Cantia Arboricultural Services

Arboricultural Impact Assessment and Method Statement

CAS/2018/246

For
Mrs Munisha Gupta

Proposed Development Site
79 Avenue Road, London, NW8 6JD

Design Team
RPS Group – Planning Consultant
RPS Group –Acoustic Consultants
KSR Architects –Architects
Mira A-Architecture & Engineering Ltd
Form SD – Structural Engineers, Flood Risk Consultants, SUDs & Basement Risk Assessment
Calfordseaden –Daylight / Sunlight
Cantia Arboricultural Service Ltd – Arboricultural Consultant
Integration- M&E Engineers

Boyd Saunders
Dip Arb L4- Tech 'Arbor A'

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1.0 Introduction

1.1 Instruction

1.1.1 Cantia Arboricultural Services were instructed to undertake a tree survey and provide arboricultural advice on the site known as 79 Avenue Road, London, NW8 6JD to accompany a planning application.

1.1.2 The site visit was carried out on 18th December 2018 between the hours of 1400-1530hrs (90 minutes) and weather conditions were noted as overcast with acceptable visibility for surveying.

1.1.3 The content and format of this report remain the property of Cantia Arboricultural Services and are for the exclusive use of the Client as shown on the front cover of this report. It may not be sold, lent, hired out or divulged to any third party not directly involved in the subject matter without the written consent of Cantia Arboricultural Services.

1.2 Aim of Report

1.2.1 To survey in accordance with BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' to plot and assess the quality of the existing trees located on site and within 15m of proposed development operations. Each tree is then allocated a grade category.

1.2.2 To assess the impact of the proposed development upon trees located on site and within the immediate vicinity. To provide advice on trees requiring removal and outline protective measures for trees marked for retention.

1.2.3 To provide a work specification as required by retained trees to accommodate the proposed development.

1.2.4 To provide recommendations and guidance on how trees and other vegetation may be satisfactorily integrated into the construction and development process.

1.3 Survey Method

1.3.1 This is a preliminary assessment from ground level and observations have been made solely from a visual perspective for the purposes of assessment in terms relevant to planning and development. No invasive or other detailed internal decay detection devices have been used in assessing internal conditions.

1.3.2 All individual trees within a 15m radius of the development that have a stem diameter over 75mm at 1.5m above ground level have been surveyed. Individual trees are given identification numbers which begin with 'T' (T01, T02 etc).

1.3.3 Where a significant number of trees grow in close proximity to one another they are surveyed as a group. In this instance trees with a stem diameter over 150mm only are recorded. Where appropriate only the largest members of a group are surveyed. Groups are given identification numbers which begin with 'G' (G01, G02 etc). Groups of considerable size will be classed as woodland and given identification numbers which begin with 'W' (W01, W02 etc).

1.3.4 Where trees have been formally planted in a group they are classed as a hedge and given an identification number which begins with an 'H' (H01, H02 etc)

1.3.5 When available, trees are plotted onto a Topographical Survey. If no such survey is provided then trees are plotted onto maps provided by *UKPlanning Maps*.

1.3.6 Where there are access restrictions data has been estimated. This is reflected in the survey schedule with a (#) symbol before measurement.

1.3.7 The survey was carried out with the assistance (where required) of the following inspection equipment-

- Binoculars – Inspection of upper sections of the tree
- Sounding Mallet – Assessment of wood quality, decay extent
- Steel Probe – To test resistance of wood and depth of cavities
- Secateurs – Removal of basal growth & ivy to allow inspection
- DBH (diameter) Tape – Measurement of stem diameter
- Clinometer- To measure height of tree
- Laser measure – Measurement of canopy dimensions & tree location

1.4 Scope of Report

1.4.1 This is an arboricultural report and no such reliance must be given to comments relating to buildings, engineering, soil or ecological issues.

1.4.2 Any conclusions relate to conditions found at the time of inspection. Any significant alteration to the site that may affect the trees that are present or have a bearing on planning implications (including level changes, hydrological changes, extreme climatic events or other site works) will necessitate a re-assessment of the trees and the site and render any previous advice/ findings invalid.

1.4.3 Trees, groups and hedges have been graded upon individual merit in the context of their existing surroundings regardless of any proposed development of the site.

1.4.4 Trees are living organisms and even apparently healthy trees cannot be considered completely safe due to forces of nature and environmental fluctuations which dictate a natural failure rate of intact and healthy trees.

1.4.5 This report is made on behalf of Cantia Arboricultural Services, and no individual is personally liable. By receiving the report and acting on it, the named client, or any third party relying on it, accepts that no individual is personally liable in contract, tort or breach of statutory duty (including negligence).

1.5 Documentation

1.5.1 The following documentation has been made available

- 79 Avenue Road – Pre-app document.pdf (Existing Site Plans & Proposed Development Plans).

2.0 Site & Tree Discussion

2.1 Site Description

2.1.1 The site currently consists of a two storey detached house set in a plot of approx. 1,430 square metres (0.35 Acre) with a double garage and associated front and rear gardens.

2.1.2 The front garden is currently split between hard surfaced areas servicing double entrances and a semi-circular grassed area located between the entrances.

2.1.3 The rear garden is predominantly laid to lawn with small trees and shrubs located around the border areas.

2.2 Proposal

2.2.1 The proposal is to demolish the existing structure and construct an extended five bedroom detached house including basement levels.

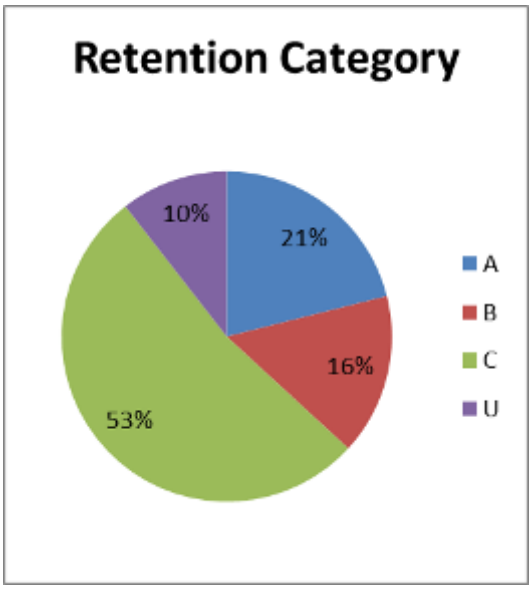
2.3 Tree Discussion

2.3.1 A total of nineteen individual trees have been assessed in detail from ground level by visual means only. The Tree Survey Schedule, at Appendix 2, details the trees in respect of dimension and quality in accordance with the methodology set out in the British Standard 5837:2012. The following categories were recorded

- Category A- Four trees have been classed as Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years. Trees, groups or

woodlands of particular visual importance as arboricultural and/or landscape features. Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

- Category B- Three trees have been classed as Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
- Category C- Ten trees have been classed as Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm. Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.
- Category U- Two trees been classed as Category U - Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.



2.3.2 Trees located within the property boundaries were generally small and unremarkable specimens many of which have been left untended.

2.3.3 Looking at the wider area the site has a number of larger high quality trees within the vicinity which contribute significantly to the arboricultural/ landscape value of the area.

2.4 Trees Requiring Removal

2.4.1 The proposal requires the removal of one Category C tree (T05). The tree is a multi-stemmed Cherry which has been subjected to historic heavy pruning. The loss of the tree will have no detrimental effect upon the arboricultural contribution of the site.

2.4.2 Tree numbered T04 is a dead flowering Cherry which formed a pair with T03. The dead tree will be removed and replaced with a Japanese Flowering Cherry (*Prunus 'Pink Perfection'*).
https://www.barcham.co.uk/products/prunus-pink-perfection

2.4.3 The tree must be planted in the same location as the removed tree and as outlined in section P6.0 of the Arboricultural Method Statement.

2.5 Cultural Implications for Retained Trees

2.5.1 Retained trees will require no additional intervention or pruning due to the proposed development.

3.0 Arboricultural Impact Assessment on Retained Trees

3.1 Access

3.1.1 Vehicle and plant access is unencumbered via Avenue Road and existing hard surfaced areas located to the front of the property.

3.1.2 Adequate space exists on site so that material and compound storage can be located outside of the measured RPAs' of trees marked for retention.

3.2 Demolition

3.2.1 No demolition is scheduled to take place within the measured RPAs' of trees marked for retention and therefore in this instance no specialised techniques are required.

3.3 Construction

3.3.1 Proposed excavation scheduled to take place during the creation of a basement level will see a conflict with the RPAs of trees numbered T01 London Plane by 0.32 square metres (0.1% of total RPA) and T02 London Plane by 0.27 square metres (0.06% of total RPA). Due to the small amount of conflict pre-emptive root pruning will be appropriate should roots be encountered. This must be carried out as outlined in section P4.2 of the Arboricultural Method Statement and where shown on the Basement Plan.

3.3.2 The excavation and insertion of the rainwater collection tank will conflict with the measured RPAs' of trees numbered T01 London Plane by 1.06 square metres (0.33% of total RPA) and T02 London Plane by 1.01 square metres (0.25% of total RPA). Due to the small amount of conflict pre-emptive root pruning will be appropriate should roots be encountered. This must be carried out as outlined in section P4.2 of the Arboricultural Method Statement and where shown on the Tree Protection Plan.

Tree Number	Total Conflict (sqm)	Conflict Percentage of RPA
T01 London Plane	1.38 sqm	0.43%
T02 London Plane	1.28 sqm	0.31%

3.3.3 Provided service plans indicate utility runs which pass through the measured RPAs' of trees marked for retention. Installation of these runs must adhere to the guidelines as stated in section P5.0 of the Arboricultural Method Statement.

3.3.4 If there is a requirement or desire to replace existing hard surfacing located within the measured RPAs' of trees marked for retention then this must be carried out in accordance with section P6.0 of the Arboricultural Method Statement.

3.4 Tree protection

3.4.1 Tree protection fencing will be required to be installed as shown on the Tree Protection Plan CAS/2018/246. Fit for its purpose fencing must be installed after any required tree works and prior to any construction operations on site.

3.4.2 Protective fencing should remain in situ throughout the entire construction process. The site manager should be aware that it is his responsibility to maintain protective measures adequately and these should be casually inspected at regular intervals.

3.4.3 If there is a requirement to move or carry out operations inside the area of protective fencing then ground protection should be laid over any exposed ground prior to movement or works commencing. This should be laid in accordance with section P3.5 of the Arboricultural Method Statement.

3.4.4 Where stipulated ground protection should be laid. The gross weight of predicted traffic in the area should be calculated and ground protection laid in accordance with section P3.5 of the Arboricultural Method Statement.

3.4.5 When there is a requirement to carry out work in an area covered with ground protection then only the immediate area of work should have the protection rolled/scraped back. Once the task in hand is completed then ground protection should be instantly re-instated.

3.4.6 Street trees located within the vicinity (T01 & T02) will require stem protection to avoid the risk of inadvertent damage caused by the movement of materials and plant. This must be installed as outlined in section P3.6 of the Arboricultural Method Statement and as shown on the Tree Protection Plan CAS/2018/246.

3.4.7 Adequate room is available for the locating of compounds and material storage within the site boundaries and outside of any measured RPA.

4.0 Conclusions

4.1.1 The proposal has been specifically designed to retain as much of the existing tree stock as possible thus minimising impact upon the broader landscape or habitat contribution made by the site.

4.1.2 The proposal requires the removal of one unremarkable Category C tree, the loss of which will have no negative impact upon the arboricultural, landscape or habitat value of the site.

4.1.3 One dead flowering Cherry will be removed and replaced with a Japenese Flowering Cherry (*Prunus 'Pink Perfection'*)

4.1.4 Minor root pruning may be required due to potential small conflicts (less than 2% of total RPA) between the proposed basement / rainwater tank and street trees located to the front of the property.

4.1.5 So long as the precautionary and protective measures outlined within this report are strictly observed and adhered to then the proposed development will have a neutral impact upon individual trees marked for retention or the wider landscape contribution of the site

Arboricultural Method Statement

1.0 Summary

1.1 The purpose of this report is to aid the preservation of trees shown to be retained at and adjacent to the site shown on the attached plan CAS/2018/246. Trees can easily be retained and effectively protected during the proposed redevelopment of the site, by clearly setting out the tree protection methods, construction techniques and working practices. This document provides this information; principles that are approved and enforced by the local planning authority.

1.2 This document gives site specific instructions on the methods required to protect the existing tree stock agreed to be retained. These methods are set out in a logical sequence of operations

1.3 The BS recommendations are made for appropriate barriers to exclude construction from RPA's: The RPA for each tree or group is provided in the tree survey schedule. The protective barriers are sacrosanct and no construction activities shall take place within this zone. This fencing should be erected in position prior to any construction and be maintained in position for the duration of the development process.

1.4 The Tree Protection Plan (TPP) will indicate retained trees, trees to be removed, the precise location of protective barriers and ground protection, service routing and specifications, areas designated for structural landscaping to be protected and suitable space for site materials storage and other construction related facilities. This document and the associated TPP will be endorsed by planning conditions, agreement or obligation as appropriate.

2.0 Important Tree Information

2.1 As the majority of tree roots are found in the upper metre of soil, development works, including for example even shallow excavation, soil compaction and soil contamination, can be harmful to trees in close proximity. Trees differ in their tolerance of root loss or disturbance, according to their age, species and/or condition. All protection works within this document will be in accordance with BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'

2.2 An assessment of the site's tree stock has been undertaken and those trees to be retained are clearly shown on the Tree Protection Plan (TPP). A calculation has been made of the volume of soil required to ensure the survival of these and this is represented by the Root Protection Area (RPA) indicated by the magenta circles or squares around the retained tree on the plan.

2.3 The RPA has been used to inform the Construction Exclusion Zone (CEZ), the area to be protected during development by the use of barriers, ground protection and specialised construction techniques - outlined below:-

3.0 Sequenced Methods of Construction and Tree Protection

P1.0 Phase 1- Pre Contract Meeting

P1.1 An onsite meeting will be held, if required with all relevant parties including the developer, appointed arboricultural supervisor and Local Planning Authority (LPA) representative. The purpose of this meeting is to record site features including tree condition, agree tree works (detailed below), location of permanent and temporary access, location of site storage and the location of tree protection barriers.

P2.0 Phase 2- Execute Agreed Tree Works

Tree No	Proposed Works	Comments
T04	Remove & Replace	Dead Tree
T05	Removal	Removal required to accommodate proposed development.

P2.1 All tree work is to conform to BS 3998:2010 and to current arboricultural best practice. Tree works are to be undertaken by a professional and specialist arboricultural contractor, who carries the appropriate experience and insurance cover and following formal approval from the LPA

P3.0 Phase 3 - Tree Protection Barriers and ground protection

P3.1 In order to protect the tree stems from significant construction activity, protection barriers will be erected. See Plan for fencing location. Fencing should be of a reasonable standard and suitable for the purpose of preventing machinery entering the protected zones see example given below in appendix 1.

P3.2 Once the barriers have been properly erected in position, they are to be considered as sacrosanct and are not to be removed or altered in any way without prior approval from the LPA.

P3.3 Clear notices are to be fixed to the outside of the fencing with words such as 'PROTECTED AREA – NO ACCESS AND NO STORAGE OR WORKING WITHIN THIS AREA'. All operatives and other relevant personnel are to be informed of the role of the exclusion barriers and their importance.

P3.4 The location of the protection barriers is indicated on the TPP. The barriers will be erected prior to any works on site in the vicinity of retained trees, including the delivery of machinery, materials, plant or equipment to the site or any adjacent land. The barriers will remain in situ until final completion or a time agreed by the LPA and Contractor.

P3.5 Where it has been agreed, as shown on the plan, access for construction operations can be located within a tree's RPA a combination of barriers and ground protection should be adopted to form the CEZ.

- For pedestrian access, a single thickness of scaffold boards placed on a driven scaffold frame, so as to form a suspended walkway or on a compressive- resistant layer such as, e.g. woodchip 100mm min, laid onto a geotextile membrane will be sufficient.
- For pedestrian operated machinery up to a gross weight of 2t inter linked ground protection boards places on top of a compression- resistant layer, as above, will be required.
- For machinery greater than 2t and engineered specification will be required.

P3.6 The main stems to the street trees will be protected by installing a wooden framework with thick plywood sheet material so as to encase the main stem. An area of open ground to the tree base should allow a reasonable stake to be driven into the ground so as to create this framework. The framework should extend as high as the first main branches or as practically possible.

P4.0 Phase 4 - Ground works

P4.1 Spoil, including soil and rubble surplus to requirements will be removed from site and not stored against any protective fencing.

P4.2 If roots are encountered during basement excavation then roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability.

P5.0 Phase 5 – Installation of Utility / Service Runs

P5.1 Contractors responsible for the installation of services must be instructed to carry out the works in accordance with guidelines given in The National Joint Utilities Group Volume 4 (NJUG Vol 4).

P5.2 Where viable it is preferable to keep apparatus together in common ducts ideally utilising existing runs and augmenting them into the new design.

P5.3 Where underground apparatus pass within the RPA, detailed plans showing the proposed routeing should be drawn up and submitted to the LPA. In such cases, trenchless insertion methods must be used with entry and retrieval pits being sited outside the RPA.

P5.4 Where trenchless insertion methods are not viable and excavation within the RPA is unavoidable then this must be carried out with care by hand. Roots, whilst exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.

P5.5 Once excavation is completed ducts can be threaded through structural rooting. If required roots smaller than 25 mm diameter may be pruned to allow threading, making a

clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability.

P5.6 Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

P6.0 Phase 6 - Removal / Replacement of Hard Surfacing Within the Root Protection Area (RPA)

P6.1 Where an existing hard surface is scheduled for removal, care should be taken not to disturb tree roots that might be present beneath it. Hand-held tools or appropriate machinery should be used (under arboricultural supervision) to remove the existing surface, working backwards over the area, so that the machine is not moving over the exposed ground. If a new hard surface is to be laid, it is preferable to leave any existing sub-base in situ, augmenting it where required.

P6.2 If the sub-base is removed then the design must not require excavation into the soil, including through lowering of levels and/or scraping. If it is intended to use the new surface for construction access, it is essential that the extra loading and wear arising from this are taken into account during the design process.

P6.3 The gross weight of proposed traffic for each area must be calculated and the design include a suitable three dimensional cellular confinement system to alleviate risk of future soil compaction.

P6.4 The sections below offer generic installation techniques relating to the construction of hard surfaces, for example, roads and paths, parking areas and bases for bicycle or bin stores not required to be to an adoptable standard and within the CEZ of retained trees.

Manufacturers installation guidelines should be referenced and where required supersede the instructions below.

P6.5 With reference to BS 5837 clause 11.8, where the construction of permanent hard surface is approved within the CEZ, a non-dig design should be used to avoid root loss caused by excavation.

P6.6 The construction area is to be levelled by filling hollows and removing protrusions and hard landscaping. No soil excavation, other than the removal of a 'turf or vegetation layer' is to be carried out during this process and filling material should be of a porous nature to allow water and oxygen to reach the soil below. In the unlikely event that roots are required to be pruned, sharp cutting tools are to be used to ensure that minimum damage is caused. No roots, greater than a diameter of 25mm, are to be pruned without prior agreement with the appointed arboricultural supervisor or LPA representative.

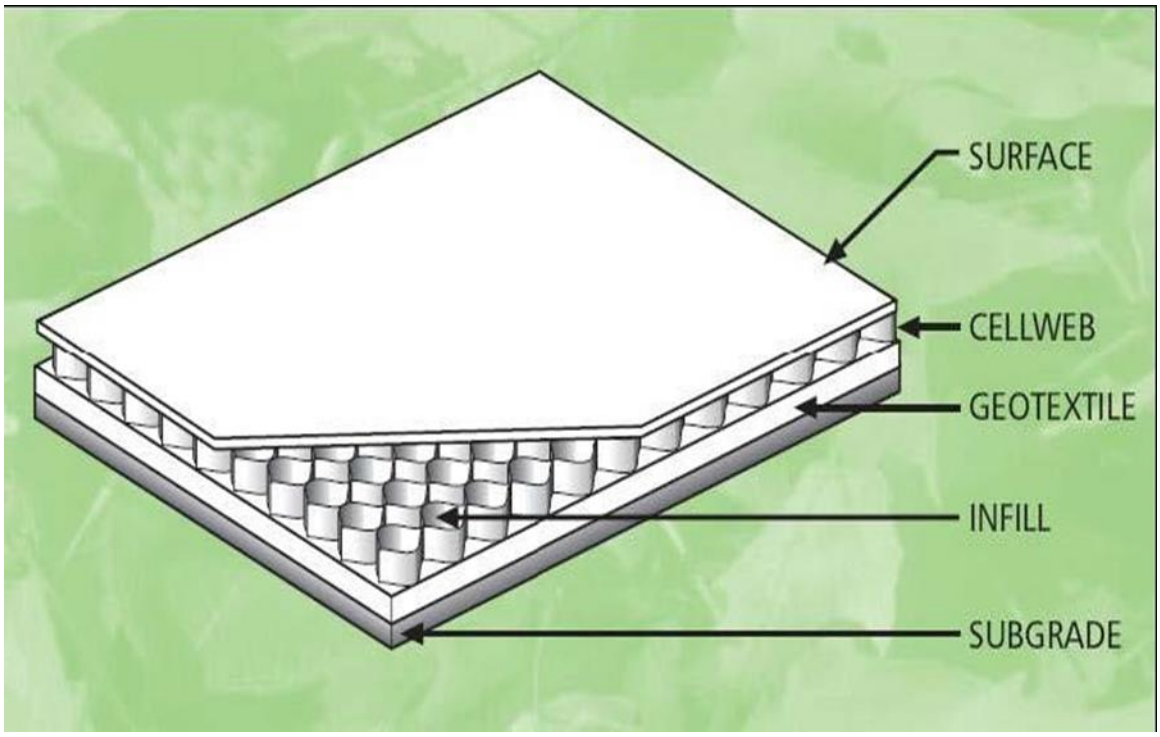
P6.7 A geo-textile membrane (Terram or similar) is then to be laid over the whole surface, including any retained hard surfaces. This is to be fixed firmly into position with ground pegs.

P6.8 Where edging blocks or stone are to be used to retain the drive surface within the CEZ, the mix into which they are set will be laid directly onto the geo-textile membrane over the supporting base. No deeper excavations are to be made to accommodate the footing of the edging detail.

P6.9 A geoweb material is then placed over the membrane and also fixed into position. An aggregate sub-base material is then introduced in to the geoweb. The depth of the sub-base aggregate should be the same depth as the geoweb and no less than 100mm. The aggregate should be a granular no fines material (typically 40-20mm). Not only will this material dissipate load and reduce soil compaction, it will permit easy passage of air (oxygen) to the rooting area of the tree below the surface.

P6.10 The sub-base material is to be compressed into position ready for the final surface treatment. This surface can also be used as a temporary works access route prior to the laying of the final surface.

P6.11 Final surface details for residential purposes will be of a porous nature such as gravel, block paviors or small paving slabs and should be approved by the LPA. In the usual way these should be bedded into a lean mix that is also highly porous. Final surface treatment can be installed as part of the landscaping works.



P7.0 Phase 7 - Dismantling Protection Barriers and Landscaping Works

P7.1 A minimum notice period of seven days will be given to the LPA prior to the dismantling of the protection barriers.

P7.2 All landscaping once the barriers have been removed will avoid soil re-grading and disturbance within the CEZ and no soil levels be altered after the protection barriers have

been removed. All vehicles are strictly prohibited from entering any RPA once barriers are removed.

P8.0 Phase 8 – Replanting

P8.1 Selected species is a Japanese Flowering Cherry (*Prunus 'Pink Perfection'*) which must be container grown 10-12cm girth (35L Pot). Stock to be checked as per BS 8545

P8.2 Planting to be carried out between November and March.

P8.3 Tree should be planted in areas previously cleared of all weeds, grass and vegetation.

P8.4 Tree must be planted with root director in planting hole at least 1.5 times the length of the root system or 1.2m x 1.2m (whichever is greater) and to a depth of 900mm. Topsoil should be mixed with a minimum of 20 litres of suitable tree planting compost and replaced carefully around the roots and lightly compacted every 150mm layer.

P8.5 Tree must be supported with a treated timber stake and rubber ties.

P8.6 It is recommended that the tree be maintained for a period of three years after planting. Ensure adequate watering and fertilising is carried out to ensure good establishment and an area around the tree of 1.5m is kept free from weeds.

P8.7 Failed planting to be replaced up to a period of five years.

4.0 General Principles for Tree Protection

4.1 A copy of this AMS and the attached TPP is to be retained on site at all times and all personnel associated with the construction process will be made familiar with the principles within.

4.2 No fires are to be lit on site at any stage during the construction process.

4.3 A designated storage area is to be created away from retained trees. All materials for construction purposes are to be stored in this compound. Care must be taken to avoid the leakage or leaching of noxious materials into the soil.

4.4 No materials will be stored or left stacked in positions around the site other than within the storage compound area.

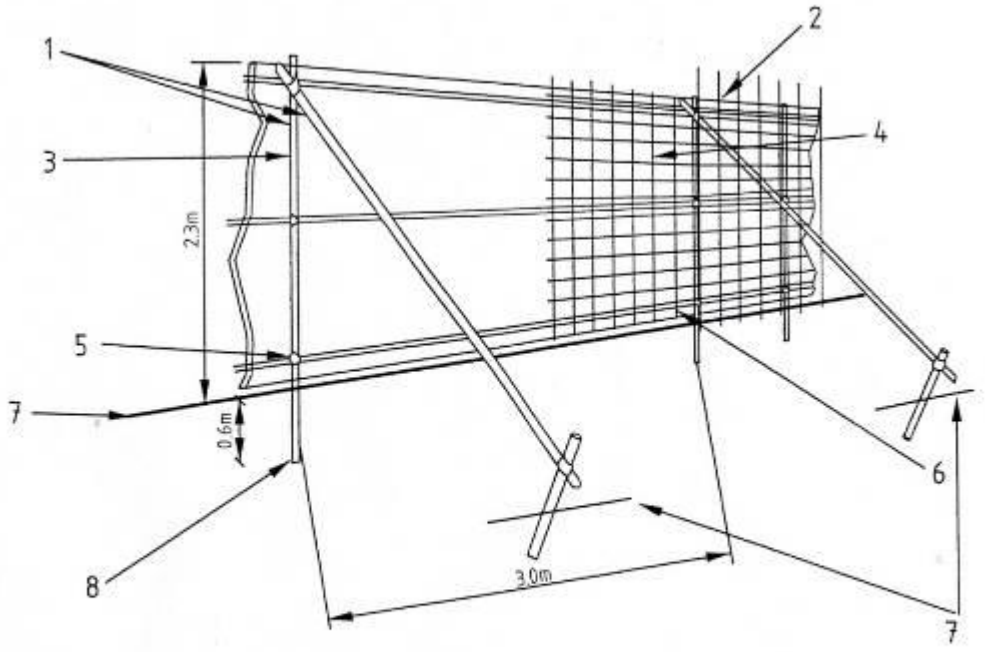
5.0 Communication Details, Monitoring and Compliance

5.1 In order to ensure that the principles of tree protection set out in the statement are adhered to, it is important to set out communication details for key individuals and tasks that require monitoring. These details should be retained by all relevant parties and be available on site at all times. Relevant parties will be advised of any changes in personnel or contractor during the development process.

5.2 Before construction begins written confirmation that the developer/contractor or its agents agree to comply in full with the principles set out within this Method Statement will be lodged with the LPA.

Appendix 1: Tree Protection Fencing

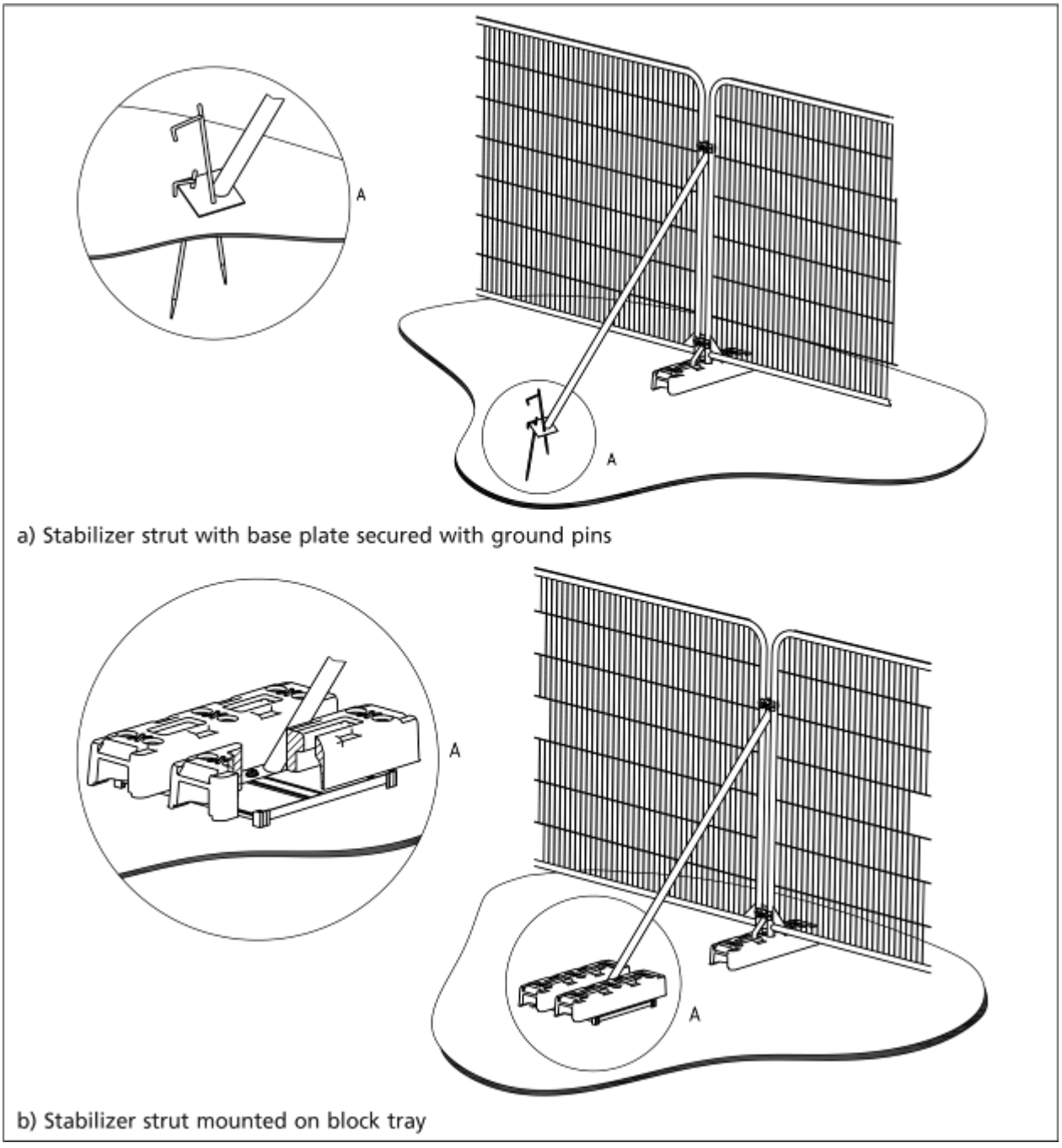
High Traffic Areas



1 Standard scaffold polee
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier

Low Traffic Areas



BS5837 Survey Data

Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T01	Plane, London (Platanus x hispanica)	Height (m): 21 Stem Diam (mm): 840 Spread (m): 8.5N, 10E, 6S, 8.5W Crown Clearance (m): 6 Lowest Branch (m): 4.5(SE) Life Stage: Mature			30+ Years	A1,2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 10.1m. Area: 320 sq m.
T02	Plane, London (Platanus x hispanica)	Height (m): 21 Stem Diam (mm): 930 Spread (m): 9.5N, 8E, 6S, 8W Crown Clearance (m): 4 Lowest Branch (m): 3.5(S) Life Stage: Mature			30+ Years	A1,2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 11.2m. Area: 394 sq m.

Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T03	Cherry (Prunus sp. (Cherries))	Height (m): 6 Stem Diam (mm): 300 Spread (m): 4N, 2E, 5S, 5.5W Crown Clearance (m): 1.5 Lowest Branch (m): 2 Life Stage: Mature			10+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 3.6m. Area: 41 sq m.
T04	Cherry (Prunus sp.)	Height (m): 3 Stem Diam (mm): 110 Spread (m): 0.5N, 1E, 2S, 2W Crown Clearance (m): 2 Life Stage: Dead			Dead	U
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Dead Structural Cond: Decaying Bat Habitat: None	Additional Comments: none			RPA none - due to Retention Category of U.
T05	Cherry (Prunus sp. (Cherries))	5 stems, diam(mm): 120, 120, 120, 100, 120, Spread (m): 3.5N, 4E, 3.5S, 4W Crown Clearance (m): 2 Lowest Branch (m): 2 Life Stage: Over Mature	Heavy historic pruning cuts visible throughout canopy & around base		10+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Poor Structural Cond: Poor Bat Habitat: None	Additional Comments: none			RPA Radius: 3.1m. Area: 30 sq m.

Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T06	Cherry, wild (Prunus avium)	Height (m): 6 Stem Diam (mm): 450 Spread (m): 5N, 4E, 2S, 2W Crown Clearance (m): 2 Life Stage: Over Mature	Ivy covered with multiple ganoderma brackets located around base to south		<10 years	U
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Poor Structural Cond: Poor Bat Habitat: Low	Additional Comments: none			RPA none - due to Retention Category of U.
T07	Willow, Weeping (Salix babylonica)	Height (m): 17 Stem Diam (mm): 530 Spread (m): 5.5N, 5#E, 5.5S, 7W Crown Clearance (m): 3 Lowest Branch (m): 4.5(SE) Life Stage: Over Mature	Tree subjected to heavy pruning in past		20+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Poor Structural Cond: Poor Bat Habitat: Low	Additional Comments: none			RPA Radius: 6.4m. Area: 129 sq m.
T08	Hazel (Corylus avellana)	5 stems, diam(mm): 150, 110, 100, 80, 80, Spread (m): 3.5N, 5#E, 4#S, 4.5W Crown Clearance (m): 1.5 Life Stage: Mature	Hazel coppice stool		20+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 2.9m. Area: 26 sq m.

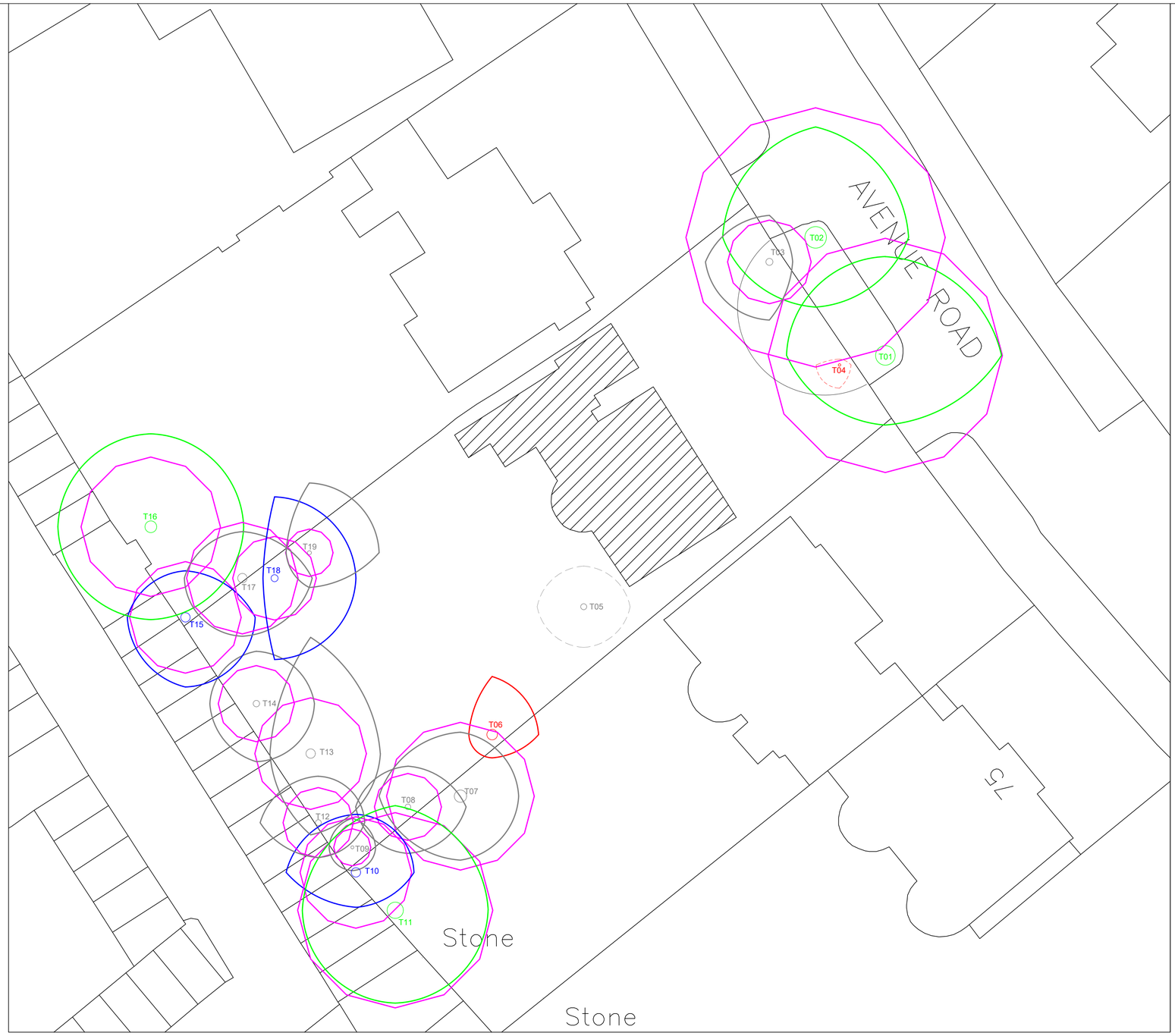
Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T09	Holly (Ilex sp.)	Height (m): 5 3 stems, diam(mm): 80, 80, 70, Spread (m): 2.5N, 2E, 2S, 2W Life Stage: Mature			10+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 1.6m. Area: 8 sq m.
T10	Lime, European (Tilia x europaea)	Height (m): 14# Stem Diam (mm): 400 Spread (m): 5#N, 5#E, 3#S, 6#W Life Stage: Mature	Historic pollard with 3-5 years re-growtg		20+ Years	B1,2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Poor Structural Cond: Poor Bat Habitat: Low	Additional Comments: none			RPA Radius: 4.8m. Area: 72 sq m.
T11	Plane, London (Platanus x hispanica)	Height (m): 20# Stem Diam (mm): 700# Spread (m): 9N, 8#E, 8#S, 8#W Crown Clearance (m): 6 Lowest Branch (m): 6(W) Life Stage: Mature			40+ Years	A1,2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 8.4m. Area: 222 sq m.

Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T12	Hazel (Corylus avellana)	Height (m): 6 7 stems, diam(mm): 120, 100, 100, 90, 90, 80, 80, Spread (m): 4N, 4E, 3#S, 5W Life Stage: Mature	Hazel coppice stool		20+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 3.0m. Area: 28 sq m.
T13	Walnut (Juglans sp.)	Height (m): 15 Stem Diam (mm): 400 Spread (m): 10N, 6E, 7#S, 3.5W Crown Clearance (m): 2 Lowest Branch (m): 4(NE) Life Stage: Mature	Large wound on main stem at ground level to 1.8m with adequate healing wood.		20+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Poor Bat Habitat: Low	Additional Comments: none			RPA Radius: 4.8m. Area: 72 sq m.
T14	Hazel (Corylus avellana)	7 stems, diam(mm): 100, 100, 100, 100, 120, 100, 100, Spread (m): 4.5N, 5E, 5#S, 4W Life Stage: Mature	Hazel coppice stool		20+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 3.3m. Area: 34 sq m.

Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T15	Lime, European (Tilia x europaea)	Height (m): 16 Stem Diam (mm): 400# Spread (m): 4#N, 6E, 6#S, 5#W Life Stage: Mature	Subjected to historic heavy pruning		20+ Years	B1,2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 4.8m. Area: 72 sq m.
T16	Poplar, Black (Populus nigra)	Height (m): 20# Stem Diam (mm): 500# Spread (m): 8#N, 8#E, 8#S, 8#W Life Stage: Mature	Tree subjected to heavy pollard style pruning regime with est 5-6 years re-growth		20+ Years	A2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 6.0m. Area: 113 sq m.
T17	Leylandii (Cupressocyparis leylandii X)	Height (m): 12 Stem Diam (mm): 400# Spread (m): 4#N, 6E, 5#S, 5#W Life Stage: Mature	Historic topping cut visible at 10m		20+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 4.8m. Area: 72 sq m.

Ref.	Species	Measurements	Physiological and structural condition	Preliminary Management Recommendations	Rem. Contrib.	Category
T18	Maple (Acer sp.)	Height (m): 15 Stem Diam (mm): 300 Spread (m): 7#N, 7E, 7S, 1W Crown Clearance (m): 3.5 Lowest Branch (m): 2(E) Life Stage: Mature	Ivy covered		20+ Years	B1,2
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 3.6m. Area: 41 sq m.
T19	Cherry (Prunus sp. (Cherries))	Height (m): 14 Stem Diam (mm): 170 Spread (m): 6#N, 6E, 3S, 2#W Crown Clearance (m): 3 Lowest Branch (m): 3.5(NW) Life Stage: Mature	Ivy covered		10+ Years	C1
		Other Reference: Distance1: Distance2: Custom Number 3: Physiological Cond: Fair Structural Cond: Fair Bat Habitat: Low	Additional Comments: none			RPA Radius: 2.0m. Area: 13 sq m.

Existing Tree Location Plan



10 0 10 20 30 40 50

Metres

KEY

- T1 — Existing Tree colour referenced in accordance with BS 5837 as shown below
- T1 — Existing tree to be removed, colour in accordence with BS 5837 as shown below. Line indicates canopy spread.
- Green – Cat A Trees of high quality and value
- Blue – Cat B Trees of moderate quality and value
- Grey – Cat C Trees of low quality and value
- Red – Cat R Trees that are dead or showing signs of irreversible decline
- Root Protection Area as calculated in accordance with BS 5837
- Existing Building to be Demolished

N

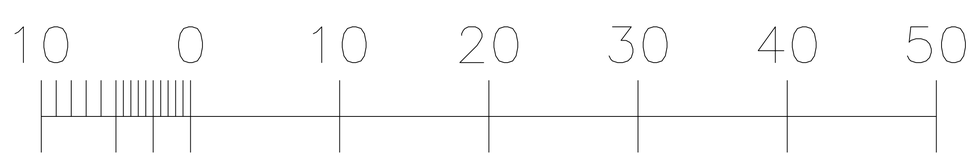
REV.	DATE	INITIALS	DETAILS
.	.	.	.

CLIENT Mira A-Architecture & Engineering Ltd				DWG. TITLE Existing Tree Location Plan	
SITE 79 Avenue Road, London, NW8 6JD					
DRAWN BY BJS	CHECKED BY BJS	SCALE 1:200 @A1	DATE Dec 2019	DWG NO. CAS/2018/246	REV.

Proposed Development Plan

KEY

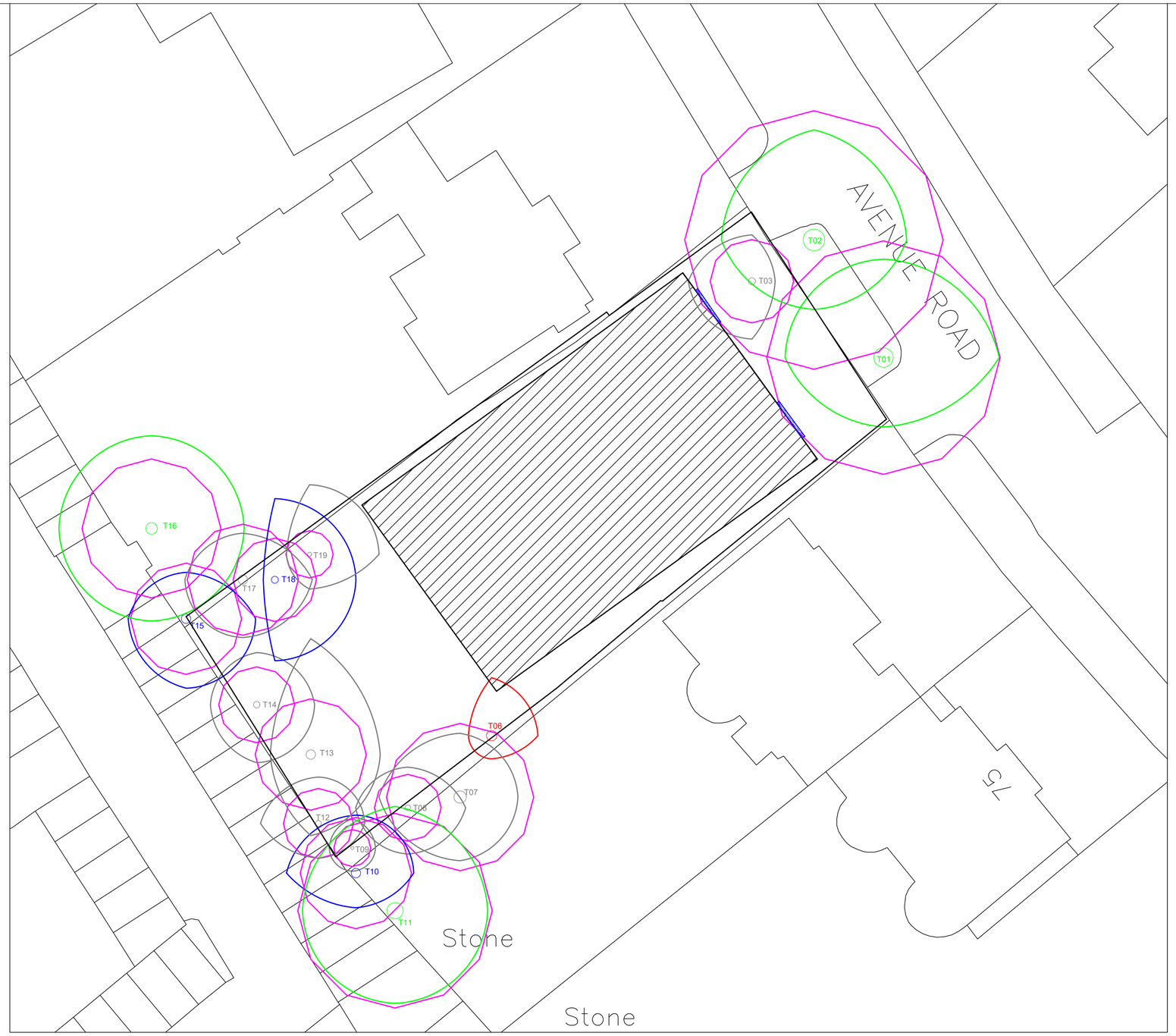
- T1 — Existing Tree colour referenced in accordance with BS 5837 as shown below
- Green – Cat A Trees of high quality and value
- Blue – Cat B Trees of moderate quality and value
- Grey – Cat C Trees of low quality and value
- Red – Cat R Trees that are dead or showing signs of irreversible decline
- Root Protection Area as calculated in accordance with BS 5837
- Footprint of Proposed Development
- Location of Rainwater Collection Tank.



REV.	DATE	INITIALS	DETAILS

CLIENT Mira A–Architecture & Engineering Ltd SITE 79 Avenue Road, London, NW8 6JD			DWG. TITLE Proposed Development Plan		
DRAWN BY BJS	CHECKED BY BJS	SCALE 1:200 @A1	DATE May 2020	DWG NO. CAS/2018/246	REV.

Basement Plan



10 0 10 20 30 40 50

Metres

KEY

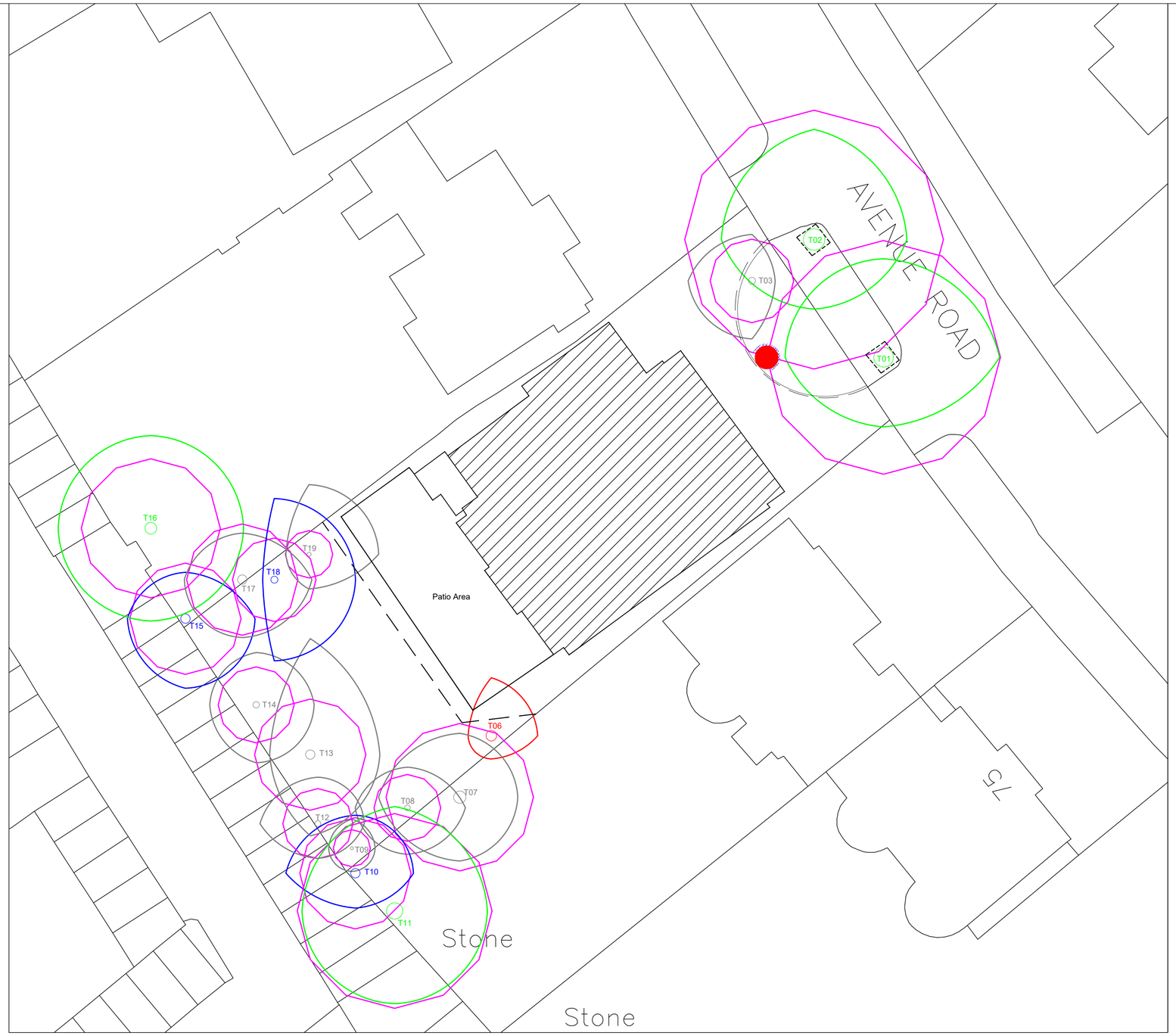
- T1 — Existing Tree colour referenced in accordance with BS 5837 as shown below
- Green – Cat A Trees of high quality and value
- Blue – Cat B Trees of moderate quality and value
- Grey – Cat C Trees of low quality and value
- Red – Cat R Trees that are dead or showing signs of irreversible decline
- Root Protection Area as calculated in accordance with BS 5837
- Location of new basement
- Location of Pre-emptive Root Pruning Trench.

N

REV.	DATE	INITIALS	DETAILS

CLIENT Mira A-Architecture & Engineering Ltd SITE 79 Avenue Road, London, NW8 6JD			DWG. TITLE Basement Plan		
DRAWN BY BJS	CHECKED BY BJS	SCALE 1:200 @A1	DATE May 2020	DWG NO. CAS/2018/246	REV.

Tree Protection Plan



10 0 10 20 30 40 50

Metres

KEY

- T1 — Existing Tree colour referenced in accordance with BS 5837 as shown below
- Green – Cat A Trees of high quality and value
- Blue – Cat B Trees of moderate quality and value
- Grey – Cat C Trees of low quality and value
- Red – Cat R Trees that are dead or showing signs of irreversible decline
- Root Protection Area as calculated in accordance with BS 5837
- Area of Proposed Development
- Approximate line of protective fencing to be erected in accordance with BS5837 and to be maintained throughout entire development process.
- Location of Rain Water Collection Tank.
- Location of Rainwater Tank Pre-emptive Root Pruning Trench.

N

REV.	DATE	INITIALS	DETAILS

CLIENT Mira A-Architecture & Engineering Ltd			DWG. TITLE Tree Protection Plan		
SITE 79 Avenue Road, London, NW8 6JD					
DRAWN BY BJS	CHECKED BY BJS	SCALE 1:200 @A1	DATE May 2020	DWG NO. CAS/2018/246	REV.

Tree Schedule Explanatory Notes

Ref.no	Identifies trees, groups and hedges on the accompanying plan.
Species	Common names are provided to aid wider comprehension.
Height	Describes the approximate height of the tree measured in metres from ground level
Canopy Spread	Indicates the crown radius from the base of the tree in four compass directions, recorded to the nearest metre.
Ground Clearance	Height of crown clearance above adjacent ground in metres.
DBH (mm)	DBH is the diameter of the stem measured in cm at 1.5m from ground level for single stemmed trees or just above root flare for multi-stemmed trees. Stem Diameter may be estimated where access is restricted.
RPR (cm)	Root Protection Radius (RPR) is area required to be protected measured radially from the trunk centre.
RPA (m^2)	Root Protection Area (RPA) is the minimum rooting area in m^2 which should remain undisturbed around each tree.
Age Class	Age of the tree expressed as Y- Young, MA- Middle-Aged, EM- Early Mature, M- Mature or OM- Over-Mature
General Condition	Overall condition of tree expressed as :Good, Fair, Poor, Dead
Structural defects/Comments	May include general comments about growth characteristics, how it is affected by other trees and any previous surgery works. Also specific problems such as dead wood, pests, diseases, broken limbs. Etc
Estimated Remaining Years	Categorised in year bands of less than 10, 10+, 20+, 40+
BS Category	B.S. Cat refers to (BS 5837:2005 Table 1) and refers to tree/overall group quality and value; 'A' - High; ‘B’ - Moderate; 'C' - Low; 'U' - Remove.
Sub Category	Sub Cat refers to the retention criteria values where 1 is arboricultural, 2 is landscape and 3 is cultural including conservational, historic and commemorative