungus at base Dying back (lead stem /centre) major deadwood Recommended husbandry 2
34	Sycamore	U	15	3.0	3132	Fell	Basal cavity Recommended husbandry 2

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

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

Appendix 3

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
56	Holly	C	6.5	0.5	2222	Fell	To facilitate development
57	Magnolia, Southern	C	6	2.0	1311	Fell	Basal cavity To facilitate development
58	Magnolia, Southern	C	6	1.0	3332	Fell	To facilitate development
59	Cypress, Lawson	C	10	1.0	2323	Fell	To facilitate development
62	Cypress, Lawson	C	2	1.0	1222	Fell	leaning To facilitate development
67	Birch, Silver	B	12	3.0	4355	Fell	To facilitate development

Landmark Trees

Site: 14 Greenaway Gardens
Date: 25/09/20

Surveyor(s): Kim Dear
Ref: DKS/14GRW/AIA

Appendix 3

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
g68	Bay, Laurel	C	7	0.5	3122	Fell	To facilitate development
69	Fig	C	6	1.0	4.5,4,3.5,4	Fell	multi stem against garage 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	Crataegus monogyna	Stricta
Cockspur	Crataegus prunifolia	Splendens
Cherry	Prunus x hillieri	Spire
Bird cherry	Prunus padus	Albertii
Rowan / Mountain ash	Sorbus aucuparia	Cardinal Royal
Swedish whitebeam	Sorbus intermedia	Brouwers
B. whitebeam	Sorbus x thuringiaca	Fastigiata

Table A4.2: Medium Specimen Tree Species

Common Name	Species	(Columnar Form for discrete usage)
Chinese red bark birch	Betula albosinensis	Fascination
Mongolian lime	Tilia mongolica	
Hornbeam	Carpinus betulus	Fastigiata Frans Fountaine
Turkish hazel	Corylus colurna	
Maidenhair tree	Gingko biloba	
Pride of India	Koelreuteria paniculata	Fastigiata
European larch	Larix decidua	Sheerwater Seedling
Tulip tree	Liriodendron tulipfera	Fastigiata

Table A4.3: Larger Specimen Tree Species

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

APPENDIX 5: GENERAL GUIDELINES & SAMPLE SITE MONITORING SHEET WITH CHECKLIST

5.1 All work must be to BS 3998:2010 - '*Recommendations for tree work*'.

5.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors, and will be covered by adequate public liability insurance.

5.3 Any defects seen by a contractor or the client that were not apparent to the consultant must be brought to the consultant's attention immediately.

5.4 No liability can be accepted by the consultant in respect of the trees unless the recommendations of this method statement are carried out under the supervision of a Landmark Trees consultant.

5.5 It is advisable to have trees inspected by a consultant regularly. On this site it is recommended that these inspections are made every year.

Landmark Trees

Site Monitoring Report Sheet

Client:		**Planning Ref:**	
Local Authority:		**Date:**	
Site Address:			
Proposal:			

Visit Checklist	**Y/N**		**Y/N**
Tree protection barrier (TPB) in place		TPB as per approved	
Ground protection (GP) in place		GP as per approved	
TPB / GP breached		Trees damaged	
Site Agent briefed by LT			
LT briefed by Site Agent			
LPA informed			
Remedial action required			

Comments

Recommendations

Outcome		
1		
2		
3		
4		

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Tel: 0207 851 4544

London Office: 20 Broadwick Street, W1F 8HT, London
Registered Office: Grange Cottage, All Cannings, Devizes, Wiltshire, SN10 3NR

Arboricultural Supervision Sign off Checklist

Tree No (s)	Project Phase	Task	Date Completed	Signed (Project arboriculturist)	Signed (Site Manager)
	Pre-commencement	Pre-commencement site meeting to include site manager briefing (S.1.5)			
	Pre-commencement	Confirm the location and specification of the protective measures is in accordance with AMS & Tree Protection Plan (TPP)			
	Pre-commencement	Confirm any tree works have been undertaken in accordance with this AMS (S.2.1/ App 1) and determine if further tree work is required			
	Pre-commencement	Seek required permission for further tree works if necessary.			
	Installation of any new services	Attend any excavation within RPA's where arboricultural supervision is prescribed by the AMS (S3.4) to ensure work is undertaken in accordance with NJUG provisions or other specification.			
	Demolition	Demolition of hard surfaces/ structures within RPA (S3.6) Confirm position of any additional temporary ground protection and that temporary ground protection is in accordance with AMS.			
	Completion of Demolition	Sign off of the demolition phase			
	Construction	Supervised manual excavation of foundations			
	Construction	Installation of 'No Dig' hard surfacing			
	Construction	Additional excavations (if required)			
	Completion of Construction	Completion of construction			
	Post Construction	Removal of machinery and materials from site			
	Post Construction	Dismantle & removal of protective measures			
	Landscaping	Completion of Landscaping			
	Project Completion	Sign off from project arboriculturist			

Landmark Trees

PART 3 – PLANS

PLAN 1

TREE CONSTRAINTS PLAN

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).

Landmark Trees

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Site: 14 Greenaway Gardens	1:200@ A0
Drawing Title: Tree Constraints Plan	October 2020

Key:

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

Category, Crown Spread, Root Protection Area, Tree Number, Species, Category

Tree Position Approximate (not shown on original survey)

PLAN 2

ARBORICULTURAL IMPACT ASSESSMENT PLAN (S)

i. Ground Floor

Proposed Site Plan

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: 14 Greenaway Gardens	1:200@ A0
Drawing Title: Arboricultural Impacts Assessment	February 2021

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

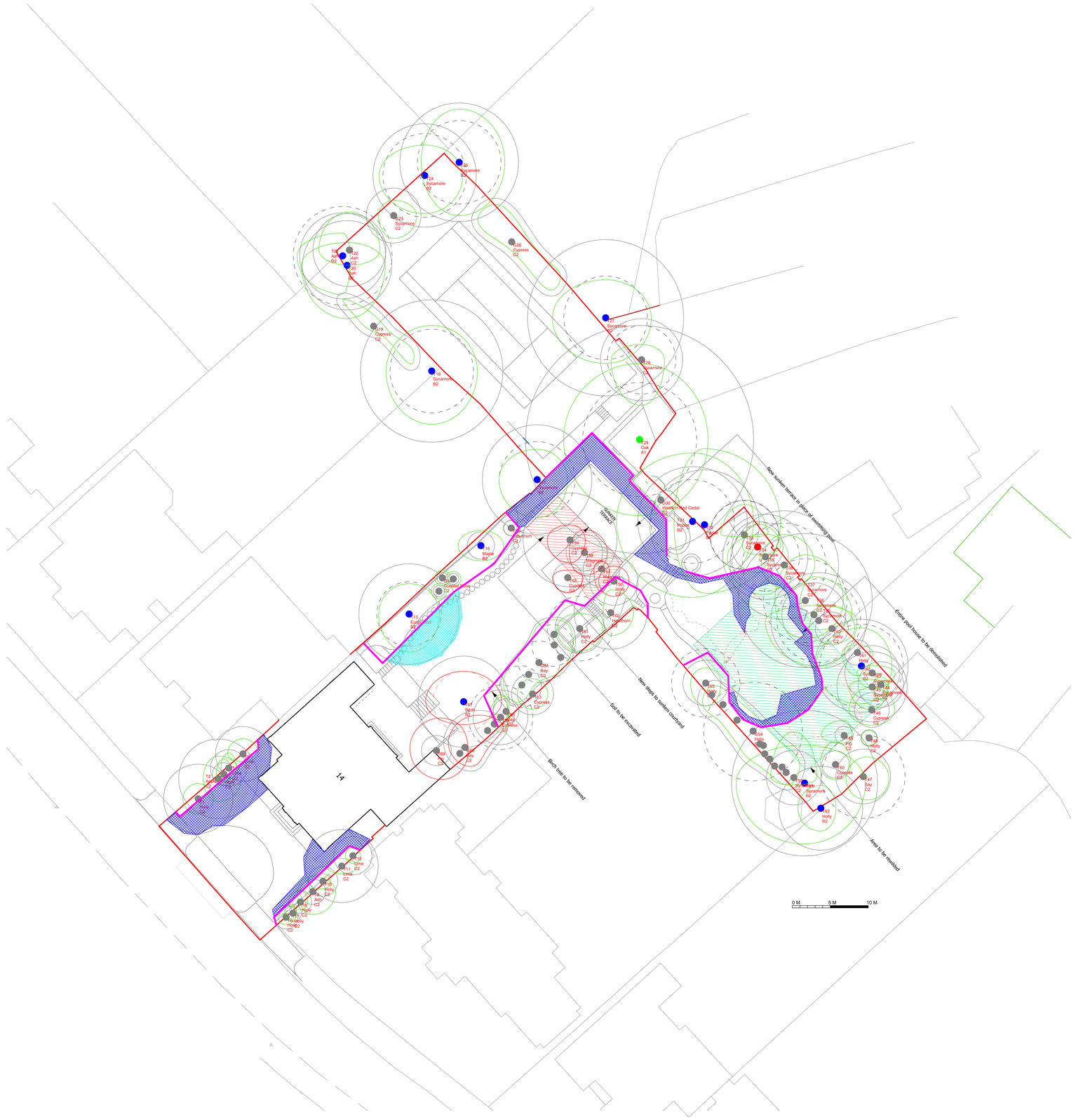
Category — Crown Spread — Tree Number — Species — Category — Root Protection Area

Tree Position Approximate (not shown on original survey)

N

PLAN

TREE PROTECTION PLAN



Proposed Site Plan

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: 14 Greenaway Gardens	1:200@ A0
Drawing Title: Tree Protection Plan	February 2021

Key:

- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention
- Tree Protection Fencing
- Ground Protection: 75mm woodchip topped with 32mm plyboard
- Category, Crown Spread, Root Protection Area, Tree Number, Species, Category
- Tree Position Approximate (not shown on original survey)
- Tree Felled To facilitate Development
- Ground Protection: Existing hard surfacing retained until swimming pool and summerhouse demolished