Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT REPORT

BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations'

report

SITE

13 Elsworthy Road, Primrose Hill, London NW3 3DS

CLIENT

K. Gurova

Sharon Durdant-Hollamby
FICFor FArborA BSc (Hons) Tech Cert (ArborA)

DATE: April 2022
OUR REF: SHA 1531

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Executive summary

This report is submitted in connection with a Section 73 application *"Variation of condition 3 (approved plans) of planning permission 2021/2071/P dated 20th August 2021 for 'Erection of a part single, part two storey side extension; single storey rear extension with terrace above, replacement steps to rear garden; replacement of windows; replacement of existing side roof dormer and enlargement of rear dormer including addition of rear balcony; air conditioning unit within roof extracted through external terrace, associated landscape works and new garden outbuilding' namely to secure minor material amendments to design''* at 13 Elsworthy Road, Primrose Hill, London NW3 3DS. I have provided all information in accordance with the British Standard (BS 5837: 2012 *''Trees in relation to design, demolition and construction. Recommendations''* (referred to as BS).

The trees on site are not protected by a Tree Preservation Order, however the site is in a Conservation Area. The layout follows a pre-design site meeting with the relevant consultants to ensure that there is minimal impact on trees. This report supercedes the previous Arboricultural report by ACS (Trees).

This report provides details on how the Section 73 application will be implemented whilst retaining trees of value. The recommended loss of T10 cherry is due to larger than expected roots on the line of the extant planning, and I consider its retention unviable. This tree is shown replaced by a Cockspur Thorn.

The installation of the sauna will be carried out under arboricultural supervision and reported to Camden Council.

Providing the measures in this report are followed, there will be no adverse impact from this proposal.

Contents

Appendices

1. Introduction:

1.1. This report accompanies a Section 73 planning application to London Borough of Camden for *"Variation of condition 3 (approved plans) of planning permission 2021/2071/P dated 20th August 2021 for 'Erection of a part single, part two storey side extension; single storey rear extension with terrace above, replacement steps to rear garden; replacement of windows; replacement of existing side roof dormer and enlargement of rear dormer including addition of rear balcony; air conditioning unit within roof extracted through external terrace, associated landscape works and new garden outbuilding' namely to secure minor material amendments to design''* at 13 Elseworthy Road, London, NW3 3DS. The work is in accordance with BS 5837:2012 *'Trees in relation to design, demolition and construction. Recommendations'* (referred to as BS).

1.2. This report details tree condition, the impact of the proposal on, and from, the existing trees and the measures taken to protect trees to be retained. It also includes tree surgery recommendations.

1.3. The survey has resulted in a layout as shown in the tree protection plan at Appendix 3. Where technical terms are used, explanations are found in the glossary.

2. Statement of instructions and the issues addressed:

2.1. I was instructed by K. Gurova to:-

2.1.1. Carry out a tree survey in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS);

2.1.2. Analyse the proposals and the impact on trees to be retained;

2.1.3. Produce a tree protection plan, showing the location of the tree protection fencing in accordance with the BS and a specification for the protection of the existing trees;

2.1.4. Provide a tree surgery schedule which includes work to facilitate construction, based on the layout of, and works to, trees due to their condition or previous management;

2.1.5. Provide arboricultural method statements in as much detail as is practical at this stage.

2.2. The issues addressed are tree condition, and how the proposal impacts on the site and vice versa.

3. The site:

3.1. The property is on the southern side of Elsworthy Road, bordered by 11 Elsworthy Road to the east and 15 to the west. To the south is Primrose Hill open space. The property is a large terraced dwelling with a rectangular rear garden.

3.2. *Site soils:* An assessment of soils on-site was carried out by a desktop analysis using the National Soil Resources Institute website which identified the soils as likely to be slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. This is a guide only and detailed on-site soil analysis should be undertaken by the project engineer to inform the foundation design.

4 The trees:

4.1. *Generally:* There are 13 individual trees, 2 shrub groups and 1 group of trees which form the subject of this survey. Full details are found in the survey sheets at appendix 1 and their location on the tree survey plan SHA 1531 *TSP* at appendix 2.

4.2. *Legislation*: No Tree Preservation orders exist on site. The site lies within a Conservation Area. Further information on legislation is found at appendix 7.

4.3. *BS retention category:*

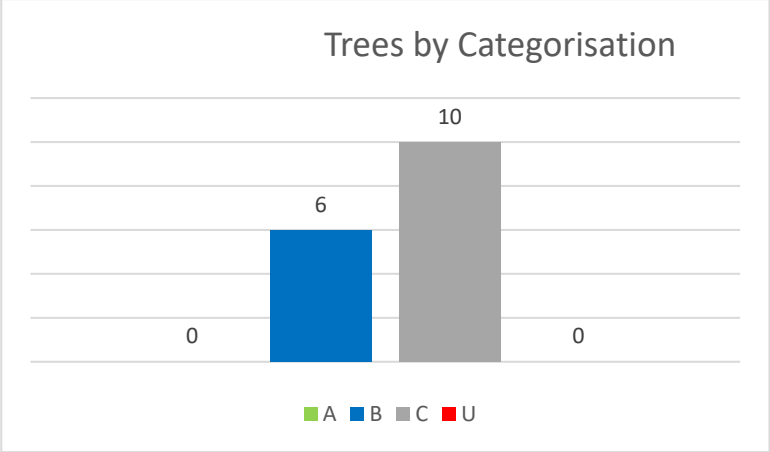

Table 1 – Retention category
A – high quality
B – moderate quality
C – low quality
U – unsuitable for retention

5. The Proposal

This is a Section 73 application for *"Variation of condition 3 (approved plans) of planning permission 2021/2071/P dated 20th August 2021 for 'Erection of a part single, part two storey side extension; single storey rear extension with terrace above, replacement steps to rear garden; replacement of windows; replacement of existing side roof dormer and enlargement of rear dormer including addition of rear balcony; air conditioning unit within roof extracted through external terrace, associated landscape works and new garden outbuilding' namely to secure minor material amendments to design''.*

In essence this includes the following:

- Replacement refuse/recycling store to the front garden
- Retain existing boundary planter resulting in a net increase in landscape area.
- Adjusted form of lower rear terrace, steps and external stair.
- Removal of T10 Cherry and replacement with 1 Cockspur thorn (Crataegus prunifolia). This is due to a new assessment of the impact of the extant planning consent, based on ground works which revealed that large roots near the trunk would need to be severed.
- Revised windows/doors to the lower ground floor extension
- Addition of roof light to rear extension
- Revised location of approved outbuilding (sauna) and addition of garden shed.

6. Arboricultural impact assessment:

6.1. *Summary of the impact on trees*: Development can adversely impact on trees by causing them to be removed to facilitate the development, or in the future, by adversely affecting their potential for retention through disturbance in root protection areas (RPAs) or through post development pressure to prune or remove.

6.2. Tree roots can be asphyxiated and die if the rooting zone becomes compacted and soil structure damaged which can easily occur, particularly on clay soils, even with the passage of light vehicles. At the design stage, disturbance within the RPA should be avoided. If unavoidable (which may need demonstrating), consideration must be given to any construction activity such as demolition, including removal of existing hard surfaces, changing soil levels and the provision of services where within RPAs, as well as new surfaces and structures.

6.3. At the planning stage, any works proposed with RPAs must be shown to be achievable with minimal impact on retained trees. Areas should be identified where a detailed Arboricultural Method Statement will be required post planning consent.

6.4. *Comments on specific trees and the arboricultural impact: Trees and shrubs in the rear garden and in neighbouring properties: T1 lime (category B under the BS - moderate value – offsite), S2 viburnum tinus (C – low value), T3 Red Robin (C), T4 sycamore (B – offsite), S5 laurel (C), T6 mulberry (B), T7 Indian bean tree (C – offsite), T8 magnolia (C), T9 lilac (C), T10 weeping spring cherry (C) and T11 oak (B - offsite).*

T1 is the closest of a line of limes growing close together in the rear garden of 11 Elsworthy road. It is a mature tree in a good condition and approximately 18m high with a crown overhang. A trial pit dug under arboricultural supervision close to the wall found that the roots are growing underneath the wall's foundations (approximately 400mm deep). T7 is a semi mature Indian bean tree to the south of the limes. The shrubs S2, S5 and other smaller shrubs in this area are low value and provide no visual amenity beyond the garden. T3 is a small twin stemmed Red Robin sapling which leans north, and at this size is young enough to be transplanted.

T4 sycamore and T11 oaks are mature trees in a reasonable form and condition growing in the rear garden of 15 Elsworthy Road. Further details on these, and all trees, are found in the tree survey sheets at appendix 1 and their location on the tree survey plan *SHA 1531 TSP* at appendix 2. The installation of the extant permission near the wall found no roots (source – construction team). The wall here has a deeper foundation and will be acting as a root barrier to at least its foundations.

T6 mulberry is a feature of the garden and has great character, but as is typical of a mulberry this age has minor defects and a sub-optimal crown architecture. It is partially enclosed by a raised log planter 700mm high at only 1m from the trunk on the southern and western aspect. Removal of ivy and dead wood is recommended, and it is also recommended that this tree is annually inspected by a competent person to see if any branch reduction is required on the over-extended branches. No work other than ivy and dead wood removal is recommended at this stage. The retaining log wall will be kept and visually enhanced.

T8 magnolia is semi mature and c. 7m high and in a reasonable form and condition. It has potential to become an important garden tree as it matures. T9 is a low quality lilac which leans heavily into the garden. It has a short safe useful life expectancy but is shown retained in the short-term to add maturity. If the owner wishes to remove this in the future once the new landscaping becomes established, then a Section 211 Notice will be required (see appendix 7).

T10 is a cherry tree originally shown to be retained in the extant planning consent. The approved arboricultural impact assessment by ACS trees states in 2.4 '*The project seeks to retain this tree for desirable landscape reasons although it would not be unreasonable, in my view, to remove and replace the tree'.* Works to implement the extant consent have revealed large surface roots that have had to be severed within the root protection area. Based on this, I do not consider the tree to be viable in the short term and this has been graded as a very low Category C, almost a U category. It has not been categorized as U at this stage as the works have not made the tree dangerous and it still has a fair vitality, but I expect it to decline. This report recommends its removal and replacement in accordance with the landscape architect's specification – a Cockspur thorn.

Arboricultural impact assessment:
Remove: T10 cherry for reasons outlined above and S2 Viburnum tinus for the sauna. T3 Red Robin can be transplanted within the garden to avoid the compost area.

Retain and tree protection: All other trees will be retained and protected during works. They are currently protected by chestnut paling fencing and plyboard ground protection, which I consider to be adequate given the lack of space and the fact that no machinery is on site.

Sauna, shed and hard landscaping: See the arboricultural method statement at appendix 6 for details on how the structures/surface can be built satisfactorily from an arboricultural perspective.

6.5. *Trees and shrubs in the front garden and in neighbouring land: T12 beech (B – offsite), T13 London plane (B – street tree), T14 cherry (C), T15 camellia (C), G16 box (C).*
T12 is a mature tree growing in the front garden of 11 Elsworthy Road. It provides a high level of visual amenity, and the wall will be acting as a root barrier to the depth of its foundations. The crown overhangs and the existing drive acts as ground protection.

T13 London plane is a mature tree managed by cyclical crown reductions. T14 cherry and T15 camellia are small trees in a secluded part of the front garden. G16 are tall, leggy box growing in a narrow planter.

Arboricultural impact assessment:

All will be retained and there are no direct arboricultural impacts.

7. Conclusions:

7.1. This report provides details on how the Section 73 application will be implemented whilst retaining trees of value. The recommended loss of T10 cherry is due to larger than expected roots on the line of the extant planning and I consider its retention unviable. This tree is shown replaced by a Cockspur Thorn.

7.2. The installation of the sauna will be carried out under arboricultural supervision and reported to Camden Council.

7.3. Providing the measures in this report are followed, there will be no adverse impact from this proposal.

8. Recommendations:

8.1. That a copy of this report is kept on site, including A3 colour copies of the tree protection plan. The arboricultural documents will be part of site induction by the main contractor to all sub-contractors.

8.2. That the arboricultural method statements are developed further and are observed by all site personnel and supervised at key stages by the project arboricultural consultant. Short supervision reports are to be written after each inspection as a record of compliance and audit trail to the Local Authority.

8.3. That the foundation design takes into account trees to be retained, trees to be removed and trees to be planted.

8.4. That there are no ground level changes with the area shown on the plan by tree protection fencing.

8.5. That any deviation from the service routes in this report, or any additional service routes are carried out in consultation with the arboriculturist and installed under arboricultural supervision.

8.6. That no tree works take place until consent is granted.

8.7. That the tree protection fencing and ground protection remains on site during works

8.8. That the exploration of the piles for the sauna is carried out under arboricultural supervision

8.9. That the replacement tree for T6 cherry is planted in the first available planting season and is planted and maintained in accordance with the landscape architect's specification. If this tree fails, then it is to be replaced in the first available planting season.

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Director
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Appendix 1

Tree survey sheets

Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m	RPA (m^2)	Comments	Recommendations
T1	Tilia X europaea (Common Lime)	M	450	1	18(6)	25	4	8	4	6	Good	40+	B2	5.4	91.62	Offsite tree. Reasonable form and condition. Stem data estimated as offsite. Forms a partial filtered screen. Part of linear group. Historically crown lifted and occluded well. Unbalanced crown shape. Crown distorted due to group pressure.This is the closest of four trees growing in a line continuing north approximately 2m apart. Growing right next to brick boundary wall and a hand dug trial pit revealed roots below foundation. The trunk leans south slightly at 10m and then corrects itself.	Responsibility of owner.
S2	Viburnum tinus	M	100	4	4(2)	6	1.5	1.5	3	2	Fair	<10	C2	2.4	18.1	Reasonable form and condition. Plotted by eye as not on topo. Multiple stems at ground level.Garden shrub with high arching crown.	
T3	Photinia x fraserii Red Robin.	SM	100 70	2	3.5(2)	8	1.5	1.5	0	2	Fair	10+	C2	1.46	6.7	Reasonable form and condition. Plotted by eye as not on topo. Spindly. Leaning north. Stem divides at ground level.	

Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m	RPA (m^2)	Comments	Recommendations
T4	Acer pseudoplatanus (Sycamore)	EM	600	1	16(4)	20	4	8	6	6	Fair	20+	B2	7.2	162.88	Prominent tree. Offsite tree. Reasonable form and condition. Stem data estimated as offsite. Historically crown lifted and occluded well. Historically crown reduced with good regrowth. Major deadwood in crown.In neighbouring garden at a slightly lower level. Heavily crown reduced at 8m in the past. Most pruning points have at least one dead stub. Otherwise vigorous regrowth.	Responsibility of owner.
S5	Prunus lustianica (Portugese Laurel)	EM	100 70	2	3(0)	6	1.5	1.5	2	2	Fair	<10	C2	1.46	6.7	Reasonable form and condition. Plotted by eye as not on topo. Suckers around stem base.Full dense crown.	

Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m	RPA (m^2)	Comments	Recommendations
T6	Morus nigra (Black Mulberry)	M	320 520	2	13(4)	14	6	5	5	8	Good	40+	B3	7.33	168.82	Tree located within raised bed. Prominent tree. Reasonable form and condition. Ivy on tree. Major deadwood in crown. Unbalanced crown shape.Large characterful tree in raised planter 700mm high and 1m from trunk on northern, Western and Southern aspect. The tree is free to root on Eastern aspect. Long low secondary branch on western aspect supports vigorous crown with only a few small dead branches. The secondary branch above is long and 45 degrees north west with good crown density. The Eastern stem is vertical supporting a good crown weighted east. A secondary branch growing south has some dieback due to shading.	Sever Ivy. Remove major deadwood.
T7	Catalpa bignonioides (Indian Bean Tree)	SM	200	1	10(2.5)	15	5	3	4	6	Fair	20+	C2	2.4	18.1	Offsite tree. Reasonable form and condition. Stem data estimated as offsite. Forms a partial filtered screen. Unbalanced crown shape. Crown distorted due to group pressure.Crown bias West.	

Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m	RPA (m^2)	Comments	Recommendations
T8	Magnolia (Magnolia)	SM	170	2	7(2)	11	4	3.5	3	3	Good	20+	C2	2.88	26.06	Reasonable form and condition. Forms a partial filtered screen. Leaning East. Stem divides below 1.5m. Historically crown lifted and occluded well.Angular branch formation following previous pruning. Crown overhangs neighbouring garden.	
T9	Syringa vulgaris (Lilac)	EM	170	1	5(2)	8	0.5	1	4	1	Poor	<10	C2	2.04	13.08	Poor shape & form. Leaning South. Broken branches in crown. Major deadwood in crown.Leans heavily south but still an attractive garden feature.	
T10	Prunus pendula Rubra (Weeping spring cherry)	M	400	1	5(2)	7	4	4	4	3	Fair	10+	C2	4.8	72.39	Declining. Exudation on stem. Broken branches in crown. Major deadwood in crown. Unbalanced crown shape.Two large dead branches on southern aspect and in centre. Prominent graft. Has been heavily reduced in the past. Recent excavations close to tree, and further excavations in accordance with approved works will be detrimental.	Remove tree and root and replace

Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m	RPA (m^2)	Comments	Recommendations
T11	Quercus robur (Common Oak)	M	950	1	21(5)	23	8	4	7	9	Good	40+	B2	11.4	408.33	Provides a high level of visual amenity. Prominent tree. Offsite tree. Stem data estimated as offsite. Good form and condition. Historically crown reduced with good regrowth.Observed from site side.	Responsibility of owner.
T12	Fagus sylvatica (Beech)	M	770	1	16(5)	20	8.5	6.5	6	5	Fair	40+	B2	9.24	268.26	Provides a high level of visual amenity. Prominent tree. Offsite tree. Reasonable form and condition. Stem data estimated as offsite. Cavity on stem.Growing close to boundary wall. Trunk kinks North and then corrects itself. Large open cavity at South West aspect. Depth and condition of cavity unknown.	Responsibility of owner.
T13	Platanus X hispanica (London Plane)	M	585	1	14(6)	25	5.5	5	4	5	Good	40+	B2	7.02	154.84	Tree located within hard surface area. Provides a high level of visual amenity. Prominent tree. Offsite tree. Good form and condition.Managed by cyclical crown reductions.	Street tree management
T14	Prunus (Prunus species)	SM	100	4	5.5(3)	9	3	4	3	3	Fair	10+	C2	2.4	18.1	Rooting area restrained by level change or structure. Suckers around stem base. Multiple stems at ground level.Growing close to house, next to change in level. Small ornamental.	

Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m	RPA (m^2)	Comments	Recommendations
T15	Camellia japonica	SM	70	3	4(2)	5	1.5	1.5	2	2	Fair	10+	C2	1.45	6.61	Tree located within raised bed. Reasonable form and condition. Multiple stems at ground level.Growing under the canopy of the cherry tree.	
G16	Buxus sempervirens (box)	SM	150	1	5(2)		2	2	2	3	Fair	10+	C2	1.8	10.18	Reasonable form and condition. Part of linear group. Leaning West.Line of small trees growing in narrow planter.	

Explanation of the tree survey sheets

The tree survey has been carried out in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Below is an annotation of the abbreviations in the sheet and their meanings.

1	2	3	4	5	6	7	8				9	10	11	12	13	14	15
Tree Number	Botanical Name (Common name)	Age	Dia (mm)	Stems	Height (crown height)	Ult ht (m)	N	E	S	W	Cond	Life Exp	BS Cat	RPR (m)	RPA (m^2)	Comments	Recommendations

1 Tree

T - Tree, **G** - Group of trees, **H** - Hedge and **S** -shrub mass

2 Species - Botanical name and (Common name)

3 Age

NP – Newly planted, **Y** – Young - an establishing tree that could be easily transplanted

SM - Semi-mature - an established tree still to reach its ultimate height and spread with considerable growth potential.

EM – Early mature – a tree reaching its ultimate height and whose growth is slowing, however it will still increase considerably in stem diameter and crown spread.

M – Mature – a tree with limited potential for further significant increase in size, although likely to have a considerable safe useful life expectancy

OM – Over-mature – of an age where the mature size of the tree can no longer be maintained, and adaptive growth strategies such as 'retrenchment' (growing down) are commencing. These strategies should not be confused with senescence or a moribund condition, as a good life expectancy can remain.

V – Veteran/Ancient – either a tree older than typical for the species, or a tree showing signs of age, and of great ecological, cultural or aesthetic value.

4 Dia (mm)

Diameter of the stem in millimetres at 1.5m above ground level for single stemmed tree or in accordance with Annex C of BS 5837 for multi-stemmed trees or trees with low forks or irregular stems.

5 Stems

Number or stems. Multi-stemmed is m/s

6 Height (Crown height)

Height in metres from the ground to the top of the crown

(Crown height) – height of canopy above ground level

7 Ult ht (m)

Height in metres that could be reasonably expected for the species given its condition, past management and location.

8 NSEW

The crown spread from the trunk to the tips of the crown at the four cardinal points

9 Cond

Physiological condition. Good, fair, poor or dead

10 Life Exp

Estimated remaining contribution in years; <10, 10+, 20+ and 40+.

11 BS Cat

Category in accordance with Table 1 and section 4.5 of BS

U – unsuitable for retention. Existing condition is such that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. Note, category U trees can have existing or potential conservation value which might be desirable to preserve.

A – high quality and value (non-fiscal) with at least 40 years remaining life expectancy

B – moderate quality and value with at least 40 years remaining life expectancy

C – low quality and value with at least 10 years remaining life expectancy, or young trees with a stem diameter below 150mm

A, B and C category trees are additionally graded into: 1 – mainly arboricultural values, 2 – mainly landscape values and 3 – mainly cultural values including conservation

12 RPR (m)

RPR – Root protection area radius (m)

13 RPA – Root protection area (m^2)

14 Comments

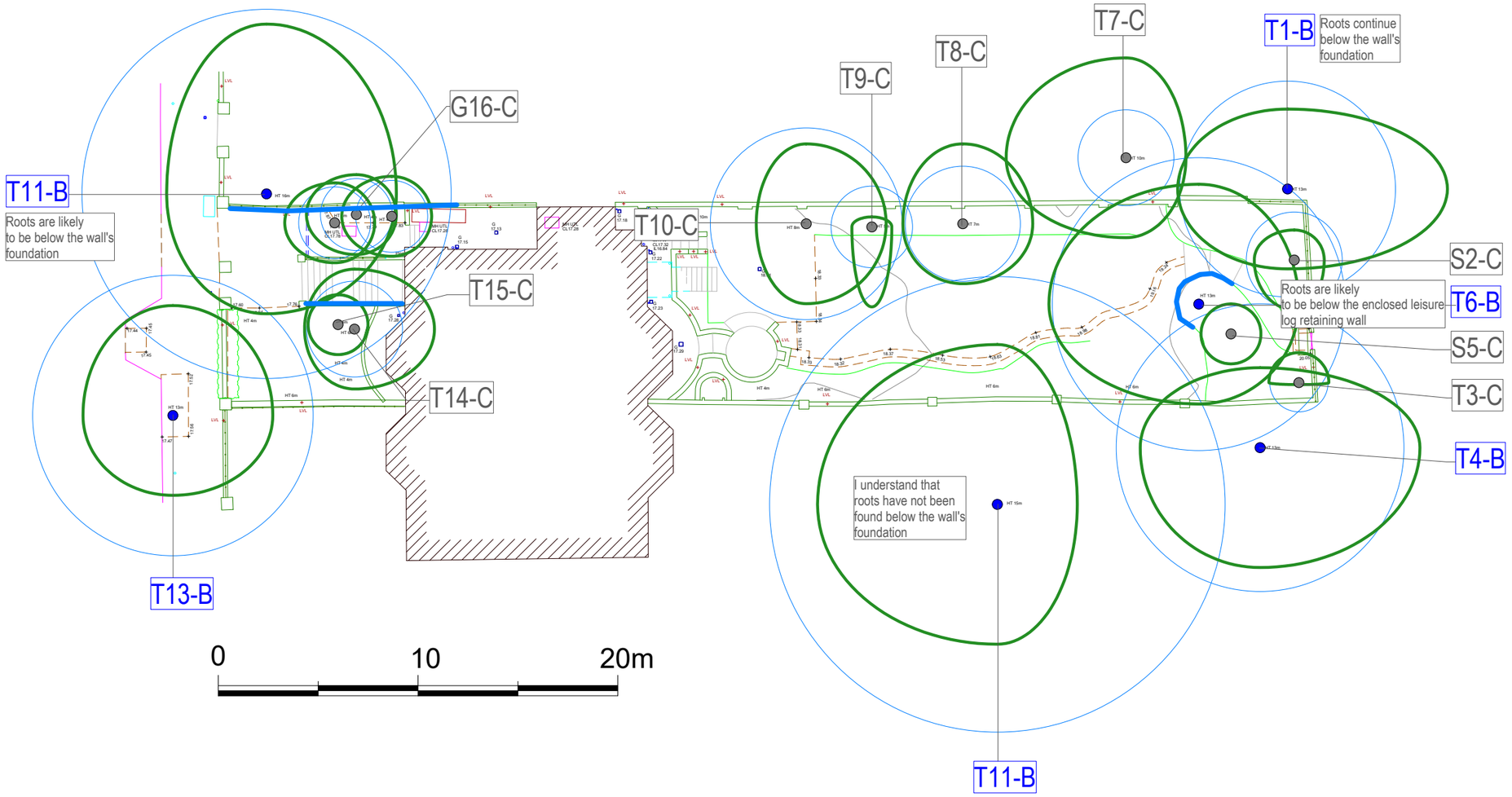
Detailed comments about the tree

15 Preliminary recommendations

Recommendations based on the tree's conditions and its current surroundings.

Appendix 2

Tree survey plan SHA 1531 TSP



Notes

1. Contractors to check all dimensions on site
2. Discrepancies must be reported to the Arboricultural Consultant before proceeding
3. The original of this drawing was produced in colour, a monochrome copy should not be relied upon.
4. It is the responsibility of the contractor to ensure necessary consents for tree works are in place
5. This drawing is copyright
   © Sharon Hosegood Associates Ltd

Rev :	Description :	Authorized :

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Client

Cornils Gurova

Site Address

13 Elsworthy Road, Primrose Hill, London NW3 3DS

Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMD-H

Date	Drawing Number	Scale	Drawing Status
15.3.22	SHA 1531 TSP	1:250@A3	For Issue

Revision

-

Appendix 3

Tree protection plan SHA 1531 TPP

Notes

1. Contractors to check all dimensions on site
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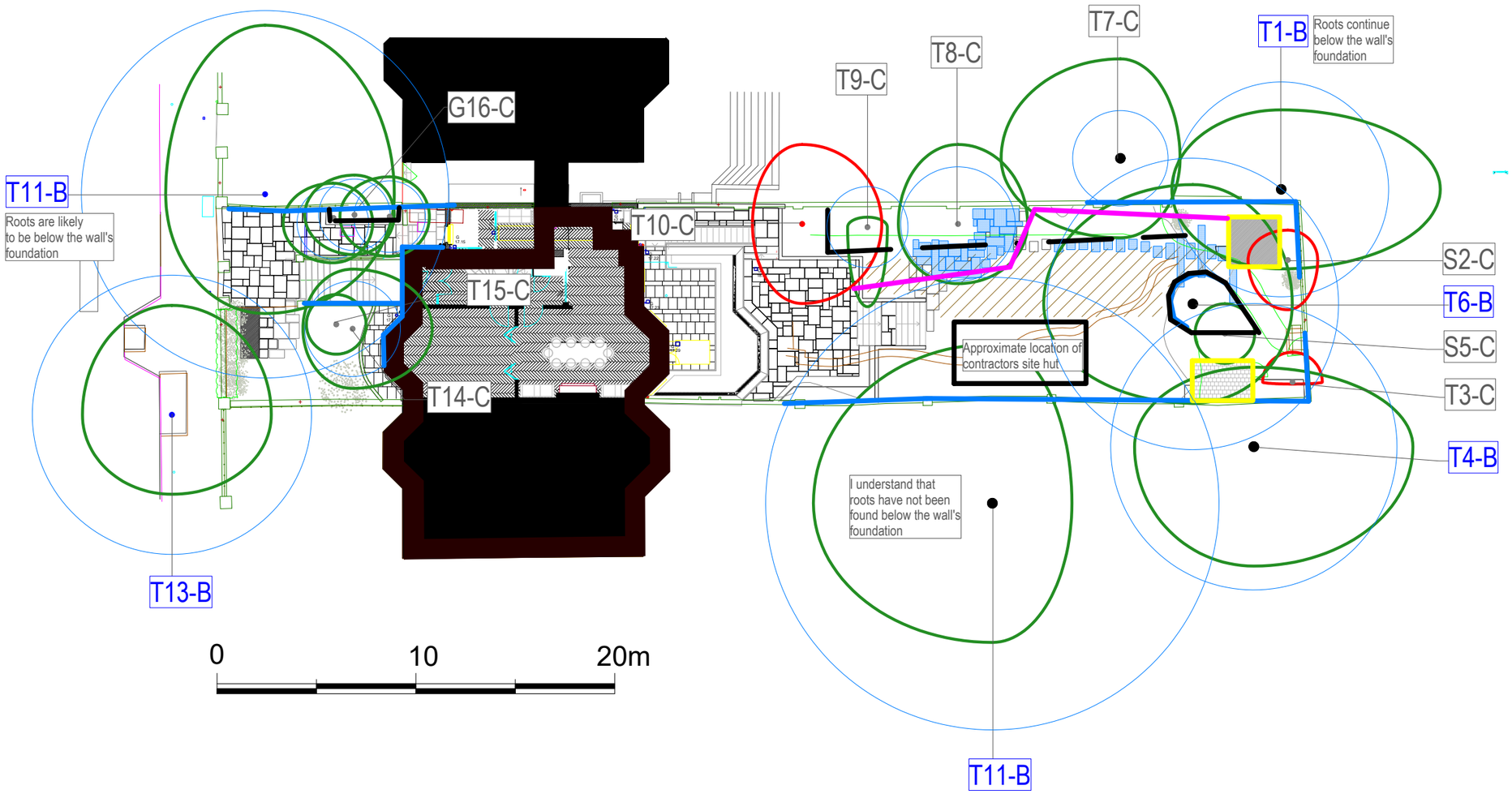

T1-A Category A - high quality and value

T1-B Category B - moderate quality and value

T1-C Category C - low quality and value

T1-U Category U - unsuitable for retention

Trees to be retained

RPA - root protection area as defined by Table 2 BS 5837:2012 Dashed area denotes unlikely rooting due to root barrier effect of wall

Group

Barriers to normal rooting depth see comments on drawing

Arboricultural method statement for foundation installation

Ground protection comprising plyboard

Trees/shrubs to be retained

Tree protection fencing

Flagstone construction in accordance with arboricultural method statement

Suggested route for water and electricity for sauna from an arboricultural perspective

Rev :	Description :	Authorized :

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Client
Cornils Gurova

Site Address
13 Elsworthy Road, Primrose Hill, London NW3 3DS

Drawing Title	Orientation	Drawn	Authorized
Tree Protection Plan		ND-H	SMD-H

Date	Drawing Number	Scale	Drawing Status
22.04.22	SHA 1531 TPP	1:250@A3	For Issue

Revision

Appendix 4

Tree surgery schedule

Tree surgery schedule

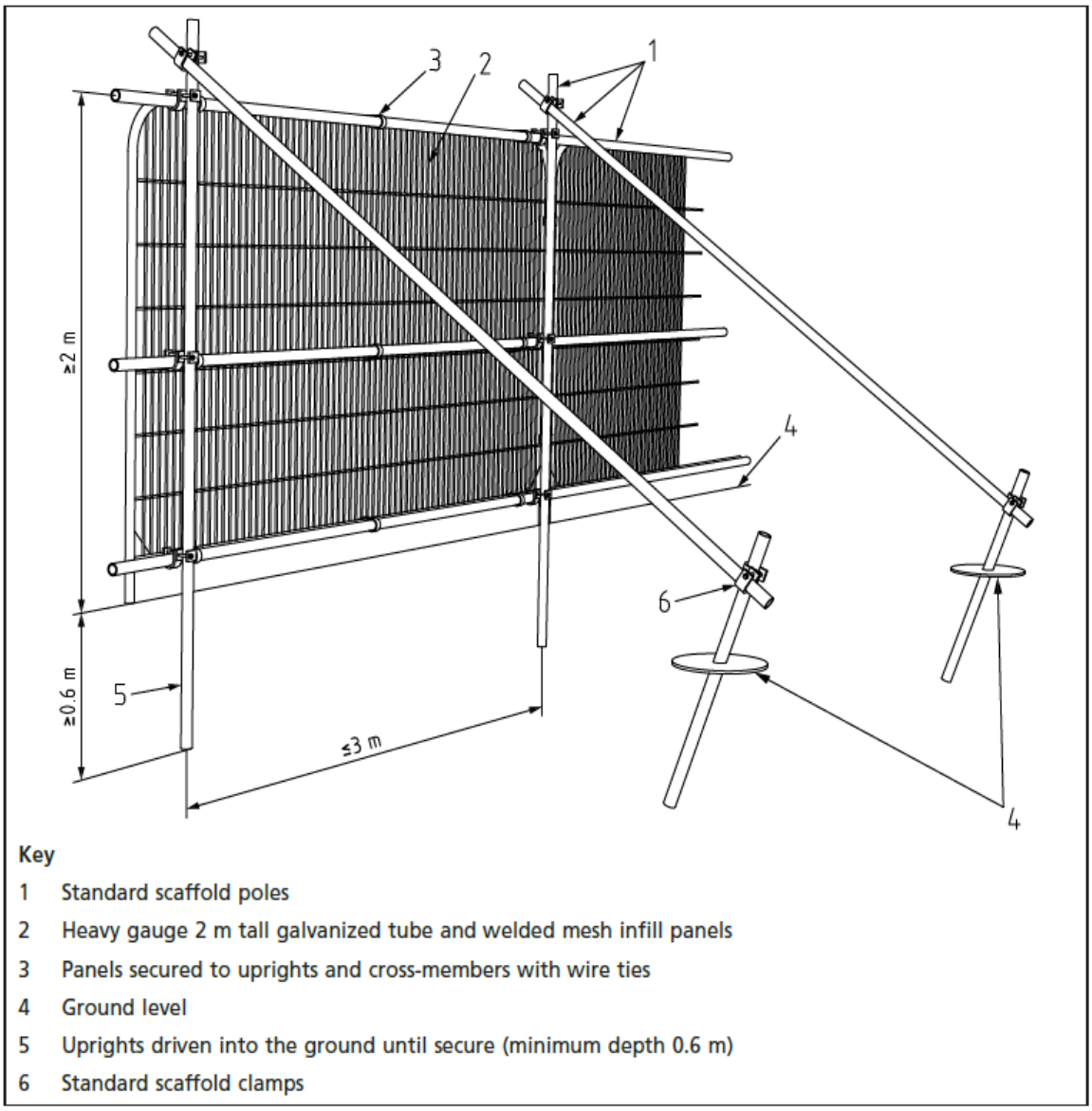
All works to be carried out in accordance with BS 3998:2010 'Tree works – Recommendations'. All pruning cuts to be made at suitable growing points in the line with the principles of 'Natural target pruning'. An ecological check is required by a competent person prior to tree works being carried. Works should not take place until planning permission is granted and all pre-commencement conditions are discharged.

Tree no.	BS category	Species	Proposed works	Reason
S2	C2	Viburnum tinus shrub	Remove	To enable sauna
T3	C2	Red Robin	Remove or transplant within garden	To enable compost area
T6	B3	Black Mulberry	Sever Ivy. Remove major deadwood.	For safety reasons
T8	C2	Magnolia	Crown lift to 1.8m	To enable pedestrian clearance
T9	C2	Lilac	Crown lift to 1.8m	To enable pedestrian clearance
T10	C2	Weeping spring cherry	Remove tree and root.	Proximity of approved and proposed works.

Appendix 5

Tree protection specification

Figure 2 **Default specification for protective barrier**



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

Tree protection fencing specification from BS 5837:2012 Figure 2

Section 6.2.2 of BS.

Barriers should be fit for purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees(s). Barriers should be maintained to ensure that they remain rigid and complete.

The default specification is shown above at Figure 2. Care should be taken when locating the vertical poles to avoid underground services and structural roots. Where it is not possible to drive a pole into the ground, for example on hard surfacing, figure 3 overleaf, applies.

On this site orange mesh fencing or the existing chestnut paling fencing will be sufficient as a visual barrier as this is a private domestic garden with limited space.

Suggested site warning sign format

Ground protection during demolition and construction

Where working space 'temporary access' is needed within the root protection area during works, fencing should be set back the minimum amount to achieve the required room. If there is existing hard surfacing in this area, it should remain during the works as ground protection. The suitability of this surfacing for ground protection, and whether it needs to be reinforced to bear the weight of machinery, should be assessed by an engineer and discussed with an arboriculturist.

Where the set back of the fencing exposes unmade ground, the ground must be protected before any works take place on site. This is to prevent root damage and soil compaction.

The ground protection might comprise of one of the following: (section 6.2.3.3 of BS)

A) For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
B) For pedestrian-operated plant up to a gross weight of 2 tonnes, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;
C) For wheeled or tracked construction traffic exceeding 2 tonnes gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

The location for ground protection is shown on the tree protection plan by brown diagonal hatching, identified in the key.

On this site plyboards have been used as there is no machinery and the only loading is from pedestrians and material storage.

Appendix 6

Arboricultural method statement

Tree works:

Recommendations for tree works can be found in the tree surgery schedule in Appendix 5. All works shall be in accordance with BS 3998:2010 '*Tree work. Recommendations'*. The use of a competent and insured tree surgery contractor is necessary to comply with this. The main contractor and tree surgery contractor must ensure that any necessary consents have been received from the local authority and that no protected species are harmed whilst carrying out site clearance or tree surgery works. Within root protection areas, stumps, shrubs and other vegetation must be removed by hand or using stump grinding machinery to minimize root damage of retained trees. Where poisoning of stumps is specified, this must be carried out by competent operatives. Only chemicals approved for this purpose and used in accordance with the manufacturer's instructions will be used.

The following information must be sought:

- Current employers, public and product liability insurance
- Waste carriers' licence
- Qualification and experience of key personnel, including relevant NPTC certificates
- COSHH assessment
- Tool and task based risk assessment, including a Working at Height Risk Assessment
- Site specific risk assessment
- Emergency procedure plan
- Method Statement

A list of suitable tree surgeons is found at:

http://www.trees.org.uk/find-a-professional/Directory-of-Tree-Surgeons

Bio security measures are important and found at:

https://www.forestry.gov.uk/biosecurity

Fires: Fires on site should be avoided if possible. If unavoidable, they should be situated far enough so that there is no risk of damage to the trees, taking into consideration the wind direction.

Site and fuel storage, cement mixing and washing points: All site storage areas, cement mixing and washing points for equipment and vehicles and fuel storage areas should be outside root protection areas unless otherwise agreed with the Local Planning Authority. No discharge of potential contaminants should occur within 10m of a retained tree stem or where there is a risk of run off into Root Protection Areas.

Temporary buildings for site use: Site cabins, trailers and other temporary buildings can sometimes be used in root protection area if consent is agreed by the local planning authority. This can be very useful if there is a robust existing hard surfacing in place. The method for installing the buildings, and assessment of whether ground protection is needed is to be agreed with the Arboriculturist and specified prior to installation.

Installation of the sauna:

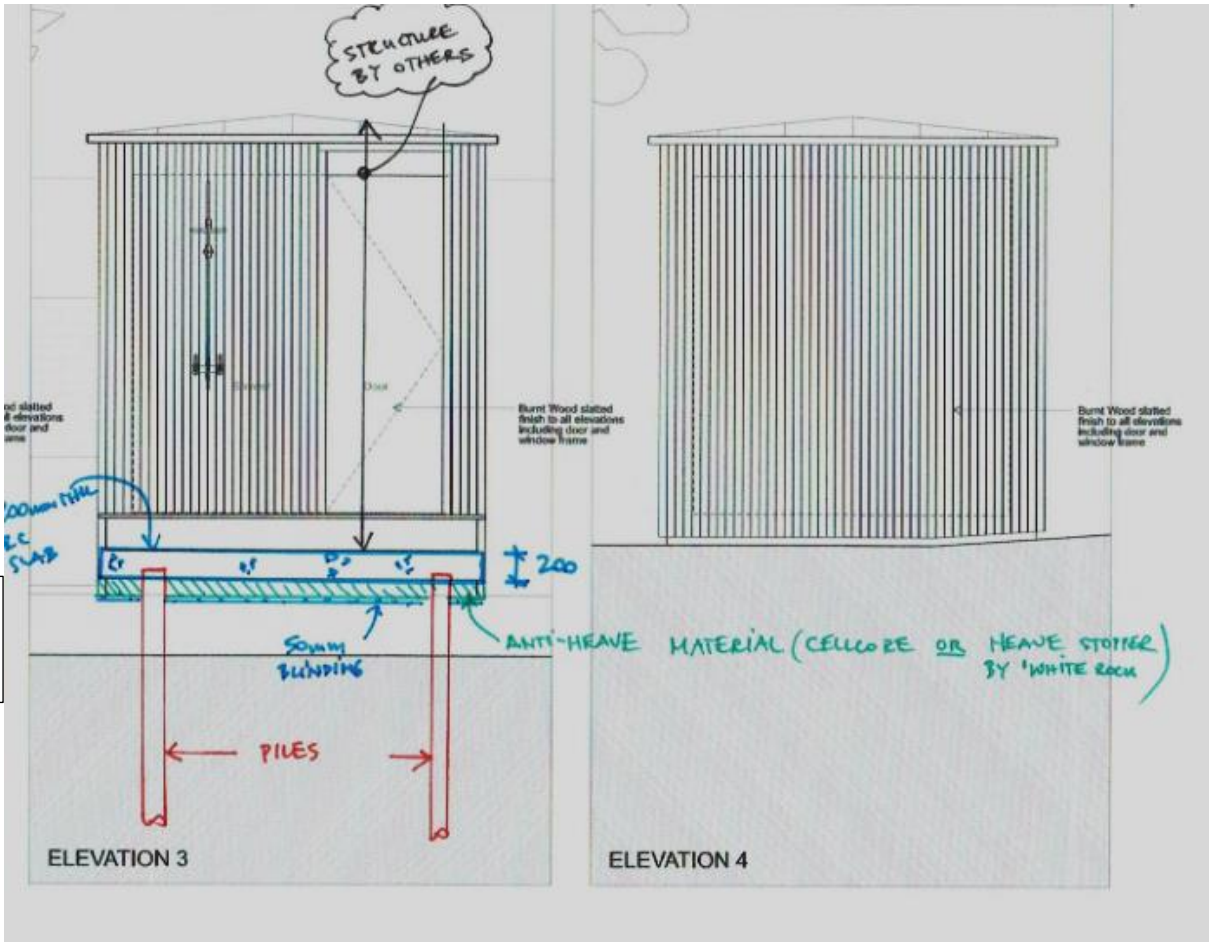
The sauna will be constructed with 4 x 150mm diameter piles down to 6m deep on a concrete pad with anti-heave measures below. The following is based on the fact that a trial pit found roots from the offsite lime tree T1 just below the wall's foundation (c.400mm) and the fact that the sauna is in the root protection area of T6 mulberry.

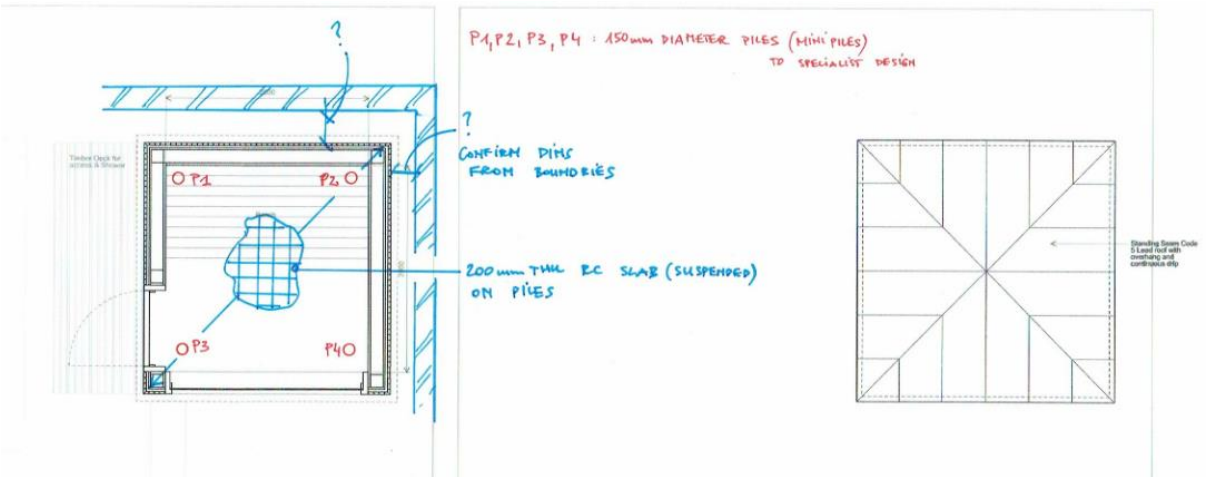
Construction:

- Remove the shrub S2 Viburnum tinus and smaller garden shrubs (including Sarcococca confusa).
- Remove the top c.50mm soil which will contain roots from shrubs
- Mark the location of the sauna and pile locations with spray paint
- Underground services check to be made
- Under arboricultural supervision, hand dig the location of the piles down to 1m or the depth of a root with a diameter greater than 25mm (whichever is greater). If roots of this size or larger are found, then the hole will be shifted in a location to avoid roots and the slab will be cantilevered. Any smaller roots will be pruned cleanly with bypass secateurs to assist digging. If the hole is found to have larger roots (>25mm diameter), it will be immediately backfilled.
- The area is to be covered in hessian as a temporary measure until the pling takes place. This is to prevent soil and root dessication.
- The soil is not to be stored within the root protection area of the trees, and should be taken offsite or reused in the garden (subject to the landscape architect's specification).
- The 4 piles will be installed with a mini rig that will not need a pile mat or pruning of either tree.

- Anti-heave measure to be installed
- Reinforced concrete slab to be installed. The concrete will be mixed away from the root protection area of the trees and transported by wheelbarrows on running boards. The timber shuttering for the pad will prevent leakage onto the soil and the anti-heave measure will prevent it from mixing on the ground.
- The erection of the building will be made by building the pre-made sections.

Ground level





Extract from sketches by structural engineer. Do not scale.

Water and electricity

The route for this will be along the boundary wall as this is furthest from the mulberry tree and within the depth of the foundation, therefore offsite trees will be unaffected. The route will then avoid T8 magnolia and T9 lilac and be hand dug. Any deviation from this will be require hand digging under arboricultural supervision in order to retain roots with a diameter greater than 25mm. The purpose is to achieve a route where the pipe and cable can go under roots. Larger roots will need to be wrapped in hessian during this work and the hole immediately backfilled.

Works will take place in accordance with National Joint Utilities Group Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2.

Installation of the shed:

The shed is in the theoretical root protection area of T6 mulberry and T4 an offsite oak. The wall will be acting as a root barrier to the oak to the depth of its foundations. The shed is a simple lightweight construction and having discussed this with the team, it has been decided that a simple shed base be laid on, or 50mm below, ground level. If this is concrete, then an impermeable plastic sheet will be laid to prevent the alkalinity of concrete from scorching the roots. The electricity cable will run along close and parallel to the boundary wall.

Installation of paving slabs:

This applies to the areas shaded blue on the plan SHA 1531 TPP where they are in the root protection areas of trees to be retained.

- Remove surface soil down to 10 – 20mm to make level
- Lay a geotextile membrane
- Lay a porous no fines stone subbase to landscape architect's specification
- Lay the slabs and use a no fines sand between joints. This will ensure porousity for water infiltration and gaseous exchange.

New landscaping: Within the root protection areas of trees to be retained, the preparation of soil for planting and turfing will be carried out by hand. Cultivation will be kept to a minimum and new topsoil must not exceed 100mm in depth within 1m of the stem. Top soil and other materials will be transported by wheelbarrow on running boards when working near trees. The use of 5% biochar is recommended with new planting and as a spot treatment every 1m (down to 300mm) in the soft landscaped part of the root protection area of the mulberry tree. Also where appropriate mulch with 50-70mm deep woodchip or bark chippings ensuring a halo 100mm wide around the base of all existing tree trunks.

Arboricultural site supervision

An initial site meeting:

Before works have started, but after the tree surgery and tree protection measures are in place. At this meeting the site manager, contractor, arboricultural consultant should discuss methodology and the tree protection measures will be examined. A '*What you need to know about working near trees at 13 Elsworthy Road, Primrose Hill, London NW3 3DS*' sheet will be issued which includes contact details.

After each site supervision, a short report will be sent to the contractor, client and local authority as a record of compliance within 5 working days.

Appendix 7

Tree related legislation and National Policy

Tree preservation orders

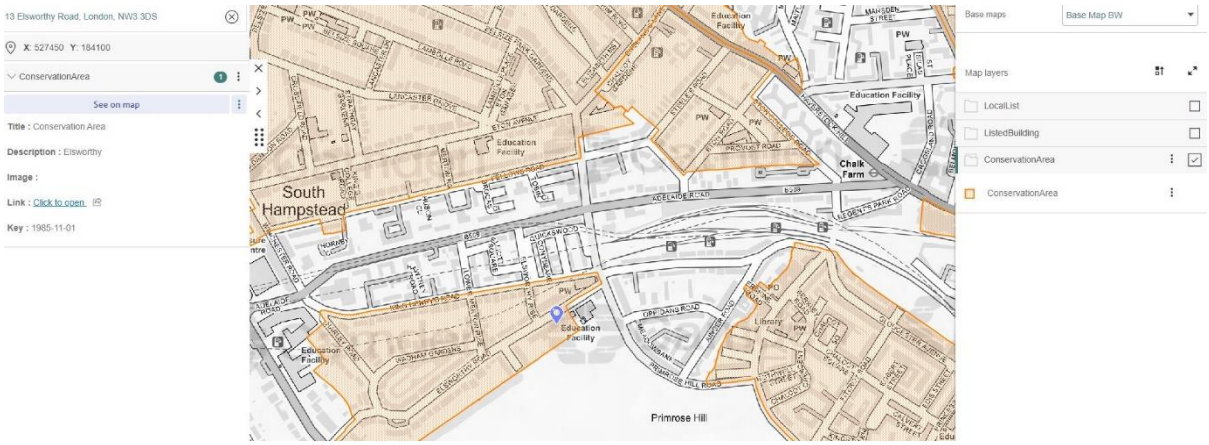
The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

No tree preservation orders affect the site.

Conservation Area

The site lies in Elsworthy Conservation Area. This means that no work can take place to trees (over 75mm at 1.5m) unless 6 weeks' notice of intent to carry out work is sent to the Local Planning Authority (LPA). The LPA can either raise no objection, or if they consider that the proposed works are detrimental to the visual amenity of the area, they will serve a Tree Preservation Order. Works listed in this report do not require separate consent, provided that all the pre-commencement conditions have been discharged from a full planning approval relating to this report.

There was no objection to aTree Works Application reference 2021/6006/T for felling a Judas tree (9.12.2021).



Source:- LBC website

Ecological considerations

The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

Occupiers Liability Act 1957 and 1984

The Occupiers Liability Act (1957 and 1984) places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore, this report includes recommendations within the tree tables for work required for safety reasons. 'Common sense risk management of tree (National Tree Safety Group 2012)' states that *'The owner of the land on which a tree stands, together with any party who has control over the tree's management, owes a duty of care at Common Law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property'.*

Common law enables pruning back to the boundary line providing the work is reasonable. Other restrictions, such as tree preservation orders/conservation areas still apply.
The owner of a tree is not obliged to trim their trees or hedges to prevent them from crossing over a boundary. Whilst the tree owner is not obliged to cut back the branches, the person whose property is overhung has the right to cut back the branches to the boundary providing there are no planning or legal restrictions on the trees such as Tree Protection Orders or if they are located in a church yard, in which case suitable consent must be obtained. Such pruning works must be undertaken to a suitable standard and must not cause damage to the tree.

The resulting debris remains the property of the tree owner, but you must not cause any damage to their property when returning it back to them and you do not have the right to trespass on the tree owner's property in carrying out the works. In the interests of good neighbourly relations, we would encourage neighbours to discuss their intentions with each other before carrying out such works, providing the work is reasonable and that the trees are not subject to TPO or Conservation Area protection.

The National Planning Policy Framework July 2021

Habitats and biodiversity 179.

To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

180. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

181. The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites64; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

182. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

The London Plan 2021

Policy G7 Trees and woodlands

A London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.

B In their Development Plans, boroughs should:

1) protect 'veteran' trees and ancient woodland where these are not already part of a protected site[139]
2) identify opportunities for tree planting in strategic locations.

C Development proposals should ensure that, wherever possible, existing trees of value are retained.[140] If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

139 Forestry Commission/Natural England (2018): Ancient woodland and veteran trees; protecting them from development, https://www.gov.uk/guidance/planning-applications-affecting-trees-and-woodland

140 Category A, B and lesser category trees where these are considered by the local planning authority to be of importance to amenity and biodiversity, as defined by BS 5837:2012

Camden Planning Guidance on Trees (March 2019)

This report provides the information required for a Trees and planning application including a Tree Survey, Tree Constraints plan and AIA. The method statements in this report require more information post planning before being finalised. A CAVAT assessment has been carried out and is separate to this report.

Camden Local Plan 2017

Policy A3 Biodiversity

Trees and vegetation

The Council will protect, and seek to secure additional, trees and vegetation. We will:

j. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation;

k. require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 'Trees in relation to Design, Demolition and Construction' and positively integrated as part of the site layout;

l. expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;

m. expect developments to incorporate additional trees and vegetation wherever possible.

Appendix 8

Statement of methodology and reference material

Statement of methodology

Review of supplied plans and information

Site visit made by Sharon Durdant-Hollamby on 14.3.22.

Tree survey using Visual Tree Assessment carried out in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS). All investigations were from ground level only and binoculars were used when necessary. All trees with a trunk diameter of 75mm or above were surveyed. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS and include species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C).

Teams meeting with engineer, client and all consultants on 31 March 2022 to discuss detail of works near trees

Received material

BA31770121-01-Topo, Proposed Site Plan 1_200, ETN concept design 210930, ELW-SK-007H [technical], ELW-SK-007G [technical], ELW-SK-006 secure storage shed, 1163_A_20_037 Arboricultural Appraisal and Tree Protection Plan for extant consent (ACS Trees reference ha/aims2/21/13elsewortyrd dated 27.04.21, ELW-SK-006B [secure storage shed], AZ2104 13 Elsworthy Road S73 Planning Statement, 13ER_1_02_05_rev B, ELW landscape design 220420, 13 Elsworthy Road - s73 application, ELW concept design 210930 p21, 13ER_P_00_GA, 13ER_P_99_GA, 13ER_S_AA_GA, 13ER_S_CC_GA

Reviewed text

BSI. BS 3998:2010 *Tree work-Recommendations.*

BSI. BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*

R.G.Strouts and T.G.Winter 'Diagnosis of ill-health in trees' TSO 1994

London Borough of Camden website

C. Mattheck 'The body language of trees' 2015

S

Appendix 9

Caveats & Exclusions

Specific report caveats

1. At the time of writing this report, the protected tree status is correct. However, this can change. Therefore, I advise that a further check is made with London Borough of Camden before any works to trees take place.
2. No internal diagnostic equipment was used other than a sounding mallet and probe and all inspections were from ground level only, with the aid of binoculars where necessary.
3. The survey is concerned solely with arboricultural issues.
4. Any changes in ground level, or excavations near to tree roots not discussed within this report may change the stability and condition of the trees and a further examination would be required.
5. As trees are a dynamic living organism this report is only valid for a period of 12 months, in respect to their health and condition.
6. Only the trees listed in this report have been examined.
7. The measure of offsite trees has been estimated, except any crown within the site overhang which is measured. Where the crown of an onsite tree overhangs the boundary, the crown spread in this direction is also estimated.
8. The base and trunk of the offsite trees could not be examined, and therefore a full assessment of the trees condition could not be made.
9. Dense ivy and undergrowth prevent a full condition survey being carried out. The vegetation may be hiding structural defects.
10. The tree information is from the time of the survey. Some pests, diseases and fungi only appear seasonally, therefore it is possible not all issues that may affect the health of the trees could be observed.

Appendix 10

My experience and qualifications

Sharon Durdant-Hollamby

FICFor FArbor A BSc (Hons) Tech Cert Arbor A

Profile

Sharon is an Expert Witness, chartered arboriculturist and Director of Sharon Hosegood Associates Ltd. Sharon had eleven years' experience as a local government tree and landscape officer before joining DF Clark Contractors as a tree consultant in 2005. In 2007 she formed an environmental practice in Essex with the owner. As managing director, she built up the ecological and arboricultural consultancy to a team of 20. She appeared on BBC1 in July 2015 and September 2015, in 'Britain Beneath Your Feet' demonstrating tree radar at the Burghley Country Park, Lincs, the consumer programme 'Rip Off Britain', and with tree radar equipment, Springwatch, investigating the rooting of the Major Oak at Sherwood Forest in June 2018. Sharon was the technical coordinator and chair of the Institute of Chartered Foresters national study tour 2016 'The streets of London'. She became President of the Institute of Chartered Foresters in May 2021. She is a committee member of B/213 Trees for the British Standard Institute.

Specialties:	Trees in relation to development, including appeals and planning hearings
	Tree root investigations, including TreeRadar
	Tree hazard evaluation
	Tree preservation orders
	Trees and well-being with community engagement
Professional bodies:	President of the Institute of Chartered Foresters Fellow of the Institute of Chartered Foresters (ICF) Fellow of the Arboricultural Association
Qualifications:	Cardiff University Law School Bond Solon Civil Expert Certificate Arboricultural Associations Technicians Certificate BSc (Hons) Geography and Landscape Studies Managing Safely IOSH (2017)
Awards:	Top student award for the Technician's certificate in 2005
	The Broomfield Hospital Woodland Management project she has managed between 2009 -2015 won the following awards: The Essex Biodiversity Awards (nomination) The Excellent Community Engagement Award (NHS Forest) Green Flag and Green Apple Award Highly commended for the Health Sector Journal Award 2013

Appendix 11

Glossary

Arboriculture	Formerly all aspects of the culture of trees, especially for forestry. Latterly, the art and science of cultivating and managing trees as groups and individuals, primarily for amenity and other non-forestry purpose**.**
Arboricultural method statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience in the field of trees in relation to construction.
Architecture	In a tree, a term describing the pattern of branching of the crown or root system.
Biochar	Biochar is charcoal used as a beneficial soil amendment enabling nutrient uptake and assisting the trees defense mechanism
Biodiversity	The variability among all living organisms of an ecological complex.
Biomechanical	Pertaining to the mechanical functions and properties of living organisms, such as trees.
Body language	In trees, the outward display of growth responses and/or deformation in response to mechanical stresses.
Branch	A limb extending from the main stem or parent branch of a tree.
Branch bark ridge	The raised arc of bark tissues that forms the acute angle between a branch and its parent stem
Branch collar	The swelling or roughened bark often found at the base of a branch which should be left intact if the branch is to be pruned off.
Canker	A lesion in which bark and cambium have been killed, sometimes exposing the wood and often showing a swollen appearance owing to the encircling growth of new tissues.
Canopy	The topmost layer of twigs and foliage in a tree.
Co-dominant	In trees, a similarity between two or more stems or branches with regard to their size and their position within the canopy.
Column	In the wood or phloem of a tree, an axially elongated zone of tissue that is distinguished form the surrounding tissue; e.g. Live verses dead or decayed versus non-decayed.
Construction exclusion zone	An area based on the root protection area from which access is prohibited for the duration of the project.
Crown	In arboriculture, the main foliage-bearing portion of a tree.
Crown lifting	The removal of shortening of the branches that form the lower part of the crown of a tree.
Crown reduction	Pruning in order to reduce the size of the crown of a tree.
Crown thinning	Pruning inside the crown of a tree in order to reduce its density.
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.
Dieback	The death of part of a plant, usually starting from a distal point and often progressing proximally in stages.
Direct damage	Direct physical damage to a structure of surface from pressure exerted by the trunk or growing roots.

Ecosystem services	The benefits that a particular species or range of species bestow upon others (including humans) though ecological relationships. Such services can sometimes be estimated in a form that allows them to be included in financial accounting.
Epicormic	Pertaining to shoots or roots which are initiated on mature woody stems; shoots can form tin this way from dormant buds or they can be adventitious.
Failure	In connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil.
Flush cut	A pruning cut close to the parent stem which removes part of the branch bark ridge.
Foreseeable	In hazard assessment, pertaining to failure and associated injury of damage which are predictable on the basis of evidence from a tree and its surroundings.
Fungi	Organisms of several evolutionary origins, most of which are multicellular and grow as branched filamentous cells within dead organic matter or living organisms.
Hazard	A thing, a process or a potential event that has the potential to cause harm.
Heartwood	The dead or predominantly dead central wood of various tree species whose outer living wood, sapwood, has a finite and pre-determined lifespan.
Independent in the landscape	Point at which a newly planted tree is no longer reliant on excessive or abnormal management intervention in order to grow and flourish with realistic prospects of achieving its full potential contribute to the landscape.
Level arm	A mechanical term denoting the length of the lever represented by a structure that is free to move at one end, such as a tree or an individual branch.
Landscape character	A distinct, recognisably and consistent pattern of elements in the landscape that make one landscape different from another, rather than better or worse.
Mulch	Material laid down over the rooting area of a tree or other plant to help conserve moisture, suppress weeds and encourage a beneficial microflora.
Mycorrhizal	Pertaining to an intimate symbiotic association between plant roots and specialised fungi.
PICUS	The Picus Sonic Tomograph is a non-invasive tool for assessing decay in trees. It works on the principle that sound waves passing through decay move more slowly than sound waves traversing solid wood. By sending sound waves from a number of points around a tree stem to a number of receiving points, the relative speed of the sound can be calculated and a two-dimensional image of the cross-section of the tree can be generated
Pollard	A term for a pollarded tree
Pollarding	The complete or partial removal of the crown of a young tree so as to encourage the development of numerous branches; also, further cutting to maintaining this growth pattern.
Probability	A statistical measure of the chance that a particular event (e.g. a specific failure of a tree or specific kind of harm to persons or property) might occur.
Resistograph	

	The IML-RESI system is based on the measurement of drilling resistance. The IML-RESI operates in a similar manner to a normal drill. A drilling needle with a diameter of 1.5mm is inserted into the wood under constant drive. While drilling, the resistance is measured as a function of the drilling depth of the needle. The data is printed and stored electronically at a scale of 1:1 simultaneously. Although invasive the relatively small needle diameter causes very little damage, testing is normally only undertaken to confirm the remaining stem wall thickness in decaying trees.
Retrenchment	Progressive reduction in the size of the crown of an old tree, by means of the dieback of breakage of twigs and small branches, accompanied by the enhanced development of the lower or inner parts of the crown.
Risks	The likelihood of the potential harm from a particular hazard becoming actual harm.
Root protection area	A layout tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. BS 5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*.
Root flare	Thickened and expanded base of s tree stem at ground level form which buttress roots form.
Rootplate	The central part of the root system of a tree, consisting of the large-diameter main roots and a dense mass of smaller roots and soil.
Service	In construction, any above-or below-ground structure o apparatus for utility provision.
SULE	Safe useful life expectancy of a tree (Barrell)
Stag-headed	In a tree, a state of dieback in which dead branches protrude beyond the current living crown.
Stress	In plant physiology, a condition under which one or more physiological functions are not operation within their optimum range, for example owing to lack of water, inadequate nutrition or extremes of temperature.
Stub cut	A pruning cut which is made at some length distal to the branch bark ridge.
Target pruning	The pruning of a twig or branch so that tissues recognisably belonging to the parent stem or branch are retained and not damaged.
Targets	In tree hazard assessment, persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it.
Tree Preservation Order	In Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.
Tree protection plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposal, showing trees for retention and illustrating the tree and landscape protection measures.
Utility	An undertaker by statute that has a legal right to provide customer services (e.g. communication, electricity, gas and water).

Veteran tree	*'A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species'.* Ancient Tree Guide No. 4 (ATF, 2008).
Vigour	In tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth.
Vitality	In tree assessment, an overall appraisal of physiological and biomechanical processes, in which high vitality equates with near-optimal function, in which high vitality equates with healthy function.
Visual Tree Assessment (VTA)	In addition to the literal meaning, a system expounded by Matteck and Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.
White-rot	Various kinds of wood decay in which lignin, usually together with cellulose and other wood constituents, is degraded.
Wound	Injury caused to a tree by a physical force.

Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT REPORT
BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations'

SITE

13 Elsworthy Road, Primrose Hill, London NW3 3DS

CLIENT

K. Gurova

DATE: April 2022
OUR REF: SHA 1531

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