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Arboricultural Survey
Impact Assessment & Method Statement
Report (BS5837:2012)

Site

UCS, Project 200
Frognal
London
NW3

Client

University College School

Date of Report:

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Executive Summary

The proposed development at the UCS Senior School Site will, in the interests of canopy cover and trees incorporate enhanced landscaping, biodiversity and tree planting, replacing smaller areas of informal planting. This includes a large green extensive planted roof on the new building, a continuous first floor deep planter at the west front of the tennis courts terrace, and landscaped gardens with new trees along the main west frontage.

The development works shall require no loss of 'A' or 'B' category trees; those trees which are rated via the British Standard (BS537:2012 - the Standard which this report is prepared to) as of importance for amenity value and canopy cover within the borough. The loss of the 11 no. 'C' category trees are of the lower category which are deemed as not to constrain development being of poorer quality or lower amenity value.

The treescape and canopy cover of the site frontage (western boundary) and rear boundary with residential properties (eastern boundary) shall remain unaffected by the development process via provision of tree protection measures set out within this report which is important that ensuring that the existing mature trees shall continue to frame the site and provide a framework for the green infrastructures at the core of the site

The robust replacement planting scheme to include 25 no. trees shall be providing long term canopy cover in accordance with the Camden Tree Planting Strategy benefiting the central site which is currently laid to a greater extent of hard landscapes. The proposal shall improve the green infrastructure of the site via this tree planting and enhance canopy cover for Camden for the future.

1.0 Instructions

1.1 This report has been commissioned by University College School to survey, assess and provide an Arboricultural Impact Assessment and Method Statement for the trees sited within close proximity of proposed development works at UCS, Project 200, Frognal, London, NW3

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2.0 Introduction

2.1 A site visit was conducted on 21st March 2023 to survey and assess the trees. The weather at the time of inspection was mild with trees in mid spring season.

2.2 The tree survey, report and recommendations have been compiled for the 72 no. trees and 1 no. group (T1-T73) assessed within the site and neighbouring sites where relevant.

2.3 The details of the subject trees are set out in the Tree Survey Schedule within *Appendix A*. The trees were surveyed on the date and time shown above and the tree survey assessment information for the tree describing size, condition and surroundings are found within this appendix.

2.4 The trees located within the site are shown in tree survey drawings T001-T003, Appendix B, and these correspond to the tree survey results table, Appendix A. Photographs of the trees can also be found in Appendix C.

2.5 This report and the opinions within it have been produced by Marcus Foster, a qualified arboriculturist and Professional Member of the Arboricultural Association with over 20 years experience and holding a National Diploma in Arboriculture, the Arboricultural Association's Technicians Certificate, Professional Tree Inspection Certificate (LANTRA) as well as a degree in History and Society. Work experience within the industry includes work as a Contracts Manager for an Arboricultural Association Approved Company, a Local Authority Tree Preservation Officer and an independent Arboricultural Consultant. As a consultant many of projects undertaken are in the inner London Boroughs of Islington, Hackney, Westminster, Camden, Southwark and RBKC, making Marcus Foster familiar with the most recent requirements of development and constraints on urban trees.

3.0 Survey Details and Scope

3.1 The tree survey included the 72 no. trees and 1 no. group (T1-T73) as shown in the survey, *Appendix A*, and also highlighted on the site plans, *Appendix B*.

3.2 The following information was recorded for each tree and is shown in the Tree Schedule included in *Appendix A*:

- Number: an identity number which cross-references locations shown on the plan in Appendix A with the schedule in Appendix B.
- Species: listed by common names
- Tree Height: height in metres (m)
- Tree Spread: spread in metres (m)
- Stem diameter: measured in millimetres (mm) and taken at 1.5m above ground level
- Age Class: Y (young); EM (early-mature); M (mature); OM (over-mature)
- Vigour: G (good); F (fair); P (poor); D (dead)
- Structural Condition: G (good); F (fair); P (poor); D (dead)
- General Condition Specific comments relating to each tree
- Estimated Remaining Contribution (years)
- BS5837 Category Grading
- Protection Distance m2 Area (where applicable – BS5827: 2012)
- Protection Distance Radius (where applicable – BS5827: 2012)

3.3 Information recorded in the tree survey, *Appendix A* is expanded in the report findings and preliminary recommendations have been made in *Section 5*.

3.4 Findings as shown within *Appendix A* and assessed within *Section 5* are also highlighted within *Appendix B* which incorporates the Tree Constraints Plan (TCP) - drawing T002 addressing areas where arboricultural solutions are required. The Tree Protection Plan (TPP) - drawing T003 provides outline tree protection measures.

4.0 Survey Limitations

4.1 No soil excavations have been carried out.

4.2 This report only considers the trees and conditions at the time of inspection. As the inspection was only visual no guarantee can be given concerning the condition of the wood at present in any of the trees inspected and furthermore that no future problems or deficiencies may arise.

4.3 The survey has been undertaken as a survey of the trees without prior influence of the development and implicating factors.

4.4 No invasive tools were used during this site survey.

4.5 It should be noted that vegetation including shrubs within this / the neighbouring sites have not been included in the survey as none were within close or relevant proximity .

4.6 The survey has been undertaken from within the site only.

4.7 No additional documentation unrelated to the property or development has been referred to for the trees or the property for the compilation of this report.

5.0 Tree Survey Summary

5.1 The trees have been surveyed in accordance with BS5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012) and have been rated via the following:

BS5837:2012 KEY

Category 'A' trees
Trees of high quality with an estimated remaining life expectancy of at least 40 years. Trees have been categorised as 'A' trees for one of the following reasons:
- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'A' category trees have a green outline as denoted within the site plan key.

Category 'B' trees
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Trees have been categorised as 'B' trees for one of the following reasons
- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'B' category trees have a blue outline as denoted within the site plan key.

Category 'C' trees
Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Trees have been categorised as 'C' trees for one of the following reasons
- Arboricultural qualities - unremarkable trees of very limited merit
- Mainly landscape qualities
- Trees with no material conservation or cultural value

Within the Site Plan (Appendix B) those trees rated as 'C' category trees have a grey outline as denoted within the site plan key.

Category 'U' trees
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

5.2 The trees have been rated as follows adhering to the key above:

Category 'A' trees

Trees of high quality with an estimated remaining life expectancy of at least 40 years. Trees have been categorised as 'A' trees for one of the following reasons:
- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'A' category trees have a **green** outline as denoted within the site plan key / survey.

T10, T28

Category 'B' trees

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Trees have been categorised as 'B' trees for one of the following reasons
- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'B' category trees have a **blue** outline as denoted within the site plan key.

T1, T2, T7, T9, T24, T25, T26, T27, T35, T36, T37, T38, T39, T43, T46, T48, T66, T67, T69, T70, T71, T72, T73

Category 'C' trees
Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Trees have been categorised as 'C' trees for one of the following reasons

- Arboricultural qualities - unremarkable trees of very limited merit
- Mainly landscape qualities
- Trees with no material conservation or cultural value

Within the Site Plan (Appendix B) those trees rated as 'C' category trees have a **grey** outline as denoted within the site plan key.

T3, T4, T5, T6, T8, T11, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22, T23, T30, T31, T32, T33, T34, T40, T41, T44, T45, G47, T49, T50, T51, T52, T53, T54, T55, T56, T57, T58, T59, T60, T61, T62, T63, T64, T65, T68

Category 'U' trees
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.Within the Site Plan (Appendix B) those trees rated as 'U' category trees have a **red** outline as denoted within the site plan key.

T12, T42

5.3 The trees have been surveyed taking into account condition, general health and form without the development process influencing the survey. In addition they have also been surveyed taking account of amenity value that is offered in relation to both the landscape and surrounding buildings and streetscape. This report outlines the impact that the proposed development will have on the overall treescape and landscape; it provides recommendations to ensure that long-term amenity value for the area is retained.

5.4 The report has been written with close reference to the British Standard Guidance, British Standard 5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012), which addresses the juxtaposition between trees and structures. The Arboricultural Impact Assessment highlights areas where the trees will require protection which should be addressed within the Arboricultural Method Statement (AMS) and/or Tree Protection Plan (TPP) specific to the site and proposed scheme, and corroborating with all construction and landscape method statements as relevant.

5.5 The report specifies precautions which shall be taken when working close to retained trees. Important terms include:

Root Protection Area (RPA)
The area defined as requiring protection from development from retained trees within BS5837 (2012). Using a calculation provided within BS5837 a radius distance is provided based on a measurement of the main stem taken at 1.5m height.

Construction Exclusion Zone (CEZ)
This is the RPA where no construction activity should occur and damage is prevented by either installing fencing to restrict access or installing ground protection that allows limited access above the ground, while protecting the rooting environment below.

Due to site constraints and the encroaching nature of development for an area within the RPA outside the CEZ where works are proposed, works must be carried out with care to minimise any impact on the tree rooting environment.

Tree Protection Plan (TPP)
The document which defines the extent and methodology of tree protection for the entire development process. This should be referred to AT ALL TIMES by the principal contractor and shall ensure safe protection of all retained trees on site.

Precautionary Area
An area where works must be undertaken with direct consultation with methodology as specified within the AMS report and / or scheme of Arboricultural supervision

6.0 Arboricultural Impact Assessment

Site Overview

6.1 The 72 no. trees and 1 no. group (T1-T73) are located as follows:

UCS, Frognal: T1, T3-T23, T32-T42 & T49-T73
4 Ellerdale Close: T29
8 Ellerdale Road: T28
14 Ellerdale Road: T27
16 Ellerdale Road: T24, T25, T26
20 Ellerdale Road: T10
14 Frognal Way: T44 - H48
18 Frognal Way: T43
18 Arkwright Road: T2

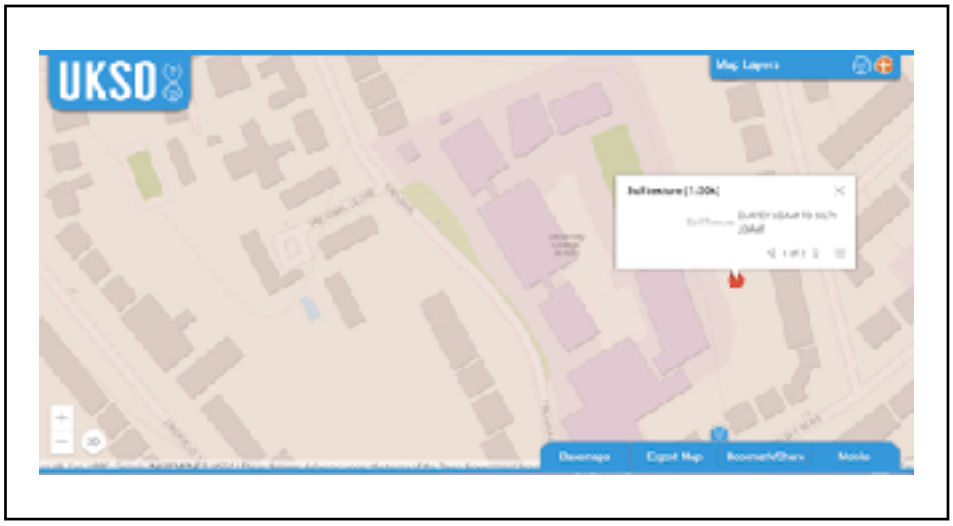
The trees are sited within London Borough of Camden. The following statutory checks have been made for the site:

CONSERVATION AREA STATUS
Redington Frognal Conservation Area (CA31), London Borough of Camden
TREE PRESERVATION ORDER (TPO) STATUS
TPO protection check has not been undertaken. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order , and those trees without. This is principally because a detailed planning consent overrides any TPO protection

6.3 The site location and statutory protection is confirmed as below:

Extract from:
https://opendata.camden.gov.uk/People-Places/Camden-Conservation-Areas-Map/d2m6-mjue

6.4 The underlying soil to this area is classified as 'clayey loam to silty loam' within the UK Soil Observatory (www.ukso.org) - a medium to heavy soil mix. The presence of a clay element within the soil is significant in terms of both tree protection and foundation design. Clay soils can experience substantial volume changes when vegetation extracts moisture from the ground they are also prone to compaction when wet; the soil is deemed as being of medium to heavy texture with greater susceptibility to compaction and volumetric change. Any foundations should also be designed in accordance with the recommendations contained within NHBC Chapter 4.2 (National House Building Council, 2010) and should account for the possibility of both subsidence and heave. The soil profile is confirmed as below:



Extract from Soil Observatory - 24/09/23 - www.ukso.org

6.5 The site comprises school grounds as shown from extracted exiting site layout / photographs:

6.6 Development proposals are for the following:

> *A single storey building at ground level, with three tennis courts on the roof, replacing the existing courts. At the south end of the site, beyond the tennis courts, the building rises to 2-storey above ground, including a special double-height space for the new Recital Room. There are proposed to be interior plantrooms for building and ancillary services, so that all main plant is concealed.*
>
> *The proposals will also extend and enhance landscaping, biodiversity and trees at the Frognal site, replacing smaller areas of informal planting. This includes a large green extensive planted roof on the new building, a continuous first floor deep planter at the west front of the tennis courts terrace, and landscaped gardens with new trees along the main west frontage.*

6.7 For the purposes of this report, reference has been made to the following plans for the proposed development:

> Katy Staton Landscape Architecture
> *P192_L01_RevE_extenalworksplan*
>
> BlueSky Building
> *BSB_UniversityCollegeSchool_CMP_071223*
> DWG: *BSB-UCS-001*
>
> Ed Toovey Architects
> *2037_GA_006_Temporary Accommodation plan v2023*
> *2037_ GL_003_Construction Management outline plan v2023*

6.8 The summary of arboricultural impact which shall be assessed is as follows:

- Loss of 15 no. C Category trees - T3, T4, T53, T54, T55, T56, T57, T58, T59, T60, T61, T62, T63, T64, T65

- No loss of ‘A’ or ‘B’ category trees included within the survey

- Potential damage to root plate of tree T1, English oak where raised planter whithi which it is sited shall be re-confingured to minor extent

- Potential compaction and damage of the retained trees in relation to the development and landscape process

- Potential damage to canopies of the retained trees surrounding the site during development and landscape process

- The use of and storage of materials and chemicals on site within close proximity of the trees

- Impact of development upon trees via future occupancy / updated usage of the site

- Replacement tree planting strategy

6.9 The trees and the impact from the proposed development are evaluated within this section to determine overall arboricultural impact from the proposed development. Where trees are retained the Root Protection Area (RPA) for each tree is evaluated in relation to proposed development works. The following is assessed within this section:

(i) Where tree protection measures are deemed appropriate these are highlighted

(ii) Mitigation for tree loss where trees are proposed for removal

6.10 Reference is also made to the Local Authority's Local Plan and wider relevant policy:

(i) Camden Tree Planting Strategy 2020-2025

(ii) National Planning Policy Framework February 2023 Ministry of Housing, Communities and Local Government

(iii) London Plan, Chapter 8 Green Infrastructure and Natural Environment - Policy G7 Trees & Woodlands

Arboricultural Impact Assessment

6.11 The trees surveyed which are sited within the subject site and where neighbouring are of the following species:

Acer pseudoplatanus (Sycamore)
Acer saccharinum (silver maple*)*
Arbutus unedo (Strawberry tree)
*Aesculus hippocastanum (*Horse chestnut)
Betula utilis 'Jacquemontii' (Himalayan birch)
Carpinus betulus 'Fastigiata' (Hornbeam 'Fastigiata')
Cordyline australis (Cordyline)
Chamaecyparsis lawsoniana 'Elwoodii' (Cypress *'Elwoodii')*
Cupressus x leylandii (Leyland cypress)
Fraxinus excelsior (Ash)
Fagus sylvatica (Beech)
Gleditsia tricanthos (Honey locust 'Sunburst')
Ilex aquifolium (Holly)
Malus huphensis (Crab apple)
Malus domestica (Apple)
Platanus x acerifolia (London plane)
Prunus domestica (Plum)
Pinus nigra (Black pine)
Pyrus domestica (Pear)
Quercus robur (English oak)
Tamarisk tetrandra (Tamarisk)
Tilia europaea (Common lime)

The trees surveyed comprise a wide range of species within the school site and neighbouring where off site to the south, north and east.

6.12 The main attributes of the 72 no. trees and 1 no. group (T1-T73) are as follows:

(i) Tree T1 a memorial English oak being sited within raised planter. Planted 1980. Western crown poorly pruned with abrupt mid crown in this direction. Retainer varies at 1.0-1.5m - height at greatest to west to retain greater level change due to sloping topography of the site

(ii) Tree T2 off site to the south beyond existing retainer features; limited overhang to site away from subject site for development

(iii) Trees T3-T4 comprising 2 no. plantings on the lower level of eastern embankment for the site - ornamental only being a Cordyline and Strawberry tree; the former Cordyline being a monocotyledon - no woody form of a large shrub / small tree or palm

(iv) Trees T5-T23 comprising ornamental trees on the raised upper embankment to the eastern boundary. Trees are generally lapsed pruned espalier nd ornamental fruit trees. No overhang beyond existing upper embankment to subject development site

(v) Off site trees T24-T29 located off site to east within Ellerdale Road / Ellerdale Close. Trees are sited beyond significant boundary wall. Generally crowns are crown lifted over the subject site with no low overhanging crowns from the subject site

(vi) Trees T30-T42 sited to north of subject site; within School grounds unaffected by development process - comprising a mix of tree species / form within soft landscape verrge to northern boundary

(vii) Trees T43-H48 off site to the north at significant distance from subject area of development process. Generally crowns are crown lifted over the subject site with no low overhanging crowns from the subject site

(viii) Trees T49-T52 are not within the area of subject development; 4 no. Honey locust trees which offer ornamental value within a courtyard siting

(ix) Trees T53 - T65 within the central site area subject to develoipment with the following key attributes - all 'C' category trees:

- Trees T53-T55 comprising 3 no. Himalayan birch with fair form only; poor establishment and associated with drainage issues with standing water surrounding main stems following rain
- Trees T56 - T63 comprising 7 no Cypress 'Elwoodii' - ornamental trees planted within poor location with limited rooting potential due to limited concrete planting pits
- Trees T64-T65 ornamental Tamarisk trees on sloping embankment and amongst mixed species shrub planting

(x) Trees T67 & T68 sited to north of site on western boundary; generally crown lifted to facilitate existing school access

(xi) Tree T69 recently planted Silver maple to replace the previously removed Willow tree (approvcal; reference LB Camden 2021/3165/T) and also provide continuation of linear planting at frontage of school with Frognal

Arboricultural Impact Assessment - Trees Retained

6.13 For those trees surveyed within close proximity the potential impacts for the trees surveyed are as follows:

(i) For tree T1, RPA incursion for re-configuration and re-construction of retaining wall within RPA

(v) Trees to eastern boundary (to east of subject site) with potential for excavations within close proximity of the RPA of all trees within this location / where off site also

(vi) General development works with potential for damage to crowns for all retained trees

(vii) Development / construction site activities where incurring within or within close proximity of all retained trees - A, B & C category including:

- General development siite activities including storage of spoil materials
- Use of heavy machinery, welfare, site offices and installation of utilities / drainage, not exhaustive of other practice
- Site access & Welfare

6.14 Where the RPA of T24, T26, T28 incurs beyond the existing retaining wall / within the development footprint to the eastern boundary of the development site, these RPA's have been modified[1]. This modification demonstrates that no incursion for the following trees occurs:

T24 - 126.88m2
T26 - 126.88m2
T28 - 452.45m2

The incursion has been applied for these trees where located off site to the east for the following reasons:

- Trees sited beyond existing raised retainer - in excess of 1.5m height between development footprint and raised soft landscape verge
- Further barrier of boundary wall with associated foundations

This modification enables tree protection fencing of the upper embankment to give a CEZ for all trees to the east of subject site for the development process.

[1] The British Standard (paragraph 4.6.2) it states that RPA's should reflect the morphology and disposition of the roots where historic site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced, often with agreement from the Local Authority and using all available historical information of the site and specific tree / area. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution by a qualified arboriculturist

6.15 Protection of all retained trees is justified based on the following:

(i) Application of general tree protection measures for development process including:
- Ground protection
- Tree protection fencing

(ii) Application of site specific tree protection measures for development process including Precautionary Area highlighted for tree T1

(iii) Precautionary Area applied for tree T1 specifically with the following measures demonstrating mitigation for the works to reduce size of planter (see Section 6.16 below):
- Arboricultural Scheme of Supervision
- Hand dug works for removal of extent of planter to be re-configured
- Extended terrace constructed as a no-dig solution and finishing the terrace as a permeable bound system
- Mitigation via soil improvement and terraventing

(iii) Limited extent of footprint updates outside of areas currently set out as school buildings and amenity spaces / MUGA pitches

(iv) Facilitative tree works schedule including pruning works to retained trees to avoid damage to crowns

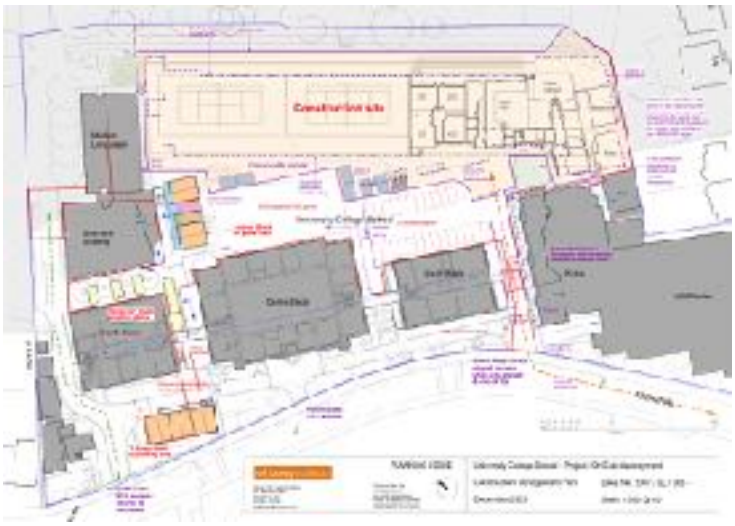
(v) Temporary school classroom buildings set on existing hard standing and without requirement for ground works

6.16 In relation to tree T1, the re-configuration of raised planter is deemed to have an acceptable impact. Whilst the reduced size of the planter shall require a minor extent of root pruning and soil loss the lifespan of the tree within the planter is limited regardless of development due to the size and depth. The removal of the existing retainer / planter shall provide an opportunity for root pruning, soil improvement and aeration thereby improving the lifespan of the tree. Prior to the works being carried out the cyclical reduction of the tree to provide a compact and rounded / balanced crown shape is required as included within the Schedule of Works. Upon completion of works terraventing of this tree is also recommended.

6.17 In relation to future occupancy of the proposed development it is clear that the site shall not be detrimentally impacted from the shading of those trees retained due to historic existence of trees and the subject site being retained as school buildings and recreation ground / MUGA areas. In relation to increased site infrastructure the facilitative tree works prescirbed and retention of trees

with realistic retention capacity only, shall ensure that the canopy cover of the site is not impacted by the development works.

6.18 It is also noted that the Construction Management Plan demonstrates that the impact upon trees is very limited being focused within footprint where no trees are retained / limited canopy cover exists:



Extract from:
DWG: *B2037_ GL_003_Construction Management outline plan v2023.pdf*

6.19 For the installation of temporary classrooms the size and location requires for facilitative pruning to trees T49-T53 in the form of crown lifting - as included within Schedule of Works - Section 9. For trees T69-T62 the classrooms shall be sited beneath trees which h ave been historically crown lifted. For both sets of classrooms where within close proximity of retained trees existing hard landscapes shall be retained providing ground protection. Additionally the rainwater discharge must be within the ground beneath structures and no utilities shall be installed within the RPA of retained trees.

6.20 The following tree protection measures shall be applied as specified within Section 6, AMS and the TPP which shall mitigate against any potential damage ensuring all trees remain protected:

(i) TREE PROTECTION FENCING
Fencing to create Construction Exclusion Zones as shown within the AMS & TPP

(ii) PRECAUTIONARY AREA
For Precautionary Area for tree T1 works shall be carried out in accordance with tree protection measures as outlined within the AMS

(iii) ARBORICULTURAL SCHEME OF SUPERVISION
Scheme of supervision for tree protection measures applied to ensure a suitably qualified arboriculturist ensures delivery of all tree protection measures throughout the development process

(iv) PROTECTION FROM SITE STORAGE, INFRASTRUCTURE & WELFARE
Site storage, mixing of chemicals and site welfare shall be sited outside of the RPA of retained trees

(v) FACILITATIVE TREE WORKS
Minor pruning works set out within Tree Works Schedule

Arboricultural Impact Assessment - Tree Removal

6.21 The proposed development requires loss of the following trees:

- A Category tree:
  None applicable
- B Category trees:
  None applicable
- C Category trees :
  T3 - Cordyline
  T4 - Strawberry tree
  T53 - Himalayan birch
  T54 - Himalayan birch
  T55 - Himalayan birch
  T56 - Himalayan birch
  T57 - Cypress 'Elwoodii'
  T58 - Cypress 'Elwoodii'
  T59 - Cypress 'Elwoodii'
  T60 - Cypress 'Elwoodii'
  T61 - Cypress 'Elwoodii'
  T62 - Cypress 'Elwoodii'
  T63 - Cypress 'Elwoodii'
  T64 - Tamarisk
  T65 - Tamarisk
- U Category trees:
  None applicable

6.22 The tree removal shall be mitigated with a robust replacement tree planting scheme which will deliver an enhanced site for canopy cover and

amenity value for the long term delivering in accordance with The Local Policy [2]which states as follows:

> *Camden Council's Tree planting Strategy sets out how we will meet our ambition to plant more trees in the borough, increasing our commitment by 50%, to at least 600 trees per year. Alongside increasing the canopy cover, we will also work to increase the quality and diversity of the urban forest to support a resilient urban forest throughout the borough.*

6.23 The loss of trees is comprising 'C' category trees: 15 no. 'C' category trees which do not comprise the main element of canopy cover for the site but being of low ornamental value trees only.

6.24 The tree planting strategy shall mitigate for those trees removed by providing as follows:

- Tree replacement proposals as mitigation to provide greater than 1:1 ratio of replacement

- 25 no. newly planted trees which will be a mix of species in accordance with the Camden Tree Planting Strategy to achieve the 'Right Tree Right Place' mantra

- Species mix to be pest & disease and climate change resilient species

- Landscape scheme to provide further mitigation with enhanced shrub and soft landscape / planting areas

6.25 To mitigate and enhance the green infrastructure of the site replacement tree proposals shall provide an important landscape feature for the long term. The replacement planting proposal / plan shall ensure long term retention by providing:

- Procurement from reputable nurseries with tree species / size secured in advance

- Implementation of scheme to BS8545 (Trees: From Nursery to Independence in the Landscape, 2014)

- Aftercare and establishment programme

[2] Camden Tree Planting Strategy 2020-2025

Summary of Arboricultural Impact

6.26 The proposed development requires tree protection measures and mitigation for the implementation of development as follows:

Tree Protection applicable to the following trees:
All 'A', 'B' and 'C' category trees where retained

Mitigation applicable for the removal of the following trees:
- Loss of 11 no. 'C' Category trees - T3, T4, T53, T54, T55, T56, T57, T58, T59, T60, T61, T62, T63, T64, T65
- No loss of 'A' or 'B' category trees

6.27 The tree protection measures and mitigation via replacement planting shall ensure that the development does not detrimentally impact the amenity value and canopy cover of the site, but provides improvement of amenity value and biodiversity value for the long term.

6.28 In summary the arboricultural impact as outlined within drawing T003 - Tree Protection Plan (TPP): require the following tree protection measures and mitigation:

(i) TREE PROTECTION FENCING
(ii) GROUND PROTECTION
(iii) PROTECTION FROM SITE STORAGE, INFRASTRUCTURE & WELFARE
(iv) PRECAUTIONARY AREA
(v) ARBORICULTURAL SCHEME OF SUPERVISION
(vi) FACILITATIVE TREE WORKS

6.29 The landscape scheme with mitigation for loss of removed trees shall include replacement planting to include 25 no. trees providing long term canopy cover in accordance with the Camden Tree Planting Strategy; this shall ensure that the development does not detrimentally impact the amenity value and canopy cover of the site but enhances for the long term to a significant extent as outlined within landscape proposals prepared by Staton Cohen Landscape Architects.

7.0 Arboricultural Method Statement

7.1 The following tree protection measures require close adherence AT ALL TIMES as outlined within this report. The measures are outlined within Tree Protection Plan (TPP) - drawing T003.

7.2 **Tree Works**

7.2.1 Tree Works included within Schedule of Works - Section 9 - shall be undertaken at pre-commencement stage.

7.3 **Tree Protection Fencing**

7.3.1 Protection of the trees highlighted for retention must be implemented as explained below and as specified within the TPP - drawing T003 to provide Construction Exclusion Zone (CEZ). Specified as

(i) BS5837:2012 Figure 2 - see TPP & Appendix E
(ii) Basal Shuttering- see TPP & Appendix E

7.3.2 These measures must remain for the entire construction process in order to provide a comprehensive barrier from the trees

- The area surrounding the trees must be surrounded by protective fencing as outlined in TPP - T003

- The protective fencing used must be suitable for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees.

- This barrier must remain rigid and complete during the entire construction process. Protection is not required surrounding entire trees where boundary treatments intervene in RPA's as the remainder of the root plate will remain unaffected by virtue of being located within the neighbouring properties

- Once the Exclusion Zone has been protected by fencing all weather notices as included in *Appendix D* must be put onto the barrier warning that the area is a construction exclusion zone.

- No heavy plant shall come into contact with any part of the canopies of the trees.

- No building materials or chemicals shall be stored within the tree protection zone as indicated on the TPP

7.4 **Ground Protection**

7.4.1 Ground protection shall be required where the tree protection fencing requires removal and with written consent of the Local Authority Tree Officer and/or appointed Arboricultural Consultant:

(i) Retention of existing hard landscapes

(ii) Ground protection
- Implementation of 75mm bark mulch layer overlapped with minimum 15mm plyboard surface or load bearing ground protection boards to provide ground protection for development process
- No storage of spoil within this area
- No storage of chemicals within this area

7.4.2 Ground protection may also be applicable for areas where tree protection is required but fencing is not achievable.

7.4.3 Where applied, ground protection shall be removed for final landscapes works within the RPA of retained trees.

7.5 **Storage of Construction site related materials, plant and spoil / Site Welfare & Site Office**

7.5.1 A designated storage area / site welfare & office shall be ocated outside of the RPA of retained trees and within existing hard standing. Strict adherence to this area must be made to this area and any amendment would require written consent from the tree officer.

7.5.2 Site welfare and the site office shall be located outside of the RPA of retained trees. Strict adherence to this area must be made to this area and any amendment would require written consent from the tree officer.

7.6 **Fires**

7.6.1 There must UNDER NO CIRCUMSTANCES be fires within this site.

7.7 **Precautionary Areas**

7.7.1 All Precautionary Areas are shown within the TPP and require tree protection measures applied within an Arboricultural Scheme of Supervision to be set out at pre-commencement to corroborate with construction methodology.

7.7.2 BS5837 (2012) makes provision for undertaking excavations in RPAs, explaining that all excavation must be carried out carefully using spades, forks and trowels, It is important not to damage the bark and wood of any roots.

7.7.3 For the 'Precautionary Area' works where manual excavations within the RPA of retained trees shall be required within the RPA of T1 the following must apply:

(i) Tree works undertaken at pre-commencement

(ii) Removal of existing hard landscape surface or features (including walls) by hand or with low pneumatic tools under arboricultural supervision

(iii) Initial excavations to be either of the following as deemed appropriate within construction methodology:

(a) air spade (see *Section 7.7.4-5)*
(b)hand dug (see *Section 7.7.6)*

7.7.4 For hand dug excavations the following tools are appropriate with methodology described below:

(i) All soil removal from existing planter where being diminished in size to be hand dug excavations to ensure no severance of major roots. With all works for this area undertaken by hand, the severance of any larger roots encountered up to 25mm diameter should then be undertaken by the supervising arboricultural consultant to ensure clean severance

(ii) Where tree root severance is not feasible due to size)significant root density in excess of 25mm diameter size)and nature structural engineering solutions / bridging of tree roots as agreed with consulting arboriculturist must be applied.

(iii) Any roots left exposed against face of trench including massing of fibrous roots shall be wrapped / covered in hessian and kept damp at all times until soil is re-instated with the following further measures:

a) During dormant period (November - March) no further works are required

b) During growing season (March - October) in addition to hessian being kept moist the face of trench should be drenched with a soluble seaweed fertiliser to manufacturers application rates on a monthly basis

(iv) Upon completion of works infill shall be with a fresh loam and sharp sand (50:50_ based topsoil with mycorrhizal fungi addition to promote root growth

7.7.5 Where Air spade techniques are deemed appropriate these must be operated by qualified contractors. His spades utilise a two-tool air compressor and hand-held lance to dislodge soil, using highly pressurised jets of air. This allows trenches to be excavated without causing the significant root damage associated with the use of conventional digging techniques such as, spade or excavator buckets. Example imagery is shown below:

Example imagery of air spade use for implementing utilities beneath root plate (existing)

Reputable companies providing this service include as follows (list not exhaustive):
https://www.ruskins.co.uk/airspade
http://www.goroots.co.uk/
http://www.dfclark.co.uk/bionomique-service/air-spade-investigation-and-remediation/

7.8 **Final Hard Landscape Works within RPA of Retained Trees**

7.8.1 For final landscaping works the following shall apply where carried out within the RPA of retained trees

- No reduction in levels of the underlying soil surface will occur during final landscaping works within the RPA of retained trees
- Close adherence with detailed excavations and root protections specifications as outlined within *Section 5.8*
- No compaction of soils for establishing level base for hard landscapes
- No installation of drainage channels / landscape features without prior written consent of the Local Authority

7.8.2 BS5837 (2012) makes provision for undertaking ground works in RPAs, explaining that all excavation must be carried out carefully using spades, forks and trowels, It is important not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air may be an appropriate alternative to hand digging, if access is available.

Final Landscape Works Tools & Methodology

7.8.3 Reference to the AMS & TPP must be made at all times and the following methodology applied and documented within the scheme of arboricultural supervision should minor excavations be required:

- For landscaping works *a*ppropriate tools for general landscape works removing debris may include a pneumatic breaker, crow bar, sledge hammer, pick, mattock, shovel, spade, trowel, fork and wheelbarrow

- Should roots be exposed they will be required to be wrapped in hessian fixed in place with duct place and kept moist until the consulting arboriculturist can provide further guidance and recommendations

- Secatuers and a handsaw must also be available to deal with any exposed roots that have to be cut. Debris to be removed from RPA area shall be removed without disturbance of the RPA / CEZ

- The use of mechanical diggers / wheelbarrows / machinery is not permitted for the implementation of final landscape works within the RPA of retained trees

7.9 **Installation of utility services**

7.9.1 The installation and/or amendment of utility services within the RPA of retained trees is not required. However where an amendment is required and utilities are required within the RPA of any retained tree the consulting arboriculturist and Local Authority must be notified prior to any ground tree protection / fencing and barrier removal and the following details adhered to:

- Trenching for the installation of underground services severs any tree roots present and can have a detrimental impact on the structural integrity of affected trees. When services are required to pass through a Tree Protection Area / CEZ, detailed plans showing proposed routes should be drawn up in conjunction with the consulting arboriculturist to avoid long term problems for related trees.

- The preferable method for trenching is to use a 'Air Spade' or similar to remove soil with compressed air, therefore minimising damage to roots in the process. Should hand dug excavations be required within the RPA this shall only be undertaken with arboricultural supervision.

7.9.2 Further reference can be made to National Joint Utilities Group (Volume 4, Issue 2) for guidance but any approach must be approved by both the consulting arboriculturist and Local Authority tree officer.

8.0 Communication, Monitoring and Compliance

8.1 In ensuring that all Tree Protections Specifications as highlighted within this AMS are closely adhered to at all times, it is important to set out for the long term of the development, communication details for key individuals and tasks that require monitoring.

8.2 For all tree protection measures these must be considered as sacrosanct and should not be removed or altered without prior written consent from the Local Authority tree officer and/or consulting arboriculturist.

8.3 The local authority arboriculturist will have free access to the site and forward any concerns / recommendations directly to the consulting arboriculturist.

8.4 The following individuals and organisations are central to the delivery of the scheme in relation to the tree protection measures it requires:

CONSULTING ARBORICULTURIST
Name - Marcus Foster MArborA
Telephone - 07812024070
Contact - Marcus Foster
Email - mail@marcus-foster.com

LONDON BOROUGH OF CAMDEN - TREE OFFICER

Name - Arboricultural Services - London Borough of Camden
Telephone - 020 7974 5939
Contact - Nick Bell - Tree Officer
Email - nick.bell@camden.gov.uk

SCHEME OF SUPERVISON

8.5 **Pre-commencement**

8.5.1 Pre-commencement meeting scheduled prior to tree works or enabling works is to include a meeting with the following interested parties:
- Arboricultural Consultant
- Architect and/or Structural Engineer
- Main Contractor (Contracts Manager)

Following the meeting issue of the approved TPP shall be made to all relevant parties.

8.6 **Scheme of Supervision Overview**

8.6.1 The consulting arboriculturist shall be appointed to provide supervision of key tree protection measures for the duration of the development. The key phases of development which require arboricultural supervision are as follows:

(i) Pre-Commencement
(ii) Approval of tree protection measures
(iii) Approval of / Supervision of Precautionary Area
(iv) Approval of continued tree protection measures
(v) Approval of removal of protection measures

8.6.2 The key individuals appointed for advising and complying with Tree Protection specifications must adhere to the following at all times:

- Relevant parties / key individuals must be advised of any changes in personnel or contractor during the development process.
- Relevant parties / key individuals must be responsible for relaying information regarding tree protection within work force where deemed applicable / relevant

8.6.3 Once the tree protection measures have been installed and for the remainder of the development until final stage of landscape works it must be considered as sacrosanct and must not be removed or altered without prior written consent from the Local Authority tree officer and/or consulting arboriculturist.

8.6.4 The local authority arboriculturist will have free access to the site and forward any concerns / recommendations directly to the consulting arboriculturist.

8.7 **Site visits – Timing and record keeping**

8.7.1 The nature and frequency of the arboricultural supervision and the attendance of the supervising arboriculturist on site will be based upon the construction project timeline, which may in turn be modified by events actually occurring on site.

8.7.2 A written record of all site visits will be made and copies retained by the main contractor and the supervising arboriculturist, with a further copy sent to the designated **Tree Officer within 5 days** of attending site.

8.7.3 The site agent will be able to contact the supervising arboriculturist at any time if any arboricultural matters arise that might need his attention or service.

8.8 **Variations**

8.8.1 A Variation Notice will be issued where any modifications to tree protection measures and construction become necessary. The Notice will set out in writing the problem which led to the change, the modification subsequently required and a confirmation that the modification specified has been properly implemented. The notice will be sent, in writing to the client and Tree Officer.

8.8.2 Any variation will need to be agreed in writing before implementation.

8.9 **Enforcement of STOP to works**

8.9.1 The arboricultural consultant and / or Tree Officer has the authority to **STOP** development works should damage to tree roots be occurring and / or where working methodology is not adhering to the specifications outlined within the AMS report. Emergency situations will be notified by phone calls with written confirmation provided that day.

8.9.2 Where a **STOP** of works be implemented the site works may only re-commence with written consent from the Tree Officer with associated obligations.

8.10 **Incidents**

8.10.1 An Incident Notice will be issued if an unforeseen event occurs that compromises tree protection measures or damages a tree. The procedure should be communicated as follows:

Site Manager to report directly to Arboricultural Consultant. Where the site manager is off site a secondary contact must be designated prior to commencement of works to identify any incident. Incident & emergency situations will be notified by phone calls with written confirmation provided that same day

↓

Arboricultural consultant to identify incident directly to client and / or consulting architect and structural engineer & notify of procedure for remedial actions

↓

Tree officer to be notified by phonecall and / or email if the former is not achievable the same day of any incident

8.11 **Schedule of Arboricultural Supervision**

ALL SITE VISITS TO PROVIDE ARBORICULTURAL REPORT WITH FINDINGS **WITHIN 5 DAYS** OF ATTENDANCE TO TREE OFFICER

PRE-COMMENCEMENT

1 no. Meeting with the following interested parties:

- Arboricultural Consultant (AC)
- Main Contractor (Contracts Manager)
- Arboricultural Contractor

The meeting must take place before any development activity and / or tree works begins to confirm the timing and implementation of tree protection measures including site storage and pertinent operations.Tree protection measures installed as specified within TPP - drawing T003 - and site to be inspected and approved by consulting arboriculturist. Trees to be removed shall be marked by the AC

ENABLING

1 no. meeting during development commencement / set up process to monitor the following:

- Approval of Site Storage / Access /Welfare
- Approval of Tree Protection Fencing specifications
- Monitoring of tree protection measures

DEVELOPMENT WORKS

Site visits during development process to monitor the following and be carried out to the timescales as specified:

- Approval of Site Storage / Access /Welfare
- Approval of Tree Protection Fencing specifications
- Monitoring of tree protection measures for Precautionary Area

Construction of new structure
Full Schedule set out at pre-commencement meeting for co-ordination of Precautionary Area Works within Construction Plan

General Construction / Final Landscapes
Monthly (every 4 weeks maximum) thereafter for

- Approval of Site Storage / Access /Welfare
- Approval of Tree Protection Fencing specifications

9.0 Tree Works Schedule

9.1 All tree work shall be carried out to BS 3998; 2010 Recommendations for Tree Work.

9.2 Tree works shall be undertaken at pre-commencement stage.

9.3 Tree Removal Works Schedule

TREE WORKS SCHEDULE: TREE REMOVAL WORKS UCS, Project 200, Frognal, London, NW3				
Tree No.	Common Name	BS5837 Category	Tree Works	Reasons for works
T3	Cordyline	C	Fell to ground level and grind out stump	To facilitate development
T4	Strawberry tree	C	Fell to ground level and grind out stump	To facilitate development
T53	Himalayan birch	C	Fell to ground level and grind out stump	To facilitate development
T54	Himalayan birch	C	Fell to ground level and grind out stump	To facilitate development
T55	Himalayan birch	C	Fell to ground level and grind out stump	To facilitate development
T56	Himalayan birch	C	Fell to ground level and grind out stump	To facilitate development
T57	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T58	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T59	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T60	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T61	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T62	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T63	Cypress 'Elwoodii'	C	Fell to ground level and grind out stump	To facilitate development
T64	Tamarisk	C	Fell to ground level and grind out stump	To facilitate development
T65	Tamarisk	C	Fell to ground level and grind out stump	To facilitate development

9.4 Tree Pruning Works Schedule

TREE WORKS SCHEDULE: PRUNING WORKS UCS, Project 200, Frognal, London, NW3				
Tree No.	Common Name	BS5837 Category	Tree Works	Reasons for works
T1	English oak	B	Crown reduce height by maximum 2.0m branch lengths Crown reduce spread by maximum 2.5-3m branch lengths to retain even and flowing canopy outline pruning to suitable branch unions Crown lift to 4.0m height pruning maximum 25mm branch diameters	To facilitate development
T49	Honey locust	C	Crown lift to 3.0m height pruning maximum 25mm branch diameters	To facilitate development
T50	Honey locust	C	Crown lift to 3.0m height pruning maximum 25mm branch diameters	To facilitate development
T51	Honey locust	C	Crown lift to 3.0m height pruning maximum 25mm branch diameters	To facilitate development
T52	Honey locust	C	Crown lift to 3.0m height pruning maximum 25mm branch diameters	To facilitate development

9.5 Wildlife & Habitat Protection Guidelines

The tree work specifications included within this report do not provide an exemption from the requirements to comply with the Wildlife and Countryside Act 1981, the Habitats Regulations 1994 and the Countryside and Rights of Way Act 2000, or any acts offering protection to wildlife. Of particular note is the protection offered to bats, birds and their nests, whilst being built or in use. It must be noted that failure to comply with the Acts may result in a criminal prosecution.

Appendices

Appendix A

Tree Survey Schedule (BS5837:2012)

UCS Project 200
Frognal
London
NW3 6XH

Colour Key: BS5837: 2012 (see Section 3.6)

- Category A
- Category B
- Category C
- Category U

Tree Survey Key: BS5837: 2012

- · Number: an identity number which cross-references locations shown on the plans
- · Species: listed by common names
- · Tree Height: height in metres (m)
- · Tree Spread: spread in metres (m)
- · Stem diameter: measured in millimetres (mm) and taken at 1.5m above ground level
  m/s - denotes multi-stemmed with measurement taken of largest stem at base
  t/s - denotes twin -stemmed with measurement taken of largest stem at base
  (e) denotes estimated
- · Age Class: Y (young); EM (early-mature); M (mature); OM (over-mature)
- · Vigour: G (good); F (fair); P (poor); D (dead)
- · Structural Condition: G (good); F (fair); P (poor); D (dead)
- · General Condition Specific comments relating to each tree
- · Estimated Remaining Contribution (years)
- · BS5837 Category Grading - refer to key - Section 1
- · First branch height (metres) / First canopy height (metres)
- · Protection Distance m2 Area (where applicable – BS5827: 2012)
- · Protection Distance Radius (where applicable – BS5827: 2012) - Root Protection Area (RPA)*

BS5837:2012 TREE SURVEY
SITE: UCS, Project 200, Frognal, London, NW3
DATE OF SURVEY: 21st March 2023

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T1	English oak	10	630	6 4 6 6	SM	G	F	B1	20 years +	Sited within raised planter. Planted 1980. Western crown poorly pruned with abrupt mid crown in this direction. Retainer varies at 1.0-1.5m height at greatest to west	4.0	4.0	179.58	7.6
T2	English oak	14	500 (e)	6 5 5 5	SM	F	G	B1	20 years +	Off site to south. Overhang to site above existing roof of structure	6.0	6.0	113.11	6.0
T3	Cordyline	6	M/s 160	2 2 2 2	M	G	G	C1	10 years +	Multi-stem monocotyledon. Ornamental form, approx 6 no. stems	2.0	2.0	8.04	1.6
T4	Strawberry tree	3	M/s 140	2 1 1 2	SM	G	G	C1	10 years +	Multi-stem, pruned to compact form. Ornamental	1.0	1.0	6.16	1.4
T5	Pear	5	170	1 1 3 3	SM	F	F	C1	10 years +	Lapsed espalier growing directly against wall. Crown dominnat to west	1.5	0.5	13.08	2.0
T6	Plum	3	120	2 1 1 2	Y	F	F	C1	10 years +	Young espalier with unruly habit. Leaning to west away from wall which it is growing directly against	0.5	0	6.52	1.4
T7	Pear	7	320	2 2 3 5	M	F	G	B1	20 years +	Mature lapsed espalier growing directly against wa;;. Bifurcates at 1.0m. Dominant north stem. Lapsed management 8-10 years with crown increasingly dominant to west	2.5	1.5	46.33	3.8
T8	Plum	4	120	2 1 1 2	EM	F	F	C1	10 years +	Young espalier with unruly habit. Leaning to west away from wall which it is growing directly against	0.5	0	6.52	1.4
T9	Sycamore	10	400 (e)	5 4 6 0	EM	F	G	B1	20 years +	Off site to east. Overhang to site at 3-8m height of 2m branch lengths. Retained by boundary wall and retainer within site	4.0	3.0	72.39	4.8
T10	Black pine	11	600 (e)	7 5 6 7	M	G	G	A1	40 years +	Off site to east. Overhang to site at 4-9m height of 3-4m branch lengths. Retained by boundary wall and retainer within site. Dense low compact and spreading form	4.0	4.0	162.88	7.2
T11	Pear	4	m/s 160	3 1 4 3	SM	F	F	C1	10 years +	Supressed beneath T10, Pine. Wire growing within main stem	1.5	1.0	8.04	1.6
T12	Pear	1.5	140	1 0 1 2	SM	P	P	U	Less than 5 years	Fallen to west	0	0	-	-

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T13	Damson	2.5	140	2 0 1 3	Y	F	G	C1	10 years +	Partial espalier; lapsed to west / south. Heavily pruned	0.5	0.5	8.87	1.6
T14	Apple	2	160	3 0 2 3	SM	F	G	C1	10 years +	Espalier; lapsed growing away from wall	0.5	0.5	11.58	1.0
T15	Apple	1.5	80	2 0 2 1	SM	F	G	C1	10 years +	Espalier; lapsed growing away from wall. Compact - likely dwarf form	0.5	0.5	2.9	1.0
T16	Apple	1.5	100	2 0 2 1	SM	F	G	C1	10 years +	Espalier; lapsed growing away from wall. Compact - likely dwarf form	0.5	0.5	4.52	1.0
T17	Apple	1.5	80	1 0 1 1	SM	F	G	C1	10 years +	Espalier; lapsed growing away from wall. Compact - likely dwarf form	0.5	0.5	2.9	1.0
T18	Pear	2	80	1 0 1 1	SM	F	G	C1	10 years +	Dwarf stock - fair form	0.5	0.5	2.9	1.0
T19	Pear	2.5	80	1 0 1 1	SM	F	G	C1	10 years +	Dwarf stock - fair form	0.5	0.5	2.9	1.0
T20	Apple	2	100	1 0 1 2	SM	F	G	C1	10 years +	Espalier; lapsed growing away from wall. Lapsed growth to east	0.5	0.5	4.52	1.0
T21	Pear	3	T/s 160	1 0 1 2	EM	F	G	C1	10 years +	Reduced within past 6 months	0.5	0.5	8.04	1.6
T22	Apple	2	80	1 0 1 2	SM	F	G	C1	10 years +	Fallen to north west	0.5	0.5	2.9	1.0
T23	Apple	2.5	M/s 160	2 0 2 2	SM	F	G	C1	10 years +	Reduced within past 6 months	0.5	0.5	8.04	1.6
T24	Common lime	18	600 (e)	4 4 5 4	EM	F	G	B2	20 years +	Off site to east beyond retaining wall with further retainer within site to west of tree. Overhang at significant height only from lifting to 6m over site	6.0	6.0	162.88	7.2

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T25	Common lime	18	500 (e)	3 4 2 4	EM	F	G	B2	20 years +	Off site to east beyond retaining wall with further retainer within site to west of tree. Overhang at significant height only from lifting to 6m over site	6.0	6.0	113.11	6.0
T26	Common lime	18	600 (e)	4 4 5 4	EM	F	G	B2	20 years +	Off site to east beyond retaining wall with further retainer within site to west of tree. Overhang at significant height only from lifting to 6m over site	6.0	6.0	162.88	7.2
T27	Ash	14	600 (e)	4 4 3 5	EM	F	G	B2	20 years +	Off site to east. Excessively ivy clad. Low growth developing over site. Overhang of 3m branch lengths at 3-10m height	4.0	2.0	162.88	7.2
T28	London plane	22	1000 (e)	9 9 10 9	M	G	G	A1	40 years +	Off site to east with boundary wall as formal barrier. Branch framework lifted from main stem to 10-12m height. Low growth over site to 7m; generally lifted. Mature spreading crown	9.0	7.0	452.45	12.0
T29	Horse chestnut	12	400 (e)	6 8 4 7	SM	F	G	B1	20 years +	Off site to east; supressed growing to north. Asymetric crown. Overhang of 3m branch lengths at 3-7m height	3.0	3.0	72.39	4.8
T30	Holly	5	M/s 100	2 2 2 2	SM	F	F	C1	10 years +	Lapsed hedge pruned form / coppice	0.5	0	4.52	1.0
T31	Holly	4	80	1 1 1 1	Y	F	F	C1	10 years +	Self sown sapling	0.5	0	2.9	1.0
T32	Crab apple	7	200	3 3 3 3	EM	F	F	C1	10 years +	One-sided crown to west; declining vigour with deadwood developing	3.0	2.5	18.1	2.4
T33	Crab apple	9	290	3 3 3 2	EM	F	F	C1	10 years +	Leans to south west with good root flare. Play features set within ground to north	3.0	3.0	38.05	3.5
T34	Cherry	12	260	3 3 4 3	EM	F	F	C1	10 years +	Unbalanced canopy to the west but is recovering with strong epicormic development. This tree is growing close to the building and has been selectively crown reduced in the past. The tree has some dead wood throughout. Developing form for embankment plantings.	3.0	2.5	30.59	3.1
T35	Fastigiate hornbeam	9	230	4 3 2 3	SM	G	G	B2	20 years +	Developing form for embankment plantings. Pruned back from building to give clearance of southern crown of 3m	0.5	1.0	23.93	2.8
T36	Fastigiate hornbeam	9	220	4 3 2 3	SM	G	G	B2	20 years +	Developing form for embankment plantings. Pruned back from building to give clearance of southern crown of 3m	0.5	1.0	21.9	2.6
T37	Fastigiate hornbeam	9	220	4 3 2 3	SM	G	G	B2	20 years +	Developing form for embankment plantings. Pruned back from building to give clearance of southern crown of 3m	0.5	1.0	21.9	2.6

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T38	Fastigiate hornbeam	9	220	4 3 2 3	SM	G	G	B2	20 years +	Developing form for embankment plantings. Pruned back from building to give clearance of southern crown of 3m	0.5	1.0	21.9	2.6
T39	Fastigiate hornbeam	9	220	4 3 2 3	SM	G	G	B2	20 years +	Developing form for embankment plantings. Pruned back from building to give clearance of southern crown of 3m	0.5	1.0	21.9	2.6
T40	Damson	4	80	2 1 2 2	Y	F	F	C1	10 years +	Ornamental within meadow area	1.0	1.0	2.1	1.0
T41	Cherry	5	100	2 3 3 2	Y	F	F	C1	10 years +	Selff sown, developing	1.0	1.0	2.9	1.2
T42	Apple	2.5	80	1 1 1 1	Y	F	F	U	Less than 5 years	Ornamental within meadow area. Limited lifespan	0.5	0.5	-	-
T43	Beech	14	400 (e)	2 5 6 6	SM	F	G	B2	20 years +	Off site to north. Lapsed boundary hedge with tree comprising southern most planting. Overhang of 3-4m branch lengths at 2-9m height	3.0	2.0	72.39	4.8
T44	Leyland Cypress	9	300 (e)	2 4 5 4	SM	F	G	C1	10 years +	Off site to north; lapsed screening tree. Overhang within site of 3-4m branch lengths at 2-7m height	2.0	2.0	40.72	3.6
T45	Bay laurel	7	200 (e)	3 4 4 4	SM	F	G	C1	10 years +	Off site to north; lapsed ornamental / screening tree. Overhang within site of 2m branch lengths at 2.5-6m height	2.5	2.5	18.1	2.4
T46	Sycamore	20	800 (e)	8 7 8 9	M	F	G	B1	20 years +	Off site to north. Lifted over site with significant retaining wall as boundary feature. Mature crown and branch framework	5.0	5.0	289.57	9.6
G47	Leyland Cypress	14	M/s 300 (e)	4 8 4 6	EM	F	G	C1	10 years +	Off site screening hedge; lapsed management. Overhang to site of 3-4m branch lengths at 5-10m height	5.0	5.0	/	3.6
T48	Yew	10	300 (e)	4 5 4 4	SM	G	G	B1	20 years +	Off sitelow screening tree. Overhang to site of 3-m branch lengths at 3-7m height	3.0	3.0	40.72	3.6
T49	Honey locust 'Sunburst'	7	120	3 3 3 3	SM	G	F	C1	10 years +	Open crown, crown lifted form. Limited planting pit. Minor deadwood throughout	2.5	2.5	6.52	1.4
T50	Honey locust 'Sunburst'	7	110	3 3 3 3	SM	G	F	C1	10 years +	Open crown, crown lifted form. Limited planting pit. Minor deadwood throughout	2.5	2.5	5.47	1.3

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T51	Honey locust 'Sunburst'	7	110	3 3 3 3	SM	G	F	C1	10 years +	Open crown, crown lifted form. Limited planting pit. Minor deadwood throughout	2.5	2.5	5.47	1.3
T52	Honey locust 'Sunburst'	7	120	3 3 3 3	SM	G	F	C1	10 years +	Open crown, crown lifted form. Limited planting pit. Minor deadwood throughout	2.5	2.5	6.52	1.4
T53	Himalayan birch	6	120	2 3 2 2	SM	F	F	C1	10 years +	Ornamental; limited planting pit.	2.0	2.0	6.52	1.4
T54	Himalayan birch	6	120	2 2 3 2	SM	F	F	C1	10 years +	Ornamental; limited planting pit.	2.0	2.0	6.52	1.4
T55	Himalayan birch	6	100	2 2 2 2	SM	F	F	C1	10 years +	Ornamental; limited planting pit. Compacted root plate / surrounds with standing water	2.0	2.0	2.9	1.2
T56	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T57	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T58	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T59	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T60	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T61	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T62	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8
T63	Cypress 'Elwoodii'	4	M/s 80	1 1 1 1	SM	F	F	C1	10 years +	Within grouping - formal planting within hardscapes; limited rooting environment. Low vitality for species	0.5	0.5	2.0	0.8

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	First branch height (m)	First canopy height (m)	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T64	Tamarisk	4	M/s 100	2 3 2 3	EM	F	G	C1	10 years +	Ornamenal plamnting with shrub form and over-exytended lateral spread. Adjacent to steps	1.0	0.5	2.9	1.2
T65	Tamarisk	4	M/s 100	3 3 3 3	EM	F	G	C1	10 years +	Ornamenal plamnting with shrub form and over-exytended lateral spread. Within shrub border	1.0	0.5	2.9	1.2
T66	Silver maple	16	490	6 6 5 6	EM	F	G	B1	20 years +	Sound at base; unions at 2 and 4m tight; characteristic of species. Columnar form. Crown growing within 3.0m of school building to north east	5.0	5.0	108.63	5.9
T67	Silver maple	14	510	5 6 4 5	EM	F	G	B1	20 years +	Sound at base; main stem bifurcates at 3.0m height - sound. Over-extended western leader to highway / west with low growth developing.	5.0	5.0	117.68	6.1
T68	Silver maple	5	100	1 1 1 1	Y	F	F	C1	10 years +	Newly planted tree	2.0	2.0	4.7	1.2
T69	Silver maple	15	500	5 6 4 5	EM	F	G	B1	20 years +	Sound at base; crown lifted over highway / car parking area	5.0	5.0	113.11	6.0
T70	Silver maple	15	500	5 6 4 5	EM	F	G	B1	20 years +	Sound at base; crown lifted over highway / car parking area	5.0	5.0	113.11	6.0
T71	Silver maple	15	500	5 6 4 5	EM	F	G	B1	20 years +	Sound at base; crown lifted over highway / car parking area	5.0	5.0	113.11	6.0
T72	Silver maple	15	500	5 6 4 5	EM	F	G	B1	20 years +	Sound at base; crown lifted over highway / car parking area	5.0	5.0	113.11	6.0
T73	Silver maple	15	500	5 6 4 5	EM	F	G	B1	20 years +	Sound at base; crown lifted over highway / car parking area	5.0	5.0	113.11	6.0

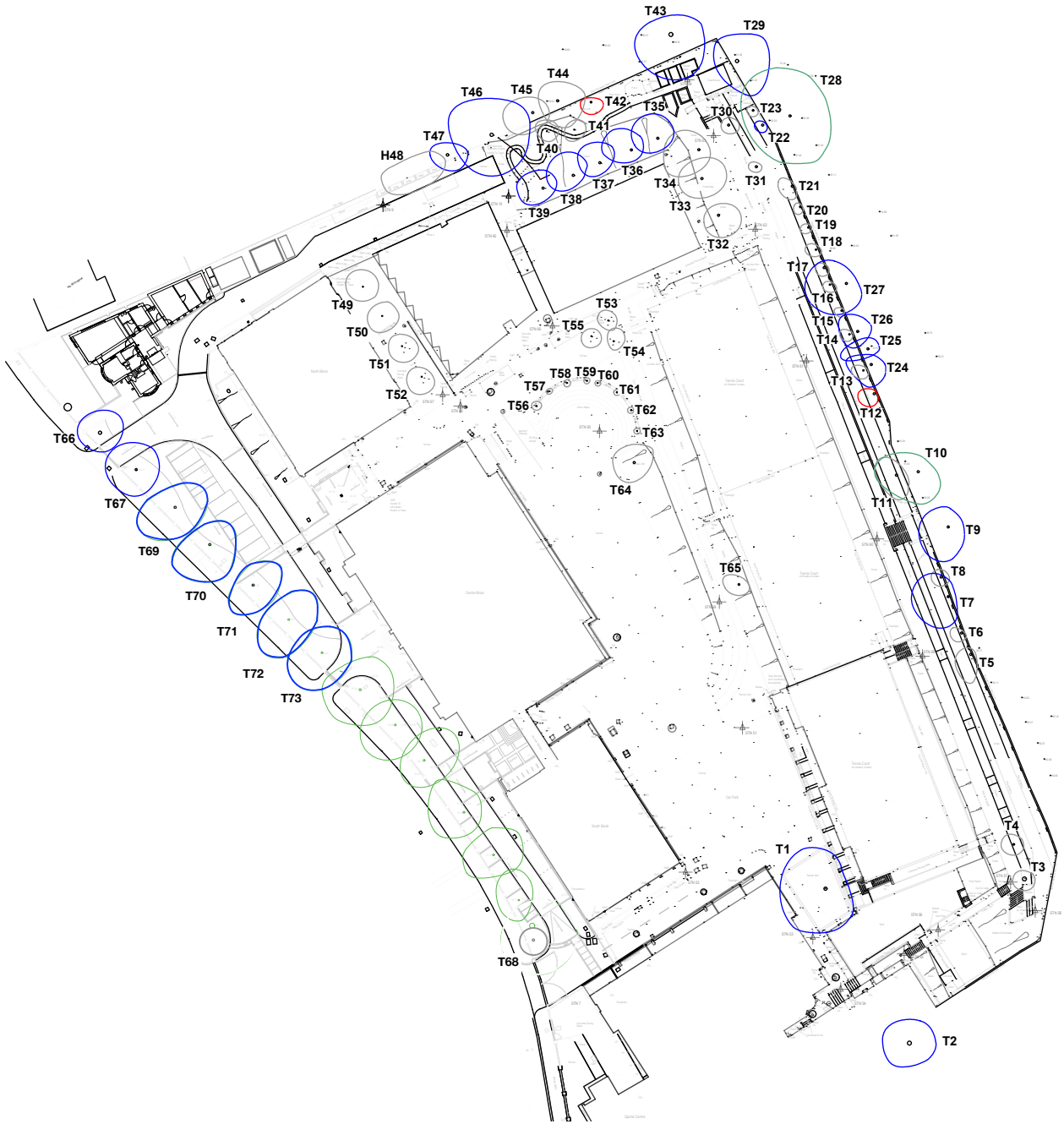
Appendix B

Existing Tree Survey (T001)
Tree Constraints Plan (T002)
Tree Protection Plan (T003)
(BS5837:2012)

UCS Project 200
Frognal
London
NW3 6XH

Colour Key: BS5837: 2012 (see Section 3.6)

- Category A
- Category B
- Category C
- Category U



KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION
	SHADING ARC
	TREE NOT SURVEYED

BS5837 (2012) Tree Survey Notes

1. In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white

2. If received electronically it is the recipients responsibility to print this drawing to correct scale. Only written dimensions should be used where not printed to scale.

3. This drawing should be read in conjunction with all other relevant drawings and specifications

4. Marcus Foster Arboricultural Design & Consultancy accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided

5. Off site trees have been plotted based on site visit survey and locations are not based upon topographiccal survey

NOTE: Tree survey locations based on previous undertaken topographical surveys for design issue and additional GIS mapping has not been undertaken for the purposes of this survey
All off site trees where not plotted within topographic survey information are plotted using on site survey tools from within the site only.

1:800 0 5 10 20 30 40 50m

N

Revisions

Rev.	Date		Checked
/	03.04.2023	ISSUED FOR INFORMATION	MF

SITE	Project 200, UCS, Frognal, Hampstead London, NW3 6QN
CLIENT	UCS
DWG TITLE	Existing Tree Survey Plan
SCALE	1:800 @ A3
DATE	APR 2023
JOB NO	AIA/MF/055/23
DWG NO.	T001

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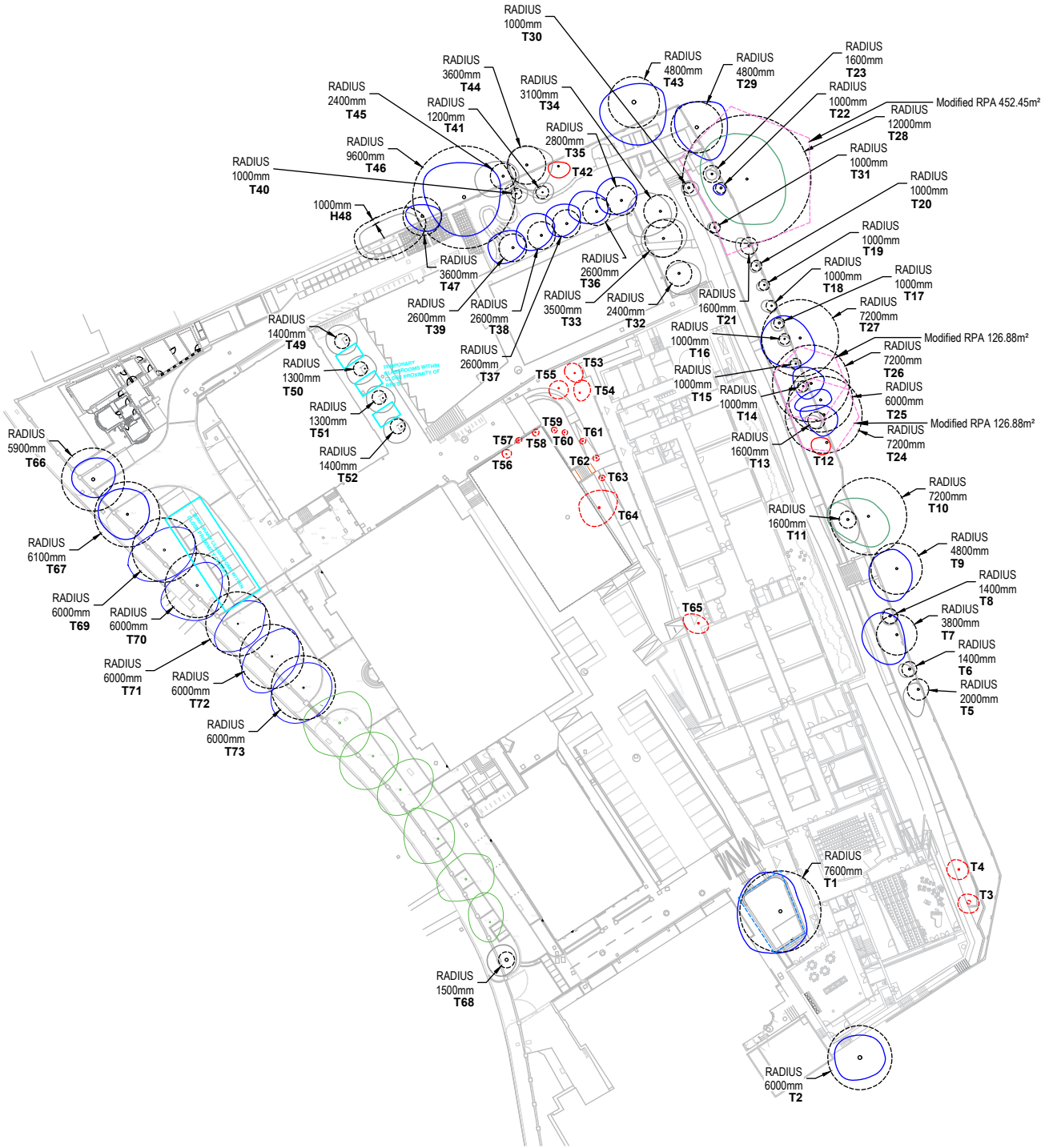

KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION
	SHADING ARC
	TREE NOT SURVEYED
	EXISTING PLANTER LANDSCAPE FEATURE
	MODIFIED RPA

BS5837 (2012) Tree Survey Notes

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Revisions

Rev.	Date		Checked
/	03.04.2023	ISSUED FOR INFORMATION	MF
/	01.12.2023	ISSUED FOR INFORMATION	MF
/	07.12.2023	ISSUED FOR INFORMATION	MF

SITE	Project 200, UCS, Frognal, Hampstead London, NW3 6QN
CLIENT	UCS
DWG TITLE	Tree Constraints Plan
SCALE	1:800 @ A3
DATE	APR 2023
JOB NO	AIA/MF/055/23
DWG NO.	T002

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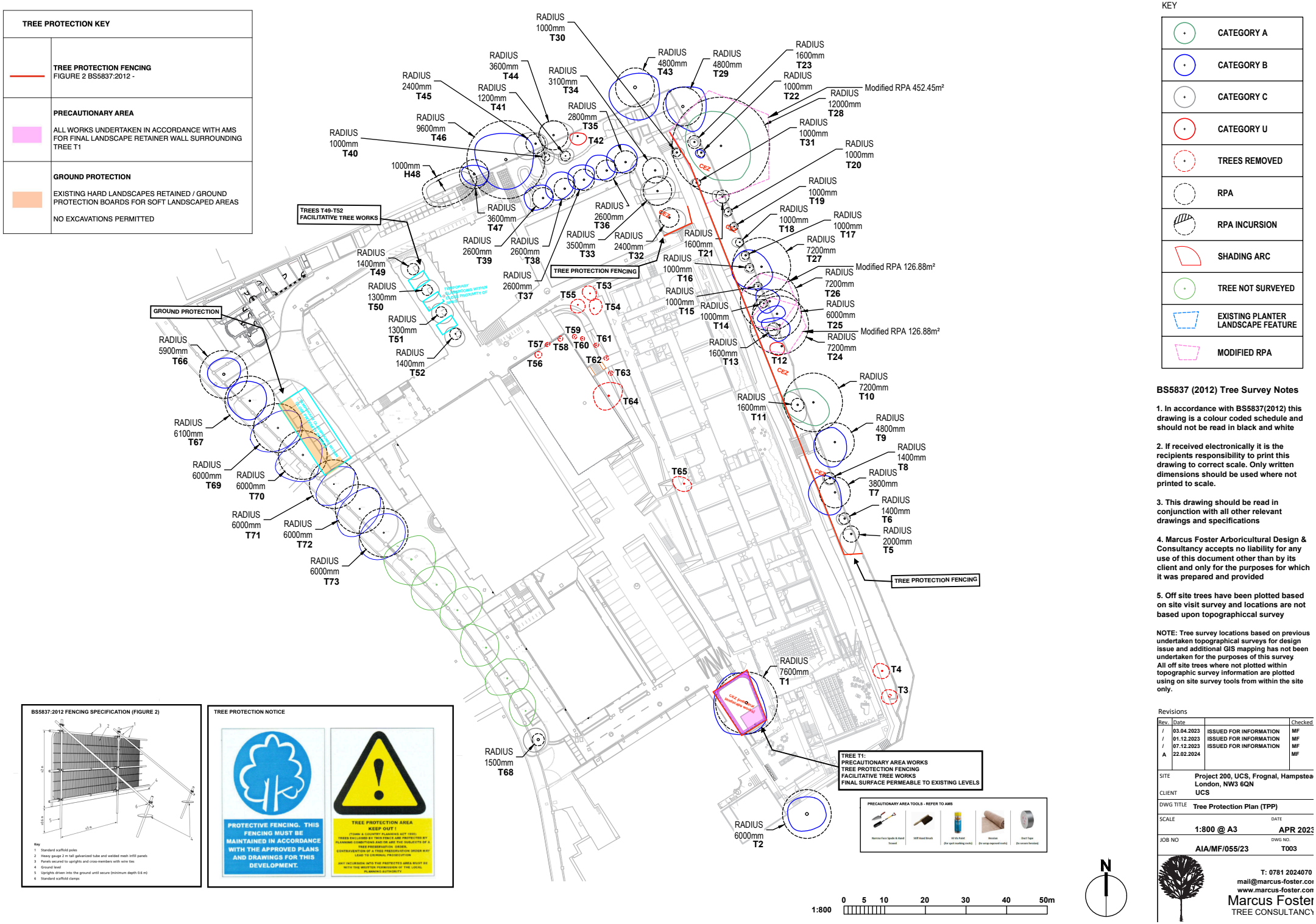

KEY

- CATEGORY A
- CATEGORY B
- CATEGORY C
- CATEGORY U
- TREES REMOVED
- RPA
- RPA INCURSION
- SHADING ARC
- TREE NOT SURVEYED
- EXISTING PLANTER LANDSCAPE FEATURE
- MODIFIED RPA

BS5837 (2012) Tree Survey Notes

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Revisions

Rev.	Date		Checked
/	03.04.2023	ISSUED FOR INFORMATION	MF
/	01.12.2023	ISSUED FOR INFORMATION	MF
/	07.12.2023	ISSUED FOR INFORMATION	MF
A	22.02.2024		MF

SITE	Project 200, UCS, Frognal, Hampstea London, NW3 6QN
CLIENT	UCS
DWG TITLE	Tree Protection Plan (TPP)
SCALE	1:800 @ A3
DATE	APR 2023
JOB NO	AIA/MF/055/23
DWG NO.	T003

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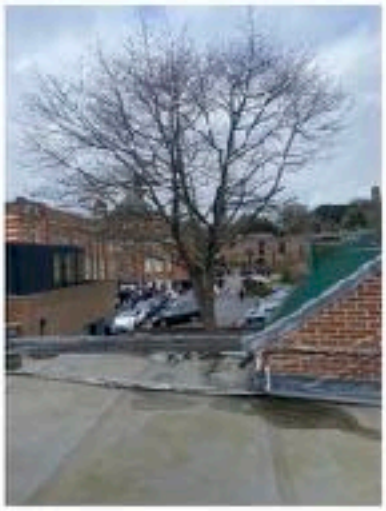
Appendix C:

Tree Survey Photographs

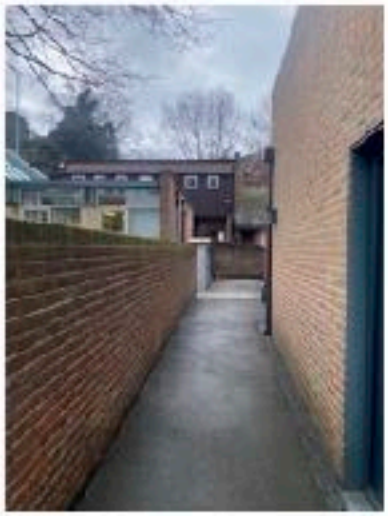
UCS, Project 200
Frognal
London, NW3

Taken by M Foster_ March 2023

Tree T1 viewed to south showing raised retainer



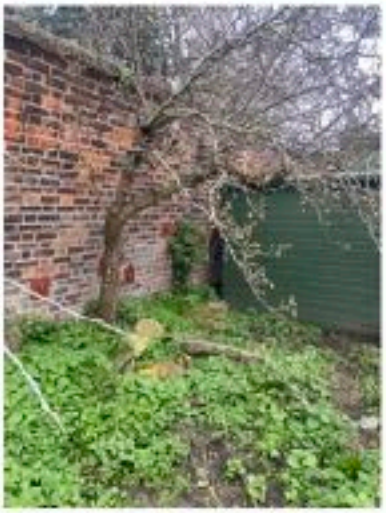
Tree T1 viewed to north from elevated position



Tree T1 viewed to south showing raised retainer

Trees T3 & T4 viewed to east

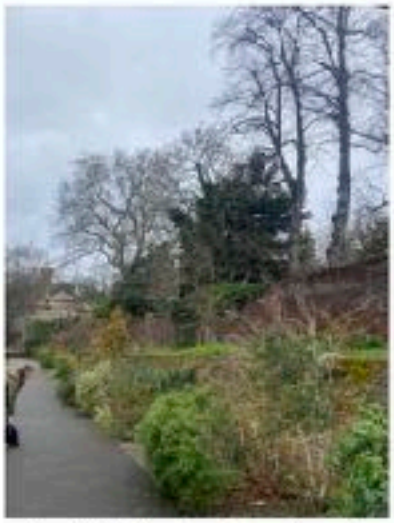
Lapsed espalier tree T7 viewed to east



Tree T11 lapsed espalier

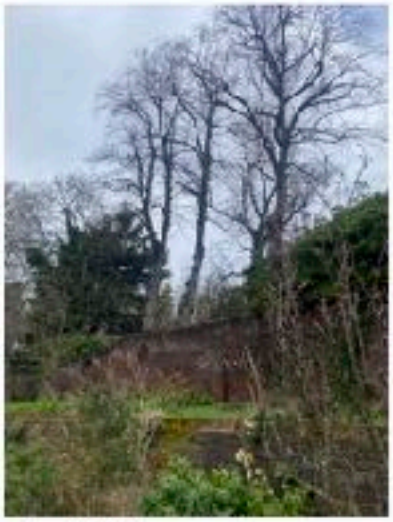
Lapsed espalier trees to eastern boundary

Lapsed espalier trees to eastern boundary also showing trees T24 and T25



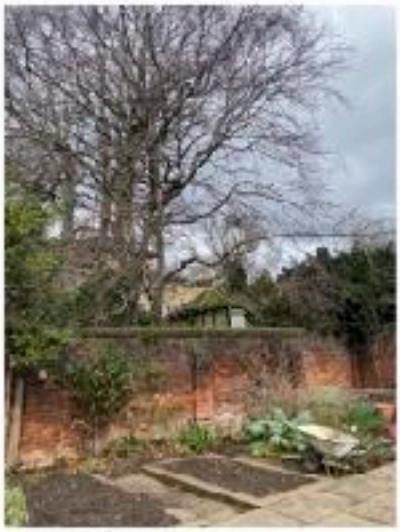
Trees T24-T27 as viewed to north east

Trees T9-10 as viewed to south east

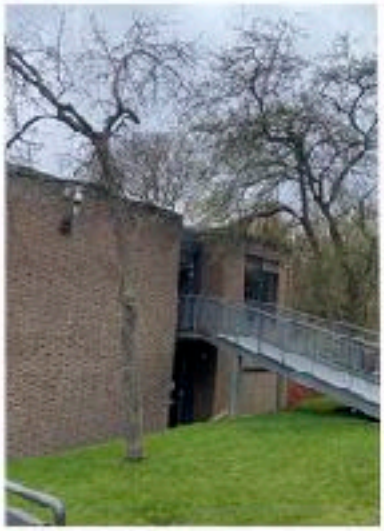


Trees T24-T27 as viewed to east

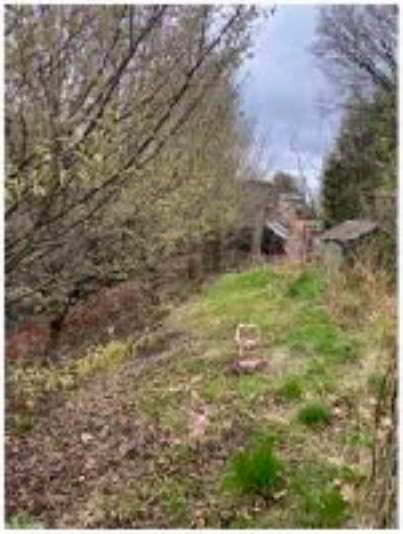
Tree T28 as viewed to north east



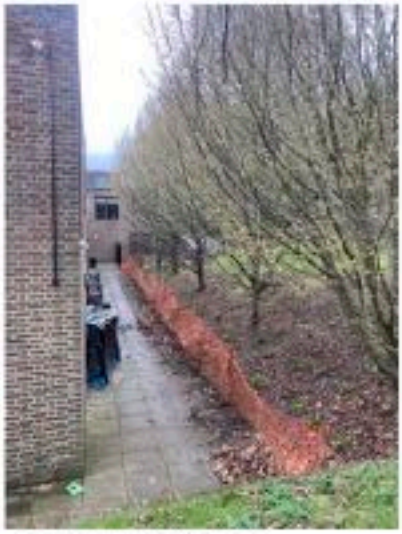
Tree T43 as viewed to north east



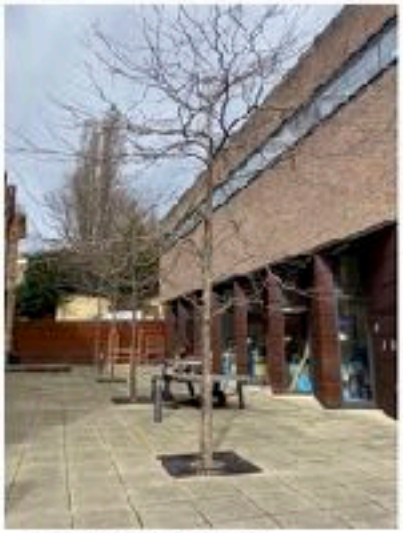
Trees T32-T34 viewed to south west



Trees T35-T39 viewed to east



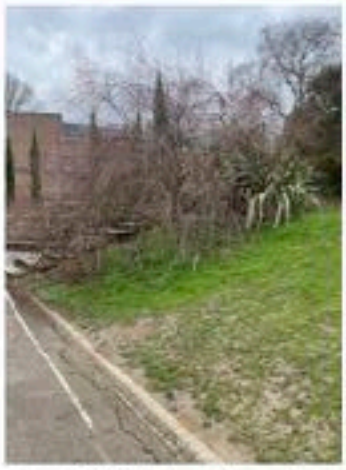
Trees T35-T39 viewed to east



Trees T49-52 viewed to west

Trees T56-T55 as viewed to east

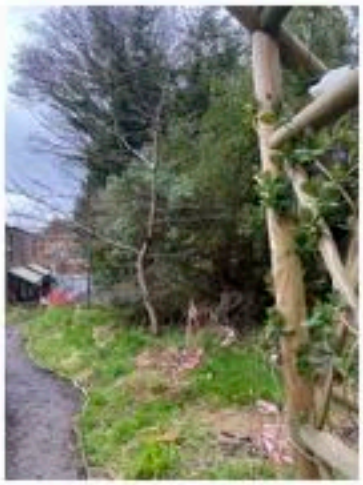
Trees T56-T55 as viewed to south east



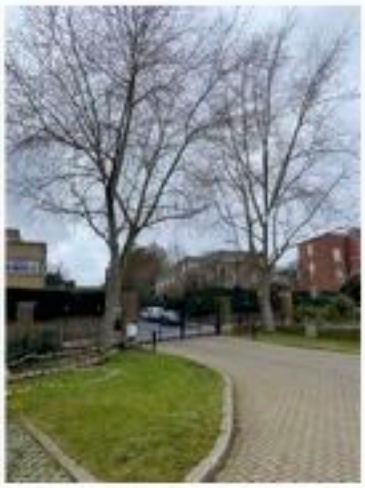
Trees T60-T64 viewed to north

Trees T56-T64 viewed to south

Off site tree T46 viewed to north



Trees T44-H48 viewed off site to north also showing T40-T42 orchard trees



Trees T66-T67 viewed to west

Trees T44-H48 viewed off site to north

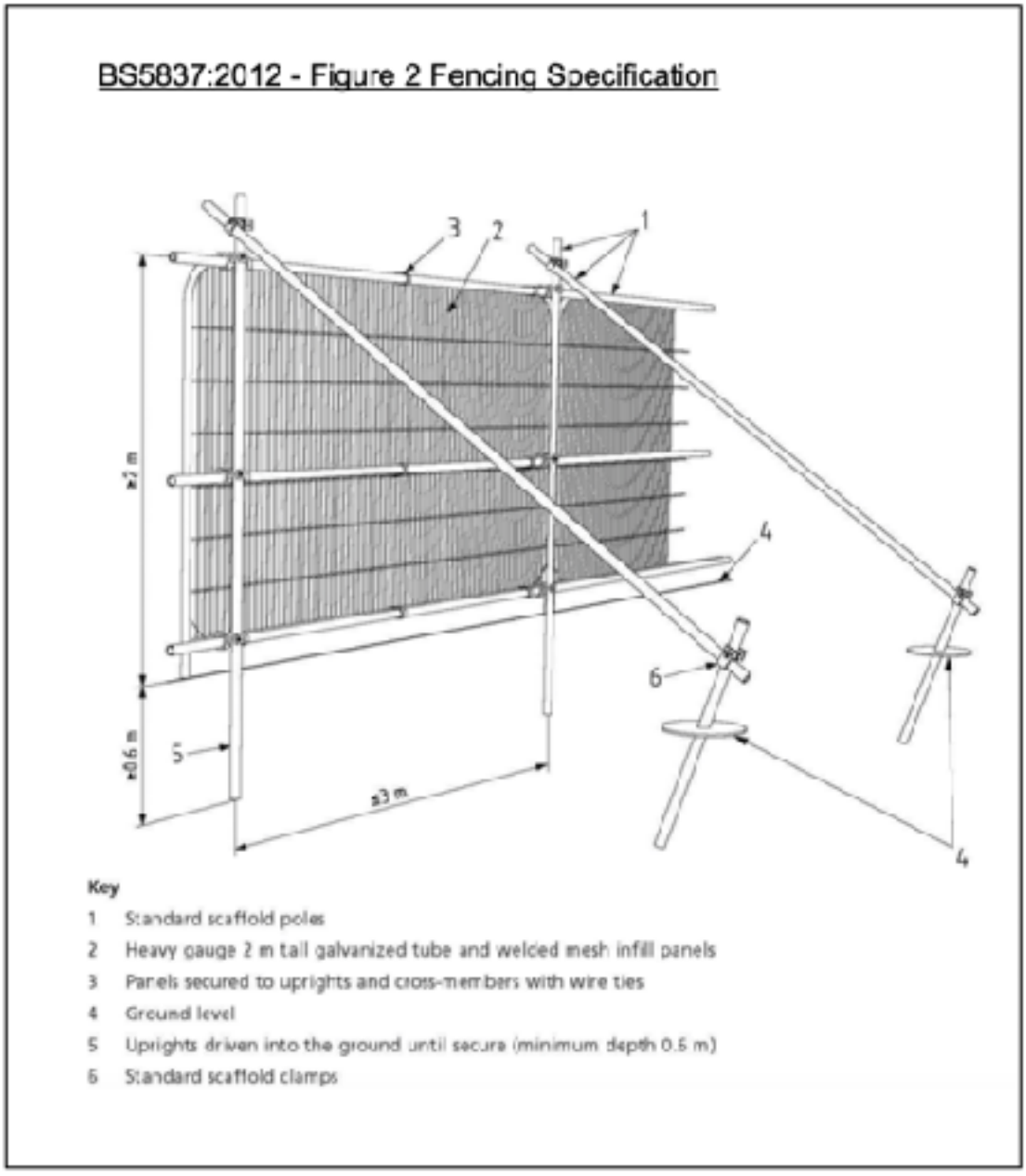
Appendix D:
Tree Protection Notice

Generic Tree Protection Notice
(BS5837: 2012):

Notice to be clearly shown on site where fencing constructed
AT ALL TIMES

Appendix E
Tree Protection Fencing Specifications

Figure 2 BS5837:2012 Fencing Specification



Basal Shutering Fencing Specification

BASAL SHUTTERING

Specification of Basal Shuttering Tree Protection

The fencing must fully enclose the main stem and initial buttress roots of the tree by being constructed as a self supporting structure to the following specifications:

Plywood Specification: 25mm thickness external grade
Supporting Structure: 4" x 2" softwood timbers to form structure within shuttering
NOTE - No ground supports permitted
Structural integrity of structure to be determined by building contractor and approved by supervising arboriculturil
Tree Protection Fencing Notices: 5 x Notices

Example of Basal Shuttering Tree Protection

Appendix F: References

1. BS5837: British Standard: Trees in relation to construction - Recommendations, British Standard (2012)

2. Principles of Tree Hazard Assessment and Management, Lonsdale, D. (Department for Transport, Local Government and the Regions, 1999)

3. The Body Language of Trees, Mattheck, C. and Breloer, H. (HMSO, 1994)

4. Trees in Britain, Philips, R. (Pan Books, 1978).

5. Diagnosis of Ill Health in Trees, Strouts, R. and Winter, (TSO, 1994)

6. National Planning Policy Framework February 2019 Ministry of Housing, Communities and Local Government

7. Plymouth & South West Devon Local Plan 2014 - 2034 (Adopted 2019)

8. NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2), (November 2007)

PREPARED BY MARCUS FOSTER MArborA
END OF REPORT _ Page 52/52