

**ARBORICULTURAL IMPACT ASSESSMENT  
AT 65 GREENCROFT GARDENS, LONDON, NW6 3LJ**



Prepared for Mr J Fisher

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## Executive Summary

This assessment outlines the tree constraints that affect the construction a new extension to the property at 65 Greencroft Gardens and demonstrates how the retained trees can be protected throughout the development process.

No trees require removal for development purposes.

All trees will be provided with proper protection as set out in BS5837:2012 during the construction phase. Protection measures will include erecting temporary protective fencing, temporary ground protection and the use of pre-emptive root pruning as appropriate.

This assessment forms an important stage in the process of managing and protecting the trees on site in relation to the proposed development. However, it will only ensure the protection of the trees on site if the tree protection measures in the Arboricultural Method Statement are implemented in full and the prescribed system of arboricultural supervision is followed. Tree protection works must be fully integrated into the construction process.

The proposed extension only encroaches marginally further into the RPA of T1, and provided that the measures outlined within this report are adhered to, it is likely that the impact to any of the trees included within this report will be minimal.

**G.G. Robbie**

**AT Coombes Associates Ltd.**

**29 August 2021**



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Appendix 6 Timetable for Implementation of Tree Protection Works

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## 1. Terms of Reference

- 1.1 The aim of this assessment is to survey trees that may be affected by the construction of a ground-floor extension and alterations to the garden at 65 Greencroft Gardens, London.
- 1.2 The assessment addresses the likely impact of the proposed development on surrounding trees and provides recommendations for the protection of retained trees during construction work based on BS 5837:2012 "Trees in relation to design, demolition and construction-Recommendations".
- 1.3 The client has provided a plan showing the position of all trees and features on site, and these positions have been assumed to be accurate. Also provided was the proposed layout for the development. These plans have been used to form the basis of the Tree Constraints Plan (TCP, Appendix 3) and Tree Protection Plan (TPP, Appendix 4).
- 1.4 The site is within the South Hampstead Local Authority Conservation Area designated by The London Borough of Camden.
- 1.5 This revision is being produced in relation to a revised site layout. The site was not revisited for the purposes of the revision.

## 2. Site Description

- 2.1 The site is to the rear of 65 Greencroft Gardens, London. It is within a residential area that comprises 3-4 storey townhouses, mostly under split ownership. The client owns a ground floor flat which also includes a rear garden (Fig 1). The garden is currently largely unused, mostly set to grass. There are no trees within the property, but there are three trees in neighbouring properties that have been included within this survey. The closest tree to the building is a large beech (Fig 1), which is situated close to a wall that forms the edge of a terrace accessed from the client's flat (Fig 2). Within this terraced area there is a hot tub sunk into the ground.



Fig 1: Rear of 65 Greencroft Gardens, London



Fig 2: Beech in neighbouring property next to garden wall

- 2.2 The garden is accessed by a set of wooden steps that are now largely unusable, with a group of large London plane situated in a neighbouring property close to the southwest corner of the site (Fig 3). To the east of the property is a pear, again in a neighbouring property (Fig 4).



Fig 3: London plane in neighbouring property at end of garden



Fig 4: Pear in garden to east of site

### 3. Tree Survey Details

- 3.1 Appendix 1, the Tree Survey Schedule gives the survey findings in tabular form. The schedule contains all the information specified in section 4.4.2.5 of the British Standard. Appendix 2 gives a full explanation of the survey headings.
- 3.2 The trees were surveyed on 25 February 2021; they were not climbed but surveyed from ground level.
- 3.3 The details recorded during the tree survey have been collected independently of any development proposals, and the categorisation of the quality and amenity value of the trees is made purely on arboricultural grounds.
- 3.4 No assessment of the soil has taken place as part of this report. The British Standard states that a soil assessment should be carried out by a competent person to establish the structure, clay content and potential for volume change of the soil. A survey of this nature is considered outside the scope of this Arboricultural Assessment. For guidance on soil structure in relation to construction advice should be sought from a Structural Engineer. Guidance on foundation depth in relation to building and trees can be found in NHBC Chapter 4.2.

### 4. Assessment of Tree Constraints

- 4.1 To facilitate the proper assessment of tree constraints a Tree Constraints Plan (TCP) has been prepared and forms Appendix 3. The plan has been produced as a basis for the assessment of the constraints imposed by existing trees on the proposed design.

4.2 Appendix 3 shows the position of trees marked by a coloured dot matching the retention category status and a reference number (as listed in Appendix 1). Heights (Ht) are marked in metres for each tree, together with the predicted ultimate heights (U/Hgt).

4.3 The plan deals with constraints that the trees may place on the development in two areas as follows:

#### **Below ground Constraints**

4.4 The Root Protection Areas (RPA) for the trees are shown as a coloured circle to match the retention category colour. The RPA will be used to help inform the closest positions of any future buildings. The RPA will be protected during any development work with temporary barriers as prescribed by the British Standard.

4.5 The British Standard states that likely root morphology should be considered when drawing the RPAs of trees. The root morphology is likely to be affected by features and structures currently in place on the site; in this instance the existing dwelling is likely to form a root barrier, and therefore the RPAs have been adjusted accordingly. The existing garden wall is unlikely to have had such a significant affect on the rooting conditions, and therefore the RPAs have not been adjusted in relation to this.

#### **Above Ground Constraints**

4.6 The branch spreads were measured at the four cardinal compass points, with a shape drawn around these points to indicate approximate branch spread, represented by green broken lines on the plan. The ultimate crown spread has been shown with an orange dashed line. This is a predicted distance, and is based on personal experience of how far it is likely the crown will grow.

4.7 A shade pattern has been shown for each tree forming an arc from north west to due east. This gives an indication of the patterns of shadows created by the trees around mid-day in the summer. This is as recommended in BS5837:2012 (Section 5.2.2) but actual shade patterns throughout the year will vary widely. If shading is likely to be a serious constraint a more detailed analysis of shade pattern using proprietary software may be deemed necessary.

## **5. Arboricultural Impact Assessment**

5.1 Three individual trees were included in this report. All three trees are within separate ownership.

5.2 T1-T3 have all been classed as Category B. These trees are generally in good condition and confer positive landscape values. These trees are also within neighbouring properties and must therefore be retained and protected throughout the development.

5.3 Any trees that are retained will be provided with their proper protection according to BS5837:2012 regardless of which category they have been placed in.

5.4 The tree constraints for each element of the development, are considered separately below:

Element	Detail
Construction of New Extension	<p>The proposed new extension extends less than 1m to the south of the existing building and encroaches within the RPA of T1. The encroachment amounts to approximately 2.5% of the RPA of T1. This level of incursion into the RPA of T1 is unlikely to impact the condition of the tree, provided that the excavation is carried out carefully as outlined below.</p> <p>Pre-emptive root pruning will be carried out to minimise the damage caused to roots, should they be present. This will be carried out by excavating a trench at least 500mm outside the line of the strip foundations in the area shown on the TPP using hand tools or an airspade. Any roots found during this excavation will be severed using a sharp handsaw or secateurs. This will ensure that the roots are not ripped or torn and will have a good point from which to re-grow and will have a chance to occlude and prevent fungal pathogens from entering.</p> <p>The extension is within the branch spread of T1, but will be constructed to the same height as the existing building and so will not have an impact on the crown of the tree.</p> <p>The new extension will be within the indicated shade pattern of T1. However, this is will not be significantly different from the shading experienced by the existing building, so should not form a significant constraint to the development.</p>
Proposed Garden Improvements	<p>There are existing garden features, such as some decking and steps from the terrace, that are to be removed together with a section of the existing retaining wall. These features are constructed from timber and are currently in poor condition, so the process of their removal is unlikely to impact on the condition of T1 or T3.</p> <p>The garden terrace is to be extended to the south by approximately 1m. The terrace will be extended by using decking that will be supported by posts. The post holes will be excavated using an airspade or hand tools. If roots over 25mm diameter are found the position of the hole will be adjusted to avoid them. If roots under this diameter are found, they will be pruned to the edge of the hole using a sharp handsaw or secateurs. The final design of the decking supports must be flexible to ensure that it can take into account any variations of post position required due to the presence of significant roots.</p> <p>Temporary ground protection will be used to minimise soil degradation and compaction where traffic is likely to require access during the construction process. This is shown on Appendix 4 – TPP as orange crosshatch and detailed further in Appendix 5 – AMS.</p>
Services and Soakaways	<p>It is anticipated that no further services or soakaways will be required for the purpose. If they are, they should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including microtunnelling, surface launched directional drilling, Pipe ramming and Impact Moleing/thrust boring. It is important common ducts should be</p>



Element	Detail
Services and Soakaways cont.	<p>used where it is not possible to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2). This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging.</p> <p>It will be necessary to prepare detailed plans for any services that run thorough the RPA of retained trees. This should be produced in conjunction with an arboriculturist and include allowance for the space needed for access for the installations, and the levels across the proposed area.</p> <p>Any above-ground apparatus including CCTV cameras and lighting should also be positioned to avoid the need for any regular or detrimental pruning to the trees. Minor facilitative pruning is acceptable. However, positions that require repetitive and significant tree work must be avoided.</p>

## 6. Tree Management and Replanting Proposals

- 6.1 No tree work has been specified in column 12 of Appendix 1 for arboricultural and health and safety reasons.
- 6.2 This schedule does not refer to, and is superseded by, any requirements for tree felling for development purposes that may be required.
- 6.3 Please note that the inspection of trees on site was of a preliminary nature, gathering, as set out in the British Standard, only information needed to assess tree constraints. While any obvious tree defects that may constitute a risk have been recorded in the survey and appropriate remedial work specified this assessment does not constitute a full tree health and safety survey. In particular inaccessible trees, trees with heavy Ivy cover and trees within groups have not been inspected fully and dimensions estimated. However, any comments on the trees relating to health and safety remain valid for 12 months from the date of this report after which the trees will require re-inspection.
- 6.4 No trees require removal for development purposes.

## 7. Further Arboricultural Input into the Design Process, Construction and Aftercare

- 7.1 A Tree Protection Plan (TPP), Arboricultural Method Statement (AMS) and Timetable for implementation of Tree Protection Works form Appendices 4, 5 and 6 respectively.
- 7.2 The AMS contains a timetable for implementation of the tree protection works. No work will commence until the protective fencing is in place.
- 7.3 If the proposed layout of the development changes it will be necessary to revise this report.



## **8. Permissions and Constraints**

- 8.1 The site is within the South Hampstead Conservation Area. Therefore, 6 weeks prior notice of any works to the trees or that may affect the condition of the trees must be given to the Local Planning Authority.
- 8.2 To assist the planning process the LPA should be provided with a copy of this report and invited to comment on the proposals.
- 8.3 When dealing with developments close to trees, special attention should be paid to related legislation ensuring that the Wildlife and Countryside Act (1994), Conservation of Habitats and Species Regulations (2010) and the Countryside Rights of Way Act (2000) are adhered to. It must be ensured that nesting birds and protected species such as bats and reptiles are considered and protected.

## **9. Conclusions**

- 9.1 All trees can be retained and protected as set out in BS5837:2012 throughout the works.
- 9.2 The extension encroaches slightly further into the RPA of T1 compared to the existing building. The incursion is minimal and is unlikely to impact on the condition of the tree. To minimise the impact, careful pre-emptive root pruning will be carried out prior to the commencement of works, as specified within the Arboricultural Method Statement (AMS, Appendix 5).
- 9.3 The extension to the garden terrace will be created using decking or similar, supported with posts. The posts will be put in place using careful excavation techniques where within the RPA of T1.
- 9.4 Temporary ground protection will be put in place within the RPA of T1 so that the garden retaining wall can be rebuilt without affecting the ground conditions within the protected area.
- 9.5 The proposed extension only encroaches marginally further into the RPA of T1. It is anticipated that the impact to this tree will be minimal provided that the precautionary measures outlined within this report are adhered to.

**G. G. Robbie, BSc Hons For, MICFor, M Arbor A**

**A.T. Coombes Associates Ltd**

**29 August 2021**



**APPENDIX 1-  
TREE SURVEY SCHEDULE**

**SITE: 65 GREENCROFT GARDENS, NW6 3LJ**

**SURVEY COMPLETED: 25/02/21**

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
T1	Beech #	16.2	650	1	5.3	7.7	5.6	5.5	5.2 N	3.0	M	Good	Good	No work required	20+	B1	7.8	191.2
T2	London plane #	15.0	700	1	3.3	9.0	6.0	3.0	4.4 E	3.0	M	Good	Good	No work required	20+	B1	8.4	221.7
T3	Pear #	12.0	400	1	6.5	5.0	5.0	5.8	3.0 N	3.0	M	Good	Good	No work required	20+	B1	4.8	72.4

SURVEYED BY A.T. COOMBES ASSOCIATES

# denotes estimated dimensions due to lack of access to tree

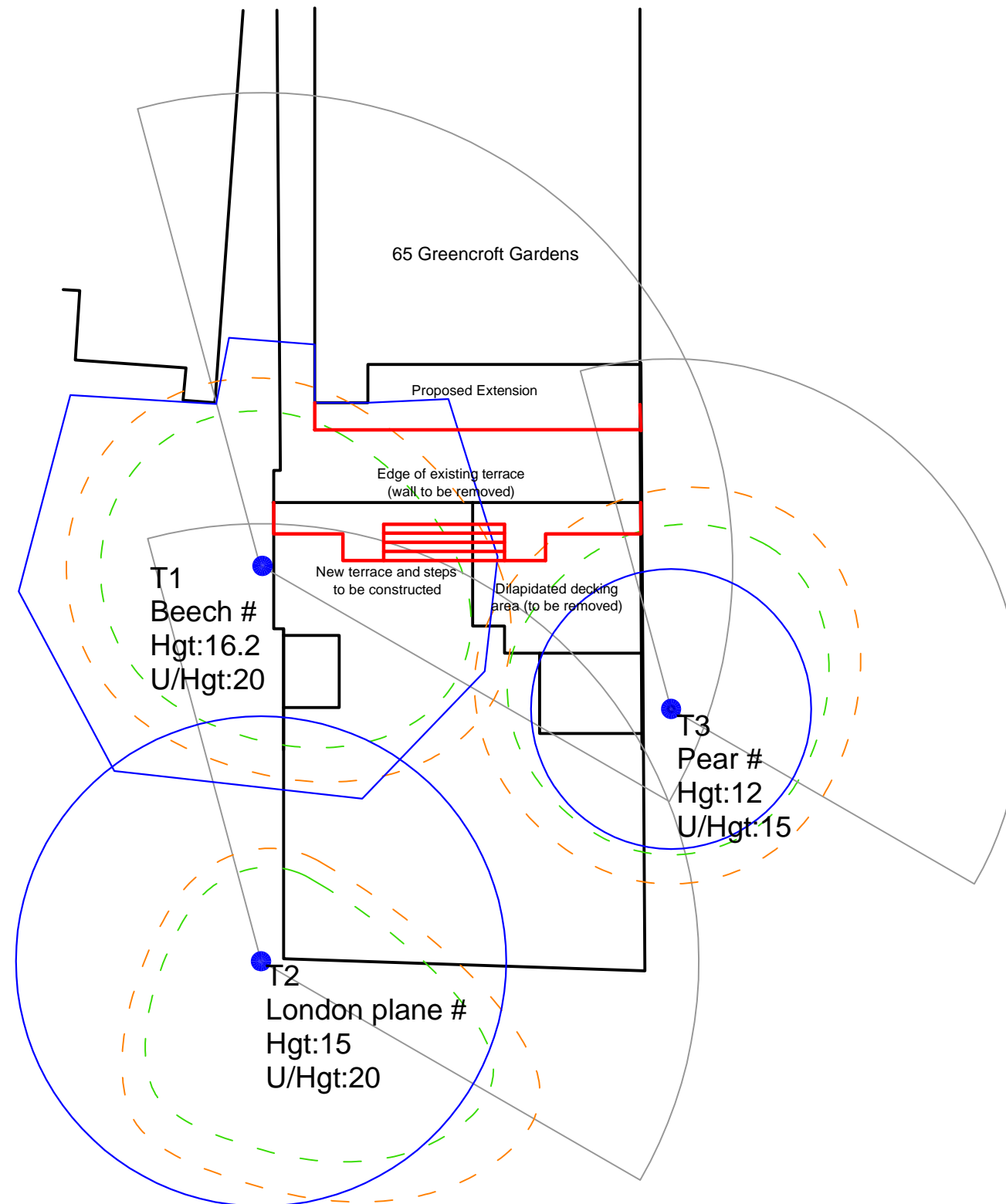
## Appendix 2: Notes on the Column Headings in Appendix 1

Col#	Title	Notes
1	Tree No.	Tree numbers to correspond with those shown on the TCP.
2	Species	Each tree has been identified and the common name given in each case.
3	Ht (m)	Height of the tree
4	Stem dia (mm)	<p>The stem diameter measured in millimetres at 1.5 metres above ground.</p> <p>For multi-stemmed trees the stem diameter has been calculated according to the formula given in BS 5837:2012. For trees with up to 5 stems, each stem has been measured at 1.5m, squared and added together. The diameter shown is the square root of the total.</p> <p>For multi-stemmed trees with over 5 stems a sample of five diameters has been taken at 1.5m, averaged and squared, then multiplied by the total number of stems. The square root of this sum gives the stem diameter figure.</p>
5	Number of Stems	Total number of stems on the tree.
6	Branch Spread	The branch spread measured in metres from the stem to the tip of the outer branches has been measured in four directions of the compass North, South, East and West.
7	Height and Direction of First Branch spread (m)	First significant branch and direction of growth (relative to the four cardinal compass points).
8	Canopy Ht	Mean height of the canopy above ground level.
9	Life Stage	The life stage of the tree has been assessed into one of the following categories: Y =Young, SM = Semi Mature, EM = Early Mature M = Mature, OM = Over mature and V = Veteran.
10 and 11	Condition	The British Standard recommends that a note is made of the structural and physical condition of the tree.

Col#	Title	Notes
12	Preliminary Management Recommendations	<p>This column includes all work considered necessary to, as far as is practicable, ensure health and safety and for the good arboricultural management of the trees. These works are not associated with the development proposals. All work to be carried out to BS 3998: 2010 "Tree Work-Recommendations".</p> <p>Recommendations given in respect of Health and Safety remain current for 12 months from the date of this assessment after which further inspection is recommended.</p> <p>It should be noted that trees are dynamic structures subject to the forces of nature, which can fail without showing external symptoms.</p>
13	Estimated remaining Contribution (Yrs)	<p>The estimated remaining contribution of each tree in years has been assessed, using personal experience, into the following groupings:</p> <p>&lt; 10 = Less than 10 years  10+ years = More than 10 years  20+ years = More than 20  40+ years = More than 40 years</p>
14	Category grading	<p>U = Those in such a condition that any existing value would be lost within 10 years and which should in the current context, be removed for reasons of sound arboricultural management.</p> <p>(Trees that have serious, irremediable structural defects, such that their early loss is expected due to collapse or ill health including trees that will become at risk due to the loss of other U category trees).</p> <p><b>A</b> = Those trees of high amenity quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)</p> <ol style="list-style-type: none"> <li>1) Trees that are particularly good examples of their species if rare unusual or essential components of groups or formal or semi-formal arboricultural features</li> <li>2) Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views in or out of the site, or those of particular visual importance.</li> <li>3) Trees groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran tree or wood pasture)</li> </ol>



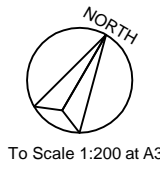
Col#	Title	Notes
14 cont	Category grading cont	<p><b>B</b> = Those of Moderate quality and amenity value: those in such a condition as to a significant contribution ( a minimum of 20 years is suggested)</p> <ol style="list-style-type: none"> <li>1) Trees that might be included in the high category but are downgraded because of impaired condition (e.g. remediable defects)</li> <li>2) Trees and woodland that forming distinct landscape features but do not form essential components</li> <li>3) Trees with clearly identifiable conservation or other cultural benefits.</li> </ol> <p><b>C</b> = Those of low quality and amenity value currently in adequate condition to remain until new planting is established (minimum of 10 years is suggested) or trees under 150 mm stem diameter.</p> <ol style="list-style-type: none"> <li>1) Tree not qualifying in higher categories</li> <li>2) Trees present in groups or woodlands but not with a significantly higher landscape value and or offering low or temporary screening benefit.</li> <li>3) Trees with very limited conservation or other cultural benefits.</li> </ol> <p>Note: Category C trees are the least suitable for retention, where they would impose a significant constraint on the development their removal for development purposes may be considered acceptable by the LPA. Trees with a stem diameter under 150mm could be considered for relocation.</p>
15	Radius of RPA (m)	The distance that would form the radius of a circular protection zone is given in metres calculated by multiplying the stem diameter given in column 4 by 12. The methods for calculating the stem diameter of multi-stemmed trees is given in section 4 above.
16	RPA (m <sup>2</sup> )	<p>The area of the RPA is given in square metres calculated by the following formula:</p> <p>Single Stemmed Trees;</p> $RPA\ m^2 = \left( \frac{(stem\ diameter\ mm\ @\ 1.5m \times 12)}{1000} \right)^2 \times 3.142$ <p>The methods for arriving at the stem diameter for multiple stemmed trees are described above in the notes for column 4.</p>









Drawing Title:  
**Appendix 3 - Tree Constraints Plan**

Site:  
**65 Greencroft Gardens, London**

Client:  
**Mr J Fisher**



**KEY**

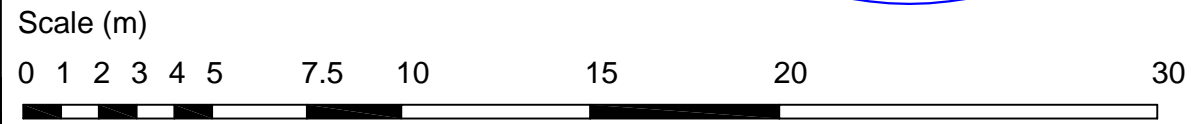
B Category RPA	
Current Crown Spreads	
Ultimate Branch Spreads	
Shade Pattern	
Existing Building / Features	
Proposed New Extension	

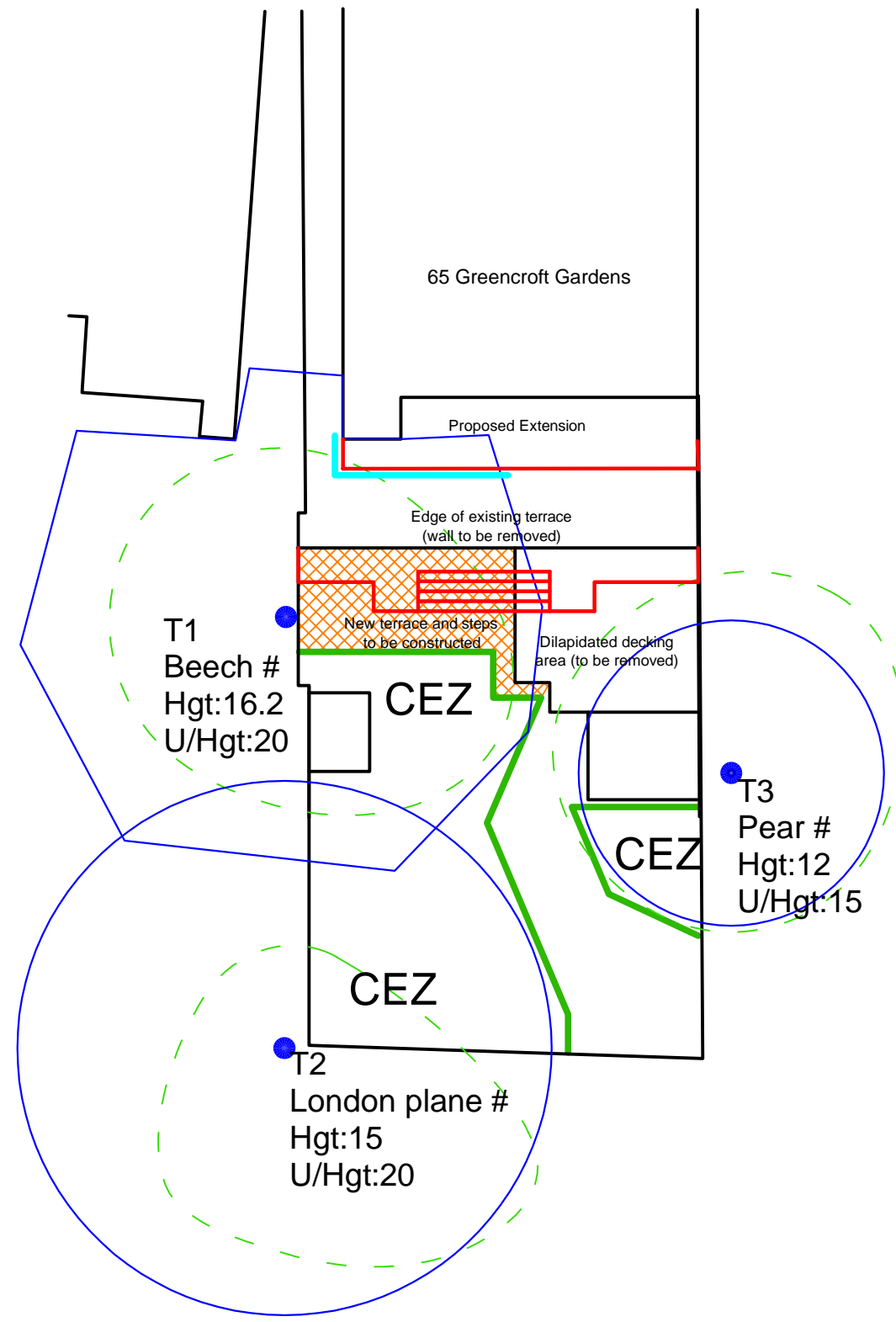
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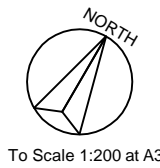




Drawing Title:  
Appendix 4 - Tree Protection Plan

Site:  
65 Greencroft Gardens, London

Client:  
Mr J Fisher



**KEY**

Construction Exclusion Zone	<b>CEZ</b>
Line of Temporary Protective Barriers	
Temporary Ground Protection	
Line of Pre-emptive Root Pruning	
Existing Building / Features	
Proposed New Extension / Features	

Drawn By: GR      Date: 29/08/21



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## **Appendix 5: Arboricultural Method Statement for a Proposed Development at 65 Greencroft Gardens, London, NW6 3LJ**

### **1. Scope of the Works**

- 1.1 The document provides a methodology for protection of trees during the construction of a new extension at the above site and should be read in conjunction with the Tree Protection Plan Appendix 4 and Timetable for Protection Works Appendix 6.
- 1.2 The main features in the protection of the retained trees on site are as follows:
  - Provision of temporary protective barriers
  - Provision of temporary ground protection
  - Use of pre-emptive root pruning.
  - Careful installation of supports for new decking area
  - Audited arboricultural site monitoring
- 1.3 A meeting between the site manager/main contractor and a consulting arboriculturist must take place prior to construction work commencing so that the above protection measures set out in this document can be discussed and agreed. At this point a list of contact details for all relevant parties will be produced and circulated including the Tree Officer of the Local Planning Authority.
- 1.4 Protective measures must be in place prior to any ground or construction works take place.

### **2. Timing of Works**

- 2.1 Tree protection works will be completed as detailed below according to the attached timetable Appendix 6.
- 2.2 The exact commencement date is not known. However, the timetable provided gives the order that the works need to be implemented to ensure the trees are fully protected and states when specific arboricultural input will be required.

### **3. Tree Protection Barriers**

- 3.1 Remaining trees will be protected by forming Construction Exclusion Zones (CEZ) as shown on Appendix 4 the Tree Protection Plan (TPP).
- 3.2 Temporary barriers will be erected as shown by the thick green lines on the TPP to form the Construction Exclusion Zone (CEZ). The barriers will consist of 2m tall welded mesh panels (Heras) supported on rubber or concrete feet. The fence panels should be joined together using a minimum of two anti-tamper couplers installed so they can be removed from the inside of the fence. The distance between couplers should be at least 1m and be uniform throughout the fence.





- 3.3 Panels should be supported on the inner side by stabilizer struts which should normally be attached to a base plate and secured with ground pins. Where the fence will be erected on hard surfacing, or it is otherwise unfeasible to use ground pins the struts should be mounted on a block tray.

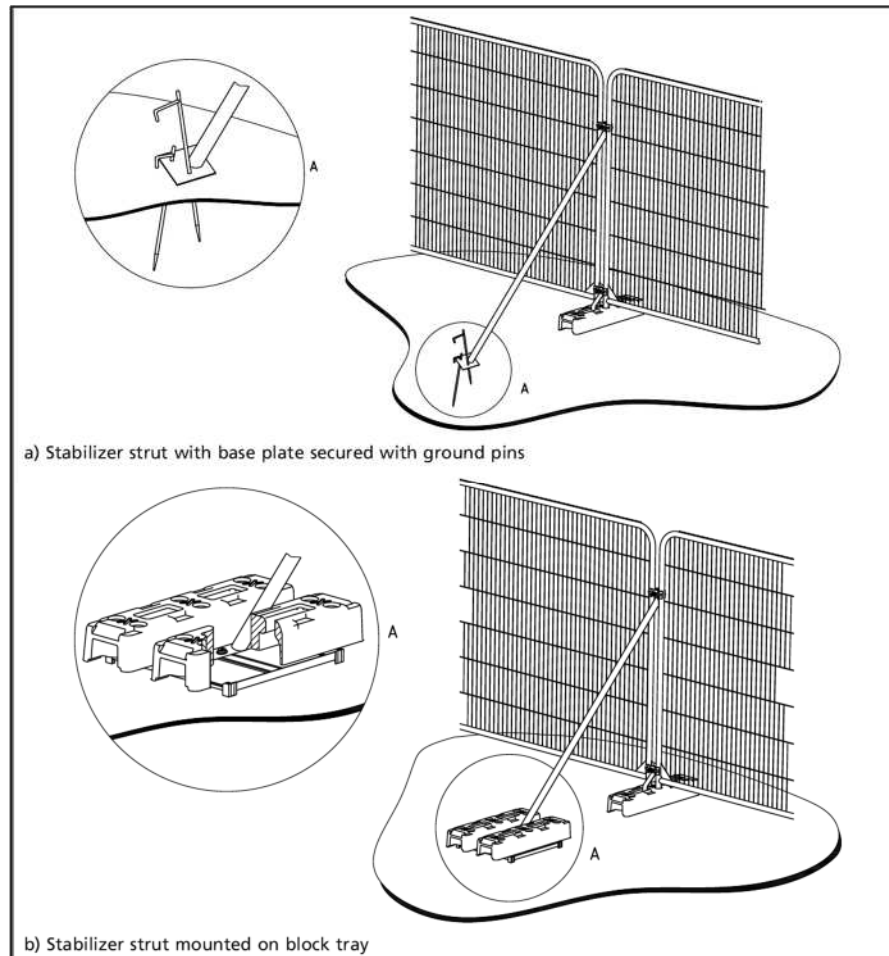


Fig 1: Temporary protective fencing as recommended by the British Standards (2012).

- 3.4 Figure 1 is an extract from BS5837:2012 showing the method of supporting the panels with ground pins and a block mounted tray for use on hard surfaces. Stabiliser struts should be fitted at each panel junction.
- 3.5 At least two all-weather notices should be erected on the barriers forming each CEZ stating “Construction Exclusion Zone – No Access “. These should face outwards towards the work area. Signs must be maintained in good condition and remain in place until completion of the works.
- 3.6 Barriers will be maintained throughout the duration of the works, ensuring that access is denied to the CEZ throughout the process.

## **4. Temporary Ground Protection**

- 4.1 Temporary ground protection will be required as shown on the TPP with orange crosshatching. The ground protection should be constructed as follows depending on the type of traffic that will use it:
- Pedestrian traffic only – a single thickness of scaffold boards on top of a driven scaffold frame to form a suspended walkway, or on top of a compression resistant layer (100mm woodchip) laid on top of a geotextile membrane.
  - Light plant up to a gross weight of 2t, proprietary ground protection boards linked to one another on top of a compression resistant layer (150mm woodchip) laid on a geotextile membrane.
  - Plant exceeding gross weight of 2t, a specification devised by an engineer will be designed in conjunction with the arboricultural consultant to support the loading that the ground will be subjected to.
- 4.2 Compaction of the soil can occur from a single pass of a heavy vehicle, especially in wet conditions, and therefore the ground protection must be put in place before any access is allowed.
- 4.3 The temporary ground protection will be kept in place before and during the installation of the new decking to protect the RPA of T1.

## **5. Pre-emptive Root Pruning**

- 5.1 Pre-emptive root pruning will take place just outside foundations of the new extension to minimise injurious damage to the root system of the neighbouring trees whilst excavating. The position of this work has been shown as a thick light blue line on Appendix 4 – TPP.
- 5.2 This will be carried out by excavating a trench at most 500mm outside the line of the strip foundations in the area shown on the TPP using hand tools or an airspade. Any roots found during this excavation will be severed using a sharp handsaw or secateurs. This will ensure that the roots are not ripped or torn and will have a good point from which to re-grow and will have a chance to occlude and prevent fungal pathogens from entering.
- 5.3 Once the root pruning has taken place, rootbarrier material will be put in place to prevent roots entering the foundation area, or any leachates from the wet concrete affecting the tree roots.
- 5.4 This work will be carried out by a suitably trained operative or under arboricultural supervision.

## **6. Installation of New Supports for Decking**

- 6.1 New supports for the decking / new terrace will be put in place within the RPA of T1.
- 6.2 The post holes will be excavated using an airspade or handtools.

- 6.3 If roots over 25mm diameter are found, the position of the hole will be adjusted to avoid them. If roots under this diameter are found, they will be pruned to the edge of the hole using a sharp handsaw or secateurs.
- 6.4 The final position of the decking supports must be flexible to ensure that it can take into account any variations required to the location of the posts due to the presence of significant roots.
- 6.5 All work will be carried out from temporary ground protection, as outlined above.

## **7. Site Huts and Temporary Buildings**

- 7.1 All site huts and temporary buildings will be sited outside the CEZ.

## **8. Additional Precautions**

- 8.1 The movement of plant in proximity to retained trees should be conducted under the supervision of a banksman to ensure adequate clearance from the branches of the trees. Hydraulic cranes, forklifts, excavators or piling rigs (other than small rigs used for mini piling) must be avoided in the immediate vicinity the crown of the trees.
- 8.2 Cement, oil, bitumen, or any other products which spillage would be likely to be detrimental to tree growth should be stored well away from the outer edge of the RPA of retained trees. Precautions should include ensuring all toxic liquids are stored in fully bunded containers. Equipment such as barriers or sandbags must be available on site to deal with any accidental spillages that may occur.
- 8.3 Lighting of fires on site should be avoided. Where they are unavoidable, they must be at such a distance from retained trees that there is no risk of the heat causing fire damage to the trunk or branches. Full account must be taken of wind direction. Fires must be attended at all times until they are completely extinguished.

## **9. Service Trenches**

- 9.1 No details of new service runs have been provided at this stage, should they be required. They should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including microtunnelling, surface launched directional drilling, Pipe ramming and Impact Moleing/thrust boring. It is important common ducts should be used where it is not possible to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2). This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging.



9.2 It will be necessary to prepare detailed plans for these services that should be produced in conjunction with an arboriculturist and include allowance for the space needed for access for the installations, and the levels across the proposed area.

9.3 Any overground services including CCTV must also be positioned to avoid the need for any regular or detrimental pruning to the trees.

## **10. Arboricultural Supervision and Aftercare**

10.1 Arboricultural/site monitoring will be carried out throughout the construction phase by a nominated arborist who will be responsible for consultation with the Local Authority's Tree Officer.

10.2 The arborist will complete regular site visits to check that the tree protection measures are being carried out. The frequency of the visits will be dictated by the level of activity and degree to which the tree protection measures are being respected. A note of the date of each visit and a summary of the findings will be forwarded to both the Tree Officer and the Main Contractor to provide an audit trail enabling the proper implementation of the tree protection measures to be checked and verified.

10.3 There are four key stages where on-site arboricultural advice will be needed.

- Prior to commencement, to review the contents of the AMS, and deal with any queries the main contractor may have.
- To confirm that the protective fencing and ground protection is in place.
- To supervise pre-emptive root pruning.
- To supervise installation of decking / new terrace supports.

10.4 On completion of the works the trees will be inspected by the arborist to check the condition of the trees and advise if any remedial work is necessary.

**A.T. Coombes Associates Ltd**

**30 August 2021**





## Appendix 6: Timetable for Tree Protection Works at 65 Greencroft Gardens, London, NW6 3LJ

Item	Operation *	Before Commencing Construction Works	During Construction Works	On Completion
1.	Carry out a pre-commencement site meeting to discuss any tree protection matters arising	X		
2.	Carry out tree work as detailed in Appendix 1, and any tree felling as set out in the AIA.	X		
3.	Erect temporary protective fencing (thick green line) on edge of the CEZ as specified in the AMS and TPP and put temporary ground protection in place (Orange Hatching)	X		
4.	Erect warning signs on fencing around each CEZ stating "Construction Exclusion Zone - Keep Out".	X		
5.	Maintain Protective fences and signs in good condition.		X	
6.	Carry out pre-emptive root pruning		X	
7.	Arboricultural supervision and advice including site visits during the course of the works to check the CEZ and liaison with the Local Authority.	X	X	X
8.	Carry out installation of decking supports.		X	
9.	Remove protective fencing			X
10.	Check condition of the protected trees and consider if remedial works are necessary.			X
	<i>* All work to comply with the attached Arboricultural Method Statement and BS5837: 2012 Trees in relation to design, demolition and construction - Recommendations"</i>			

