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ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT REPORT

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

report

SITE

Land surrounding Snowman and Casterbridge House,
Belsize Road, Camden, NW6 4DP

CLIENT

London Borough of Camden

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DATE: 19 May 2020

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Executive summary

This report is submitted in connection with a planning application for *“Construction of a new health and community centre (Use Class D1), relocation of existing residential car park, along with landscaping, associated access, demolition of link bridge between Phases 2 and 3 and cycle parking”*. at Land surrounding Snowman and Casterbridge House, Belsize Road, Camden, NW6 4DP. 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, and the site is not in a Conservation Area.

The development results in the removal of 19 trees, 2 small groups of elder and 1 hedge on the site although the important trees along, and near, the street frontage are retained. Of these 18 trees and groups, 1 tree and both groups were recommended for removal due to their poor condition. There has been considerable design team and client discussion to maximise tree retention and to ensure significant tree planting. Trees to be retained will be protected by tree protection fencing and by the application of arboricultural method statements which will be carried out under arboricultural supervision.

Other tree removals (5 trees and one small group) are recommended for their poor condition, and not in connection with the proposal. Please note that trees recommended for removal by the arboriculturist are currently under review as part of the scope of this project, final confirmation of this is to be secured by way of planning condition. The landscaping scheme includes 41 new trees, therefore there will be a net gain of 22 trees. The landscaping scheme also provides a rich meadow, shrub and perennial layer, greatly enhancing the species and structural diversity of the site.

Arboricultural supervision will take place at key stages: marking trees to be removed, installation of tree protection measures, pruning of roots of one lime tree to enable the piling mat, and installation of hard landscaping near trees. Generally, this is a simple construction in terms of arboriculture, with room for construction and the trees to reach their full maturity.

Contents

Heading number	Detail	Page number
1	Introduction and background	4
2	Statement of instructions and issues addressed	4
3	The site	5
4	The trees	5
5	The proposal	7
6	Arboricultural Impact Assessment	7
7	Conclusions	20
8	Recommendations	20

Appendices

1	Tree survey sheets	22
2	Tree survey plan SHA 1032 TSP	25
3	Tree protection plan SHA 1032 TPP1 for enabling works, SHA 1032 TPP2 for construction and SHA 1032 TPP3 for external works	26
4	Tree surgery schedule	27
5	Tree protection specification	31
6	Draft method statements incorporating site supervision	36
7	Tree related legislation affecting the site	40
8	Statement of methodology and reference material	44
9	Caveats & Exclusions	46
10	My experience and qualifications	48
11	Glossary	50

1. Introduction:

- 1.1. This report accompanies a planning application to London Borough of Camden for
“Construction of a new health and community centre (Use Class D1), relocation of existing residential car park, along with landscaping, associated access, demolition of link bridge between Phases 2 and 3 and cycle parking”. 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 Wates Construction Residential on behalf of the London Borough of Camden 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. The opportunities for new planting are discussed, as detailed in the Landscaping Scheme by Farbrik.

3. The site:

- 3.1. The existing site is currently in use as a private open space and as a residential car park, for Snowman and Casterbridge House. The site is bordered by Belsize Road on the south-eastern aspect and Abbey Road on the south-western aspect. Rear gardens from properties on Goldhurst Terrace back on to the northern boundary of the site. On the eastern boundary is a large semi-detached residential property (170 Belsize Road) and on the western boundary is 124 Abbey Road. Both have long rear gardens that are on the entire boundaries.

- 3.2. The northern, eastern and western boundaries are enclosed by high brick walls which act as root barriers to the depth of their foundations. Along the southern boundary frontage the trees are planted in low raised planting beds enclosed by low walls (in varying states of repair). These low walls are essential for the support of the trees. Other than a raised mound for play, there is a 2m level change from the northern boundary to the southern boundary in building location and the site is mostly laid to grass or tarmac. There are very few shrubs, and the landscaping is one of individual trees in mown grass/raised beds/tarmac. The trees on the frontage provide a high visual amenity and provide essential ecosystem services next to Belsize Road and Abbey Road.

- 3.3. *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. The likelihood is that the soils are made ground with some rubble from previous construction. Ground investigations have been completed and the design team awaits the results.

4. The trees:

- 4.1. *Generally:* There are 66 individual trees, 2 hedges and 4 groups 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 1032 TSP* at appendix 2.

- 4.2. *Legislation:* The site is not protected by a Tree Preservation Order, nor does it lie within a Conservation Area. The trees are owned and managed by the London Borough of Camden who have tree inspection and management regimes. For further information, please see appendix 7.

4.3 BS retention category:

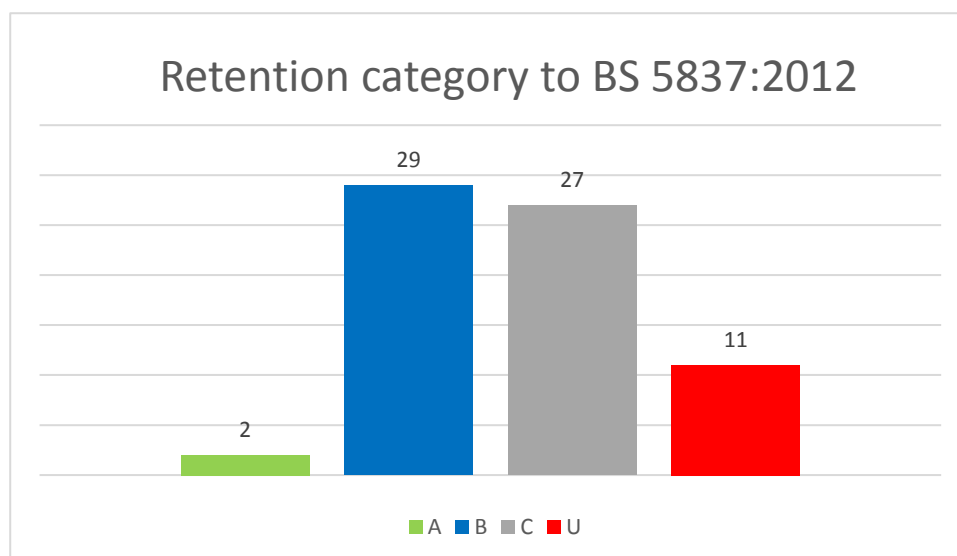


Table 1 – Retention category

A – high quality

B – moderate quality

C – low quality

U – unsuitable for retention

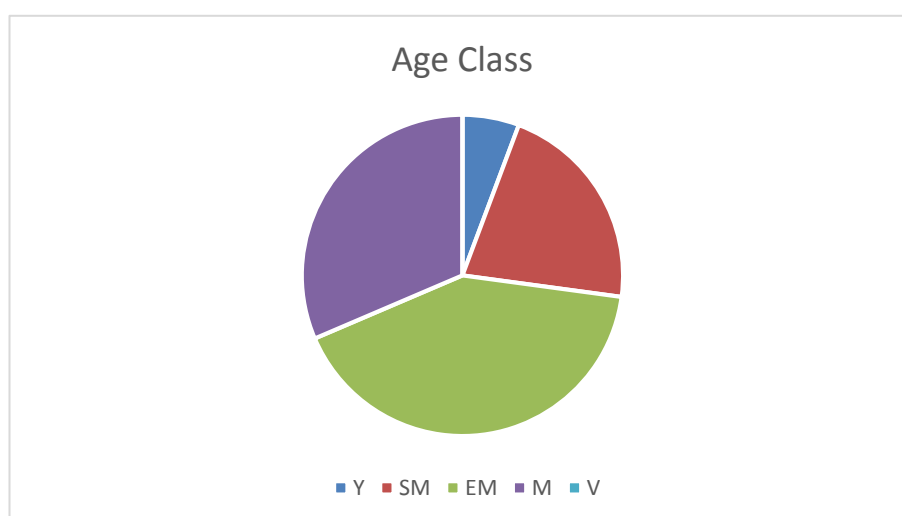


Table 2 – there are few young trees (shown blue), and therefore little succession planting.

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

V-veteran - either a tree older than typical for the species, or a tree showing signs of age, and of great ecological, cultural or aesthetic value.

5. The Proposal

- 5.1. For *“Construction of a new health and community centre (Use Class D1), relocation of existing residential car park, along with landscaping, associated access, demolition of link bridge between Phases 2 and 3 and cycle parking”*.

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. Building lines ideally should be at least 2m outside of the RPA to allow for scaffolding and other build-ability issues and to allow for service runs and paths around the edge of buildings. Trees are long-lived organisms which take a long time to mature and if considered at an early stage can complement and increase the value of a development.
- 6.5. *Comments on specific trees and the arboricultural impact: Trees in the centre of the site: T1 pear (category C under the BS – low quality), T2 & T3 lime (category B – moderate quality), T4 & T5 Norway maple (C) and T34 willow (B).*
- T1 is a leaning mature pear with minor structural defects as listed in the tree survey sheets at appendix 1, T2 is a mature tree of high visual amenity but also with minor defects and T3 lime is the best of the group. A high artificial play mound is within the root protection area of T2.

T4 and T5 are 9-metre-high Norway maples growing on the edge of the car park and both have structural and physiological defects, although they are not hazardous trees. T34 willow is the most prominent tree within the site and has been managed by regular crown reductions. It has large surface roots but otherwise appears to be in reasonable form and condition.



Photo 1 of T34 looking north

Arboricultural impact assessment:

All will be retained, except T4 which is a small low quality tree. This tree will be removed to enable planting of an oak tree planted at a semi-mature size, to form a pair of oaks at the narrowing of the landscape design. The trees to be retained will be protected during work. The tree protection fencing for T34 will be set back slightly north within the root protection area, and the ground protected to make room for the compound. Play equipment will be installed under T34 in accordance with the draft method statement at appendix 6.

The raised mound under T2 will be removed with care, with the latter stages under arboricultural supervision to ensure that any roots found underneath are retained.

6.6. *Trees on the eastern part of the site: T6 goat willow (category U – unsuitable for retention), T7 goat willow (C), T8 & T12 sycamore (B), T9 – T11, T13 & T14 lime (B), T15 hawthorn (C), H16 hawthorn (C), T17 ash (C), T18, T19, T20 & T21 sycamore (B), T22 beech (C), G23 elder (U), T24 sycamore (C), T25 Lawson cypress (C), T26 ash (C), T27 sycamore (C), G28 elder (U), T29 sycamore (C), T30 pear (B) and T31 ash (C).*

T6 and T7 goat willow has a poor structural form, with T6 being potentially hazardous. T8 sycamore is in reasonable form but with more dead wood than is typical, with a tight fork where the tree becomes co-dominant at 3m.



Photo 2 of T6, T7 and T13 looking south-east



Photo 3 of T13, T14, T15 and H16 looking south-east



Photo 4 of T18 – T21 looking north-east



Photo 5 showing close proximity to the wall

The lime trees T9, T10, T11, T13 and T14 are all managed as pollards and provide a high level of visual amenity to Belsize Abbey Road and Abbey Road. T12 sycamore is also prominent. T15 hawthorn is a small scrubby tree slightly to the east of a neat 3m high hawthorn hedge along the road frontage, behind the railings.

Set back from the road are a group of trees comprising T17 a semi mature ash with a tight fork between the main stems, T18, T19 and T21 sycamores in reasonable form and condition (but with some dead wood in the crowns). T20 is growing right next to the boundary wall which will be acting as a root barrier, at least to the depth of its foundations. Given the height of the wall, the foundations are likely to be substantial. The crown overhangs the neighbouring property. The remainder of the trees are all semi-mature self sown trees growing right up next to the boundary walls in an unsustainable location. The exception to this is T32 sycamore which are offsite and the wall acts as a root barrier into the site.

T30 pear is set slightly south from the wall and is a characterful old tree, but reaching the end of its safe useful life expectancy.

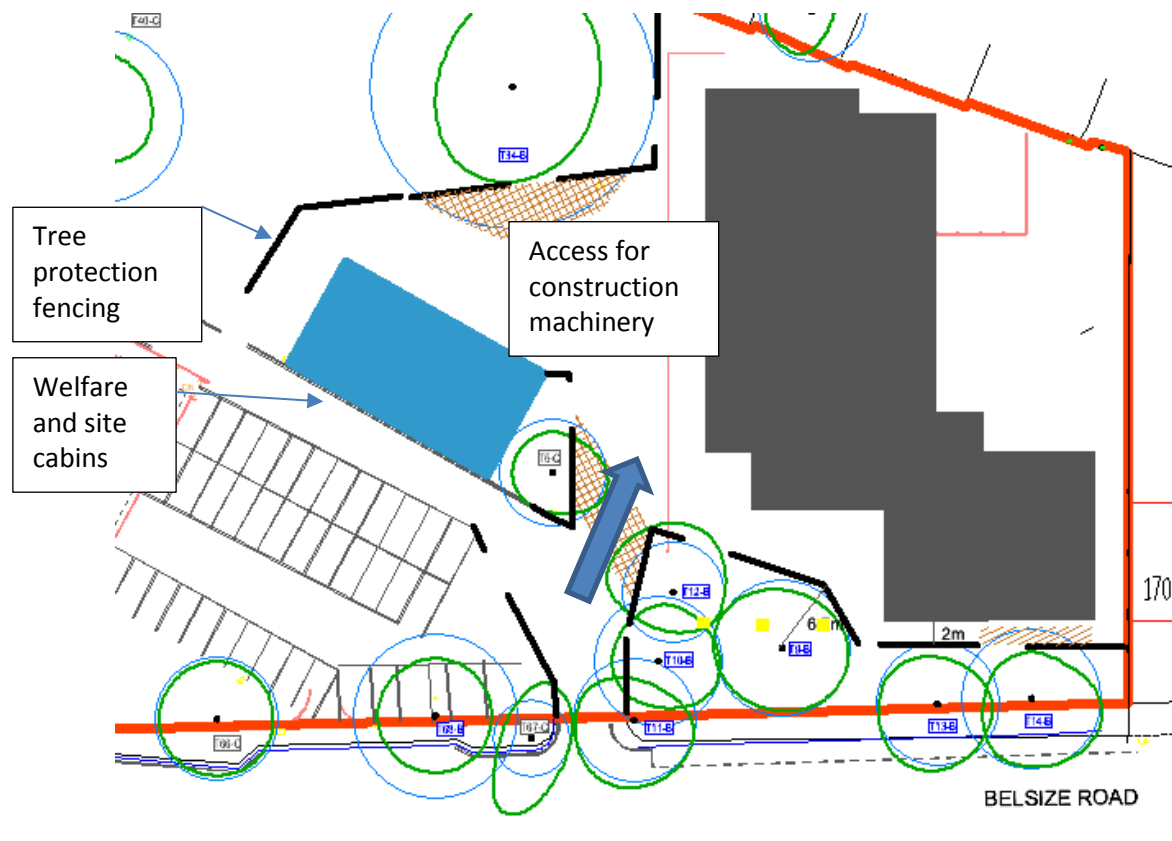
Arboricultural impact assessment:

The following trees will be removed to facilitate construction: T7, T8, T15, H16, T17, T18, T19, T20, T21, T22 and T30.

The following trees might be removed due to their condition and/or unsustainable location next to the wall: T6, G23, T26, T27, T29 and T31 and G28. Please note that trees recommended for removal by the arboriculturist are currently under review as part of the scope of this project, final confirmation of this is to be secured by way of planning condition.

The following trees will be retained: T9, T10, T11, T12, T13 and T14. These are the highest quality trees.

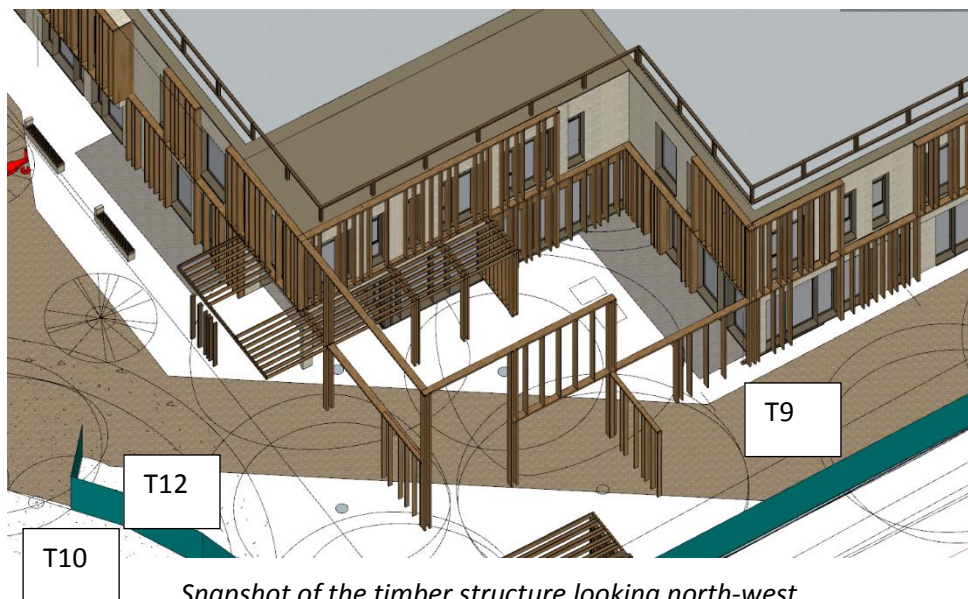
The trees to be retained will be protected during construction by a combination of tree protection fencing and ground protection to a specification at appendix 5 and at a location shown on the plan *SHA 1032 TPP2* for construction. The fencing has been set back slightly to enable a 2m clear scaffold zone near T13 and T14. The ground protection includes an area between T5 Norway maple and T12 sycamore, on the outer edges of their root protection areas to allow for the site compound and access for construction vehicles. Both trees will be crown lifted to achieve clearance. This is modest incursion into the root protection area, and levels allow for the raising of the surface without the need to excavate. A fence near T10 will be removed with care, as shown on the plan *SHA 1032 TPP1* as a yellow line. Details for this will be in the forthcoming method statement post planning.



Plan 1 – extract from SHA 1032 TPP2. Do not scale. North

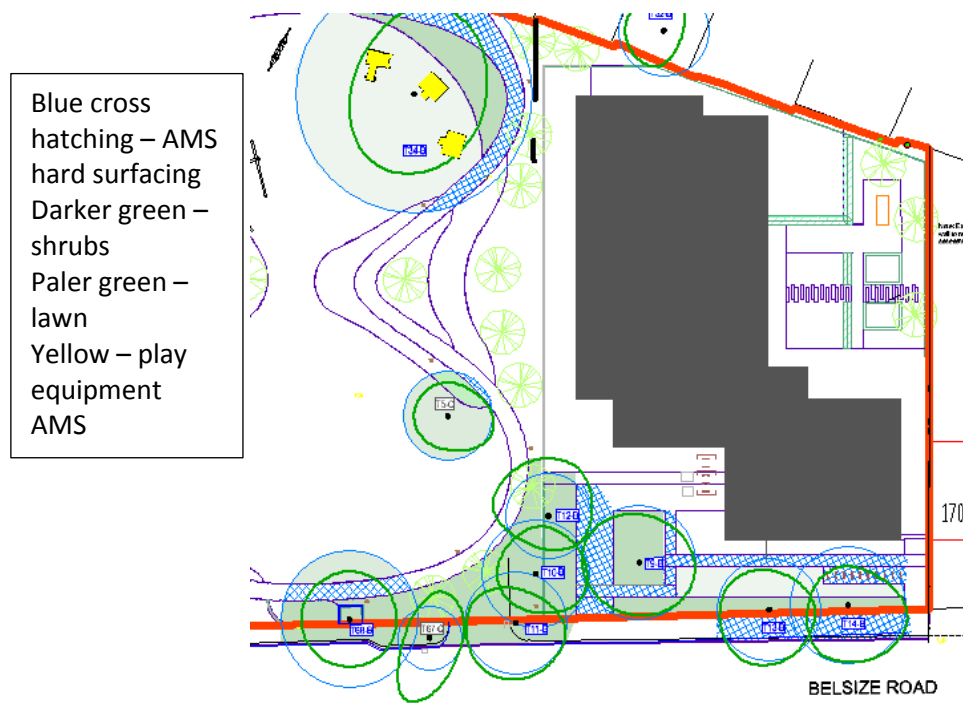
The proposed building is clear of the root protection areas. The crown spreads of the trees to be retained will provide a pleasant outlook, screen, pollution moderation and ecosystem services.

The timber frame structure will be installed using screw piles (or similar to be agreed) following root investigation under arboricultural supervision along the desired lines of posts. The details of this will be established post planning by way of Arboricultural Method Statement. The view overleaf shows the location of the proposed structure relative to the nearest trees, T9, T10 and T12. It is likely that the narrower spaced vertical timbers will not need foundations, but be supported by the corner and the larger timbers and the horizontal support.



Snapshot of the timber structure looking north-west.

The hard and soft landscaping scheme has been sympathetically designed to ensure no exaction for the surfacing, and the maintenance of porosity (for water infiltration and gaseous exchange). This has been the subject of detailed discussions with the landscape architects, and the final details for this be determined post planning with an arboricultural method statement. The plan *SHA 1032 TPP3* for external works shows the areas where the arboricultural method statements apply.



Plan 2 – extract from SHA 1032 TPP3. Do not scale. North

The existing railings along Belsize Road frontage, directly in front of the building will be removed and replaced, using the existing footings of the piers/posts where possible, and each hole will be lined with plastic to prevent the alkalinity of concrete from locally raising the soil PH and scorching roots.

The construction footprint, and up to the northern boundary wall will be excavated and sheet piled.

As the wall acts a root barrier, there will be no issue with offsite T32 and only light tip pruning is required to avoid conflict with the piling rig.

6.7. *Trees on the northern boundary: T32 sycamore (B), T33 ash (U), T35 Leyland cypress (C), G36 elder (U), T37 Norway maple (B), T38 sycamore (U), T39 sycamore (C), T40 ash (C), T41 elder (U), T42 hybrid black poplar (C), T43 sycamore (C), T43 sycamore (C), T44 & T45 elder (U), T46 sycamore (C), T47 sycamore (B), T48 bay (B), G49 lime (B), T50 Norway maple (B), T51 cherry (C) and T52 ash (C).*

The line of offsite trees which are T35, T37, T47, T48, G49, T50 and T51 provide a pleasant backdrop and collective screening. The tall wall acts as a root barrier to the depth of its foundations. The on site trees are low quality, reasonably small and leaning due to overcrowding. The category U trees will be removed as a matter of good practice.



Photo 6 of G28 – T32 looking north



Photo 7 of G36 – T40 looking north



Photo 8 of offsite trees T48 and G49

Arboricultural impact assessment:

The following category U trees will be removed to enable new planting of a greater longevity: T33, G36, T38, T41, T44 and T45. All other trees will be retained, and will be outside of the construction area. A new path, and new shrub, perennials, lawn and meadow planting will snake through the trees, and will be installed in accordance with the arboricultural method statements to ensure root integrity and function.

- 6.8. *Trees on the southern boundary: T53 lime (category A – high value), H54 hawthorn (C), T55 lime (U), T56 & T57 Swedish whitebeam (B), T58 hornbeam (B), T59 & T60 lime (B), T61 silver birch (C), T62 lime (A), T63 lime (U), T64 & T65 lime (B), T66 lime (C), T67 silver birch (C), T68 beech (B) and T70 cotoneaster (U).*

The high and moderate lime trees, T53, T59, T60, T62, T64 and T65 form a collective high quality amenity to the site and the neighbouring area. T55 lime has a fungus which is likely to cause tree failure. This has been reported to Camden Council to take necessary action with regards to the tree removal. The two whitebeams, T56 and T57 are in a reasonable form and condition and form a pair fronting Snowman House. Many of the trees have been planted in narrow low planting beds, which is a poor design for tree planting. The levels and walls have to remain as the tree roots will be growing up to the walls and using them as support.



Photo 9 of T53 and H54 looking south



Photo 10 of T62 looking along Abbey Road east



Photo 11 of T64 and T65 limes



Photo 12 of T66 looking east



Photo 13 of T66 beech and T67 and T70 looking south

Arboricultural impact assessment:

The following trees will be removed due to their condition: T55 and T63. Please note that trees recommended for removal by the arboriculturist are currently under review as part of the scope of this project, final confirmation of this is to be secured by way of planning condition.

T58, a young fastigate hornbeam street tree, T57 whitebeam and T70 (a low quality Cotoneaster) will be removed to facilitate improved access. All other trees will be retained and the landscaping enhanced. They are outside the main construction area, and the low walls will be retained.

7. **Conclusions:**

- 7.1. The scheme has been a long collaboration with the design team and contractor to maximise the appropriate tree retention. The important trees along the frontage will be retained, and all trees, except those which are unsuitable for retention will be retained in the public spaces.
- 7.2. The scheme results in the removal of a cluster of trees on the eastern side of the site which do provide collective amenity. In total 19 trees, 2 small groups and 1 hedge will be removed to facilitate construction. Of these, 1 tree and 2 small groups are recommended for removal irrespective of the proposal due to their poor condition. 5 trees and 1 small group is recommended for removal due to their poor condition, but this is a matter for further review as previously stated. 41 new trees will be planted.
- 7.3. Trees to be retained will be protected by tree protection measures and by the application of arboricultural method statements carried out, where appropriate, under arboricultural supervision.
- 7.4. The new landscaping scheme provides a richer landscape in terms of visual amenity, biodiversity and structure.

8. **Recommendations:**

- 8.1. That a copy of this report, and subsequent more detailed arboricultural method statement, is kept on site, including A1 colour copies of the tree protection plans. 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. This method statement will include all ground work.
- 8.3. That the foundation design takes into account trees to be retained, trees to be removed and trees to be planted. This should also include a structural heave assessment on property for trees on the eastern boundary.
- 8.4. That there are no ground level changes with the area shown on the plan by tree protection fencing.
- 8.5. That the line of the underground services should be ideally located outside of Root Protection Areas. However, as a precaution the final service plan should be assessed by an arboriculturist. If it is unavoidable that services are to be located in RPAs, then a method statement must be produced.
- 8.6. That the landscaping scheme includes a mix of native trees from a cross section of species to ensure biosecurity against host specific pests and diseases. The trees must be planted and maintained in accordance with BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*. This has been discussed with the landscape architect and will be achieved
- 8.7. That the tree protection fencing is installed before machinery enters the site and remains in place until the soft landscaping stage.
- 8.8. That the installation of new hard surfacing near trees to be retained is carried out under arboricultural supervision.
- 8.9. That T55 is removed as soon as reasonably practical as it poses a hazard to the Highway.

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SHA 1032

Land surrounding Snowman & Casterbridge House
AIA May 2020

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	Pyrus (Pear)	M	420	1	8(2)	15	4	2	2	3	Fair	10+	C2	5.04	79.81	Leaning North. Major bark wounding on stem. Epicormics on stem. Unbalanced crown shape. Crown distorted due to group pressure. Heavily suppressed by T2 resulting in a leaning mid and upper trunk and poor crown formation. Historic dog damage resulting in multiple wounds, the largest of which is at the base on the eastern aspect. Historically crown lifted. Fruiting heavily. Growing on a raised mound.	

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
T2	Tilia X europaea (Common Lime)	M	600	1	14(4)	22	4	6	5	5	Good	40+	B2	7.2	162.88	Leaning East. Decay present on stem. Epicormics on stem. Broken branches in crown. Major deadwood in crown. Poor buttress flare either due to burying of base (unlikely as the tree is contemporaneous with estate) or due to historic dog damage on underside (east) of trunk. Historically crown lifted and partly reduced. Decay on the upperside of lowest branch west at the union with the trunk. As this is an over extended branch I recommend reducing branch back to the first growing point to reduce risk of failure. Growing on a mound. Low quality B.	Remove major deadwood. Reduce western branch back to suitable growing points.
T3	Tilia X europaea (Common Lime)	M	640	1	12(2)	22	6	5	4	4	Good	40+	B1	7.68	185.32	Epicormics on stem. Major deadwood in crown. Prominent isolated tree in park, growing on a raised mound. Dense mound of epicormic shoots on the base. Otherwise in reasonable form and condition.	Remove major deadwood.

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 platanoides (Norway Maple)	SM	250	1	9(2.5)	18	3	4	3	4	Fair	20+	C2	3	28.28	Major bark wounding on stem. Dieback in crown. Low bud/leaf density. Prominent location next to car park. Growing towards street light, but not an issue at the moment. Crown quite sparse on the northern side and all of the leaves are smaller and yellower than expected, indicating stress. Sycamore cultivar.	Consider enriching rooting area with organic soil additives and mulching to boost vitality.
T5	Acer platanoides Purpurea (Purple Norway Maple)	EM	390	1	9(2.5)	18	4	5	4	4	Fair	10+	C2	4.68	68.82	Leaning East. Major bark wounding on stem. The main feature of this tree is the 1.5m x 0.25m wound on northern side from the base which was caused by dog damage/vandalism. There is callous growth indicating that the wound was much larger. The exposed heartwood is delaminating. This wound may have slowed down growth. Recently crown reduced. Some of the branches have had inner side branches removed resulting in end loading (known as lions failing). Crown growing over lamp but not causing an issue. Upper surfaces of roots prominent in the grass, possibly indicating shallow rooting on compacted soil.	

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	Salix caprea (Goat Willow)	M	250 250 250	3	9(2)	11	7	6	4	6	Poor	<10	U	5.2	84.96	Poor shape & form. Coppice. Decay present on stem. Cavity on stem. Multiple stems at ground level. Dieback in crown. Broken branches in crown. Major deadwood in crown. The stool is decayed and the northern most stem has the beginning of a shear failure. As this is a weak timbered tree, splitting from this point is likely.	Remove tree and root.
T7	Salix caprea (Goat Willow)	M	340	1	10(1)	13	6	8	6	3	Fair	<10	C2	4.08	52.3	Poor shape & form. Broken branches in crown. Major deadwood in crown. Unbalanced crown shape. Crown distorted due to group pressure. Plotted by eye as not on topo.	
T8	Acer pseudoplatanus (Sycamore)	EM	420	1	15(3)	20	5	5	4	5	Good	40+	B2	5.04	79.81	Major deadwood in crown. Reasonable form and condition, but with slightly higher dead wood than typical. Becomes co dominant at 3m with tight union. The ground around the tree and in the vicinity has recently been disturbed (most likely just top dressed).	

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
T9	Tilia X europaea (Common Lime)	EM	500	1	14(2.5)	22	5	6	6	6	Good	40+	B2	6	113.11	Pollard. Unable to inspect stem due to undergrowth. Epicormics on stem. Prominent tree from road. Pollarded at 4m. Crown reduced at 7m with good regrowth. Dense mass of epicormic shoots at the base.	Inspect stem/basal area. Remove ground suckers. Remove epicormics.
T10	Tilia X europaea (Common Lime)	EM	470	1	14(2.5)	22	5	6	4	4	Good	40+	B2	5.64	99.95	Pollard. Unable to inspect stem due to undergrowth. Epicormics on stem. Prominent tree from road. Pollarded at 4m. Then again at 8m with good regrowth. Dense mass of epicormic shoots at the base. Tight form with 2 conjoined branches.	Inspect stem/basal area. Remove ground suckers. Remove epicormics.
T11	Tilia X europaea (Common Lime)	EM	450	1	14(2.5)	22	4	6	6	5	Good	40+	B2	5.4	91.62	Pollard. Leaning West. Unable to inspect stem due to undergrowth. Epicormics on stem. Prominent tree from road. Pollarded at 10m with good regrowth. Dense mass of epicormic shoots at the base. One of an attractive line of limes adjacent to road.	Inspect stem/basal area. Remove ground suckers. Remove epicormics.
T12	Acer pseudoplatanus (Sycamore)	EM	370	1	14(3)	20	6	5	4	6	Good	40+	B1	4.44	61.94	Dieback in crown. Good form but more dead wood than typical. Evidence of sooty bark disease (Cryptostroma corticale) on the dead branches.	Remove major deadwood.

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
T13	Tilia X europaea (Common Lime)	EM	450	1	14(2.5)	22	4	5	6	5	Good	40+	B2	5.4	91.62	Part of linear group. Pollard. Unable to inspect stem due to undergrowth. Epicormics on stem. Prominent tree from road. Pollarded at 4m with good regrowth. Dense mass of epicormic shoots at the base. One of an attractive line of limes adjacent to road. Ground recently disturbed up to base (most likely just top dressed) of tree on park side. Crown reduced approximately 7 to 10 years ago with good regrowth.	Inspect stem/basal area. Remove ground suckers. Remove epicormics. Continue with current management regime of cyclical pruning.
T14	Tilia X europaea (Common Lime)	EM	510	1	14(2.5)	22	4	7	6	4	Good	40+	B2	6.12	117.68	Part of linear group. Pollard. Unable to inspect stem due to undergrowth. Epicormics on stem. Prominent tree from road. Pollarded at 4m with good regrowth. Dense mass of epicormic shoots at the base. One of an attractive line of limes adjacent to road. Soil recently disturbed up to the base of tree (most likely just top dressed) on northern aspect. Slight lean south east. Trunk pushing against railing. Crown reduced approximately 7 to 10 years ago with good regrowth.	Inspect stem/basal area. Remove epicormics. Continue with current management regime of cyclical pruning.

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	Crataegus monogyna (Hawthorn)	M	150	5	7(1)	11	3	3	3	3	Fair	10+	C2	4.02	50.78	Ivy on tree. Unable to inspect stem due to Ivy. Multiple stems at ground level. Low value tree growing in corner of site next to brick wall and railings. Recent ground disturbance (most likely just top dressed) near tree. Historically cut at 2m.	
H16	Crataegus monogyna (Hawthorn)	EM	150	1	3(0)	11	1	1	1	1	Fair	10+	C2	1.8	10.18	Ivy on tree. Unable to inspect stem due to Ivy. This hedge is mostly bare up to 1.5m. The crown then arches above this. One elder arching into site.	
T17	Fraxinus excelsior (Ash)	SM	250 270	2	9(2)	22	6	5	5	5	Fair	20+	C2	4.42	61.38	Poor shape & form. Ivy on tree. Unable to inspect stem due to Ivy. Included bark present in fork. Twin stemmed at 0.5m with tight fork. Reasonable crown with dead small twig sized branches interspersed in the crown. Two elder trees with dbh 150mm at the base.	Sever Ivy. Remove Ivy. Inspect stem/basal area.
T18	Acer pseudoplatanus (Sycamore)	EM	450	1	10(2)	20	7	6	5	6	Good	40+	B2	5.4	91.62	Major deadwood in crown. In good form and condition. Upper surfaces of roots visible in the grass.	Remove major deadwood.
T19	Acer pseudoplatanus (Sycamore)	EM	500	1	12(2)	20	6	7	6	7	Good	40+	B1	6	113.11	Major deadwood in crown. In good form and condition. Holes drilled in trunk on western aspect which could be a pathway to decay, but does not present a structural issue.	Remove major deadwood.

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
T20	Acer pseudoplatanus (Sycamore)	EM	420	1	12(3)	20	4	5	5	7	Good	40+	B2	5.04	79.81	Suckers around stem base. Major deadwood in crown. In good form and condition. Holes drilled in trunk on southern aspect which could be a pathway to decay, but does not present a structural issue. Growing very close to boundary wall. Dead stub at 4m rubs branch causing wounding. Historically crown lifted leaving stubs and cavities, some of which are decaying. Slightly lower vitality than would be expected. Crown overhangs neighbouring property.	Remove major deadwood.
T21	Acer pseudoplatanus (Sycamore)	EM	500	1	10(2)	20	6	4	5	7	Good	40+	B2	6	113.11	Major deadwood in crown. Unbalanced crown shape. Crown distorted due to group pressure. In good form and condition. Upper surfaces of roots visible in the grass.	Remove major deadwood.

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
T22	Fagus sylvatica (Beech)	EM	280 320 330	3	10(4.5)	20	5	5	3	4	Fair	20+	C2	6.46	131.12	Ivy on tree. Unable to inspect stem due to Ivy. Stem divides below 1.5m. Dieback in crown. Low bud/leaf density. Major deadwood in crown. Unbalanced crown shape. Crown distorted due to group pressure. Growing very close to the wall. Densely ivy clad to near the top of crown. One stem leans heavily north and the other north west. Patches of dead wood indicate that the tree is not thriving. Plotted by eye as not on topo. Elder growing right next to tree. Felted beech scale on bark (Cryptococcus fagisuga).	Sever Ivy. Remove Ivy. Inspect stem/basal area. Remove major deadwood.
G23	Sambucus nigra (Elder)	EM	100 150	2	4(0.5)	7	2	2	2	2	Fair	<10	U	2.16	14.66	Occasional elders self sown at the base of the wall with numerous suckers. Major dead wood in the crown	Unsustainable location.
T24	Acer pseudoplatanus (Sycamore)	Y	150	1	8(3)	18	2	1	2	2	Fair	10+	C2	1.8	10.18	Self down tree growing in an unsustainable location next to wall.	
T25	Chamaecyparis lawsoniana (Lawson Cypress)	SM	250	1	10(2)	25	3	3	1	3	Fair	20+	C1	3	28.28	Offsite tree plotted by eye. Dimensions and condition estimated 1.5m wall acts as a root REMOVED	

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
T26	Fraxinus excelsior (Ash)	SM	200	1	10(2)	22	3	5	5	3	Good	10+	C1	2.4	18.1	Leaning South. Good form and condition, but growing in an unsustainable condition close to boundary wall.	
T27	Acer pseudoplatanus (Sycamore)	SM	100 200	2	10(2)	22	3	5	5	2	Good	10+	C1	2.69	22.74	Leaning South-East. Suckers around stem base. Good form and condition, but growing in an unsustainable condition close to boundary wall.	
G28	Sambucus nigra (Elder)	EM	100 150	2	4(0.5)	7	2	2	2	2	Fair	<10	U	2.16	14.66	Occasional elders self down at the base of the wall with numerous suckers. Major dead wood in the crown. Unsustainable location.	
T29	Acer pseudoplatanus (Sycamore)	SM	150	1	10(2)	22	3	1	4	3	Good	10+	C1	1.8	10.18	Leaning South-West. Ivy on tree. Unable to inspect stem due to Ivy. Suckers around stem base. Good form and condition, but growing in an unsustainable condition close to boundary wall.	
T30	Pyrus (Pear)	M	750	1	13(2)	15	4	4	4	4	Good	20+	B2	9	254.5	Ivy on tree. Unable to inspect stem due to Ivy. Major bark wounding on stem. Epicormics on stem. Major deadwood in crown. Characterful old tree reaching the end of its SULE. Large old flush cut at 1m which has delaminated.	

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
T31	Fraxinus excelsior (Ash)	SM	150	1	8(2)	22	3	1	4	3	Good	10+	C1	1.8	10.18	Leaning South-West. Ivy on tree. Unable to inspect stem due to Ivy. Suckers around stem base. Good form and condition, but growing in an unsustainable condition close to boundary wall.	
T32	Acer pseudoplatanus (Sycamore)	EM	400	1	13(6)	18	4	2	4	4	Good	20+	B2	4.8	72.39	Ivy on tree. Unable to inspect stem due to Ivy. Unbalanced crown shape. Crown distorted due to group pressure. Offsite tree plotted by eye, and dimensions estimated. Growing behind wall with very dense ivy cover.	
T33	Fraxinus excelsior (Ash)	SM	200 100 100	3	7(2)	22	2	4	3	2	Fair	10+	U	2.94	27.16	Leaning East. Suckers around stem base. Good form and condition, but growing in an unsustainable condition close to boundary wall.	
T34	Salix alba (White Willow)	M	1040	1	20(3)	28	10	8	9	7	Good	20+	B2	12.48	489.37	Prominent tree and the largest in the survey. Managed by crown reduction, last cut recently. Upper surfaces of roots visible through grass.	
T35	X Cupressocyparis leylandii (Leyland Cypress)	SM	250	1	8(4)	25	4	4	4	4	Good	20+	C1	3	28.28	Offsite tree plotted by eye. Dimensions and condition estimated 1.5m wall acts as a root barrier.	

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
G36	Sambucus nigra (Elder)	EM	100 150	2	4(0.5)	7	2	2	2	2	Fair	<10	U	2.16	14.66	Poor shape & form. Leaning East. Occasional elders self down at the base of the wall with numerous suckers. Major dead wood in the crown.	Unsustainable location.
T37	Acer platanoides Purpurea (Purple Norway Maple)	EM	400	1	12(4)	18	5	5	5	5	Good	20+	B1	4.8	72.39	Appears to be in good form and condition providing a pleasant backdrop to the estate and screening. Growing behind wall so condition and measurements estimated.	
T38	Acer pseudoplatanus (Sycamore)	Y	150	1	8(2)	18	0	4	4	0	Fair	10+	U	1.8	10.18	Poor shape & form. Leaning South. Major bark wounding on stem. Unbalanced crown shape. Crown distorted due to group pressure.	Remove tree and root.
T39	Acer pseudoplatanus (Sycamore)	SM	200	2	8(2)	22	4	4	4	4	Good	10+	C1	3.4	36.32	Leaning South-West. Suckers around stem base. Included bark present in fork. Major deadwood in crown. Growing in an unsustainable condition close to boundary wall. Very tight fork at the base where the tree becomes co dominant.	
T40	Fraxinus excelsior (Ash)	SM	220	1	10(3)	22	2	5	4	4	Fair	20+	C2	2.64	21.9	Unbalanced crown shape. Crown distorted due to group pressure. Minor vandalism on trunk.	

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
T41	Sambucus nigra (Elder)	EM	100 150	2	4(0.5)	7	2	2	2	2	Fair	<10	U	2.16	14.66	Poor shape & form. Leaning East. Occasional elders self down at the base of the wall with numerous suckers. Major dead wood in the crown	Unsustainable location.
T42	Populus serotina (Hybrid Black Poplar)	M	300 300 200	3	12(2)	25	4	5	5	4	Fair	20+	C2	5.63	99.59	Leaning South. Epicormics on stem. Multiple stems at ground level. Reasonable form and condition.	
T43	Acer pseudoplatanus (Sycamore)	SM	200	2	8(2)	22	4	2	4	4	Good	10+	C1	3.4	36.32	Ivy on tree. Unable to inspect stem due to Ivy. Epicormics on stem. Suckers around stem base. Major deadwood in crown. Unbalanced crown shape. Crown distorted due to group pressure. Growing in an unsustainable condition close to boundary wall.	
T44	Sambucus nigra (Elder)	EM	100 150	2	4(0.5)	7	2	2	2	2	Fair	<10	U	2.16	14.66	Poor shape & form. Leaning East. Occasional elders self down at the base of the wall with numerous suckers. Major dead wood in the crown. Unsustainable location.	
T45	Sambucus nigra (Elder)	EM	100 150	2	4(0.5)	7	2	2	2	2	Fair	<10	U	2.16	14.66	Poor shape & form. Leaning East. Occasional elders self down at the base of the wall with numerous suckers. Major dead wood in the crown. Unsustainable location.	

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
T46	Acer pseudoplatanus (Sycamore)	SM	200	1	9(4)	18	4	4	4	4	Good	20+	C1	2.4	18.1	Reasonable form and condition. Growing close to wall, but there is room for the trunk to grow without damaging the wall.	
T47	Acer pseudoplatanus (Sycamore)	EM	400	1	12(4)	18	5	5	5	5	Good	20+	B1	4.8	72.39	Appears to be in good form and condition providing a pleasant backdrop to the estate and screening. Growing behind wall so condition and measurements estimated. Sparse on north western side.	
T48	Laurus nobilis (Bay)	M	350	1	10(3)	11	4	4	4	4	Good	10+	B1	4.2	55.42	Excellent form and condition. Unusually large. Growing behind wall which acts a root barrier to the depth of its foundations. Dimensions and stem condition estimated.	
G49	Tilia X europaea (Common Lime)	EM	400	1	10(3)	22	4	4	4	4	Fair	20+	B2	4.8	72.39	Part of linear group. Major deadwood in crown. Unbalanced crown shape. Crown distorted due to group pressure. Line of four lime trees growing behind boundary wall which acts as a root barrier to the depth of its foundations. Average dimensions given. Stem diameter and condition estimated as off site.	

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
T50	Acer platanoides (Norway Maple)	M	350	1	10(3)	18	6	6	8	8	Good	10+	B1	4.2	55.42	Good form and condition. Growing behind wall which acts a root barrier to the depth of its foundations. Dimensions and stem condition estimated.	
T51	Prunus avium (Wild Cherry)	M	300	1	12(6)	15	5	5	5	5	Fair	10+	C2	3.6	40.72	Offsite tree, therefore dimensions and stem diameter estimated. Has been historically crown lifted and crown reduced.	
T52	Fraxinus excelsior (Ash)	Y	150	1	8(2)	22	3	3	3	3	Fair	20+	C2	1.8	10.18	Self sown tree in reasonable form and condition with kink in trunk. Too close to building and wall to mature.	
T53	Tilia X europaea (Common Lime)	M	680	1	15(4)	22	6	6	6	6	Good	40+	A2	8.16	209.21	Part of linear group. Cavity on stem. Epicormics on stem. Attractive tree with flared buttress growing in indented from pavement. Provides a high level of visual amenity to the site and road. Historically crown reduced. Historic cavity at 2m north east.	Carry out further Inspection. Remove epicormics.
H54	Crataegus monogyna (Hawthorn)	M	150	1	4(0)	11	1	1	1	1	Good	40+	C2	1.8	10.18	Useful bushy hedge, higher at the western end. Provides low level screening.	Carry out further Inspection. Remove epicormics.

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
T55	Tilia X europaea (Common Lime)	M	580	1	15(4)	22	6	5	6	6	Good	40+	U	6.96	152.2	Part of linear group. Cavity on stem. Epicormics on stem. Attractive tree with flared buttress growing in indented from pavement. Provides a high level of visual amenity to the site and road. Historically crown Pollarded at 6m. Ustilina deusta present on buttress on road side. This is a decay fungi that causes tree failure.	Remove tree and root. Camden Council tree team informed.
T56	Sorbus intermedia (Swedish Whitebeam)	M	380	1	7(1.5)	11	4	4	4	4	Good	20+	B1	4.56	65.33	One of an attractive pair fronting Snowman House.	
T57	Sorbus intermedia (Swedish Whitebeam)	M	410	1	8(1.5)	11	4	4	5	5	Good	20+	B1	4.92	76.06	Tree located within hard surface area. One of an attractive pair fronting Snowman House.	
T58	Carpinus betulus (Hornbeam)	Y	100	1	5(1.5)	18	1	1	1	1	Good	40+	B1	1.2	4.52	Tree located within hard surface area. Young street tree in good condition. Frans Fontaine variety. Plotted by eye.	
T59	Tilia X europaea (Common Lime)	M	680	1	15(5)	22	5	6	7	6	Good	40+	B2	8.16	209.21	Tree located within raised bed. Leaning East. Epicormics on stem. Prominent tree in reasonable form and condition. A few branches have been pruned, but mostly in its natural form. A few cavities from old pruning but nothing significant.	

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
T60	Tilia X europaea (Common Lime)	EM	440	1	10(3)	22	6	6	6	4	Good	40+	B1	5.28	87.59	Tree located within hard surface area. Unbalanced crown shape. Crown distorted due to group pressure. Prominent tree in a good form and condition.	
T61	Betula pendula (Silver Birch)	SM	150	1	5(1)	18	2	2	2	2	Good	20+	C2	1.8	10.18	Tree located within raised bed. Reasonable form and condition.	
T62	Tilia X europaea (Common Lime)	M	800	1	18(5)	22	8	8	6	6	Good	40+	A2	9.6	289.57	Part of linear group. Ivy on tree. Unable to inspect stem due to Ivy. Unable to inspect stem due to undergrowth. Epicormics on stem. Diameter estimated as Provides a high level of visual amenity to the site and road.	Carry out further inspection. Remove epicormics.
T63	Tilia X europaea (Common Lime)	SM	270	1	10(2)	13	4	5	4	2	Poor	<10	U	3.24	32.98	Poor shape & form. Major bark wounding on stem. All of the southern base of the tree has had the bark removed. The inward rolling reaction growth will never cover this, and this area has become a structural defect due to the weight above.	Remove.

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
T64	Tilia X europaea (Common Lime)	M	600	1	18(5)	22	5	4	5	7	Good	20+	B2	7.2	162.88	Tree located within raised bed. Part of linear group. Epicormics on stem. Crown distorted due to group pressure. Prominent pair of limes growing very close to the remaining wall of the raised bed. Dense epicormic shoots on the trunk and miner dead wood interspersed in the crown. Difficult to assess structural condition due to dense foliage. Lozenge shaped wound on northern side at base.	Inspect stem/basal area. Remove epicormics.
T65	Tilia X europaea (Common Lime)	M	540	1	18(5)	22	6	6	6	2	Good	20+	B2	6.48	131.93	Tree located within raised bed. Part of linear group. Epicormics on stem. Crown distorted due to group pressure. Prominent pair of limes growing very close to the remaining wall of the raised bed. Dense epicormic shoots on the trunk and miner dead wood interspersed in the crown. Difficult to assess structural condition due to sense foliage. Historically crown lifted.	Inspect stem/basal area. Remove epicormics.

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
T66	Tilia X europaea (Common Lime)	EM	450	1	10(5)	22	5	5	5	5	Good	10+	C2	5.4	91.62	Tree located within raised bed. Pollard. Unable to inspect stem due to undergrowth. Epicormics on stem. Major deadwood in crown. Reasonable form and condition and prominent but down graded as it has been planted in an unsuitably small brick planter which is beginning to crack.	Inspect stem/basal area. Remove ground suckers.
T67	Betula pendula (Silver Birch)	EM	280	1	8(4)	15	5	4	7	3	Fair	20+	C2	3.36	35.47	Low vitality. Tree located within hard surface area. Street tree with a rather sparse pendulous crown.	
T68	Fagus sylvatica (Beech)	EM	600	1	10(4)	20	5	5	5	5	Good	40+	B2	7.2	162.88	Tree located within raised bed. Prominent tree. Good form and condition but growing in a small planter which limits upper rooting. Crown obscures lamppost.	Prune tree clear of road light.
T69	Tilia X europaea (Common Lime)	EM	400	1	10(4)	20	4	4	6	4	Good	40+	C2	4.8	72.39	Removed since survey conducted	
T70	Cotoneaster waterii (Cotoneaster)	M	200	1	4(2)	8	4	3	3	3	Fair	<10	C2	2.4	18.1	Poor shape & form. Tree located within raised bed. Ivy on tree. Unable to inspect stem due to Ivy. Decay present on stem. Dieback in crown. Unbalanced crown shape. Crown distorted due to group pressure. Angular branch formation, as is typical of this species.	

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 (m²)	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 of 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 (m²)

14 Comments

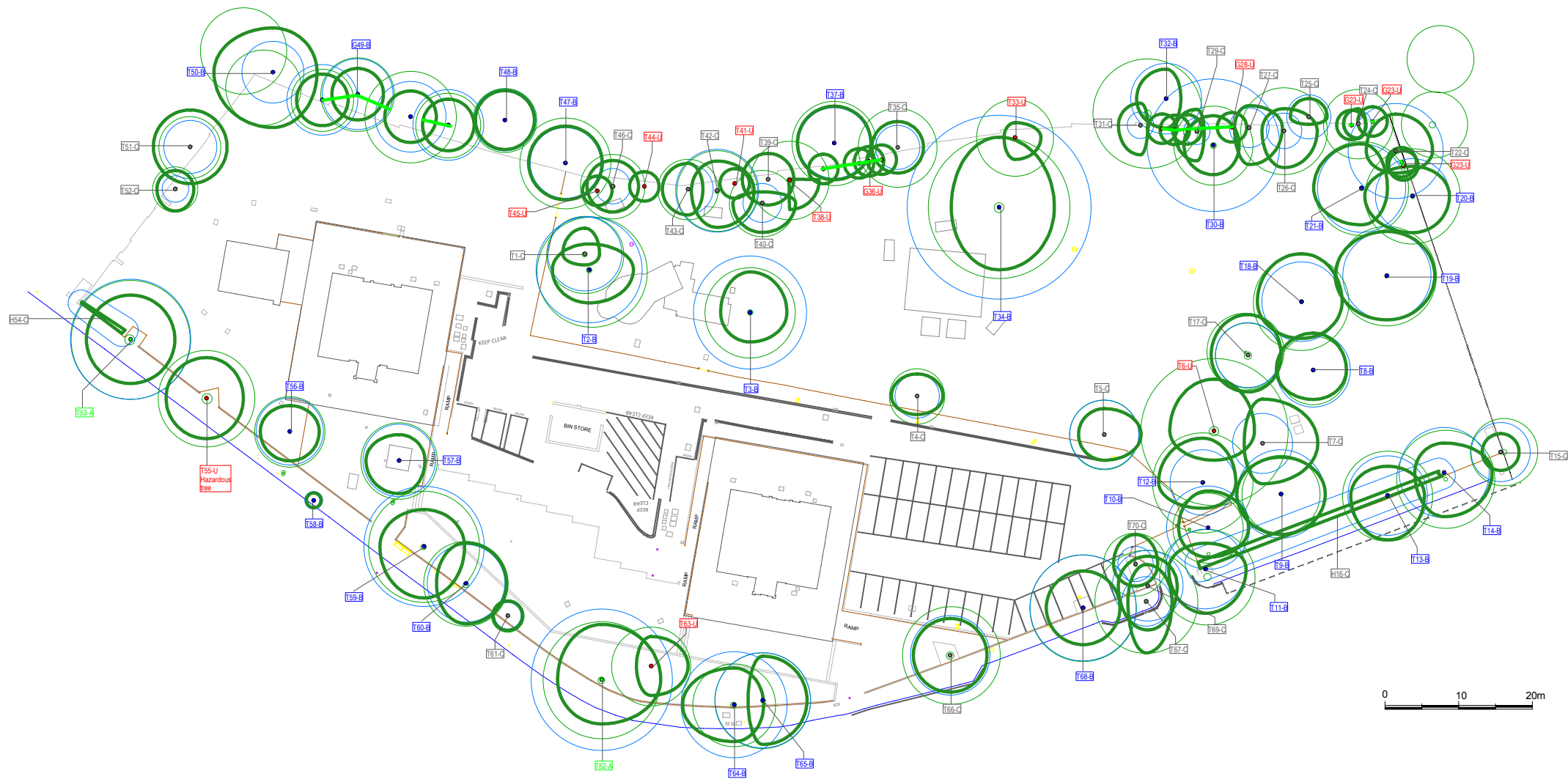
Detailed comments about the tree

15 Preliminary recommendations

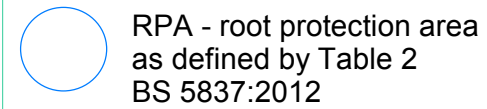
Recommendations based on the tree's conditions and its current surroundings.

Appendix 2

Tree survey plan SHA 1032 TSP



- 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



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
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Rev :	Description :	Authorized :
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www.sharonhosegoodassociates.co.uk

Client

London Borough of Camden

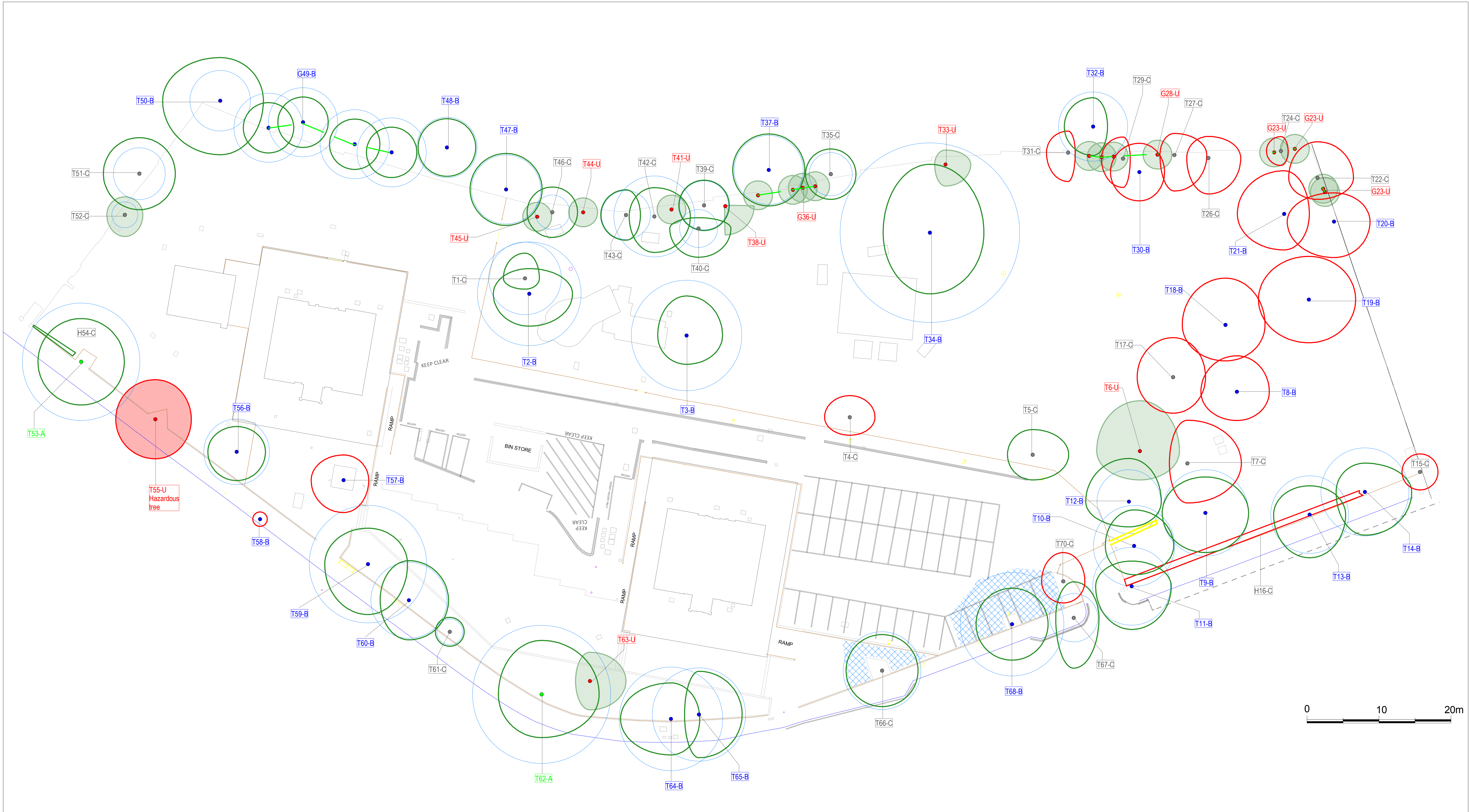
Site Address

Snowman and Casterbridge House

Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMH
Date	Drawing Number	Scale	Drawing Status
6.8.19	SHA 1032 TSP 1:750@A3	For Issue	
Revision			

Appendix 3

Tree protection plan SHA 1032 TPP1 for tree removals and enabling works
SHA 1032 TPP2 for construction
SHA 1032 TPP3 for external works



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

Group to be retained

Group to be retained

Trees which may be removed due to their poor condition. Please note that the trees recommended for removal due to condition by the arboriculturist are currently under review as part of the scope of this project, final confirmation of this is to be secured by way of plannign condition.

Trees to be removed to facilitate construction

Hedge to be removed

Fencing to be removed in accordance with the Arboricultural Method Statement

Hard surfacing to be removed in accordance with the Arboricultural Method Statement

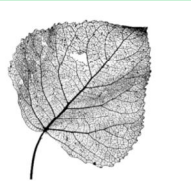
Hazardous lime tree with decay fungi Kretzschmaria deusta

This is the first of three tree protection plans - this is for the tree removal/enabling works phase

Notes

- Contractors to check all dimensions on site
- Discrepancies must be reported to the Arboricultural Consultant before proceeding
- The original of this drawing was produced in colour, a monochrome copy should not be relied upon.
- It is the responsibility of the contractor to ensure necessary consents for tree works are in place
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Rev: Description: Authorized:



Sharon Hosegood Associates

Site Address

The London Borough of Camden

Land surrounding Snowman and Casterbridge House, Belsize Road, Camden, NW6 4DP.

Drawing Title

Tree removal & demolition plan

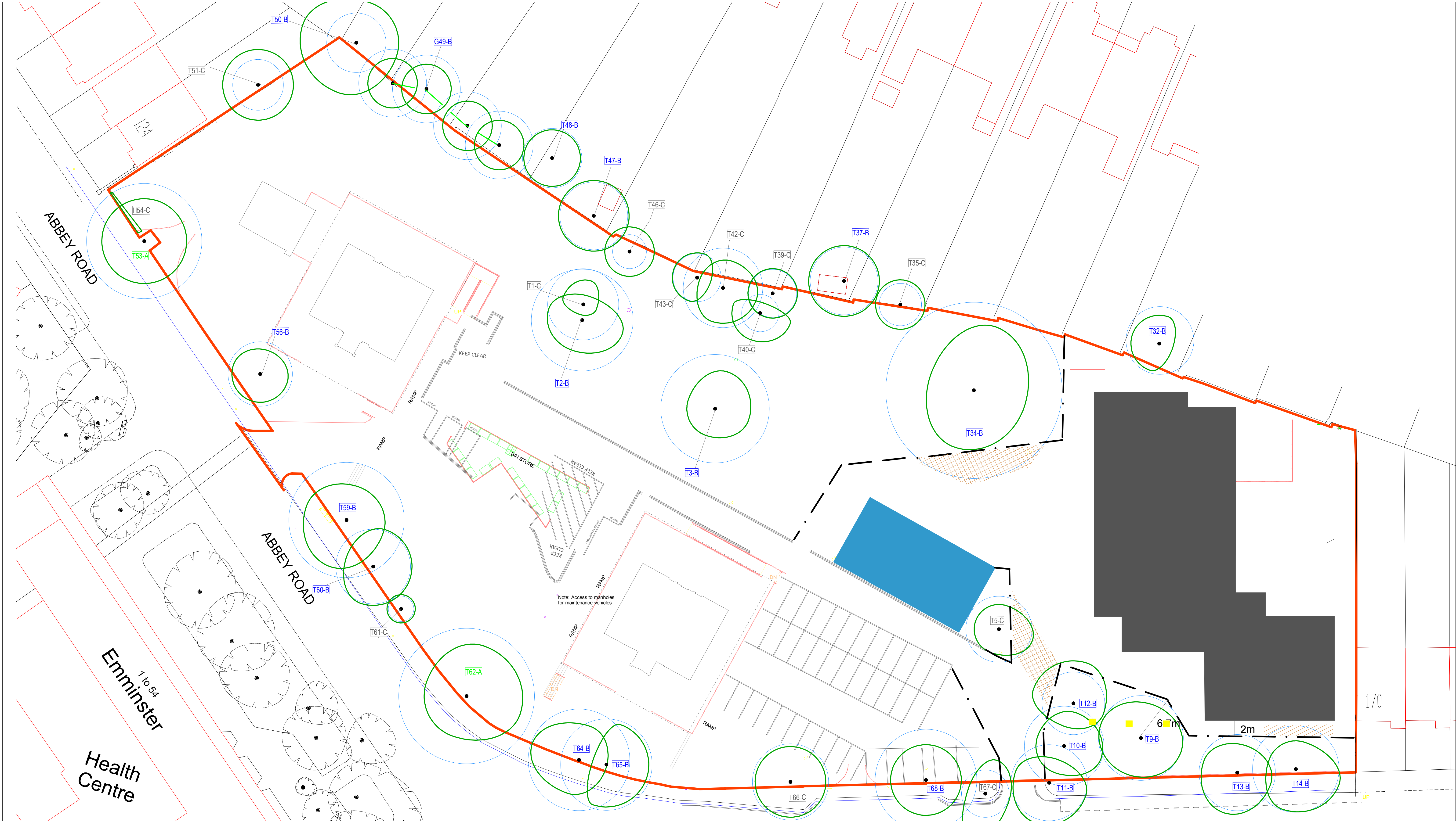
Orientation

Scale

Drawing Status

Revision

SHA 1032 TPP1 1:250@A1 For Issue



This is the second of three
tree protection plans - this
is for the construction phase

- 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
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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
- Group to be retained
- Group to be retained

- Tree protection fencing comprising braced Heras panels
- Specialist ground protection for heavy machinery where the existing hard surface ends
- Area for screw piles for timber frame, subject to root investigation under arboricultural supervision and team working.
- Trees which may be removed due to their poor condition. Please note that the trees recommended for removal due to condition by the arboriculturist are currently under review as part of the scope of this project, final confirmation of this is to be secured by way of plannign condition.

Rev :	Description :	Authorized :
		Sharon Hosegood Associates Sunnyside, Dulton Hill, Dunmow CM6 2DY
Sharon Hosegood Associates		t: 01245 210420 www.sharonthosegoodassociates.co.uk
Client The London Borough of Camden		
Site Address Land surrounding Snowman and Casterbridge House, Belsize Road, Camden, NW6 4DP.		
Drawing Title Tree Protection Plan - construction	Orientation Drawing Number Scale Drawing Status	Drawn SMD-H SMD-H
Date 19.05.20	Revision	SHA 1032 TPP2 1:250@A1 For Issue

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.	Species	Proposed works	Reason
T1	Pear	Remove dead wood with a diameter greater than 25mm	For safety reasons
T2	Lime	Remove dead wood with a diameter greater than 25mm Reduce western branch to suitable growing points	For safety reasons Due to decay on the upper side of the lowest branch west at the union of the branch
T3	Lime	Remove dead wood with a diameter greater than 25mm	For safety reasons
T4	Norway maple	Fell to ground level and remove stump	To facilitate works
T5	Norway maple	Remove dead wood with a diameter greater than 25mm and crown lift to achieve 4m clearance on eastern side	For safety reasons To provide clearance
T6	Goat willow	Fell to ground level and remove stump	Poor structural form – potentially hazardous
T7	Goat willow	Fell to ground level and remove stump	Poor structural form
T8	Sycamore	Fell to ground level and remove stump	To facilitate works
T9	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T10	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T11	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons

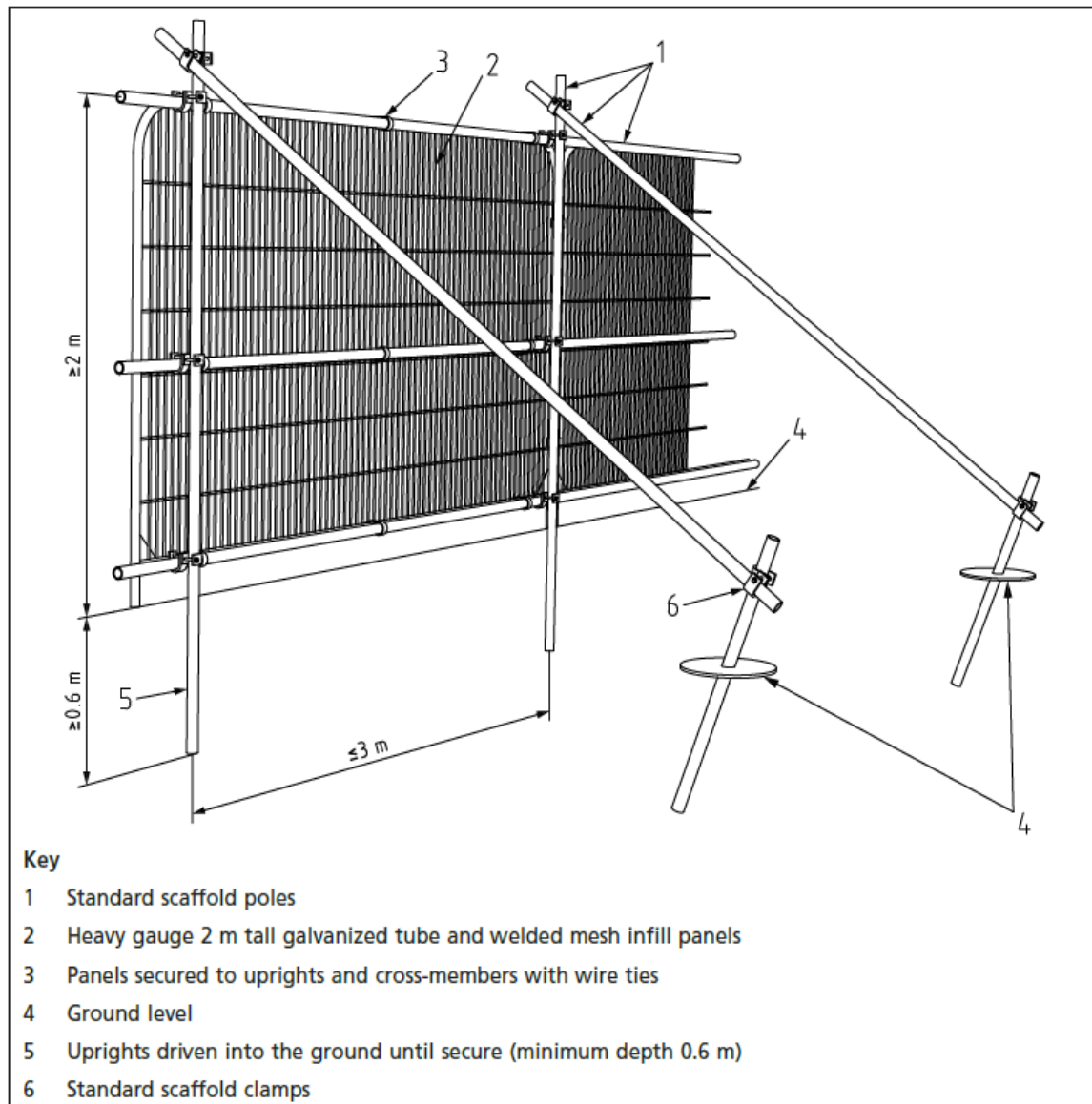
Tree no.	Species	Proposed works	Reason
T12	Sycamore	Remove dead wood with a diameter greater than 25mm Crown lift to achieve 4m clearance	For safety reasons To provide access
T13	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T14	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T15	Hawthorn	Fell to ground level and remove stump	To facilitate works
H16	Hawthorn	Fell to ground level and remove stumps	To facilitate works
T17	Ash	Fell to ground level and remove stump	To facilitate works
T18	Sycamore	Fell to ground level and remove stump	To facilitate works
T19	Sycamore	Fell to ground level and remove stump	To facilitate works
T20	Sycamore	Fell to ground level and remove stump	To facilitate works
T21	Sycamore	Fell to ground level and remove stump	To facilitate works
T22	Beech	Fell to ground level and remove stump	To facilitate works
G23	Elder	Fell to ground level and remove stump	To facilitate works and growing in an unsustainable location
T24	Sycamore	Fell to ground level and remove stump	To facilitate works
T26	Ash	Fell to ground level and remove stump	To facilitate works
T27	Sycamore	Fell to ground level and remove stump	To facilitate works
G28	Elder	Fell to ground level and remove stump	To facilitate works and growing in an unsustainable location
T29	Sycamore	Fell to ground level and remove stump	To facilitate works
T30	Pear	Fell to ground level and remove stump	To facilitate works
T31	Ash	Fell to ground level and remove stump	To facilitate works

Tree no.	Species	Proposed works	Reason
T32	Sycamore	Light pruning back of any overhang if required	To facilitate works
T34	Willow	Remove any dead wood with a diameter greater than 25mm and carry out a full climbing inspection as part of this work Crown reduce to previously pruned points	For safety reasons
T43	Sycamore	Remove dead wood with a diameter greater than 25mm and sever ivy	Good practice and for safety reasons
T53	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T55	Lime	Fell as soon as practical	Hazardous tree – see survey sheets
T57	Whitebeam	Fell to ground level and remove stump	To facilitate works
T58	Hornbeam	Fell to ground level and remove stump	To facilitate works
T59	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T60	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T62	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T64	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T65	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T66	Lime	Inspect stem area after removing epicormic growth and remove any dead wood with a diameter greater than 25mm	For safety reasons
T68	Beech	Remove dead wood with a diameter greater than 25mm Prune to clear street light	For safety reasons

Appendix 5

Tree protection specification

Figure 2 Default specification for protective barrier



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.

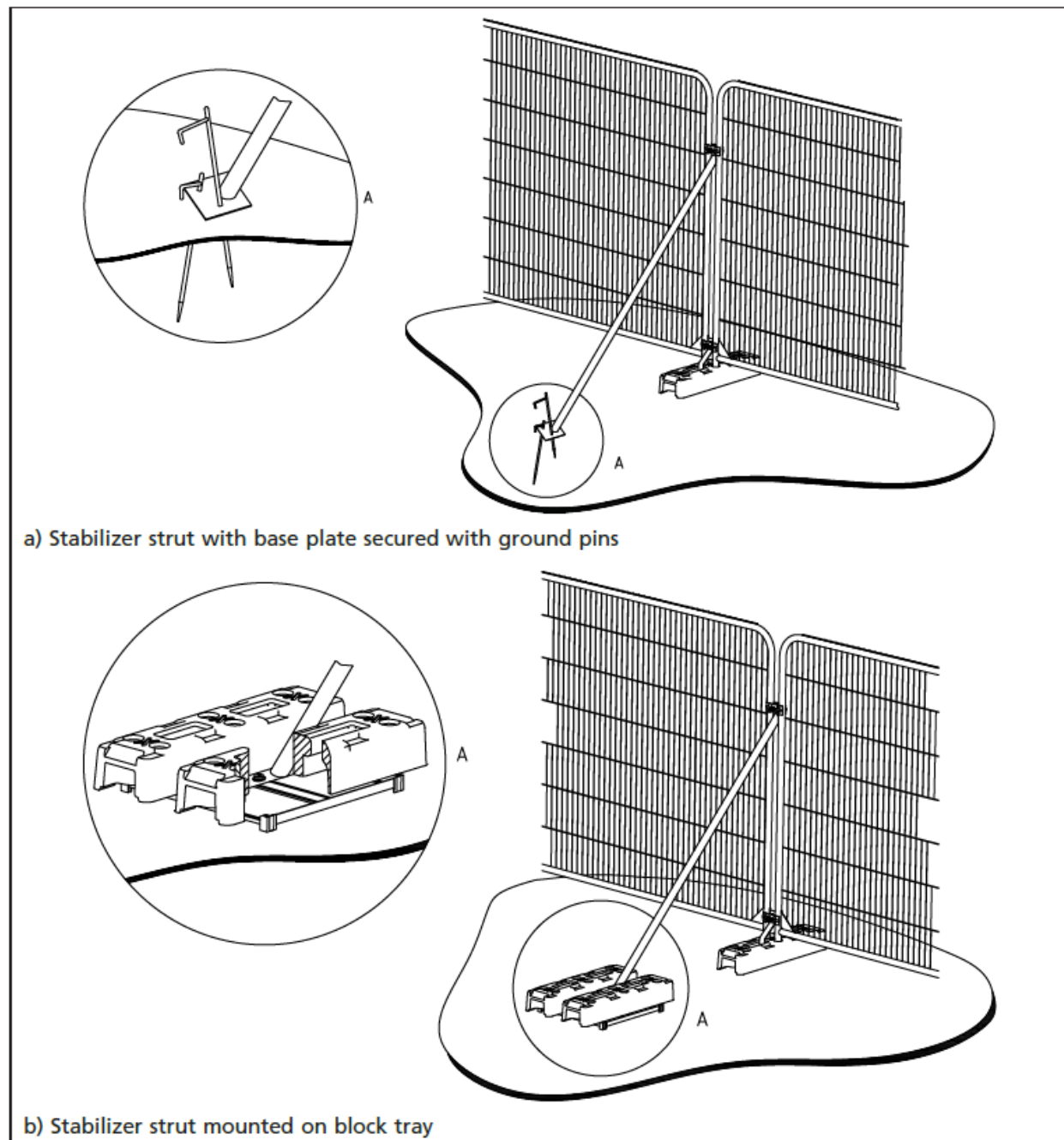
The default specification is shown above at Figure 2. Care should be taken when locating the vertical poles to avoid underground services and structural roots. Where it is not possible to drive a pole into the ground, for example on hard surfacing, figure 3 overleaf, applies.

The location for the tree protection fencing is shown on the tree protection plan delineated by a black dashed line. The location of the fencing is out the outer edge of the root protection area and the dimensions from fixed points are shown on the drawings. All weather signs should be affixed to the barriers, no more than 12m apart.

BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems



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 recommendation for the site road is a proprietary metal plat system such as TuffTrack or Eve Trackway

The location for ground protection is shown on the tree protection plan by brown diagonal hatching, identified in the key for pedestrian (near T13 and T14) and cross hatching for the heavy duty protection.

Appendix 6

Draft arboricultural method statement
These will be developed further post planning

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>

The trees are owned and managed by London Borough of Camden and all works must be agreed, and are likely to be carried out , by the Council.

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.

Protection of tree canopies: Piling rigs and cranes are often used close to trees. Work must be carefully planned so that there is sufficient room to avoid hitting the canopy during transportation or operation. Arboricultural supervision may be required, however, it is the responsibility of the contractor to assess and plan the work. Any access facilitation pruning required is detailed in the tree surgery schedule.

Installation of paths within the root protection area of trees to be retained: The area to which this applies is shown by blue cross hatched areas on the tree protection plan *SHA 1032 TPP3*. The purpose of the method statement is to ensure that tree roots are retained and that they can function. Therefore digging down, compacting the soil and creating an impermeable surface will be prevented. A method to spread and support the load of the hard surface and anticipated usage without causing compaction of the soil structure beneath will be used; a suitable method is a flexible cellular confinement system (further details available on request). The use of a geotextile membrane (such as Tree Tex T300) will help support the sub-base and be a partial filter (a last line of defense) for contaminants such as oil and road salt. This works by laterally diffusing the contaminants over a wider surface area so that the effect is minimized. The sub-base will be porous to enable gaseous exchange and water infiltration. A suitable material is washed angular stone with a diameter between 20 – 40mm with no fines. Aggregates or stones must have a near neutral PH. The surface material will be permeable paving. The exact specification of the hard surface is a matter for the engineer and architect, however the principles are as follows overleaf:

1. Mark the area that the method statement applies to with spray paint

2. Under **arboricultural supervision** skim off the grass using a spade cutting horizontally under the turf. Remove the turf from the root protection area. The depth of the excavation will be determined by the arboriculturist, and gentle scraping by a spade will continue until the shallowest root with a diameter greater than 25mm, or a matt of fine fibrous tree roots, are encountered.
3. Immediately after an even soil grading has been achieved, a geo textile membrane will be laid flat on the surface.
4. The sub-base will be laid to a depth and specification prescribed by the engineer/architect. This could include a cellular confinement system
<http://www.geosyn.co.uk/product/cellweb-tree-root-protection>
 or a root bridge system
<http://greengridsystems.com/>
5. A second geotextile layer to be laid to prevent mixing of materials
6. The no fines sand to be laid on top of the geotextile layer
7. Porous paving blocks (or similar) laid
8. The edge treatment within the areas hatched blue will comprise treated timber laid on end pegged every 500mm with a wooden peg on the outside. The top of the peg will be flush with the top of the board. A small amount of topsoil will grade down from the top of the board to the soil to prevent a trip hazard.

Points 1 – 4 would be carried out under arboricultural supervision.

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.

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 Land surrounding Snowman and Casterbridge House, Belsize Road, Camden, NW6 4DP' 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 does not lie in a conservation area.

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.

Felling licence

A felling licence is required to fell more than 5 cubic metres of timber in a calendar quarter.

Applications typically take 13 weeks to process and are administered by the Forestry Commission.

A felling licence is not required to fell the trees in the report provided that number 4 applies.

Exemptions include:

1. Tree surgery other than felling.
2. Trees smaller than 8cm at 1.3m.
3. Trees growing in a garden, orchard, and churchyard or designated open space.
4. Works to facilitate planning permission once all pre-commencement conditions are discharged and are shown removed on the approved tree protection plans.
5. Works to dangerous trees.

The National Planning Policy Framework February 2019 (updated June 2019)

Section 175 states that:

- 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 exists; and a suitable compensation strategy
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

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.

Camden Planning Guidance on Trees (March 2019)

KEY MESSAGES

Camden's trees and canopy cover have valuable amenity and are an integral asset to the borough's green environment and quality of life.

Using our planning powers and British Standard BS5837:2012 the Council will aim to preserve existing tree and canopy coverage where possible as well as increase and improve tree coverage in the design of new developments and through planning contributions.

With all proposals, we will expect:

- A survey of existing trees (and woody vegetation) to be undertaken prior
- to the developer deciding on a design of a scheme;
- Retention and integration of existing significant trees in the design of a
- scheme.
- New trees to sustain or increase canopy coverage and visual amenity,
- applying a "right place, right tree" approach;
- Other planting to be provided to contribute to Camden's green
- infrastructure, where appropriate.

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 6 August 2018.

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).

Site meeting held on 27.01.20. Design team meeting in May 2020

Received material

All plans relating to the design, D2819-FAB-S1-XX-M3-L-9000-200518, topographical drawing and construction management plan

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

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.

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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 is a regular presenter and an occasional trainer for Trevor Roberts Associates. She appeared on BBC1 in July 2015 and September 2015, in 'Britain Beneath Your Feet' demonstrating tree radar at the Burghley Country Park, Lincs, with Dallas Campbell, the consumer programme 'Rip Off Britain', and latterly, again 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'. In November 2018 Sharon presented at the Annual International Arboricultural Summit in Hong Kong. She became Vice President of the Institute of Chartered Foresters in April 2019.

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

Appendix 11

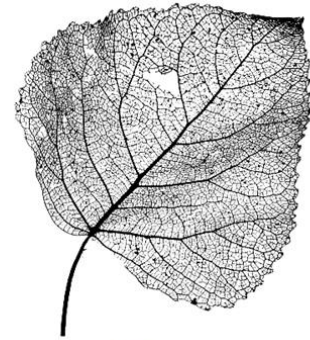
Glossary

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 from the surrounding tissue; e.g. Live versus 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 or 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) through 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 in 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	

	<p>The IML-RESI system is based on the measurement of drilling resistance.</p> <p>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.</p> <p>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.</p>
Retrenchment	Progressive reduction in the size of the crown of an old tree, by means of the dieback or 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 ' <i>Trees in relation to design, demolition and construction – Recommendations</i> '.
Root flare	Thickened and expanded base of a tree stem at ground level from 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 or 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 operating 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	<i>'A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species'.</i> 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 Matlack 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 REPORT
BS 5837:2012 'Trees in relation to design, demolition and construction.
Recommendations'

SITE

Land surrounding Snowman and Casterbridge House, Belsize Road, Camden,

NW6 4DP

CLIENT

London Borough of Camden

DATE: 19 May 2020
OUR REF: SHA 1032

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