Heathrow

EASTERLY ALTERNATION INFRASTRUCTURE PROJECT

Environmental Impact Assessment
Environmental Statement, Volume III
Appendix 12.6: Arboricultural Impact Assessment

Document Reference: 19309-XX-EC-XXX-000057

October 2024

Heathrow

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1. Introduction

1.1 Project background

1.1.1 An Arboricultural Impact Assessment (AIA) and Tree Removal and Protection Plan (TRPP) (see **Annex C: Tree Removal and Protection Plan**) has been produced on behalf of the Applicant in support of the Proposed Development.

1.1.2 The geographical scope and level of detail included within this Appendix is commensurate with that required for the consideration of arboricultural features as part of the noise barrier component of the Proposed Development. This is because effects on trees are concentrated to this area only in relation to the entire Proposed Development.

1.1.3 The noise barrier component of the Proposed Development comprises the construction of a noise barrier that is up to 7m high noise barrier along the northern and western extents of the perimeter of Heathrow Pod parking Terminal 5, and along the northern side of Wright Way to the west of the car park. This also includes an access gate opening to the southwest of the car park (see **Annex C Tree Removal and Protection Plan**). This Appendix does not consider sections of noise barrier development where there are no trees.

1.2 Scope of report

1.2.1 The purpose of this report is to identify all trees which may be affected by the Proposed Development, to assess the impact of the noise barrier development upon those trees and to recommend such protection measures as are necessary to ensure the health of retained trees.

1.2.2 Information provided complies with the requirements of British Standard (BS) 5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS 5837)[1], and includes reference to the following:

- Results of a BS 5837 walkover survey;
- An AIA; and
- An Outline Arboricultural Method Statement (AMS).

1.2.3 BS 5837 does not provide explicit parameters for measuring the sensitivity of arboricultural features nor does it provide a methodology for the classification of effects. However, it does provide guidance on how to assess the quality of an arboricultural feature and further recommends an evaluation of impacts, both direct and indirect. Impacts should be defined as an assessment of arboricultural removals and identification of matters to be addressed within an AMS.

[1] British Standards Institution (2012) *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*. [online] Available at: https://beta.bathnes.gov.uk/sites/default/files/2020-01/BS5837%202012%20Trees.pdf [Accessed: 18 October 2024].

1.3 Limitations

1.3.1 WSP has provided this Appendix solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this Appendix, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

1.3.2 Provisional Tree Preservation Orders (TPOs) may be made whenever a local planning authority deems it appropriate with only those persons interested in the land served with a copy of the Order. Any reference to the presence of TPOs is only valid on the date at which the desk study search was undertaken. In instances where works unspecified in this report are to be undertaken, and which may impact trees, a further search for the presence of TPOs should be carried out prior to commencement.

1.3.3 Trees are dynamic organisms which are influenced by a variety of environmental variables and whose health and condition can rapidly change. Any recommendations made within this report are valid for a period of 24 months from the date of survey, when any site conditions change or pruning or other works unspecified in the report are carried out to, or affecting, the subject trees, whichever is the sooner.

1.3.4 This report does not constitute a health and safety survey. Where concerns for tree health and safety exist then necessary and appropriate tree inspections should be carried out.

1.3.5 Assessment of statutory and non-statutory constraints have been carried out using publicly accessible third-party information.

1.4 Relevant legislation, policy, and guidance

1.4.1 This report has been compiled with reference to the following legislation, policy, and guidance:

Legislation

- The Town and Country Planning Act 1990[2]; and
- The Town and Country Planning (Tree Preservation) (England) Regulations 2012[3].

Policy

- National Planning Policy Framework (NPPF) (revised 20 December 2023)[4];

[2] HM Government (1990) *The Town and Country Planning Act 1990 (as amended)*. [online] Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents [Accessed: 18 October 2024].

[3] HM Government (2012) *The Town and Country Planning (Tree Preservation)(England) Regulations 2012*. [online] Available at: https://www.legislation.gov.uk/uksi/2012/605/contents [Accessed: 18 October 2024].

[4] Ministry of Housing, Communities and Local Government (2023) *National Planning Policy Framework*. Available:

- Hillingdon Local Plan Part 2 Development Management Policies[5] and Part 2 – Site Allocations and Designations (adopted January 2020)[6]; and
- The London Plan (March 2021)[7].

Guidance

- British Standards Institute. *BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations*. London: BSI[1]; and
- British Standards Institute. *BS 3998: 2010 Tree work – Recommendations*. London: BSI[8].

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf [Accessed: 18 October 2024].

[5] London Borough of Hillingdon (2020) *Hillingdon Local Plan Part 2: Development Management Policies*. [online] Available at: https://www.hillingdon.gov.uk/media/3084/Hillingdon-Local-Plan-Part-2-Development-Management-Policies/pdf/pdLPP2_Development_Management_Policies_-_ADOPTED_VERSION_JAN_2020_1.pdf?m=1598370641570 [Accessed: 18 October 2024].

[6] London Borough of Hillingdon (2020) *Hillingdon Local Plan Part 2: Site Allocations and Designations*. [online] Available at: https://www.hillingdon.gov.uk/local-plan-and-review [Accessed: 18 October 2024].

[7] Greater London Authority (2021) *The London Plan*. [online] Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf [Accessed: 18 October 2024].

[8] British Standards Institution (2010) *BS 3998:2010 Tree work – Recommendations*. [online] Available at: https://www.westberks.gov.uk/media/50570/CD17-2-BS3998-2010-Tree-Work-Recommendations/pdf/CD17.2_BS3998.2010_Tree_Work__Recommendations.pdf [Accessed: 18 October 2024].

2. Methodology

2.1 Site and arboricultural study area

2.1.1 The Site of the noise barrier component of the Proposed Development is located at Heathrow Airport Pod Parking Terminal 5 and along Wright Way, London Heathrow Airport. The National Grid reference for the Site is TQ 05116 76721. The extents of the Site are shown in **Annex C: Tree Removals and Protection Plan** .

2.1.2 The arboricultural study area (hereafter referred to as 'Study Area') covers the extents of the noise barrier component of the Proposed Development plus up to a further 15m. The purpose of this 15m Study Area beyond the Site extents is to ensure compliance with BS 5837 which recommends that all arboricultural features whose Root Protection Areas (RPAs) and crowns may be impacted are identified and surveyed. BS 5837 has a maximum RPA radius of 15m, hence the extent of the Study Area. Given the absence of trees to the west of the Site along Wright Way this area is not shown in the graphics of this Appendix.

2.2 Baseline data collection

2.2.1 Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study; and
- A walkover survey of arboricultural features within the Study Area.

2.3 Desk study

2.3.1 A desk study was undertaken in December 2023 to identify specific statutory and non-statutory arboricultural constraints which may apply to arboricultural features within the Study Area. The desk study, as outlined in **Annex A: Survey Methodology**, was undertaken to establish the following statutory and non-statutory arboricultural constraints:

- Tree preservation orders;
- Conservation areas;
- Traditional orchards;
- Ancient woodland; and
- Ancient or veteran trees.

2.4 Walkover survey

2.4.1 A walkover survey of the Study Area was undertaken on 6 December 2023, 19 February 2024, and 8 May 2024. The survey was undertaken to comply with BS 5837 and details of the method used are presented in **Annex A: Survey Methodology**.

2.5 Provided design information

2.5.1 The information presented in **Annex C: Tree Removal and Protection Plan** has been viewed and used to prepare this Appendix and arboricultural assessment.

3. Arboricultural survey findings

3.1 Desk study findings

3.1.1 The desk study found no TPOs nor conservation areas within Study Area. The desk study also found no records of ancient or veteran trees, traditional orchards, or ancient woodlands within the Study Area.

3.2 General site description

3.2.1 The noise barrier component of the Proposed Development is centred on Ordnance Survey National Grid Reference: TQ 05116 76721 and is located north of Wright Way and south of Duke of Northumberland's River.

3.2.2 The noise barrier largely replaces and existing fence and would run along the same perimeter alignment of a hard surfaced car park and road at the northwest of Heathrow Airport. North of the Site were trees planted as part of landscaping, some trees still with anchor systems in-situ. South of the Site is the Pod Parking which is predominantly tarmacadam paved surface separated from the trees by a wooden boundary fence which is along the alignment of the noise barrier component of the Proposed Development.

3.3 Walkover survey findings

3.3.1 An arboricultural survey schedule detailing information about trees in the Study Area is presented in **B: Tree Survey Schedule Explanatory Notes**. **Table 3.1** summarises the number of arboricultural features surveyed and their quality categories. The locations of arboricultural features are shown on the TRPP in **C: Tree Removal and Protection Plan**. In the absence of a detailed topographical survey the location of individual trees within groups has generally not been recorded but most trees from G1 to G7 were at least 1m from the existing fence.

Table 3.1 Summary of tree quality categories

BS 5837 Category	Quality	Individual Trees	Groups	Totals
Category A	High	0	0	0
Category B	Moderate	3	6	9
Category C	Low	7	7	14
Category U	Very Low	1	0	1
Totals		11	13	24

3.3.2 A total of 24 arboricultural features were surveyed in the Study Area, comprising 13 groups and 11 individual trees. Most of the surveyed arboricultural features were low quality groups understood to have been planted when the car park was constructed in 2007/8. The mature poplar T9 predates the other trees and is likely to be the parent of T8 which appears to have grown from a sucker.

4. Arboricultural Impact Assessment

4.1 Scope of assessment

4.1.1 The scope of this assessment has been established with reference to BS 5837 and is to evaluate the effects of the noise barrier component of the Proposed Development on arboricultural features, and where necessary recommend mitigation.

4.1.2 The assessment includes specific reference to the effects of tree loss and other potentially damaging activities which could foreseeably occur in the vicinity of retained trees. Further reference is made concerning recommendations for mitigation, including those matters which require inclusion within an AMS.

4.2 Assumptions and limitations

4.2.1 This AIA report has been compiled on the basis of the following assumptions:

- A width of 2m to 3m either side of the noise barrier would be required for access and its construction; and
- Existing areas of hard surfacing would remain in-situ or be utilised for construction access, site compounds, and material storage as specified in this AIA.

4.2.2 The following limitations apply to this AIA report:

- The size of the existing fence foundations do not form part of this assessment;
- Enabling works (such as the installation or diversion of services by statutory undertakers) have not been considered; and
- Where the location of arboricultural features is not recorded in topographic surveys, they have been indicatively plotted using aerial imagery relative to other Site features. The accompanying TRPP therefore has features plotted with approximate locations only which could have an error of up to 5m.

4.3 Arboricultural features to be removed

4.3.1 The noise barrier component of the Proposed Development in relation to arboricultural features is shown in the TRPP in **Annex C: Tree Removal and Protection Plan**. The noise barrier component of the Proposed Development would result in the removal of a total of ten arboricultural features to allow for construction. Removals would consist of seven low quality trees (T8, T10, T12, T13, T14, T15, and T16), one very low quality tree (T9), one moderate quality group (G17), and two low quality groups (G11 and G19).

4.3.2 The arboricultural features detailed in **Paragraph 4.3.1** would require removal due to their proximity to the noise barrier component of the Proposed Development.

4.4 Impacts on retained arboricultural features

4.4.1 Other arboricultural impacts are activities which have the potential, if uncontrolled, to cause damage to arboricultural features which are retained. Implementation of the recommended mitigatory measures in **Annex D: Outline Arboricultural Method Statement** would be sufficient to ensure that arboricultural features can be retained without significant loss of value or a notable reduction in health or longevity.

Above ground impacts

4.4.2 During demolition and construction work there is potential for the stem and branches of retained arboricultural features to be damaged by the Contractor making physical contact. Such damage can reduce vitality and cause decline in health.

4.4.3 To prevent above ground damage to arboricultural features a construction exclusion zone (CEZ) should be established. An AMS should cover the duration of demolition and construction with appropriate levels of arboricultural supervision where work is near trees.

4.4.4 The noise barrier component of the Proposed Development is much taller than the current fence. As trees overhang the current fence, pruning in the form of crown lifting would be required for trees in groups G1 to G7. The extent of pruning is relatively minor, and trees have been pruned previously to ensure clearance over the car park.

4.4.5 The **Construction Environment Management Plan** (CEMP) requires that all tree works undertaken must comply with British Standard 3998:2010 – Tree Work Recommendations[8] and should therefore be carried out by skilled tree surgery contractors.

Below ground impacts

4.4.6 During demolition and construction work there is potential for soil compaction and root damage caused by contractors. This could cause loss of vitality and decline in health with a reduction in quality of tree and potential instability or death of trees.

4.4.7 To prevent below ground damage to arboricultural features a CEZ would be established within an AMS for the duration of demolition and construction which is demarcated by a tree protection fence. Where access only is required then temporary ground protection measures could be installed to prevent soil compaction and root damage.

4.4.8 The indicative RPAs are based on a symmetrical circle and are shown in the TRPP. For groups of trees the RPA is based on a distance from the plotted group extent which represents tree stem locations. These RPAs are indicative, and the shape can be adjusted by an arboriculturist to ensure that sufficient area, and therefore soil volume, is protected.

4.4.9 The construction of the noise barrier component of the Proposed Development would require the installation of fence posts in the ground along the alignment of the fence. The location of some posts would be within the preliminary root protection area for tree groups. Due to the relatively small area to be excavated for each post, and the spacing between posts, the impact on the condition of the tree groups G1 to G7 would be negligible given the existing hardstanding, the distance from the works to the trees and their tolerance to change.

4.5 Compensation planting

4.5.1 Tree removal should be compensated for through the planting of new trees either onsite or nearby to benefit the local environment.

4.5.2 The London Plan[7] Policy G7 requires adequate replacement and references larger canopy surface areas provide greater benefits. No CAVAT valuation has been undertaken, however Biodiversity Net Gain assessment has been undertaken (see **Appendix 12.4: Biodiversity Net Gain Assessment**).

4.5.3 The Proposed Development is assessed as resulting in the removal of eight medium sized trees and approximately 112 linear metres of densely planted small trees/woody shrubs.

4.5.4 Planting new trees should be close to the location of removal but along the line of the noise barrier would not be practical. This is anticipated to be secured through a suitably worded planning condition or through the Section 106.

4.6 Arboricultural Method Statement

4.6.1 An outline AMS is included in **Annex D: Outline Arboricultural Method Statement.** The AMS adopts a precautionary approach to tree protection and addresses activities which have the potential to cause damage to retained trees.

4.6.2 The AMS addresses, in principle, the following matters which are of relevance to the noise barrier component of the Proposed Development:

- Arboricultural site supervision;
- Tree works;
- Tree protection fencing;
- Ground protection; and
- Additional precautions outside the CEZ.

4.6.3 It is recommended that this AMS be viewed as a 'living document'. It should therefore be reviewed, and if necessary, updated (most likely by the Principal Contractor) at the following stages of design and construction:

- Detailed design and discharge of conditions or reserved matters;
- Contractor engagement;
- Pre-commencement; and
- Prior to any instance where the site clearance or construction methodology is amended.

5. Summary and conclusions

5.1.1 The noise barrier component of the Proposed Development is to install a noise barrier up to 7m in height along the fenced boundary of the Heathrow Airport Pod Terminal 5 Parking. A desk study undertaken in December 2023 found no records of TPOs and confirmed the absence of conservation areas within the Study Area. It was also established that there was no veteran trees and no areas of ancient woodland or traditional orchards within the Study Area.

5.1.2 An arboricultural walkover survey of the Study Area was undertaken on 6 December 2023 with additional features surveyed on 19 February 2024. The arboricultural surveys were undertaken in accordance with BS 5837 and arboricultural features were plotted relative to an Ordnance Survey plan and aerial imagery.

5.1.3 A total of 24 arboricultural features, consisting of 13 groups and 11 individual trees, were recorded. Of the 124 surveyed features, nine were assessed to be moderate quality, 14 were low quality and one was very low quality.

5.1.4 The noise barrier component of the Proposed Development would result in the removal of ten arboricultural features to allow for construction. Removals would consist of seven low quality trees (T8, T10, T12, T13, T14, T15, and T16), one very low quality tree (T9), one moderate quality group (G17), and two low quality groups (G11 and G19) due to their proximity to the noise barrier.

5.1.5 Minor tree pruning work is required for groups G1 to G7 and G20 to ensure there is sufficient space for the fence to be installed, the work should not be of detriment to the trees.

5.1.6 All other arboricultural features can be retained and protected through demolition and construction. Principles for tree protection are set out in an outline AMS in **Annex D: Outline Arboricultural Method Statement**.

ANNEX A SURVEY METHODOLOGY

Method of baseline data collection

Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study, and
- A walkover survey of all arboricultural features within the Study Area.

Desk Study

The desk study for the noise barrier component of the Proposed Development was undertaken on 10 April 2024.

The desk study reviewed existing arboricultural information available in the public domain. The desk-study has considered the following sources:

TPOs

The London Borough of Hillingdon is responsible for implementing any legal controls imposed through TPOs within the Study Area. Information on the location of TPOs within the Study Area was available on their website.

Conservation areas

The London Borough of Hillingdon is responsible for implementing any legal controls imposed through conservation areas within the Study Area. The location of conservation areas is information publicly accessible on London Borough of Hillingdon's website[9] which was accessed on 10 April 2024.

Ancient woodland

The potential presence of ancient woodland within the Study Area was checked using the web based Multi Agency Geographic Information for the Countryside (MAGIC) map database which was accessed on 10 April 2024[10].

[9] London Borough of Hillingdon (n.d.) *Conservation areas*. [online] Available at: https://www.hillingdon.gov.uk/conservation-areas [Accessed: 18 October 2024].

[10] Department for Environment, Food & Rural Affairs (2024) *Defra's Magic Database*. Available at: https://magic.defra.gov.uk/ [Accessed: 18 October 2024].

Ancient and veteran trees

The potential presence of ancient and veteran trees within the Study Area was checked using the Woodland Trust's Ancient Tree Inventory[11].

Walkover survey

A walkover survey was undertaken with aerial imagery and Ordnance Survey used as base mapping. The walkover survey was undertaken in accordance with the following criteria;

- Arboricultural features have been recorded as tree groups or linear areas where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value;
- The trees have been visually inspected from ground level only;
- No tissue samples were taken nor was any internal investigation of the subject trees undertaken;
- Tree heights and crown spreads have been estimated to the nearest 1m;
- Notes have been recorded where they relate to the quality of the arboricultural feature;
- Management recommendations have been provided where work is necessary for the abatement of a hazard which presents a high level of risk to persons or property. Such management recommendations have been communicated to the tree owner/manager separately from this report;
- Stem diameters have been measured in accordance with Annex C of BS 5837;
- Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other commonly encountered stems have been measured as per the guidance. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1; and
- By default, Root Protection Areas (RPAs) are calculated as an area equivalent to a circle with a radius 12 times the stem diameter and are capped at a distance of 15 metres.

Quality assessment

The quality of arboricultural features has been determined in accordance with BS 5837 Table 1, a copy of which is provided in **Graphic A.1**. The purpose of the quality assessment is to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development. For an arboricultural feature to be included within a particular quality category it should accord with the description provided.

The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority and are simply included to indicate the

[11] Woodland Trust (2023) *Ancient Tree Inventory*. [online] Available at: https://ati.woodlandtrust.org.uk/ [Accessed: 18 October 2024].

primary value associated with each surveyed item. Sub-categories 1, 2, and 3 are intended to reflect arboricultural, landscape and cultural values, respectively.

The quality and sub-category assigned to each arboricultural feature are identified within the Arboricultural Survey Schedule included in **Annex B: Tree Survey Schedule Explanatory Notes**.

Graphic A.1 ***BS 5837 Table 1 - Cascade Chart for Tree Quality Assessment***

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
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 have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see* ***4.5.7****.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	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)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	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	Trees with material conservation or other cultural value	See Table 2
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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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	Trees with no material conservation or other cultural value	See Table 2

Notes and limitations

Arboricultural survey data is of a preliminary nature and has been collected based on a walkover survey.

Only defects visible from the ground have been noted and each individual feature may not have been inspected closely due to access difficulties, the presence of dense ivy, other vegetation or safety constraints. Safety related features have not been recorded on the basis that the arboricultural features would be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.

Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes to the Site may render it invalid within a shorter timescale.

Records held on the Ancient Tree Inventory are collected on a voluntary basis, therefore the absence of records does not demonstrate the absence of ancient or veteran trees but may simply indicate a gap in recording coverage.

Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Walkover survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.

The survey has only been undertaken from land within the Applicant’s ownership, from public land, or from areas where formal access has been arranged.

The position of arboricultural features not recorded on a topographical survey has been estimated using aerial photography. The position and extent of these features should be regarded as approximate only.

ANNEX B TREE SURVEY SCHEDULE EXPLANATORY NOTES

Reference Abbreviations

- T – Tree
- G – Group

Measurements

- Height is estimated to provide a relative indication of tree size.
- Stem diameter are in accordance with BS 5837 paragraph 4.6.1, Annex C and for groups the larger stem sizes are recorded.
- Stem diameters estimate have suffix ‘e’.
- Crown spread for individual trees was estimated in the four cardinal points.
- Crown spread for groups is recorded as an average for the group.
- LCH – lowest canopy height. It is an estimate of the lowest point of foliage above ground level of the tree indicating the clearance below the tree.
- LBH – lowest branch height. It is the height above ground level of the first branch union with the main stem of the tree.

Assessments

- Life stage: Y – Young, SM – Semi-mature, EM – Early Mature, M – Mature, V – Veteran.
- Physiological condition: G – Good, F – Fair, P – Poor, D – Dead.
- Structural condition: G – Good, F – Fair, P – Poor, U – Unstable.
- ERC – Estimated remaining contribution: <10 years, 10+ years, 20+ years or 40+ years.
- BS 5837 Category: A, B, C or U with sub-category recorded as 1, 2, or 3.
- RPA Radius is the radius of a circular RPA associated with the tree as measured from the centre of the stem. For arboricultural features, where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension. Unless otherwise noted the RPA for groups is based on the equivalent RPA for the largest tree in that group.

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N – E – S – W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining	BS5837 Category
G1	Common hazel, Common ash	10	200	2	0	0	SM	F	G	Coppice Hazel with standard ash. Typically 1m from fence crown overhanging.	2.4	40+	B2
G2	Willow species	7	250	3	0	0	EM	F	F	Coppice grey willow at least 1m from fence.	3.0	20+	B2
G3	Field maple, Silver birch, Willow species	14	300	4	0	0	EM	F	F	field maple multistem at 3-4m spacing. One grey willow at west and occasional birch, birch have underground guy system around base.	3.6	40+	B2
G4	Common hazel, Pedunculate oak	15	300	4	0	0	EM	F	F	Coppice Hazel with oak, at least 1m from fence.	3.6	20+	B2
G5	Pedunculate oak, Crack willow	15	450	5	0	0	M	F	P	Multistem willow and occasional standard oak. Some willow sparse crown	5.4	<10	C2
G6	Field maple, Wild cherry	8	230	3	0	0	SM	F	F	Line of trees not accessible. Viewed from car park above guys damaging stem ar1.8m	2.8	40+	C2
G7	Common hazel, Wild cherry	12	230	3	0	0	SM	G	F	Planted rows at least 1m from fence	2.8	40+	B2

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N – E – S – W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining	BS5837 Category
T8	Hybrid poplar	14	300	2 – 1 – 5 – 3	0	0	EM	G	P	Multi stem from base, likely to be suckered from nearby poplar. 0.8m from fence	3.6	10+	C2
T9	Hybrid poplar	16	750	4 – 5 – 6 – 3	0	10	M	F	P	Pollarded at 5m. Growing through mesh fence	9.0	<10	U
T10	Hybrid Poplar	15	450e	5 – 5 – 5 – 5	5	1	EM	F	F	Pollarded at 4m. Tag 3828.	5.4	20+	C2
G11	Field Maple, Common hazel, Common hawthorn, Common ash, Goat willow, Elder	10	150	2	0	0	Y	F	F	Hedge type planting 300mm from kerb.	1.8	20+	C2
T12	Hybrid poplar	15	450e	5 – 5 – 5 – 5	5	0.5	EM	F	F	Pollarded at 4m. Ivy clad to 5m.	5.4	20+	C2
T13	Hybrid poplar	15	450e	5 – 5 – 5 – 5	5	1	EM	F	F	Pollarded at 4m. Ivy clad to 5m. Branches with wire fence included to the west.	5.4	20+	C2
T14	Common ash	14	230e	5 – 3 – 3 – 4	6	2	SM	F	F	Part of tree row. Twin stem from 2m. Ivy clad to 7m.	2.8	40+	C2

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N – E – S – W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining	BS5837 Category
T15	Common ash	14	190e	5 – 3 – 1 – 3	7	2	SM	F	F	Part of tree row. Twin stem from 3m. Ivy clad to 4m.	2.3	40+	C2
T16	Common ash	14	320e	5 – 6 – 2 – 3	3	3	SM	F	F	Part of tree row. Twin stem from 4m. Ivy clad to 7m.	3.8	40+	C2
G17	Field maple, Sycamore, Common hazel, Common ash, Holm oak, Goat willow	14	180	3	0	0	EM	F	F	Row of trees in narrow strip between kerb and boundary. Several stems with weld mesh fence included in stem to branches. Several multistem from below 1.5m, suggests past hedge planting, hedge trimming to south side over tarmac.	2.2	40+	B2
G18	Leylandii	15	150	3	3	0	SM	F	F	Etiolated close planted. Fenced off from nursery but appears in their property.	1.8	20+	C2
G19	Field maple	10	150	3	0	0	EM	F	P	Previous hedge to 2m and multistem lower. Ivy clad to 2m.	1.8	40+	C2

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N – E – S – W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining	BS5837 Category
G20	Field maple, Common hawthorn, Goat willow, Holm oak, Pedunculate oak	10	270	4	0	0	SM	F	F	Pruned to behind kerb line	3.2	40+	C2
T21	Hybrid poplar	14	550	4 – 4 – 4 - 4	1	1	EM	F	F	Stem located 1m behind kerb line with minor deadwood under 75mm diameter	6.6	40+	B2
T22	Hybrid poplar	12	480	4 – 4 – 4 - 4	1	1.5	EM	F	F	Stem located approximately 3m behind kerb line. Past lower limb removal with prolific ivy to 4m	5.8	40+	B2
T23	Hybrid poplar	13	580	4 – 4 – 4 - 4	1	1.5	EM	F	F	Stem located approximately 2m behind kerb line. Past lower limb removal with prolific ivy to 5m and minor deadwood under 75mm diameter	7.0	40+	B2
G24	Field maple, Common hawthorn	10	170	4	0	0	SM	F	F	Previously pruned back from car parking bays.	2.0	40+	C2

ANNEX C TREE REMOVAL AND PROTECTION PLAN

505000 505100 505200 505300

176800

176700

N

Key

- Heathrow ownership boundary
- Proposed Noise Barrier
- Indicative Root Protection Area
- Indicative Crown Spread

BS 5387 Quality category tree stem locations

Trees	Groups
B	B
C	C
U	

- Indicative Fence Alignment
- Indicative Tree Removal

Prefix

T - Tree

G - Group

0 10 20 30 Meters

Scale at A3: 1:1,000

Heathrow

Heathrow Easterly Alternation Infrastructure Project
Environmental Statement

Tree removal and protection plan

Logika GROUP

wsp

October 2024

\\uk.wspgroup.com\UKCentral\GISData\WSP_UK\WSP_E\gint\#Projects\Agresso\Noida\Paras Beniwal\Heathrow EAI\MXD\Tree Removal and Protection Plan V2.mxd Originator: UKTHS775

ANNEX D OUTLINE ARBORICULTURAL METHOD STATEMENT

Introduction

This, heads of terms, outline AMS describes arboricultural protection measures to protect retained trees as part of the noise barrier component of the Proposed Development. An AMS is a dynamic document that shall be reviewed prior to the issuing of any tender documentation. It shall be revised to accommodate any design amendments or known construction methodologies and must be read in conjunction with **Annex C: Tree Removal and Protection Plan** of this Appendix.

Arboricultural site supervision

Effective tree protection can only be achieved by adherence to a logical sequence of works combined with effective arboricultural supervision. The purpose of arboricultural monitoring is to ensure that all tree protection measures are fit for purpose, are implemented in accordance with any approved details and as a means of enabling any previously unforeseen arboricultural issues to be promptly identified and suitably addressed.

An Arboricultural Clerk of Works (ACoW) shall be appointed to oversee the tree protection during the demolition and construction phase.

The role of the ACoW is to:

- Advise the client and principal contractor on tree protection issues;
- Attend site as required to advise on variations;
- Supervise works undertaken within CEZs; and
- Inspect and report on the status of tree protection measures in place during the construction phase.

The ACoW shall attend site:

- Prior to commencement of works to ensure tree protection fencing is in place; and
- Periodically during the construction phase.

Tree works

A schedule of currently identified tree works is provided below:

Table D.1 Table of currently identified tree works

Tree Reference	Tree work
T8-G17	Remove to allow for construction
G1 to G7	Crown lift for clearance above noise barrier

- All tree works shall adhere to British Standard BS 3998:2010 *Tree work – Recommendations*;
- All operations shall be carefully carried out to avoid damage to the trees being retained; and
- No trees to be retained shall be used for anchorage or winching purposes.

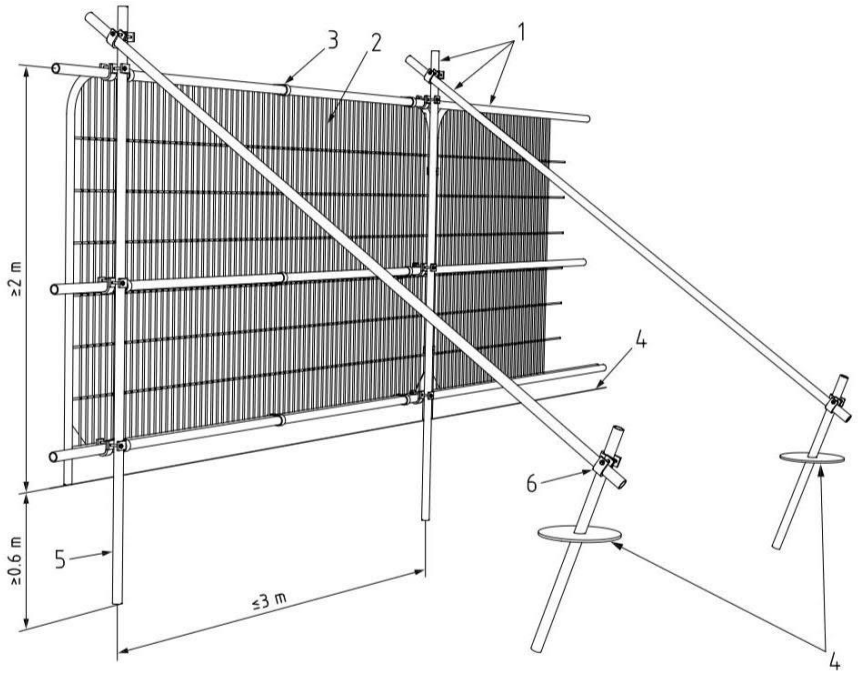
Should the requirement for a tree felling or pruning arise which is additional to that identified above then the following process shall be applied:

- Any specification shall be technically approved by the ACoW; and
- Written approval shall be obtained from the Local Planning Authority prior to implementation of the work.

Tree protection fencing

Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing which may be required is included in **Graphic D1**.

Graphic D.1 Example of appropriate tree protection fencing



Key:

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanised tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6m)
6. Standard scaffold clamps

Tree protection fencing would be used to prevent access to the RPAs of retained trees and this would form the CEZ. In all instances the following shall be adhered to:

- Tree protection fencing shall be erected prior to any works onsite including site clearance, groundwork or the importation of plant and materials;
- Tree protection fencing shall be erected in accordance with the layout shown on the Tree Removal and Protection Plan in **Annex C**;
- All weather notices would be attached (at eye level) to the tree protection fencing at suitable intervals and shall include suitably sized informative text stating “Tree Protection Fencing, Construction Exclusion Zone – No Access”;
- Once erected tree protection fencing shall remain in-situ until construction activities are complete;

- No construction activities, storage of materials or pedestrian or vehicular access shall take place within the CEZ; and
- Regular daily checks would be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage would be rectified without delay.

Ground protection

Ground protection shall be used within any area where construction access is required within the RPAs of any retained tree. Its suitability shall be reviewed by the ACoW prior to implementation onsite and shall adhere to:

- Ground protection shall be sufficiently robust to prevent damage or disturbance of the underlying soil and adhere to section 6.2.3 of British Standard BS5837: 2012;
- It shall be in-situ prior to any works onsite including site clearance, groundwork or the importation of plant and materials;
- Ground protection shall remain in-situ until all construction activities are complete; and
- Regular daily checks would be carried out by an appointed person to ensure that ground protection is still in place and functioning; any damage would be rectified without delay.

Additional precautions outside the CEZ

A precautionary approach to working near retained trees shall be adopted with site huts, welfare facilities, parking, material/spoil storage, mixing and vehicle cleaning facilities being located outside of RPAs.

Care should be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.

Notice boards, telephone cables or any other services shall not be attached to any part of a retained tree.

Installation of underground apparatus and service runs

Wherever possible any underground services (cabling and pipes) shall be located outside the RPA of any retained tree. Soakaways must not be located within RPA.

Wherever possible services shall be grouped together utilising common ducts and have all inspection chambers located outside of the RPA.

In situations where services must pass through the RPAs of a retained tree then trenchless techniques shall be used wherever possible with launch and receptor pits being located outside the RPAs.

Guidance within *Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2:16 November 2007)*[12] shall be followed.

[12] The National Joint Utilities Group, (2007). *Volume 4 NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*. [online] Available at: https://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf [Accessed 18 October 2024].