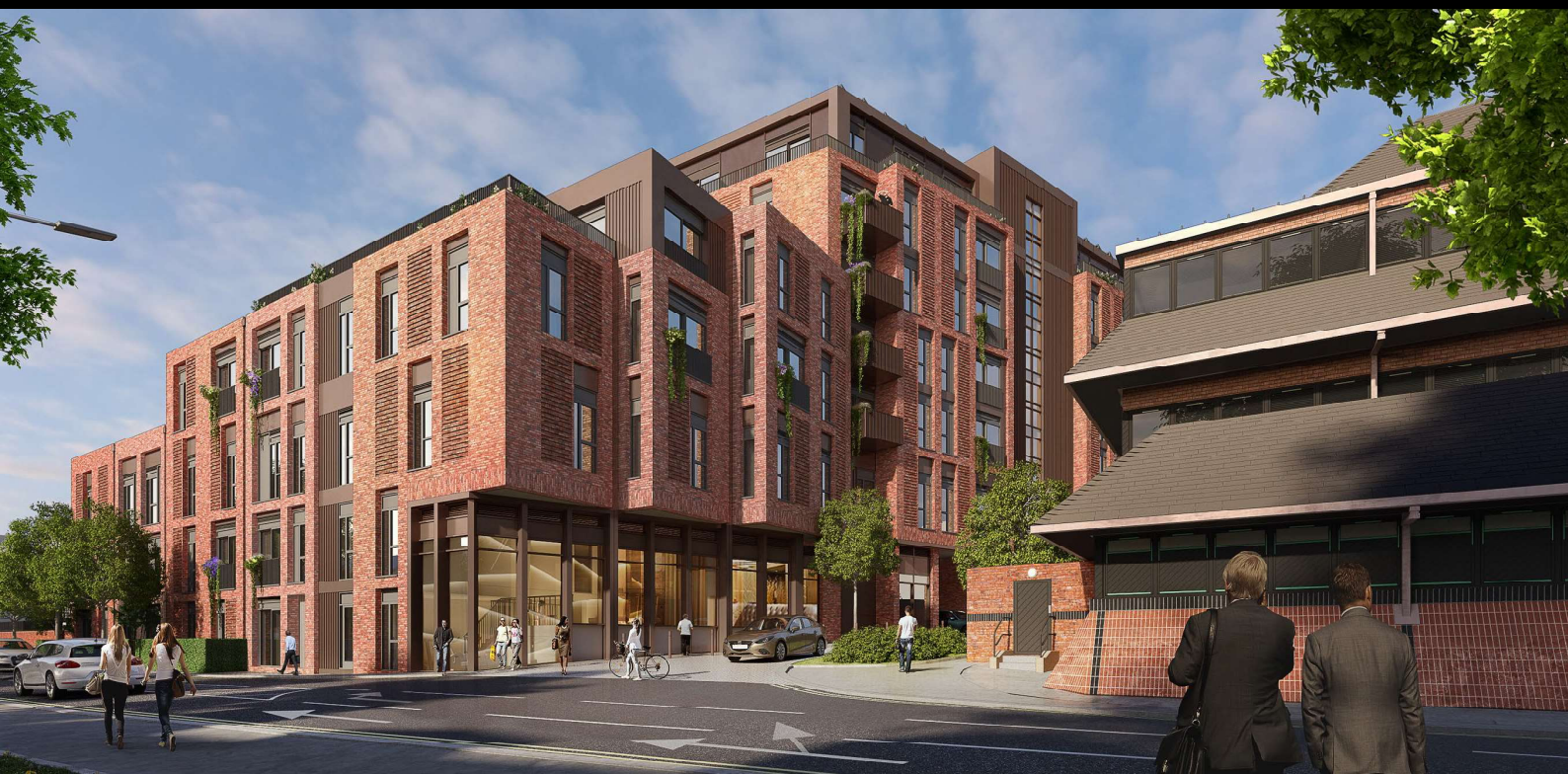
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Tree Survey and Arboricultural Assessment

SEPTEMBER 2020

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Senior Living Urban (Uxbridge) Limited

HAREFIELD ROAD, UXBRIDGE

Tree Survey & Arboricultural Assessment



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TREE PROTECTION PLANS

1 INTRODUCTION

1.1 OVERVIEW

1.1.1. WSP has been instructed by Senior Living Urban (Uxbridge) Limited to undertake a tree survey and to subsequently provide an Arboricultural Report for Land off Harefield Road (Units 1 and 2), Uxbridge UB8 1JS (hereafter referred to as 'the site').

1.1.2. The purpose of this report is to identify all trees which may reasonably be affected by the Proposed Development, to assess the direct and indirect impact of the scheme upon those trees and to recommend such protection measures as are necessary to ensure the long-term wellbeing of trees which are to be retained.

1.2 SCOPE

1.2.1. The scope and level of detail included within this report is commensurate with that required for the adequate consideration of arboricultural features as part of an application for full planning consent. Information provided complies with the requirements of BS 5837 Table B.1 and includes reference to the following:

- Arboricultural survey
- Arboricultural impact assessment
- Arboricultural method statement (heads of terms)
- Arboricultural protection plan

1.3 PROPOSED DEVELOPMENT

1.3.1. Proposals include an application for '*full planning permission for comprehensive redevelopment of the site comprising demolition of existing buildings to provide residential care accommodation (C2), café and nursery (E) in buildings up to 8 storeys, car parking, landscaping and associated works*.'

1.4 VALIDITY PERIOD

1.4.1. Trees are dynamic organisms which are influenced by a variety of environmental variables and whose health and condition can rapidly change. Because of this any recommendations made within this report are valid for a period of 24 months from the date of issue.

1.5 LIMITATIONS

1.5.1. This report in no way constitutes a health and safety survey. Where concerns for tree health and safety exist the necessary and appropriate tree inspections should be carried out.

1.6 RELEVANT LEGISLATION, POLICY AND GUIDANCE

1.6.1. This report has been compiled with reference to the following legislation, policy and guidance. Additional information relating to context and applicability is provided in Appendix C.

LEGISLATIVE FRAMEWORK

- *The Natural Environment and Rural Communities (NERC) Act 2006*[1].

POLICY

- *National Planning Policy Framework 2019*[2],
- The London Plan 2016[3];
- Intend to Publish London Plan 2019[4]; and,
- *London Borough of Hillingdon, Local Plan Part 1, Strategic Policies*[5]
- *London Borough of Hillingdon, Local Plan Part 2, Development Management Policies (Adopted January 2020)*[6]

GUIDANCE

- *British Standards Institute. 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (2012)*; and,

[1] The Natural Environment and Rural Communities (NERC) Act (2006)

[2] Ministry of Housing, Communities & Local Government (2019) *National Planning Policy Framework*

[3] Mayor of London (2016) Intend to Publish *London Plan*. Available at https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan (Last accessed 13 August 2020)

[4] Major of London (2019) *Draft London Plan*. Available at https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/what-new-london-plan (Last accessed 13 August 2020)

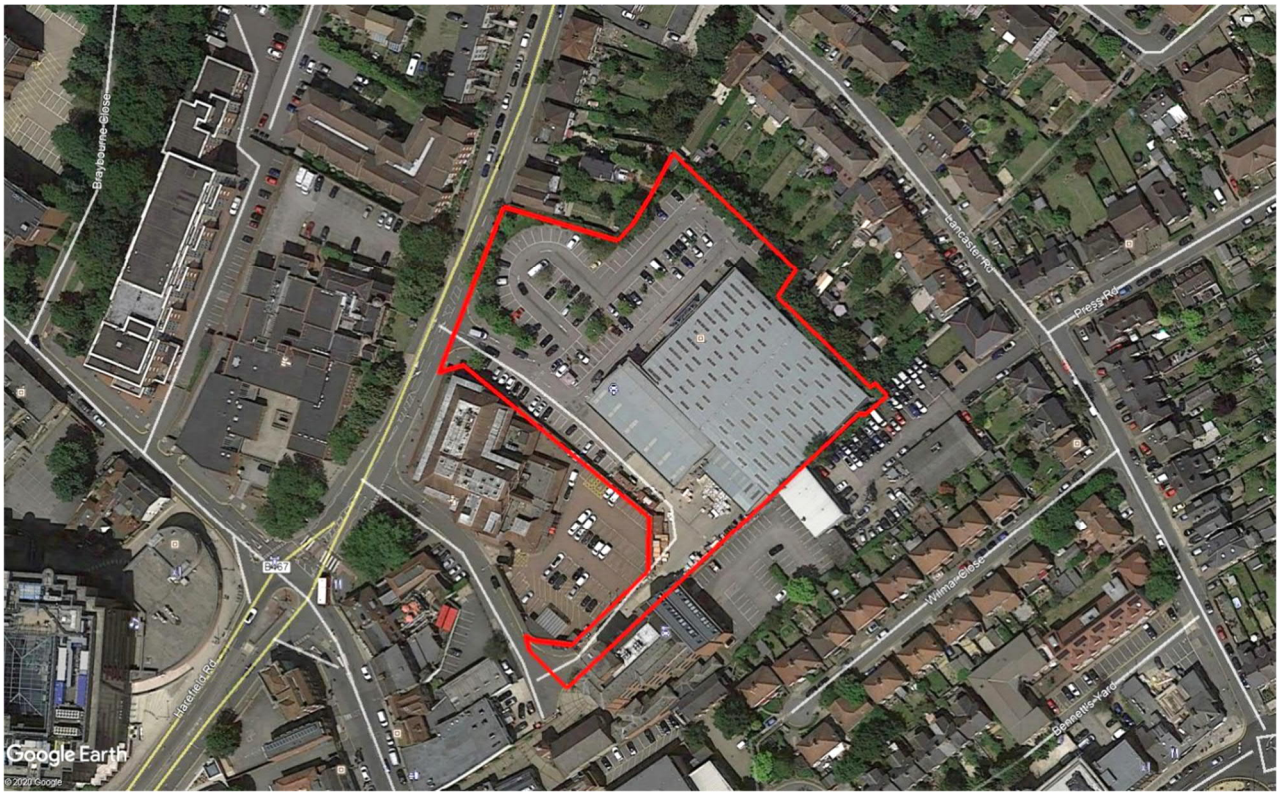
[5] London Borough of Hillingdon (2012) *Local Plan Part 1, Strategic Policies*. Available at https://www.hillingdon.gov.uk/article/5546/Local-Plan (Last accessed 09 September 2020)

[6] London Borough of Hillingdon (2020) *Local Plan Part 2, Development Management Policies*. Available at https://archive.hillingdon.gov.uk/lpp2 (Last accessed 31 July 2020)

2 SITE LOCATION

2.1.1. The site is located to the east of Harefield Road and north of Warwick Place within Uxbridge Town Centre. It is bound by the rear gardens of the residential properties of Harefield Road and Lancaster Road to the north; Warwick Place and Beasley Court to the south; Penfield Estate to the east; and Harefield Road to the west.

Figure 2-1 - Aerial photograph showing the site boundary (edged in red)



3 BASELINE ARBORICULTURAL RESOURCE

3.1 BASELINE DATA COLLECTION

3.1.1. Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study, and;
- A walkover survey of all arboricultural features within the study area.

3.2 BASELINE CONDITIONS

DESK STUDY

3.2.1. The desk study confirmed the absence of any trees covered by a Tree Preservation Order either within or adjacent to the site. It further confirmed that the site is not within a conservation area.

SITE VISIT / SURVEY

3.2.2. A total of 48 arboricultural features were surveyed, details of which are provided within the Arboricultural Survey Schedule included in Appendix E of this report. A summary of the surveyed features including their category and designation is provided in Table 3-1.

Table 3-1 - Summary of surveyed arboricultural features

BS 5837 Category	Quality	Trees	Tree Group	Hedges
B	Moderate	8	2	0
C	Low	31	0	1
U	Very Low	6	0	0
TOTAL		45	2	1

MODERATE QUALITY ARBORICULTURAL FEATURES

3.2.3. A total of ten moderate quality arboricultural features were recorded and include eight individual trees and two tree groups.

Individual Trees

3.2.4. Of the eight individual trees three are small-leaved lime (*Tilia cordata*); three are sycamore (*Acer pseudoplatanus*) with one each of birch (*Betula pendula*) and horse chestnut (*Aesculus hippocastanum*). Moderate quality trees are recorded as T26, T27, T36, T39, T41, T42 and T43. All are semi-mature or mature specimens with heights of five to 14 metres and stem diameters ranging from 180 to 650 millimetres. They have estimated retention spans in excess of 20 years under current site conditions and have been variously valued based upon their arboricultural and landscape merits.

Tree Groups

3.2.5. Two moderate-quality tree groups have been identified and are recorded as G46 and G47. Tree group G46 comprises a row of sycamores whilst G47 includes a more diverse range of species which includes sycamore, lime, horse chestnut, Leyland cypress (*x Cupressocyparis leylandii*) and yew (*Taxus baccata*). Moderate-quality tree groups include trees with average heights of 12 to 14 metres, stem diameters from 150 to 400 millimetres and combined retention spans in excess of 20 years. As with the moderate-quality trees they have again been valued based upon their arboricultural and landscape merits.

Location and public amenity value

3.2.6. Moderate-quality features T27, T36, T38, G46 and G47 are located externally to the site. In the case of T36 this is at the edge of a car park whilst all other features are within the rear gardens of adjacent residential properties. As a general rule these moderate-quality features form prominent features within the local landscape and, in the case of G46 and G47, also provide a degree of boundary screening. As such they are deemed to be of good public amenity value.

3.2.7. The remaining moderate-quality features (T26, T39, T41, T42 and T43) are positioned within the site. Tree T26 is within a soft-landscaped area on the edge of the car park and, as it is at a lower level to land to the north, is not clearly visible from surrounding properties or areas of public access. Trees T39, T41, T42 and T43 are located close to the north-eastern boundary of the site and share crowns with some of the trees which form tree group G47. Whilst this does not afford them any specific additional value they do assist in reinforcing the boundary screening within this area and, as such, do accrue a degree of public amenity.

LOW QUALITY ARBORICULTURAL FEATURES

3.2.8. The walkover survey identified 32 low quality features including 31 trees and one hedge. Low-quality trees are formed from a range of tree species including cherry (*Prunus avium*), hornbeam (*Carpinus betulus*) horse chestnut, London plane (*Platanus x hispanica*), Norway maple (*Acer platenoides*), small-leaved lime and sycamore. Low-quality hedge G48 comprises solely of cherry laurel (*Prunus laurocerasus*).

3.2.9. Low quality trees and hedges are either young or semi-mature in age, have heights of two to 12 metres and stem diameters ranging from 50 to 290 millimetres. They have retention spans in excess of 10 years under current site conditions and have been valued mainly for their localised visual amenity and limited contribution to the wider landscape.

3.2.10. With the exception of sycamore trees T28, T29 and T34 and cherry tree T45 all low-quality features are located within the site and appear to have been planted at the time when the site was last developed. In some instances, such as in the case of T2, T5, T6, T7, T9 T20, T21, T22, T23 and T30, they show structural and physiological defects which indicate that they are unlikely to reach their full potential and may enjoy only a limited future retention span. Defects are most likely the result of limited rooting opportunities, a poor rooting environment or infection by common pests and disease.

3.2.11. Although some of these low-quality trees (T2-T9) are clearly visible from Harefield Road their obviously limited future retention span means that any public amenity benefits are likely to be only

short-term. On this basis they should not be viewed as important elements within the local landscape.

3.2.12. Other low-quality trees T28, T29 and T34 are positioned within adjacent residential properties whilst cherry tree T45 is a small and rather insubstantial specimen located within the footway on the eastern side of Harefield Road. Laurel hedge H48 runs part-way along the north-eastern site boundary and is heavily suppressed due to the shade cast by nearby trees.

VERY LOW QUALITY ARBORICULTURAL FEATURES

3.2.13. Six very low-quality trees have been included within the survey results and are referenced as T1, T10, T14, T16, T18 and T35. These comprise four London plane, one horse chestnut and a whitebeam (*Sorbus aria*) and are specimens which exhibit serious structural defects, are in physiological decline or, as is the case with T1 and T35, have already died.

3.2.14. Very low-quality arboricultural features have estimated retention spans of less than ten years and as a result their loss will have a negligible adverse impact on public amenity or landscape appeal. These features should not be viewed as a constraint to future development with opportunities to remove and replace seen as a positive chance to improve the quality and value of the baseline arboricultural resource.

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1.1. The following Arboricultural Impact Assessment (AIA) evaluates the direct and indirect effects of the Proposed Development on existing trees and identifies the necessary mitigation measures where these are deemed appropriate.

LIMITATIONS

4.1.2. Topographical survey data showing the location of tree stems is absent for the area north-east of Unit 1 and for land external to the site. In these instances, tree have been located as accurately as possible using aerial photography. In the absence of topographical data tree locations must be considered as approximate and may have an accuracy of between one to three metres.

4.1.3. This AIA has been compiled in the absence of the following information:

- Detailed cross-sectional drawings for new and replacement hard-surfacing within the Root Protection Areas (RPAs) of retained trees;
- Detailed cross-sectional drawings for the formation of retaining walls within the RPA of tree group G47; and,
- A detailed demolition and construction methodology to include the sequencing of works, method of working and spatial requirements.

4.2 ARBORICULTURAL FEATURES TO BE REMOVED/RETAINED

4.2.1. Arboricultural features selected for retention and removal are clearly identified on the Tree Protection Plan (TPP) included in Appendix F of this report. Details of the arboricultural features to be removed are summarised in Table 4-1.

Table 4-1 - Arboricultural features to be removed sub-divided by type and quality

BS 5837 Category	Quality	Trees	Hedges
B	Moderate	2	0
C	Low	21	1
U	Very Low	6	0
TOTAL		30	1

4.2.2. Construction of the Proposed Development will require the removal of 30 trees and one hedge. These comprise two moderate-quality trees (T26 and T39), 21 low-quality trees (T2-T9, T11-T13, T15, T17, T19-T23, T30, T37 and T45), one low-quality hedge (H48) and six very-low quality trees (T1, T10, T14, T16, T18 and T35).

LOW AND VERY-LOW QUALITY REMOVALS

4.2.3. Low and very-low quality trees T2-T22 and T30 all require removal on the basis that they sit wholly, or partially, within the footprint of a proposed structure and thus cannot be retained. Very-low quality trees T1 and T35 are also to be removed on the basis that they are dead.

4.2.4. Other low-quality tree removals include T23 and T37. Tree T23 is a small horse chestnut and will be lost on the basis that it is an unsuitable species for retention within the Proposed Development and that it is positioned close to a large kerbstone which, when demolished, carries with it a high likelihood of significant root disturbance and damage. Tree T37 will be removed because it is situated directly within the footprint of a proposed path.

4.2.5. Low-quality hedge H48 will also be removed in order to provide space for better quality landscaping along the north-eastern boundary of the site as well as to permit access for construction of a new boundary fence. This hedge is also considered to be formed from an unsuitable species of plant insofar as cherry laurel has an aggressive growth habit, can become quite large and, without regular trimming, can quickly suppress surrounding vegetation.

4.2.6. Cherry tree T46 is located within the footway on Harefield Road. This low-quality street tree has been identified for removal in order to make space for the planting of three new trees along the frontage of the site. It is intended that these new trees will be planted to a very-high standard including the provision of a good quality rooting environment. This will not only increase the number of street trees present but will provide for potentially large, healthy trees with a high level of public amenity and landscape presence.

MODERATE QUALITY REMOVALS

4.2.7. Two moderate-quality trees are to be removed. Tree T26 is to be lost partly because its RPA will be compromised by the construction of a new footpath and partly because, as a horse chestnut, it is unsuitable species for retention in the context of the proposed site layout. Horse chestnut trees are not considered to be particularly long-lived, but they are quick to grow and have large and broad crowns which cast dense shade and suppress all vegetation beneath. As such they are best suited to parkland situations and are not suited to confined situations in proximity to buildings. The removal of tree T26 will therefore not only permit the establishment of a high quality hard and soft landscaping design within the area of the site but will also prevent future maintenance issues associated with the need for tree pruning to abate nuisance and building damage.

4.2.8. Tree T39 will be removed as its RPA will become significantly compromised by the construction of a proposed path around the eastern corner of the site. The path is necessary to provide for pedestrian and maintenance access and at, this location, needs to accommodate a significant change in levels. This can only be achieved through excavation within the RPA of T39 together with the establishment of a small retaining wall. This work will require root severance and soil removal such that this tree cannot be sustainably retained.

4.3 OTHER ARBORICULTURAL IMPACTS

4.3.1. Other identified arboricultural impacts associated with the construction of the Proposed Development are recorded in Table 4-2. Included are recommendations for the mitigation of identified impacts and a brief assessment of likely residual effects. Residual effects have been calculated based upon the implementation of all mitigation measures and the exclusion of any additional construction activities from the remainder of the root protection area.

Table 4-2 – Other identified arboricultural impacts, proposed mitigation and likely effects

Feature / Category	Cause of Impact (construction of)	Potential Impact	Mitigatory Measures to Avoid Adverse Impacts	Residual Effects
T38, T41-T43, G47 / B	Formation of new footpath within RPA.	Root severance caused by excavation; Root damage caused by compaction.	New footpath to be constructed using no dig construction methods and in accordance with design and construction principles provided within Appendix B.	Neutral. The use of proven construction methods will ensure roots and rooting conditions can be preserved.
T27, G46 / B	Formation of new footpath within RPA and within existing car parking area.	Root severance caused by excavation; Root damage caused by compaction.	New footpath to be constructed using no dig construction methods and in accordance with design and construction principles provided within Appendix B.	Neutral. The use of proven construction methods will ensure roots and rooting conditions can be preserved.
G46 / B	Removal of retaining wall adjacent to RPA.	Root severance caused by excavation.	Provision of a working methodology which requires no excavation to the rear of the existing concrete retaining wall.	Beneficial. Existing rooting conditions will remain unaltered. Replacement of retaining wall with new soil will improve future rooting opportunities for existing trees.
G47 / B	Excavation and formation of small retaining wall within RPA – to accommodate level changes for new footpath.	Root severance caused by excavation. Loss of rooting volume.	Provision of a design and working methodology which limits the extent of excavation. Provision of a working methodology for severing roots.	Minor adverse. Some loss of RPA cannot be avoided. However, excavation represents only a limited amount of the entire RPA and is sufficient distance from the tree stems to avoid structural roots.
T40, T41-T44 / B & C	Pruning of crowns to improve shape / form.	Loss of value caused by inappropriate pruning and possible decay.	Provision of a pruning specification to be compiled by a competent arboriculturist in discussion with a landscape architect.	Neutral. Sycamore and lime trees are particularly tolerant of pruning. Correctly specified pruning will not adversely impact tree health of appearance.

Feature / Category	Cause of Impact (construction of)	Potential Impact	Mitigatory Measures to Avoid Adverse Impacts	Residual Effects
T38, T40, T41-T44, G47 / B & C	Demolition of existing building adjacent to RPA. Installation of surface water drains adjacent to RPA.	Root severance caused by excavation. Loss of rooting volume.	Provision of a working methodology which avoids excavation within the RPA and/or ensures that construction access does not result in soil disturbance or compaction within the RPA.	Neutral. Building to be demolished from within its own footprint. Drainage has been designed to sit outside RPA. Working access can be provided through the provision of temporary ground protection if required.
T24, T25, T27, T28, T29, T31, T32, T33, T34, T38, T40, T41, T42, T43, T44, G46, G47	Soft-landscaping activities within RPA.	Root severance caused by excavation; Root damage caused by compaction.	Soft landscaping activities to be undertaken in accordance with the construction principles provided within Appendix B.	Neutral. Avoidance of soil level changes, deep cultivation and trench planting will avoid root severance/suffocation. Adherence to the proposed working methodology will avoid soil compaction and associated root damage.

4.3.2. Moderate-quality tree T36 will remain unaffected during demolition and construction. It is located outside the site and atop a large sheet-piled retaining wall. The retaining wall will be retained meaning that the roots of this tree will remain undisturbed.

4.3.3. Other arboricultural features may be impacted by the development activities identified in Table 4-2. These include trees within the site as well as external trees where their RPAs cross the site boundary. Without the benefit of a detailed design and an understanding of the proposed construction methodology it is not possible to fully specify the tree protection measures necessary to ensure that adverse arboricultural impacts are fully controlled. On this basis outline measures have been specified as a means of identifying how impacts will be addressed with the presumption that more detailed proposals can be provided at later stages of design and following engagement of a Principle Contractor.

4.3.4. Should the London Borough of Hillingdon consider it to be required, then full details of all the necessary tree protection measures can be secured to their satisfaction through the imposition of a suitably worded condition attached to a grant of full planning consent.

4.4 MITIGATORY AND LANDSCAPE TREE PLANTING

4.4.1. Any adverse arboricultural impacts associated with the Proposed Development must be viewed in the context of the likely benefits that will arise from the development of the site. Included with these

are the benefits associated with any post-development landscaping proposals and opportunities for new tree planting. Details of such measures are provided within the Landscape Strategy provided by Andy Sturgeon Design alongside which this report should be read.

4.5 TREE PROTECTION PLAN

4.5.1. A Tree Protection Plan (TPP) is included within Appendix F of this report. The purpose of the TPP is to identify trees for retention and show the location and extent of any proposed tree protection measures.

4.5.2. The TPP has been compiled in accordance with the following specification:

- The TPP shows the position of each feature including its stem/extent, current crown spread and its root protection area.
- Features have also been coloured based upon the quality category within which they have been placed.

Location / extent of arboricultural features

- Arboricultural features have been located using topographical survey data where stem locations have been provided. In instances where topographical data is unavailable then features have been positioned using Ordnance survey data and/or aerial imagery. In these instances, locations should be considered as approximate only and will have an assumed accuracy of two to five metres.
- The shape of the RPAs shown on the TPP have been modified where barriers to root growth have been identified. For the purposes of this report barriers are defined as any feature with a substantive foundation or which would obviously form a relatively impenetrable barrier to root growth.
- The TPP shows the location and extent of the following tree protection information:
  - Tree retention and removals;
  - Protective barriers; and,
  - Special engineering and other relevant construction details.

4.6 ARBORICULTURAL METHOD STATEMENT

4.6.1. An Arboricultural Method Statement (AMS) provided in Appendix F adopts a precautionary approach to tree protection and addresses all activities which have the potential to cause damage to retained trees and for which a protection specification can reasonably be provided. For the purposes of the Proposed Development these should include reference to the following matters:

- Arboricultural monitoring;
- Removal of arboricultural features;
- Protective barriers; and,
- New and replacement hard surfacing within RPAs.

4.6.2. The matters identified above are addressed within the AMS and TPP included within Appendix B and Appendix F of this report. It is envisaged that they will be reviewed, revised and expanded upon during both detailed design and following appointment of a Principal Contractor.

Appendix A

GLOSSARY OF TERMS AND ACRONYMS

Public

GLOSSARY OF TERMS

Table A-1 - Glossary of Terms

Term	Definition
Arboriculturalist	A person who has, through relevant education, training or experience, gained expertise in the field of trees in relation to construction.
Arboricultural Method Statement	A methodology for the implementation of any aspect of development which is within the root protection area, or has the capacity to adversely affect, any retained tree.
British Standard BS 5837:2012	Provides guidance and recommendations for the integration of trees and development. To be interpreted by appropriately qualified and experienced persons.
Conservation Area	An area of special architectural or historic interest identified by the Local Planning Authority.
Construction Exclusion Zone	An area within which all site clearance and construction activities, access and storage of materials are prohibited.
Crown	The upper part of a tree, measured from the lowest branch, including all branches and foliage.
Proposed Development	All works associated with the proposed development of the site
Root Protection Area	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's vitality.
Tree Preservation Order	An order made by the Local Planning Authority to protect specific trees, groups of trees or woodlands in the interests of amenity.

Table A-2 – List of acronyms used within this report

Acronyms	
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
BS 5837	British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations
CEZ	Construction Exclusion Zone
RPA	Root Protection Area
TPO	Tree Preservation Order
TPP	Tree Protection Plan

Appendix B

ARBORICULTURAL METHOD STATEMENT

Public

INTRODUCTION

This AMS describes the arboricultural protection measures identified as necessary for the protection of retained trees as part of the Proposed Development. It presents in principle the arboricultural protection measures which will be applied during construction. It is envisaged that these protection measures will be reviewed by the Design Team prior to the issuing of any tender documentation and that they will be revised to accommodate any design amendment or known construction methodologies.

It is further envisaged that this AMS will be updated to include reference to the following construction activities where they have the potential to adversely impact retained trees:

- Demolition of existing structures, surfacing and retaining walls;
- Excavation and construction of retaining walls;
- Tree pruning; and,
- Installation of underground services and drains.

This AMS must be read in conjunction with the TPP included within Appendix F of this report.

ARBORICULTURAL MONITORING

General Requirements

Effective tree protection can only be achieved by adherence to a logical sequence of works combined with effective arboricultural monitoring. The purpose of arboricultural monitoring is to ensure that all tree protection measures are fit for purpose, are implemented in accordance with any approved details and as a means of enabling any previously unforeseen arboricultural issues to be promptly identified and suitably addressed.

The Principal Contractor will be responsible for ensuring that all site personnel are made aware of the requirements of this AMS and that any future amendments are known and understood. Copies of the approved AMS will be available onsite the requirements of which will be incorporated into all relevant site management documents and site induction procedures.

Pre-Commencement

A pre-commencement meeting will be held between the Principal Contractor, local authority tree officer and the project arboriculturist. The purpose of this meeting will be to ensure that all aspects of the tree protection measures are clear and understood and that any future sequencing and supervisory arrangements are agreed. The details of this meeting will be recorded and will be circulated to all parties in writing.

The Principal Contractor shall nominate a person to be responsible for all arboricultural matters onsite. This person must:

- Be present on site whenever work is being undertaken,
- Be aware of their arboricultural responsibilities,
- Have the authority to stop any work that is causing, or has the potential to cause harm to any retained tree,
- Be responsible for ensuring that all site operatives are aware of their responsibilities toward retained trees and the consequences of any failure to observe those responsibilities,

- Make immediate contact with the local authority and/or the project arboriculturist in the event of any tree related problems occurring, whether actual or potential.

During / Post-Construction

Once works commence the project arboriculturist will undertake a programme of monitoring. This may include phone and email contact with the site manager, regular site visits and direct monitoring of sensitive works. The frequency of any monitoring will be determined by the intensity and proximity of works to trees and will be flexible enough to accommodate changes in the scheduling of tasks as they occur on the site.

The project arboriculturist will maintain a record of all aspects of the arboricultural monitoring which has been undertaken. This will provide a record of compliance with any agreed tree protection measures and will assist in the efficient discharge of any relevant planning conditions or demonstration of compliance with any statutory requirements.

PROTECTIVE BARRIERS

TREE PROTECTION FENCING

Purpose

To protect retained trees including their stems, crowns, rooting areas and the soil within which they grow.

General Requirements

Tree protection fencing should be specified by an arboriculturist.

Tree protection fencing will be used to prevent access to the root protection areas (RPAs) of retained trees. In all instances the following specification will be strictly adhered to:

- The area to the rear of the tree protection fencing shall be considered to form a Construction Exclusion Zone. No construction activities, storage of materials or pedestrian or vehicular access shall take place within this area.
- All weather notices will be attached to the tree protection fencing at suitable intervals and shall include suitably sized informative text containing the following statement:

''TREE PROTECTION FENCING

CONSTRUCTION EXCLUSION ZONE – NO ACCESS''

- Regular daily checks will be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage will be rectified without delay.

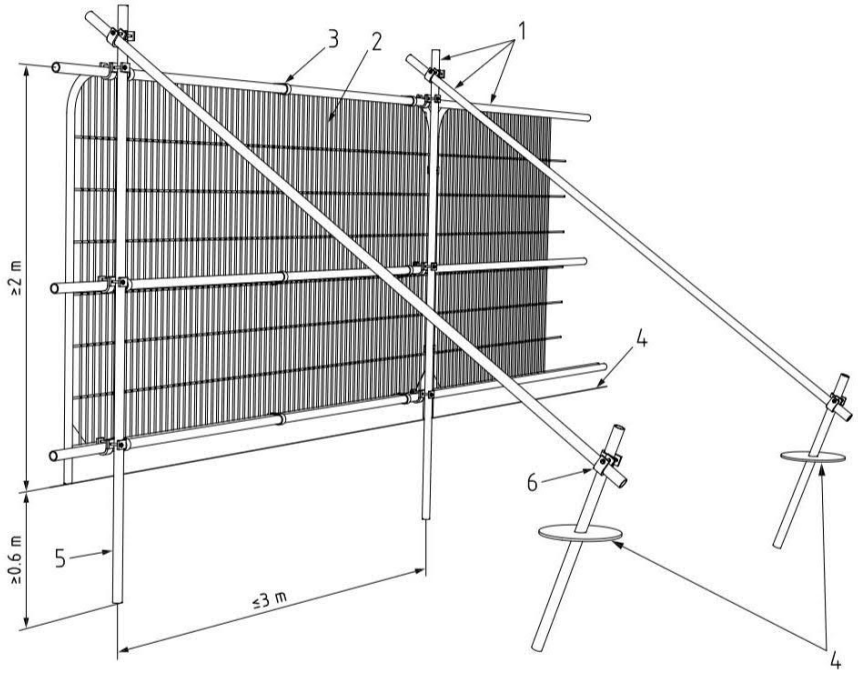
Timing

- Tree protective fencing shall be erected prior to any works onsite including site clearance, ground work or the importation of plant and materials.
- Once erected tree protection fencing shall remain in-situ until all construction activities are complete.

Specification for Fencing

- Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing which may be required is included in Figure B-1.

Figure B-1 - Example of appropriate tree protection fencing



Key:

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

GROUND PROTECTION

Purpose

To provide construction access within root protection areas whilst preventing damage to underlying soil and roots.

General Requirements

Ground protection shall be employed within any area where construction access is required within the root protection area of any retained tree. Any specification for ground protection shall be reviewed by an arboriculturist prior to implementation onsite.

Timing

- Ground protection shall be in-situ prior to any works onsite including site clearance, ground work or the importation of plant and materials.
- Ground protection shall remain in-situ until all construction activities are complete.
- Regular daily checks will be carried out by an appointed person to ensure that ground protection is still in place and functioning; any damage will be rectified without delay.

Specification

Ground protection shall be sufficiently robust to prevent damage or disturbance of the underlying soil. To accord with British Standard BS5837:2012 ground protection shall comply with the following specification:

Areas of Unmade Ground

- For pedestrian only, access ground protection measures shall include a single thickness of scaffold boards placed on top of 100mm depth of compression resistant material (e.g. woodchip) laid onto a geotextile membrane.
- For pedestrian activities and plant up to 2 tons in weight proprietary interlinked ground protection boards will be used and placed on top of 150mm depth of compression resistant material (e.g. woodchip) laid onto a geotextile membrane.
- For wheeled or tracked equipment exceeding 2 tons in weight a structural engineer will design an alternative system. This may include the use of temporary cellular confinement systems, reinforced concrete slabs or track board systems details of which are to be approved before construction commences.

Areas of Existing Hard Surfacing

- Areas of existing hard surfacing identified for use as ground protection shall not be removed during site clearance and shall be retained throughout the construction period.
- Areas of existing hard surfacing shall be assessed by an engineer to ensure that they are sufficient to prevent damage or disturbance to the underlying soil. A precautionary approach to any anticipated loadings should be adopted.

In instances where the engineer identifies existing surfacing as inadequate then a specification for additional protection must be provided and any requirements actioned onsite.

NEW PERMANENT HARD SURFACING WITHIN ROOT PROTECTION AREAS

Purpose

To enable permanent hard surfacing to be installed without significant damage to retained trees. To prevent sudden changes to the rooting environment of retained trees thereby giving them time to adapt.

General Requirements

The design of any new permanent hard surfacing should seek to comply with the following specification:

- Avoid the need for any excavation or lowering of soil levels other than the removal, using hand tools only, of any turf, surface vegetation or organic matter. Levels may be raised using a granular fill which will remain gas and water permeable for the duration of its design life.
- Avoid any localised compaction of the underlying soil by evenly distributing any anticipated loading over a suitably large area.
- Utilise a sub-base and wearing course that is permeable to air and water (this includes and separation membranes that may be required).
- Must not exceed 20% of any existing un-surfaced ground within the RPA.
- Should either avoid the need for the use of de-icing salt or, if undesirable, should include a system whereby contaminated run-off is directed outside of the RPA.
- Should be buildable without the need for machinery or plant to operate on areas of unprotected soil.

Timing

Permanent hard surfacing may be installed at any time during the development process provided that:

- Installation does not leave the root protection area at risk of damage (e.g. through the removal of protective fencing whilst other potentially damaging activities are taking place nearby).
- If it is to be used as temporary ground protection it is robust enough to withstand any anticipated loadings without deformation.

Specification

Design

- Hard surfacing should be designed by a structural engineer.
- Hard surfacing should utilise a sub-base formed from a three-dimensional cellular confinement system or an above ground slab supported by piles, pads or elevated beams.
- Exploratory investigations to determine suitable locations for piles and pads should be undertaken as part of the design process.
- Hard surfacing should be designed to withstand deformation by tree roots and should be sufficient distance from the tree to account for future tree growth.
- Excavations associated with the installation of kerbs and edging should be avoided. Above ground products which can be pinned in place should be used in preference to those which require foundations and haunches. Examples include pegs and boards, sleepers and gabion baskets.

Construction

- Compaction of soil surrounding and beneath any new hard surfacing shall be prevented. This may be achieved through the use of temporary ground protection or by constructing the new surface with machinery working forward from the surface as it is constructed (i.e. “rolling out”).
- Vegetation control beneath the new surface may be achieved via the use of herbicide to be applied in accordance with manufacturer’s instructions or through the installation of a permeable weed inhibiting membrane.
- Loose organic matter may be removed using hand tools only.
- The soil surface should not be lowered to remove high spots. Soil levels may be raised using granular infill which will remain permeable to air and water for the duration of its design life.

- If uncured concrete is to be used, then an impermeable membrane will be required in order to prevent leachate from entering the surrounding soil.

SOFT-LANDSCAPING OPERATIONS

Purpose

To avoid damage to trees during the implementation of soft landscaping activities.

Design

The root protection areas of retained trees are identified on the TPP included in Appendix F of this report. All soft landscaping activities within these areas will conform to the following specification:

Timing

- No works will be carried out if the soil moisture is of a level likely to allow compaction to occur (i.e. soil shall not be waterlogged but shall be firm and friable).

Specification

General requirements

- Only pedestrian operated machinery shall be used.
- All pedestrian operated machinery shall utilise low ground pressure tyres.

Soil preparation

- Herbicide applications shall be restricted to the use of translocated products such as glyphosate. These will be applied according to the manufacturer's instructions and drift onto non-target plants avoided.
- Existing vegetation will be removed by hand. Turf may be removed using a mechanical turf stripper where necessary.
- Compacted areas of soil will be broken up by using hand tools only.
- There shall be no excavation or lowering of soil levels.
- Depressions may be levelled through infilling with a maximum depth of 150mm of loosely compressed good quality topsoil or other porous material.

Grass seeding, wildflower seeding and turfing

- Soil shall be cultivated to a depth of no more than 25mm.

Planting

- Bare root seedlings, transplants, whips and feathered trees shall be notch planted
- Container grown shrubs, feathered trees, and standard trees shall be planted into individual pits.
- In no circumstances shall planting take place into cultivated beds or trenches.
- All planting pits shall be excavated with due care for underlying tree roots and using hand tools only.
- In instances where tree roots are found within the planting pit then roots less than 25mm in diameter may be severed using a sharp tool such as a saw or pair of secateurs. The cut should be as small as possible and must avoid leaving a ragged end. Roots over 25mm diameter may only be cut on the advice of an arboriculturist. If roots over 50mm are encountered, or groups of roots over 25mm, then the planting pit will be backfilled and moved to an alternative location.

Appendix C

RELEVANT LEGISLATION, POLICY AND GUIDANCE

Public

This report has been compiled with reference to relevant legislation, policy and guidance. An overview and context are provided in Table C-1.

Table C-1 – Summary of relevant legislation, policy and guidance

Legislation
The Natural Environment and Rural Communities (NERC) Act 2006 Section 40 of the Natural Environment and Rural Communities Act 2006 places a duty on local authorities and government departments to have regard for the conservation of biodiversity when exercising their normal functions. Biodiversity comprises all living things including animals, plants, fungi and micro-organisms and includes the communities and habitats that they form. Trees form integral elements of the natural environment either due to rarity (e.g. Common Juniper (Juniperus communis)), as part of an important habitat (e.g. ancient woodland) or because they directly support another species (e.g. a bat roost or nesting bird). Even widespread, common or non-native tree species are important due to their positive contribution towards a sustainable natural environment. The NERC Act requires that development activities must be undertaken with due regard for trees and their biodiversity value. Trees should be retained wherever practicable and opportunities taken to maintain and enhance their environmental contribution.
Policy
National Planning Policy Framework. (2019) The National Planning Policy Framework includes relevant guidance in Chapter 15: Conserving and Enhancing the Natural Environment. Guidance provided includes: Paragraph 170(b) recognises the economic and other benefits that trees, and woodlands provide and the fact that they should be considered as part of a planning decision;
London Plan (2016) – Policy 7.21 Trees and woodlands Relevant aspects of this policy include: ▪ A strategic requirement for trees and woodlands to be protected, maintained and enhanced ▪ A requirement for planning decisions to ensure that existing trees of value are retained, and that any loss is mitigated with replacement tree planting following the principle of 'right place, right tree'. Furthermore, where appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.
Draft London Plan (2019) – Policy G7 Trees and woodlands This policy includes a requirement for development proposals to '*ensure that, wherever possible, existing trees of value are retained*'. It further requires that, where trees are removed '*there should be adequate replacement based on the existing value of the benefits of the trees removed'.* This policy also advises that the planting of new trees should generally be incorporated into new developments – particularly large-canopied trees as these provide greater benefits.
London Borough of Hillingdon, Local Plan Part 2, Development Management Policies (Adopted January 2020) – Policy DMHB 11: Design of New Development This policy requires that all development incorporates 'landscaping and tree planting to protect and enhance amenity, biodiversity and green infrastructure.'

London Borough of Hillingdon, Local Plan Part 1, Strategic Policies (Adopted November 2012)

This document identifies the diverse ways in which trees benefit the Borough of Hillingdon. It describes, in principle, the Council's vision for trees and woodland.

London Borough of Hillingdon, Local Plan Part 2, Development Management Policies (Adopted January 2020) – Policy DMHB 14: Trees and Landscaping

Relevant aspects of this policy include a requirement for development to:

'retain or enhance existing landscaping, trees, biodiversity or other natural features of merit.'

'provide an accurate tree survey showing the location, height, spread and species of trees. Where the tree survey identifies trees of merit, tree root protection areas and an arboricultural method statement will be required to show how the trees will be protected. Where trees are to be removed, proposals for replanting of new trees on-site must be provided or include contributions to offsite provision.'

Guidance

British Standards Institute. 5837:2012 Trees in relation to design, demolition and construction – Recommendations (2012)

British Standard BS 5837:2012 provides recommendations and guidance on the relationship between trees and design, demolition and construction processes. It sets out principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures and is applicable whether or not planning consent is required.

Appendix D

ARBORICULTURAL SURVEY METHODOLOGY

Public

SURVEY METHODOLOGY

STUDY AREA

The study area has been defined as the area within which arboricultural features may be impacted by the Proposed Development.

METHOD OF BASELINE DATA COLLECTION

Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study, and;
- A walkover survey of all arboricultural features within the study area.

DESK STUDY

A desk-study has been undertaken as a means of identifying any statutory and non-statutory constraints which may apply to arboricultural features within the study area. The desk-based review has considered the following sources:

TPOs and Conservation Areas

The London Borough of Hillingdon is responsible for implementing any legal controls imposed through TPOs and conservation areas within the study area. The statutory status of arboricultural features within the study area was checked using the Council's online mapping system[7].

SITE VISIT / SURVEYS

A walkover survey of all arboricultural features within the study area was undertaken on 05 June 2020. The survey was undertaken by John (Arboricultural Consultant).

The survey was undertaken with topographical survey data forming the base mapping. The arboricultural survey was undertaken in accordance with the following criteria:

- Arboricultural features have been recorded as tree groups or wooded areas where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value. Wooded areas are recorded where larger expanses of trees exist and included features which may otherwise be referred to as copses, spinneys or shelterbelts.
- The trees have been inspected using the Visual Tree Assessment methodology as proposed by Mattheck and Breoler[8].
- The tree survey was carried out from ground level only.
- No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- Tree heights and crown spreads have been estimated to the nearest 1m.

Stem diameters have been measured in accordance with Annex C of BS 5837. Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other

[7] London Borough of Hillingdon, 2020. *Protected Trees* [online] Available at: < https://lbhillingdon.maps.arcgis.com/apps/View/index.html?appid=7b18f60872a94d38a0c9bf1aea032760> [Accessed 04 June 2020].

[8] Mattheck, C., Breloer, H., 2006. *The body language of trees*. Norwich: The Stationary Office

commonly encountered stems have been measured where most appropriate and this is recorded within the schedule. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1.

By default, Root Protection Areas (RPAs) are calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

QUALITY ASSESSMENT

The quality of arboricultural features has been determined in accordance with BS 5837 Table 1 a summary of which is provided in Tables C-1, C-2, C-3 and C-4. The purpose of the quality assessment is to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development.

The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority and are simply included to indicate the primary value(s) associated with each surveyed item. The quality and sub-category assigned to each arboricultural feature are identified within the Arboricultural Survey Schedule included in Appendix E of this report.

Table D-1 - Sub-categories associated with high quality category A arboricultural features

Sub-category	Area of value	Estimated remaining life expectancy (years)	Description
1	Arboricultural	>40	Trees that are of particularly good examples of their species (e.g. notable specimens), especially if rare or unusual; or those that are essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principle trees within an avenue).
2	Landscape	>40	Trees, groups, or woodlands of particular visual importance as arboricultural and/or landscape features.
3	Cultural	>40	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. ancient trees, veteran trees and ancient woodland).

Table D-2 - Sub-categories associated with moderate quality category B arboricultural features

Sub-category	Area of value	Estimated remaining life expectancy (years)	Description
1	Arboricultural	>20	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. the presence of significant though remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the special quality necessary to merit category A designation.
2	Landscape	>20	Trees present in numbers, usually as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
3	Cultural	>20	Trees with material conservation or other cultural value.

Table D-3 - Sub-categories associated with low quality C category arboricultural features

Sub-category	Area of value	Estimated remaining life expectancy (years)	Description
1	Arboricultural	>10	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
2	Landscape	>10	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.
3	Cultural	>10	Trees with no material conservation or other cultural value.

Table D-4 - Very-Low Quality U Category Arboricultural Features

Sub-category	Estimated remaining life expectancy (years)	Description9
None	<10	Trees that have serious irremediable structural defects; Trees that are dead or are showing signs of immediate and irreversible physiological decline, and; Trees infected with significant pathogens or very-low quality trees suppressing specimens of better quality.

NOTES AND LIMITATIONS

Arboricultural survey data is of a preliminary nature and has been collected based on a walkover survey. Only defects visible from the ground have been noted and each individual feature may not have been inspected closely due to access difficulties, the presence of dense ivy or vegetation or safety constraints. Safety related features have recorded on the basis that the arboricultural features will be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.

Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes to the site may render it invalid within a shorter timescale.

Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Walkover survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.

The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

The position of arboricultural features not recorded on a topographical survey has been estimated using aerial photography. The position and extent of these features should be regarded as approximate only.

[9] These features do not apply in the instance that a tree is defined as ancient or veteran

Appendix E

ARBORICULTURAL SURVEY SCHEDULE

Public

Key:	Description			
REFERENCE NUMBER:	Individual reference number			
TYPE:	T - Tree	G – Tree Group	W – Wooded Area	H - Hedge
SPECIES:	Species listed by common name			
HEIGHT:	Overall height (m) – maximum and minimum heights may be recorded for tree groups, wooded areas and hedges where these vary considerably or are deemed to be noteworthy			
DIAMETER:	Stem diameter (mm) calculated in accordance with BS 5837 paragraph 4.6.1. An average stem diameter is provided for tree groups, wooded areas and hedges			
CROWN SPREAD	Spread of crown based upon the maximum lateral dimension (m)			
LCH:	Lowest crown height (m)	* Where an arboricultural feature abuts the edge of the study area then only the portion of the crown within/overhanging the study area will be surveyed and recorded		
FSB:	Height of lowest significant branch (m)			
AGE CLASS:	Young - < 1/3rd estimated life expectancy	Semi-mature – 1/3rd to 2/3rd estimated life expectancy	Mature - > 2/3rd estimated life expectancy	Veteran – a tree which exists significantly beyond its normal life expectancy
PHYSIOLOGICAL CONDITION:	Good	Fair	Poor	Dead
STRUCTURAL CONDITION:	Good	Fair	Poor	
ESTIMATED REMAINING CONTRIBUTION:	>10 years	10+ years	20+ years	40+ years
CATEGORY:	BS 5837 Category - A, B, C, U	BS 5837 Sub-category - 1, 2, 3		
RPA RADIUS	The radius of the circular Root Protection Area associated with the tree as measured from the centre of the stem (m). For arboricultural features where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension.			

Ref.	Type	Species (Botanical)	Species (Common)	Height (m)	Min Height (m)	Max Height (m)	DBH (mm)	Min DBH (mm)	Max DBH (mm)	North (m)	East (m)	South (m)	West (m)	LCH (m)	FSB (m)	Age Class	Physiological Condition	Structural Condition	Retention	Category	Sub-Cat	Notes	Rpa (m)
46	G	Acer pseudoplatanus	sycamore	-	13.0	13.0	-	150	400	5.0	0.0	5.0	5.0	3.0	4.0	Mature	Good	Fair	20+	B	1/2	Group of approximately five trees; All multi-stemmed	4.8
47	G	x Cupressocyparis leylandii; Acer pseudoplatanus; Tilia sp.; Taxus baccata; Aesculus hippocastanum	Leyland cypress, sycamore, lime, yew, horse chestnut	-	12.0	14.0	-	200	450	3.0	3.0	3.0	3.0	3.0	3.0	Mature	Fair	Fair	20+	B	1/2	Slightly sporadic group of trees	5.4
48	H	Prunus laurocerasus	cherry laurel	-	2.0	4.0	-	50	100	2.0	2.0	2.0	2.0	0.0	0.5	Semi-Mature	Fair	Fair	10+	C	2	Suppressed; Some low-level screening	1.2
1	T	Aesculus hippocastanum	horse chestnut	4.0	-	-	240	-	2	2.0	2.0	2.0	2.0	2.0	2.0	Dead	Poor	Poor	<10	U	-	Dead	2.9

Ref.	Type	Species (Botanical)	Species (Common)	Height (m)	Min Height (m)	Max Height (m)	DBH (mm)	Min DBH (mm)	Max DBH (mm)	North (m)	East (m)	South (m)	West (m)	LCH (m)	FSB (m)	Age Class	Physiological Condition	Structural Condition	Retention	Category	Sub-Cat	Notes	Rpa (m)
2	T	Aesculus hippocastanum	horse chestnut	6.0	-	-	260	-	-	2.0	3.0	3.0	1.5	2.0	2.0	Semi-Mature	Poor	Fair	10+	C	2	Bleeding canker to stem; Sparse crown; Pruned to clear CCTV	3.1
3	T	Aesculus hippocastanum	horse chestnut	5.5	-	-	250	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Poor	Fair	10+	C	2	Bleeding canker to stem; Sparse crown	3.0
4	T	Aesculus hippocastanum	horse chestnut	6.0	-	-	250	-	-	2.5	2.5	3.0	2.5	2.0	2.0	Semi-Mature	Fair	Fair	10+	C	2	Some leaf miner damage; Small tree of limited stature and public amenity value	3.0
5	T	Platanus x hispanica	London plane	7.5	-	-	265	-	-	4.0	3.0	3.0	2.0	2.0	3.0	Semi-Mature	Poor	Fair	10+	C	2	Major crown dieback to south; Possible root damage due to installation of hoarding	3.2
6	T	Platanus x hispanica	London plane	8.0	-	-	290	-	-	3.5	3.5	3.5	3.5	2.5	2.5	Semi-Mature	Poor	Fair	10+	C	2	Extensive dieback to upper crown; Restricted rooting due to adjacent retaining wall	3.5
7	T	Platanus x hispanica	London plane	7.5	-	-	220	-	-	3.0	2.0	1.5	2.5	2.0	3.0	Semi-Mature	Fair	Fair	10+	C	2	Restricted rooting due to adjacent retaining wall	2.6
8	T	Platanus x hispanica	London plane	7.5	-	-	210	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Fair	Fair	10+	C	2	-	2.5
9	T	Platanus x hispanica	London plane	6.0	-	-	150	-	-	2.0	2.0	1.0	1.0	2.0	3.0	Semi-Mature	Fair	Fair	10+	C	2	Historically pruned to clear adjacent flag poles	1.8
10	T	Platanus x hispanica	London plane	6.5	-	-	250	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Poor	Poor	<10	U	-	Dying tree; Approximately 10% live crown	3.0
11	T	Platanus x hispanica	London plane	5.0	-	-	120	-	-	2.0	2.0	2.0	2.0	2.5	2.5	Semi-Mature	Fair	Fair	10+	C	2	-	1.4
12	T	Platanus x hispanica	London plane	5.5	-	-	180	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Good	Good	10+	C	2	-	2.2
13	T	Platanus x hispanica	London plane	5.5	-	-	150	-	-	2.5	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Fair	Fair	40+	C	2	-	1.8
14	T	Platanus x hispanica	London plane	3.5	-	-	100	-	-	1.0	1.0	1.0	1.0	1.0	1.0	Young	Poor	Poor	<10	U	-	Moribund tree; Dieback of tertiary foliage; Little extension growth	1.2
15	T	Prunus avium	cherry	3.0	-	-	90	-	-	1.0	1.0	1.0	1.0	2.0	2.0	Semi-Mature	Fair	Fair	10+	C	2	-	1.1

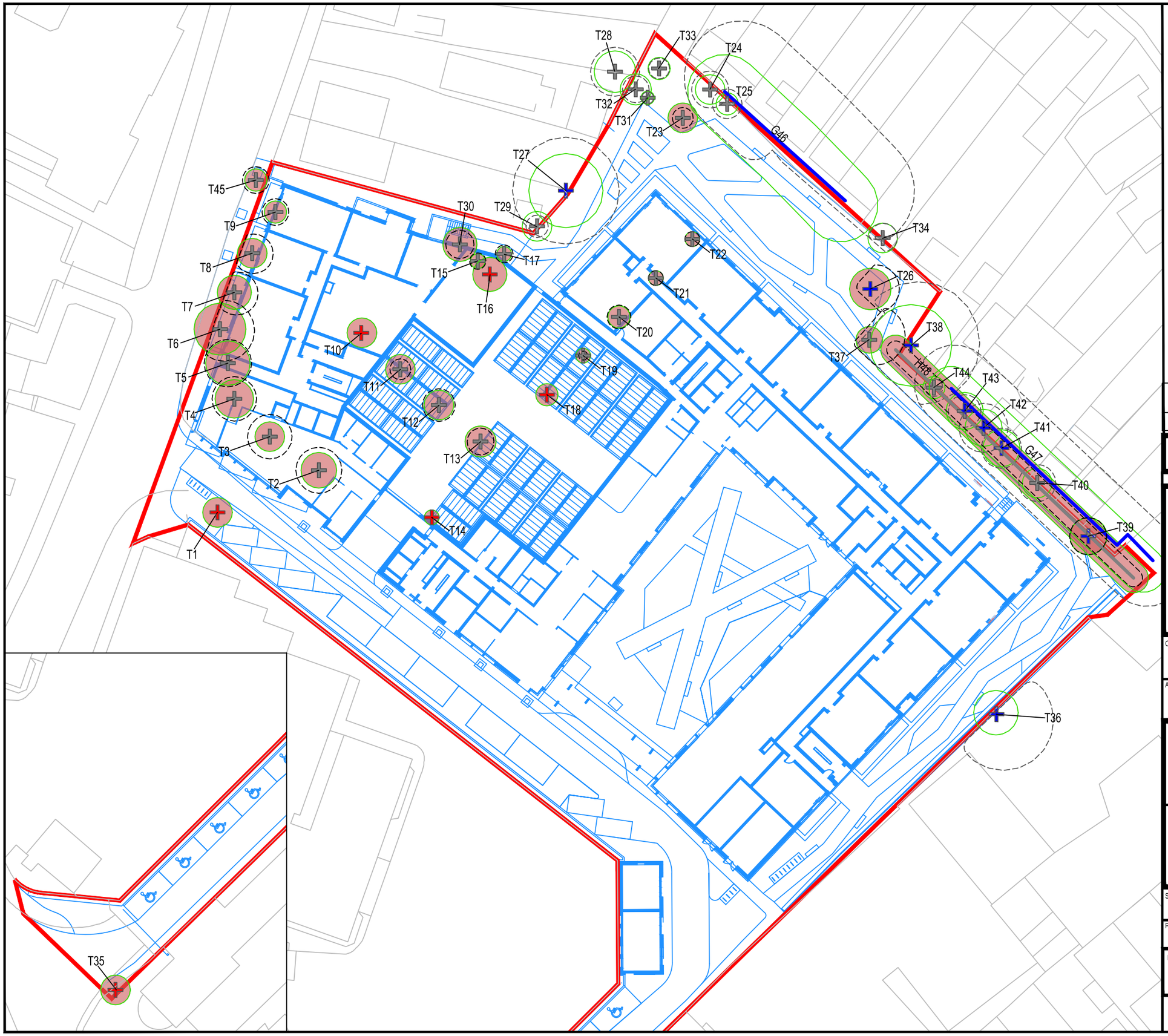
Ref.	Type	Species (Botanical)	Species (Common)	Height (m)	Min Height (m)	Max Height (m)	DBH (mm)	Min DBH (mm)	Max DBH (mm)	North (m)	East (m)	South (m)	West (m)	LCH (m)	FSB (m)	Age Class	Physiological Condition	Structural Condition	Retention	Category	Sub-Cat	Notes	Rpa (m)
16	T	Platanus x hispanica	London plane	8.0	-	-	240	-	-	3.0	1.0	3.0	2.0	2.0	2.0	Semi-Mature	Poor	Fair	<10	U	-	Dying tree; Approximately 50% live crown	2.9
17	T	Prunus avium	cherry	3.0	-	-	100	-	-	1.0	1.0	1.0	1.0	1.5	1.5	Semi-Mature	Fair	Fair	10+	C	2	-	1.2
18	T	Aesculus hippocastanum	horse chestnut	4.0	-	-	250	-	-	1.5	1.5	1.5	1.5	2.0	1.5	Semi-Mature	Poor	Poor	<10	U	-	Dying tree; Approximately 10% live crown; Extensive stem canker	3.0
19	T	Aesculus hippocastanum	horse chestnut	2.0	-	-	50	-	-	1.0	1.0	1.0	1.0	1.5	1.5	Semi-Mature	Fair	Fair	10+	C	2	Moribund tree; Little growth since planting; Limited extension growth	0.6
20	T	Aesculus hippocastanum	horse chestnut	4.0	-	-	130	-	-	1.5	1.5	1.5	1.5	2.0	2.0	Semi-Mature	Poor	Fair	10+	C	2	Bark damage to stem; Slightly chlorotic leaves	1.6
21	T	Aesculus hippocastanum	horse chestnut	4.0	-	-	85	-	-	1.0	1.0	1.0	1.0	2.0	2.0	Semi-Mature	Poor	Fair	10+	C	2	Moribund tree; Little extension growth	1.0
22	T	Aesculus hippocastanum	horse chestnut	3.0	-	-	85	-	-	1.0	1.0	1.0	1.0	2.0	2.0	Semi-Mature	Poor	Fair	10+	C	2	Moribund tree; Little extension growth	1.0
23	T	Aesculus hippocastanum	horse chestnut	5.0	-	-	120	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Good	Good	10+	C	2	-	1.4
24	T	Acer platanoides	Norway maple	6.0	-	-	210	-	-	2.0	1.0	3.0	2.0	2.0	2.0	Semi-Mature	Good	Good	10+	C	2	Partially suppressed	2.5
25	T	Acer platanoides	Norway maple	6.0	-	-	170	-	-	1.0	1.0	2.0	2.0	2.0	2.0	Semi-Mature	Good	Good	10+	C	2	Partially suppressed	2.0
26	T	Aesculus hippocastanum	horse chestnut	5.0	-	-	230	-	-	3.0	3.0	2.0	3.0	3.0	3.0	Semi-Mature	Good	Good	20+	B	2	-	2.8
27	T	Acer pseudoplatanus	sycamore	13.0	-	-	600	-	-	5.0	5.0	5.0	5.0	4.0	3.0	Mature	Good	Fair	20+	B	1/2	Dense ivy to stem; Limited inspection	7.2
28	T	Acer pseudoplatanus	sycamore	8.0	-	-	275	-	-	3.0	2.0	3.0	3.0	3.0	3.0	Semi-Mature	Fair	Fair	10+	C	1	Lean to stem; Dense ivy to stem	3.3
29	T	Acer pseudoplatanus	sycamore	5.0	-	-	125	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Semi-Mature	Fair	Fair	10+	C	1	Growing between fence and metal fence post	1.5
30	T	Prunus avium	cherry	4.5	-	-	160	-	-	3.0	2.0	2.0	2.0	1.5	2.0	Semi-Mature	Fair	Good	10+	C	2	Small tree of limited stature and public amenity value	1.9
31	T	Carpinus betulus	hornbeam	3.0	-	-	65	-	-	0.5	1.0	1.0	1.0	1.0	1.5	Young	Fair	Fair	10+	C	2	Suppressed	0.8

Ref.	Type	Species (Botanical)	Species (Common)	Height (m)	Min Height (m)	Max Height (m)	DBH (mm)	Min DBH (mm)	Max DBH (mm)	North (m)	East (m)	South (m)	West (m)	LCH (m)	FSB (m)	Age Class	Physiological Condition	Structural Condition	Retention	Category	Sub-Cat	Notes	Rpa (m)
32	T	Acer pseudoplatanus	sycamore	7.0	-	-	150	-	-	1.0	1.0	4.0	2.5	2.0	3.0	Semi-Mature	Fair	Fair	10+	C	2	Partially suppressed	1.8
33	T	Carpinus betulus	hornbeam	4.0	-	-	120	-	-	0.0	2.0	2.0	2.0	1.5	1.5	Young	Fair	Fair	10+	C	2	Small tree of limited stature and public amenity value	1.4
34	T	Acer pseudoplatanus	sycamore	3.5	-	-	150	-	-	2.0	2.0	2.0	2.0	1.0	1.0	Semi-Mature	Fair	Poor	10+	C	2	Multi-stemmed tree; Re-growth from stump	1.8
35	T	Sorbus aria	whitebeam	4.5	-	-	250	-	-	2.0	2.0	2.0	2.0	2.0	2.0	Dead	Poor	Poor	<10	U	-	-	3.0
36	T	Betula pendula	birch	14.0	-	-	450	-	-	3.0	3.0	3.0	3.0	7.0	7.0	Mature	Good	Fair	20+	B	1/2	Growing atop sheet piled retaining wall	5.4
37	T	Acer pseudoplatanus	sycamore	12.0	-	-	275	-	-	3.0	1.0	2.0	1.0	3.0	5.0	Semi-Mature	Fair	Poor	10+	C	2	Heavily suppressed; Ivy to stem	3.3
38	T	Acer pseudoplatanus	sycamore	14.0	-	-	650	-	-	6.0	5.0	5.0	6.0	8.0	6.0	Mature	Good	Good	20+	B	1/2	Limited access prevented full inspection	7.8
39	T	Acer pseudoplatanus	sycamore	10.0	-	-	210	-	-	2.5	2.5	2.5	2.5	4.0	2.0	Semi-Mature	Fair	Fair	20+	B	1/2	-	2.5
40	T	Acer pseudoplatanus	sycamore	10.0	-	-	210	-	-	2.0	2.0	2.0	2.0	4.0	4.0	Semi-Mature	Fair	Fair	10+	C	2	-	2.5
41	T	Tilia cordata	small-leaved lime	14.0	-	-	225	-	-	2.5	2.5	2.5	2.5	3.0	3.0	Semi-Mature	Good	Good	20+	B	1/2	-	2.7
42	T	Tilia cordata	small-leaved lime	14.0	-	-	275	-	-	2.5	2.5	2.5	2.5	3.0	3.0	Semi-Mature	Good	Good	20+	B	1/2	-	3.3
43	T	Tilia cordata	small-leaved lime	14.0	-	-	180	-	-	2.5	2.5	2.5	2.5	3.0	3.0	Semi-Mature	Good	Good	20+	B	1/2	-	2.2
44	T	Tilia cordata	small-leaved lime	5.0	-	-	100	-	-	1.5	1.5	1.5	1.5	1.0	2.0	Semi-Mature	Poor	Poor	10+	C	2	Suppressed	1.2
45	T	Prunus avium	cherry	4.0	-	-	150	-	-	1.5	1.5	1.5	1.5	2.0	2.0	Semi-Mature	Good	Good	10+	C	2	-	1.8

Appendix F

TREE PROTECTION PLANS

Public



DO NOT SCALE

T TREE
G TREE GROUP
H HEDGE

BS 5837 CATEGORY GRADING / QUALITY

B CATEGORY / MODERATE
C CATEGORY / LOW
U CATEGORY / VERY LOW

ROOT PROTECTION AREA

TREE CANOPY

ARBORICULTURAL FEATURE TO BE REMOVED

SITE BOUNDARY

PROPOSED STRUCTURE / HARD SURFACING

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	04/09/2020	JM	REVISED SITE LAYOUT PLAN	ND	ND

DRAWING STATUS:
TECHNICALLY APPROVED

1 Capital Quarter, Tyndall St, Cardiff, CF10 4BZ, UK
T+ 44 (0) 292 076 9200
wsp.com

CLIENT:
GUILD LIVING

ARCHITECT:
MARCHESE AND PARTNERS

PROJECT:
HAREFIELD ROAD, UXBRIDGE

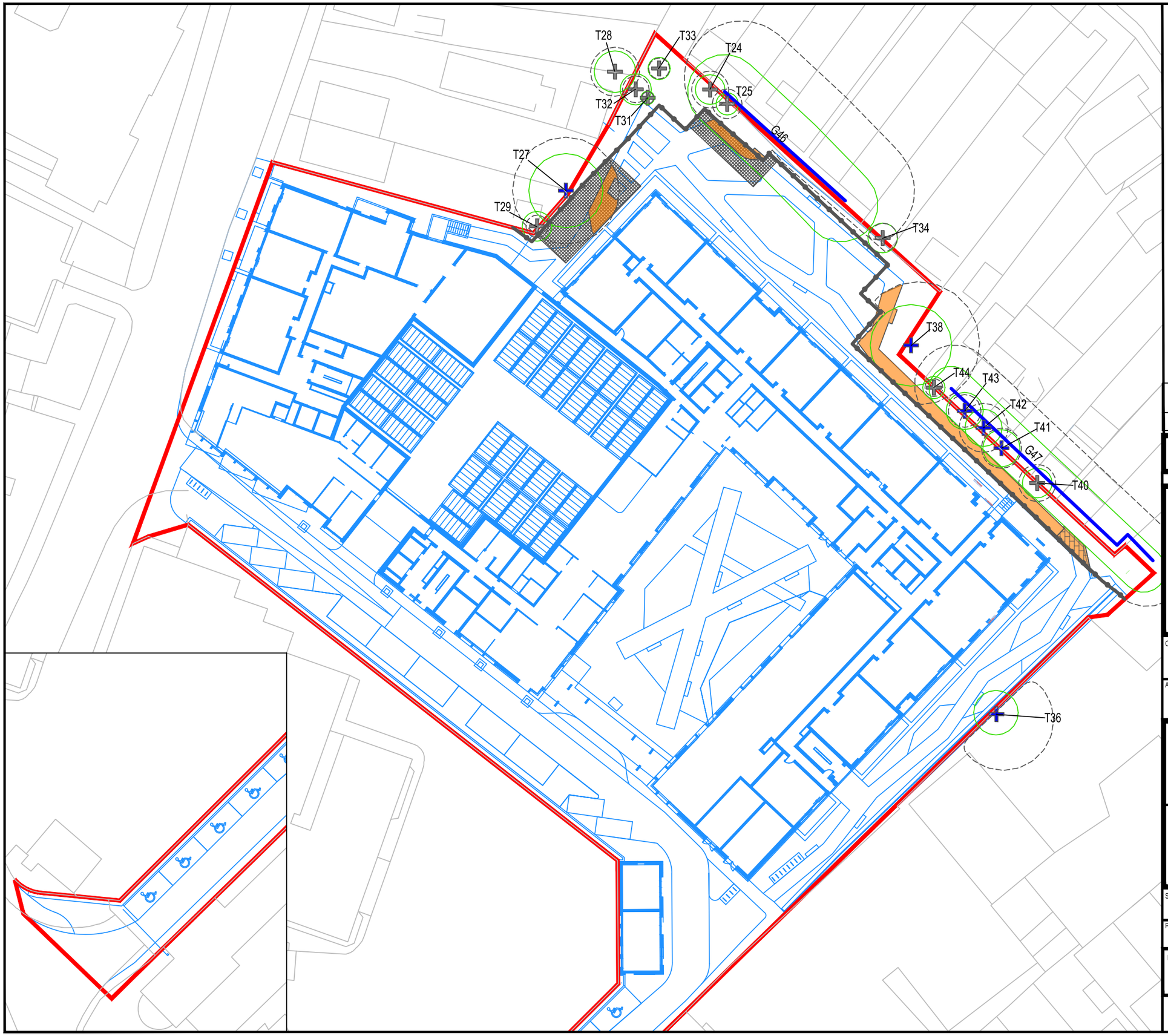
TITLE:
TREE PROTECTION PLAN (TREE REMOVALS)

SCALE @ A3:	CHECKED:	APPROVED:
1:500	ND	ND

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70073356	JM	JM	09/06/2020

DRAWING No:	REV:
70073356-TPP-EV-001	P04

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DO NOT SCALE

T TREE
G TREE GROUP

BS 5837 CATEGORY GRADING / QUALITY

B CATEGORY / MODERATE
C CATEGORY / LOW

ROOT PROTECTION AREA

TREE CANOPY

SITE BOUNDARY
PROPOSED STRUCTURE / HARD SURFACING
TREE PROTECTION FENCING
NO DIG NEW / REPLACEMENT HARD SURFACING
GROUND PROTECTION - RETAINED CAR PARK SURFACING
AREA OF PROPOSED EXCAVATION AND LEVEL CHANGES

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	04/09/2020	JM	REVISED SITE LAYOUT PLAN	ND	ND

DRAWING STATUS:
TECHNICALLY APPROVED

wsp

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CLIENT:
GUILD LIVING

ARCHITECT:
MARCHESE AND PARTNERS

PROJECT:
HAREFIELD ROAD, UXBRIDGE

TITLE:
TREE PROTECTION PLAN

SCALE @ A3:	CHECKED:		APPROVED:
1:500	ND		ND
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70073356	JM	JM	03/08/2020

DRAWING No:	REV:
70073356-TPP-EV-002	P01

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