Arboricultural Appraisal Report

Impact Assessment & Method Statement to Inform Development

BS5837:2012 Trees in relation to Design, demolition and construction – Recommendations

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South Shields
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REPORT DATE:	13/03/2023

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Technical Summary

Proposal summary: construction of a double garage with study and w.c. above.

See supervision statement regarding direct supervision of works and monitoring.

Table 1: Summary of Tree works Summary

Tree Works Summary	Vegetation Affected by Category			
	Cat A	Cat B	Cat C	Cat U
Removal under sound arboricultural management	0	0	0	0
Removal due to development	0	0	0	0
Pruning (Enabling Works)	0	0	1	0

Table 2: Mitigation Requirements Summary

Mitigation Requirements Summary	Vegetation Affected by Category			
	Cat A	Cat B	Cat C	Cat U
Protective Fencing	0	0	0	0
Ground Protection	0	1	1	0
Excavation within RPAs	0	1	1	0
No Dig Installation	0	1	1	0

Table 3: List of Trees Works and Mitigation

Tree Works / Mitigation	Vegetation Affected
Removal	None
Pruning	T2
Protective Fencing	None
Ground Protection	T1, T2
Excavation within RPAs	T1, T2
No Dig Installation	T1, T2

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Introduction

1 Scope

1.1 The scope of this report is limited to an appraisal of the existing trees on (and/or adjoining) the site and identification of the implications of development on retained trees in accordance with our instruction. The assessment is to be made with reference to BS 5837:2012 'Trees in Relation to design, demolition and construction – Recommendations'. The property was visited on 03/03/2023 and this report is based on conditions found on that day.

1.2 To prepare clear recommendations supported by relevant plans and data in order to facilitate consideration of the arboricultural implications by the Local Planning Authority (LPA).

1.3 To consider the development proposals, identify areas where there are arboricultural issues and to recommend possible solutions.

1.4 To consider additional information supplied, to identify arboricultural issues arising from this information and to recommend possible solutions.

1.5 No responsibility is assumed by MWA Arboriculture Ltd for legal matters that may arise from this report, and the consultant shall not be required to give testimony or to attend court unless additional contractual arrangements are made.

1.6 This report is not a Tree Risk Management Report or a Hazard Analysis Report and its use as such is invalid.

1.7 The trees have been assessed from ground level only. Assessment of condition is based on a visual tree assessment (VTA). No detailed inspection of the upper crown has been carried out. No decay detection equipment (destructive or non-destructive) has been used to further assess the condition of the trees, which is beyond the scope of the survey. Any dangerous trees requiring further assessment on safety grounds will be identified.

1.8 Due to the changing nature of trees and other site circumstances this report and any recommendations made are limited to a 3-year period. Any alteration to the application site or any development proposals could change the current circumstances and may invalidate this report and any recommendations made. Should this be the case this report will require revision to reflect the development proposals.

1.9 A lack of recommended work does not imply that a tree is safe and likewise it should not be implied that a tree will be made safe following the completion of any recommended work.

1.10 All measuring instruments were used in accordance with appropriate user guides.

1.11 No site investigations to identify underlying soils and geology have been undertaken. This information may have a bearing upon existing and proposed foundations and landscape design. The project engineer is to be consulted regarding impacts from the recommendations contained within this report.

1.12 Any legal description or information given to MWA Arboriculture Ltd is believed to be accurate.

1.13 Where solutions to arboricultural problems are specified which require the usage of a third-party product e.g., no dig roadway construction, no liability is assumed for the performance or suitability of the product and specialist advice as to the suitability or installation of the product should be sought from the manufacturer or other specialist.

1.14 No responsibility is assumed by MWA Arboriculture Ltd for legal matters that may arise from this report, and the consultant shall not be required to give testimony or to attend court unless additional contractual arrangements are made.

1.15 Any alteration or deletion from this report shall invalidate it as a whole.

2 Supporting Documents

2.1 We have been supplied with .pdf files showing the existing situation and the proposals. Tree locations were plotted using on-site features at the time of survey.

3 Components of Report

3.1 This report comprises the following elements:

Site Assessment

- Baseline tree survey of trees that may be impacted by proposals
- Description of the site
- Assessment of existing tree stock
- Tree Survey Schedule (TS)

Development Appraisal

- Description of proposed development
- Arboricultural Impact Assessment

Arboricultural Method Statement

- Arboricultural Method Statement (AMS) - preliminary
- Tree Protection Plan (TPP)

Site Assessment

4 Statutory Controls, Policy and other Constraints

4.1 We are not aware of any statutory protection relating to trees on or adjacent to the site at the time of writing.

4.2 It would not therefore be necessary to inform the Local Planning Authority (LPA) before working on trees within or adjacent to the site.

4.3 National planning policy is set out in the revised National Planning Policy Framework (NPPF) July 2021 and trees on this site should be considered against the information contained in Section 15 "Conserving and enhancing the natural environment". Trees can also contribute to historical character and settings and where this is the case Section 16 "Conserving and enhancing the historic environment" would also be relevant.

5 Tree Survey

5.1 The survey was conducted on 03/03/2023. A total of two individual trees were recorded during the survey.

5.2 Trees were assessed in accordance with Sections 4.4 and 4.5 of BS 5837:2012. Under this system trees are allocated a retention category based upon their quality and value in the existing context. These are:

- Category A – trees of high quality with long term future potential;
- Category B – trees of moderate quality with medium term future potential;
- Category C – trees of low quality with short term future potential;
- Category U – trees in such a condition that they cannot be realistically be retained as living trees for longer than 10 years.

5.3 T1 was assigned category B due to its landscape contribution. The remaining tree was considered to be worthy category C.

5.4 Tree locations were plotted using on-site features at the time of survey.

5.5 The survey information is provided in tabular form in the survey schedule within the TPP

6 Site Description

6.1 The site is located to the front left of an existing dwelling. The majority of the front garden is already occupied by hard standing. No trees are located within the site.

6.2 Two trees are located just beyond the site boundary, to the rear of the proposed garage.

Figure 1: Existing Situation

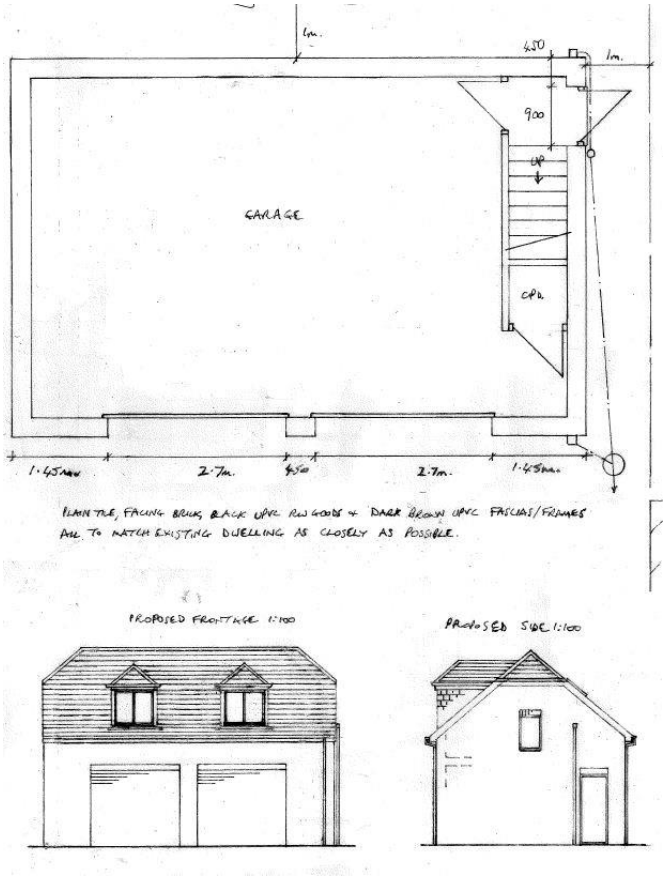


Development Appraisal

7 Development Proposal

7.1 The proposed development will entail the construction of a double garage with study and w.c. above.

Figure 2: Proposed Situation



8 Arboricultural Impact Assessment

8.1 This appraisal is made in the context of a potential development. It therefore seeks to identify trees that would form a constraint to development, those trees that would need to be removed, assess impacts from the proposals and define measures to assist in the long-term retention of retained tree stock. The assessment does not consider the requirements of other disciplines such as highways or drainage.

8.2 Our assessment of the arboricultural component of the site is presented within the associated document MWA Tree Protection Plan. Our assessment of the proposed scheme is shown in associated plan MWA TPP 01. The assessments consider tree location, ground conditions, likely root morphology, current dimensions, future growth and the proposed setting. The tolerance of the trees to disturbance based on species, age, condition and the presence of surrounding trees and / or built form is also considered.

8.3 **Above ground impacts**:

8.4 We have identified the need for tree pruning enabling works to T2 to accommodate construction and to ensure adequate space for vehicular movements below the canopies (T1 has already been subject to a crown lift). Tree works are to be agreed at the pre-start meeting.

8.5 Shading is not considered an issue as no windows will be located on the sides or rear of the structure. The trees are already subject to a crown lift that would need to be repeated to ensure clearance from the proposed structure.

8.6 **Below ground impacts:**

8.7 The proposed development is located largely within the root protection areas of retained trees thus requiring manual excavation and a no dig solution to the floor of the garage.

8.8 The root plate is the area of roots immediately adjacent to the trunk which supplies mechanical support and damage to this area can result in collapse of the tree. The wider root system supplies nutrients and water to the tree. Loss of some of these roots can be tolerated by most species, but if too large an amount is lost then the tree can be seriously affected and could potentially die.

8.9 The area of the RPA likely to be affected by the proposed development is over 20% in the case of T1. This is a significant impact but the presence of adjacent gardens, and therefore available rooting volume in other areas, would mean that the tree could access sufficient soil to replace the lost root system.

8.10 It should also be considered that trees do not always make use of their full root system at all times, occasionally letting some areas go dormant if nutrient supplies become depleted or if a better area of resources is available. The use of rainwater harvesting could also assist in offsetting any impacts.

8.11 Due to the extent of the proposed incursion, we do not consider strip foundations to be a viable option. Piles would be required with the floor of the garage either formed on an above soil surface or suspended over the existing soil levels.

8.12 Manual excavation of any pile heads (or similar) would be required.

8.13 It is important to protect the ground within the RPAs from damage and compaction the as a result of vehicular and pedestrian movements during development and this will involve the installation of temporary ground protection as indicated on the TPP.

8.14 **Tree/hedge removals:**

8.15 No trees will be removed to facilitate development.

8.16 **Other Impacts:**

8.17 We currently have no information relating to the provision of services to the new buildings. These are likely to be routed to the front of the building and so would not infringe RPAs to a significant degree if they enter the front of the building and are contained inside.

8.18 Drainage is currently shown at the right side oof the dwelling. This would need to be routed above ground as far as the front right corner before being taken underground.

8.19 In order to safeguard retained vegetation we advise that any excavation undertaken within the RPA of retained trees is supervised by a competent arboriculturist and that any root pruning which way be necessary is undertaken in accordance with NJUG10.

Arboricultural Method Statement

9 Arboricultural Method Statement (subject to revision if planning conditions are imposed)

9.1 Our assessment identifies that the proposed development will require works to be conducted within the RPAs of retained trees based on the current information. Extra care is therefore required to prevent damage to retained trees.

9.2 The following sections provide information relating to the order of implementation and proposed works. This assessment is based upon the plans available at the time of writing. As such the recommendations below may be subject to revision in response to additional information or revisions required to discharge planning conditions.

9.3 **Restrictions to operations within RPAs**

9.4 Where development activities occur within the RPAs of retained trees the following shall apply within the RPA:

- All excavation will be by hand and completed under direct arboricultural supervision of the project arboriculturist, following a written method statement that has first been approved by the local planning authority.
- No mechanical excavation is to take place within the RPA. In some circumstances it may be permissible under strict arboricultural site supervision and with a site-specific method statement.
- No lowering of levels for any purpose (except removal of grass sward using hand tools).
- No storage of plant or materials.
- No storage or handling of any chemical including cement washings.
- No vehicular access unless specified when those needed for construction works such as light diggers, mini dumper mini piling machinery shall advance only over ground protection.
- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders' sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees.
- No fire is permitted at any time.
- Whacker plates will not be used within the RPAs of retained trees. Non vibrating rollers will be used to compact materials if required. Hand tampers should be avoided as they can also damage roots, but these may be employed if access prevents the use of a roller.

9.5 Care shall be taken when planning site operations in proximity of retained trees to ensure that wide or tall loads, or plant with booms, jibs and counterweights, can operate without coming into contact with retained trees. Such contact can result in serious injury to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in proximity of trees shall be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is at all times maintained.

9.6 **Enabling works**

9.7 A pre-commencement meeting will be held to discuss phasing of works and appropriate practices where works are to be conducted within RPAs. This meeting will include the site agent and project arboriculturist.

9.8 Tree works detailed in the Tree Protection Plan MWA TPP 01 will be completed before any other activity is conducted on the site.

9.9 Ground boarding will be used to protect areas where protective fencing cannot be used or must be temporarily removed. A generic example of boarding suitable for pedestrian access is shown below, but this should be tailored to expected loads.

Figure 3: Ground Protection Schematic

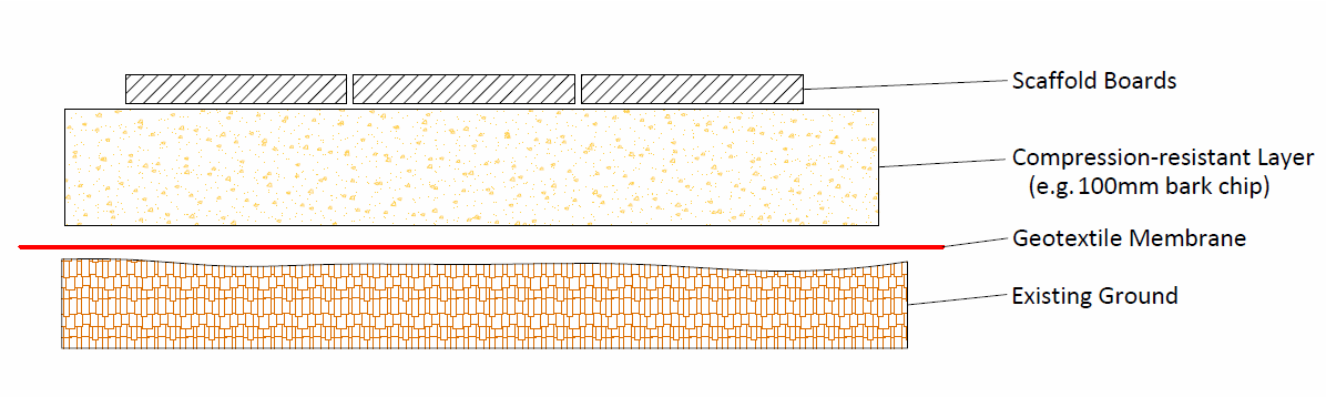


Figure 4: Ground Protection Example



9.10 In order to minimise the potential damage to the rooting environment arising from the proposed garage, and to provide additional, long-term protection to the trees, the proposed garage floor will be constructed using a cellular confinement system (installed according to the manufacturer's specification) or as a suspended floor.

9.11 If an above soil surface is to be used existing vegetation is removed manually within RPAs, and a membrane placed on the existing soil.

9.12 The cellular matrix is then placed over the membrane, usually by pinning one end in place and pulling the matrix open across the area to be protected. This can then be trimmed to shape as required and pegged in place. Should it be required edging will be installed at this stage.

9.13 The matrix is then filled with angular stone (typically loose-filled with 5-15mm diameter inert no-fines granular fill). A second membrane may be added to prevent contamination of the cells depending on the final wearing course. Plant may be sued to deliver the stone but may not drive over unprotected RPAs. At this stage a temporary wearing course can be applied if the proposed final surface is likely to be damaged by construction traffic.

9.14 A diagrammatic cross section of a typical cellular confinement system is shown below:

Figure 5: Cellular Confinement System Schematic

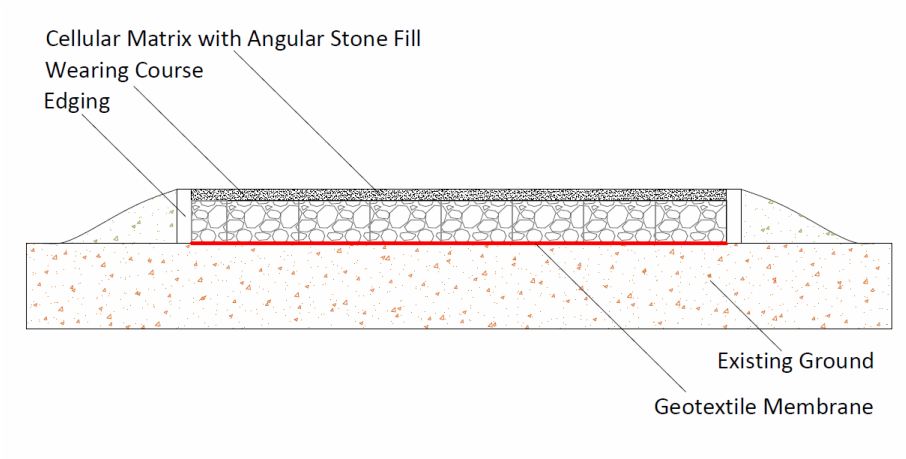


Figure 6: Cellular Confinement System Example



10 Construction Phase

10.1 Protective fencing and other measures shown will be maintained in accordance with agreed plans for the duration of each particular phase / operation or until construction is complete (as applicable). No changes are permitted without consultation with the project arboriculturist and agreement of the Tree Officer.

10.2 **Excavations within the RPA**

10.3 Excavation will be required within the RPA of retained trees which will require the following methodology to be adhered to where shown in MWA TPP 01. This is currently shown as a strip but this is expected to be revised to pile heads on the line shown.

10.4 Manual excavation seeks to avoid this damage by exposing roots before severance and cutting them cleanly using appropriate tools when necessary. Exposed root ends are minimised and can be better protected from incidental damage.

10.5 Manual excavation will be used as deep as possible subject to ground conditions. Typically, 82% of the roots of broadleaved trees and 70% of conifer roots are found in the top 500mm of soil, with root networks usually decreasing rapidly below this depth. Excavations below 500mm may require trenches to be shuttered to protect operatives from injury if the walls collapse. Shuttering is likely to preclude retention of roots.

10.6 Proposed excavation within the RPA will be conducted by hand and under direct arboricultural supervision. Ideally an air spade should be used but this is often not possible in heavy soils when hand tools will be used instead.

10.7 A trench will be dug in the positions shown in the MWA tree protection plan. Once exposed roots below 25mm diameter will be severed and the now isolated soil on the far side of the trench may be removed in the usual manner as any roots within this soil would no longer be attached to the tree.

10.8 Exposed roots will be severed by the project arboriculturist using secateurs or a hand saw to leave a wound of the lowest cross section possible. Exposed roots / cut faces will be protected by damp hessian until re-covered. Protective materials will be removed and backfilling completed as soon as possible once operations are complete. Plastic sheeting will be used to prevent contamination by cement if this is required for adjacent construction.

10.9 If roots over 25mm are found the arboriculturist will determine if these may be severed in consultation with the Tree Officer.

10.10 **Installation of Services (underground and above ground services)**

10.11 Since trenching for the installation of underground services severs any roots present and may change the local soil hydrology in a way that adversely affects the health of the tree, in the event of works being required, particular care will be taken in the routeing and methods of installation of all underground services.

10.12 If required, the project arboriculturist will discuss the routing of underground services as soon as the requirement is identified. Guidance offered in NJUG will act as reference for working methods.

10.13 Extra precautions will be taken if it is necessary to use concrete near to or within the RPAs of retained trees. This is necessary to prevent potential soil contamination in areas where roots are likely to be present either directly (spillage) or leaching. These include:

- Holes will be excavated by hand;
- An impermeable membrane will be used to line the hole to protect surrounding soil before pouring concrete;
- No concrete is to be mixed within an RPA;
- Excess/spilt concrete will be removed upon completion of works.

10.14 **Additional precautions outside the exclusion zone**

10.15 Planning of site operations will take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweights (including drilling rigs), in order that they can operate without coming into contact with retained trees.

10.16 Such contact can result in serious damage to the trees and might make their safe retention impossible. Consequently, any transit or traverse of plant in proximity to trees will be conducted under the supervision of a banks man, to ensure that adequate clearance from trees is maintained at all times. Access facilitation pruning will be undertaken where necessary to maintain this clearance. NOTE: In some instances LPA consent for pruning may be required.

10.17 Fires are prohibited due to the likely proximity of retained vegetation. NOTE: Local environmental health authorities might also have specific restrictions relating to fires.

10.18 Any materials whose accidental spillage would cause damage to a tree will be stored and handled well away from the outer edge of its RPA. It is essential that allowance will be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.

11 Sequencing of works & supervision

11.1 Phase 1a – Pre start – relevant stakeholders to be made are of AMS and sequencing of works. These include:

- Site Manager (TBC)
- Arboriculturist (M Bisley – MWA Arboriculture Ltd)
- LPA tree officer
- Engineer
- Appointed tree works contractor

11.2 The agenda of this meeting will cover installation of tree protection mitigation, operating rules, scope of tree works, phasing and landscape operations if information available.

11.3 Phase 1b – Enabling works prior to practical start to be inspected by arboriculturist to include:

- Tree works as per MWA TPP
- Protective fencing as per AMS
- Trouble shooting

11.4 Phase 2 – Construction phase - monitoring visit(s)

- Position and Specification of Fencing to be assessed (unscheduled visits)
- Assessment for unauthorised encroachment in exclusion zones (unscheduled visits)
- Supervision of works (if required)
- Trouble shooting with site manager

11.5 Phase 3– Practical completion and Landscaping (hard and soft)

- Arboriculturist to meet with site manager
- Final monitoring report to be completed

11.6 **SUPERVISION VISITS WILL BE RECORDED USING MWA SITE MONITORING FORM TO BE ACCOMPANIED BY PHOTOGRAPHS. THIS INFORMATION CAN BE MADE AVAILABLE TO THE LPA UPON THEIR REQUEST.**

12 Conclusions

12.1 There are trees adjacent to the site which fall within the constraints of BS 5837:2012.

12.2 A total of two individual trees were recorded during the survey. No trees will need to be removed to accommodate development.

12.3 Provided that development works take place in accordance with the method statements specified in this report, the works will not be detrimental to the retained trees.

12.4 All technical issues relating to arboriculture should be addressed to MWA Arboriculture Ltd in the first instance. MWA Arboriculture Ltd will liaise between the Local Planning Authority and any interested parties.

12.5 It is suggested that the development proceeds in accordance with the above recommendations with the use of condition(s) to ensure the appropriate methods of working are agreed and any necessary site supervision/enabling works are correctly sequenced prior to the commencement of construction work.

Appendix 1 – Key Contacts

Position	Organisation	Name	Contact Info
Project Arborist	MWA Arboriculture Ltd	TBC	0191 432 9560 office@mwaarboriculture.co.uk
LPA Tree Officer	South Tyneside Council	TBC	TBC
Site Manager	TBC	TBC	TBC

Appendix 2 – Images



View of boundary where garage is proposed



View of existing ground conditions

Appendix 3 – Site Monitoring Form

Arboricultural Monitoring & Supervision Record

Site Address			
MWA Consultant			
Date of visit			
Also in attendance			
Purpose of Visit			
Monitoring	Supervision	Spot-Check	Meeting
Observations			
	As per AMS/TPP?	Breach?	S Manager aware?
Protective Fencing			
Ground protection			
Signage			
Storage			
Access/egress			
Tree Works			
Underground services			
Comments			
Signed:			
Dated:			

Appendix 4 – Example handout for site operatives when working with RPAs



Precautions When Working Close to Trees



The following points are designed to prevent damage to both the visible and below ground parts of the tree. Failure to work in line with the points set out below is likely to result in damage to trees and may result in action by the Local Planning Authority such as a stop notice or prosecution.

- Works stipulated in the approved **Tree Protection Plan** and Arboricultural Report will be completed before other works on the site begin. No other tree pruning is permitted without written permission from the Project Arboriculturist.
- If required **Protective Fencing** is to be installed in accordance with the approved Tree Protection Plan before the start of any construction activities, including demolition or placing of site offices.
- **Protective Fencing** will remain in place until the end of the build unless approval for its removal is provided in writing by the Project Arboriculturist.
- If required **Ground Protection** is to be installed in accordance with the approved Tree Protection Plan before the start of any construction activities, including demolition or placing of site offices.
- **Ground Protection will remain in place** until the end of the build unless approval for its removal is provided in writing by the Project Arboriculturist.
- **Excavations within the Root Protection Areas of retained trees (RPAs)** must be conducted in **strict accordance with the AMS** and in accordance with site specific briefing provided by the Project Arboriculturist.
- Only those **underground services** shown in the approved plans will be routed through the RPA of retained trees without consultation with the Project Arboriculturist. (See above regarding excavation within RPAs.)
- **No storage of chemicals or other materials** is allowed within the RPA of retained trees irrespective of ground protection. Materials should not be stored uphill of retained trees or their RPAs.
- **No mixing of concrete or other potentially toxic materials** is permitted within the RPAs of retained trees.
- **No fires are permitted within RPAs or close to retained trees**, irrespective of local Council policy.
- **Banksman** will be used whenever plant is operating close to retained trees.
- **No plant may operate within the RPA of retained trees** without appropriate ground protection in place.
- Details for the **Project Arboriculturist** may be obtained from the Site Agent.