By Appointment to
Her Majesty The Queen
Tree Surgeons
The F.A. Bartlett Tree Expert Co. Ltd

# Bartlett Consulting

## DEVELOPMENT SITE METHOD STATEMENT

**OUR REF:** JH/150099(AMS)/R/sh

**YOUR REF**: N/A

**DATE:** 1st June 2015

| | |
|---|---|
| **CLIENT:** | Mr. Andrew Selby<br>By Design Construction Management |
| **SITE ADDRESS**: | 15 Ranulf Road<br>Hampstead<br>London<br>NW2 2BT |
| **DATE & TIME OF VISIT:** | 10:00, Tuesday 21st April 2015 |
| **PEOPLE PRESENT:** | Mr. Jason Hasaka, Bartlett Consulting |
| **REPORT COMPLETED BY:** | Mr. Jason Hasaka |

### SUMMARY

This report provides a detailed methodology for the implementation of any aspect of development that has the potential to result in the loss of, or damage to, trees indicated for retention, due to site operations taking place within or in close proximity to tree root protection areas.

Included within the report are recommended planning and working methodologies for associated demolition and construction activities from an Arboricultural perspective, as well as the specification for physical tree protection measures in accordance with British Standard 5837 (2012) Trees in Relation to Design, Demolition, and Construction – Recommendations.

A Tree Protection Plan is also appended, illustrating the precise location of physical tree protection measures as well as identifying areas of useable free space and other development site requirements.

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## 1.0 SCOPE OF REPORT

### 1.1 Brief

Following the finalisation of proposed development design and site layout, Bartlett Consulting has been commissioned to provide a report and recommendations suitable for provision of robust tree protection measures and to allow for the facilitation of any approved development with regards to retained trees.

In accordance with the current guidance of British Standard 5837(2012), this report will provide details on: the final specification of tree works, the location and appropriate specification of tree protection measures and recommended planning for associated development site operations.

### 1.2 Background

A site visit and tree survey was conducted by Bartlett Consulting on 21st April 2015 and an Arboricultural Impact Assessment and Tree Constraint Plan was later provided to the client on the 30th April 2015. This document is referenced JH/150099/R/sh and dated 28th April 2015.

As part of the design team, Bartlett Consulting was involved in on-going discussions with regards to the evolution of development proposals, since the submission of the Impact Assessment in April. These discussions were via email correspondence and telephone conversations with the homeowner, Planning Consultant and Architect Assistant.

These discussions led to a modification of design, which has been incorporated into the final proposed layout subject to this report.

This Method Statement will guide the practical implementation of any approved development.

### 1.3 Report References

As a progressive company, we keep abreast of research data relating to Arboriculture. All observations, recommendations and works are based on current industry standard reference material and extensive FA Bartlett research findings, derived from the company's own facilities at the University of Reading in England, as well as in Charlotte, North Carolina, in the USA. A selection of pertinent items is shown in Appendix 2.

Our Arboricultural Method Statement has evolved from industry material including the following:

- O'Callaghan & Lawson (1995) *Trees and Development Conflicts: Importance of Advanced Planning & Site Control in Tree Preservation Plans*
- Matheny & Clark (1998) *Trees and Development a Technical Guide*
- BS 5837: (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations*
- BS 3998: (2010) *Tree Works – Recommendations*
- BS 8545: (2014) *Trees: From Nursery to Independence in the Landscape - Recommendations*
- National Joint Utilities Group (2007) Publication Volume 4: Issue 2 *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*
- Town & Country Planning Act (Tree Preservation) (England) Regulations 2012
- National House Building Council Standard, Chapter 4.2 – *Building Near Trees*

F.A Bartlett's long arboricultural expertise is used to interpret these references for practical application to the site and the trees which are the subject of this report and to provide the most appropriate advice and guidance for sound tree health care and the achievement of the development proposals.

## 1.0 SCOPE OF REPORT (continued…)

### 1.4 Report Limitations

This report is restricted to those trees detailed within the previously produced Impact Assessment Report and illustrated on the attached Tree Protection Plan (TPP). The TPP is illustrative of the discussions within the report and is based entirely on drawings previously provided to Bartlett Consulting. The TPP can only be used for dealing with the tree issues related to the proposals. All scaled measurements must be checked against the original submission documents and confirmed on site.

**NOTE:** Prior to the production of this report Bartlett Consulting was provided with a suite of updated and amended drawings following the Arboricultural Impact Assessment and subsequent discussions and negotiations took place. These drawings were provided by Archial NORR and those used referenced:

- Proposed Ground Floor Plan (dwg no A2-01-02) (drawn by SMS) (revision 3) (undated)
- Proposed Basement Plan (dwg no A2-01-01) (drawn by SMS) (revision 3) (undated)

The trees subject to the survey have been referenced and numbered, colour coded and categorised for amenity and life expectancy, as per the British Standard and plan key. Trees to be removed are identified by the broken line representing the tree canopy and crown spread and any trees recommended for pruning have also been annotated accordingly.

All other limitations and constraints as per the previously submitted Impact Assessment apply.

The contents of this report remain valid for one year.

### 1.5 Assessment of Ecological Status of Site & Potential Constraints

Following the site visit and tree survey, we believe that there is the potential for wildlife to use the rear garden and trees of 15 Ranulf Road for habitat and foraging, given the proximity to open spaces and the cemetery. This would include nesting birds and small mammals.

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000, provides statutory protection to birds, bats, insects and other species that inhabit trees, hedgerows, or other associated vegetation.

Although this area of the property is remote from the main areas of development, it is the recommendation of Bartlett Consulting that professional, detailed advice from an ecologist is sought, to confirm the consideration of Bartlett Consulting and check if any such constraints apply to this site and the development proposals.

Given the time of year, all trees must be thoroughly and properly assessed for nesting birds prior to the commencement of any tree works.

## 2.0 TREE PRESERVATION ORDER & CONSERVATION AREA STATUS

Both the Town & Country Planning Act (Tree Preservation) (England) Regulations 2012 and the Town & Country Planning Act 1990 (as amended) provide legislative protection for trees within England.

An enquiry was conducted by Bartlett Consulting on 24th April 2015 with London Borough of Camden via email correspondence to confirm the status of any statutory tree protection.

A second enquiry was conducted by Archial NORR, following discussions with Bartlett Consulting, on 11th May 2015 with London Borough of Barnet as 15 Ranulf Road straddles the authority boundary.

### 2.1 Tree Preservation Order (TPO) Status

An emailed response was received by Bartlett Consulting on 27th April 2015 from Mr. James Clark, Planning Officer – Regeneration and Planning, London Borough of Camden – confirming that none of the trees within the boundary of 15 Ranulf Road are subject to a tree preservation order.

A similar email response was received by Archial NORR on 13th May 2015 from Ms. Ann Currell, Principal Planner – Trees and Environment, London Borough of Barnet – confirming that:

The County of London (Hampstead No.19) Tree Preservation Order 1957 protects a Cherry tree within the front garden of 15 Ranulf Road, referenced T01 within the TPO and T09 throughout this report and on the accompanying Tree Constraints Plan and Tree Protection Plan.

### 2.2 Conservation Area (CA) Status

With reference to the London Borough of Camden website and mapping page:

http://www.camden.gov.uk/ccm/content/environment/planning-and-built-environment/two/conservation-and-listed-buildings/conservation-areas/find-a-conservation-area-in-Camden/

It was confirmed that 15 Ranulf Road is not within a designated CA.

### 2.3 Development Implications

Following emails to the Arboricultural Officer at the London Borough of Camden on the 14th and 29th May 2015 a dialogue was opened on 1st June 2015 with regards to the standing of the tree preservation order. However no conclusion was reached at the time of writing this report.

For the purposes of development, Cherry T09 will be considered as protected by a Preservation Order.

Under the Town and Country Planning (Tree Preservation) (England) Regulations 2012, you cannot carry out any works to the Cherry referenced T09 within this report before obtaining formal written permission as issued by the appropriate LPA.

This can be sought with the submission of a Tree Preservation Order planning application (1APP) but cannot be acted upon until full Local Planning Authority permission is granted.

All other trees can be managed without the prior consent of London Borough of Camden.

## 3.0 PROPOSED DEVELOPMENT & DEVELOPMENT SITE DETAILS

### 3.1 Proposed Development

● Construction of a conservatory, with terracing at the rear of the building. The proposed conservatory is 19.0 metre$^2$ and sited centrally at the rear of the building. The terracing extents approximately 6.2 metres from the rear of the building into the garden.

● Extension of the pre-existing basement to a total distance of 6.0 metres from the rear of the building, and the creation of two light wells either side of the basement – the western with steps leading up to the garden. The light wells are approximately 3.0 metres by 2.0 metres.

● Creation of a light- well at the front-right (northeast) corner of the building. The light- well is 3.3 metres in length and 1.2 metres in width to provide natural light to the pre-existing lower floor bedroom.

### 3.2 Existing Grounds

The front garden is comprised of concrete paving slabs creating a footpath to the front door, with gravel and raised flower beds to the front of the dwelling as the front garden. There is a small ornamental sculpture within the gravel area and a low retaining wall marking the edge of the flower beds.

The rear garden is predominantly laid to lawn, with a concrete patio to the rear of the dwelling and a stone paving path running along the eastern boundary, leading to a small set of concrete steps at the southeast corner of the rear garden.

### 3.3 Slopes & Boundaries

There is a very gentle slope across the entire site, falling from north down to the south.

However, there is a significant, steep, drop-off over the final 1.5 metres of the rear garden of approximately 2.0 metres. There are concrete retaining walls throughout this area of level change, as well as steps leading down to the lower level.

The front boundary of 15 Ranulf Road is defined by a low brick wall planter, topped by formal hedge. The rear boundaries are defined by close-board fencing. Along the eastern rear boundary the fencing is on top of a low brick wall.

*Figure 1: Image of Rear Garden Looking South from Dwelling*

## 4.0 ARBORICULTURAL IMPACT ASSESSSMENT

As a formal layout has now been designed and agreed, an updated and amended Impact Assessment will be provided to discuss and address the modifications in design from an Arboricultural perspective.

### 4.1 Proposed Development at Rear of Property

The proposed conservatory itself is not of direct or indirect impact to any of the trees in the rear garden.

The extension of the basement and creation of the light wells and terrace area will necessitate the removal of the trees forming G01. These are low quality trees exhibiting signs of declining health and are not considered to be a material constraint to any proposed development. Their value is limited to screening 15 Ranulf Road from the neighbouring property to the east and if their removal is required to facilitate development, their loss can easily and effectively be mitigated with appropriate replacement planting.

All proposed development is sited outside of the root protection area (RPA) for T08; however the "working zone" (usually considered to be 3.0 metres) would overlap with the RPA of this tree as well as be under the crown.

It is anticipated that a mini-digger will be employed to extend the basement and create the light wells, which will have the potential to damage the soils in the RPA as well as the adjacent tree crown.

Therefore, a vertical barrier will be required to create a construction exclusion zone around this tree.

### 4.2 Proposed Development at Front of Property

The proposed light-well, located within the RPA of Cherry T09, has been the primary point of discussion and negotiation for this development project. T09 is considered to be a Category B tree and of sufficient quality and merit to be a material consideration.

The proposed light- well has been reduced in scale and shape to a size to meet the competing needs of the proposed development and the tree. The reduction in size is as much as practical to allow light through to the pre-existing room (in accordance with the British Standard for light and buildings) and to address the proposed works within the RPA to minimise any impact.

Although the proposed development is to be positioned within RPA of the tree, the light- well is actually under the RPA and root system of the tree. Therefore, it is reasonable to consider the creation of this feature to co-exist with the root system as justified and the creation as practical.

Site specific working methods will be detailed below to carefully expose and trace the root system within the area of proposed development. There will be options for managing the tree roots depending on the distribution, quantity and size of the roots uncovered being provided. Excavations for the creation of the light-well can commence from outside of the RPA to the west, to avoid direct damage to the root system, with works carefully progressing towards and beneath the calculated root protection area.

The rooting environment is already considered to be compacted; however further damage to the soils can be prevented through the establishment of ground protection. The crown of the tree is a suitable distance from the working zone so no facilitation pruning is recommended.

Returning the front garden to a formal lawn through soil ameliorations and the laying down of turf, will improve the rooting environment and growing conditions for the Cherry T09, following disturbances caused by the implementation of any approved development.

## 5.0 TABLES OF DEVELOPMENT IMPLICATIONS & MITIGATION ON TREE STOCK

### 5.1 Table 1: Implications on Existing Tree Stock

| Tree Ref | Species | Cat. | Removal Due To | | Mitigation Required | | Aspect of Development Affecting Retained Tree |
|---|---|---|---|---|---|---|---|
| | | | Proposed Development | Tree Condition | Canopy | RPA | |
| G01 | Leyland Cypress | C2 | ✓ | N/A | N/A | N/A | · Excavations for extension of basement and creation of light-wells. |
| T07 | Cherry | C2 | N/A | N/A | N/A | ✓ | · 3rd Party Tree.<br>· Excavations and working zone for extension of basement and creation of light-wells in close proximity to RPA. |
| T08 | Common Broom | C2 | N/A | N/A | ✓ | ✓ | · Woking zone for extension of basement and creation of light-wells within RPA.<br>· Working zone under crown spread of tree. |
| T09 | Cherry | B2 | N/A | N/A | N/A | ✓ | · Excavations for creation of light-well within RPA of tree.<br>· Working zone for creation of light-well within RPA of tree. |

## 5.0 TABLES OF DEVELOPMENT IMPLICATIONS & MITIGATION ON TREE STOCK (continued…)

### 5.2 Table 2: Mitigation for Identified Tree & Development Conflicts

| Tree Ref | Species | Cat. | Mitigation Required |
|---|---|---|---|
| T07 | Cherry | C2 | · Erection of a vertical barrier to create a construction exclusion zone.<br><br>· If the vertical barrier constrains upon the development site too much with regards to useable free space for storage and materials, establishment of ground protection to be maintained throughout all phases of site operations. |
| T08 | Common Broom | C2 | · Erection of a vertical barrier to create a construction exclusion zone around the tree, to be maintained throughout all phases of site operations.<br><br>· Crown raise to 4.0 metres height over proposed terrace and basement extension zone – to the north of the tree. |
| T09 | Cherry | B2 | · Supervised and careful hand-digging with use of air-spade technology when working within RPA prior to excavations for proposed light-well, to identify the presence of any tree roots.<br><br>· Arboricultural supervision when undertaking excavations within RPA. |

## 6.0 ARBORICULTURAL METHOD STATEMENT

### 6.1 Tree Works

Due to the physical constraints of the site, it is considered essential that the tree works are carried out as a primary site task i.e., prior to the erection and establishment of tree protection barriers, as well as prior to any site operations with regards to demolition or development including deliveries and site set-up.

- The following schedule sets out proposed works involving trees.
- All works will be carried out in accordance with BS3998: 2010 *Tree Work – Recommendations.*

| Tree Ref | Species | Schedule of works prior to installation of protective Barriers |
|---|---|---|
| G01 | Leyland Cypress | 1. Remove tree to ground level.<br>2. Grind or excavate stump. |
| T08 | Common Broom | 1. Reduce height & lateral spread by 1.0 metre in length.<br>2. Crown raise northern aspect of crown to a height of 4.0 metres.<br>3. Crown clean & Formative Prune. |

**Crown Reduction**: Will be carried out in accordance with Section 7.7 of British Standard 3998:2010 by reducing the lateral spread of T08 as detailed in the table above. Pruning cuts will be made by using the selective pruning and 'drop-crotch' methodologies as described in Section 7.7 and 7.8 of the British Standard and as per Figure 4 of the Standard.

**Crown Raising:** Will be carried out in accordance with Section 7.6 of British Standard 3998:2010 so to achieve a final clearance in height above ground level as detailed in the table above. Branch removal will be in accordance with Figure 3 of the British Standard and carried out removing primary branches in the first instance and the secondary branches second.

**Crown Cleaning:** The removal of deadwood (of all sizes) throughout the tree crown; broken and hanging branches to be removed and safely excised from the crown; stubs and ripped branches to be removed back to the branch bark collar or reduced back to substantial lateral growth; branches exhibiting any disease; branches with structural weakness such as vertical or horizontal cracking.

**Formative Pruning**: The removal of crossing and rubbing branches to prevent further damage; removal of secondary branches with vertical growth; removal of branches growing internally; reduction in length of branches with included branch unions; reduction back to lateral growth of branches competing for apical dominance; removing selective branches to improve and increase branch spacing. This does not include major crown reduction and reshaping works.

## 6.0 ARBORICULTURAL METHOD STATEMENT (continued…)

### 6.2 Sequence of Events

From an Arboricultural perspective, site operations with regards to tree protection should follow the below table and sequence of events. It is strongly recommended that prior to each event all matters pertaining to the trees should be checked and liaison made with an Arborist, including a site inspection where necessary.

| Sequence | Brief outline of event |
|---|---|
| 1 | Tree works to be carried out as primary site task. |
| 2 | Establishment of vertical barriers. |
| 3 | Establishment of ground protection. |
| 4 | Tree root zone investigations within RPA of Cherry T09. |
| 5 | Excavations within RPA of Cherry T09. |
| 6 | General construction. |
| 7 | Clearance of equipment and supplies. |
| 8 | Removal of ground protection. |

### 6.3 Tree Protection Measures

The location of the temporary tree protection barriers and the areas they protect is shown on the Tree Protection Plan referenced JH/150099/TPP (hereafter referred to as TPP) and found at the end of this document. The precise location of the barriers is shown on this plan.

Specifications and illustrations can be found below and in the attached Method Statements.

- Vertical barriers are physical protection measures for the retained trees, which will ensure that the designated RPA becomes an exclusion zone during any stage of development. Fencing will prevent machinery, personnel, materials, and other site activities from accessing the within the RPA or damaging the tree crown.

Vertical barriers should be fit for the purpose of excluding construction activities, and appropriate to the degree and proximity of the site operations. The specification can be found in Method Statement 1 below.

- Non-compacting ground protection will be required where the vertical barriers have been off-set to allow for the 'working zone' and site traffic during demolition and construction. Ground protection must be retained on site, for the duration of development works, until there is no risk of any damage from demolition and construction works.

Specifications for ground protection can be found below and must be installed immediately after the erection of the vertical barriers prior to any site operations.

- Once erected, both barriers and types of tree protection will be treated as sacrosanct, and must not be moved or adjusted during any stage of site operations without the prior written consent of London Borough of Camden and Bartlett Consulting.

## 6.0 ARBORICULTURAL METHOD STATEMENT (continued…)

### 6.4 Site Supervision

Good tree protection cannot be reliably implemented without regular Arboricultural input. The nature and extent of that provision will vary according to the complexity of the site and the resources available. An Arboricultural Consultant should always be instructed to work within the guidance of this report and Local Planning Authority conditions to oversee implementation of protective measures and tree management proposals as detailed within this report.

**Discharge of Planning Conditions**

It is highly likely that London Borough of Camden, if minded to 'consent' the planning application, will subject this report and specific section of it as conditions of planning approval. If subject to a condition, this report and its contents will form legal requirements during all phases of development.

Breaches of planning conditions can result in enforcement action being taken by the Council in the form of "stop notices" as well as monetary fines. It is strongly recommended therefore that this report and accompanying plans are kept on site at all times; and all contractors are familiarised with the requirements.

Arboricultural planning conditions cannot be effectively discharged without site supervision by an Arboricultural Consultant. Any supervisory action must be confirmed by formal letters or log entries circulated to all relevant parties, including the council. These records of site visits will provide proof of compliance and allow planning conditions to be discharged as the development progresses. The proposer or his agent should instruct an Arboricultural Consultant to enable compliance with the Local Planning Authority requirements set out in the planning conditions, before any work begins on site.

**Phasing of Supervision**

Phasing of Arboricultural involvement in the development project, including proper budgeting can only be factored into the developing work programmes if the overall project management takes full account of tree issues if the application is consented. An Arboricultural Consultant must be involved in the following phases of the project management:

1 - During the root zone investigations within RPA of Cherry T09.

2 – During the excavations and working within and beneath the RPA of Cherry T09.

3 - Immediately following the removal of all tree protection measures.

**Preparations Prior to Commencement**

It is not unusual for development proposals to vary from original expectations and as the detail of implementation reaches completion and commencement. Early instruction of an Arboricultural Consultant should ensure that tree issues are considered as part of site management and can help to ease pressures where site demands and tree protection conflict. Pre-commencement meetings between the Arboricultural Consultant and the proposer's site managers are an effective means of managing tree issues to maximise site efficiency.

## 6.0 ARBORICULTURAL METHOD STATEMENT (continued…)

### 6.4 Site Supervision (continued…)

A pre-commencement site visit should be held on site before any of the demolition and construction work begins. This should be attended by the site manager, the Arboricultural Consultant and ideally a council representative.

If this is not possible, the Arboricultural Consultant must inform the council in writing of the details of meetings. All tree protection measures detailed in this document must be discussed so that they are fully understood by all the parties. Clarification or modifications to the consented details must be recorded and circulated to all parties in writing. These documents should then form the basis of any supervision arrangements between the Arboricultural Consultant and the proposer.

### 6.5 Useable Free Space

There are numerous spatial requirements on development sites, apart from that of the proposed structures and ancillary development. These requirements include designated areas for storage; room for deliveries; space for materials and equipment; and space for site huts to name but a few.

The ground protection is not to be used as an area for temporary storage at any time during any approved development. No mixing of cement or other chemicals must take place atop the ground protection, nor should any storage of oils, fuels, chemicals or cement take place atop the ground protection.

Identified by the "Cyan" coloured areas on the Tree Protection Plan are areas where from an Arboricultural perspective storage of materials and supplies can take place without having a negative influence on tree health and condition. The final locations must be confirmed with the landowner.

As space within the property is limited from the start bulk deliveries might need to be split into smaller deliveries, with the day and time pre-arranged so that the materials and supplies are used as soon as possible and storage and time on site not being used is reduced and limited.

No mixing of cement or other chemicals must take place atop the ground protection, nor should any storage of oils, fuels, chemicals or cement take place atop the ground protection as they can penetrate the protection and leach into the soils below.

### 6.6 Arboricultural Method Statement Attachments

1) Root Protection Area – Vertical Barriers
2) Root Protection Area – Ground Protection
3) Guidance on Working Within Tree Root Protection Areas

## METHOD STATEMENT 1 – VERTICAL BARRIERS

**Date:** June 1st 2015

**Site:** 15 Ranulf Road, Hampstead, London, NW2 2BT

Although the intensity of site operations in proximity to the trees and their RPA is high, the form and branching structure of the trees precludes the use of the default fencing specification. Therefore it is deemed reasonable for vertical barriers to be of the following specification:

Heras® Mesh System wired fencing approximately 2.0m high, with each panel 3.5m wide, securely fixed to one another using the clips included with the system, on rubber or concrete feet. Where space allows, the panels should be supported on the inner side by stabiliser struts attached to a base plate and secured with ground pins. Please see figure below.

The fencing shall completely exclude access during all site operations. The protected areas shall not be used either for the storage of materials or spoil nor for the mixing of substances or the disposal of any residues nor shall be allowed to be contaminated by run off from activities beyond the protection zones.

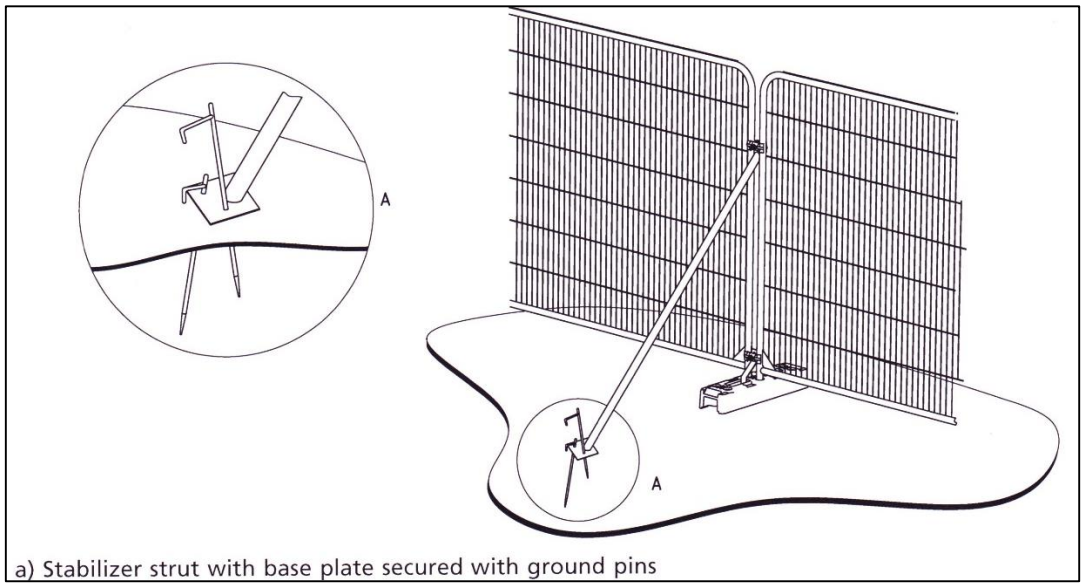



*Figure 2: Illustration of Vertical Barrier from British Standard 5837(2012)*

- No arising material is to be dumped over the boundary fence into the adjacent 3rd party land; no material or debris should be stacked against the wooden panel fencing.

- If plant is to be used for excavations, a banksman shall be employed to ensure that the overhanging and adjacent branching structure and crown of tree T08 is not damage by the swinging boom or moving parts of machinery.

## METHOD STATEMENT 2 – GROUND PROTECTION

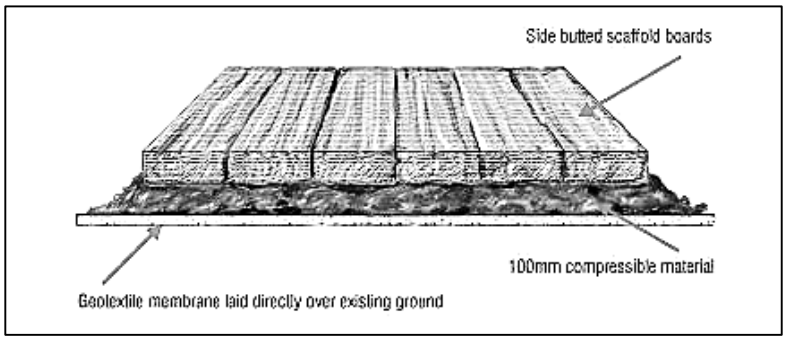
**Date:** June 1st 2015

**Site:** 15 Ranulf Road, Hampstead, London, NW2 2BT

Ground protection shall be installed in accordance with the most appropriate specification detailed below, based on the final working methodologies, following appointment of the contractor and the pre-commencement site meeting.

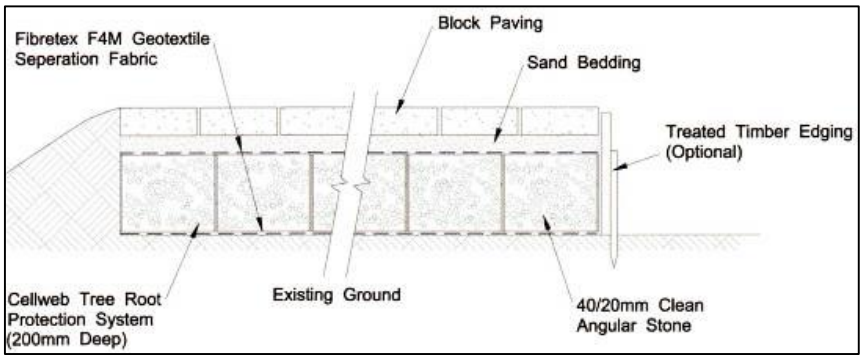
### Pedestrian Movement and Pedestrian Operated Machinery up to Gross Weight 2 Tones

Lay a geo-textile matting directly onto the uncovered sub-base; apply approximately 100mm – 150mm of a compressible material such as mulch or sand over the matting (to achieve the desired level); and laying down abutting scaffold boards, large sheets of plywood, or interlinked metal tracks such as Ground Guard. The later shall be to the appropriate capacity as per the manufacturers' specification for the load.




### Vehicle and Machinery with Gross Weight Over 2 Tones

Ground protection must be created using a non-dig, 3D, cellular confinement system. There must be no excavations of the existing ground below that of the pre-existing sub-base, and any levelling of the surface prior shall be made using soil or aggregate infill of hollows to create the site level. The confinement cells will be in-filled with inert coarse aggregate to the appropriate depth for the weight and size of vehicles and spread and leveled to form a wearing surface.




The 3D cellular confinement system itself can be driven across, or a suitable surfacing used. The depth of the 3D cellular confinement system shown above is 200mm; the actual depth required will be dependent on the manufacturers recommended specification based on the weight of vehicles.

## METHOD STATEMENT 3 -
## WORKING GUIDANCE WITHIN & ADJACENT TO RPA

**Date:** June 1st 2015

**Site:** 15 Ranulf Road, Hampstead, London, NW2 2BT

### Site Preparation around Cherry T09

1 – Remove all gravel as well as low retaining wall within RPA.

2 – Clear away flowerbed and all pre-existing garden features within RPA to expose soils.

3 – Establish ground protection as per the Tree Protection Plan (referenced JH/150099/TPP) and appropriate specification as detailed above following pre-commencement meeting.

4 – With reference to the Tree Protection Plan, the area identified by the "Magenta" coloured honeycomb area for T09 shall be measured and marked out for reference using landscape pegs or marking paint around the outside edge of the boundary, within the footprint of the proposed light-well.

### Site Investigations for Root System Cherry T09

1 – When the soil level (sub-grade) is reached, investigations within the tree RPA shall be undertaken using either hand dig excavation or ideally air spade technology to expose the critical tree root system – with Arboricultural supervision. This working methodology will carefully and delicately expose and identify any tree root pattern and allow for the determination of methods for creating the light-well.

1a – If excavations within the RPA are to be undertaken by hand, this must be carried out carefully and in a controlled manner – with Arboricultural supervision – using hand tools such as: spades; shovels; pick-axe; cutting maul; trowel; narrow trenching shovel; and a hand-brush to clear away smaller fines and stones.

3 – Roots with a diameter of 25mm or smaller within the footprint of the proposed light-well may be pruned back to the outside edge of the light-well, and excavations and construction can take place within the RPA without the need for further supervision.

- Roots must be pruned with a sharp and sterile pair of secateurs and/or hand-loppers by a qualified Arboricultural Consultant or Local Authority Tree Officer.

4 – Roots with a diameter greater than 25mm or massed bundles of fibrous roots cannot be pruned and must be retained. Alternative methods for design and installation of the light-well will have to be considered, although it is entirely feasible that the light-well and roots can co-exist.

4a – These larger roots can be retained and protected by wrapping them in hessian, while the light-well is excavated underneath and the concrete foundations are established. The roots can then be a feature over the light-well.

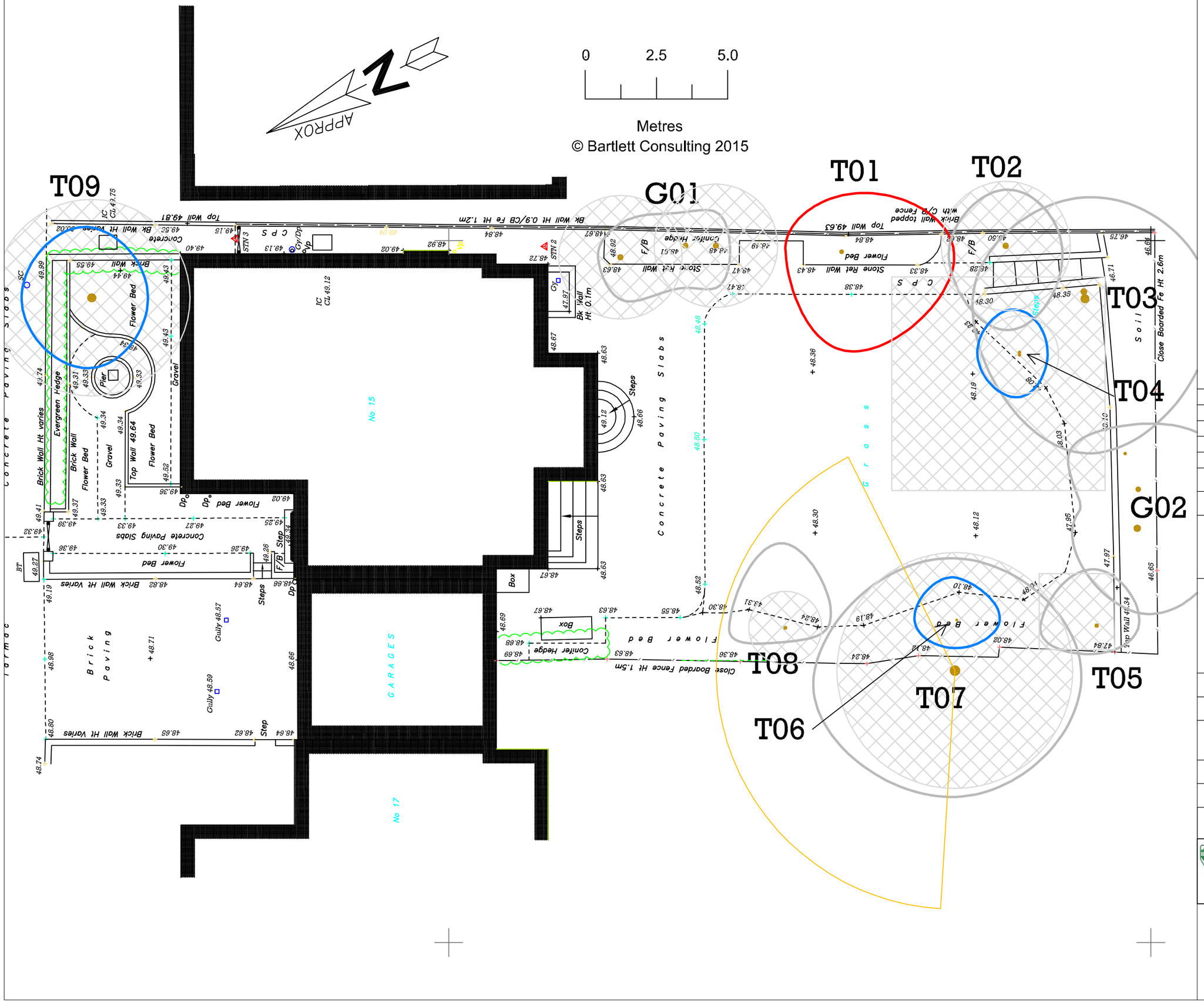
NOTE: If there is a prolific amount of smaller roots (≤25mm) pruning these roots can have just as negative an effect on tree health and vigour as pruning one or two large roots. A decision will be made on-site as to the appropriateness of severing a large quantity of smaller tree roots.

| | |
|---|---|
| **REPORT CLASSIFICATION:** | British Standard 5837: 2012 Arboricultural Method Statement |
| **REPORT STATUS:** | **FINAL** |
| **REPORT COMPLETED BY:** | Mr. Jason Hasaka *A.A.S. Urban Tree Management*<br>**Arboricultural Consultant** |
| **SIGNATURE:** |  **DATE: 01.06.2015** |
| **REPORT REVIEWED BY:** | Mr. James Percy-Lancaster<br>**Arboricultural Consultant** |
| **SIGNATURE:** |  **DATE: 04.06.2015** |

## TREE CONSTRAINTS & TREE PROTECTION PLANS

- Tree Constraints Plan 01: Existing Site Layout
- Tree Constraints Plan 02: Proposed Site Layout
- Tree Protection Plan 01: Proposed Site Layout

**NOTE: Plans will be inserted sized A3 (landscape) after this cover page when report provided electronically. Print hardcopy sized A3 (landscape) and insert into printed and bound report after this page otherwise.**




Category A Tree - x00

Category B Tree - x03

Category C Tree - x10

Category U Tree - x01

Tree Root Protection Area

Shade & Shadow Pattern

Drawing Based Upon: Topographical Survey

Status: FINAL

NOTES: Please use scale bar on the plan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| | |
|---|---|
| Client: | Mr. Andrew Selby, BDCM (Heritage Group) |
| Project: | 15 Ranulf Road, Hampstead, London, NW2 2BT |
| Title: | Tree Constraints Plan as Existing |
| Date: | 28/04/15 |
| Scale: | 1 : 1 |
| Drawn: | J Hasaka |
| Job Ref: | JH/150099/TCP |
| Figure Number: | |
| Rev: | |

BARTLETT TREE EXPERTS
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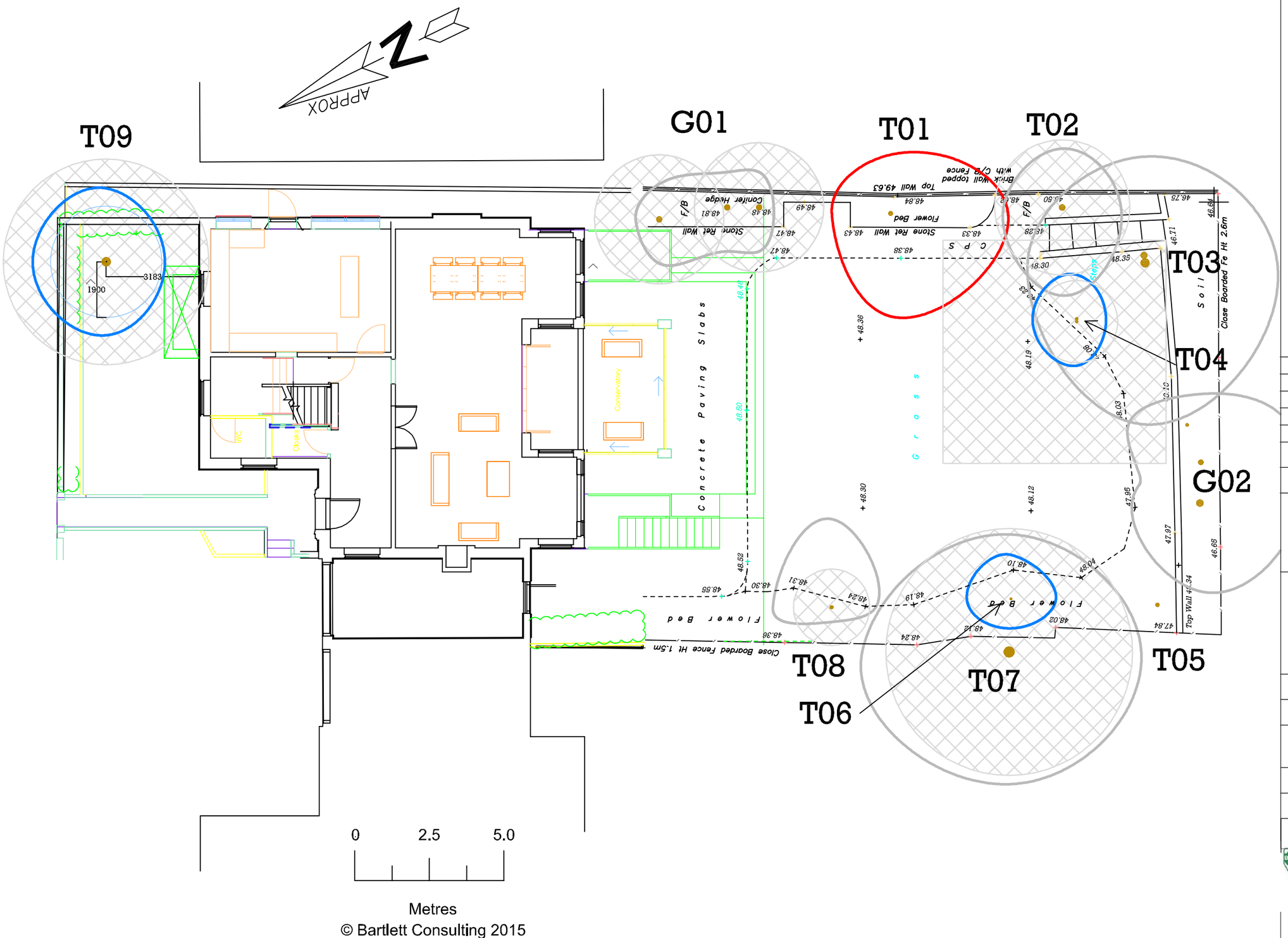




Category A Tree - x00

Category B Tree - x03

Category C Tree - x06

Category U Tree - x01

Tree Root Protection Area

Proposed Development in Relation to Trees

Drawing Based Upon: Topographical Survey & Proposed Ground Floor Plan (Archial NORR Dwg No A2-01-02 Rev. 3)

Status: FINAL

NOTES: Please use scale bar on the plan


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| | | | |
|---|---|---|---|
| Client: | Mr. Andrew Selby, BDCM (Heritage Group) | | |
| Project: | 15 Ranulf Road, Hampstead, London, NW2 2BT | | |
| Title: | Tree Constraints Plan as Proposed | | |
| Date: | 01/06/15 | Scale: | Use Scale Bar |
| Drawn: | J Hasaka | Job Ref: | JH/150099/TCP |
| Figure Number: | | Rev: | A |

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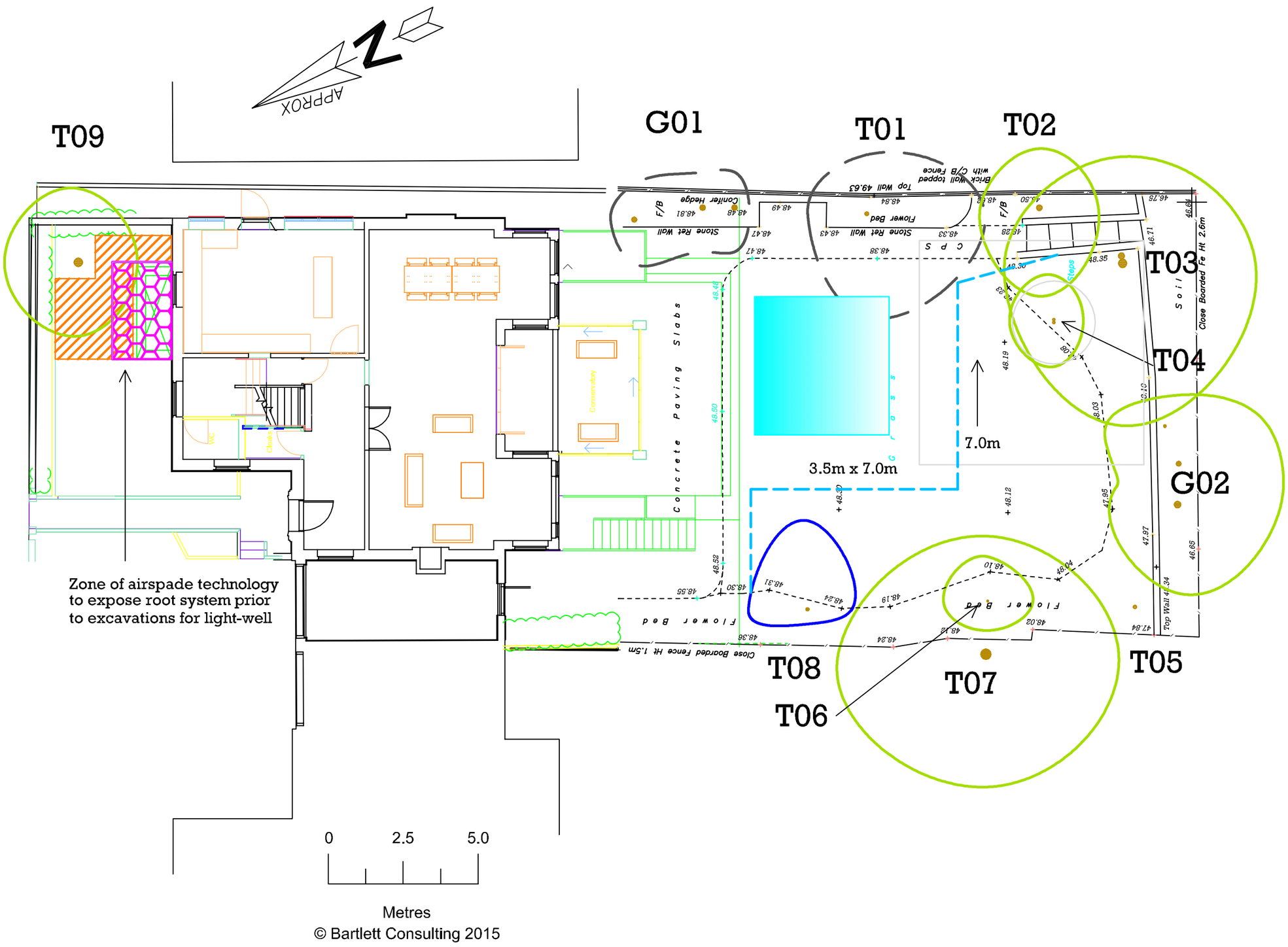




Drawing Based Upon: Topographical Survey & Proposed Ground Floor Plan (Archial NORR Dwg No A2-01-02 Rev. 3)

Status: FINAL

NOTES: Please use scale bar on the plan


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| Client: | Mr. Andrew Selby, BDCM (Heritage Group) |
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| Title: | Tree Protection Plan |
| Date: | 01/06/15 |
| Scale: | Use Scale Bar |
| Drawn: | J Hasaka |
| Job Ref: | JH/150099/TPP |
| Figure Number: | |
| Rev: | |

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