



Arboricultural Implication Assessment

An Arboricultural Implication Assessment (AIA) derived from the Tree Survey and Report relating to SWEC, ISS and trench projects

British Museum
Great Russell Street,
London WC1B 3DG

Ref No: 231005

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1. Introduction

1.1 Aims of this Assessment

The aim of this Arboricultural Implication Assessment (AIA) is to consider how the proposed development and the associated trees will co-exist and interact in the present and the future.

The AIA addresses and considers issues such as statutory constraints, above and below constraints, alternatives to tree loss and infrastructure requirements. It also considers such issues as end use of space, the need to prune or remove trees due to excessive shade or encroachment and whether it is possible to plant new trees.

1.2 Aspects not dealt with within this Assessment

Please also refer to Appendix 1.

The AIA does not include an Arboricultural Method Statement (AMS).

This AIA does not consider issues relating to boundary lines and the proposed structures. It may be that such issues effect the ownership of a tree/s, but the assessment does not deal with this issue. (Issues of boundary line dispute and/or ownership of vegetation may require a land registry search and reference to local records. (This can be conducted if so requested).

2. Implications of Proposed Development on Tree Population

2.1 Description of Proposed Development

The proposed works are as follows:

Demolition of existing Energy Centre to internal West Road. Removal of temporary buildings to the south of the existing energy centre on the internal West Road and to the north and east of the White Wing facing Montague Street. Erection of new energy centre incorporating maintenance support accommodation to internal West Road, new substation off Montague Street, all together with associated internal and external works, service runs, erection of plant, landscaping, and temporary works associated with construction.

The following stages of works are identified in relation to trees:

1. Demolition of an existing building/ parts of build on West road.
2. Movement of Fire main on West road.
3. Lowering of some of the existing drainage on East road.
4. Construction of new SWEC build, including utilisation of a crane.
5. Installation of below ground utilities around perimeter of British Museum site in trench approx. 1m deep and 1m wide.
6. Demolition/removal of 2no. existing portacabins including stairs.
7. Installation of 6no. concrete pad foundations.
8. Construction of a sub-station with associated trenching to allow for new services to be installed.

2.2 Considerations of those trees that will be affected by the proposed build

Tree no.	Species	Cat.	Removal due to		Mitigation required		Details of how proposed affects tree and outline of mitigation required
			Works	Con.	Crown	RPA	
T1	Bay Laurel	C1	N/A	N/A	N/A	N/A	No Issues
T2	London Plane	B1	N/A	N/A	✓	✓	<ol style="list-style-type: none"> 1. Extent of tree canopy limits working area for Crane operation. 2. Height of vehicles/machinery accessing area of proposed works to be restricted to 5m, consider installing height barrier to prevent direct damage. 3. Installation of Service trench within rooting area of tree. Larger roots discoverable at depth from previous investigative operations. Supervision required.
T3	London Plane	A1	N/A	N/A	✓	✓	<ol style="list-style-type: none"> 1. Height of vehicles/machinery accessing area of proposed works to be restricted to 5m, consider installing height barrier to prevent direct damage. 2. Installation of Service trench within theoretical rooting area of tree. Larger roots found adjacent to the wall at minimal depths. Supervision required.
T4	Hawthorn	C1	N/A	N/A	N/A	N/A	No Issues
T5	Bay Laurel	C1	N/A	N/A	N/A	N/A	No Issues
T6	London Plane	C1	N/A	N/A	✓	N/A	<ol style="list-style-type: none"> 1. Height of vehicles/machinery accessing area of proposed works to be restricted to 5m, consider installing height barrier to prevent direct damage. 2. Installation of Service trench. No roots associated with tree in area
T7	Sycamore	C1	N/A	N/A	N/A	N/A	No Issues

Tree no.	Species	Cat.	Removal due to		Mitigation required		Details of how proposed affects tree and outline of mitigation required
			Works	Con.	Crown	RPA	
T8	London Plane	B1	N/A	N/A	✓	N/A	<ol style="list-style-type: none"> 1. Crown to the east overhangs access to proposed area of works. Both with regard to scaffold for build construction as well as area for delivery of materials via Crane. Probably hard crown reduction required to accommodate crane operations 2. Footprint of proposed demolition of the existing building and construction of the proposed building encroaches on the outer extent of the modified RPA by 5% to the north-east. No mitigation required due to recent historic trial pit investigation previously excavated adjacent to the tree on the boundary wall, which revealed no significant sized roots (>25mm in diameter). Therefore, it is considered unlikely significant sized roots being present on the outer extent of the theoretical modified RPA.
T9	Sycamore	U	N/A	N/A	N/A	N/A	No Issues
T10	Sycamore	C1	N/A	N/A	✓	N/A	Crown to the east overhangs access to proposed area of works. Cut back by 2m to facilitate crane movements in the area. Note: This is a third-party tree, liaison and permission required from owner if access and climbing of tree required to carry out pruning.
T11	Cherry	C1	N/A	N/A	✓	N/A	Crown to the east overhangs access to proposed area of works. Cut back by 2m to facilitate crane movements in the area. Note: This is a third-party tree, liaison and permission required from owner if access and climbing of tree required to carry out pruning.
T12	Cypress	C1	N/A	N/A	N/A	N/A	No Issues
G1	Fig & Bay Laurel	C1	N/A	N/A	N/A	N/A	No Issues
T13	Sycamore	C1	N/A	N/A	N/A	N/A	No Issues
T14	Sycamore	C1	N/A	N/A	N/A	N/A	No Issues
T15	Sycamore	B2	N/A	N/A	✓	N/A	Installation of Service trench within theoretical rooting area of tree. Supervision advised.

Tree no.	Species	Cat.	Removal due to		Mitigation required		Details of how proposed affects tree and outline of mitigation required
			Works	Con.	Crown	RPA	
G2	Elder x2, Cherry + Sorbus	C3	N/A	N/A	N/A	N/A	No Issues
T16	London Plane	A2	N/A	N/A	✓	N/A	Installation of Service trench within theoretical rooting area of tree. Larger roots found with previous historic investigations at minimal depths. Supervision required.
T17	London Plane	A3	N/A	N/A	✓	N/A	Installation of Service trench within theoretical rooting area of tree. Larger roots found with previous historic investigations at minimal depths. Supervision required.
T18	London Plane	B1	N/A	N/A	✓	N/A	Installation of Service trench within theoretical rooting area of tree. Supervision advised.
T19	Lime	B1	N/A	N/A	✓	N/A	Installation of Service trench within theoretical rooting area of tree. Larger roots found with previous historic investigations. Supervision required.
T21	Prunus sp.	C1	N/A	N/A	N/A	N/A	No Issues
T22	Horse Chestnut	U	N/A	N/A	N/A	N/A	No Issues

Tree no.	Species	Cat.	Removal due to		Mitigation required		Details of how proposed affects tree and outline of mitigation required
			Works	Con.	Crown	RPA	
T23	Field Maple	B1	N/A	N/A	✓	N/A	<p>4. Crown to the north overhangs access to proposed area of access and proposed area of demolition/removal of existing portacabins to the west.</p> <p>4.1 Reduce crown to the north and the west by up to 1.5m to allow proposed works to proceed.</p> <p>Note: This is a third-party tree, liaison and permission required from owner before carry out pruning.</p> <p>5. The proposed construction works do not encroach on the RPA of this tree. However, suitable protection will need to be provided both to the exposed root system and the main stem.</p> <p>5.1 A tree protection box will be required to protect the tree stem and exposed rooting area during the duration of works. Access will be required to water the tree during the construction period. The contractor will liaise with the Local Authority (LA) to ensure this work can be carried out.</p> <p>Any lorry parked on the road along with associated machinery, for loading or off-loading will not exceed a height of 4.5m. Cranes used for delivery of goods/ removal of waste should be guided at all times by a banksman to ensure that there is no damage to the tree canopy.</p>

Tree no.	Species	Cat.	Removal due to		Mitigation required		Details of how proposed affects tree and outline of mitigation required
			Works	Con.	Crown	RPA	
T24	Field Maple	B1	N/A	N/A	✓	N/A	<p>1. Crown to the north-west overhangs proposed area of demolition/removal of existing portacabins.</p> <p>1.1 Reduce crown to the north-west by up to 1.5m to allow proposed works to proceed.</p> <p>Note: This is a third-party tree, liaison and permission required from owner before carry out pruning.</p> <p>2. The proposed construction works do not encroach on the RPA of this tree. However, suitable protection will need to be provided both to the exposed root system and the main stem.</p> <p>2.1 A tree protection box will be required to protect the tree stem and exposed rooting area during the duration of works. Access will be required to water the tree during the construction period. The contractor will liaise with the Local Authority (LA) to ensure this work can be carried out.</p> <p>Any lorry parked on the road along with associated machinery, for loading or off-loading will not exceed a height of 4.5m. Cranes used for delivery of goods/ removal of waste should be guided at all times by a banksman to ensure that there is no damage to the tree canopy.</p>
T25	Field Maple	B1	N/A	N/A	N/A	N/A	No issues
T26	Field Maple	B1	N/A	N/A	N/A	N/A	No issues
T27	Field Maple	B1	N/A	N/A	N/A	N/A	No issues
T28	London Plane	A1/2	N/A	N/A	N/A	N/A	No issues
T29	London Plane	B1/2 *	N/A	N/A	N/A	N/A	No issues
T30	London Plane	B1/2	N/A	N/A	N/A	N/A	No issues
T31	London Plane	A1/2	N/A	N/A	N/A	N/A	No issues
T32	London Plane	A1/2 *	N/A	N/A	N/A	N/A	No issues

Tree no.	Species	Cat.	Removal due to		Mitigation required		Details of how proposed affects tree and outline of mitigation required
			Works	Con.	Crown	RPA	
T33	Golden-rain tree	C1	N/A	N/A	N/A	N/A	No issues
T34	Golden-rain tree	C1	N/A	N/A	N/A	N/A	No issues
T35	Golden-rain tree	C1	N/A	N/A	N/A	N/A	No issues
T36	Golden-rain tree	C1	N/A	N/A	N/A	N/A	No issues

2.3 Summary of effects on the Trees from Proposed Layout

Consideration	Number of trees
Trees, groups and hedges to be retained	35no. trees and 2no. groups
Category A trees, groups and hedges to be removed	0 trees
Category B trees, groups and hedges to be removed	0 trees
Category C trees, groups and hedges and groups to be removed	0 trees
Category U trees, groups and hedges to be removed	0 trees

No trees will be removed. The proposed development will not significantly impact on the local tree landscape.

2.4 Summary of Mitigation required

Extensive historic below ground investigation has given an insight as to the areas where roots are most likely to be encountered. The areas that will require Arboricultural supervision are highlighted within section 2.2 of this report and are marked on the Tree Protection Plan.

Above ground mitigation includes minor crowning lifting to allow for proposed works to proceed. However, reduction of the crown of T8 London Plane will be more significant. The canopy will need to be cut back hard to accommodate the build and associate infrastructure to enable construction, namely suitable for crane operations as well as the erection of scaffolding.

Further above ground mitigation includes minor pruning of 2 number street trees, to allow for installation of the Electric sub station.

2.5 Infrastructure requirements

It is understood that the trench that will be excavated to run services will be approx. 1m deep and approx. 1m wide. That the size and depth of the trench will vary but that 1m by 1m will not be exceeded.

In areas where the trench may encounter roots, the installation of infrastructure should accommodate for larger roots where encountered (>25mm). Where this is not possible the install should allow where possible, for offset of the trench to avoid roots.

Where trenching is required within the RPA of a retained tree Arboricultural supervision will be required to ensure that minimum impact is caused to the rooting area. Such areas are noted on the TPP.

The areas of trenches to be established to run cabling from the road to the electric sub- station and out to the main build are shown on the TPP. Neither of these trenches impinge on the RPAs of trees.

It is understood that the trenching within the main road to the boundary of the British Museum site will be the responsibility of UK Power Network (UKPN). Plans for these works are not available and will be the responsibility of UKPN.

2.6 Installation of Protective Barriers

It will be necessary to install protective barriers to prevent incursion within the RPAs of retained trees during the build process. The protective barriers will remain in-situ throughout the main construction and only removed on completion of the build. The specification of the Protective Barriers will be sufficiently robust to prevent access into the Construction Exclusion Zones and in accordance with BS5837:2012.

In relation to protecting the retained trees on Montague Street, a stem protection system (tree box) is to be installed, to prevent direct damage to the trees. The stem protection will remain in-situ throughout the construction and only removed on completion of the proposed works.

2.7 Consideration of Ecological concerns

No ecological concerns have been raised in relation to the works or the trees on the site and none were noted at the time of the survey. Ecological considerations that involve EU Habitats Directive will overrule any Arboricultural recommendations as given within this report.

3. Change in Site Use and Tree Management Implications

3.1 The Implications of the Potential Growth of the Trees within the next 10 years

There are no significant implications of potential future tree growth and/or nuisance of the trees on the proposed new development on the West Road and general refurbishment works, other than tree T8 London Plane. Given the proximity of the tree to the development it would be prudent to carry out 5-7 year cyclical pruning of the tree canopy.

3.2 Potential root damage to Infrastructure

This report does not consider the implications of trees, whether retained or removed, indirectly or directly on the proposed development. New structures must be so designed to avoid potential movement as a result of the influence of trees.

4. Conclusions

4.1 Further considerations

An Arboricultural Method Statement (AMS) has been compiled along with a Tree Protection Plan (TPP).

Appendix 1: Limitations of Arboricultural Implication Assessment

Limitations of the Arboricultural Implication Assessment

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

- This Assessment is based upon information obtained from the Tree Survey.
- All dimensions and measurements are based upon the previous data collected from the survey and from the design drawings as provided.
- This Assessment considers the possible implications to proposed future built structures. Suggestions may be given outlining alternative proposals for building layout. Such suggestions must be considered by the Architect/ Designer/or Engineer before implementing any of the suggestions.

Data on which the Assessment is based

- Validity, accuracy and findings of the report will directly relate to the accuracy of information provided at the time of the survey.
- No checking of independent data provided will be undertaken. This is particularly relevant with regards to scaled maps and drawings provided to Writtle Forest Ltd.

Validation of the Assessment

- The Assessment considerations/ findings in this tree report 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.
- 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 survey/report is undertaken.

Trees in relation to other Properties:

- This assessment only considers the trees in relation to the site and the proposed structures as identified.
- The Assessment only considers those trees as are relevant to the proposed structures. Comment is not made with regard to trees in relation to structures beyond the boundaries as identified, (third party property).
- Issues with regard to neighbouring property and trees on the site considered maybe relevant if new planting is considered or required.
- 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. However, it may be prudent to consider the effects of heave on any property if trees are removed.
- Unless information relating to soils is presented or if the client has instructed the assessment to consider the type and depth of foundations, then this is not considered within the assessment.

Trees subject to statutory controls:

- Where 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 tree 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.
- 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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