Tree Survey,
Arboricultural Impact Assessment
& Arboricultural Method Statement

Site:
32 Norwich Road
Northwood
Middlesex
HA6 1NB

In support of planning application for demolition of existing detached property and construction of new three storey building comprising 4 flats with associated car parking and amenity space.

Hillingdon Council

Mr Ahmad Ismat
c/o Amasia Architects Ltd

Prepared by:

James Hedges BA (Hons), MICFor, F.Arbor.A, Dip.Arb. (RFS), Tech.Cert. (Arbor. A.)

25th November 2022 AA/32NR/AIA/22 v.1.1 (amenity space amendments; for planning submission)

Contents

1) Terms of Reference

1.1 Final instructions were received by email on 14th October 2022 from Mr Ahmad Ismat (Client) with regards to the proposed planning application for the demolition of the existing detached dwelling and construction of new three-storey building comprising of 4 flats. The tree survey included within this report was undertaken on 29th October 2022 following a site meeting with the Client.

1.2 I have been instructed to undertake a tree survey and produce an Arboricultural Impact Assessment (AIA) in accordance with **British Standard BS5837: 2012 'Trees in relation to design, demolition and construction - Recommendations'** to evaluate the direct and indirect effects of the proposed design on the adjacent Silver Birch tree (T1) and identify issues to be addressed in a draft Arboricultural Method Statement (AMS) and illustrated on a draft Tree Protection Plan (TPP).

1.3 Attendance at site meetings arboricultural supervision or any subsequent amendments to the approved plans requiring changes to either the AIA, AMS or TPP or as a result of subsequent planning conditions will be in addition to the current work undertaken.

1.4 Existing and amended proposed site plans have been provided by Amasia Architects Ltd (32 Norwich Road - 23-11-22) in .DWG format to be used to produce the draft Tree Protection Plan.

1.5 Qualifications held by me include:

- Royal Forestry Society Professional Diploma in Arboriculture
- Arboricultural Association Technicians Certificate
- City & Guilds in Arboriculture (Merrist Wood)

I have over 20 years of practical arboricultural experience at craft level, private consultancy and as a local authority Arboricultural Officer. I am a Fellow of the Arboricultural Association (F.Arbor.A.) and a Professional Member of the Institute of Chartered Foresters (MICFor).

Signed:

Chartered Arboriculturist.

25th November 2022.

2) Scope of Report and Limitations

2.1 The tree data gathered is for the purposes of a development site survey in accordance with BS5837:2012 and is **not** a detailed tree safety inspection. As general guidance it is recommended that regular tree safety inspections are carried out by a competent person to ensure that the owner / controller of the land fulfils their duty of care to persons who may reasonably be affected.

2.2 A preliminary visual assessment of the Silver Birch tree (T1) tree was carried out from ground level noting external faults and features only. All measurements are estimated and tree locations on the attached plans are approximate.

2.3 This preliminary assessment did not include a detailed examination of tree root systems, aerial access, or the use of internal decay detection equipment. A tree with internal faults will often display associated external evidence of such faults; these would be noted in a visual tree inspection. However, such signs are not always apparent at all times of the year for example fungal fruiting bodies or leaf size and condition. The survey findings and recommendations have been drawn from the evidence present on the day of inspection.

2.4 Only trees identified by the Client have been surveyed as per instructions received i.e. those within or immediately adjacent to 32 Norwich Road which could be affected either directly (proximal to the area of construction) or indirectly (e.g. during the construction phase). It is recommended that the owners of any trees adjacent to the site have them inspected by a qualified and competent arboriculturist.

2.5 This report does not constitute an assessment of the presence or absence of invasive plant species (including Japanese Knotweed) or a preliminary ecological appraisal of the development site. Should a more comprehensive survey be required then full access arrangements should be made and a further specialist survey be conducted.

2.6 This survey expressly excludes any liability for any direct or indirect structural damage that the trees may cause to property including any structural movement, subsidence and heave. Where necessary, appropriate specialists e.g., structural engineer, building surveyor or drainage expert should be consulted for specific advice including foundation design and anti-heave precautions where trees are to be retained or removed in proximity to existing or proposed structures. No reliance shall be placed on any comment(s) made in respect of the structural integrity / foundation design of any built structure or drainage system located on the premises to which this survey and report relates.

2.7 The Local Planning Authority (Hillingdon Council) must be consulted prior to any works being carried out to establish whether any Tree Preservation Orders (TPO's) or Conservation Areas apply to the site. Failure to obtain written permission may result in a substantial fine and criminal conviction. No works to any neighbouring trees should be undertaken without the agreement and express permission (in writing) of the owner.

2.8 Full consideration must be given to current legislation by anyone proposing to carry out works to trees, particularly with regards to the presence of European Protected Species (including bats). Arboricultural ('tree surgery') contractors should be adequately trained, experienced and carry adequate insurance. All works should be carried out to the current edition of British Standard BS3998 'Recommendations for Tree Work', 2010.

2.9 This report supersedes all previous versions and should be considered valid for a period of **12 months** from date of original issue assuming that any recommendations are carried out. Additional inspection is recommended following exposure to extreme weather, significant wounding or damage (e.g., incursion into the rooting zone, impacts, etc.) or any other event giving cause for concern.

2.10 The information contained within this document is provided without prejudice and is based upon the author's knowledge, experience, qualifications and published research. The author cannot be held responsible for the consequences of a difference of opinion held by third parties, for example the Local Planning Authority or Planning Inspectorate.

2.11 Third Party Disclaimer: Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Hedges Tree Consultants Ltd at the instruction of, and for the sole use by Amasia Architects Ltd, the Client and the Local Planning Authority. This report does not in any way constitute advice to any third party who is able to access it by any means.

3) Arboricultural Impact Assessment (AIA)

3.1 General Description of the Site and Surroundings

No. 32 Norwich Road is a detached 2-storey property situated at the junction with Cranbourne Road. The site slopes slightly from north to south with a large rear garden / amenity space incorporating existing hard standing / parking space (accessible from Cranbourne Road). The most significant vegetation in the immediate area is an early-mature Silver Birch (T1) which is protected by a Tree Preservation Order TPO794. A limited number of both broadleaved and coniferous tree species of varying ages are present within the within the wider vicinity of the property, primarily in front and rear gardens of the surrounding properties.

3.2 Planning History

` Pre-application planning advice Reference: 35516/PRC/2022/112 was issued by the Hillingdon Council Planning Applications Team on 12/9/22. This specifically identifies the protected Silver Birch tree (T1) and comments upon the location of the proposed refuse/cycle store building in relation to the Root Protection Area. *The design layout has subsequently been amended to relocate the refuse bin / cycle storage areas away from the tree in order to directly address these concerns.*

3.3 Description of the Proposed Development

It is proposed subject to planning consent to demolish the existing detached property and construct a new three-storey building comprising 4 flats with associated car parking and amenity space.

3.4 Legal Constraints

Preliminary enquiries via The Hillingdon Council website (www.lbhillingdon.maps.arcgis.com) identified the Silver Birch tree (T1) in the rear garden as protected by Tree Preservation Order TPO794. No Conservation Areas were identified as affecting the property. No works to any protected trees (including their root systems) should be carried out without the consent in writing of the Local Planning Authority and, if necessary, the owner(s) of the tree(s). No additional constraint checks have been undertaken as part of this report.

The Escallonia and Leyland Cypress hedges (H2 & H3) are considered to be exempt from the requirements of the Hedgerow Regulations 1997 (Regulation 3 (3) – *'do not apply to any hedgerow within the curtilage of, or marking a boundary of the curtilage of, a dwelling-house'*) www.legislation.gov.uk/uksi/1997/1160/regulation/3/made

3.4 Impact of the Proposed Development on the Amenity Value of the Trees

3.4.1 Direct Loss of Trees / Shrubs

Based on the proposed site plan *32 Norwich Road – 07-11-22* (November 2022), the removal of the following vegetation is required in order to facilitate the development:

Tree Reference	Species	BS5837 Retention Category	Comments
H3	Leyland Cypress hedge	**C**	2 x 90mm diameter stems forming a heavily pruned low hedge approximately 2m in height with minimal public visual amenity

Table 1: Trees identified for removal in order to facilitate development operations).

The loss of the above hedge within the site boundary – assessed as being of low quality and value (BS5937:2012, Category 'C') – is not considered to have any significant impact on wider public visual amenity due to its size and historical management.

Photos 1 & 2: Leyland Cypress hedge (H3) – minimal amenity value. Silver Birch (T1) and boundary fence substantially screen H3 form view.

H3 would be unlikely to warrant the making of a Tree Preservation Order on visual amenity grounds and its removal can be readily mitigated through new tree and shrub planting at appropriate distances from the property to ensure that there is overall loss of wider amenity upon completion of the development.

3.4.2 Retained Trees

Silver Birch (T1) can be retained subject to appropriate tree protection measures. Given the early-mature life-stage, orientation to and distance from the proposed new building its future growth can reasonably be managed in the context of the proposed development e.g. by occasional light pruning (crown lifting to 2.5m). This work can be undertaken in line with good arboricultural practice, acceptable in terms of the recommendations within Section 7.2.4 and Table 1 of BS3998: 2010 and will be necessary in order to maintain appropriate clearance from the public footpath and lamp column which are currently (October 2022) partially obstructed by low foliage. Minor, localised pruning of the lower crown proximal to rear gate (crown lifting to a maximum of 3m) may be required as part of the Access Facilitation Pruning to allow safe access / egress of vehicles based upon specific advice from the Project Arboriculturist.

Photos 3 & 4: Silver Birch (T1) – low branches. Crown lift to 2.5m as part of Access Facilitation Pruning / clearance from highway by removing 3 lowest branches <75mm diameter and cutting back from lamp column. Crown lifting to a maximum of 3m by the entrance gate will allow safe access / egress from site.

T1 can be protected from soil compaction and impact damage by protective barriers (with additional ground protection if necessary) which will be fit for purpose, complying with BS5837: 2012 unless otherwise agreed with the LPA / Tree Officer. A draft Arboricultural Method Statement (AMS) and draft Tree Protection Plan (TPP) are included in section 4 of this report; compliance with detailed tree protection measures can readily be achieved through the use of conditions attached to any subsequent grant of planning consent.

3.5 Above and Below Ground Constraints

3.5.1 Given on the relative uniformity of the ground surrounding the trees, it is reasonable to assume that the retained Silver Birch (T1) has a *circular, unobstructed* Root Protection Area (RPA). Based on this assumption, the proposed development will involve the following RPA incursions:

Tree # & Species	Reason	Approx. RPA Incursion % of Total	Impact	Mitigation
T1 Silver Birch	Disabled parking space (replacement of existing hard surfacing)	<20% [1]	Low	*Area already entirely covered by existing hard surfacing - No increase in new hard surfacing area.* General precautions / tree protection fencing / temporary ground protection. Supervised removal of existing hard surfacing and replacement with low-invasive / permeable surfacing.

Table 2: Root Protection Area Incursions (retained tree)

[1] This level of incursion is considered broadly acceptable in terms of impact on the *physiological* condition upon the following factors:

- No increase in area of hard surfacing – replacing / upgrading existing surfacing
- That the limited loss of any roots can be readily compensated for by the contiguous rooting area particularly to the south and west (BS5837: 2012 section 5.3a) where they can reasonably be expected to have developed considering the site topography and soil type / structure
- Life stage and overall tree vitality (ability to react to changes in the rooting environment)

In addition, the proposed outline of the new development (retaining walls) is at a distance greater than six times the stem diameter of T1, minimizing the risk of adversely impacting tree health and stability (ISA, Best Management Practices – Root Management, 2017).

Specific details of the extension foundations and construction should be attached to this report and further advice on the need for additional measures obtained from the Project Arboriculturist. Although the precise foundation design has not yet been confirmed, the use of 'traditional' trench or strip foundations designed by a structural engineer as part of the development may be considered acceptable from an *arboricultural* perspective providing that appropriate precautions (e.g. supervised removal / replacement of the hard surfacing, appropriate treatment of any exposed roots >25mm diameter, etc.) as indicated in the draft AMS and on the draft TPP) are adhered to – matters which in this instance can reasonably be conditioned following the grant of planning consent. Overall, the construction of the new building should not result in significant root damage, loss of rooting area or reduction in the physiological condition of T1.

3.5.2 The British Geological Survey Map Sheet 255 (Solid & Drift Edition) indicates the bedrock geology to be London Clay (clay and silt) with no overlying superficial deposits. Due to the approximate nature of the geological mapping and because of the high-volume change potential of London Clay (and derived soils) it is recommended that the foundation design is informed by further investigation and reference to the current edition of NHBC Chapter 4.2 'Building Near Trees', in particular:

- There is a 'Low Water Demand' tree (T1) within the Zone of Influence - NHBC Chapter 4.2, Table 2
- Whether specially engineered foundations e.g. piles are appropriate
- Whether anti-heave precautions are considered necessary by the engineer

Soils derived from the London Clay are more susceptible to compaction and / or waterlogging which may adversely affect the distribution and functioning of tree and shrub roots. Care must be taken to ensure that any construction activity does not result in damage occurring within the RPA of any retained trees.

3.5.3 It is intended, subject to Building Regulations, to connect to existing underground services where possible to ensure the minimum of disruption to the RPA of T1. Any additional services required by the development should be located to avoid conflict between T1 and / or any new planting. Any upgrading of underground utilities must be in accordance with advice from the LPA and installed in accordance with NJUG Volume 4 (Issue 2) guidelines. Any new soakaways should be located outside of the RPA of T1.

3.5.4 The relative orientation of the new building to T1 should not result in a significant obstruction of sunlight / daylight or shade constraint when considered in terms of the expected pattern of use and occupation. Consideration has been given to the fact that the Silver Birch is a deciduous species and therefore will provide dappled shade in the summer yet will be leafless in the winter allowing increased levels of daylight to pass through (BR 209). A basic shade arc (BS5837) is shown on the Tree Survey and Constraints Plan.

3.5.5 Minor Issues arising from leaf and seed fall can reasonably be expected to be dealt with through periodic clearance and maintenance and / or the use of proprietary gutter guard products. Overall, the future growth and maintenance requirements of the retained Silver Birch can be reasonably managed (see section 3.4.2, above) through occasional crown lifting (including roadside works required by the Highways Act 1980) and should not result in concerns over dominance or 'post-development tree resentment'.

3.5.6 The design of any new planting and landscape proposals should be based upon a soil analysis which considers the pH and any nutrient deficiencies or imbalances and accords with the distances set out in NHBC Chapter 4.2 and BS5837: 2012, Table A.1 to minimize the impact of future growth.

3.6 Construction of the Proposed Development

3.6.1 Demolition

Sufficient space exists for demolition of the existing dwelling and associated site clearance work without affecting T1 providing that all necessary precautions are observed including the prior installation of protective fencing / ground protection where necessary and direct supervision of any plant movements by an appointed banksman. A detailed demolition method statement should be produced and further advice obtained from the Project Arboriculturist including the supervision arrangements and the provision of water to deal with any accumulation of dust.

3.6.2 Special Engineering Methods

Final details of the extension foundation design have not yet been provided. However, given the avoidance of any significant incursion into the RPA of T1 and the proposed mitigation measures, specially engineered foundations for *arboricultural* reasons are not anticipated (subject to the architect / engineer's design and specifications). The final specification should be appended to the detailed AMS based upon the findings of trial excavations and arboricultural advice.

3.6.3 Ground Level Changes

In order to achieve the desired finished floor levels and overall design criteria, the construction of the new dwelling, hard landscaping and replacement hard surfacing should not require any significant changes in ground levels within the RPA of T1 (considered in section 3.5.1 (above)). If any further changes to existing ground levels within any RPA's are subsequently required (including landscaping operations) then they should be accompanied by a detailed method statement and subject to LPA approval.

3.6.4 Changes to Surfacing / Storage within the RPA

Providing that appropriate low-invasive surfacing techniques are applied (BS5837:2012 section 7.4.2) and that the General Precautions listed in the draft AMS are observed then the installation of any new / replacement hard surfacing (disabled parking space) should have no significant impact on the retained T1. Any subsequent changes to the hard surfacing layout should be based upon further advice form the Project Arboriculturist.

3.6.5 Planning of Construction Operations

The proposed design layout makes allowance for the following:

- Amended design layout to position the refuse bin / cycle storage area away from T1
- Space for demolition, excavation of foundations and construction operations
- Phased work program
- Connection to existing underground utilities without additional incursions into the RPA's of retained trees.
- Space for delivery, storage and removal of materials, welfare facilities and contractors' car parking

3.7 End Use of Space

The proposed layout offers a reasonable degree of space for the intended use of the site. The retained trees should not result in any conflicts with the use of the site and so will avoid post development pressure to remove further trees as well as providing adequate space for new tree planting.

3.8 Mitigation

A limited amount of space is available for the planting of 3 new trees and shrubs as part of a general landscaping scheme with the potential to satisfy Policies DMHB 11 and 14 of the Hillingdon Local Plan – enhancing amenity, biodiversity and green infrastructure while retaining the existing Silver Birch. Any landscape proposals should make particular reference to:

- Ensuring no net loss of individual trees as part of the development
- The inclusion of native trees and shrubs where possible within a new scheme of landscaping
- Inclusion of semi-mature tree stock where necessary
- Use of permeable, low-invasive surfacing solutions when installing or upgrading hard surfacing or driveway areas
- Provision for recovering any other areas that may have suffered (e.g., historical compaction, poor-quality soil or following construction operations) prior to the installation of permeable hard surfacing or new planting

3.9 Conclusions

- The proposed design avoids any significant new incursions into the RPA of the retained Silver Birch (T1). Design amendments since the pre-app advice was issued have relocated the refuse bin / cycle storages area away from T1 while the new disabled parking space requires no increase in hard surfacing within the RPA of T1
- The use of appropriate low-invasive surfacing methods and arboricultural supervision (associated with changes to hard surfacing) will allow for the retention of underlying rooting material – matters which can be readily be conditioned (Arboricultural Method Statement) following the grant of any planning consent
- The removal of the small 'C' Category Leyland Cypress hedge H3 will have a minimal impact on wider public visual amenity and can be readily compensated for through selected new tree planting at appropriate distances from built structures
- The expected pattern of use and occupation of the new build property in relation to T1 should not result in any significant conflicts (dominance or shading) and avoid a situation of 'post-development tree resentment'. Occasional light pruning (crown lifting to 2.5m) may be required in future to maintain adequate clearance over the rear garden and will be in keeping with the pruning required to maintain adequate clearance over the adjacent public footpath. Overall, any pruning works should not exceed the recommendations of BS3998: 2010 and should have no discernible impact on wider public visual amenity compared to the current situation
- Where necessary, new or replacement hard surfacing using low-invasive techniques, permeable surfacing and facilitating soil amelioration should improve local rooting conditions and mitigate the impact of minor localised root loss
- Adequate space exists for new tree and shrub planting to enhance local amenity and biodiversity in keeping with Local Plan Policies
- Compliance with an Arboricultural Method Statement and Tree Protection Plan, if conditioned as part of any subsequent grant of consent, should ensure there are no adverse effects on the overall health of the retained trees or their amenity value as the result of any site clearance, excavation or construction operations

4) Draft Arboricultural Method Statement

An Arboricultural Method Statement (AMS) will be required where any construction operations, including access, are proposed within or adjacent to the RPA (or crown spread where this is greater) of any retained trees. This applies to trees within the scope of this proposed development.

The intention of the method statement is to minimise the risk of any adverse impact on the trees to be retained (especially damage caused by excavation and soil compaction) and to clearly demonstrate how relevant operations will be undertaken. It should also specify appropriate tree and ground protection measures in accordance with BS5837:2012 which will be detailed on the Tree Protection Plan (TPP).

The following draft AMS is to be read in conjunction with the draft TPP. A detailed AMS and TPP may be required to address specific conditions attached to any subsequent grant of planning consent.

4.1 Site Information

4.1.1 Site Address

32 Norwich Road

Northwood

Middlesex

HA6 1NB

4.1.2 Planning Information

Planning application for demolition of existing detached property and construction of new three storey building comprising 4 flats with associated car parking and amenity space.

	Name	Contact Details
Client	Mr Ahmad Ismat	c/o Amasia Architects Ltd
Architect	Joseph Kent, Amasia Architects Ltd	www.amasiaarchitects.com Tel. 01483 205725
Structural Engineer	To be appointed	-
Site Agent / Manager / Building Contractor	To be appointed	-
Project Arboriculturist	James Hedges	23 Elmlee Close Chislehurst Kent, BR7 5DU Tel. 07976 627575 james_hedges_ctc@hotmail.com
Local Planning Authority	Hillingdon Council	Civic Centre High Street Uxbridge UBB 1UW Tel. 01895 250230
Local Authority Planning Case Officer	To be appointed	As LPA
Local Authority Tree Officer	To be appointed	As LPA

4.2 Introduction *to be read in conjunction with the Tree Protection Plan (TPP)*

4.2.1 Overview

This document outlines the methodology to be followed for any operation that may result in the loss or damage to trees in or adjacent to 32 Norwich Road during the demolition and construction of the proposed new three-storey residential building and associated landscaping works, in particular:

- How the trees / hedges will be protected
- How works close to the protected Silver Birch T1 will be carried out
- Responsibilities, supervision and emergency procedures

Copies of this document should be made available on site for consultation by anyone carrying out operations in proximity to the tree. Reference will be made throughout to **BS5837:2012 'Trees in relation to design, demolition and construction - Recommendations'**.

4.2.2 Legal Considerations

Silver Birch T1 adjacent to Cranbourne Road is protected by a Tree Preservation Order TPO794. No works should be carried out to any tree without first confirming with the LPA whether they are subject to any form of protection and that all relevant consents have been granted. **Unauthorised works to protected trees (including their roots), including those protected by a Tree Preservation Order or Conservation Area may result in a criminal conviction and substantial fine.**

4.2.3 Significance of Planning Conditions

The grant of any planning permission relating to this development may be subject to conditions specifically relating to tree protection measures. This may include the approval of and compliance with the tree protection measures detailed within this Arboricultural Method Statement and the accompanying Tree Protection Plan.

Any breaches of these or other conditions may result in the LPA carrying out an investigation of that breach. The Client / developer will be advised to adhere to the requirements of the planning condition(s) and if the breach continues to take place the LPA can use various planning enforcement tools such as a Temporary Stop Notice, Enforcement / Stop Notice or a Breach of Condition Notice.

4.2.4 Notifying the Local Planning Authority

It is the responsibility of the Client or their appointed Site Agent / Manager to ensure that appropriate notice as required by the LPA is given prior to the commencement of works.

4.2.5 Pre-Commencement Site Meeting

A pre-commencement site meeting is recommended and should be arranged by the Client or their appointed Site Agent / Manager including the main contractor and Project Arboriculturist (with the LA Tree Officer invited to attend) to discuss issues of tree protection and appropriate precautions to avoid damage to rooting systems.

4.3 Pre-Construction Schedule of Works to Trees

4.3.1 Trees to be Retained

Tree #	Species	Location	Pre-Development Tree Work
T1	Silver Birch **(TPO794)**	Rear garden (western boundary) adjacent to Cranbourne Road	Crown lift to approximately 3m (removal of 3 lowest branches <75mm diameter) to ensure adequate clearance from pavement and driveway. Ensure 1m clearance from lamp column.
H2	Escallonia	Rear garden (eastern boundary)	Maintain hedge at current dimensions

Note: It is presumed that approval of the Arboricultural Method Statement will represent deemed consent by the Local Planning Authority for all the listed pre-construction tree works without further reference to the Local Planning Authority.

4.3.2 Trees to be Removed

Tree #	Species	Location	Pre-Development Tree Work
H3	Leyland Cypress	Rear garden (northern boundary)	Remove 2 small (<90mm diameter) trees forming 2m tall hedge

Note: Stumps must not be removed using mechanical excavation equipment where it is reasonably foreseeable that this may cause damage to the root systems of adjacent retained trees. Where such methods are used, appropriate precautions must be in place including site supervision, the use of a toothless bucket, placement of temporary ground protection and the use of a banksman while manoeuvring near the canopies of retained trees.

Any additional works to trees or shrubs (including those on neighbouring land) must be subject to obtaining any necessary permission from the LPA and, where necessary, written consent from the relevant owner(s)

4.3.3 Conditions Regarding Tree Work

Tree work is a potentially hazardous activity; anyone carrying out these operations must be appropriately trained, experienced and carry appropriate insurance. All works will be carried out in accordance with BS3998: 2010 'Recommendations for Tree Work' or current industry best practice. In particular:

- Full consideration must be given to all relevant legislation including the Health and Safety at Work Act 1974, the Management of Health and Safety at Work Regulations 1999, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2017 (as amended) regarding European Protected Species such as bats. Works should be timed, where possible, to avoid the bird nesting season (March to September)

- Contractors to comply with the Work at Height Regulations 2005 particularly when making an assessment of a tree's condition before undertaking climbing operations
- Contractors to confirm protected status of any trees and obtain necessary permissions before work starts

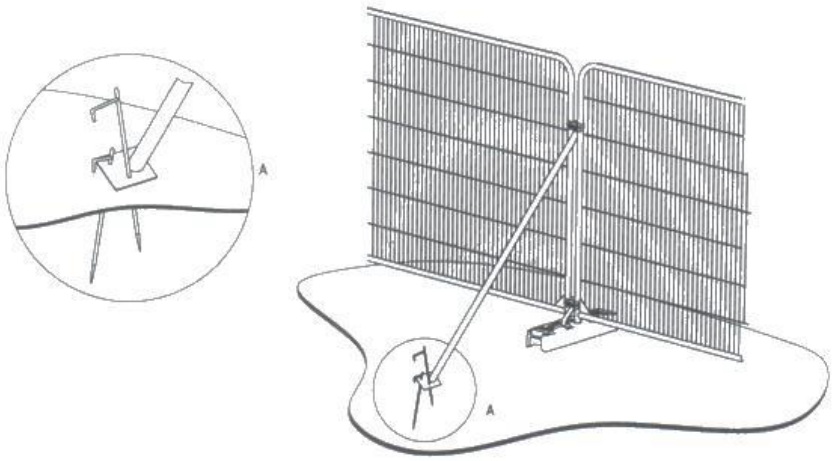
4.4 Tree protection

4.4.1 **Protective Fencing Specification** (as indicated on the Tree Protection Plan for T1)

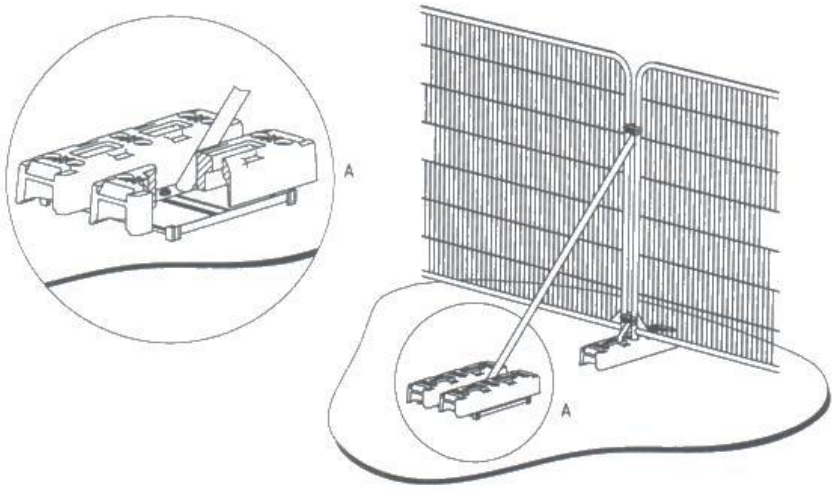
Protective fencing will be fit for purpose, complying with Figure 3 in BS5837:2012 (see below) unless otherwise specified and agreed in writing by the LPA. For example, the use of a wooden post framework with plywood site hoarding as alternative form of protection providing that it can be securely installed without causing any root damage. The existing hard surfacing where the fencing is to be located means that the use of a scaffolding support framework is not considered appropriate although it will be necessary to use appropriate securing systems such as weighted block trays in order to prevent unauthorised movement of the fencing.

Where the risk to retained vegetation has been assessed as low (e.g. rear garden adjacent to hedge H2) then orange builder's' mesh supported on road pins may be used.

Figure 3 **Examples of above-ground stabilizing systems**



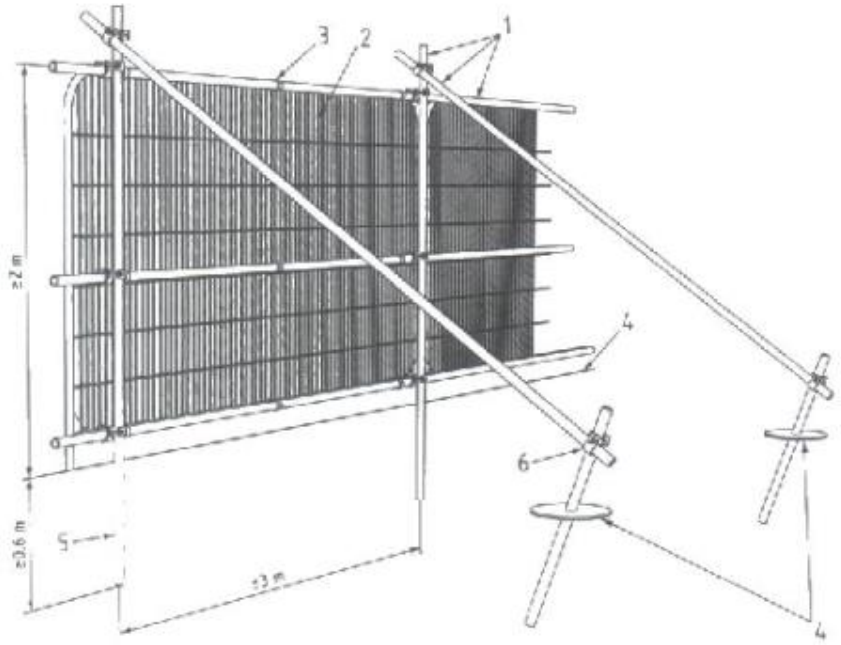
a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

BS5837: 2012 Figure 3 Tree Protection Fencing – Examples of above ground stabilizing systems

Figure 2 Default specification for protective barrier



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

Protective fencing must:

- Be erected prior to any demolition or construction taking place at distances specified within the Tree Protection Plan
- Prevent unauthorised access to / from Construction Exclusion Zones
- Be installed taking all necessary precautions to avoid **underground utilities or buried obstacles** when installing any support poles, pins or pegs (the supports being installed on the 'protected' CEZ side of the fencing)
- Have appropriate all-weather warning signs clearly affixed e.g., 'CAUTION - PROTECTED TREE – STRICTLY NO ACCESS' (See Appendix 1 for examples)
- Be inspected daily by the appointed Site Manager to ensure that it is effective
- Remain in place until completion of the construction phase (including any hard landscaping works).

Once erected, the area within the barriers – the **Construction Exclusion Zone** (shaded area marked 'CEZ' on the Tree Protection Plan) – must be regarded as sacrosanct and not removed or altered without the prior recommendation of the Project Arboriculturist and approval of the

LPA / Local Authority Tree Officer. *Where daily checks identify that lower specification fencing is either ineffective or moved without authorisation then further it must immediately be upgraded to the default BS5837 Figure 2 specification and the Project Arboriculturist informed.*

Where site huts or temporary storage containers are used as components of the protective fencing or temporary ground protection the following precautions should be observed:

- Use railway sleepers (or similar bulk timber / ground mats) to spread the load
- No excavation within any RPA to install the huts and no trenching to install temporary services e.g., drainage to the site facilities
- Observe all precautions set out in this document regarding discharge of materials, diesel, concrete, etc. and emergency procedures in the event of spillages

4.4.2 Ground Protection and Temporary Access

Where temporary ground protection is required within the CEZ of the retained Silver Birch (T1) then this must be approved by the Project Arboriculturist and designed to cope with the expected load and be capable of preventing soil compaction. Detailed guidance is provided in BS5837:2012 section 6.2.3.3 including for:

- Pedestrian movement (including scaffolding) - a single-thickness scaffold board on top of a compressible layer e.g., 100mm depth of woodchip laid on a geotextile fabric
- Pedestrian-operated plant up to 2t – proprietary ground protection boards on top of a compressible layer e.g., 150mm depth of woodchip laid on a geotextile fabric
- Construction machinery exceeding 2t – proprietary ground protection or pre-cast slabs to an engineer's specification. An assessment of the need for upgrading the existing driveway should be made by an engineer before commencement of works

An example of a typical proprietary ground protection boards (Groundguards) can be seen at https://www.ground-guards.co.uk/wp-content/uploads/2021/06/Ground-tree-root-protection-2021-1.pdf

image 1: Example of proprietary ground protection laid on a compressible layer of woodchip – suitable for • Pedestrian-operated plant up to 2t

Where scaffolding requires additional space to be safely installed or for a wider working width, the tree protection fencing may be moved back as required only if this is accompanied by a corresponding increase in appropriate ground protection. If the supporting feet need to be placed directly onto the ground for reasons of stability, their combined area should not result in a significant incursion into any RPA.

4.5 Development Operations

4.5.1 The nature of the development and restricted space should result in a medium intensity build environment as overseen by the Site Agent / Manager. Details (subject to confirmation) include:

Site Access	Site access via front of property and vehicular crossover from Cranbourne Road to rear garden hardstanding area (TBC)
Build Sequence / Arboricultural Supervision & Monitoring	• Pre-commencement site meeting (Hillingdon Council Tree Officer to be invited) # • Pre-commencement tree and hedge works • Installation of tree protection fencing / temporary ground protection # • Demolition of existing dwelling (subject to demolition method statement) • Excavation of new foundations soakaways & service utility runs / installation of new foundations • Construction operations • Hard landscaping operations including low-invasive surfacing techniques and retaining wall construction # • Soft landscaping operations including new planting **# Indicates Arboricultural Involvement / Supervision / Monitoring Recommended**
Service Installation including drainage	Use of existing service routing where possible with the routing of additional services outside of amended RPAs of any retained trees. NJUG Volume 4 Guidelines to be followed for any excavation / installation near trees. New soakaway(s) located outside of T1 RPA (subject to Building Regs)
Contractors Car Parking	Off street parking or on street parking in accordance with local restrictions
Deliveries / Storage	No materials to be stored / no concrete mixed / re-fuelling within CEZ. Appropriate precautions in place e.g., fully bunded trays / impermeable membranes to prevent contaminants reaching T1 RPA when handling or mixing on any slope
Site Huts / Welfare Facilities	May be located within CEZ in front or rear garden subject to precautions detailed in AMS section 4.4.1

4.5.2 Demolition

Adequate space exists for site clearance operations without impacting on the retained Silver Birch (T1) providing that all tree protection measures are in place before commencement. All plant and vehicles should either operate outside of the RPA or run on appropriate ground protection (see section 4.4.2, above). All plant and vehicle movements to be supervised to avoid causing damage to any part of T1. Adequate water supplies should be in place so that if there is a significant build-up of dust on foliage then the trees can be hosed down. A separate demolition method statement should be provided and additional advice sought from the Project Arboriculturist.

4.5.3 Ground Level Changes

No significant ground level changes within the RPA of T1 are anticipated as part of this development. Any additional changes to ground levels within the CEZ or areas marked as 'Low Invasive Surfacing' / 'Temporary Ground Protection' must be approved in writing by the LPA and subject to advice from the Project Arboriculturist, observing the General Precautions / Prohibited Activities listed in section 4.5.11 (below).

4.5.4 Removal of Existing Hard Surfaces

Any existing hard surfacing within the CEZ should be retained for as long as practicable to provide temporary ground protection (upgraded with additional protection or impermeable layers as appropriate for the operations being undertaken).

When the existing block paving is to be removed / replaced, the following steps must be observed (in accordance with BS5837:2012 section 7.2):

- Relocation of tree protection fencing based on advice of Project Arboriculturist
- Existing surfacing carefully lifted using hand tools
- Extreme care must be taken to avoid damage to roots that may be present beneath the surface:
    - Exposed roots to be immediately wrapped or covered to avoid desiccation
    - Pruning back of roots <25mm diameter where the replacement hard surfacing is to be installed making a clean cut with a suitable sharp tool
    - Clumps of roots and roots >25mm diameter only to be severed after consultation with the Project Arboriculturist
    - Protection of exposed roots e.g. using hessian sheeting to avoid frost damage or desiccation
    - Installation of replacement hard surfacing (section 4.5.7) to be undertaken as soon as possible. Exposed ground to be fenced or temporary ground protection installed prior to completion of new hard surfacing

4.5.5 Foundation Excavation / Installation

The precise foundation design is yet to be determined by the architect / structural engineer and will be influenced by and the results of trial excavations, detailed geotechnical assessment and reference to NHBC Chapter 4.2, 2022.

The soil and roots of T1 must be protected from the effects of wet concrete leachate through the use of impermeable membranes or liners where necessary. A copy of the finalised foundation design should be attached to the AMS when available and the Project Arboriculturist consulted on the need for any additional precautions.

4.5.6 New Drainage / Utility Runs

It is anticipated that connections will be made to the existing service runs or routed outside of the RPA of T1. Should they need to be cited within this area, then they must be subject to LPA approval and installed in accordance with NJUG Volume 4 Guidelines (Issue 2) with a separate method statement detailing the specific methods to be used to allow the retention of significant rooting material including trenchless techniques and broken / continuous hand-dug trenches. Any soakaways must be installed where they will not cause harm to the rooting system of T1 and in accordance with Building Regulations

Root severance, tree de-stabilised.

Significant roots retained.

4.5.7 Installation of Low-Invasive Surfacing

Any replacement hard surfacing within the RPA of T1 should be based upon a permeable, low-invasive solution. In order to minimise the impact on tree root function, the design and construction of new hard surfacing should adequately consider and allow for the following factors (the performance specification):

- Allows gaseous exchange (horizontally and vertically)
- Water permeable while preventing contaminants entering the rooting area
- Allows for future growth of the root system
- Prevents damage to the roots during demolition or construction
- Recognises the fact that the majority of roots are found in the top 600mm of soil
- Incorporates low-invasive edge treatments

New surfacing should be fit-for-purpose with specialist advice obtained from an appropriate expert to meet the above performance specification. The excavation of trial pits at an early stage of the development to determine the extent of root spread may assist with this decision utilising a cellular confinement system as part of the sub-base. Proprietary products such as 'Cellweb' are available that can help deliver the performance specification e.g., www.geosyn.co.uk or telephone 0870 850 1018 (Geosynthetics Ltd).

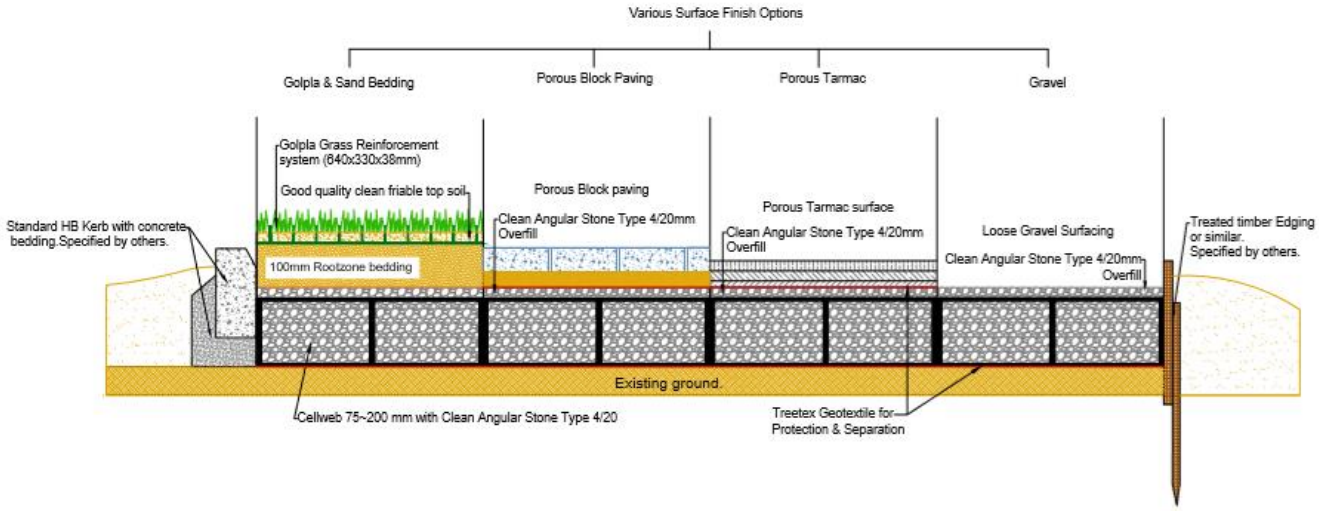


Diagram 1: Composite of low-invasive surfacing with alternative surface treatments and no-dig edging for replacement surfacing of the front driveway near to T1 (see draft Tree Protection Plan)

Suggested Method: (further information available in BS5837:2012 section 7.4 and AA GN14)

- Pre-commencement meeting with Project Arboriculturist to agree process and to clearly identify areas where additional precautions are required
- Existing hard surfacing to be carefully removed using hand-held tools or appropriate machinery working backwards over the area so that the machinery is not working on the exposed ground
- Any roots encountered should be treated in accordance with BS5837:2012 section 7.2. In particular roots >25mm in diameter should only be severed following consultation with the Project Arboriculturist.
- Small roots <25mm diameter directly below the existing surface (including callused roots and those causing localised lifting / distortion) may be cleanly cut with secateurs. Any exposed roots should be immediately wrapped or covered to avoid desiccation
- Fill any hollows using quality topsoil or sharp sand (Builder's sand not to be used due to high salt content)
- Install the geotextile fabric layer
- Lay the cellular confinement system over the geotextile fabric layer
- Fill the cellular confinement system using a no-fines angular material, working from the area already filled to minimise the risk of soil compaction
- Install finished permeable surface (may be delayed until completion of construction works if the sub-base is appropriately overcharged with no-fines angular material) according to architect's / engineer's specification

4.5.8 Hard Landscaping within T1 RPA

- Any new post holes, edging or hard landscape foundations within the RPA of T1 tree must be carefully excavated using hand tools and should be positioned to avoid any damage to roots. Any roots encountered <25mm in diameter should be cleanly severed and treated in accordance with BS5837:2012 section 7.2. Roots >25mm should only be severed following arboricultural advice
- Excavation of the upper 600mm of soil along the line of the proposed retaining walls to the south of T1 (*outside* of the RPA) to be undertaken by hand so that any roots can be treated appropriately
- Any in-situ poured concrete (e.g., new retaining walls / steps / post holes) in close proximity to any retained trees must be separated from the existing soil by heavy duty impermeable membrane to prevent the potentially damaging effects on the rooting area
- Landscaping operations should be carried out in accordance with BS4428:1989

4.5.9 **<u>Soft Landscaping</u>** (Including tree and shrub planting)

1) Site Preparation:

- All ground preparation and planting operations adjacent to T1 to be undertaken using hand tools only. No chemicals of any description are to be used
- Any changes in soil level +/- 300mm to be made using imported soil meeting BS3882:2007 'Multipurpose' classification standards
- Shrub planting areas are to be graded to be approximately 50mm below any adjacent surfaces prior to planting and mulching. Remaining landscape areas to be graded flush with existing/finished levels
- Landscaping operations should be carried out in accordance with the following British Standards:
    - BS4428:1989 'Code of practice for general landscape operations'
    - BS8545:2014 'Trees: from nursery to independence in the landscape – Recommendations'
    - BS5837:2012, 'Trees in relation to design, demolition and construction – Recommendations'
    - BS3996 'Nursery Stock' (all parts) and BS7370-4 'Recommendations for maintenance of soft landscape (other than turf)'
    - Reference to NHBC Chapter 4.2 Tables 4-6 for planting distances in relation to new foundation depths

2) Shrub Planting:

- All planting to be handled, stored, transported and planting in accordance with BS8545:2014 Trees: from nursery to independence in the landscape Recommendations
- All planting to be watered thoroughly (field capacity) prior to planting.
- Topsoil to all shrub planting areas to be improved with 50mm depth composted green waste to BSI PAS 100
- Planting holes / trenches to be cultivated to a minimum of 300mm depth incorporating composted soil improver (detailed above) and slow-release fertilizer to manufacturer's recommended rates

3) Tree Planting

- At time of planting compost and slow-release fertilizer to be incorporated into backfill material at manufacturer's recommended rates
- Trees to be double staked with crossbar using 75mm diameter x 1.65m tree stakes. Stakes to extend no more than 900mm above ground level. Tree to be tied to stakes using 75mm rubber tie and spacer block

Example Tree Planting Schedule (suggested species / numbers TBC in Landscaping Scheme)						
Reference to be made to BS3936: Part 1: 1992 - Nursery Stock. Specification for Trees and Shrubs.						
Name (common and botanical)	Height (min.)	Root (container ©, root ball (RB) bare root (BR)	Container Size (Lt)	Spacing per sq. m	Centres	Quantity
Field Maple *(Acer campestre)*	8-10 Standard	C	-	Specimen tree	-	1
Turkish Hazel *(Corylus colurna)*	8-10 Standard	C	-	Specimen tree	-	1
Himalayan Birch *(Betula jacquemontii*	8-10 Standard	C	-	Specimen tree	-	1-3 (e.g. group planting)
Hornbeam *(Carpinus betulus*)	8-10 Standard	C	-	Specimen tree	-	1

4) Mulch, Weed Control and Watering

- All planting areas (shrub and hedge) to be mulched with medium grade bark mulch laid to depth of 75mm
- Areas of new planting to be hand weeded
- Shrubs to be watered as appropriate to ensure that the soil remains moist during the growing season (March-November)

4.5.10 <u>Aftercare</u>

Adequate soil moisture levels should be maintained around all new tree planting. Regular watering should be undertaken to ensure that the soil remains moist particularly during periods of hot weather and / or low rainfall (e.g. the application of 20L to 30L every 2 weeks during the Spring and Summer) and mulch reapplied as required. Trees should be inspected upon completion of the development and any post development works specified to BS3998:2010. Additional watering of the established trees is not considered necessary although water should be available to flush through any contamination.

4.5.11 Prohibited Activities / General Precautions

- All construction access via the approved access (Cranbourne Road)
- Tree protection fencing to be secured to prevent unauthorised access or movement
- No storage of materials (including excavated material) or mixing of concrete / mortar within the CEZ
- Any materials whose discharge may cause damage to a tree (concrete mixings, diesel, vehicle washings, etc.) must be handled well away from the outer edge of the T1 RPA
- Consideration must be given to any slopes that may affect any run-off towards trees
- No fires to be lit on site
- Banksman to oversee movements of high-sided vehicles, grab lorries, unloading, etc. in proximity to any trees on or adjacent to the site

4.5.12 Responsibilities

- Unless otherwise agreed in writing, it will be the responsibility of the Client or their appointed Site Agent / Manager to ensure that the content of this AMS is adhered to
- the Client or their appointed Site Agent / Manager to arrange the pre-commencement site meeting (section 4.2.5, above)
- The main contractor and any sub-contractors are to be briefed on the relevant sections of this prior to commencing any works particularly with regards to the Prohibited Activities. Copies of general information regarding the prevention of damage to trees are included in Appendix 4 to assist with the site induction
- The Client or their appointed Site Agent / Manager are responsible for contacting the LPA / arboriculturist at any time issues relating to the trees on site are raised or when specialist arboricultural advice is needed

4.5.13 Supervision & Emergency Procedures

- Day-to-day supervision will be the responsibility of the appointed Site Agent / Manager including checks on tree protection fencing
- Supervision and monitoring by the Project Arboriculturist at key stages of the development (as indicated at section 4.5.1, above) to be coordinated by the Client or their appointed Site Agent / Manager. An example of the Site Supervision / Site Visit Record template is included at Appendix 2
- Water to be readily available on site and to be used to flush spilt materials through the soil to minimise tree root contamination. Spill kits to be available at all times
- The Project Arboriculturist to be contacted for advice immediately following any unauthorised incursion / spillages within the RPA
- Copy of the approved Arboricultural Method Statement to be available on site at all times

Appendix 1 – Sample Tree Protection Notices

CAUTION

PROTECTED TREES

NO ACCESS TO CONSTRUCTION SITE FROM THIS POINT OR STORAGE / MIXING OF MATERIALS IN THIS AREA.

Tree Protective barriers are essential to protect tree roots from soil compaction, contamination, poisoning, etc.

Tree Protective Barriers MUST NOT BE REMOVED or REPOSITIONED unless permitted to do so by the Local Planning Authority (LPA).

The barriers MUST remain in place until completion of the development or such earlier time as agreed by the LPA.

PROSECUTION may result from a failure to adhere to these instructions.

The Tree Officer (Hillingdon Council) can be contacted on 01895 250230.

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA

KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Appendix 2 – Site Supervision / Site Visit Record

Arboricultural Consultant's Development Site Monitoring Form

Arboricultural Consultant's Details: Company name/address Consultant's name tel: fax: mob:	
Development site address:	Local Planning Authority (LPA):
LPA Case Officer:	LPA Tree Officer:
Developer's details: Company name/address Developer's name tel: fax: mob:	

Stage of development (√):

Pre-development works		**Development works**		**Post-development works**	
Tree works	☐	Demolition	☐	Rectifying tree damage/pruning	☐
Protective fencing/tape	☐	Grading/muck away	☐	Hard landscaping/walls/drives	☐
Fencing signage	☐	Placing portacabin	☐	Removal of protective fencing etc	☐
Ground protection	☐	Excavations/services	☐	Soft landscaping	☐
Temporary haul road	☐	Construction works	☐	Special surfacing ☐ Tree planting	☐

Findings:	
Action taken:	
Further action required/recommendations:	
Comments:	
Date of site visit:	Date of next site visit:

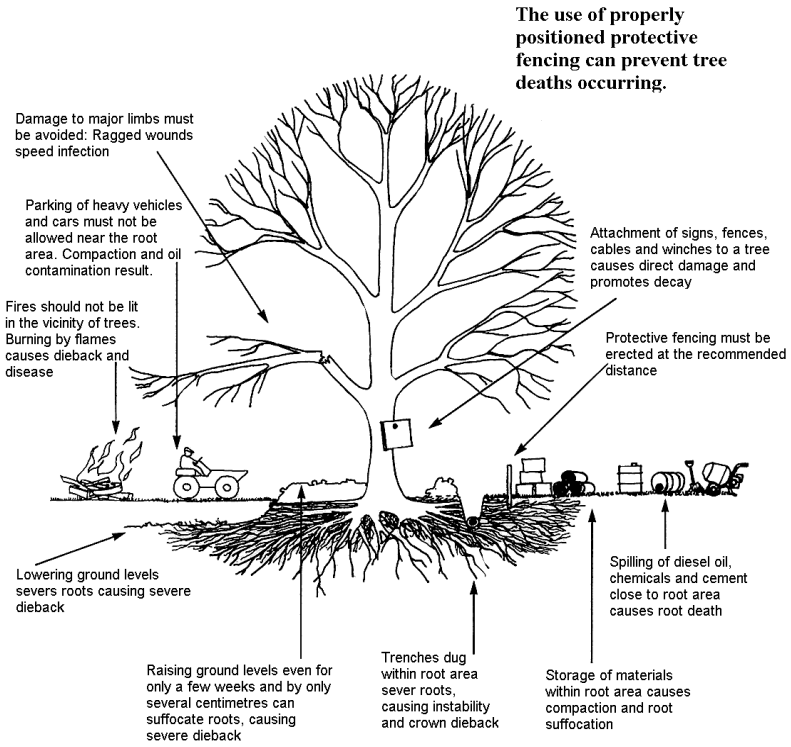
Date sent to Local Planning Authority Case Officer _____

Appendix 3 – Reference Material

- Arboricultural Association Guidance Note 14 ‘ The use of Cellular Confinement Systems Near Trees’ 2020
- British Standard 3936:1989 onwards ‘Nursery Stock’ (all parts)
- British Standard 3998:2010 ‘Recommendations for Tree Work’
- British Standard 4428:1989 ‘Code of Practice for General Landscape Operations (excluding hard surfaces)’
- British Standard 5837:2012 ‘Trees in relation to design, demolition and construction - Recommendations’
- British Standard 8545:2014 ‘Trees from nursery to independence in the landscape - Recommendations’
- DCLG Planning Practice Guidance –Tree Preservation Orders and trees in conservation areas
- NHBC Chapter 4.2 ‘Building Near Trees’ 2022
- National Joint Utilities Group NJUG Volume 4 ‘Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2)’ 2007
- Countryside and Rights of Way Act 2000
- Conservation of Habitats and Species Regulations 2017
- Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1999
- The Town & Country Planning Act 1990, The Town and Country Planning (Trees)(England) Regulations 2012, The Planning (Listed Buildings & Conservation Areas) Act 1990
- Wildlife and Countryside Act 1981
- Construction (Design & Management) Regulations 2015

Appendix 4 – Key Messages for Site Induction (courtesy of Chris Skellern)

Common causes of Tree Death



Please use copies of this as an on-site poster for personnel

Construction and Trees

Why Is Fencing Erected Around Trees?

1. The major cause of damage to trees on construction sites is due to **soil compaction**.
2. Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
3. Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.
4. A compacted soil structure will stay compacted.
5. Consequently the tree suffers and will show signs of branch die-back.
6. Symptoms such as die-back may take several years to appear.
7. Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
8. The exclusion zone distance is calculated using British Standard 5837.
9. Protective Fencing is installed at the calculated distance.
10. Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

BS5837: 2012 - TREE SURVEY SCHEDULE - 32 Norwich Road, Northwood, HA6 1NB

Client: Mr Ahmad Ismat c/o Amasia Architects Ltd
Site: 32 Norwich Road, Northwood, Middlesex, HA6 1NB
Arboricultural Consultant / Surveyor: J Hedges Dip.Arb.(RFS)
Tagged: No
Weather: Bright, still
TPO/CA Status: *TPO794 Hillingdon Council*
Date of Survey: 29/10/2022

Tree #	Species	Height (m)	Stem @ 1.5m Diameter (mm)	Branch spread (m) N	E	S	W	Life Stage	Physiological Condition	Structural Condition / Comments	Preliminary Management Recommendations	Estimated Remaining Yrs	Category UABC	RPA Radius (m)
T1	**Betula pendula (Silver Birch)**	12.5	300	4.0	3.5	3.5	3.5	EM	Good	No significant defects visible. Will cause future maintenance issues. Evidence of recent trenching or resurfacing. Trunk sounding did not indicate any significant defects. Minor trunk wounds. Low branches over road/footpath. Branches restricting highway light. Previously canopy raised. Previously crown reduced.	Crown lift to 3m. Prune tree clear of road light.	20+	B	3.6
H2	**Escallonia**	2	multistemmed	0.5	0.5	0.5	0.5	SM	Good	Hedge. No significant defects visible.	Maintain as hedge.	10+	C	-
H3	**X Cupressocyparis leylandii (Leyland Cypress)**	2	2 x 90	0.5	0.5	0.5	0.5	SM	Good	No significant defects visible. Shaped hedge.	Remove tree and grind stump. Maintain as hedge.	10+	C	1.87

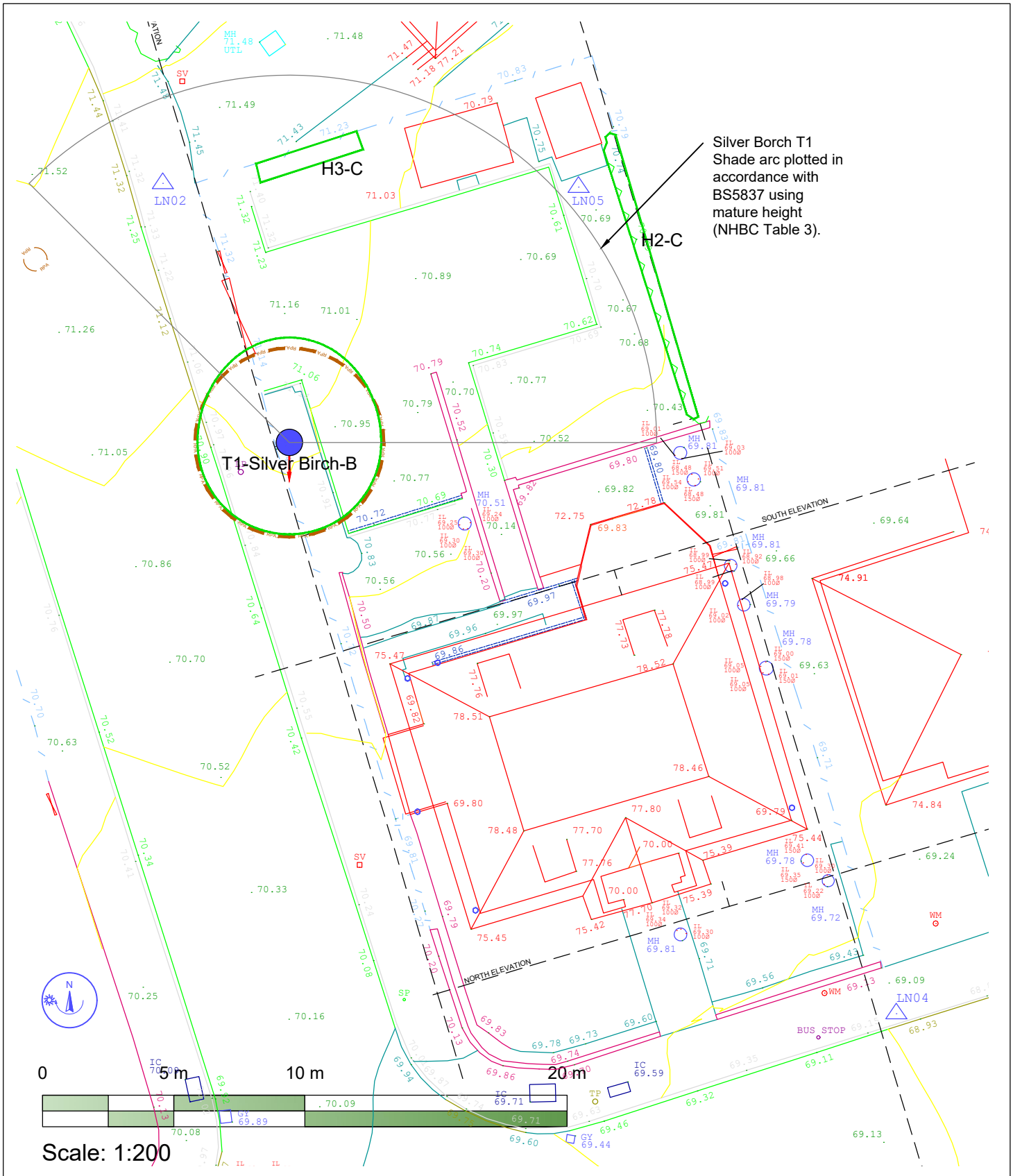
***** END OF SURVEY *****

Key to Survey

T1, T2, etc.	Individual tree survey ID number (not TPO reference numbers). **G** for Group, **H** for Hedge.
NESW	Radial branch spread recorded against the 4 compass points (where relevant)
Life Stage	Y = Young, recently planted / established SM = Semi Mature e.g. <1/3 life expectancy EM = Early Mature e.g. 1/3 – 2/3 life expectancy M = Mature e.g. 2/3 – full life expectancy OM = Over Mature
Physiological Condition	based upon the performance of the biological processes of the tree and its overall 'health'
Structural Condition	based upon the presence of any identified structural defects in specific parts of the tree or in its arrangement as a whole
Category	Based upon Table 1, BS5837, 2012
U	Trees is such a condition that they cannot realistically be retained as living specimens in the context of the current land use for longer than 10 years
A	Trees of high quality with an estimated remaining life expectancy of at least 40 years
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
C	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm

Other Comments:

- ***Est.*** = estimated measurement
- ***Av.*** = average measurement
- ***Occluded wound*** = where a wound has been progressively closed by the formation of new wood and bark around it
- ***Non-occluded wound*** = where a wound has not closed (or is in the process of being closed) by the formation of new wood and bark
- ***Basal*** = in or around the base of the trunk
- ***Epicormic*** = growth arising from adventitious or dormant buds. In the case of European Lime trees this frequently occurs around the base of the tree
- ***Deadwood*** = Minor (<25mm), Moderate (25mm-150mm) and Major (>150mm)



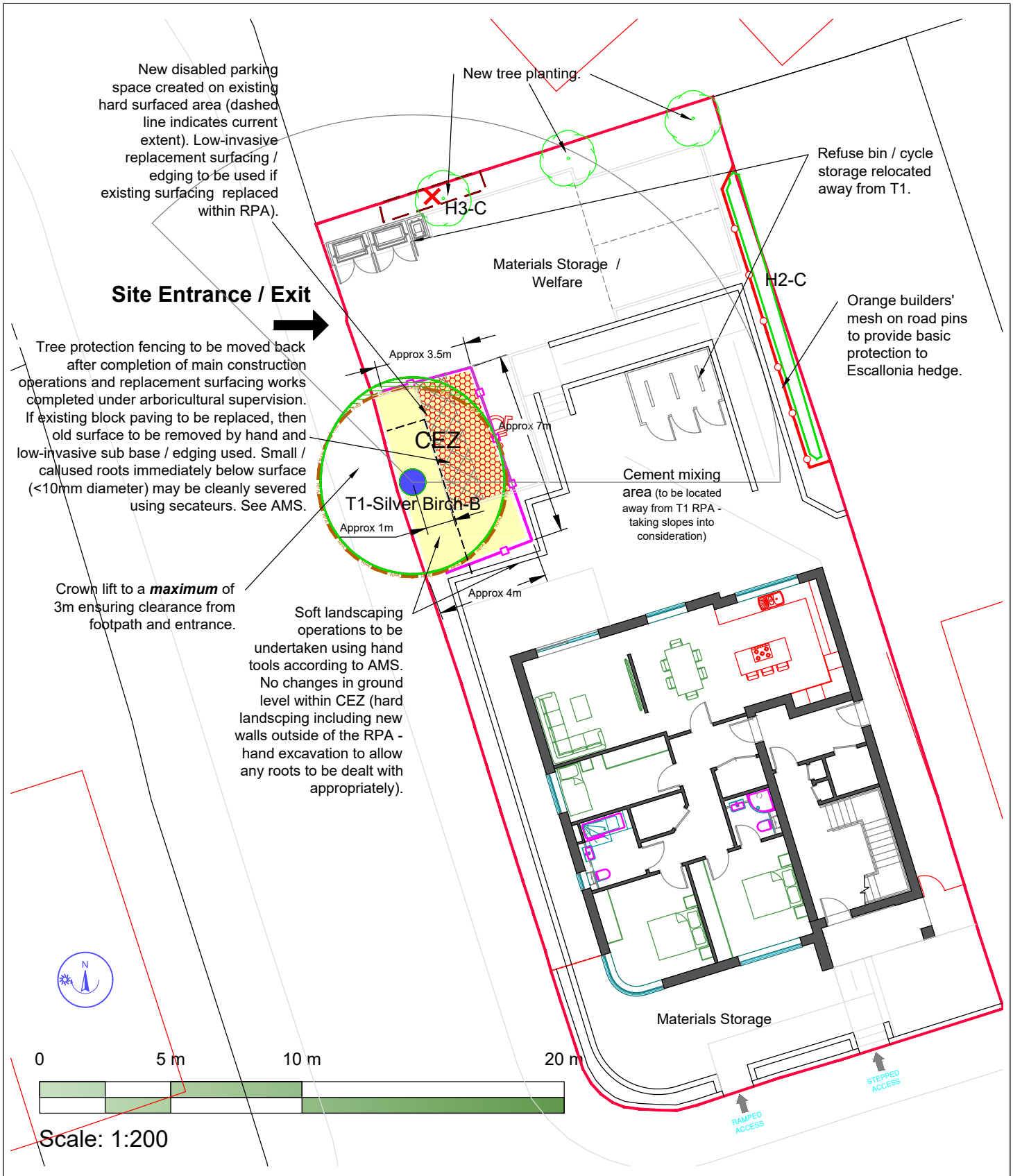
Hedges Tree Consultants Ltd

23 Elmlee Close, Chislehurst, Kent, BR7 5DU
T 020 8467 8029 M 07976 627575
E james_hedges_ctc@hotmail.com

Notes:
1) To be reproduced in colour only
2) Do not scale from this plan - refer to Architect's drawings for all measurements
3) Refer to Arboricultural Method Statement for additional details

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY C TREE
- CATEGORY U TREE
- ROOT PROTECTION AREA (RPA)
- CROWN SPREAD
- SHADE AREA (BS5837)
- TREE TO BE REMOVED
- BS5837 Fig 3 PROTECTIVE FENCING
- TEMPORARY GROUND PROTECTION
- LOW INVASIVE SURFACING
- ACCESS FACILITATION PRUNING
- CEZ — CONSTRUCTION EXCLUSION ZONE

Client:	Mr Ahmad Ismat c/o Amasia Architects Ltd
Project:	32 Norwich Rd, Northwood, Middlesex, HA6 1NB
Title:	TREE SURVEY & CONSTRAINTS PLAN
Date: 7/11/22	Scale: 1:200 — Original Paper Size: A4
Drawn: JWH	Checked: - — Job Ref: AA/32NR/AIA/22
Drawing Number:	TSCP — Rev: A



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T 020 8467 8029 M 07976 627575
E james_hedges_ctc@hotmail.com

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3) Refer to Arboricultural Method Statement for additional details. **T1 protected by TPO794.**

- CATEGORY A TREE
- CATEGORY B TREE
- CATEGORY C TREE
- CATEGORY U TREE
- ROOT PROTECTION AREA (RPA)
- CROWN SPREAD
- SHADE AREA (BS5837)
- TREE TO BE REMOVED
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- TEMPORARY GROUND PROTECTION
- LOW INVASIVE SURFACING
- ACCESS FACILITATION PRUNING
- CEZ CONSTRUCTION EXCLUSION ZONE

Client:	Mr Ahmad Ismat c/o Amasia Architects Ltd
Project:	32 Norwich Rd, Northwood, Middlesex, HA6 1NB
Title:	draft TREE PROTECTION PLAN (based on design layout 7-11-22)
Date: 25/11/22	Scale: 1:200 Original Paper Size: A4
Drawn: JWH	Checked: - Job Ref: AA/32NR/AIA/22
Drawing Number: dTPP	Rev: B