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Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP)

An Arboricultural Method Statement and Tree Protection Plan derived from the Arboricultural Implication Assessment ref no. 220122.

British Museum
Great Russell Street,
London WC1B 3DG

Ref No: 220122

Client:	William Horton Capital Planning & Programme Management The British Museum Great Russell Street, London WC1B 3DG
Date instructed:	18.02.22
Instructed by:	William Horton IIIP Project Manager Capital Planning & Programme Management
Documents referenced:	• Tree Survey and Tree Constraints Plan – Ref: 210342 • Proposed structure external areas sheets 1-10 1756/20/00- 08 + 10. April 2021 • Arboricultural Implication Assessment – ref: 220122 • 1910-40- Site Investigations • TPL Trial Pit Schedule (draft 2) 16.3.22 • Summary schedule of Investigations
Prepared by:	O R Booth
Date completed:	21.03.22

Contents

1: Introduction

1.1 Aspects dealt with within this Method Statement:

The Arboricultural Method Statement (AMS) is a methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree identified as suitable to be retained.
The AMS takes into consideration construction operations undertaken in the vicinity of the trees. It will deal with such issues as site access, intensity of construction activity, space needed for works, location of materials and location of service runs.
This AMS includes with it a Tree Protection Plan (TPP). The TPP outlines trees to be retained, removed, preliminary location of barriers and type of barrier to be installed. This method statement contains a timetable indicating when and how specific works adjacent to trees should be carried out

1.2 Aspects not dealt with within this Method Statement

Please also refer to Appendix 2.
This report does not deal with issues relating to Subsidence or Heave either as a result of retention or removal of trees. It does not consider the water demands of the trees present to enable decisions as to foundation type and depth. It is considered that such considerations are best dealt with in a different report having liaised with the structural engineer.

2. Background Information

2.1 Names and Contact numbers of Parties concerned

Contact Name	Company/ Organisation	Role	Contact details
William Horton	British Museum	Project Manager	
Oliver Booth	Writtle Forest Consultancy Ltd	Arboricultural Consultant	oliver@writtleforest.co.uk 01277 355970
TBC	London Borough of Camden	Local Authority Tree Officer	treesection@camden.gov.uk 0207 974 4444

2.2 Availability of this Method Statement

The Site Manager and appointed Contractor will each hold a copy of the document, including the Tree Protection Plan. Copies of this document will be made available for contractors visiting site.

3: Supervision and Monitoring

3.1 Monitoring and Supervision

Some aspects of the investigative excavation works will require Arboricultural monitoring. Key time points for such visits are noted within this method statement.
The Arboricultural Consultant's role is to advise on the trees in relation to investigative excavation, as well as liaise as necessary between the developer/ site manager and the local planning authority to ensure that appropriate protection measures are taken at all times to protect all aspects of the trees. The role will involve monitoring compliance with Arboricultural conditions and advising on any tree problems as they arise. A report will be issued by the supervising Arboriculturist after each site visit as required.

3.2 Site Management

All tree protection measures detailed in this document must be fully understood by all the parties involved in the development.
It is the Site Manager's responsibility to ensure that the requirements set out within the Arboricultural Method Statement are known and understood by all site personnel. Copies of pertinent documents should be kept on site at all times. The site manager will brief all personnel who may have an impact on any trees and relay specific tree protection requirements.
This methodology should be a part of all site induction procedures and written into appropriate site management documents. The following pertinent points should be explained to all personnel who could have an impact on trees;

1. The specification of the Protective Barriers around retained trees.
2. The requirement for Protective Barriers to be sufficiently robust to prevent incursion by construction activity.
3. Why it is essential that the Protective Barriers remain throughout the works.
4. The importance of the 'exclusion zones' around retained trees.
5. The potential damage caused to trees and new tree planting by compaction of soils and the requirement for ground protection.

These works primarily affect excavations that may affect tree roots. To this end it is imperative that the Contractor is aware that roots should not be damaged, severed or removed. All matters pertaining to tree roots will be referred to the Consulting/ supervising Arboriculturist.

4: Schedule of Tree Work

4.1 Tree works to be carried out prior to installation of Protective Barriers

The only works that may be required is facilitation pruning in relation to trees in G2. There is minimal overhang from the these boundary trees and the crown height of the trees immediately adjacent to proposed site investigation trench number 10 is approx. 3m. The Contractor involved in the excavation of trench 10 must be content that there is suitable height in which to conduct excavation works.
All other tree canopies have sufficient under which to conduct excavation works, minimally 4m.

5: Sequence of Events

Sequence	Brief outline of events	Arboricultural input required
1	Install Protective Barriers as shown on the Tree Protection Plan (TPP).	Yes - Site visit to check adequacy and location of Protective Barriers and Ground Protection.
2	Commencement of excavation works including use of Airspade for excavation around tree roots	Yes – to attend to oversee works, prune smaller roots (<25mm Ø) and protect larger roots (>25mm Ø).
3	Log of discoverable infrastructure and tree roots	Yes - to log findings with respect to size and position of tree roots.
4	Backfill of excavation	Yes – to ensure that where roots have been protected and left in situ these are not damaged when the excavations are filled in.
5	Re-instatement of surfaces	None required
6	Re-inspection of all retained trees and hedges	Yes - Site visit to carry out the inspection of retained trees and hedges within six months of the completion of works.

6. Mitigating Methodologies

The site investigation areas, both proposed and potential, that relate directly to the trees are numbers: 2, 2a, 2b, 3, 5, 6, 6a, 7, 7a, 10, 11, 12, 12a, 13, 13a.
All of the excavations, other than 7a will require that an Airspade operator is available to excavate soils from around areas where tree roots are identified. Where these site investigations are carried out this should be done with Arboricultural supervision to over see works and log findings of roots, position size etc.
The following methodologies are identified as of the AIA and will be required in almost all instances of excavation of the above numbered areas:

6.1 Use of Hand tools and Hand held machinery only

It will generally be necessary to use hand held tools when excavating to ensure minimal damage to tree roots. This will include the use of hand operated concrete breakers. Only the concrete that needs to be excavated to enable the excavation of the investigation will be removed. The remaining hard stand will function as ground protection in the course of the excavation. Concrete will be broken up and then removed with hand tools.
Most roots will utilise the area between the soils and the concrete, as the temperature gradients between the strata will lead to elevated water resource. Digging will commence with hand tools. Where roots are encountered then an Airspade will be used to expose the root.
Care will be taken by the operative to ensure that the outer surface of the root tissue is not damaged by the It will be the decision of the Consulting Arboriculturist as to whether to progress works with a

mini digger if it is deemed that no roots will be encountered in the dig consequent to the initial excavation by hand.

All back fill of excavation must be carried out by hand around areas where there are protected roots.

6.2 Methodology for excavating around and protecting roots

1. The initial investigative excavations within the areas as identified are to be carried under Arboricultural Supervision using hand tools and air-spade only.
2. Excavation is to be of minimal dimensions and depth. Significant Roots (>25mm Ø) encountered are to be retained, protected and worked around. Smaller roots(<25mm Ø) are to be pruned back using a sharp tool such as secateurs leaving as small a wound as possible, only if required to facilitate excavation. Pruning cuts will be preferentially made at growth points.
3. Details of any roots (>25mm dia.) or significant root mass are to be logged to inform future management of the surrounding trees.
4. Exposed retained roots will be wrapped in hessian with hydro gel crystals and inert compost material to prevent drying out and desiccation.
5. Excavation to be carefully backfilled with the removed material and lightly compacted. Areas around roots must not be compacted with any machinery.

6.3 Shoring up of excavation whilst ensuring retention of protected roots

The depth of excavations will require that the trenches and trial pits will need shoring when hand dug. Traditional mechanical shoring will not likely be possible where roots are encountered.

The Contractor will need to provide suitable methodologies to ensure that the shoring in excavations where roots are encountered meet with suitable H&S regulations.

Appendix 1: General Site Conditions and Tree Protection Measures

Storage of Materials

Designated areas for storage of materials and site office will be decided by the Site Manager before any works can commence. It is advisable to consult with the Arboriculturist if the storage areas or site office are located within the RPA of any of the trees to be retained.

Discharge of Contaminants

No materials that are likely to have an adverse effect on tree health, such as oil, bitumen or cement will be discharged within the RPA of any of the trees to be retained. It is advised that the disposal of all waste materials is carried out in an appropriately sustainable fashion.

Contingency Plans

Should there be any contamination of soils either within or adjacent to the RPA these should be dealt with as quickly as possible with a proprietary emergency clean up kit. The situation should then be assessed as to whether it is appropriate to remove soils. An Arboriculturist should be consulted before a decision is made. The protection barriers erected should be able to be removed relatively easily to access the area in event of an emergency.

Changes in Ground Levels and Soft Surface Ground changes within the RPA's of trees

It is considered certain operations may require ground level changes, but these changes should be limited to a minimum. Landscaping operations within the RPA of trees to be retained should be carried out with minimum disruption to the existing landscape avoiding removal of topsoil and re-introduction of foreign soils.

Where there are areas to be re-turfed within the RPA of trees to be retained, existing turf should be removed with minimum disruption to the soils, removing no more than 25 to 50mm of topsoil. Similarly, in new amenity grass areas that encroach RPAs, the ground levels should not be raised in excess of 50mm above existing. Soils used should be from the site or clean imported topsoil.

It will be necessary to review the proposed Soft and Hard Landscaping with the consulting Arboriculturist prior to commencement.

Access to the area of proposed works

Main access to the site is understood to be from the west. It is considered that this would be the only access point into the site for the purposes of carrying out the development as proposed. If there are any other proposed access points into the site, this should be agreed prior to use with the Arboriculturist.

Cranes and Lifting Equipment

All lifting equipment, including cranes if utilised, should be so positioned that they operate without contact with the retained trees. Care must be taken so that the arc of the boom fitted to the lifting equipment is sufficiently clear of the retained trees.

Boundaries/ Scope of the Site

The appointed Arboricultural Supervisor must be consulted if the boundaries of the site are extended or if excavations/ storage/ construction related to this development is to be carried out on other parts of the wider area, outside of the development site as indicated on the Tree Protection Plan.

Appendix 2: Protective Barriers

Before the commencement of any works on site (other than those set out in the schedule of tree works, contained in this document), protective vertical barriers must be erected. The location of the barriers is illustrated on the Tree Protection Plan.
The barriers are to be erected to exclude construction activity in the RPAs of retained trees and to protect soils in areas designated to receive new replacement tree plantings.
The barriers will remain in place until completion of the main construction phase and then only removed with the agreement of the consulting Arboriculturist.
Other than works detailed within this method statement or approved in writing by the local planning authority, no works shall take place within the exclusion zones defined by the protective fencing. No vehicles will be allowed to enter areas to be protected by the barriers.

Specification of Protective Barriers

The barriers should be fit for purpose of excluding construction activity. At this site, it is considered sufficient to install two-metre-tall welded mesh or solid panels on concrete feet (please refer to figures 1a and 1b. The panels (Heras type) should be joined together using a minimum of two anti-tamper couplers and installed so they can only be removed from the inside. The distance between the couplers should be at least 1 metre and should be uniform throughout the protective barrier.

The panels should be supported on the inner side by angled stabilizer struts installed every 3.5 metres at the join of the Heras panels. Both the concrete feet and the stabiliser strut base plates should be secured with ground pins. Where barriers are to be erected on retained hard surfaces or it is otherwise unfeasible to use ground pins stabilizer struts should be mounted on a block tree.
The specification of the temporary barriers will be installed in accordance with the specification as discussed in the paragraph above and referenced in figures 1a and 1b.
Notices will be affixed to all protective fencing 'Construction exclusion zone - Keep Out' (please refer to figure 2.

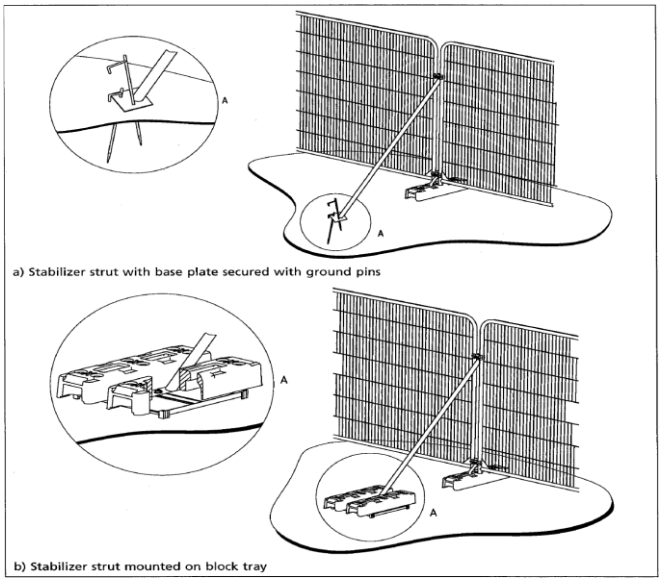

Figure 1a and 1b - Diagram of protective barrier taken from BS 5837 (2012)

Figure 2 - Example of suitable warning sign affixed to protective barrier

Photo 1: T2 London Plane requiring protective fencing to the main stem

Appendix 3: Limitations of Arboricultural Method Statement

Limitations of the Report

Please also refer to sections 1.2 and 1.3 at the beginning of this report.

- The report is based on information provided by third parties and the specifications and recommendations is dependent upon information provided therein.
- This report does not consider the possible implications to any present or future built structures other than those considered within the report.

Findings of the Survey and the Report

- Validity, accuracy and findings of the report will directly relate to the accuracy of information provided at the time of the tree survey.

Timing of the Survey and the Report

- The considerations/ findings in this method statement are valid for one year.
- Such considerations/ findings will become invalid if any building works are undertaken, soil levels are altered or tree work undertaken outside of the scope of works as detailed and presented at the time of compiling this report.
- If there are any alterations to either the property or soil levels, or if tree works are carried out, it is recommended that a new tree report is undertaken.

Trees in relation to other Properties:

- This report/survey only considers the trees in relation to the site as identified.
- It does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, or with regard to possible hazards presented by trees surveyed.
- Neighbouring owners of trees that are identified as posing a possible risk to the property/site in question should seek their own advice as to possible effects of the recommendations given within this report.
- Damage to, or possibility of damage to, any other structure that is not referred to within the report is not considered unless otherwise specified. This includes both neighbouring structures and any other structure on the property.

Trees in Relation to Subsidence, Heave and Direct damage

- This report does not deal with issues relating to subsidence or heave in relation to any built structures and surrounding vegetation whether the structure or vegetation falls within the boundaries as considered or lies beyond the boundaries.
- The report does not consider issues relating to subsidence or heave in relation to any proposed built structures or future vegetation whether within the boundaries as considered or beyond the boundaries
- It is prudent to consider the effects of heave on any property if trees are removed.
- Similarly, the issue of direct damage (when the roots of a tree have physical contact with a structure) is not considered within this report.

Trees subject to statutory controls:

- If the trees are covered by a Tree Preservation Order or are located in a conservation area it will be necessary to consult the local authority before any pruning works, other than certain exemptions, can be carried out.
- The works specified above are necessary for reasonable management and should be acceptable to the local authority. However, tree owners should appreciate that the local authority may take an alternative point of view and have the option to refuse consent.

Trees are subject to changes outside man's control:

- Trees are living organisms subject to changes outside man's control. Trees and environment alter with the seasons it is as well to inspect trees whilst in full leaf and when out of leaf.
- If there are any harsh or unexpected weather conditions, or heavy storms it is also prudent to inspect trees.
- Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of man's influence and other factors may be involved.

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