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| Report | Arboricultural Impact Assessment (AIA) |
| Descriptor | An Arboricultural Impact Assessment derived from the Tree Survey and Report |
| Address | British Museum Great Russell Street, London WC1B 3DG |
| Ref No | 250223 |
| Client | William Horton Capital Planning & Programme Management The British Museum Great Russell Street, London WC1B 3DG |
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| Documents referenced | <ul style="list-style-type: none"> • SW001-ABA-1000-X_01-DDG-C-9000 (Client-provided) • SW001-ABA-1000-X_01-DDG-C-9001 (Client-provided) • SW001-ABA-1000-X_01-DDG-C-9002 (Client-provided) • SW001-ABA-1000-X_01-DDG-C-9003 (Client-provided) • SW001-ABA-1000-X_01-DDG-C-9004 (Client-provided) • SW001-WWA-1040-C-DDG-A-1911 (Client-provided) • SW001-TBM-XX-XX-DR-V-1684 (Tower Crane Layout) (Contractor-provided) • SW001-TBM-XX-XX-DR-V-1705 (Tower Crane Dismantle Outline) (Contractor-provided) • Tree Survey Report and Tree Constraints Plan Ref. 231005 • Arboricultural Implication Assessment Ref. 231005 |
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Contents

| | |
|--|----|
| 1. INTRODUCTION | 3 |
| 1.1 Aims of this Assessment..... | 3 |
| 1.2 Aspects not dealt with within this Assessment | 3 |
| 2. IMPLICATIONS OF PROPOSED DEVELOPMENT ON TREE POPULATION..... | 3 |
| 2.1 Description of Proposed Development | 3 |
| 2.2 Considerations of those trees that will be affected by the proposed build | 4 |
| 2.3 Summary of effects on the Trees from Proposed Layout..... | 10 |
| 2.4 Summary of Mitigation required | 10 |
| 2.5 Infrastructure requirements | 10 |
| 2.6 Installation of Protective Barriers..... | 10 |
| 2.7 Consideration of Ecological concerns | 11 |
| 3. CHANGE IN SITE USE AND TREE MANAGEMENT IMPLICATIONS..... | 11 |
| 3.1 THE IMPLICATIONS OF THE POTENTIAL GROWTH OF THE TREES WITHIN THE NEXT 10 YEARS | 11 |
| 3.2 POTENTIAL ROOT DAMAGE TO INFRASTRUCTURE | 11 |
| 4. CONCLUSIONS | 11 |
| 4.1 FURTHER CONSIDERATIONS..... | 11 |
| APPENDIX 1: LIMITATIONS OF ARBORICULTURAL IMPLICATION ASSESSMENT | 12 |

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.

This is an updated AIA based on information gathered from the Tree Survey Ref:231005, and Arboricultural Impact Assessment Ref: 231005.

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 related to this updated AIA 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.
- Erection of new energy centre incorporating maintenance support accommodation to internal West Road.
- Works to the façade of new wing west.
- New substation off Montague Street,
- Install of new/improved service runs associated with the west and east side of the British Museum.

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

1. Movement of Fire main on West road.
2. Works to the facade of new wing west, to include openings for ventilation. Scaffolding required.
3. Demolition of existing Energy Centre and associated temporary buildings.
4. Construction of new SWEC building, including utilization of a crane installed adjacent to the build, on piled foundations. New build is in similar footprint.
5. Installation of below ground utilities, to include 2no. new surface water drainage pipe (1 no. 400mm wide by 600mm deep ovoid pipe and 1 no 225mm dia pipe) as well as a combined drainage pipe (225-300mm dia.) around museum site in trench approx. 1m deep and 1m wide.
6. Installation of new channel drain gulleys, manholes, grubbing out of existing drainage runs, gulleys and associated manholes.
7. Construction of a sub-station to the east of the main building with associated trenching to allow for new services to be installed.
8. Installation of 6no. concrete pad foundations for the substation.
9. Lowering of some of the existing drainage on East road.

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 | ✓ | ✓ | <ol style="list-style-type: none"> 1. Installation of service trench extends through RPA. It is considered that the RPA falls within the theoretical rooting area of T2, to which an area of arboricultural supervision has been applied. This area of arboricultural supervision shall also cover T1. 2. It will be necessary to prune back the crown by approx. 1m to facilitate installation of Tree-Box. |
| T2 | London Plane | B1 | N/A | N/A | ✓ | ✓ | <ol style="list-style-type: none"> 1. Eastern side of crown encroaches over crane pick up zone by approx. 3m This area would also be used to place the crane mast on the hard standing prior to installation. Crown clearance of 3.5m to the east, would be required to ensure no conflict with branches during both installation of the crane mast, and lifting/ slewing of materials from the pick up zone. It will be necessary to reduce the height and spread of the tree by 3.5m to all cardinal points to prevent crown imbalance. 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 and 2no. proposed manholes within theoretical rooting area of tree. Larger roots discoverable at depth from previous investigative operations. Supervision required (arboriculturist to be informed 7 days prior to commencement of works). It is considered that both proposed manholes are located outside the area requiring arboricultural supervision. |
| 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 and 2no. proposed manhole within theoretical rooting area of tree. Proposals also allow for re-laying of existing surface water below ground drainage run. Larger roots found adjacent to the wall at minimal depths. Supervision required (arboriculturist to be informed 7 days prior to commencement of works). It is considered that the easternmost proposed manhole is located outside the area requiring arboricultural supervision. |
| 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 | ✓ | ✓ | <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. Permission has been granted by Camden Council to reduce to a high pollard at approx. 12m. This is to be carried out prior to the commencement of works. 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. 3. Installation of 2no. service trenches and 2no. proposed manhole within theoretical rooting area of tree. Proposals also allow for re-laying of existing surface water below ground drainage run. Supervision required (arboriculturist to be informed 7 days prior to commencement of works). |
| 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>1. 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>1.1 Reduce crown to the north and the west by up to 1.5m to allow proposed works to proceed. 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> |

| 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. 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 to the areas where roots are most likely to be encountered. The areas that will require Arboricultural supervision during excavations are highlighted within section 2.2 of this report and are marked on the Tree Protection Plan.

Above ground mitigation includes minor crown lifting to allow for proposed works to proceed. However, the reduction of the crown of T8 London Plane will be more significant, for which approval of the proposed works, outlined in a Section 211 Notice, has been granted (dated 25th November 2024). These works will serve to accommodate the proposed new SWEC build and associated infrastructure to enable construction, namely for crane operations as well as the erection of scaffolding.

Further above ground mitigation includes minor pruning of 2no. street trees, to allow for installation of the Electric substation.

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 to accommodate a 400mm wide by 600mm deep ovoid pipe (surface water drainage pipeline) and 225mm dia. pipe (1no. surface water drainage pipe and 1no. combined drainage pipeline). The size and depth of the trench may 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 installation 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 on the east side of the main building are 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 Stem Protection

It will be necessary to install stem protection (Tree-Boxes) around some retained trees during the build process to prevent direct damage. The stem protection will remain in-situ throughout the main construction and only removed on completion of the build.

This relates to 2no. retained trees adjacent to the site entrance off Great Russell St. (T1 and T2) as well as 2no. retained trees on Montague Street (T23 and T24).

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 Plan, to which tree works have been prescribed.

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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