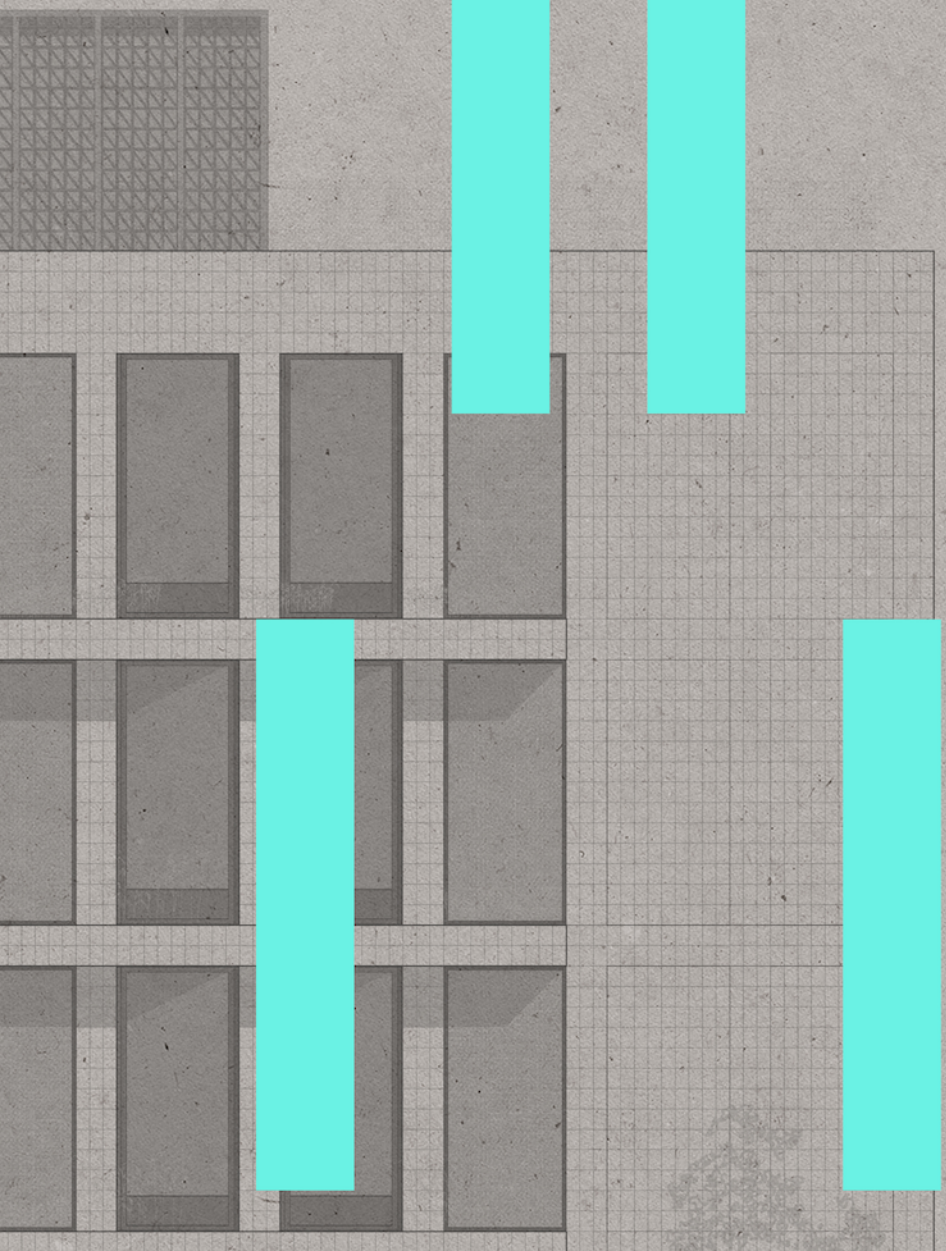
Former Car Repair Centre
70 – 86 Royal College Street
London
NW1 0TH

ARBORICULTURAL REPORT



ROCCO VENTURES

NHS
Central and
North West London
NHS Foundation Trust

ChallisConsulting

Arboricultural Consultancy
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Revision 1 of Tree Survey
Arboricultural Impact Assessment
Arboricultural Method Statement

Relating to:

70–86 Royal College Street, Camden, London NW1 0TH

Produced for:
Norton Mayfield Architects

Prepared by:
Challice Consulting Ltd.
Mr. David Challice
Dip. Arb. (RFS), F.Arbor.A, MICFor
Chartered Arboriculturist

Date:
16th January 2020

Our Ref:
CC/2217 AR4170

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APPENDICES

Appendix 1	Tree Survey Schedule with Recommended Tree Works
Appendix 2	Tree Protection Plan in Colour at A1 and Scale 1:200 with Tree Protective Fencing Specification
Appendix 3	Example of Site Inspection Record
Appendix 4	Induction Form for Personnel

INTRODUCTION

1.0 Frequently Used Key Terms and Abbreviations

Arboricultural Method Statement	AMS
British Standard 5837:2012 – Recommendations for Trees in Relation to Design, Demolition and Construction	BS 5837
British Standard 3998:2010 - Recommendations for Tree Work	BS 3998
Root Protection Area/Root Protection Areas	RPA/RPAs
Local Planning Authority	LPA

2.0 The Proposal

2.1 It is proposed to demolish the existing vacant structure and replace it with a new intermediate care facility on the existing site. Pre-application discussions with Planning Officers from the London Borough of Camden have been carried out on multiple occasions in 2019.

3.0 Instructions and Purpose

3.1 This report has been commissioned by Norton Mayfield Architects to;

- Survey the trees in accordance with British Standard (BS 5837) 5837:2012 - Trees in Relation to Design, Demolition and Construction- Recommendations.

- Make suggestions to decrease the arboricultural impact of the proposed scheme on the retained tree during the design process.

- Detail the arboricultural impact of the proposed project.

- Prepare a tree work schedule to British Standard (BS 3998) 3998:2010 - Recommendations for Tree Work.

- Develop a tree protection strategy for the duration of the development including any demolition works.

- Advise on the enhancement of the street tree planting directly outside the site by providing funds to replace Amelanchier T2 and plant two additional trees along with associated maintenance costs for a five year period.

3.2 Provision of the above information is designed to address the requirements of the LPA in terms of the arboricultural information necessary to register and determine the planning application.

4.0 Scope

4.1 In surveying the trees to the requirements of BS 5837, trees on and immediately adjacent to the site with a stem diameter over 75mm have

been included. Large shrubs and hedges have been included where these are considered to be of significant amenity value. These are particularly important where they provide boundary screening. For clarity and ease of data interpretation, large shrubs have been classified as trees.

4.2 A full hazard assessment of the trees (including the assessment of decay or defects and their impact), has not been undertaken as this is considered beyond the scope of this report. Any obvious hazards and defects have been identified in the Tree Survey Schedule and appropriate works recommended for immediate action.

4.3 It is the Client or their representative's responsibility to review the contents of this report to ensure it meets their requirements before it is sent to the LPA.

5.0 Documents Supplied/Used

Document	Obtained From	Format/Ref.
Existing and proposed layout plans	Norton Mayfield Architects	Dwg.
Topographical Survey	Norton Mayfield Architects	Dwg.

6.0 Site Details

6.1 The site of 70-86 Royal College Street is comprised of a large vacant building with smaller vacant outbuildings and associated hard surfacing. The previous use was as a commercial garage for vehicle maintenance and repairs.

6.2 The site is largely flat with no significant inclines in any direction that would affect the recommendations in this report.

6.3 The site is within the administrative jurisdiction of the London Borough of Camden.

6.4 I understand from the Client that none of the trees have Tree Preservation Orders at the time of the survey.

TREE SURVEY

7.0 Survey Method

7.1 The site and trees were inspected on 14th November 2019.

7.2 The trees were inspected from ground level and no climbing inspections were undertaken.

7.3 Stem diameters were measured using a diameter tape at 1.5m from ground level unless stated in the Tree Survey Schedule at **Appendix 1**. The locations of the surveyed trees have originated from the drawings supplied by the Client unless otherwise stated in the Tree Survey Schedule.

8.0 Tree Details

8.1 The total number of records is as follows:
Individual Trees (T): 3
Tree Groups (G): 0

8.2 The tree details and proposed works are presented in the Tree Survey Schedule with Recommended Tree Works at **Appendix 1** and tree positions are shown on the Tree Protection Plan at **Appendix 2**.

8.3 The quality and value of the tree stock has been broken down by BS 5837 quality grade. The grading system can be summarised as follows:
A Grade – trees of high quality and value with a life expectancy of more than 40 years
B Grade – trees of moderate quality and value, with a life expectancy of more than 20 years
C Grade – trees of low quality and value, with a life expectancy of more than 10 years
U Grade – trees usually for removal (unless otherwise stated), with a life expectancy of less than 10 years

Quality and Value of Existing Tree Stock

Total No. Trees (3)	A Grade	B Grade	C Grade	U Grade
No. of Trees	0	1	2	0

8.4 The retained tree (Himalayan Birch T3) is included in the Tree Survey Schedule with reference to Table 1 of BS 5837. The RPA is the area, measured in m^2, which is calculated in accordance with the BS 5837 using the stem diameter of the trees. This should provide the retained tree with sufficient rooting environment to survive the proposed development.

ARBORICULTURAL IMPACT ASSESSMENT

9.0 Introduction to Arboricultural Impact Assessment

9.1 This section comprises an assessment of the impact the proposed works detailed in Section 2 above have on trees. It considers the arboricultural impact and how this may be mitigated.

10.0 Tree Removal and Retention

10.1 The proposed scheme provides for the retention and protection of Himalayan Birch T3 with Sycamore T1 and Amelanchier T2 not suitable for retention within the proposed scheme. Trees T2 and T3 will require the owner's written permission before any tree work is carried out.

11.0 Tree Pruning Works

11.1 Minor tree pruning is recommended for T3 to ensure reasonable clearance from the proposed construction. The pruning described in the Tree Survey Schedule with Recommended Tree Works at **Appendix 1** will not adversely affect the trees or their contribution to local amenity.

12.0 Incursions into Root Protection Areas

12.1 There are no incursions into the RPA of retained tree T3 within this scheme.

12.2 Existing buildings are also to be demolished adjacent to the RPA of retained tree T3. These works will be undertaken in an arboriculturally sensitive manner as detailed in the AMS.

12.3 No new underground services are to be installed within the RPA of the retained tree.

13.0 Proximity Issues and Shading

13.1 The approximate shade segment for Himalayan Birch T3 has been plotted using the ArborCAD software system, which identifies the approximate area of the site which may be affected by shade during the course of the day. The shade segment does not represent the area which will be in shade all day long; however, it represents an area which **may** be affected **at some point** during the course of a day by shade depending on the time of day and season.

13.2 The juxtaposition between tree T3 and the proposed development is in accordance with Section 5.3 of the BS 5837 and should not lead to future pressure to heavily prune or remove this tree for the following reasons:

1. Tree pruning has been recommended to provide adequate separation between the proposed development and the T3.
2. Any future tree pruning works are unlikely to be over and above those generally accepted as good arboricultural practice in an urban environment.
3. Low maintenance gutters can be specified to negate the need for removing leaves from the rainwater collection system.

14.0 Summary of Arboricultural Impact

14.1 In summary, the arboricultural impact of the proposed scheme is relatively minor as the two trees being removed are of low to moderate quality and will cause very little impact to the surrounding landscape.

14.2 I have assessed the impact of the proposed development and it is considered to be in line with the recommendations set out in British Standard 5837.

14.3 The proposed development includes planting three new trees and is, therefore, considered an enhancement, in arboricultural terms, by comparison to the existing situation on site.

14.4 Tree T3 can be afforded an appropriate degree of protection in accordance with the BS 5837 as detailed in the AMS.

ARBORICULTURAL METHOD STATEMENT

15.0 Introduction to Arboricultural Method Statement

15.1 To safeguard T3 (both above and below ground parts) during the development works and preserve the soil structure of areas which could be allocated for new planting, it will be necessary to implement tree protection measures as outlined below.

15.2 The basic principle is that the area inside the tree protective fencing and where ground protection has been used is to be protected for the duration of the works.

15.3 A copy of this AMS shall be maintained on site at all times and made available to all site personnel.

15.4 All site personnel shall be made aware of the key impact of this AMS and be given an arboricultural induction by the Site Manager. An Induction Form is attached at **Appendix 4**. A copy of the Induction Form will be signed by all site personnel to confirm that they have understood the issues involved.

15.5 As of 2005, Local Planning Authorities have powers to serve **Temporary Stop Notices** if agreed tree protection measures are not carried out. Adhering to this AMS will ensure that such costly and time consuming action is avoided.

16.0 Pre-Commencement Meeting

16.1 A pre-commencement site meeting, involving representatives from the Development Company, the Arboricultural Consultant and the LPA Tree

Officer will be held to ensure that all aspects of the tree protection process are understood and agreed. A record of the meeting will be communicated to all parties by the Arboricultural Consultant within five days of the meeting.

16.2 Attendance at a pre-commencement site meeting and for any site supervision (see Section 27.0) is chargeable at the standard hourly rate as stated in the terms and conditions attached to the fee proposal for this report.

17.0 General Site Precautions

17.1 The following points will be observed at all times:

- No fires will be lit on site during the construction or demolition phases.
- No access will be permitted inside the tree protective fencing.
- No materials, equipment or debris will be stored within the tree protective fencing.
- Notice boards, telephone cables or other services will not be attached to any parts of tree T3.
- Materials which will contaminate the soil (e.g. diesel oil and vehicle washings) will not be permitted to migrate into the RPA of Himalayan Birch T3.
- A dedicated mixing and cleaning area will be set up to prevent concrete, cement and cleaning residue leaching into the RPA of tree T3 (see Tree Protection Plan for specification).
- Site cranes are to be automatically programmed to avoid loads striking the crown, stem and branches of retained tree T3.

18.0 Tree Works

18.1 All works will be carried out in accordance with BS 3998:2010 ‘Recommendations for Tree Work’ (as amended) and to current arboricultural best practice. Tree works will be carried out by a suitably qualified and experienced Arboricultural Contractor holding the necessary insurance cover. This contractor should carry out the relevant site specific risk assessments and record such information prior to commencement of tasks and work in accordance with current health and safety standards,

practices and legislation. A list of such contractors is available from the Arboricultural Association at www.trees.org.uk.

18.2 Submission of this AMS in connection with a planning application should be construed as a formal application to carry out those works specified in the Tree Survey Schedule with Recommended Tree Works at **Appendix 1**. It is recommended that this matter be clarified by the Client in writing with the LPA prior to any works commencing.

18.3 In addition, prior to the commencement of any tree works, an ecological assessment of specific trees may be required to ascertain whether protected species (e.g. nesting birds, bats, badgers and certain invertebrates) may be affected.

18.4 Tree ownership should be clarified in writing by the Client before any trees are removed or pruned.

18.5 If additional pruning of trees is required to facilitate the proposed works or access for machinery/plant, the Arboricultural Consultant will be contacted to advise on appropriate works and liaise with the LPA as necessary.

19.0 Tree Protective Fencing

19.1 Tree protective fencing is used to ensure that the RPA of T3 is safeguarded. These measures may also be employed to protect areas of ground for new landscaping.

19.2 The positioning and specification of the fencing is shown in **Appendix 2**. In this case, the default specification of BS 5837 consisting of **fixed Hoarding** fencing would be effective.

19.3 The protective fencing will remain in position for the duration of the development, including the removal of any existing structures. Clear signs will be attached to the fencing once erected – suggested wording will be **'Construction Exclusion Zone No Access'**.

20.0 Ground Protection

20.1 In this instance, there is no requirement for ground protection as the RPA of T3 can be afforded an adequate degree of protection using tree protective fencing and the existing hard surfacing.

21.0 Site Access/Hard Surfaces

21.1 The existing vehicle and pedestrian accesses into the site are suitable for ingress during demolition and construction and little or no damage is anticipated to the root system of retained tree T3.

22.0 Demolition

22.1 The existing buildings will be demolished using the 'top down, pull back' method as recommended in BS 5837. This is achieved by demolishing the structure into its own space with the placement of heavy machinery (if required) onto the existing foundation or ground protection. Existing hard surfacing within the RPA of retained tree T3 will be removed using the same procedure under direct arboricultural supervision to prevent the roots below the surfacing from being damaged.

Example of demolition within the RPAs of retained trees (note that the machinery is located within the building footprint and the debris is contained by the tree protective fencing and the ground protection)

23.0 Underground Services

23.1 The proposed scheme can make use of existing services located inside and outside the site boundary and all new services and soakaways will be located in the adequate space outside the RPA of the retained tree.

23.2 The locations, specifications and installation methods of all new services will be available for review at the pre-commencement site meeting before any works start on site.

24.0 Foundations

24.1 The foundations for the proposed development are located outside the RPA of the retained tree, therefore, the design and installation of specialised foundations is not required.

25.0 Construction/Hard Landscaping

25.1 There is no requirement for additional construction or hard landscaping that will affect retained tree T3.

25.2 Construction is taken to include erection of scaffolding and the installation of associated hard landscaping features such as retaining walls, patios, and cycle stores.

25.3 In this instance, the retained tree will not impede the erection of scaffolding and no ancillary structures are proposed within the RPA of this tree.

25.4 Subject to all of the above tree protection measures being implemented, construction works may proceed without risk of damage to T3.

26.0 Soft Landscaping/Boundary Fencing

26.1 Soft landscaping will be undertaken when heavy machinery has been removed from site and tree protective fencing taken down. The following points will be observed:

- Care will be taken not to compact the soil within the RPA of tree T3 or where new tree planting is to be carried out.
- No changes in ground levels will occur within the RPA of T3.
- Unwanted vegetation will be removed manually or using contact herbicides that will not damage existing tree roots.
- No irrigation or drainage pipes will be installed within the RPA of T3.
- If soil has been compacted in areas where planting is proposed, measures to improve soil structure (e.g. decompaction) may be necessary to facilitate successful plant establishment.
- Where fence and gate post holes are to be installed within the RPA of tree T3, they shall be lined with heavy duty polythene to prevent the harmful cement leaching into the soil and damaging the roots of this tree.

27.0 Sequencing/Supervision, Responsibility and Incident Reporting

27.1 Effective tree protection relies on following a logical sequence of events and arboricultural inspection/supervision.

27.2 Works which have the potential to affect trees will be supervised by a suitably qualified and experienced Arboricultural Consultant. Regular inspection visits will also be undertaken to ensure that tree protection measures are being adhered to. The final details of supervision and the frequency of inspection visits will be agreed with the Tree Officer at the pre-commencement meeting. The Arboricultural Consultant will make a record of visits, which will be attached to the site copy of the AMS for inspection and communicated in writing to the LPA within five days of the site visit. An example of the Site Inspection Record is found in **Appendix 3**.

27.3 Daily inspection of the physical tree protection measures will be carried out by the on-site Arboricultural Liaison, who does not have to be a trained Arborist, but will be responsible for the implementation of the approved tree protection. Any deviation from the approved methodologies will need to be agreed by the Arboricultural Consultant who may need to visit site to authorise the revised tree protection measures. It is the responsibility of the Client or the Arboricultural Liaison to instruct the Arboricultural Consultant to attend site for the key events requiring supervision or monitoring.

27.4 Any damage to the stem, branches or any size roots of retained tree T3 will be reported immediately by email and telephone by the Arboricultural Liaison to the Arboricultural Consultant. The Arboricultural Liaison will take photographs of the damage and send these to the Arboricultural Consultant who will visit site to assess the scale of the damage and report to the LPA Tree Officer. Mitigation for the damage will be agreed with the LPA Tree Officer.

Sequencing and Supervision

Stage	Action/Task	Personnel Responsible
1.	Issue arboricultural report to site manager	Client/Developer
2.	Give Arboricultural Consultant (**AC**) at least a week's notice of pre-commencement meeting	Client/Developer
3.	Pre-commencement meeting	Site Manager, Tree Officer and AC
4.	Arboricultural induction and appointment of the Arboricultural Liaison	Site Manager
5.	Carry out tree works (the Client is to establish tree ownership and protection status in writing before any tree works are carried out)	Client
6.	Erect tree protective fencing	AC to inspect
7.	Carry out demolition within the RPA of retained tree T3	AC to supervise
8.	Construct foundations	Site Manager
9.	Install underground services	AC to supervise
10.	Erect scaffolding and carry out construction (including hard landscaping)	Site Manager
11.	Remove machinery/plant	Site Manager
12.	Remove tree protective fencing	Site Manager
13.	Carry out soft landscaping and erect boundary fencing	Site Manager to brief landscaping company on site and supervise

28.0 Amendments

28.1 Issues sometimes arise on development sites which require amendments to the previously agreed tree protection details. Any amendments to this AMS will be discussed with the Arboricultural Consultant and approved in writing by the LPA prior to being implemented. Copies of paperwork relating to any amendments shall be attached to the site copy of the AMS to provide a definitive record of what has been agreed.

Appendix 1

Challice Consulting Ltd.
Tel: 01306 743374

Tree Survey Schedule with Recommended Tree Works

Site: 70-86 Royal College Street, Camden, London NW1 0TH

Surveyor: Mr. James Burton, T. Cert. Arb.

Date Surveyed: 14/11/2019

Our Ref: CC/2217 AR4170

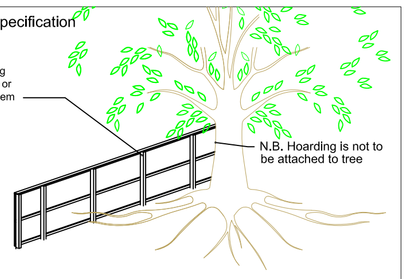
Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T1	Sycamore **1** Number	9	3 2 4 4	GC 1.5 FB 2 S	Early Mature	270 1	12	3.2	Normal	Fair	Medium	C	2	20+	Self sown tree growing in limited space to rear of existing building. Stem very close to existing retaining wall and likely to be in conflict within 5 years due to incremental growth.
Recommended Works/ Reason for Works:	Remove and replace as part of landscaping proposals Recommended to permit development														
T2	Amelanchier 'Robin Hill ' **1** Number	6	3 3 3 3	GC 2.5 FB 2.5 S	Early Mature	110 1	12	1.3	Normal	Fair	High	C	2	10+	Tree located off site in street and managed as a street tree. Bark wounds with associated dead tissue below on lower stem at 300mm on western side and 1.8m on the eastern side. Area of dead bark above the eastern wound.
Recommended Works/ Reason for Works:	Remove and replace as part of enhanced street tree planting programme **with written permission from the tree owner** Advisable for good arboricultural practice														
T3	Himalayan Birch **1** Number	8	4 4 4 4	GC 2 FB 2.5 N	Early Mature	170 1	12	2.0	Normal	Good	High	B	2	20+	Tree located off site and managed as Local Authority street tree. A tree with insignificant defects.
Recommended Works/ Reason for Works:	Crown reduce sides of crown by 1.5m **with written permission from the tree owner** Recommended to permit development														

Notes:

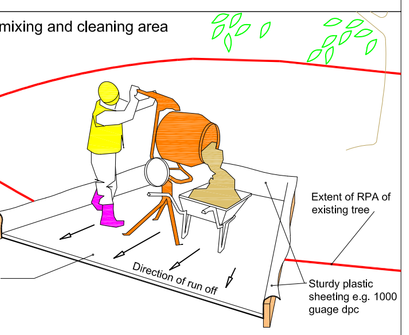
1. Height describes the approximate height of the tree measured in meters from ground level.
2. The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
3. Ground Clearance (**GC**) is the height in meters of crown clearance above adjacent ground level, the height of the first significant branch (**FB**) and the direction in which it is growing.
4. Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level. The stem diameter may be estimated (**est**) where access is restricted or an average (**ave**) taken for groups or multi-stemmed trees with more than five stems. The number of stems is also indicated.
5. Protection Multiplier is the number used to calculate the tree's protection radius and area and is shown as 12.
6. Protection Radius is a radial distance measured from the trunk centre.
7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak) or Dead (dead or dying tree).
8. Structural Condition - Good (no or only minor defects), Fair (remedial defects), Poor (major defects present).
9. Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
10. B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; '**A**' - High, '**B**' - Moderate, '**C**' - Low, '**U**' - Remove.
11. Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
12. Useful Life is the tree's estimated remaining contribution in years.

Appendix 2

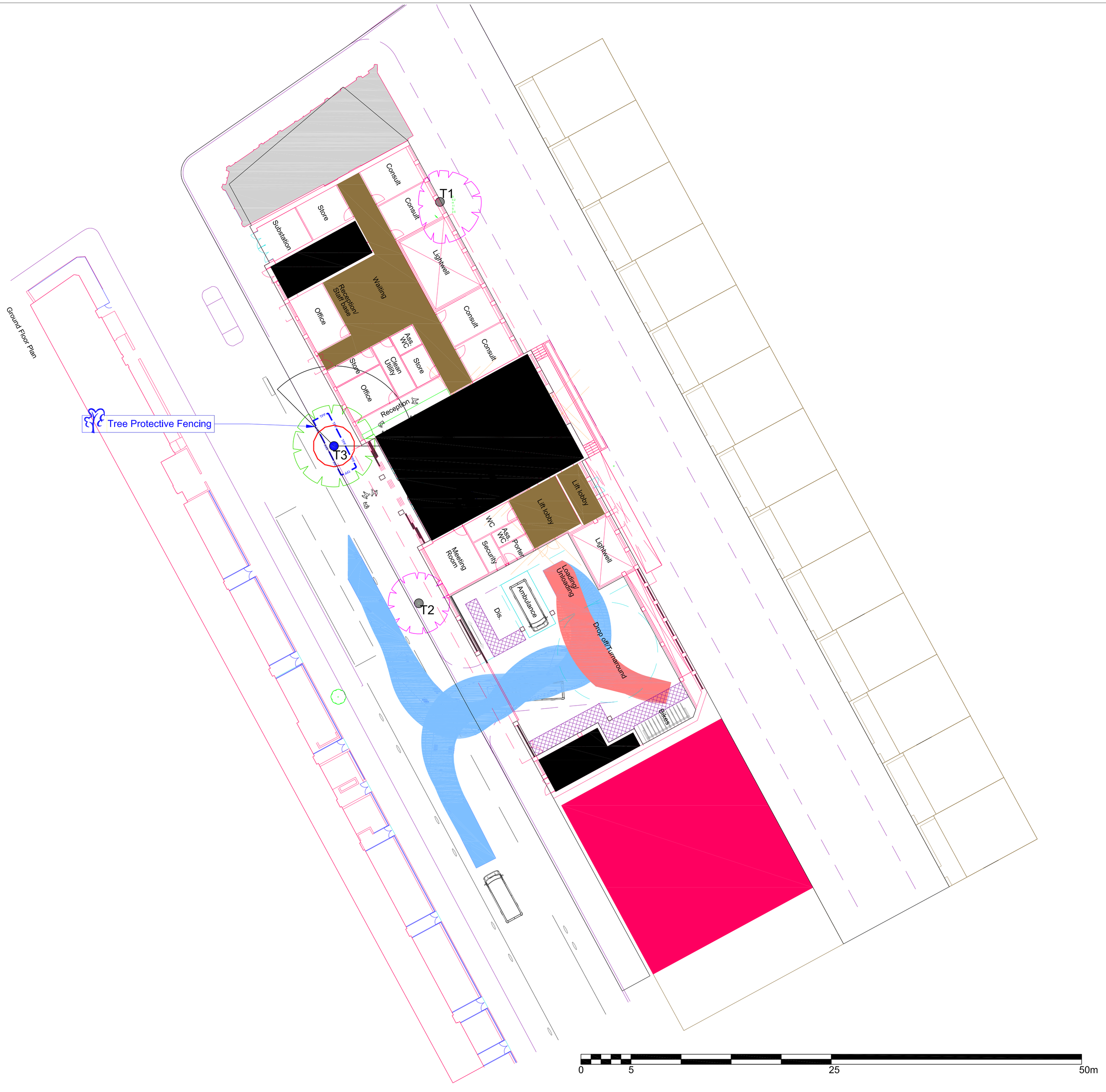
Hoarding Specification



Dedicated mixing and cleaning area



THIS PLAN TO BE USED FOR SETTING OUT OF TREE PROTECTION MEASURES ONLY; DO NOT SCALE FROM THIS PLAN UNLESS IT IS PRINTED AT A1. DO NOT USE UNLESS PRINTED IN COLOUR



Indicative

KEY:

- Shade pattern for Himalayan Birch tree T3
- BS rooting area is shown uniform but may be modified to account for site features
- BS rooting area has been modified to account for site features
- A Grade
- B Grade
- C Grade
- U Grade
- Tree to be removed
- Position of fixed Hoarding style fencing
- Challice Consulting Ltd. annotation

Notes:

Tree protection barrier to be erected and installed before machinery or materials are brought onto site, before any demolition or development of land and before soil stripping.

Tree protection measures should be implemented following any necessary pre-development tree work.

Barriers must not be removed or altered except with prior recommendation by project arboriculturist and where necessary, approval from the Local Planning Authority.

Setting out to be confirmed by project arboriculturist prior to commencement of other operations.

Plan to be printed in colour and to scale

DRAWING TITLE
Tree Protection Plan

PROJECT
70-86 Royal College Street, Camden, London NW1 0TH

SCALE	DATE	DRAWN BY
1:200 @ A1	26.11.2019	D.C.

DRAWING NUMBER	REV
TPP-CC/2217 AR4170	0

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Appendix 3

Challice Consulting Ltd.
T: 01306 743374

Arboricultural Site Supervision

Site: Sample
Inspected By: D. Challice
Client: The Builder
Site Agent: No staff present
Date of Inspection:
Time of Inspection:

Tree Protective Fencing

Tree protection in correct location

Comments/Action
No action at this time

Tree protection T23

Agreed Construction Exclusion Zone

No debris within construction exclusion zone

Comments/Action
No action at this time

Amendments to Documentation Required

No amendments required

Comments/Action

Tree protection T14

Remedial Works

Install protection as per Arboricultural Method Statement

General Comments

No ground protection in place for T11,12,14,17 & 22
Sweet Gum T1 not removed

Appendix 4

Induction Form for all Site Personnel:

Site Name:……..

- I have had explained to me by the Site Manager the key implications of the Arboricultural Method Statement relating to the development at the above site.

- I am aware that the tree protective fencing must remain in its original position and must not be moved without the approval of the appointed Arboricultural Consultant.

- I understand that certain operations must be supervised by the appointed Arboricultural Consultant and that these operations must not start until the consultant is present and has given approval.

- I confirm that I will bring any concerns about potential damage to trees to the attention of the Site Manager.

- I am aware that I must not cause damage to any of the retained trees on or adjacent to the site. Damage may be caused by direct means (i.e. physical damage caused to roots or the trunk/branches of the tree) or by indirect means (e.g. by fire or toxic materials entering the rooting environment of the tree).

Print Name:……

Sign Name:…….

Date:…….