Landmark Trees

ARBORICULTURAL IMPACT ASSESSMENT REPORT

& OUTLINE METHOD STATEMENT:

12 Park Village West

London

NW1 4AE

REPORT PREPARED FOR:

Collett - Zarzycki Ltd.

Fernhead Studios

2B Fernhead Road

London W9 3ET

REPORT PREPARED BY

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MSc ARB MICFor FArbor A MRICS C Env

Ref: CZL/12PVW/AIM/02

Date: 8th December 2015

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.

Tree Constraints & Protection Overview

Client:	Collett - Zarzycki Ltd	**Case Ref:**	CZL/12PVW/AIM/02
Local Authority:	Camden	**Date:**	8/12/15
Site Address: 12 Park Village West, London NW1 4AE			
Proposal: Revised proposals for a basement extension underneath the garage/coach house			

Report Checklist	**Y/N**		**Y/N**
Arboricultural constraints on site	Y	Trees removed (Good husbandry only)	Y
Tree Survey	Y	Topographical Survey	Y
BS5837 Report	Y	Conservation Area	Y
Tree Preservation Orders	N/k		
Tree Protection Plan:	Y		
Tree Constraints Plan:	Y		
Arboricultural Impact Assessment:	Y		

Site Layout				
Site Visit	Y	Date: 09/09/14	Access Full/Partial/None	F
Trees on Site		Y	Off site Trees	Y
Trees affected by development		Y	O/s trees affected by development	N
Tree replacement proposed on plans: (T22 potentially felled on grounds of good husbandry – Replacement planting TBA)		N	On or off-site trees indirectly affected by development	N

Trees with the potential to be affected

8 trial pits have been dug and reviewed by Tree Officer, Nick Bell.

Trial pit evidence has confirmed minimal impact to trees, including category B tree T1 and category U tree T22 (if retained).

Comments

Recommended works for 4 trees regardless of development, including the felling of T22 which is also pertinent to maintaining a safe work site.

Recommendations

1	Proposal will mean the loss of important trees (TPO/CA)	N
2	Proposal has sufficient amelioration for tree loss	N/a
3	Proposals provide adequate tree protection measures	Y
4	Proposal will mean retained trees are too close to buildings	N
5	Specialist demolition / construction techniques required	N
6	The Proposal will result in significant root damage to retained trees	N
7	Further investigation of tree condition recommended	Y

RPA= Root Protection Area
TPP= Tree Protection Plan
AMS= Arboricultural Method Statement
AIA = Arboricultural Implication Assessment
BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'

1. SUMMARY

1.1 This report comprises an arboricultural impact assessment of the proposed development at 12 Park Village West, London NW1 4AE, reviewing any conflicts between the proposals and material tree constraints identified in our survey.

1.2 Of the 26 surveyed trees on or near the site 1 is category A *(High Quality), 9 are category B *(Moderate Quality), 15 are category C *(Low Quality) and 1 is category U *(Unsuitable for Retention). In theory, only moderate quality trees and above are significant material constraints on development. However, the low quality trees will comprise a constraint in aggregate, in terms of at least, replacement planting. In this instance, no such collective impact is proposed.

1.3 Trial pits have been undertaken to confirm the low theoretical impacts of the proposals on trees on and off-site. The trial pits confirm the proposals will have a negligible impact on both the onsite trees, T'1 lime and T22 plum and also the off-site trees, T's 27 -33: the findings revealed only small 'rootlets' within the proposed footprint, identified mostly as belonging to vines / creepers. Small tree roots from a London plane were found in TP6, but there is no plane within 15m of the proposals: RPA's are limited to 15m radii, though trees may root to 60m+ from their stems. Thus, these small roots are not a material constraint on development. It is also important to note that any encroachment on T22 should not strictly speaking be rated as such, as the tree is recommended for felling on the grounds of sound husbandry. Manual excavation to 750mm depth along the line of basement within RPA is recommended as a precautionary measure.

1.4 There are no significant secondary (post-development pressure) impacts on a basement.

1.5 The site has potential for development without impacting on the wider tree population or local landscape. Thus, with suitable mitigation and supervision the scheme is recommended to planning.

* 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 LANDMARK TREES were asked by Collett - Zarzycki Ltd to provide a survey and an arboricultural impact assessment of proposals for the site: 12 Park Village West, London NW1 4AE. The report is to accompany a planning application.

2.1.2 The proposed new works remain primarily focused around a basement extension underneath the garage/coach house. Long-term subsidence has caused cracking to this building as well as the adjoining studio both of which therefore now require piling and underpinning to maintain their structural integrity. The opportunity has therefore been seized to undertake the excavation of these areas and the courtyard to extend the existing vaults and form new laundry, plant room, gym and storage spaces. Included as part of these works are the installation of flush heritage style skylights within the courtyard and the formation of a light well along the rear to get natural light and fresh air into the subterranean level; as well and the reconfiguration of the internal layout of accommodation to the first floor of the coach house.

2.1.3 This report will assess the impact on the 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.

2.1.4 I am a Registered Consultant and Fellow of the Arboricultural Association and a Chartered Forester, with a Masters Degree in Arboriculture and 20 years experience of the landscape industry - including the Forestry Commission and Agricultural Development and Advisory Service. I am a UK Registered Expert Witness, trained in single joint expert witness duties. I am also Chairman of the UK & I Regional Plant Appraisal Committee, inaugurated to promote international standards of valuation in arboriculture.

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: 1401/P/01

Proposals: 1401/P-20

2.3 Scope of survey

2.3.1 As Landmark Trees' (LT) arboricultural consultant, I surveyed the trees on site on 9th September 2014, 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 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 to this report.

2.4.2 A site plan identifying the surveyed trees, based on the client's drawings / topographical survey is provided in Appendix 5.

2.4.3 This plan also serves as the Tree Constraints Plan with the theoretical Root Protection Areas (RPA's), tree canopies and shade constraints, (from BS5837: 2012) overlain onto it. These constraints are then overlain in turn onto the client's proposals to create an Arboricultural Impact Assessment Plan in Appendix 6 and a Tree Protection Plan in Appendix 7. General observations and discussion follow below.

3.0 OBSERVATIONS

3.1 Site description

Photograph 1: 12 Park Village West, London NW1 4AE (Source: Bing Maps)

3.1.1 12 Park Village West is an early Victorian 'villa' style property, situated on the northern corner of the Park Village West Road. The house lies within the generally gentle sloped setting toward Regents Canal. Although the areas to either side of no 12 are relatively flat, the site is divided into two levels: the front house and garage levelled with Park Village West road, and a lower ground level toward the garden facing Regents Canal area, with an approximately 3m difference in level.

3.1.2 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.

3.1.3 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.

3.1.4 Further soil analysis has been undertaken by Geotechnical Environmental Associates with 7 boreholes, which confirmed the presence of London Clay and made ground (see Extract 1 below). The boreholes were also checked for roots, with the results confirming only fibrous roots were present. Appendix 5 contains the results table and the further analysis of the roots found in 6 of the boreholes. One further trial pit was dug.

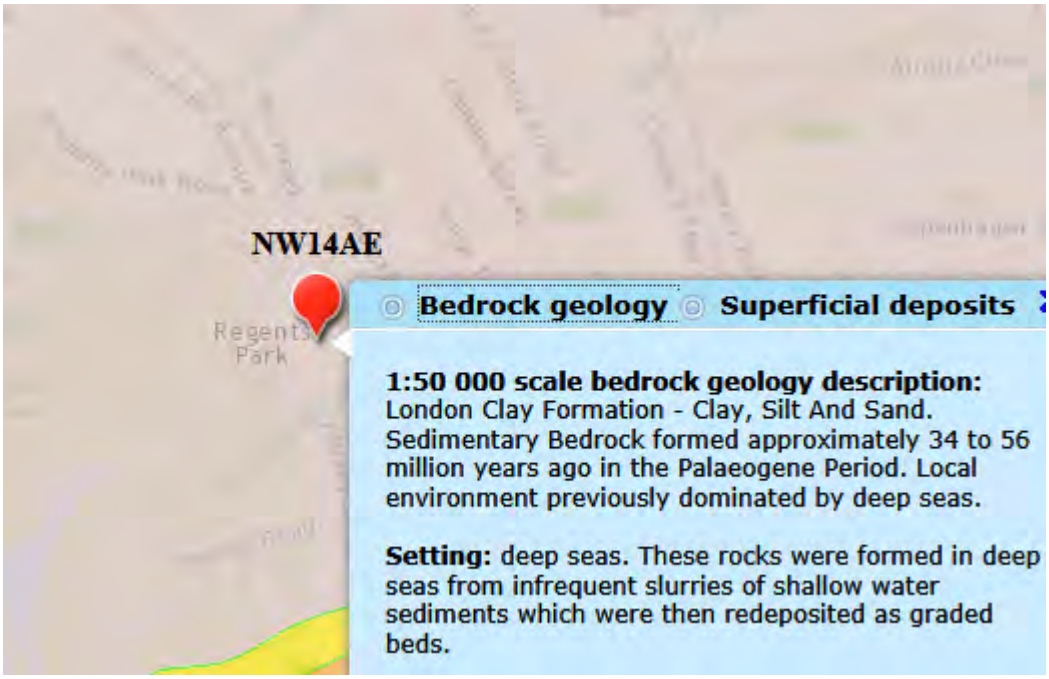


Figure 1: Extract from the BGS Geology of Britain Viewer

5.1 Made Ground

The made ground generally comprised brown silty sandy clay with brick, coal, slate, and gravel which extended to depths of between 0.3 m and 1.7 m below ground level. Along the northern boundary wall, made ground was overlain by a layer of topsoil comprised of dark brown slightly clayey, slightly sandy silt with gravel and abundant vine roots.

Apart from the presence of fragments of extraneous material noted above, no visual or olfactory evidence of contamination was observed during the fieldwork. Four samples of the made ground have been sent for contamination testing as a precautionary measure and the results are presented in Section 5.4.

5.2 London Clay

The London Clay initially comprised firm becoming stiff brown or grey silty fissured clay with occasional selenite crystals, which extended to depths of 5.00 m, the maximum depth investigated.

Extract 1: Soil Analysis from Geotechnical Environmental Associates

3.2 Subject trees

3.2.1	Of the 26 surveyed trees 1 is category A *(High Quality), 9 are category B *(Moderate Quality), 15 are category C *(Low Quality) and 1 is category U *(Unsuitable for Retention).

3.2.2	The tree species found on site comprise common lime, sweet and laurel bay, elm, birch, Judas tree, field and Japanese maple, flowering cherry, horse chestnut, leyland and lawson cypress, London plane, purple plum, sycamore, common yew and Chinese privet.
3.2.3	In terms of age demographics there is a preponderance of semi-mature and mature trees on the site, with young and early mature trees in the population.

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 4 trees, including the need to fell T22 due to decay, canker and frass. These are listed in Appendix 2.

3.3 Planning Status

3.3.1	We are not aware of the existence of any Tree Preservation Orders, but understand the site stands within the Regents Park 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.

4.0 DEVELOPMENT CONSTRAINTS

4.1 Primary constraints

4.1.1 BS5837: 2012 gives Recommended Protection Areas (RPA's) for any given tree size. 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.

4.1.2 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. No modifications have been made in this instance, although **8 trial pits have been undertaken to confirm there are no significant roots from the neighbouring trees within the site (see below).**

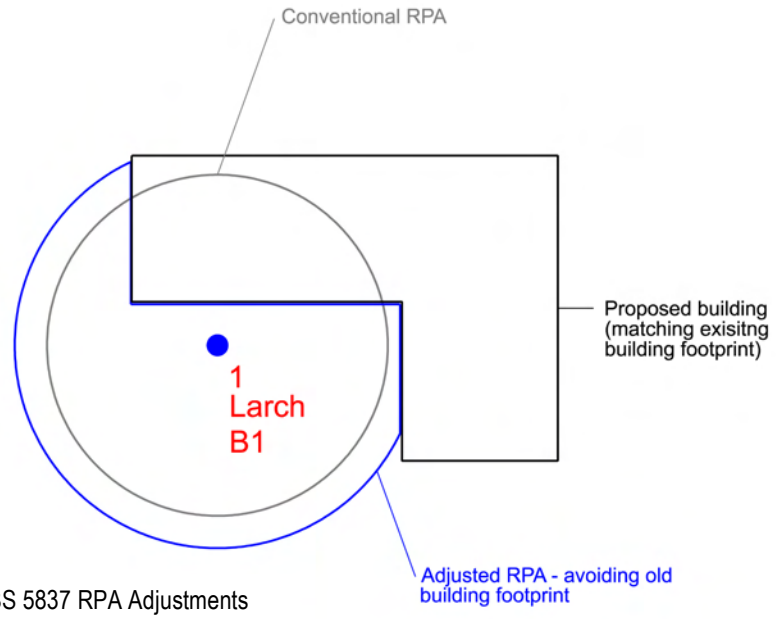


Figure 2 – Generic BS 5837 RPA Adjustments

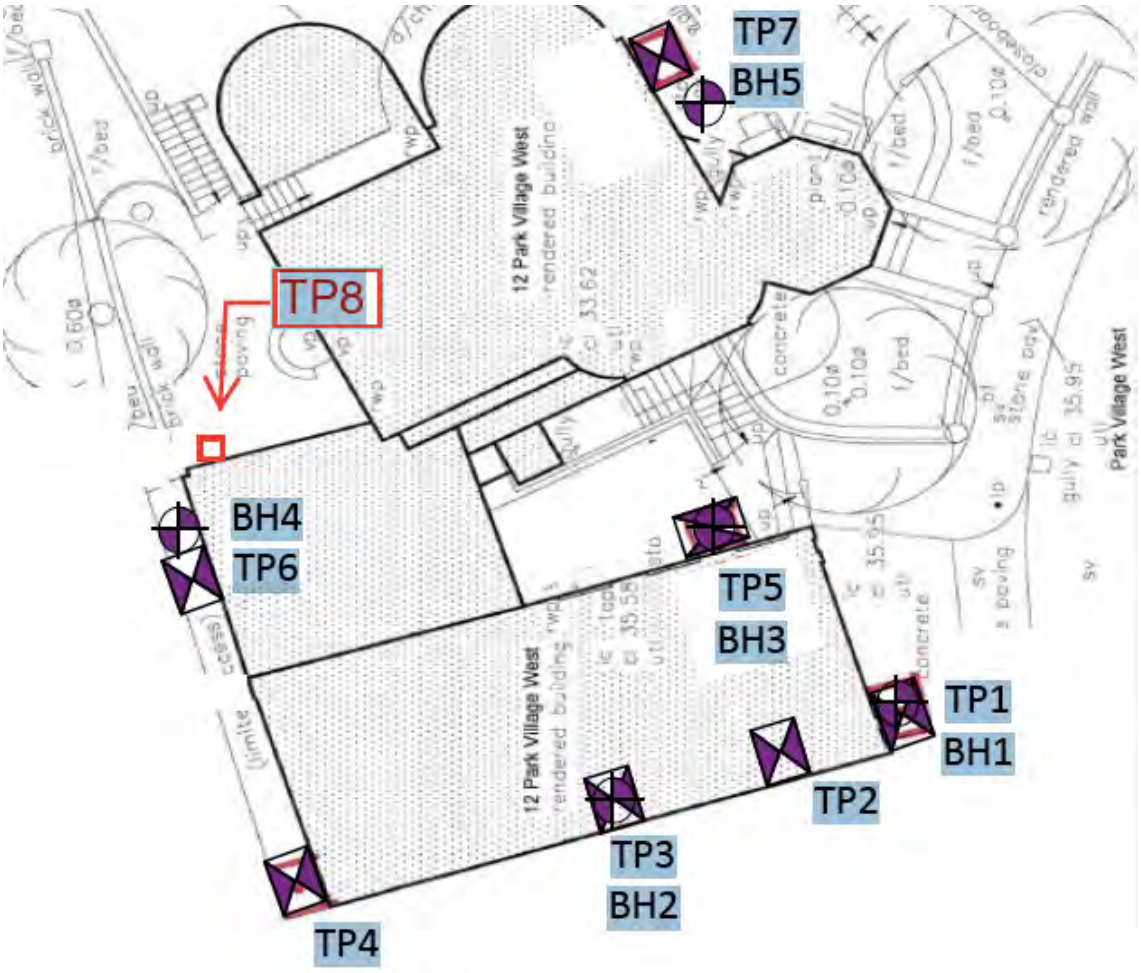
4.1.3 In BS5837, paragraph 4.6.2 states that RPA's should reflect the morphology and disposition of the roots; where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution. Not infrequently, LT are requested by LPA Tree Officers to modify the RPA's to reflect their assumptions that e.g. a road will have drastically limited root growth.

4.1.4	Seven trial pits were dug for the original proposals in April 2015, with the additional trial pit dug on 5th August 2015 (the original trial pits 1, 4 & 6 were also re-opened on the 5th August 2015 for the Camden Tree Officer Nick Bell). The results are summarized in Table 2 below, with the information provided by Richardson's Botanical Identifications on the identity of the roots found:

Table 2: Summary of all Trial Pit Results and Root Identification

Trial Pit	Results
1 **Southern Wall of Coach House**	Top: 0.85m deep Base: 1.1m base and 100mm lateral projection Rootlets (fibrous roots) noted 1 root – hornbeam?
2 **Internal western wall of Coach House**	Top: 0.68m deep Base: 1.15m base and 0mm lateral projection Rootlets (fibrous roots) noted 1 root – grape vine/Virginia creeper 1 root – grape vine/Virginia creeper 1 root – dead (birch) 1 root – shrub (aucuba) - dead
3 **Chimney Stack on western wall of Coach House**	Brick wall to base; Base: 1.15m and 0mm lateral projection No roots
4 **Northern wall of Coach House**	Brick wall; Base: 0.5m and 0mm lateral projection Abundant rootlets (fibrous roots) noted 1 root – ivy 1 root – lime
5 **Eastern Wall of Coach House**	One tier brick corbel Top: 0.75m; Base: 1.2m and lateral projection 60mm Roots noted
6 **Northern wall of gym**	One tier brick corbel Top: 0.15m; Base: 0.7m and lateral projection 400mm Abundant rootlets (fibrous roots) noted 1 root – plane – dead 1 root – plane 1 root – plane 1 root – plane - dead
7 **Southern wall of main house**	Two tier with additional step up Top: 0.22m; Base: 0.5m and lateral projection 400mm Rootlets (fibrous roots) noted
8 **Eastern wall of main house**	Trench under concrete of approximately 0.6m depth – excavated below this to 0.82m No significant roots

4.1.5	The most recent photographic trial pit evidence for trial pit 8 (see Appendix 5) has been viewed by the Tree Officer Nick Bell on the 12th August 2015. At the site meeting on the 5th of August 2015 and in a subsequent email, there is agreement between the parties that the excavations appear to be free of significant roots; the Tree Officer also noted that some of the excavations (TP8) would be best described as a holes as opposed to pits i.e. trenches. This was due to the existence of a 600mm concrete apron.



4.1.6	The quality of trees will also be a consideration: U Category trees are discounted from the planning process in view of their limited service life. Again, Category-C trees would not normally constrain development individually, unless they provide some external screening function. As discrete, internal trees, their removal will not affect the wooded envelope that encloses much of the site.
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."

4.1.10 In theory, only moderate quality trees and above are significant material constraints on development. However, the findings reveal only small 'rootlets' within the proposed footprint, identified mostly as belonging to vines / creepers. Small tree roots from a London plane were found in TP6, but there is no plane within 15m of the proposals: RPA's are limited to 15m radii, though trees may root to 60m+ from their stems. Thus, these small roots are not a material constraint on development

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.

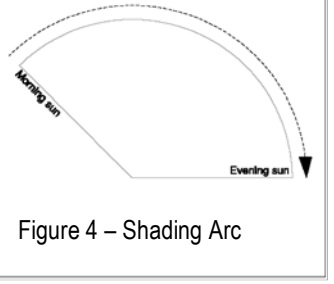


Figure 4 – Shading Arc

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 The on and off-site trees 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 significance of these constraints will vary depending on the location and proximity to the proposed re-development.

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: CZL/12PVW/AIM

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	1	Lime, Common	Basement excavation and lightwell All existing development /hardstandings with supporting trial pit evidence	8.2 m^2 5.99 %	Mature	Normal	Moderate	Low	N/A	Hand dig / prune top 750mm of path thru. RPA (including underpinning boundary wall thru. RPA)
U	22	Purple Plum	Basement Construction within RPA NB: Recommended for felling on grounds of sound husbandry	0.62 m^2 1.52 %	Mature	Poor	Moderate	N/A	N/A	New planting / landscaping Manual excavation in RPA if retained

6.0 DISCUSSION

6.1 Rating of Primary Impacts

6.1.1 Trial pits have been undertaken to confirm the low theoretical impacts of the proposals on trees on and off-site. The trial pits confirm the proposals will have a negligible impact on both the onsite trees, T'1 lime and T22 plum and also the off-site trees, T's 27 -33: the findings revealed only small 'rootlets' within the proposed footprint, identified mostly as belonging to vines / creepers. Small tree roots from a London plane were found in TP6, but there is no plane within 15m of the proposals: RPA's are limited to 15m radii, though trees may root to 60m+ from their stems. Thus, these small roots are not a material constraint on development. It is also important to note that any encroachment on T22 should not strictly speaking be rated as such, as the tree is recommended for felling on the grounds of sound husbandry. Manual excavation to 750mm depth along the line of basement within RPA is recommended as a precautionary measure.

6.1.2 The principal of RPA encroachment is established within BS5837:2012 and supported by the source document, National Joint Utilities Guidelines 10 / Vol. 4 1995 / 2010. NJUG introduced the x12 diameter *Precautionary Zone* for supervised working and *Prohibited Zone* at a universal 1m from the base of the tree. RPA's are frequently confused with the NJUG Prohibited Zone, when they clearly correlate with the NJUG Precautionary Zone.

6.1.3 An RPA encroachment of <20% of RPA may be considered as low impact, given the permissive references to 20% RPA relocation and impermeable paving within BS5837:2012 and other published references to healthy trees tolerating up to 30-50% root severance (Coder, Helliwell and Watson in CEH 2006). The trees in question are healthy specimens of species with a good resistance to development impacts, and quite capable of tolerating these low impacts.

6.1.4 "**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 2000). LT do not recommend annexing such high proportions of the root system; rather that within the context of the published science, planning should not be unduly concerned by impacts that are well below the subcritical threshold – *tree health is not at stake.*

6.2 Rating of Secondary impacts

6.2.1 There are no significant secondary (post-development pressure) impacts on a basement; any nuisance deposition on the lightwells can be mitigated by simple cleaning maintenance.

6.3 Mitigation of Impacts

6.3.1	All plant and vehicles engaged in excavation works should either operate outside the RPA, or should run on a temporary surface designed to protect the underlying soil structure.

6.3.2	In the unlikely event that T22 is retained, the path of foundations through RPA will be manually excavated to 750mm depth under arboricultural supervision; any roots encountered within the trenches / pits will be cleanly pruned back to an appropriate junction with a sharp pruning saw or secateurs back to a junction. Roots larger then 25mm diameter may only be cut in consultation with an arboriculturalist.

7.0 CONCLUSION

7.1	The trial pits have confirmed that there will be no significant impact from the basement proposals.
7.2	The RPA of T1 must be further protected with fencing / physical barriers. These measures are elaborated in the Outline Method Statements in Section 8.0.
7.3	Therefore, the proposals will not have any significant impact on either the retained trees or wider landscape. Thus, with suitable mitigation and supervision the scheme is recommended to planning.

8.0 RECOMMENDATIONS & OUTLINE METHOD STATEMENT

8.1 Specific Recommendations

8.1.1 Recommended tree works are found in Appendix 2 to this report, with a selection of columnar tree species cultivars for landscaping of constricted sites provided in Appendix 3. Any tree works recommended within this report should only be carried out with local authority consent.

8.1.2 The excavation and construction impacts within the RPA identified in Table 1 above, will need to be controlled by the outline method statement below.

8.2 Outline Method Statement (to be read in conjunction with Appendix 7: Tree Protection Plan, and developed further with a contractor in consultation with the retained arborist, post-planning)

8.2.1 The sequence of works should be as follows:

i) installation of TPB for demolition & construction;
ii) installation of underground services;
iii) installation of ground protection;
iv) main construction;
v) removal of TPB;
vi) soft landscaping;

8.2.2 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.

8.2.3 The arboricultural consultant should be given responsibility for monitoring of all arboricultural works and issuing a certificate of practical completion. In addition, the arboricultural consultant should be instructed to inspect and monitor any works within exclusion zones; i.e. demolition of hard standing **and pre-emptive excavation of piling line and any service trenches**. A record of site visits should be maintained for inspection on site and copies forwarded to the developer / agent and to the local planning authority.

8.2.4 T1 should be protected with a Tree Protection Barrier (TPB). This TPB should comprise steel, mesh panels 2.4m in height ('Heras') and should be mounted on a scaffolding frame (shown in Fig 2 of BS5837:2012 – see below). The position of the TPB can be shown on plan as part of the discharge of conditions, once the lay out 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 removed only upon full completion of works.

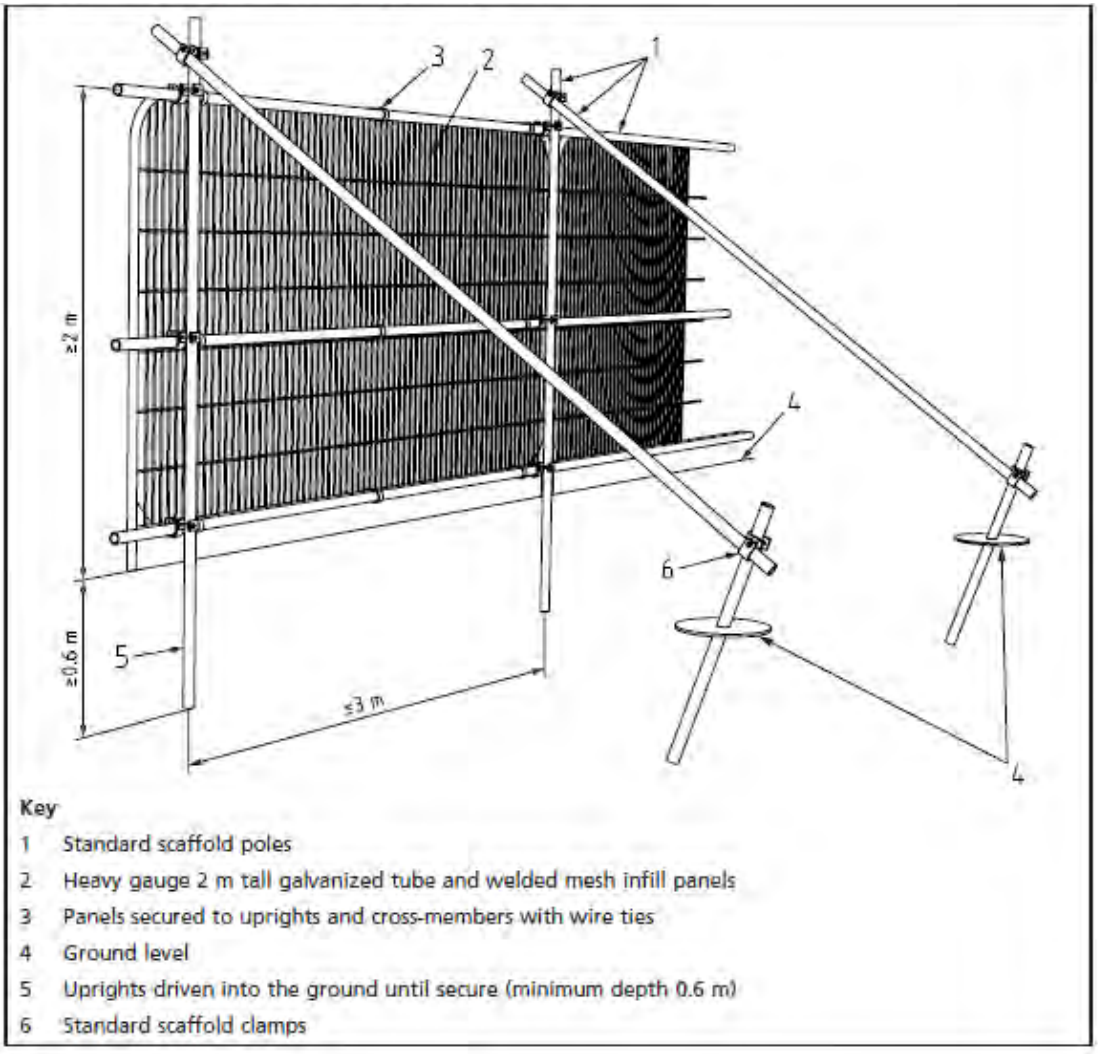
8.2.5 The TPB may no longer be required during soft landscaping work but a full arboricultural assessment must be performed prior to the undertaking of any excavations within the Root Protection Area (RPA) of a tree. This will inform a decision about the requirement of protection measures. It is important that all TPBs have permanent, weatherproof notices denying access to the RPA.

8.2.6 Where possible, the RPA will be entirely contained within the TPB. However, if it is not entirely possible; all involved parties will need to be made aware of any deficiencies. In this instance, ground protection (with metal or plastic sheeting as shown in Appendix 7) will be used to make good the deficiencies and avoid root damage by soil compaction.

8.2.7 Ground outside the TPZ must be protected from site traffic and not left exposed during construction. As far as practical, existing hard surfaces should be retained as initial ground protection (where fit for purpose for anticipated loading) until the landscaping phase and / or substituted / supplemented with appropriate materials (e.g. Infraweb etc.), capable of withstanding anticipated loads. **NB the provision of ground protection on plan does not prohibit the consented laying of services and related works in those areas. It means that those operations should proceed under caution and protect adjacent ground to that immediately requisitioned for the work in hand.**

8.2.8 Where the basement line/wall underpinning line lies within the RPA of T1 (and T22 if retained), the foundations should be hand excavated to 750mm with pre-emptive root pruning under arboricultural supervision if required.

8.2.9 Where levels of dust build-up on trees are likely, 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.



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Fig. 1 Tree Protection Barrier Specification

(Source: Figure 2 from BS5837 - Default specification for protective barrier)

8.2.10	It is understood that the existing services will be used. If additional service routes are required, they should avoid the RPA at the design stage; however if unavoidable then it may be possible with written permission from the LPA to implement the provisions of BS5837 and NJUG VOLUME 4 (e.g. radial trenching and /or mole trenching) under arboricultural supervision.
8.2.11	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.
8.2.12	These points should be resolved and approved through consultation with the planning authority via their Arboricultural Officer.

9.0 REFERENCES

- Barlow JF & Harrison G. 1999. Shade By Trees, Arboricultural Practice Note 5, AAIS, Farnham, Surrey.
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APPENDIX 1

TREE SCHEDULE

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: 12 Park Village West, London NW1

Date: 9 September 2014

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Adam Hollis

Ref: CZL/12PVW/AIM

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	Lime, Common	18	4544	7.0	550	Mature	6.6	Normal	Fair	B		20+	Ivy clad Tipped Suckers on base.
G2	Sycamore	17	5	10.0	200	Early Mature	2.4	Normal	Fair	B	1	>40	Ivy clad
3	Elm	12	2533	4.0	139	Young	1.7	Moderate	Fair	C	2	10+	Leaning as suppressed Ivy clad
4	Cypress, Leyland	19	4	5.0	500	Mature	6.0	Normal	Good	C	2	20+	
5	Elm	12	5053	6.0	200	Semi-mature	2.4	Normal	Fair	C	2	10+	Leaning - suppressed
G6	Sycamore	17	5	10.0	500	Mature	6.0	Normal	Fair	B	2	>40	High pruned
7	Yew, Common	6	3	3.0	278	Semi-mature	3.3	Normal	Good	C	1	>40	

Landmark Trees

Site: 12 Park Village West, London NW1

Date: 9 September 2014

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
020 7851 4544
Surveyor(s): Adam Hollis
Ref: CZL/12PVW/AIM

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
8	Cypress, Lawson	7	2	1.5	250	Semi-mature	3.0	Normal	Good	C	2	>40	
9	Birch	11	1322	7.0	180	Semi-mature	2.2	Moderate	Fair	C	1	>40	Leaning through canopy of 8
10	Cypress, Lawson	5	1.5	1.0	110	Young	1.3	Normal	Good	C	2	20+	Suppressed by nearby tree
11	Privet, Chinese	8	3431	3.0	160	Semi-mature	1.9	Moderate	Fair	C	1	>40	Sprawling habit Variegated
12	Sycamore	18	8555	8.0	566	Mature	6.8	Normal	Fair	B	2	20+	Twin stem
13	Sycamore	20	5246	10.0	580	Mature	7.0	Moderate	Fair	B	2	20+	Highly pruned Co-dominant from 6m abg Included bark generally
14	Sycamore	19	2546	10.0	540	Mature	6.5	Moderate	Fair	B	1	>40	

Landmark Trees

Site: 12 Park Village West, London NW1

Date: 9 September 2014

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Adam Hollis

Ref: CZL/12PVW/AIM

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	Elm	10	6456	3.0	300	Semi-mature	3.6	Moderate	Fair	C	2	10+	Flat topped Lost leader Large burr to west
16	Lime, Common	18	4	1.5	540	Mature	6.5	Moderate	Fair	B	1	20+	Necroti lesion with bleed Honey fungus near base
17	Bay, Sweet	8	2233	2.5	210	Semi-mature	2.5	Normal	Fair	C	2	20+	Suppressed by nearby tree
18	Maple, Field	7	3	2.5	240	Semi-mature	2.9	Normal	Fair	C	2	20+	Pollarded
19	Lime, Common	16	2433	10.0	600	Mature	7.2	Normal	Fair	B	1	>40	Slight lean Loss of limbs
20	Bay Laurel	9	3	3.0	180	Semi-mature	2.2	Normal	Good	C	1	>40	Multi-stem
21	Bay Laurel	9	3	1.0	320	Semi-mature	3.8	Normal	Good	C	1	>40	Multi-stem

Landmark Trees

Site: 12 Park Village West, London NW1

Date: 9 September 2014

Appendix 1

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd

020 7851 4544

Surveyor(s): Adam Hollis

Ref: CZL/12PVW/AIM

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
22	Purple Plum	6	2433	2.5	300	Mature	3.6	Poor	Fair	U		<10	Cankered with decay Frass Sparse top
23	Judas Tree	9	1122	7.0	160	Semi-mature	1.9	Moderate	Fair	C	1	10+	Low live crown ratio Die-back tips Small broken branch; S Top
24	Maple, Japanese	9	4255	5.0	283	Early Mature	3.4	Normal	Fair	B	1	>40	Multi-stem
25	Plane, London	25	999,11	10.0	1200	Mature	14.4	Normal	Good	A	1	>40	Restricted rooting
26	Shrub	8	1230	6.0	160	Semi-mature	1.9	Moderate	Fair	C	2	20+	Low live crown ratio Wounded stem Pollard as support for climber

APPENDIX 2

RECOMMENDED TREE WORKS

Notes for Guidance:

1, 2, 3	**- Urgent (ASAP), Standard (within 6 months), 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 %.
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.
Svr Ivy / Clr Bs	- Sever ivy / clear base and re-inspect base / stem for concealed defects.
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.

Landmark Trees

Site: 12 Park Village West, London NW1

Date: 9 September 2014

Surveyor(s): Adam Hollis

Ref: CZL/12PVW/AIM

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
1	Lime, Common	B	18	7.0	4544	CB Svr Ivy Clear suckers on base	Ivy clad Tipped Suckers on base. Recommended husbandry 3
16	Lime, Common	B	18	1.5	4	Finv	Necroti lesion with bleed Honey fungus near base Recommended husbandry 2
22	Purple Plum	U	6	2.5	2433	Fell	Cankered with decay Frass Sparse top Recommended husbandry 2
26	Shrub	C	8	6.0	1230	POL Pollard as support for climber	Low live crown ratio Wounded stem Pollard as support for climber Recommended husbandry 3

APPENDIX 3

TREE SELECTION FOR CONSTRICTED LOCATIONS

Table 4: Rosaceous Tree Species for Constricted Planting Locations

Common Name	Species	Selected Form
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
Rowan / Mountain ash	Sorbus aucuparia	Rossica Major
Rowan / Mountain ash	Sorbus aucuparia	Sheerwater Seedling
Swedish whitebeam	Sorbus intermedia	Brouwers
B. whitebeam	Sorbus x thuringiaca	Fastigiata

Table 5: Specimen Tree Species for Constricted Planting Locations

Common Name	Species	Selected Form
Chinese red bark birch	Betula albosinensis	Fascination
Swedish birch	Betula pendula	Dalecarlica
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

APPENDIX 4

TRIAL PIT RESULTS

A4.1 Seven trial pits were dug for the original proposals in April 2015 by Geotechnical Environmental Associates, with the additional trial pit number 8 dug on 5th August 2015 (the original trial pits 1, 4 & 6 were also re-opened on the 5th August 2015 for the Camden Tree Officer Nick Bell). The results for Trial Pits 1 – 7 are summarized below, with photographs and a full table summary also noted:

Trial Pit No	Structure	Foundation detail	Bearing Stratum
1	Southern Wall of Coach House	One tier concrete corbel Top 0.85 m Base 1.10m. Lateral projection 100mm	MADE GROUND (brown silty clay with red brick, concrete, coal, gravel and rootlets)
2	Internal western wall of Coach House	One tier concrete corbel with sloped edge Top 0.68 m Base 1.15 m Lateral projection 220 mm	MADE GROUND (brown sandy slightly silty clay with brick, concrete, coal fragments, gravel and rootlets)
3	Chimney stack on western wall of Coach House	Brick wall to base Base 1.15 m Lateral projection 0 mm	MADE GROUND (red brick fill with silty slightly clayey matrix)
4	Northern wall of Coach House	Brick Wall Base 0.50 m Lateral projection 0 mm	MADE GROUND (brown sandy silt with brick, concrete and abundant rootlets)
5	Eastern wall of Coach House	One tier brick corbel Top 0.75 m Base 1.2 m Lateral projection 60 mm	MADE GROUND (brown slightly sandy clayey silt with brick, concrete, gravel and roots)
6	Northern wall of gym	One tier brick corbel Top 0.15 m Base 0.7 m Lateral projection 400 mm	MADE GROUND (brown sandy silt with brick, concrete and abundant rootlets)
7	Southern wall of main house	Two tier with additional step up Top 0.22 m Base 0.5 m Lateral projection 400 mm	MADE GROUND (slightly sandy silty clay with rootlets, brick and concrete fragments)

Extract A4.1: Results from Trial Pits 1 – 7 (Source: Geotechnical Environmental Associates)

Table A4.1: Summary of all Trial Pit Results and Root Identification

Trial Pit	Results
1 **Southern Wall of Coach House**	Top: 0.85m deep Base: 1.1m base and 100mm lateral projection Rootlets (fibrous roots) noted 1 root – hornbeam?
2 **Internal western wall of Coach House**	Top: 0.68m deep Base: 1.15m base and 0mm lateral projection Rootlets (fibrous roots) noted 1 root – grape vine/Virginia creeper 1 root – grape vine/Virginia creeper 1 root – dead (birch) 1 root – shrub (aucuba) - dead
3 **Chimney Stack on western wall of Coach House**	Brick wall to base; Base: 1.15m and 0mm lateral projection No roots
4 **Northern wall of Coach House**	Brick wall; Base: 0.5m and 0mm lateral projection Abundant rootlets (fibrous roots) noted 1 root – ivy 1 root – lime
5 **Eastern Wall of Coach House**	One tier brick corbel Top: 0.75m; Base: 1.2m and lateral projection 60mm Roots noted
6 **Northern wall of gym**	One tier brick corbel Top: 0.15m; Base: 0.7m and lateral projection 400mm Abundant rootlets (fibrous roots) noted 1 root – plane – dead 1 root – plane 1 root – plane 1 root – plane - dead
7 **Southern wall of main house**	Two tier with additional step up Top: 0.22m; Base: 0.5m and lateral projection 400mm Rootlets (fibrous roots) noted
8 **Eastern wall of main house**	Trench under concrete of approximately 0.6m depth – excavated below this to 0.82m No significant roots


Photographs A4.1 – A4.4: Results from Trial Pit 8 showing one root in the paving slabs only


A4.2 The roots/rootlets noted in Extract A4.1 above and Table A4 were identified by Richardson's Botanical Identifications (see letter below).

A4.3 It has been agreed between the Tree Officer Nick Bell and Landmark Trees during the site meeting on the 5th August 2015 and subsequent emails that none of the trial pits contained significant roots. Whilst it was noted TP8 was a 'hole' rather than a trench, it was noted that the 600mm of concrete excavated to provide the trial pit evidence had clearly restricted root colonisation in this area.

Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Dr Ian B K Richardson
BSc, PhD, CBiol, MiBiol, MiHort, FLS
James Richardson
BSc (Hons. Biology)

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RG6 7BB

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E-mail: richardsons@botanical.net
Web: www.botanical.net

Conisbee & Associates
4 Offord Street
LONDON
N1 1DH

Your ref: **140627 - N. Nicholls**

Our ref: 73/8701

10/04/2015

Dear Sirs

Park Village West

The samples you sent in relation to the above on 01/04/2015 have been examined. The structure was referable as follows (please note that no roots were found in TP3 (Internal coach house and PW with No 13 Park Village West)):

TP1 (External front elevation of coach house and PW with No 13 Park Village West), 0.25m

1 root: could well be CARPINUS (Hornbeam). Tentative - this sample was in POOR condition. Alive, recently*.

TP1 (External front elevation of coach house and PW with No 13 Park Village West), 0.70m

1 root: the family VITACEAE (Vitis (Grape-Vine), Parthenocissus (Virginia Creeper etc.)). Alive, recently*.

1 root: BETULA (Birch). A further sample, not examined in detail appeared similar under low magnification. Dead*.

TP2 (Internal coach house and PW with No 13 Park Village West), 0.60m

1 root: the family VITACEAE (Vitis (Grape-Vine), Parthenocissus (Virginia Creeper etc.)). Alive, recently*.

TP2 (Internal coach house and PW with No 13 Park Village West), 0.70m

1 root: the family VITACEAE (Vitis (Grape-Vine), Parthenocissus (Virginia Creeper etc.)). A further sample, not examined in detail appeared similar under low magnification. Alive, recently*.

TP2 (Internal coach house and PW with No 13 Park Village West), 1.40m

1 root: a SHRUB, similar in some ways to AUCUBA (evergreen shrubs, often with large, variegated leaves). Tentative. Dead*.

TP4 (External rear elevation of coach adjacent to boundary with Pennethorne House and PW with No 13 Park Village West), 0.10m

1 root: HEDERA (Ivy); also the related FATSIA (a robust shrub with fig-like leaves). 7 further

roots, not examined in detail appeared similar under low magnification. Alive, recently*.

1 root: TILIA (Lime). Alive, recently*.

9 samples: unfortunately insufficient cells for identification.

TP6, 0.20m

1 root: PLATANUS (Plane). Dead*.

TP6 (External rear elevation of coach adjacent to boundary with Pennethorne House), 0.60m

1 root: PLATANUS (Plane). Alive, recently*.

TP6 (External rear elevation of coach adjacent to boundary with Pennethorne House), 0.70m

1 root: PLATANUS (Plane). Alive, recently*.

TP6 (External rear elevation of coach adjacent to boundary with Pennethorne House), 0.80m

1 root: PLATANUS (Plane). 4 further roots, not examined in detail appeared similar under low magnification. Dead*.

I trust this is of help. Please call us if you have any queries; our Invoice is enclosed.

Yours faithfully

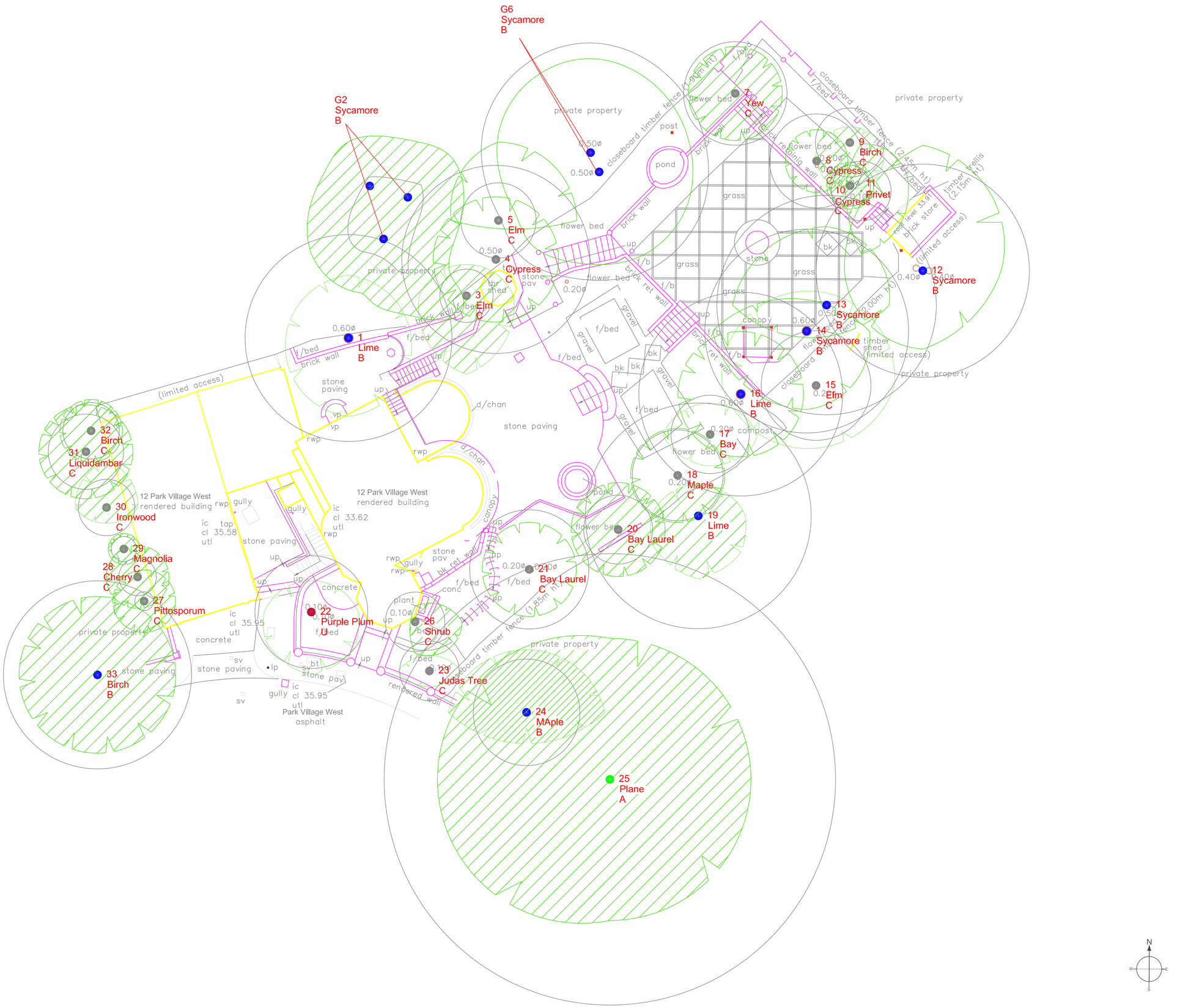
Dr Ian B K Richardson

* Based mainly on the Iodine test for starch. Starch is present in some cells of a living woody root, but is more or less rapidly broken down by soil micro-organisms on death of the root, sometimes before decay is evident. This result need not reflect the state of the parent tree.

Identified with no information on vegetation, on or off site.

APPENDIX 5

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

20 Broadwick Street, London, W1F 8HT
Tel: 0207 851 4544 Mobile: 07812 989928
e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 12 Park Village	1:100@ A1
Drawing Title: Tree Constraints Plan	September 2014

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
3 Birch B2

Tree Position Approximate (not shown on original survey)

APPENDIX 6

ARBORICULTURAL IMPACT ASSESSMENT PLAN

G6
Sycamore
B

G2
Sycamore
B

7
Yew
C

9
Birch
C

8
Cypress
C

10
Cypress
C

11
Privet

5
Elm
C

4
Cypress
C

3
Elm
C

1
Lime
B

12
Sycamore
B

13
Sycamore
B

14
Sycamore
B

15
Elm
C

16
Lime
B

17
Bay
C

18
Maple
C

19
Lime
B

20
Bay Laurel
C

21
Bay Laurel
C

32
Birch
C

31
Liquidambar
C

30
Ironwood
C

29
Magnolia
C

28
Cherry
C

27
Pittosporum
C

22
Purple Plum
U

26
Shrub
C

23
Judas Tree
C

24
MAple
B

25
Plane
A

33
Birch
B

GYM
KITCHEN
DINING ROOM
HALLWAY
TOILET
LAUNDRY
STORE
STUDY
PLANT

LOWER GROUND FLOOR PLAN

N
W
E
S

5m
10m

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

Landmark Trees
20 Broadwick Street, London, W1F 8HT
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e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 12 Park Village	1:100@ A1
Drawing Title: Arboricutural Impact Assessment	August 2015

Key:

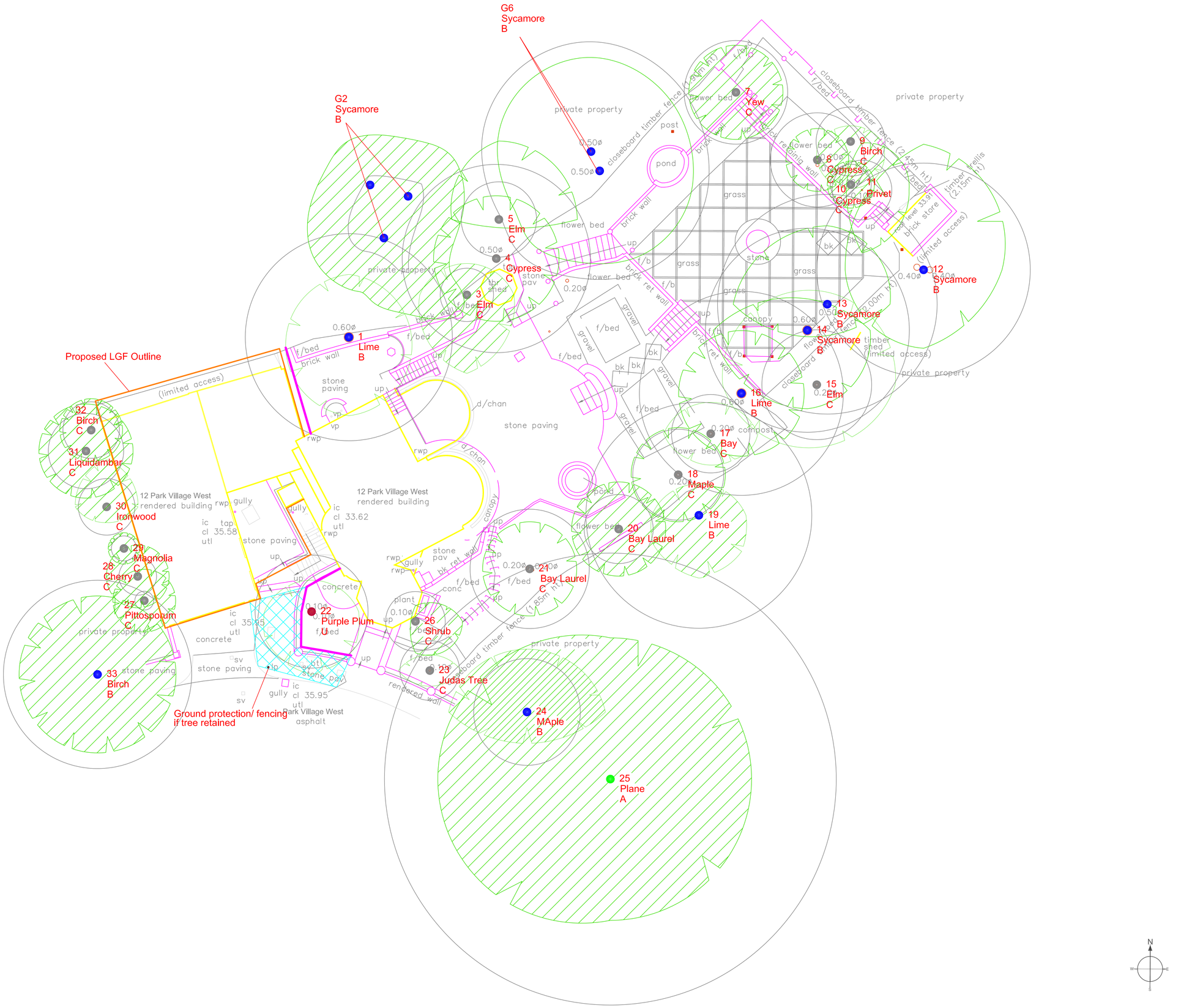
- Category A
  High Quality
- Category B
  Moderate Quality
- Category C
  Low Quality
- Category U
  Trees Unsuitable for Retention

Category
Crown Spread
Root Protection Area
13 Birch B2
Tree Number
Species
Category

Tree Position Approximate (not shown on original survey)

APPENDIX 7

TREE PROTECTION 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

20 Broadwick Street, London, W1F 8HT
Tel: 0207 851 4544 Mobile: 07812 989928
e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 12 Park Village	1:100@ A1
Drawing Title: Tree Protection Plan	September 2014

Key:

- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention
- Precautionary area: assumed no-dig construction. All excavation subject to arboricultural supervision; limits of which to be hand-dug; hard-surfacing retained as ground protection where practicable

Category
Root Protection Area
13 Birch B2
Crown Spread
Tree Number
Species
Category

- Tree Position Approximate (not shown on original survey)
- Tree Protection Fencing

N W E S

5m 10m