

Tree Survey, Arboricultural Impact Assessment & Arboricultural Method Statement



Site:
43 Cholmeley Crescent
London
N6 5EX

In relation to proposed construction of new rear garden outbuilding / studio and associated landscaping

London Borough of Haringey

Prepared for: Tom Gillespie & Minyan Sun
c/o CAN Ltd

Prepared by:

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Hedges Tree Consultants Ltd

21st June 2023 CAN/43CC/23 v1.1 (planning submission with draft AMS / TPP)

Contents

Section	Page
1) Terms of Reference	3
2) Scope of Report & Limitations	4
3) Arboricultural Impact Assessment	6
<i>Conclusions</i>	16
4) Draft Arboricultural Method Statement	17
 Appendix 1: Sample Tree Protection Notices	 34
Appendix 2: Site Supervision / Site Visit Record	36
Appendix 3: Reference Material	37
Appendix 4: Key Messages for Site Induction	38
 Tree Survey: Tree Survey Schedule	 39
Key to Survey	42
 Drawings: Tree Survey & Constraints Plan	 43
Draft Tree Protection Plan	44

1) Terms of Reference

- 1.1** Initial instructions were received from Mat Barnes of CAN Ltd by email dated 27th March 2023 on behalf of Thomas Gillespie & Minyan Sun (clients). The tree survey contained within this report was undertaken on 20th April 2023 with clients present.
- 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 studio / hard landscaping design on the adjacent trees and identify issues to be addressed in a draft Arboricultural Method Statement (AMS) and illustrated on a draft Tree Protection Plan (TPP) including reference to the Conservation Area / TPO status affecting trees within and adjacent to the site boundary.
- 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 assignment.
- 1.4** A site survey and proposed site drawings (2247–Proposal Drawings–070623) have been provided by CAN in .DWG format to be used to produce the Tree Survey & Constraints Plan and draft Tree Protection Plan. Tree locations have been plotted by visual reference to site features.
- 1.5** Qualifications held by me include:
- Royal Forestry Society Professional Diploma in Arboriculture
 - Arboricultural Association Technicians Certificate
 - Lantra Professional Tree inspection qualification

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:



James Hedges, Chartered Arboriculturist.

21st June 2023.

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 each tree was carried out from ground level within the boundary of No.43 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 43 Cholmeley Crescent 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 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. No reliance shall be placed on any comment(s) made in respect of the structural integrity of any main structure or drainage system located on the premises to which this survey and report relates.
- 2.6** This survey specifically excludes an assessment of the presence or absence of any invasive species (including Giant Hogweed, Japanese Knotweed and Himalayan Balsam). If required, specific advice on this matter should be obtained from a specialist in invasive weed surveying and management.

- 2.7** The Local Planning Authority (Haringey 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 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 use by, the clients named within the report, CAN Ltd 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) Preliminary Arboricultural Assessment

3.1 General Description of the Site and Surroundings

The proposed location of the new outbuilding / studio is the raised area in the north west corner of the garden, separated from the main lawn by a timber retaining wall approximately 1m in height. The location is generally level and currently includes a garden shed constructed on a concrete base with a shallow retaining wall, separating it from an accumulation of garden waste on the upper level extending into the far corner of the garden.

The date of construction of the approximately 1m timber retaining wall is unknown although it has been constructed substantially within the circular Root Protection Area (RPA) of Sycamore T1 – one of the most significant trees adjacent to the proposed development area along with Ash T2 and Leyland Cypress T3 / T4 (located in the rear garden of 12 Kingsley Place and subject to a Tree Preservation Order. Although there are no significant trees in the rear garden of No.43 (the limited number of small trees and mature shrubs do not contribute to public visual amenity) the wider area is characterised by a range of broadleaved and coniferous species of varying ages.



Photos 1 & 2: Existing retaining timber wall with shed beyond, surrounded by shrubs (new terracing to be undertaken on lawn side, avoiding excavation into rooting area of retained trees). Second photo taken from raised area with accumulated garden material showing low brick wall retaining the soil (red arrow).

3.2 Description of the Proposed Development

It is proposed to remove the existing shed and construct a new outbuilding / studio with new access steps, a small courtyard to the rear and the creation of a new landscaped terrace within the bounds of the existing lawn retaining wall.

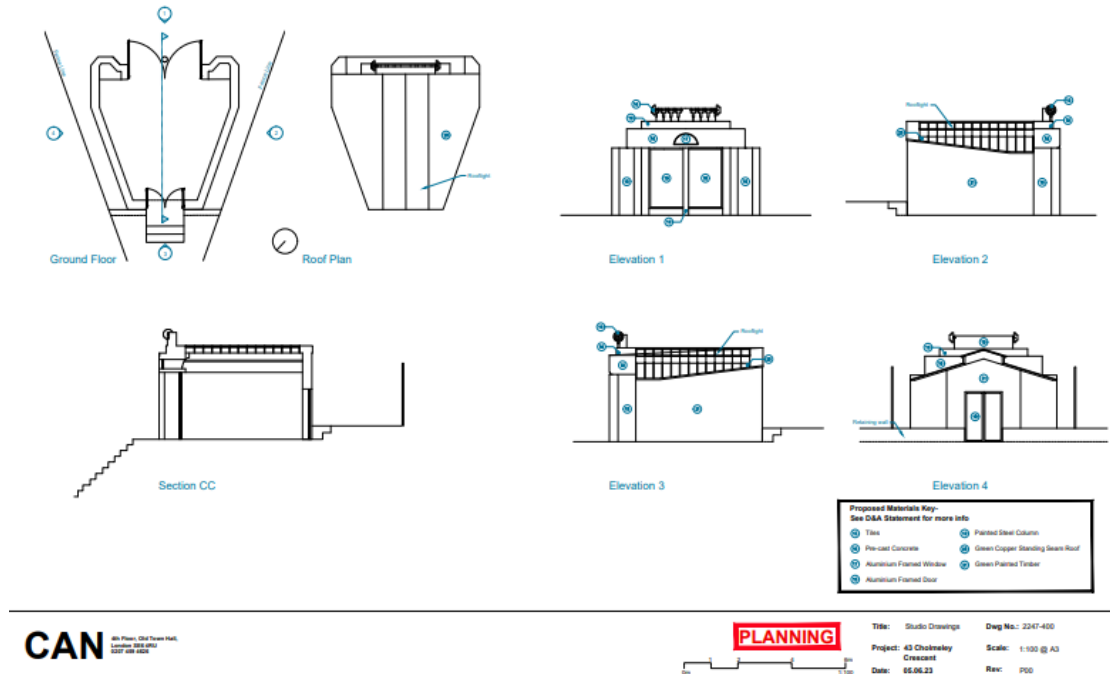


Image 1: CAN Studio Drawings

3.3 Legal Constraints

Preliminary enquiries made via the Haringey Council website www.haringey.gov.uk/planning-and-building-control accessed 18/4/23) indicated that No.43 and the adjacent properties are located within the **Highgate Conservation Area**. In addition, the area to the immediate west is subject to a Tree Preservation Order (TPO 4-12 Kingsley Place) and includes trees T1 to T4 adjacent to the proposed development area. No works to any protected trees (including their root systems) shall be carried out without the consent in writing of the Local Planning Authority and, if necessary, the owner(s) of the tree. No additional constraint checks have been undertaken as part of this report.

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

3.4.1 Direct Loss of Trees

Based on the proposed CAN drawings (2247–Proposal Drawings–070623) the removal of the following rear-garden trees / large shrubs is recommended in order to facilitate the development:

Tree Reference	Species	BS5837 Retention Category	Comments
T5	Holly	U	Poor quality small tree (crown dieback / low vitality in constrained space with negligible public visual amenity value).
T6	Cherry Laurel	C	Large multi-stemmed shrub (minimal public visual amenity value).
T7	Bay	C	Small, multi-stemmed form (negligible public visual amenity value).
T11	Amelanchier	C	Small multi-stemmed tree (minimal public visual amenity value).

Holly T5, multi-stemmed Cherry Laurel T6 & Bay T7 and Amelanchier T11 have been assessed as 'U' and 'C' Category respectively (BS5837: 2012) being of low quality and value. Due to their size, form and location they have minimal amenity value and do not make any significant contribution to wider public visual amenity and in my professional opinion would not justify the making of a Tree Preservation Order.



Photo 3: View from front – Ash T10 and Sycamore T1 visible to rear (smaller trees obscured by property with minimal visual amenity value).

3.4.2 Retained Trees

In order to maintain an appropriate level of clearance between the proposed outbuilding building and retained trees and to reduce potential conflicts in terms of the shedding of leaf and other debris, periodic pruning (largely canopy raising) of neighbouring trees T2-T4 will be required ¹. The level of works (canopy raising to a maximum of 4m where the branches of T2-T4 overhang the boundary of the property as detailed within the draft AMS) is unlikely to exceed the recommendations contained within British Standard BS3998:2010 'Recommendations for Tree Work' and should have no impact on wider public visual amenity although it will require the appropriate approval from the LPA before being carried out.

¹ *By amending the initial design layout (moving the structure forwards, towards the garden) the extent of the domination of the retained trees has been reduced.*

Given the overall condition of Sycamore T1 and the history of branch removal, it is recommended that the owner undertakes appropriate inspection to address any risk associated with falling branches while Ash T2 should be periodically assessed for any signs of Ash Dieback Disease and the potential implications for the species (Forestry Commission information: https://cdn.forestresearch.gov.uk/2022/02/7894_new_fc_chalara_leaflet_dft9.pdf#:~:text=Ash%20dieback%20is%20a%20fungal%20disease%20affecting%20the,been%20observed%20damaging%20ash%20trees%20since%20the%201990s).

Retained trees can be protected from soil compaction and impact damage where necessary by protective barriers and / or ground protection and detailed in an Arboricultural Method Statement and Tree Protection Plan - a likely condition attached to any grant of planning consent. Protective barriers must be fit for purpose, complying with BS5837: 2012 unless otherwise agreed with the Local Planning Authority (LPA). Such alternatives may include the use of temporary buildings or existing hard surfaces as part of tree protection or alternative fencing specification for areas of lower risk e.g. areas or where existing site features provide effective protection.

3.5 Above and Below Ground Constraints

3.5.1 The British Geological Survey mapping (Geology of Britain Viewer) indicates the underlying bedrock geology to be Claygate Member (Clay, silt and sand). Although soils formed from Claygate Member can include shrinkable clays, because of the approximate nature of geological mapping and the location of Bagshot Formation (sand) to the immediate west it is recommended that the engineer's finalised foundation design (and the need for any anti-heave precautions) is informed by further investigation and reference to the current edition of NHBC Chapter 4.2 'Building Near Trees' particularly as there are potentially 'Moderate' (Sycamore, Ash) and 'High' (Leyland Cypress) Water Demand trees within the zone of influence.

While soils derived from the Claygate Member are often less prone than heavy clay soils to compaction and / or waterlogging which may adversely affect the distribution and functioning of tree and shrub roots, care should still be taken to ensure that construction activity does not result in damage occurring within the RPA's of any retained trees. The design of new planting and landscape proposals should be based upon a soil analysis which considers the pH and any nutrient deficiencies or imbalances.

3.5.2 Standard circular, unobstructed Root Protection Areas (RPA's) have been plotted to provide a general indication of the potential constraint of trees within and immediately adjacent to the site. Although the existing shed is based on a concrete slab (presumed thickness of approximately 150mm subject to further investigation) it is reasonable to assume that rooting material will be located immediately beneath. This includes fine rooting material which is particularly important for the uptake of water and nutrients and which should be preserved as part of the finalised design in order to promote long term tree health.



Photos 4 & 5: Accumulation of material to rear of shed and proximity to Ash tree T2. Cast concrete slab shed base (no excavation into underlying soil).

3.5.3 The historical ground level changes and installation of the timber retaining wall are likely to have constrained the development of roots to the east (lawn area). For this reason, the design of the terracing has been amended so that it will now be within the bounds of the existing lawn retaining wall and avoid the need for disturbing the rooting area (especially that of Sycamore T1) to the immediate west.

3.5.4 The proposed footprint of the new garden studio does not exceed 20% of the RPA of any individual retained tree and could potentially incorporate a ground-bearing slab foundation (*minor structure* - BS5837 section 7.5.3). Alternative foundation designs for larger structures including pile and raft, if assessed as suitable by the structural engineer given the anticipated loading, should avoid any significant excavation into the underlying soil with the amended location aligning the rear with the existing shed base and retaining wall. The cumulative effect of the RPA incursions on the physiological condition of trees T1-T4 is likely to be reduced by the following factors:

- The impact of site features (timber retaining wall, existing shed base and retaining wall) on restricting root growth proximal to the development
- The history of previous heavy crown reduction pruning and *actual* crown dimensions / reduced crown volume of Sycamore T1 and Ash T2 relative to stem diameter measurements
- That the terracing on the lower lawn area will require graduated changes in ground level where root development is likely to have been restricted
- That the loss of any roots can be readily compensated for by the contiguous rooting area particularly to the west and south (BS5837: 2012 section 5.3a) where they can reasonably be expected to have developed considering the site topography
- Relative tolerance of Sycamore, Ash and Cypress species to construction / root disturbance ('Moderate' / 'Good' – Matheney & Clark, 1998)

3.5.5 The finalised design of the proposed studio foundation slab must make allowance for the presence of the roots of trees T1-T4 and ensuring that conditions are favourable for their survival including access to moisture and gaseous exchange. Design and construction features that should be considered include:

- Careful removal of the existing structures by hand, retaining any underlying roots and reinstating / promoting improved rooting conditions where possible
- No excavation into the underlying soil. Retention and appropriate treatment of any exposed roots >25mm diameter and pruning of roots <25mm diameter based on the advice of the Project Arboriculturist
- Establishing the underside of any new concrete slab no lower than that of the existing concrete sub base (finished floor levels and the overall height of the building need to be considered along with the ability of the foundation to withstand future root growth and the forces exerted when the trees are exposed to high winds)
- Separating the underlying soil from the concrete via the use of an impermeable membrane (to protect the soil from the potentially toxic effects of wet concrete)

- Incorporating (subject to the structural engineer's approval) some form of ventilation e.g. pile foundations to raise the structure above the underlying soil or perforated pipe beneath the concrete slab to improve air circulation to the roots
- Supervised removal of the loose organic material for the proposed rear courtyard tree to identify whether significant rooting material is present (to inform design for rear terrace and access steps)
- Using low-invasive techniques for any new hard surfacing within any retained tree RPA
- If screw or micro piles are utilised, the design must be capable of allowing them to be moved where the initial hand excavation identifies significant rooting material (typically roots >25mm diameter)

3.5.6 Given the proximity of trees T2-T4 and the accumulation of loose organic material beyond the low retaining wall, it is likely that rooting material is to be found in the area of the proposed rear courtyard at a level above that of the adjacent shed base. Subject to further investigation, it will be necessary for any rear courtyard to be constructed at an elevated level (i.e. stepping up from the studio) using low-invasive construction techniques and permeable surfacing to avoid damage to the underlying rooting area. It is also likely that some degree of localised distortion of the courtyard surface may be caused by the adjacent trees (either root growth or root plate movement). The design should therefore incorporate a flexible surface that can be easily repaired as necessary and be set back by a minimum of 500mm from the stem of any tree (BS5837 section 7.4.2.7).

² *The proposed courtyard does not exceed 20% of any existing unsurfaced ground of any retained tree RPA in accordance with the recommendations of BS5837 section 7.4.2.3.*

3.5.7 Locating the proposed building to ensure a *minimum* distance of 1.2m from the trunk of Ash T2 would correspond with the recommendations of BS5837: 2012, Table A.1 to reduce the risk of direct damage from future tree growth (although this guidance specifically relates to young or new tree planting). Final design details for the proposed construction of the studio, rear terrace and terracing as part of the hard landscaping should be attached to this report and further advice on the need for additional measures obtained from the Project Arboriculturist.

Overall, the construction of studio should not result in significant root damage, loss of rooting area or reduction in the physiological condition of the retained trees. As a result, the impact on the retained trees is considered to be at an acceptable level providing that appropriate foundation design, mitigation and tree protection measures are implemented – matters which may reasonably addressed by planning conditions attached to any grant of consent.

- 3.5.8** Where possible (subject to any applicable Building Regulations) any utility connections should be made to existing underground services without routing through any retained tree RPA and any additional services required by the development must be located to avoid conflict between retained trees and / or new planting. In practical terms this includes the routing of new power and water feeds to the studio inside the existing retaining walls and under the new terracing in order to avoid the need for significant excavation. Any new installation or upgrading of underground utilities must be in accordance with advice from the LPA and follow the guidance within NJUG Volume 4 using techniques that avoid continuous trenching. Any water butts are to be installed above surface level avoiding the need for any excavated soakaways close to the retained trees.
- 3.5.9** The future growth and maintenance requirements of the retained trees can be reasonably managed (see section 3.4.2, above) through occasional crown lifting and light lateral pruning and should not result in concerns over dominance or 'post-development tree resentment' given the anticipated pattern of use as a garden studio. The design of the studio roof and roof lights should incorporate high-performance materials with a general ability to resist issues associated with lightweight tree debris. Issues arising from leaf and seed fall can reasonably be expected to be dealt with through periodic cleaning and maintenance or the use of proprietary gutter guard products.
- 3.5.10** 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

Other than the removal of existing garden shed, slab and retaining timber wall using hand tools, no significant demolition operations are involved in the proposed development. Removal of these structures must be carefully planned and carried out under supervision where close to trees. Sufficient space exists for site preparation and excavation works without affecting the retained trees providing that basic precautions are observed including the prior installation of protective fencing / ground protection where necessary and direct supervision of any vehicle / plant movements by an appointed traffic marshal.

3.6.2 Special Engineering Methods

Final details of the studio foundation design have not yet been provided although it is anticipated that it will incorporate an engineer-specified pile and raft slab foundation to support the main structure above the existing ground level. Specific installation details should be provided in a Construction Engineer's Method Statement and supported by the approved Arboricultural Method Statement; Pile locations should be indicated on a general arrangement plan with an allowance to move them by up to 500mm should significant roots >25mm diameter be identified during the initial hand excavation. The use of this system should allow the retention of both structural and fine feeder roots associated with trees T1-T4 as well as facilitating gaseous exchange and maintaining moisture levels, allowing the successful retention of both trees.

3.6.3 Ground Level Changes

The proposed terracing of the garden should have taken into consideration the pre-existing timber wall and ground level changes in relation to Sycamore T1. Terracing works close to the other retained trees can reasonably be undertaken providing that appropriate tree protection measures including arboricultural supervision at key stages are adhered to. 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 within the RPA of Retained Trees

Providing that appropriate permeable, 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 hard surfacing in the rear courtyard should have no significant impact on the retained trees. If necessary, then flexible surfacing such as gravel or decorative bark may be applied. Any additional changes to hard surfacing in the rear garden within any retained tree RPA as part of the landscaping scheme should be based upon further advice from the Project Arboriculturist.

3.6.5 Planning of Construction Operations

The proposed design layout makes allowance for the following:

- Amendments to the garden studio and terracing location to reflect existing site features
- Space for demolition, excavation 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 and New Tree Planting**

A limited amount of space is available for the planting of new trees and shrubs as part of a general landscaping scheme. Any landscape proposals should make particular reference to:

- Promoting the concept of biodiversity net gain and ensuring that there is no net loss of trees as part of the development
- The inclusion of native trees and shrubs where possible using semi-mature tree stock where appropriate within a scheme of landscaping
- 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
- A scheme of aftercare and maintenance including watering, mulching and replacement planting in the event of any tree failures

Subject to soil analysis, possible options for new planting which reflect the current character of the site and its immediate vicinity could include:

- *Acer campestre* (Field Maple) – native, tolerant of dry soils
- *Amelanchier* species – small trees with year-round interest
- *Betula* species (Birch) – variety of forms with attractive bark
- *Carpinus betulus* (Hornbeam) – native
- *Celtis australis* (Nettle Tree) – tolerant of dry soils
- *Corylus colurna* (Turkish Hazel) – upright form with attractive bark
- *Ginkgo biloba* (Maidenhair Tree) – upright form with unusual foliage

Further details can be obtained from the RHS website www.rhs.org.uk or from established tree nurseries such as www.barcham.co.uk . Landscaping operations should be carried out in accordance with the relevant British Standards.

3.9 **Conclusions**

- The main house extension has no material impact on any retained trees
- The loss of a limited number of small 'C' Category trees / large shrubs (Laurel T6, Bay T7 and Amelanchier T11) and a 'U' Category Holly T5 to facilitate the construction of the garden studio will have a minimal impact on wider public visual amenity due to their rear garden location, species characteristics and condition and can be offset through appropriate new tree and shrub planting
- The new studio, access steps and any rear courtyard area have been designed to accommodate the existing ground levels and allow for the retention of underlying rooting material by incorporating a specially engineered foundation design that avoids any significant excavation. The garden terracing has been realigned so that it occurs within the bounds of the existing lawn retaining wall and does not require any significant incursion into the raised rooting area
- The expected pattern of use and occupation of the studio should not result in any significant conflicts (dominance or shading) between the retained trees and built structures and avoid a situation of 'post-development tree resentment'.
- Occasional light pruning (canopy lifting) may be required in future to maintain adequate clearance from the studio and trees T1-T4 although this should not exceed the recommendations of BS3998: 2010 and be acceptable in arboricultural terms without impacting on wider public visual amenity
- The incorporation of an approved Arboricultural Method Statement and scheme of arboricultural supervision (likely to be attached as a condition to any planning consent) should ensure there are no adverse effects as the result of any demolition, excavations or construction operations and that any roots encountered are dealt with appropriately.

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

43 Cholmeley Crescent

London

N6 5EX

4.1.2 Planning Information

Planning application for proposed construction of new rear garden outbuilding / studio and associated landscaping in association with extension / alterations to main dwelling.

	Name	Contact Details
Client	Tom Gillespie & Minyan Sun	c/o CAN Ltd
Architect	Mat Barnes RIBA ARB, CAN Ltd	Tel. 0207 459 4626 w: can-site.co.uk i: @can_agram
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	Haringey Council	Civic Centre High Road London N22 8LE Tel. 020 8489 5504
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 43 Cholmeley Crescent during the extension of the property or construction of the new garden studio and associated hard landscape works, in particular:

- How the retained trees will be protected
- How works close to the trees 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

No.43 and the adjacent properties are located within the **Highgate Conservation Area**. In addition, the area to the immediate west is subject to a Tree Preservation Order (TPO 4-12 Kingsley Place) and includes trees T1 to T4 adjacent to the proposed development area. No works to any protected trees (including their root systems) shall be carried out without the consent in writing of the Local Planning Authority and, if necessary, the owner(s) of the tree. No additional constraint checks have been undertaken as part of this report. **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
T2, T3 & T4	Ash, Leyland Cypress	Neighbouring trees to immediate west of rear garden boundary	Crown lift up to 4m, pruning no further than the boundary (as necessary to facilitate construction operations)

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
T5, T6, T7 & T11	Holly, Laurel, Bay, Amelanchier	Rear garden	Remove 4 trees / large shrubs and grind stumps.

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. A stump grinder should be used to remove stumps to below ground level where they are located in or adjacent to a Construction Exclusion Zone.

Any additional works to trees or shrubs (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.
- Tree 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

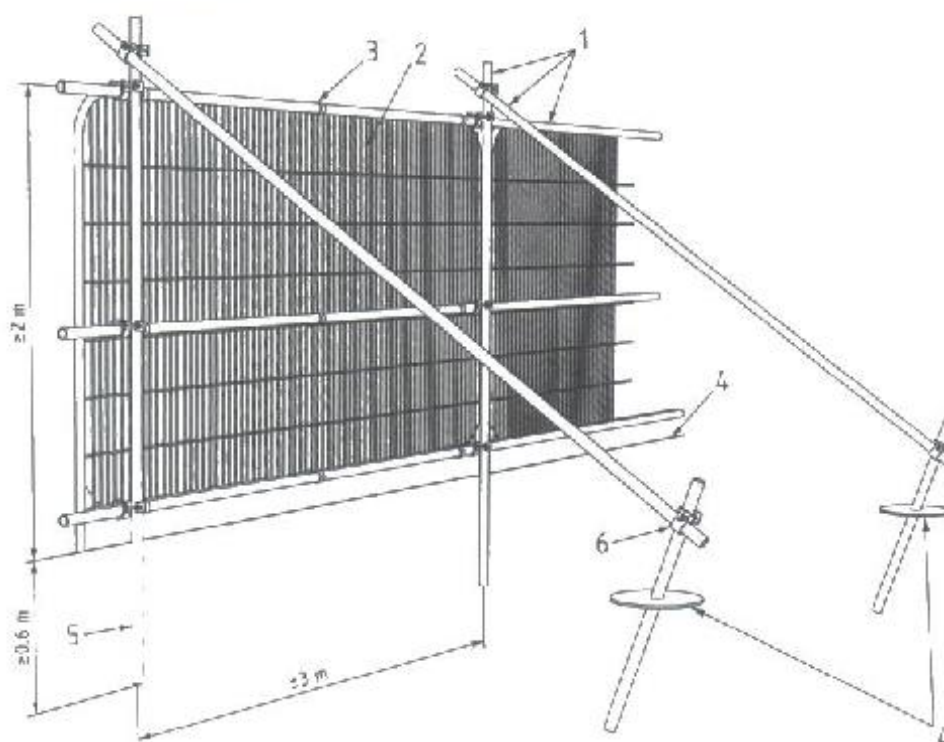
4.4.1 Protective Fencing Specification (as indicated on the Tree Protection Plan)

Protective fencing will be fit for purpose, complying with Figures 2-3 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 (additional plywood box protection for T14 may be required by the LPA).

BRITISH STANDARD

BS 5837:2012

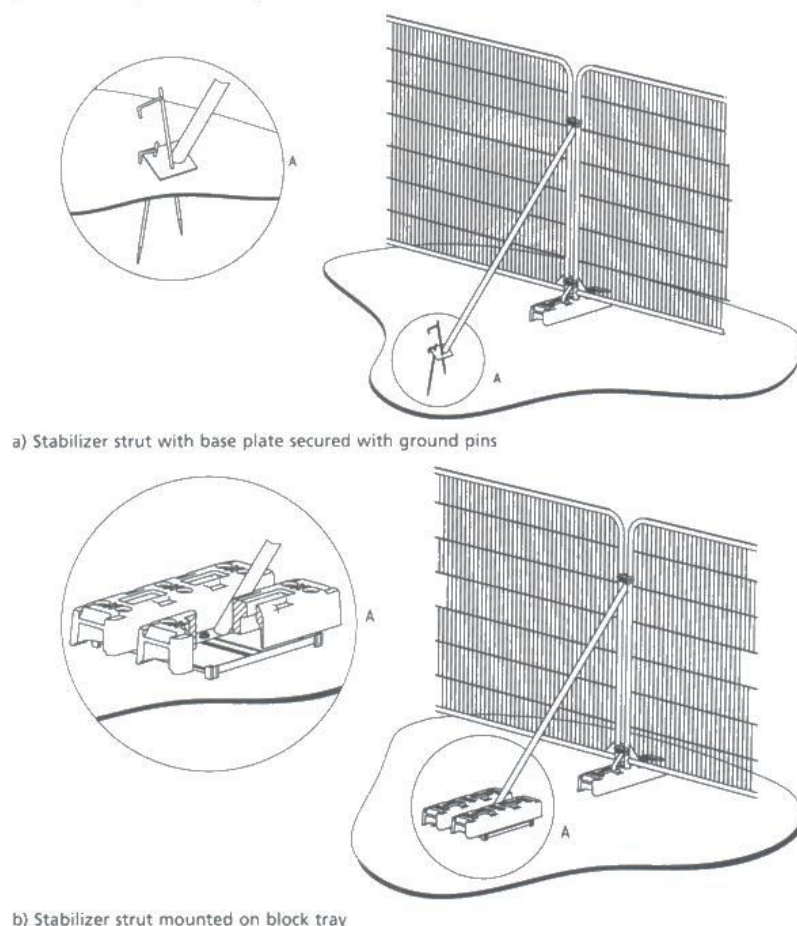
Figure 2 Default specification for protective barrier



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

Figure 3 Examples of above-ground stabilizing systems



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 Figure 3 specification fencing is moved without authorisation it must immediately be upgraded to the full BS5837 Figure 2 or 3 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 a Root Protection Area or CEZ of a retained tree(s) then this should be 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 side gate. <i>Care must be taken to avoid any damage to street tree T14 (additional box protection may be required subject to LPA approval)</i>
Build Sequence / Arboricultural Supervision & Monitoring	• Pre-commencement site meeting (Haringey Tree Officer to be invited) # • Pre-commencement tree and shrub works # • Installation of tree protection fencing / ground protection # • Clearance of shed and existing base # • Construction operations including specially engineered foundations # • Construction of garden studio • Hard landscaping operations including terracing and rear courtyard (low-invasive techniques proximal to T2-4) # • Soft landscaping operations # 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 RPAs of any retained trees. NJUG Volume 4 Guidelines to be followed for any excavation / installation near trees. Route power / water inside retaining wall / under new terracing
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 any RPA when handling or mixing on any slope
Site Huts / Welfare Facilities	May be located within RPA in front garden subject to precautions detailed in AMS section 4.4.1

4.5.2 **Demolition / Clearance**

Adequate space exists for site clearance operations without impacting on the retained trees providing that all tree protection measures are in place before commencement. All plant and vehicles should either operate outside of any RPA or run on appropriate ground protection (see section 4.4.2, above). All vehicle and plant movements at the front of the property to be overseen by a traffic marshal to avoid causing damage to any part of street tree T14. 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 / Excavation Within RPA** (*studio foundation / access steps / rear terrace steps / rear terrace / retaining timber wall removal*)

All excavation works must be undertaken using hand tools under arboricultural supervision (as indicated on the TPP) avoiding any unnecessary disturbance of the underlying soil. Any roots must be treated in accordance with BS5837:2012 section 7.2 including:

- Exposed roots to be immediately wrapped or covered to avoid desiccation
- Pruning back of roots <25mm diameter 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
- Backfilling to take place as soon as possible. Prior to backfilling retained roots to be surrounded with topsoil, uncompacted sharp sand or other inert loose granular material before the soil is replaced. Builders' sand should not be used due to its high salt content



Root severance, tree de-stabilised.



Significant roots retained.

4.5.4 **Removal of Existing Hard Surfaces** (including existing shed base)

Any existing hard surfacing within an RPA 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 these areas have to be removed, the surfaces must be carefully lifted using either using hand tools or plant (under supervision) working from the remaining hard surfacing and replaced with either temporary ground protection

or appropriate tree protection fencing. **Care must be taken to avoid damage to roots that may be present beneath the surface.** Soil amelioration including filling of voids with quality topsoil and / or decompaction using compressed air equipment may need to be undertaken subject to arboricultural assessment.

4.5.5 Studio Foundation / Construction

The garden studio is to be constructed without the need for any significant excavation into the underlying soil. A copy of the Construction Engineer's Method Statement must be attached to this report and the following precautions followed:

- Existing shed base beneath the footprint of the building removed using hand tools
- Proposed pile locations to be marked and inspection pits excavated to 500mm below ground level using hand tools or air displacement tools (e.g. air pick / air spade). Should any significant roots >25mm diameter be identified then the screw pile location to be moved in accordance with the Structural Engineer's recommendations
- Appropriate temporary ground protection to be placed prior to installation of piles and adjusted to cover exposed ground prior to construction of main structure
- Installation of piles using smallest available machinery taking care to ensure overhanging branches are not damaged (see General Precautions section regarding fuelling, etc.)
- Slab to be cast with appropriate precautions in place to prevent damage from wet concrete

4.5.6 New Drainage

It is anticipated that connections will be made to the existing drainage runs and that any soakaways will be installed where they will not cause harm to the rooting systems of any retained tree. Should they need to be cited within these areas, 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.

4.5.7 Installation of Low-Invasive Surfacing (including rear terrace)

Any new hard surfacing within the RPA of any retained tree 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

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).

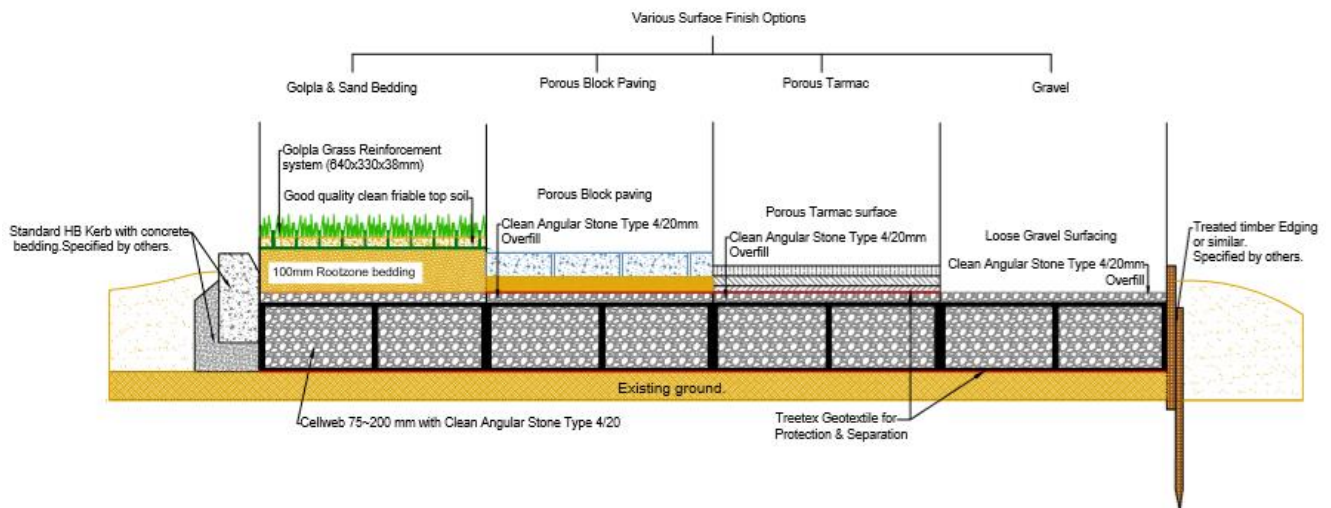


Diagram 1: Composite of low-invasive surfacing with alternative surface treatments and no-dig edging e.g. for installation replacement surfacing of the front driveway near to T3-T8 (see draft Tree Protection Plan)

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 or loose organic matter and / or turf 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. Alternatively, machinery will work from appropriate temporary ground protection i.e., it will not compact the exposed rooting area
- 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. 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 Retained Tree RPA's (including rear terrace steps)

The soil and roots of T1-T4 must be protected from the effects of wet concrete leachate through the use of impermeable membranes or liners. Details of the finalised rear terrace surfacing should be attached to the approved AMS and the Project Arboriculturist consulted on the need for any additional precautions to ensure that there are no adverse effects on the rooting environment. 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). In addition

- Any new post holes or hard landscape foundations within the RPA of any retained 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
- 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

4.5.9 Soft Landscaping (Please refer to separate Landscape Scheme for planting details)

Site Preparation:

- All ground preparation and planting operations adjacent to existing retained trees, shrubs and hedges 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

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

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

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 Aftercare

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 main driveway / Cholmeley Crescent
- 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 any RPA
- Consideration must be given to any slopes that may affect any run-off towards trees
- No fires to be lit on site
- Traffic Marshal ('Banksman') to oversee movements of high-sided vehicles, grab lorries, unloading, etc. in proximity to any trees 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 the approved 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

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 (Haringey Council) can be contacted on 020 8489 5504.



**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:

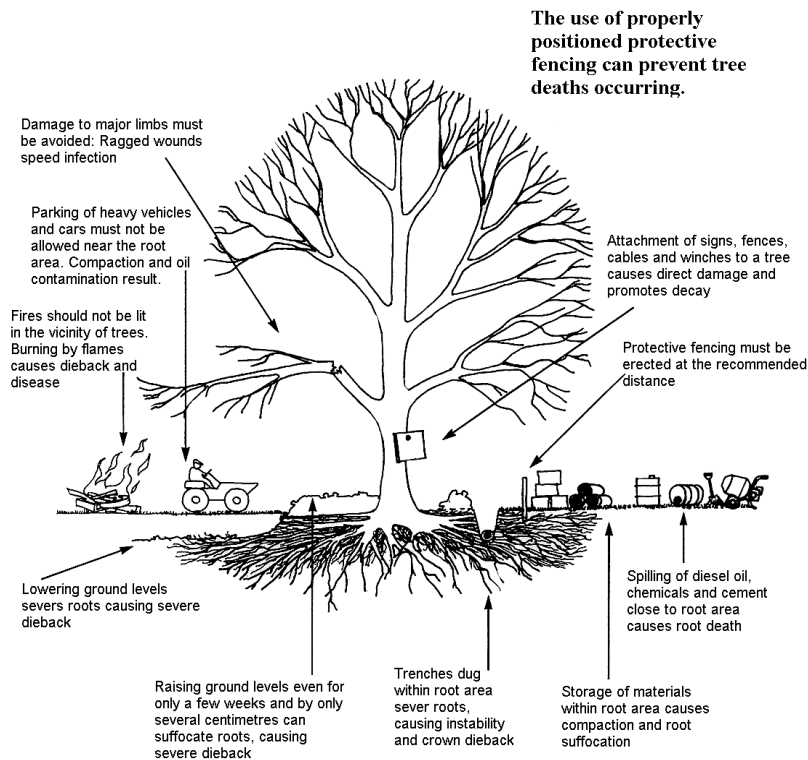
Date sent to Local Planning Authority Case Officer _____

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’ 2023
- 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)

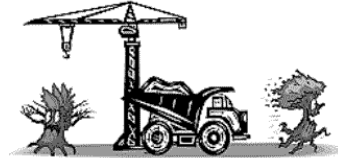
Common causes of Tree Death



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 - 43 Cholmeley Crescent, London, N6 5EX

Client: Thomas Gillespie & Minyan Sun c/o CAN
 Site: 43 Cholmeley Crescent, London, N6 5EX

Arboricultural Consultant / Surveyor:
 Tagged: No (topographical survey numbering used)
 Weather: Clear, still

J Hedges Dip.Arb.(RFS)

TPO/CA Status:

TPO 4-12 Kingsley Place (to west)
Highgate Conservation Area
Confirm status before any works

Date of Survey: 20/04/2023

Tree #	Species	Height (m)	Stem @ 1.5m Diameter (mm)	Branch spread (m)				Life Stage	Physiological Condition	Structural Condition / Comments	Preliminary Management Recommendations	Estimated Remaining Yrs	Category UABC	RPA Radius (m)
				N	E	S	W							
T1	Acer pseudoplatanus (Sycamore)	19	Est.550,550	6.0	5.0	5.0	6.0	M	Fair	Declining. Will cause future maintenance issues. Unable to inspect stem due to Ivy. Third Party owned tree. Boundary tree. Co-dominant stems. Over-extended branches. Minor deadwood <2.5cm. Squirrel damage in crown. Previously crown reduced / thinned to remove damaged branches. Pruning wound decay pockets. Truncated stubs with decay.	Owner to arrange inspection.	10+	C (provisional subject to detailed inspection)	9.34
T2	Fraxinus excelsior (Ash)	14	Est.600	3.0	6.0	5.0	5.0	M	Good	Unable to inspect stem due to Ivy. Third Party owned tree. Boundary tree. Epicormic growth. Co-dominant stems. Previously crown reduced. Lapsed pollard at approximately 3m.	Owner to arrange inspection.	10+	C	7.2
T3	X Cupressocyparis leylandii (Leyland Cypress)	Est.12	Est.550	4.0	5.0	4.0	4.0	M	Good	No significant defects visible. Unable to inspect due to debris. Third Party owned tree. Boundary tree.	Owner to arrange inspection.	10+	C	6.6
T4	X Cupressocyparis leylandii (Leyland Cypress)	Est.12	Est.250	4.0	3.0	1.0	4.0	EM	Good	Unable to inspect due to debris. Third Party owned tree. Boundary tree. Significant stem lean. Unbalanced crown.	Owner to arrange inspection.	10+	C	3
T5	Ilex aquifolium (Holly)	4	150	3.0	3.0	3.5	3.0	SM	Poor	Poor shape & form. Low vitality. Declining. Will cause future maintenance issues (fences). Unable to inspect stem due to vegetation. Unable to inspect due to debris. Dieback in crown. Minor deadwood <2.5cm. No wider public visual amenity value.	Remove tree and grind stump.	<10	U	1.8
T6	Prunus laurocerasus (Cherry Laurel)	4	150,100, 100,100	3.0	4.0	4.0	2.0	EM	Good	No significant defects visible. Raised surface roots. Multiple stems at ground level. Minor trunk wounds. Large shrub species. No wider public visual amenity.	Remove tree and grind stump to facilitate development.	10+	C	2.75

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 Weather: Clear, still

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Highgate Conservation Area
Confirm status before any works

Date of Survey: 20/04/2023

Tree #	Species	Height (m)	Stem @ 1.5m Diameter (mm)	Branch spread (m)				Life Stage	Physiological Condition	Structural Condition / Comments	Preliminary Management Recommendations	Estimated Remaining Yrs	Category UABC	RPA Radius (m)
				N	E	S	W							
T7	Laurus nobilis (Bay)	6	50,50,50,50,50	1.5	1.5	1.5	1.0	SM	Good	No significant defects visible. Multiple stems at ground level. Previously crown reduced. Dense re-growth from pruning points.	Consider removal to allow relocation of garden building.	10+	C	1.34
T8	Fraxinus excelsior (Ash)	7	Est.300	2.0	2.0	3.0	2.0	EM	Fair/Poor	Declining. Previously severed Ivy on tree. Unable to inspect stem due to Ivy. Third Party owned tree. Boundary tree. Previously crown reduced. Dense re-growth from pruning points.	Owner to arrange inspection.	<10	U	3.6
T9	Corylus avellana (Hazel)	6	Est.Av.100	3.0	3.5	3.5	4.0	EM	Good	No significant defects visible. Multiple stems at ground level. Potential habitat value. Previously coppiced. Recent landscaping works.	No works required.	10+	C	Est.3.5 (based upon crown spread)
T10	Fraxinus excelsior (Ash)	15	Est.700	6.0	6.0	6.0	6.0	M	Good	Third Party owned tree. Epicormic growth. Previously canopy raised. Previously crown reduced with large pruning wounds. Dense re-growth from pruning points.	Owner to arrange inspection.	10+	C	8.4
T11	Amelanchier lamarckii (Snowy Mespil)	5	200 above root flare	2.0	2.0	2.0	1.5	SM	Good	No significant defects visible. Multiple stems at ground level.	Consider removal to facilitate landscaping.	10+	C	2.4
T12	Arbutus unedo (Strawberry Tree)	4	200 above root flare	2.0	2.0	2.0	2.0	EM	Good	No significant defects visible. Multiple stems at ground level.	No works required.	10+	C	2.4
T13	Amelanchier lamarckii (Snowy Mespil)	4	120 above root flare	2.0	1.5	1.5	1.5	SM	Good	No significant defects visible.	No works required.	10+	C	1.44

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Arboricultural Consultant / Surveyor:
Tagged: No (topographical survey numbering used)
Weather: Clear, still

J Hedges Dip.Arb.(RFS)

TPO/CA Status:

***TPO 4-12 Kingsley Place (to west)
Highgate Conservation Area
Confirm status before any works***

Date of Survey: 20/04/2023

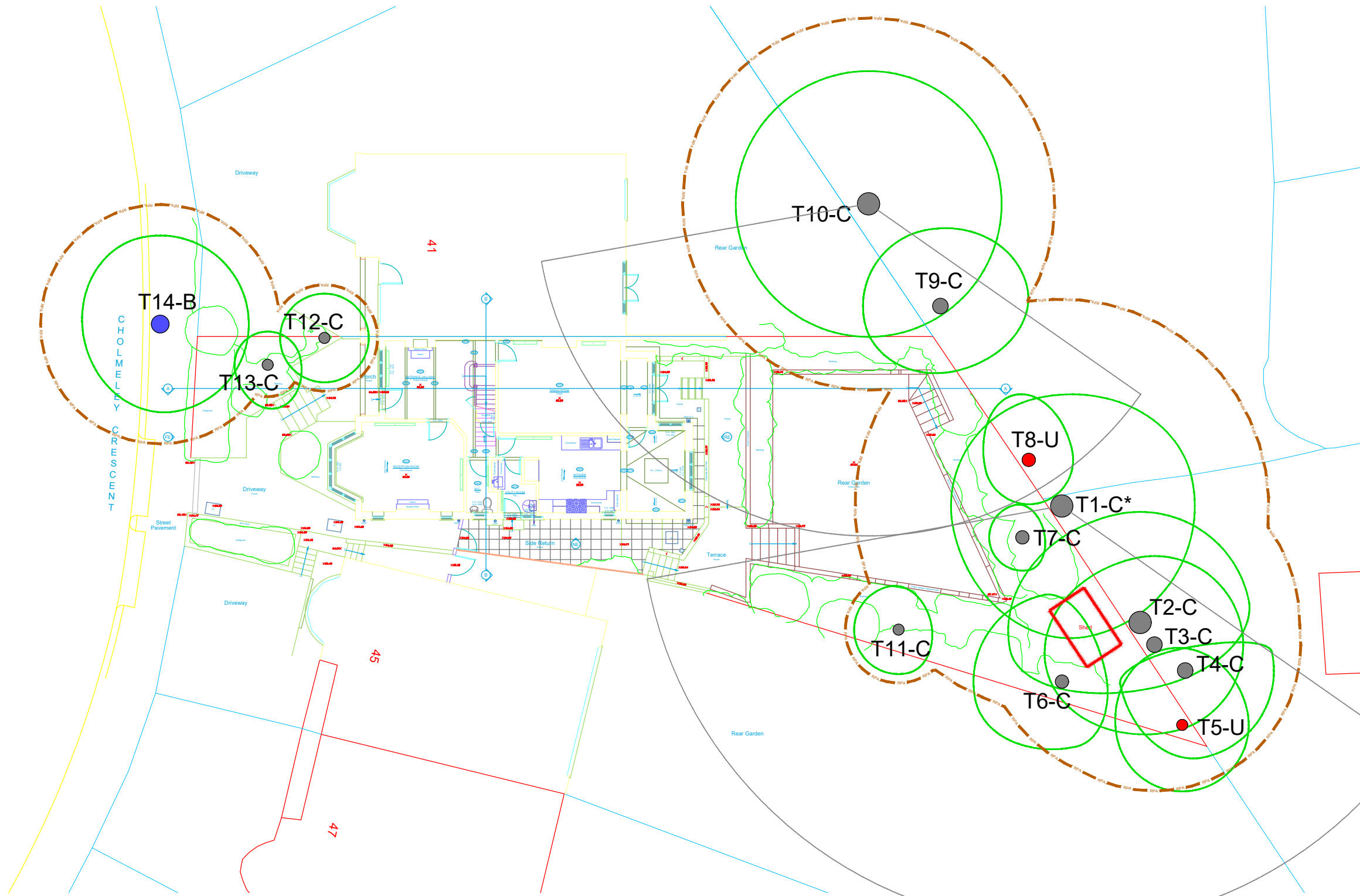
Tree #	Species	Height (m)	Stem @ 1.5m Diameter (mm)	Branch spread (m)				Life Stage	Physiological Condition	Structural Condition / Comments	Preliminary Management Recommendations	Estimated Remaining Yrs	Category UABC	RPA Radius (m)
				N	E	S	W							
T14	Sorbus aria (Whitebeam)	11	450	4.0	3.5	4.0	4.0	M	Good	No significant defects visible. Vehicle impact damage. Third Party (Highways) owned tree. Minor trunk wounds. Previously canopy raised. Previously crown reduced.	Owner to arrange inspection.	20+	B	5.4
*** 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 in 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)



Legend:

- 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
- PROTECTIVE FENCING
- TEMPORARY GROUND PROTECTION
- LOW INVASIVE SURFACING
- ACCESS FACILITATION PRUNING
- CEZ CONSTRUCTION EXCLUSION ZONE
- SUPERVISED EXCAVATION

Refer to Arboricultural Method Statement for tree protection measures, etc.)

Notes:

1) To be reproduced in colour only.

2) Do not scale from this plan - refer to Architect's drawings for all measurements. Approximate tree locations based on reference to site features.

3) Trees to west of site are protected by **Tree Preservation Order (TPO 4-12 Kingsley Place)**. Site and adjacent trees within the **Highgate Conservation Area**. **NO WORKS TO PROTECTED TREES OR ROOTING SYSTEMS WITHOUT WRITTEN CONSENT FROM LPA.**

A	Based on CAN survey (as provided)	April '23

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Client: Tom Gillespie & Minyan Sun c/o CAN

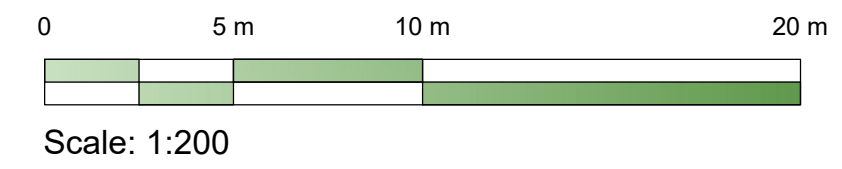
Project: 43 Cholmeley Crescent, London, N6 5EX

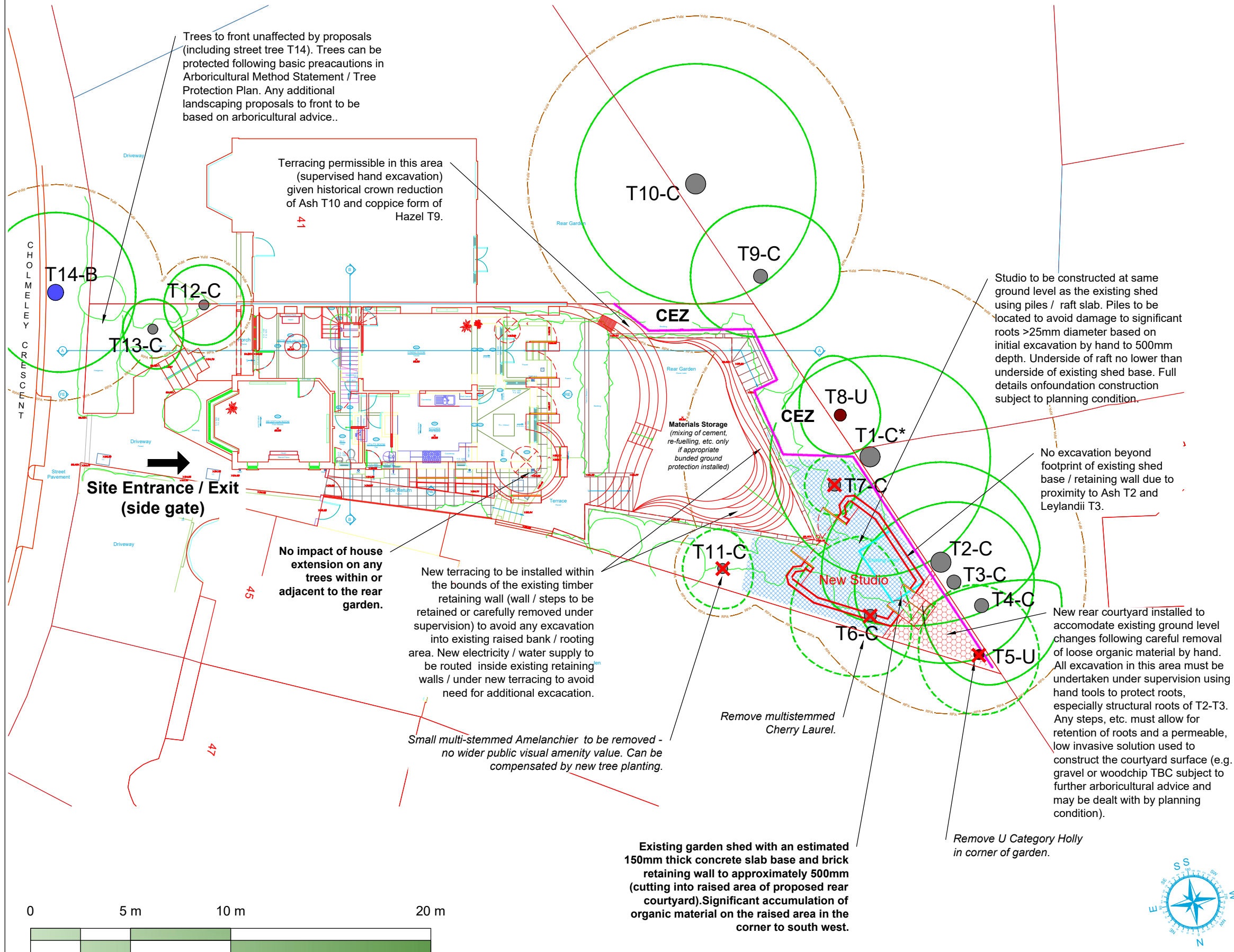
Title: **TREE SURVEY & CONSTRAINTS PLAN**

Date: 01/05/23 Scale: 1:250 Original Paper Size: A3

Drawn: JWH Checked: Y Job Ref: CAN/43CC/23

Drawing Number: **TSCP** Rev: **A**





Legend:

- 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
- PROTECTIVE FENCING
- TEMPORARY GROUND PROTECTION / REMOVAL OF EXISTING CONCRETE UNDER ARBORICULTURAL SUPERVISION
- LOW INVASIVE SURFACING / EDGING & CONSTRUCTION (STEPS)
- CEZ CONSTRUCTION EXCLUSION ZONE

Refer to Arboricultural Method Statement for tree protection measures, etc.)

Notes:

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- Trees to west of site are protected by **Tree Preservation Order (TPO 4-12 Kingsley Place)**. Site and adjacent trees within the **Highgate Conservation Area**. **NO WORKS TO PROTECTED TREES OR ROOTING SYSTEMS WITHOUT WRITTEN CONSENT FROM LPA.**
- Crown lifting of T2, T3 & T4 to a maximum of 4m above ground level (as required), pruning no further than the boundary subject to LPA approval of Arboricultural Method Statement.

A	Based on CAN survey (as provided)	April '23
B	CAN 2247 - Proposal Drawings - 070623	June '23

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Client: Tom Gillespie & Minyan Sun c/o CAN

Project: Studio - 43 Cholmeley Crescent, London, N6 5EX

Title: Draft TREE PROTECTION PLAN

Date: 18/06/23	Scale: 1:200	Original Paper Size: A3
Drawn: JWH	Checked: Y	Job Ref: CAN/43CC/23

Drawing Number: **TPP**

Rev: **B**