

Arboricultural Report

Client: Nicky Kay

Site: 15 Dartmouth Park Avenue, London NW5 1JL

*Survey undertaken: Trees in relation to design, demolition and construction –
Recommendations.*

Author: Frank Parsons

RFS certificate in Arboriculture

AA Technicians certificate in Arboriculture

(Level 4 Diploma in Arboriculture)

20th February 2023

Appendices

1. Background
2. Clients Brief
3. Scope
4. Site Observations
5. Proposed Development
6. Tree Protection Methodology
 - i. Construction Exclusion Zones
 - ii. Foundation guidance
 - iii. Utility installation guidance
7. Arboricultural Implications Assessment
8. Site observations (photos)
9. Arboricultural Method Statement
10. Conclusion
11. References
12. Plans
 - i. Tree Survey
 - ii. Survey Map
 - iii. Tree Constraints Plan
 - iv. Tree Protection Plan

1. Background:

This report is to be read in conjunction to the tree survey attached, which has been undertaken to identify any trees within or affected by the proposed development at the site address that should be removed or retained and therefore protected during the proposed development. This report will outline tree categorization methodology with reference to BS 5837:2012. The proposed site is within a conservation area. The local authority is the London Borough of Camden.

2. Clients Brief:

- To undertake a tree survey within the rear gardens of affected properties. To scale plan supplied by William Tozer Associates Ltd.
- To provide an Arboricultural report identifying the trees to be retained, removed or worked on within the proposed development and outline and evaluate the constraints posed by the trees retained on site via:
- Root Protection Area (RPA) – Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of a tree, shown in plan form.
- Construction Exclusion Zone – Area based on the RPA, identified by an arboriculturalist, to be protected during development, including demolition and construction work, by the use of barriers and or ground protection, fit for purpose to ensure the successful long term retention of a tree.
- Tree Protection Plan (TPP) – Scale drawing prepared by an arboriculturalist showing the finalized layout proposals, tree retention and tree landscape protection measures detailed within the arboricultural method statement (AMS), shown in plan form.
- Arboricultural Implications Assessment – Study undertaken by an arboriculturalist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.
- Arboricultural method statement (AMS) – Methodology for the implementation of any aspect of development that has the potential to result in loss or damage to a tree. N.B. The AMS is likely to include details of an on site tree protection monitoring regime, construction traffic management plan in relation to trees and a tree pruning schedule.

3. Scope:

The survey has been conducted in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

4. Site Observations:

Number 15 Dartmouth Park Avenue is a four-storey semi detached property situated on a hill that slopes down from the front of house to the rear garden. The rear garden is west facing and consists of a lawn area closest to the rear of property and a vegetable patch towards the end of the garden. A shed is situated on the rear boundary. The garden slopes down from east to west. There are a number of large shrubs planted in the beds either side of the lawn and some small fruit trees located to the rear of the garden. Closer to the rear elevation of property is a raised decking with a far-reaching west facing view. The neighbouring garden to the south has two trees close to the decking. The neighbouring garden to the north does not have any trees in close proximity to the building. The exterior side access runs down the north side of number 15 from front garden access. There is a street tree directly outside the front of number 15. Parking is restricted for residents. The soil type has not been recorded but presumed to be London Clay. The weather at the time of survey was overcast with no wind.

5. The Proposed Development:

A lower ground floor extension into the existing rear garden decking area, consisting of a flat roof with roof lights and glass sliding doors onto an outdoor terrace. A brick wall to replace existing fence on the shared boundary of number 13 and steps down from the new terrace into the rear garden. Please refer to the architect's plans for more detailed description and drawings.

Below: Table 1 – Cascade chart for tree quality assessment

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

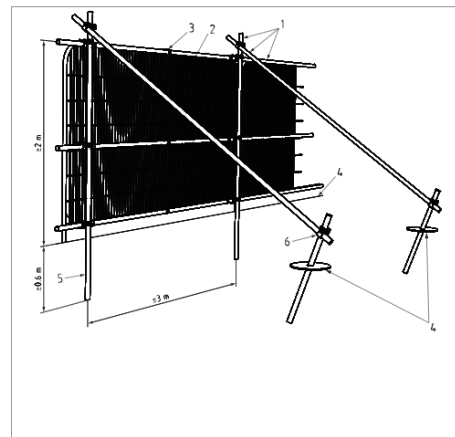
6. (i) Construction Exclusion zones (CEZ's): *_Guidance only*

Barriers and/or ground protection should protect trees that are being retained on site before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers may be erected to create a construction exclusion zone. However in the case of this site the garden boundary walls and fences will act as construction exclusion fencing confining all construction activity to no.15 Therefore barriers will not be applicable in excluding construction activity taking place around the retained trees due to its position in the neighbouring garden.

The mixing and storage of materials is prohibited within the construction exclusion zones, contractors and machinery are also prohibited within CEZ's to mitigate soil compaction. This should be communicated via the project manager at commencement of each stage of the development.

Fig.1 BS 5837:2012:

Example of typical tree protection fencing used to demarcate the calculated construction exclusion zone.



(ii) Recommendations to mitigate or eliminate damage to tree roots within RPA's -

To mitigate severance of roots for foundation construction specialist methods should be used: Trench footings with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to an approximate depth of 1.5m at least 2.4m away from nearby trees. Beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation. Designs for foundations that would minimize adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project architect, developer and an engineer.

(iii) Appropriate measures to eliminate or mitigate severance of roots for construction of a utility service:

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

Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routing should be drawn up in conjunction with myself. Trenchless insertion methods should be used with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs where applicable.

7. Arboricultural Implications Assessment:

The proposed development of 15 Dartmouth Park Avenue has the potential to impact the neighbouring Japanese maple tree that grows in no.13 due to the proximity of the tree to the boundary wall affected by the proposed extension. A specimen Magnolia tree also grows in the rear of number 13 however the stem is over 5m away from the shared boundary wall and the canopy does not extend into number 15. There is one street tree in the vicinity of the project located outside the front of the property. Multiple large shrubs and small fruit trees grow in the rear gardens of 15 and 17 Dartmouth Park Avenue, all of which are over 20m away from the rear elevation of the property and the fruit trees are newly planted, which have a stem diameter of under 75mm so have not been included in the survey.

T1 – Magnolia has been recorded category A in the BS tree quality assessment. It has a medium landscape contribution and the most significant tree in the immediate vicinity of the proposed extension. The stem grows on the opposite boundary to number 15 so approximately 5m away from the shared wall. The rooting area has been calculated at 2.7m and therefore is not likely to be impacted by the proposed development. The canopy is largely untouched and has a natural free flowing form that does not extend into number 15.

T2 – Japanese Maple is less than 1m away from the shared boundary wall, the lateral spread of the canopy extends into number 15 marginally (by 300mm) however if the boundary wall is proposed to be dismantled then suitable tree protection measures should be put in place to ensure the roots and canopy are not damaged by construction activities. Due to the current size of the tree one solution may be to transplant the tree prior to any work commencing and then replant post construction.

T3 – Field Maple is a street tree growing directly outside front garden of number 15. The tree has been reduced to contain the spread in the past two years. Although the roots of this tree are clearly not within the area proposed for development I have included this tree to ensure it is considered during the project with regards to construction traffic and unloading activities. Skip

lorries or HIAB lorries can cause mechanical damage to the stem or canopy as it grows in close proximity to the front garden access. Materials would need to be unloaded away from this tree. It would be prudent to erect hoarding around the stem to ensure mechanical damage doesn't occur and materials are not stored in the tree-planting pit.

8. Site Observations

Photo 1: Front of number 15 Dartmouth park Avenue with access down the side return to rear garden. T3 Field Maple grows outside in close proximity to site entrance. Tree stem hoarding would mitigate mechanical wounding from construction traffic for duration of project.



Photo 2: Left, denotes side access considerations, such as narrow width and steps down to rear garden. The proposed project would not permit heavy machinery on site due the access considerations therefore soil compaction in the rear garden would not occur.

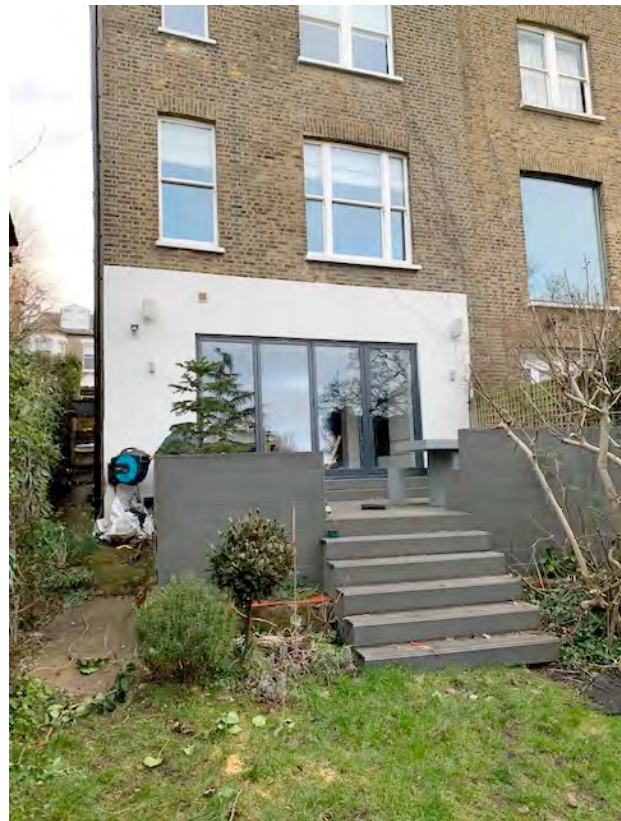


Photo 3: Right, illustrates lower ground floor level proposed for extension. Existing decking would need to be removed for foundations and build space. There is adequate space in the immediate vicinity of the rear garden for storage and mixing of materials without having to utilize the rear section vegetable growing areas.

Photo 4 & 5: T1. Magnolia grows in number 13 clearly visible and enjoyed from the existing terrace. The Tree grows an acceptable distance away for its roots not to be disturbed during proposed excavations for foundations. The canopy has a natural form free of water shoots and provides high amenity value to the surrounding gardens. The canopy does not extend into the rear of number 15. Therefore no pruning would be required to facilitate the proposed project.



Photo 6:

T2. Japanese Maple growing in close proximity to the boundary wall shared with 15 and 13. The canopy does extend into the area proposed for extension and light pruning would be required to facilitate the project to ensure no damage arises from construction activities. If all work can be contained within boundaries of 15 then pruning may be a solution.

However if build space encroaches into number 13 then the tree would be impacted due to its delicate form. The Maples' DBH is 90mm so protected under conservation area orders. The tree is established in its position but could be potentially transplanted with a high degree of survival if it was under threat.

The project engineers would need to draw up foundation plans along the shared boundary and then we can re assess the potential impact on this tree and come to a suitable solution to preserve it.



9. Arboricultural Method Statement:

To ensure the health and existing vitality of the trees that grow in and around the proposed site, the AMS should be used in conjunction with the tree protection plan attached to this report. (*TPP 15 Dartmouth Park Avenue*) See below for trees that require protection prior to demolition and construction.

T1 – Magnolia: RPA not affected by proposed development, no pruning required.

T2 – Japanese maple: RPA marginally affected by proposed development. Professional transplanting to a different location temporarily would eliminate necessity to prune canopy and ensure roots were not damaged during boundary wall reconstruction. (TBC once foundation design has been submitted)

T3 – RPA not affected by proposed development. No pruning required. Installation of protective hoarding around main stem to prevent mechanical damage by construction traffic is recommended (2.5m in height and to incorporate dimensions of the planting pit)

(i) Pruning:

T2 will require lateral pruning of secondary branches that extend over the boundary line of no.15. However if the tree owner would prefer the tree to be transplanted for the duration of the project no pruning would be required.

(ii) Installation of services and utility runs:

At this stage it is not clear where the service runs and inspection chambers will be installed. All services running through the RPA of trees surveyed must be installed by hand dig only with arboricultural supervision.

(iii) Construction exclusion zones:

The boundary fence lines will act as construction exclusion zones and heras fencing should be installed half way down the garden of no.15 to barrier off the lower section and ensure materials are not stored that may contaminate the soil reserved for growing vegetables.

(iv) Site access:

The site access denotes the scale of machinery permitted onto site. All materials and machinery have to be brought down the narrow side passage of the property and therefore heavy plant would not be used on this project.

(v) CTMP – construction traffic management plan with regards to deliveries.

It will be necessary to suspend parking bays nearby the front of the property due to limited parking availability on the road. Due to the location of T3 outside the front of number 15 suspended bays should be reserved away from the canopy of this street tree and any other in the vicinity. A suitable parking location is set out in the tree protection plan.

10. Conclusion

The proposed extension to the rear of 15 Dartmouth Park Avenue is a relatively small-scale project to enhance the interior living space of the lower ground floor of the property. The area has an abundance of trees and mature shrubs in the vicinity but none that are in close proximity that would be impacted by the proposed project with the exception of T2 Japanese maple growing in number 13. The RPA of T2 is marginally impacted but due to the delicate nature of the tree species there is the potential for damage to this canopy if the boundary wall is removed and rebuilt. My recommendation would be to professionally transplant T2 to another part of the garden for the duration of the project and then replant in its same position post completion.

All tree works should be carried out in accordance with British Standards 3998:2010. The Tree Protection Plan annotates measures to protect trees during the proposed development as per BS 5837:2012. Should the project gain planning; I would oversee the tree protection prior to works commencing, during and after the proposed development for continuity.

*This report is to be submitted in conjunction with **Tree Survey – FP/TS/289, Site Plans – TMS 15** Dartmouth Park Avenue, TCP 15 Dartmouth Park Avenue, and TPP 15 Dartmouth Park Avenue.*

11. References:

- BS 5837:2012 – Trees in relation to design, demolition and construction – Recommendations
- Original scale site survey supplied by William Tozer Associates Ltd.

12. Plans:

(i) Tree Survey

*Attached below as a pdf document: Reference - **FP/TS/289***

(ii) Survey Map – attached below as a pdf document identifying tree numbers and BS Tree Categories: Reference – **TMS** 15 Dartmouth Park Avenue.

(iii) Tree Constraints Plan:

*Attached below as a pdf drawing: Reference **TCP** 15 Dartmouth Park Avenue*

(iv) Tree Protection Plan:

*Attached below as a pdf drawing: Reference **TPP** 15 Dartmouth Park Avenue*

Tree Survey

Client: Nicky Kay
 Site: 15 Dartmouth Park Avenue, London NW5 1JL
 Date of Survey: 02/02/2023
 Job reference: FP/TS/289

Parsons Tree Care Ltd
 frankparsons@me.com
 07791 652 889

Tree ID	Species	Height	Branch spread	DBH	Crown clearance	Age class	Physiological condition	Structural condition	Landscape Contribution	Estimated contribution	BS Cat'	Protection Radius
T1	Magnolia x soulangeana (Saucer Magnolia)	6.00m	N 3m E 3m S 3m W 3m	222.73mm	2m	Mature	Good.	Good. Stem leans west due to phototropic growth.	Medium	40+	A	2.67m
T2	Acer palmatum (Smooth Japanese Maple)	2.50m	N 0m E 1m S 1m W 1m	89.09mm	0.5m	Semi-mature	Good.	Good.	Low	20+	B	1.07m
T3	Acer campastre (Field maple)	9.00m	N 2m E 2m S 3m W 2m	270.45mm	3m	Mature	Fair. Street tree	Fair. Previously reduced.	High	10+	C	3.25m

Notes

- Height describes the approximate height of the tree in meters from ground level.
- The Branch Spread refers to the crown radius in meters from the stem centre and is shown on each of the four compass points (i.e. N, E, S, W).
- DBH is the diameter of the stem measured in millimeters at 1.5m from ground level or just above ground level for multi stemmed trees. The diameter may be estimated (e), where access is restricted. An average is taken for tree groups.
- Crown Clearance is the height in meters of crown clearance above adjacent ground level.
- Physiological condition – Good (normal growth), Fair (below normal), Poor (sparse/weak), Dead (dead or dying tree). Individual observations are included in this section.
- Structural Condition - Good (no or only minor defects), Fair (remediable defects), Poor – (major defects present or suspected), No significant defects – (defects of no concern present), Dangerous – (dead, diseased or dangerous). Individual observations are included in this section.
- Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
- Estimated contribution is the tree's estimated remaining effective contribution in years.
- BS Cat refers to British Standard 5837:2012 Table 1 category and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove or very poor quality.
- Protection Radius is a radial distance measured from the trunk centre and is used to calculate the BS RPA.



DARTMOUTH

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Revision - 20/02/2023
TMS 15 Dartmouth Park Avenue
Scale: 1:200 @A3
BS category survey map
U - Red
A - Green
B - Blue
C - Grey

stage 3: developed designs 17.02.23
-issued for information

Rev	Date
DRAWING STATUS INFORMATION	
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JOB NUMBER	286
JOB TITLE	Kay Residence 15 Dartmouth Park Ave, London NW5 1JL
DRAWING TITLE	Site Plan existing
SCALE:	1:200 @ A3
DATE:	February 2023
DRAWING NO.	REV
A/01/108	-



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stage 3: developed designs -issued for information		17.02.23
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JOB TITLE	Kay Residence 15 Dartmouth Park Ave, London NW5 1JL	
DRAWING TITLE	Site Plan existing	
SCALE:	1:500 @ A3	
DATE:	February 2023	
DRAWING NO.	A/01/109	REV -



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REVISED DRAWING 20/02/2023

KEY: Tree Constraints Plan -

TCP 15 Dartmouth Park Avenue

NOTES:

Root Protection Area (RPA) -

Red dashed circle

Trees to be retained -

Inner green circle

stage 3: Developed Design
-issued for information

17.02.23

Rev Date

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NW5 1JL

DRAWING TITLE
Site Plan
Proposed

SCALE: 1:200 @ A3

DATE: February 2023

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A/02/112

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stage 3: Developed Design 17.02.23
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Kay Residence
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DRAWING TITLE
**Site Plan
Proposed**

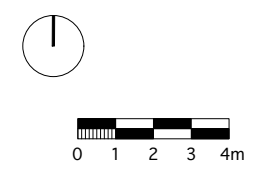
SCALE: 1:500 @ A3

DATE: February 2023

DRAWING NO. REV
A/02/113 -



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REVISED DRAWING 20/02/2023
TPP 15 Dartmouth Park Avenue
Tree Protection Plan
KEY: Trees to be retained - Green
Trees to be removed - Red
CEZ (construction exclusion zone) -
Yellow dotted line
Storage and mixing of materials -
Purple dotted rectangle

stage 3: developed designs -issued for information	17.02.23
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