Landmark Trees

ARBORICULTURAL METHOD STATEMENT

10a Heath Drive

London

NW3 7SN

REPORT PREPARED FOR:

Simon Wyn James

Patalab Architecture

Unit 4.3

2-6 Northburgh Street

London EC1V 0AY

REPORT PREPARED BY:

Adam Hollis

MSc ARB MICFor FArbor A MRICS C Env

Ref: PAT/10HD/AMS/01

Date: 18th December 2013

Contents

Appendices

1.0 Introduction

1.1 Purpose & Use of the Method Statement

1.1.1 This outline method statement has been prepared for Patalab Architecture to support the recent planning application at 10a Heath Drive, London NW3 7SN. The document will address the London Borough of Camden's request for further information on the impact the proposal may have on the surround trees:

'Please provide a tree survey within the application site, specifying the ***species****, spread, roots and position of trees, illustrating them accurately on a site plan. This must indicate any trees, which are to be felled or affected by the proposed development. The location of any trees within adjacent properties that may be affected by the application should also be shown (within 8-10m) and street trees on frontage should be shown.* ***A statement in relation to the measures to be adopted during construction works to protect those trees shown to be retained on the submitted drawings may also be necessary.*** *Further guidance is also provided in BS5837:2005, 'A guide for trees in relation to construction' available from the British Standards Institute website.'*

1.1.2 This report will assess the impact on the trees and their constraints, identified in our survey. This information has been used to inform the methodology for any proposed works that may have an effect upon the trees on and adjacent to the site. 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 document form part of the work schedule and specification issued to the building contractors and can be used to form part of the contract.

1.1.3 Copies of this document 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.

1.2 Terms of Reference

1.2.1 We (LT) are instructed by Patalab Architects to prepare a method statement for proposed development based on the above planning application with reference to BS 5837:2012 Trees in Relation to Design, Demolition and Construction. As Landmark Trees' (LT) arboricultural consultant, I surveyed the trees on site on 11th December 2013, 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].

1.2.2 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.

1.2.3 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.

1.2.4 The client has supplied us with a site lay-out plan (Existing_survey-Site Plan), the current proposals plan (A2010_P-GF Plan A2) and the Design and Access Statement (131104_DAS_Rev02). We are also reliant upon our own impact assessment (See Table 1 below) and Arboricultural Impact Assessment plan overlays of tree constraints contained in Appendix 6.

1.3 Development Proposals & Potential Impacts

1.3.1 No. 10a is an existing residential dwelling located toward the centre of Heath Drive and near the junction of Kidderpore Ave and Bracknell Gardens. Access to the existing building is provided directly from Heath Drive via a vehicular driveway along the northeast side of the property and a pedestrian pathway along the centre of the front garden, whilst there is no access from the rear of the property. There is a large, stepped and densely planted garden to the rear in which a separate external double garage occupies the north corner, whilst a more paved and hedged garden occupies the front of the building. The property is located in the Redington & Frognal Conservation Area.

Photograph 1: View of 10a looking north-east from Heath Drive. (Image courtesy of Google Maps)

1.3.2 The principal proposals are for the demolition of an existing garage and a single storey extension to the property. Access to the rear garden would be relocated around the north corner of the site.

1.3.3 There are 11 trees surveyed on or around the site, of which 3 are B category *(Moderate Quality), 5 are C category *(Low Quality) and 3 are U category *(Unsuitable for Retention). Of these 11 trees, four trees require removal on the grounds of good husbandry, namely T1, T4, T5 and T7.

1.3.4 In theory, only moderate quality trees and above are significant material constraints on development. However, the low quality trees would comprise a constraint in aggregate, in terms of any collective loss / removal, where replacement planting would be appropriate. In this instance, no such collective impact is proposed.

1.3.5 The principal impacts in the current proposals are the losses of the category U T4 and category C T5, in addition to the category C shrub T3 to allow for landscape enhancement. T3 is a garden shrub of no landscape significance; T4 has a large wound and decay in its base and the removal of U category trees should not be rated an impact; T5 is a category C suppressed magnolia that has developed a pronounced asymmetry in habit, and stands unsuitably close to the garage bay window, with the young stem already pressed against the ridge. Thus, T5 is of low quality and can have but limited service life in its current location. Overall, the loss of the low quality, interior site trees and shrub is rated as a low impact which can be mitigated with the proposed replanting.

1.3.6 There are also the potential impacts to the off-site T6 from the demolition of the garage, in addition to the impacts to the theoretical RPA of this tree from the construction of the extension. However, this theoretical RPA overlaps the existing garage floor and hardstandings, with the further impediment of a c.1m level change between the off-site position and the development area and associated retaining wall. Thus, it is highly unlikely that the pollarded pear will be rooting below the garage. Accordingly, the garage will be carefully demolished by hand within the theoretical RPA. The crown has a 1.5m clearance of the existing garage roof and is unlikely to be damaged. All of the impacts are noted below in Table 1.

1.3.7 All tree works will be carried out by competent contractors to best practice. Retained trees near development will be protected by a combination of fencing and ground protection. Site deliveries, access and material storage will be routed away from trees by means of these protection measures. The existing service routes will be used.

5.0 Table 1: Arboricultural Impact Assessment

Hide irrelevant | Show All Trees

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

Ref: PAT/10HD/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	3	Kapuka	Felled to Facilitate Landscape enhancement Garden shrub not a tree: no landscape significance	m^2 N/A %	Mature	Normal	N/A	N/A	Very Low	New planting / landscaping
C	5	Magnolia (M. X soulangiana)	Felled to Facilitate Development Requires felling on grounds of sound husbandry	m^2 N/A %	Semi-mature	Normal	N/A	N/A	Very Low	New planting / landscaping
U	4	Plum, Purple	Felled to Facilitate Development Requires felling on grounds of sound husbandry	m^2 N/A %	Mature	Moderate	N/A	N/A	Very Low	New planting / landscaping
C	6	Pear, Domestic	Demolition of existing garage/hard standings Building Construction within RPA (6.4m2)but below canopy - all existing development (14.7m2)	6.4 m^2 15.72 %	Mature	Normal	N/A	Low	N/A	Pull-back method undertaken manually None required

1.4 Sequence of Works

1.4.1 The sequence of works will be as follows:

- initial tree works – felling, stump grinding and pruning for working clearances
- installation of Tree Protection Barrier (TPB) & ground protection
- demolition of existing garage & landscaping
- main construction
- removal of TPB
- soft landscaping

These works and their arboricultural implications are outlined in sequence below

1.5 Site Supervision

1) Site supervision – an individual e.g. the Site Agent, must be nominated to be responsible for all arboricultural matters on site. An agent must be nominated for each phase of work, if demolition and construction contracts are to be awarded separately. The agent(s) must:

- be present on site for the majority of the time
- be aware of the arboricultural responsibilities - to this end, a site briefing / meeting between the agent and arboricultural consultant must be held before the commencement of each phase of works.
- 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 local authority and/or a retained arboriculturalist in the event of any tree related problems occurring, whether actual or potential
- Contact details for Landmark Trees are provided on the cover to this report.
- Contact details for the Local Authority Tree Officer are as follows:

Alex Hutson
Tree and Landscape Officer
London Borough of Camden
5th Floor Town Hall Extension
Argyle Street
London
WC1H 8ND

E-mail: alex.hutson@camden.gov.uk
Telephone: 020 7974 5939

1.6 Site Monitoring

1.6.1 Landmark Trees are to be retained as Arboricultural Consultants responsible for site monitoring for the duration of the development. Key personnel are in the main Adam Hollis MSc (Arb) and occasionally 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.

1.6.2 The arboriculturalist will arrive at the site, check in at the site office and be safely escorted around the site by the site agent, checking the maintenance of tree protection measures. 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.

1.6.3 Monitoring will involve a schedule of routine visits (monthly for the first 6 months and quarterly thereafter, including both site-setup and sign-off inspections) and reports to ensure contractor compliance with tree protection measures and to provide ongoing liaison with all personnel involved in the site development (including the LPA). Any defects requiring rectifying must be notified to the Site Agent and the Client and copied to the LPA by email. Emergencies will be notified to the LPA by phone. Appropriate records will be kept and be made available to the LA if required to show evidence of site monitoring (Appendix 4).

1.6.4 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). Such supervision would require the arboriculturalist to attend site, if not the whole task, 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 foreman/ contractor and arboriculturalist.

1.6.5 In addition, a site log book will be kept by the Site Agent to record all stages of the development from the installation of the fence protection, to routine checks of the fencing through to the completion of the project. This should be made available to the LA if required to show evidence of site monitoring. Site monitoring should include:

- Pre-Development Site Inspection (S.2.3)
- Construction Site Agent Briefing (S.1.5)
- Installation of site facilities (S.3.3)
- Demolition of hard surfaces / structures within RPA's (3.6)
- Construction of new of hard surfaces / structures within RPA's (3.7)
- Site completion meeting (S.5)

1.6.6 The LPA's Arboricultural Officer will have free access to the site and report on any problem areas directly to the developer's Project Arboriculturalist, who will then visit the site and make recommendations to the

developer on how best to rectify the situation and ensure implementation. 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 LPA 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.

1.6.7 N.B. Landmark Trees will only be responsible for providing monitoring in so far as they fully instructed to do so and regularly paid for such services by the client. In the absence of routine payment (as per our business terms), routine monitoring will cease (temporarily or permanently) and the LPA 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 LPA.

1.7 Statement Adoption

1.7.1 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 observation of such recommendations have been priced in. If conflicts between any part of a tree and the building(s) 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 reflect poorly on the construction and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

2.0 Pre- Development Site Preparation

2.1 Arboricultural Works

2.1.1 All works must be carried out by a competent arborist in accord with BS 3998: 2010 and any other prevailing good professional practice.

2.1.2 Specific works recommended to facilitate development are the removal of trees T3, T4 and T5. These specific works to facilitate development and any other husbandry works are listed in Appendix 1.

2.2 Installation of Tree Protection Barrier

2.2.1 A Tree Protection Barrier [TPB] comprising steel mesh panels of 2.4m in height ('Heras') should be erected to protect trees near buildings to be demolished on site. These panels will be mounted on a scaffolding frame as shown in Figure 1 below (this is also Figure 2 of BS5837: Trees in Relation to Design, Demolition and Construction in paragraph 6.2.2.2). Individual boxed hoarding of 1m l x 1m w x 2.4m high will also be employed for the smaller, lesser quality trees scattered about the site, where hard standing can provide suitable ground protection for any otherwise vulnerable RPA.

2.2.2 This TPB is 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.

2.2.3 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 TPB should carry waterproof warning notices denying access within the RPA.

2.2.4 The Tree Protection Plan in Appendix 8 illustrates where the protective fencing will be located to form the boundary of the Tree Protection Zone (TPZ). The TPZ 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 TPZ.

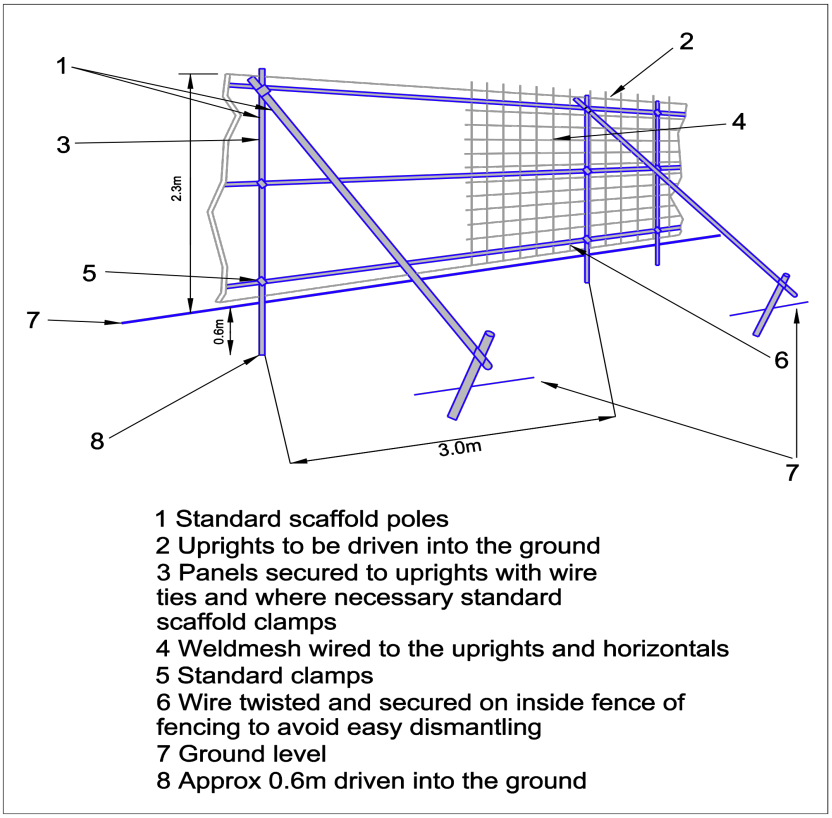


Fig. 1 Tree Protection Barrier Specification

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

2.3 Pre-Development Site Inspection

2.3.1 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.

3.0 Development Phase

3.1 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.

3.2 Root Protection Areas (RPA)

3.2.1 The Root Protection Area (RPA) is a desirable zone of protection around the trees' rooting system and these have been marked on the plan in Appendix 8. As much as possible, the RPA's will lie within the TPZ and therefore, be fully fenced off. However, this degree of protection is not entirely possible on the site: it is necessary to perform some works (in part) within the theoretical RPA of the off-site T6 i.e. demolition of existing garage and hard landscaping, then the construction of new building. Whilst rooting from the pollarded pear tree is unlikely within the site, the theoretical RPA will be protected and work undertaken with due care and attention.

3.2.2 All involved parties will need to be made aware of the deficiencies. In these instances, careful and supervised working, as described in sections, S. 3.4 (routing of services) and S. 3.6 (demolition of surfaces) and S. 3.7 (construction) will be required.

3.2.3 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. Cellweb, Ground Guards 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.**

3.3 Site Access, Accommodation & Storage

3.3.1 Site access and accommodation will be as per the layout within our Tree Protection Plan (Appendix 8), making use of the existing accesses and hard standings.

3.3.2 Pedestrian access will run parallel, but separate to vehicular access.

3.3.3 Delivery lorries will be excluded from RPA's by tree protection fencing and ground protection. 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. Materials can be unloaded onto protected ground within RPA's and stored throughout the interior of the site away from protected trees

3.3.4 Many site activities are potentially damaging to trees e.g. material storage, parking, soil compaction and the use of plant machinery. In this latter example particular care is required to ensure that the operational arcs of excavation and lifting machinery, including their loads, do not physically damage trees in use.

3.4 Routing & Installation of Services

3.4.1 It is understood that the existing service routes will be used. If new service routes are required, every effort should be made to ensure that the routing and instillation of services 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.

3.5 Changes in Grade

3.5.1 The upper layer of top soil contains the majority of a tree's roots and if this is disturbed by a reduction in ground level, serious damage can be caused. If such soil is to be disturbed within the TPZ / RPA, it will be done only with hand tools; prior agreement must be sought from the Tree Preservation Officer and given in writing by the LPA.

3.6 Demolition Measures.

3.6.1 Demolition of structures within what would otherwise be an RPA will proceed by hand with due caution to avoid unnecessary damage to T6. The demolition will be undertaken inwards within the footprint of the existing building (often referred to as "top down, pull back").

3.6.2 If the weather is "dry," the site will be watered down to reduce dust travelling to adjacent properties. Where 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.

3.6.3 All spoil is to be loaded into trucks reversing into site from the road or removed to trucks on the road outside. Trucks to be fitted with loading grabs.

3.6.4 Any existing hard standing within the tree's RPA's will be first broken up with manual power tools and then carefully removed with light plant by a skilled machine operator, either operating outside the RPA, or

working from within the existing built structure and hard standing, near trees. Soil exposed beneath the structure will not be scraped away, but preserved in situ and protected immediately (not tracked over) with replacement ground protection (as per para 3.2.1) before the continuance of operations.

3.7 Construction 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.

3.7.1 The differences in level between the development area and the pollarded off-site pear tree T6, in addition to the intervening wall, will have limited the root colonisation within the area proposed for the extension. In the unlikely event that any roots are found during the construction of the extension, roots smaller then 25mm diameter may be cut cleanly with a sharp pruning saw or secateurs back to a junction. Roots larger then 25mm diameter may only be cut in consultation with the Local Planning Authority Arboriculturalist. Piling works will be restricted to the ground clearance height of the T6 canopy, which will amply allow for a mini-piling rig (3.5m working clearance) as necessary.

3.7.2 All spoil to be removed by wheelbarrow and loaded into trucks entering the site from Heath Drive. Construction materials will generally be delivered on lorries with mechanical off load and brought into site by all terrain forklift.

3.7.3 Any new paving/hard landscaping within RPA's will require a no-dig construction technique, either using a cellular confinement system with no fines aggregate for the sub-base or simply building upon the existing sub-base without disturbing the ground below. Choice of construction method will initially depend upon root penetration within the existing sub-grade. The key principle is not to excavate in the presence of roots and to provide a porous surface to promote healthy soil water relations for future root growth.

3.8 Removal of Ground Protection & Post Construction Landscaping & Treatment

3.8.1 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.

3.8.2 Any further landscaping works should avoid the changing of ground levels or deep digging. Ideally, retained trees should be within a shrub area as this reduces the chances of compaction and disturbance of root systems. 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.

3.8.3 If herbicides are to be used they should be appropriate to their purpose and not in such a way as to damage any retained trees or vegetation; they must be applied by a suitably qualified person i.e. a holder of a recognised 'certificate of competence'.

4.0 Summary of Proposed Methods

4.1 Table of Impacts and Mitigation

4.1.1 The table below summarises the main areas where trees could become damaged by the proposed development and the methods that need to be adopted in order to prevent such damage:

Impact	Mitigation	Reference	Trees Affected
General site access, material storage etc.	Ground protection to acceptable standards.	Paras 2.2.1 & 3.3.3 Tree Protection Plan in Appendix 8	All retained trees
Demolition of existing build within RPA	Pull back / down technique within RPA. Supervised working	Section 3.6	T6
Damage to roots / canopy caused by building extension	Rooting from T6 unlikely on site Restricted working heights to canopy clearance.	Section 3.7 & 8	T6

5.0 Completion

5.1 Completion Meeting

5.1.1 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. It is the client's duty to notify LT that the project has been completed, in order to facilitate such an inspection.

5.1.2 A separate LT post-development tree inspection (with specific reference to trees identified in the Appendix 1 schedules) is recommended to facilitate a constructive meeting and to monitor the health of some of the more senescent trees on site.

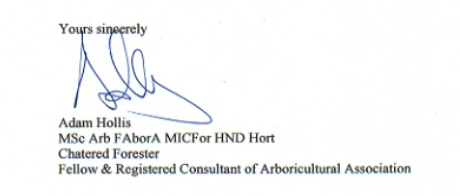
5.1.3 Any works agreed in the above meeting will be confirmed in writing and will be performed to BS 3998: 2010 Tree Works.

5.1.4 Landmark Trees recommend that any work proposed post development is checked to avoid penalty for performing illegal work on a protected tree.

5.1.5 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 observation of such recommendations have been priced in.

5.1.6 If conflicts between any part of a tree and the building(s) 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 reflect poorly on the construction and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

Signed



.....

Adam Hollis MSc ARB MICFor FArbor A

18th December 2013

For and on behalf of ***Landmark Trees***

Web: www.landmarktrees.co.uk
e-mail: info@landmarktrees.co.uk
Tel: 0207 851 4544

London Office: 20 Broadwick Street, London, W1F 8HT
Registered Office: Grange Cottage, All Cannings, Devizes, Wiltshire, SN10 3NR
Landmark Trees is the trading name of Landmark trees Ltd. Registered in Wales. Reg No. 3882076

Appendix 1: Tree Survey

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: 10a Heath Drive, London NW3 7SN

Date: 16 12 2013

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
Tel: 020 7851 4544
Surveyor(s): Adam Hollis

Ref: PAT/10HD/AIA

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
1	Cherry, Autumn Flowering	9	3222	2.0	2.0	290.0	Mature	3.5	Moderate	Poor	U		<10	Bleeding on lower stem Canker Dieback in pollarded top
2	Poplar, Hybrid	15	8	4.0	5.0	470.0	Early Mature	5.6	Normal	Good	B	2	20-40	A tree with insignificant defects
3	Kapuka	7	4	2.0	0.5	367.4	Mature	4.4	Normal	Good	C	2	20-40	Shrub not tree
4	Plum, Purple	9	4344	2.0	1.5	380.0	Mature	4.6	Moderate	Poor	U		<10	Decay in trunk Decay fungi present on trunk/roots Lost stem at 1.5m S
5	Magnolia (M. X	8	3441	2.0	2.0	180.0	Semi-mature	2.2	Normal	Fair	C	2	10-20	Unsuitable species for position Asymmetry (major) Growing into garage bay window
6	Pear, Domestic	7	3442	3.5	3.5	300.0	Mature	3.6	Normal	Fair	C	2	10-20	Pollard (Old) 1.5 -2m clearance of garage 1m level drop to client site

Landmark Trees

Site: 10a Heath Drive, London NW3 7SN

Date: 16 12 2013

BS5837 Tree Constraints Survey Schedule

Landmark Trees Ltd
Tel: 020 7851 4544
Surveyor(s): Adam Hollis

Ref: PAT/10HD/AIA

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Clear Stem Height	Stem Diameter	Age Class	Protection Radius	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
7	Cherry, Autumn Flowering	8	3334	3.0	2.0	330.0	Mature	4.0	Moderate	Poor	U		<10	Decay in trunk Canker Dieback in pollarded top
8	Pear, Willow-leaved	3.5	1.5	2.0	2.0	120.0	Semi-mature	1.4	Normal	Fair	C	2	20-40	A tree with insignificant defects
9	Plane, London	14	4	6.0	5.0	970.0	Mature	11.6	Normal	Fair	B	2	>40	Pollarded Root damage for drive
10	Plane, London	14	4	8.0	5.0	1060.0	Mature	12.7	Normal	Fair	B	2	>40	Pollarded Root damage for drive
11	Plum, Myrobalan	4	2	2.0	1.5	141.4	Semi-mature	1.7	Normal	Fair	C	2	20-40	A tree with insignificant defects

Appendix 2: Tree Works To Facilitate Development

Notes for Guidance:

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

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.

Landmark Trees

Site: 10a Heath Drive, London NW3 7SN

Surveyor(s): Adam Hollis

Date: 11 12 2013

Ref: PAT/10HD/AIA/01

Recommended Tree Works To Facilitate Development

Show All Trees
Hide irrelevant

Tree No.	English Name	Height	Stem Diameter	Crown Spread	Recommended Works	Comments/ Reasons
3	Kapuka	7	367.4	4	Fell	Shrub not tree To Allow Landscape Enhancement
5	Magnolia (M. X	8	180.0	3441	Fell Requires felling on sound husbandry grounds	Unsuitable species for position Asymmetry (major) Growing into garage bay window Recommended Husbandry 2/to facilitate
4	Plum, Purple	9	380.0	4344	Fell Requires felling on sound husbandry grounds	Decay in trunk Decay fungi present on trunk/roots Lost stem at 1.5m S Recommended Husbandry 3/to facilitate

Appendix 3: General Guidelines

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

3.2 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.

3.3 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.

3.4 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.

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

Appendix 4: Sample Site Monitoring Sheet

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

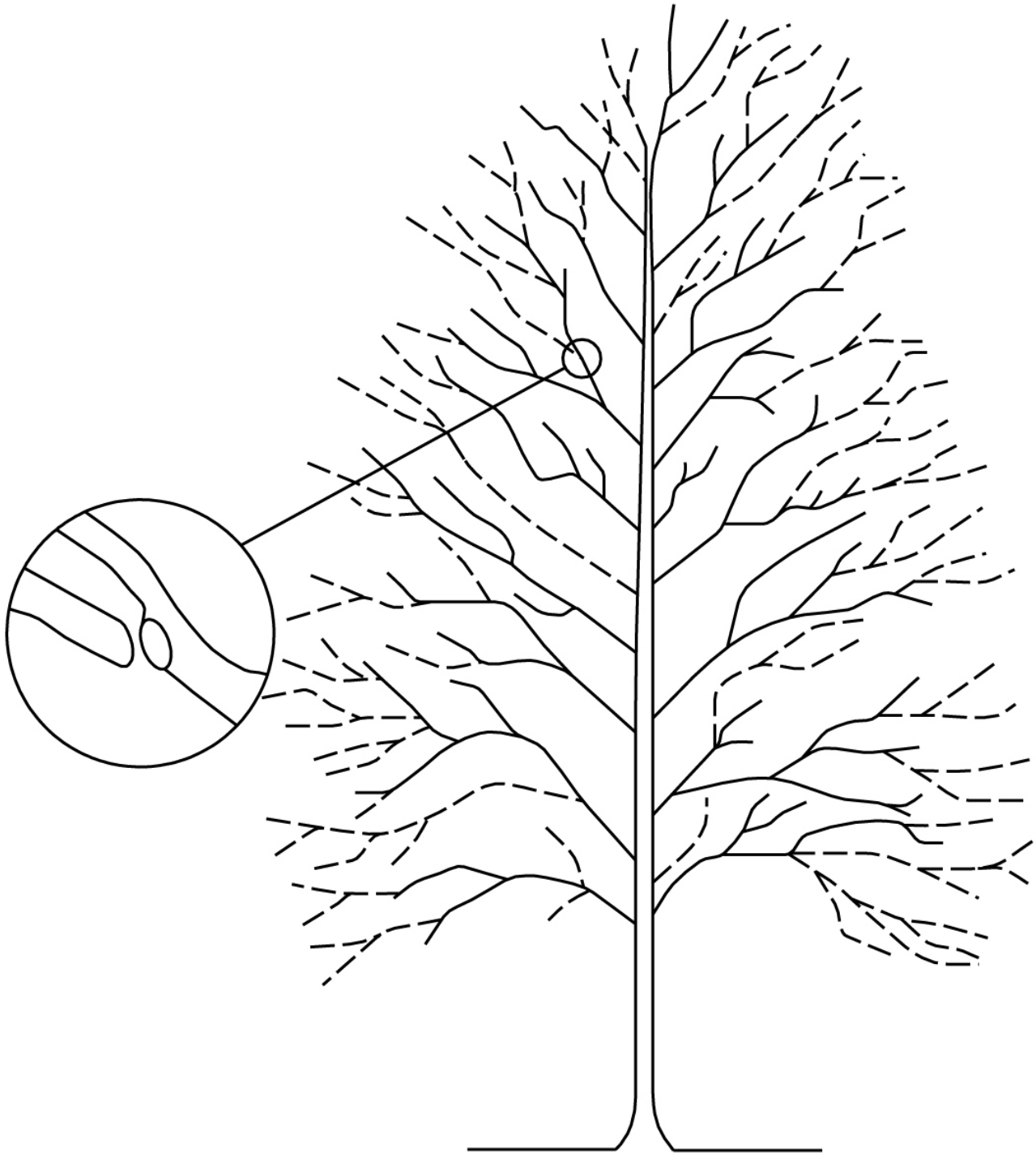
Recommendations

Outcome		
1		
2		
3		
4		

Web: www.landmarktrees.co.uk
e-mail: info@landmarktrees.co.uk
Tel: 0207 851 4544

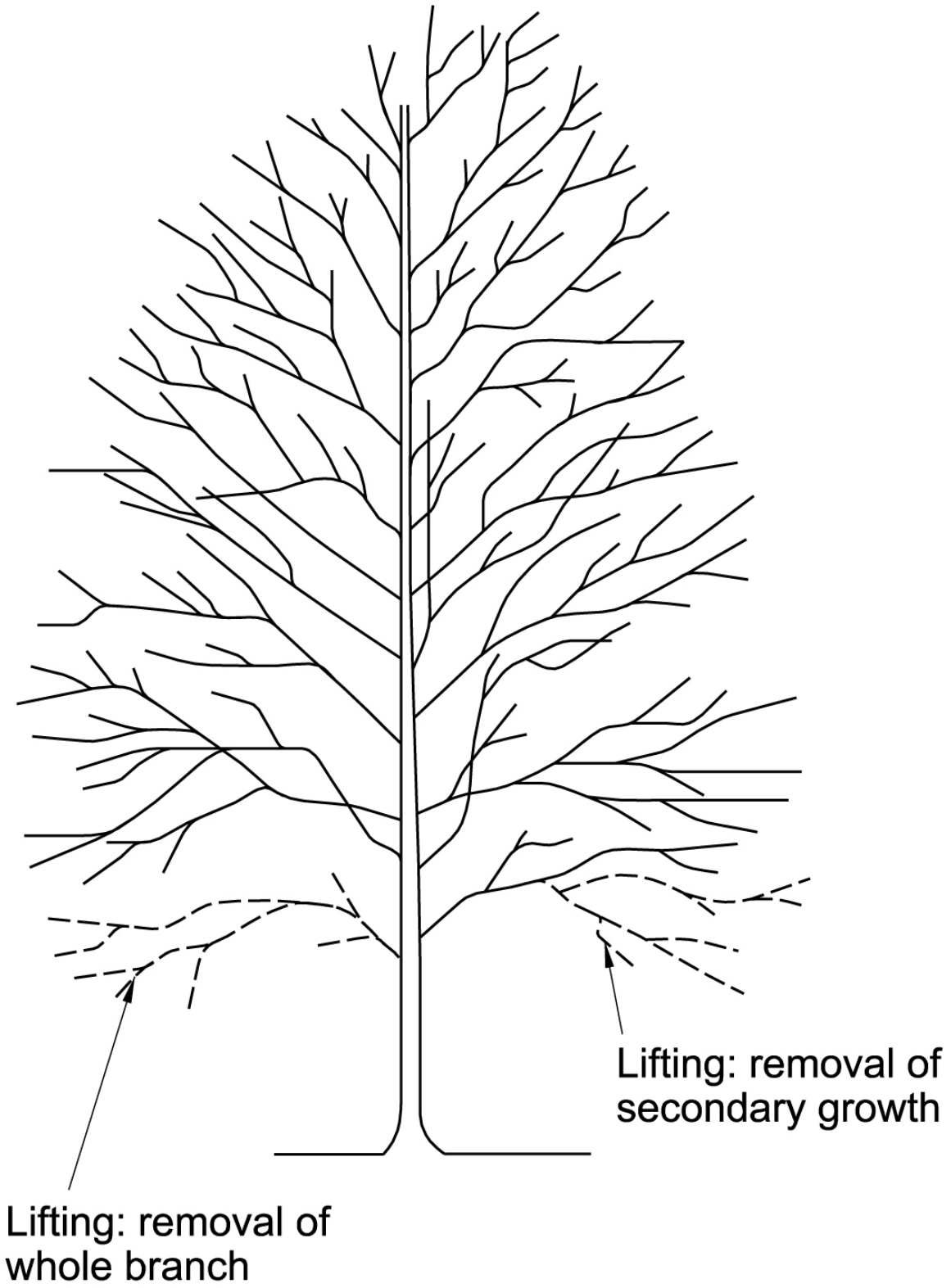
London Office: 20 Broadwick Street, W1F 8HT, London
Registered Office: Grange Cottage, All Cannings, Devizes, Wiltshire, SN10 3NR

Appendix 5: Indicative Pruning Guidelines



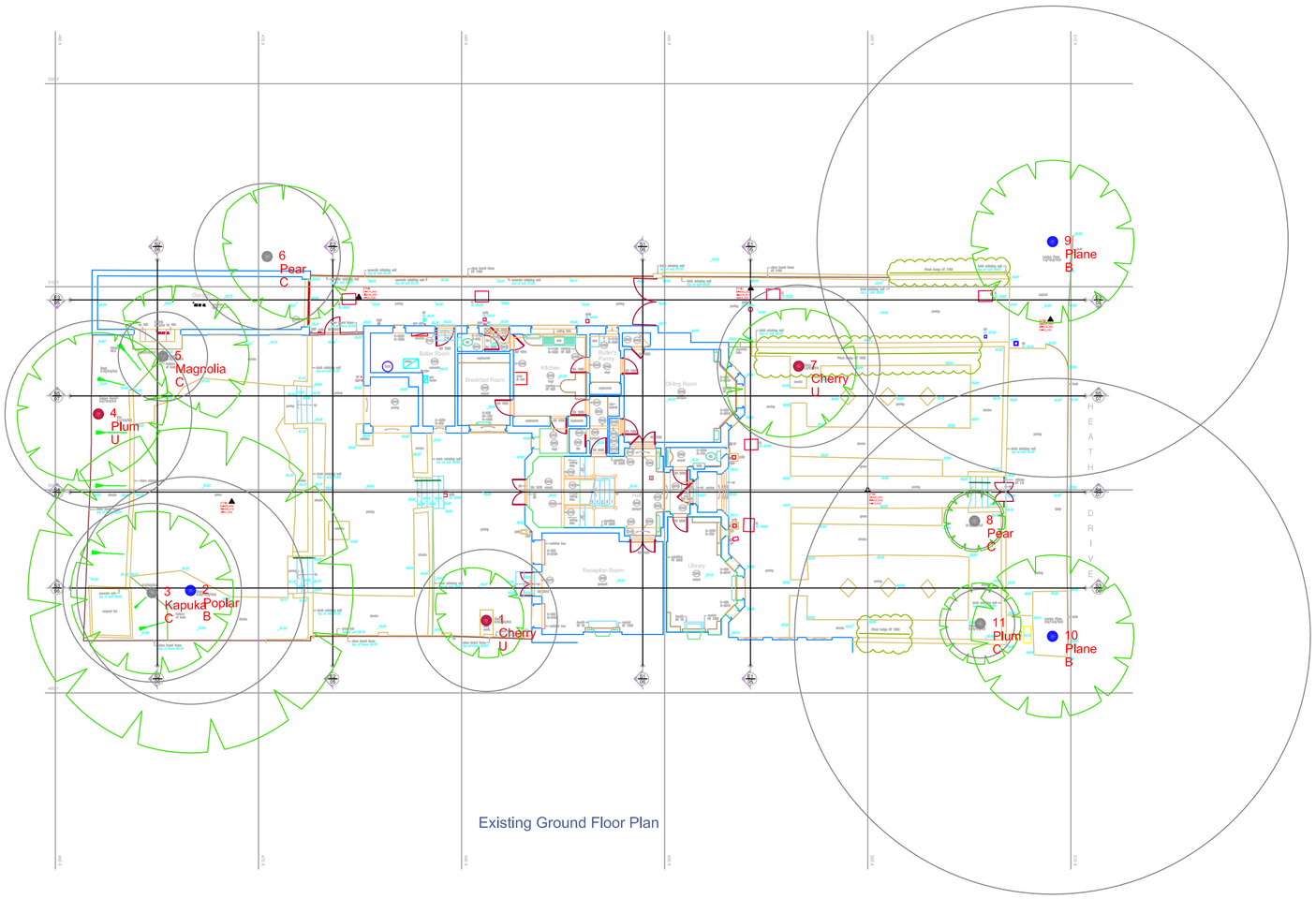
NOTE: Branches pruned back to suitable outward pointing bud or small branch.

REDUCING THE CROWN



CROWN LIFTING

Appendix 6: Tree Constraints Plan



Existing Ground Floor Plan

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).

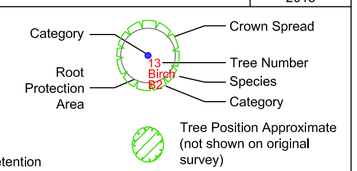
Landmark Trees

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: 10A Heath Drive	1:200@ A2
Drawing Title: Tree Constraints Plan	December 2013

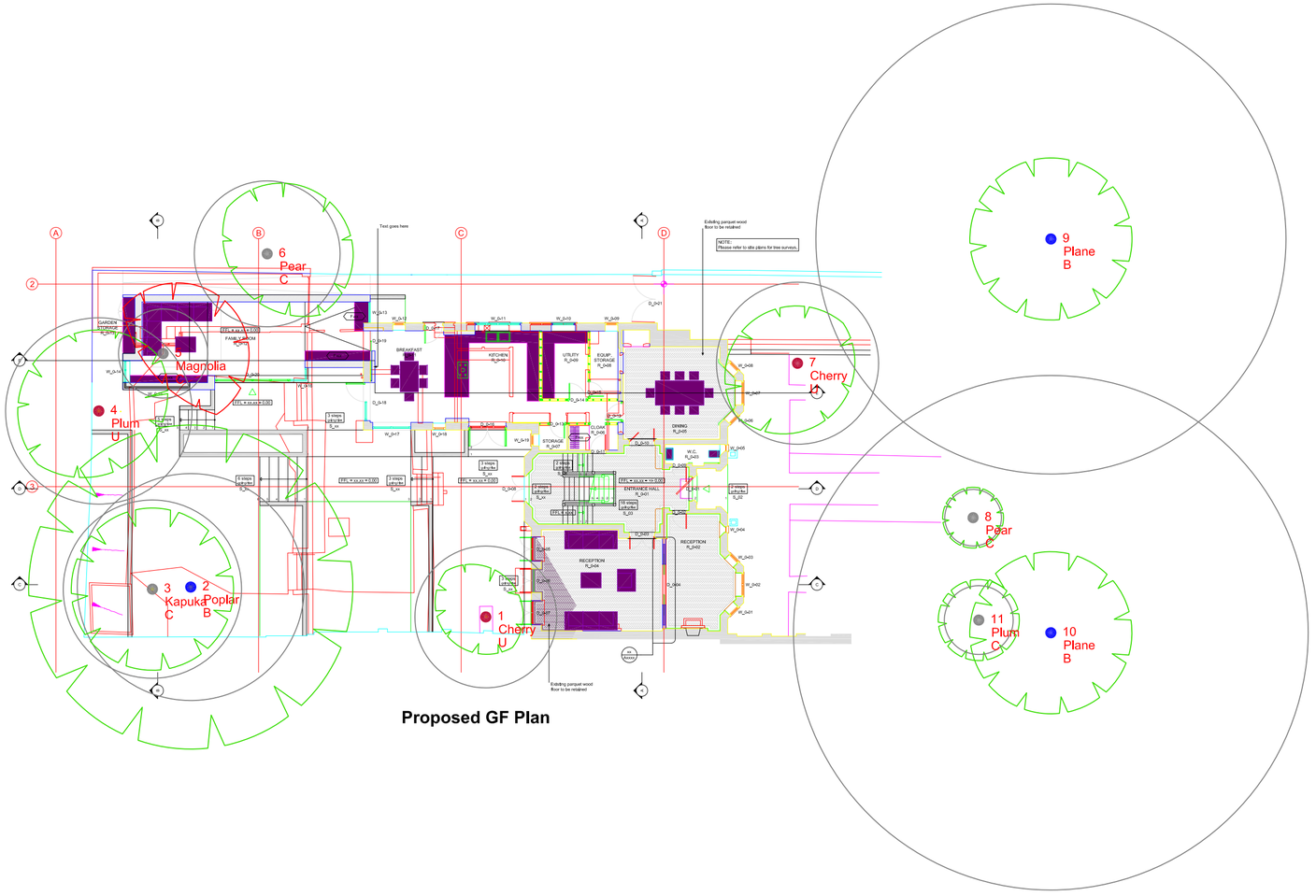
Key:

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



Tree Position Approximate (not shown on original survey)

Appendix 7: Arboricultural Impact Assessment Plan



Proposed GF 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).

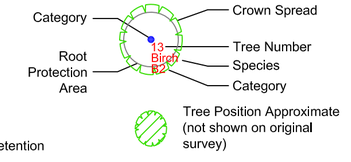
Landmark Trees

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

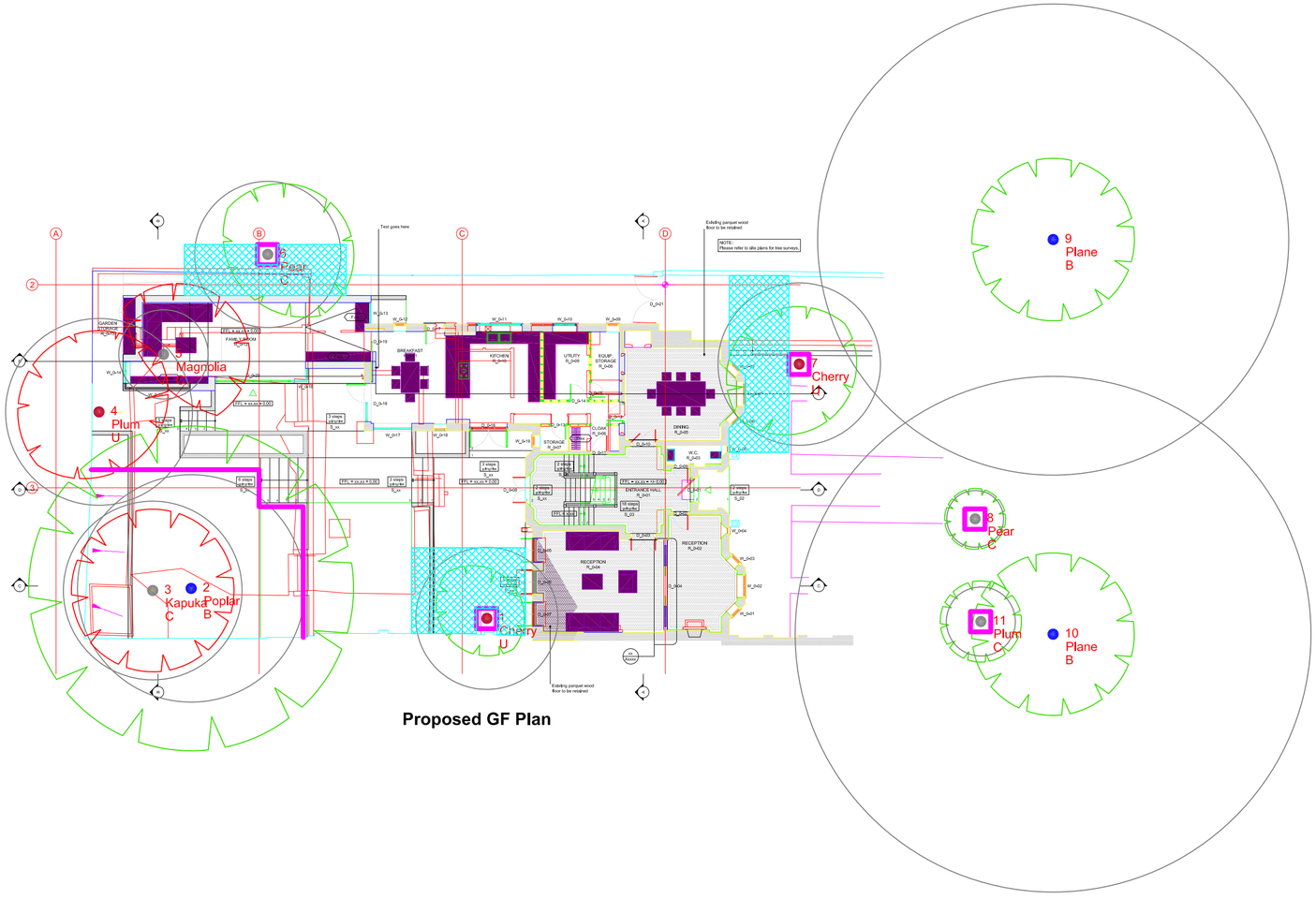
Site: 10A Heath Drive	1:200@ A2
Drawing Title: Arboricultural Impact Assessment Plan	December 2013

Key:

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



Appendix 8: Tree Protection Plan



Proposed GF 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).

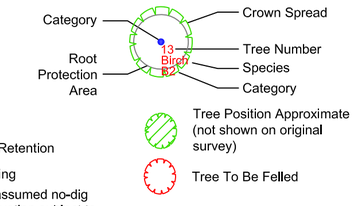
Landmark Trees

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: 10A Heath Drive	1:200@ A2
Drawing Title: Tree Protection Plan	December 2013

Key:

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



- Tree Position Approximate (not shown on original survey)
- Tree To Be Felled