AIA

ARBORICULTURAL IMPACT ASSESSMENT

(INC. TREE SURVEY TO BS 5837:2012)

PROJECT - Ruislip Lido Railway
CLIENT - Ruislip Lido Railway
DOC. REF - P3343–AIA01 V2
PLANNING REF - n/a
CREATION DATE - 05/06/2025

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PURPOSE OF DOCUMENT

This document assesses the anticipated impact that the proposed scheme will have on the surrounding tree population, and outlines possible technical design considerations and mitigation measures that should be implemented in order to minimise the overall arboricultural impact.

ARBORICULTURAL DOCUMENT REGISTER

Planning Documents		Version Issued	
Document	Ref.	Current Version	Document Date
Arb. Impact Assessment	P3343-AIA01	V2	05/06/2025
Arb. Site Plan (Existing)	P3343-ASP01	V1	30/05/2025
Arb. Site Plan (Proposed)	P3343-ASP02	V2	05/06/2025

1. SUMMARY

1.1 PROPOSED DEVELOPMENT

1.1.1 Erection of new single storey storage building, new single storey control building and installation of new railway tracks.

1.2 TREE SURVEY

1.2.1 The following woody vegetation was considered to be of note in relation to any development of the site: 35 individual trees.

1.3 MITIGATION AND PROTECTION MEASURES

1.3.1 The required arboricultural mitigation measures can be found in *Section 3* of this report.

1.4 CONCLUSION

1.4.1 The table below summarises the trees which will be lost, pruned, or protected by special measures during the development project.

	Tree Category				
	A	B	C	U	Total
Trees to be removed	1	3	1	-	5
Groups to be removed	-	-	-	-	-
Other Vegetation to be removed	-	-	-	-	-
Groups / Hedges to have sections removed	-	-	-	-	-
Trees to be pruned	3	5	2	-	10
Site clearance	-	-	-	-	-
Routing and installation of utility apparatus	-	-	-	-	-
Instances of trees being affected by the installation of buildings/structures	3	8	2	-	13
Instances of trees being affected by the installation of surfacing	-	-	-	-	-
Number of new tree plantings (minimum)	-	-	-	-	7

1.4.2 Considering the anticipated arboricultural impact from the construction activities associated with the development of the site, and the implementation of the proposed mitigation measures outlined in this document, the proposed development's arboricultural impact is considered to be **acceptable with mitigation plantings.**

2 GENERAL INFORMATION

2.1 BRIEF

2.1.1 Ligna Consultancy Ltd were instructed by the client, Ruislip Lido Railway, to undertake a tree survey in accordance with BS 5837:2012 and to prepare an arboricultural impact assessment for the proposed scheme at Ruislip Lido Railway.

2.2 PROPOSED DEVELOPMENT

2.2.1 Erection of new single storey storage building, new single storey control building and installation of new railway tracks.

2.3 SITE

2.3.1 The site discussed within this report is located at:

Ruislip Lido Railway, Reservoir Road, Ruislip, HA4 7TT

2.4 SCOPE OF REPORT

2.4.1 This report consists of the following:

- Appraisal of arboricultural impact
- Outline of tree protection & mitigation measures

2.4.2 Appendices included with this report are:

No.	Appended Document
1	Tree Survey
2	Site Photos
3	Arboricultural Site Plan (Existing) (P3343-ASP01 V1)
4	Arboricultural Site Plan (Proposed) (P3343-ASP02 V2)

2.5 DOCUMENTS PROVIDED

2.5.1 The following documents were submitted to Ligna Consultancy Ltd for consideration:

No.	Supplied Document
1	Topographical Survey
2	Proposed Site Plan (WBA-001-H)

2.6 PROJECT CONTACT

Role	Name	Telephone	Email
Arboricultural Consultant	Jennifer Sinclair	01284 598008	jennifer@lignaconsultacy.co.uk

2.7 AUTHOR

2.7.1 Jennifer Sinclair is a Technician member of the Arboricultural Association with PTI certification. She has worked in arboriculture for over a decade, including supervisory roles undertaking both domestic and commercial arboricultural work. She possesses a level 3 extended diploma in arboriculture and has undertaken additional study and training at level 6. A full CV and list of experience and CPD is available on request.

2.8 LIMITATIONS

2.8.1 Detailed inspections and recommendations relating to tree condition and health are not included within this report.

2.8.2 Any engineering solutions presented within this document are recommendations for their suitability from an arboricultural viewpoint. The architect and structural engineers should make the final decision on the suitability of the methods advised.

2.8.3 Information provided by third parties, considered in the creation of this report, is assumed to be correct.

2.9 PROTECTED TREES

2.9.1 Details of trees (if any) that are protected by Tree Preservation Orders (TPOs) or are situated within Conservation Area are available upon request.

2.9.2 It is the standard approach of Ligna Consultancy not to obtain this information from the LPA prior to an application, as the LPA will provide details of nearby protected trees as part of the consultation.

2.9.3 It should also be noted that granted planning permission that includes tree work specifications overrides Tree Preservation Orders and Conservation Area protections (approved works only).

2.10 NESTING BIRDS / BATS

2.10.1 Officially, the 'Bird Nesting Season' is between February and August (Natural England). During this time, it is recommended that vegetation works (tree or hedge cutting) or site clearance is avoided if there is a reasonable potential for the disruption of nesting birds.

2.10.2 All parties involved in the management and/or development of a site must actively avoid causing disturbance and disruption to nesting birds. Failure to do this may result in an infringement of the *Wildlife and Countryside Act 1981* and the *European Habitats Directive 1992 / Nesting Birds Directive*.

2.10.3 When tree or vegetation clearance work has to be undertaken during the nesting season, a pre works survey needs to be carried out by a suitably competent person.

2.10.4 All bats and their roosts are protected by domestic and international legislation. They are protected by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations (2017 – as amended). This means you may be committing a criminal offence if you: Deliberately take, injure or kill a wild bat; Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats; Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time); Intentionally or recklessly obstruct access to a bat roost.

2.10.5 Prior to carrying out any tree works it is recommended that a survey of the tree/trees is carried out to confirm whether there are any nesting birds or bat roosts. This should be carried out by a suitably trained person.

2.11 SUMMARY OF TERMS

Term	Definition
Species	The type of tree.
Stem	The main woody upright portion of a tree that is supported by the roots and supports the crown.
Branch Spread	The length of a tree's branches from stem to tip measured from the north, east, south and western sides of the crown.
BS 5837	The commonly used name for the official guidance document relating to trees and development *(BS 5837:2012 - Trees in relation to design, demolition and construction – Recommendations)*
Canopy / Crown	The branches, leaves, and reproductive structures extending from the trunk or main stems of a tree/trees.
DBH	Diameter of a tree's stem, measured as per BS 5837:2012
RPA	The root protection area (RPA) is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Facilitation Tree Works	Tree pruning/felling required in order to facilitate the implementation of the proposed development.
Tolerance	The relative tolerance the species can show to construction related activities such as root-loss, soil compaction and other development pressures.
Category (Cat.)	Categorisation of the tree's value based on the methodology shown in Appendix 1, A1.4. This rating takes into account the size, quality, condition, estimated remaining life expectancy and legal status of each tree.

2.12 COPYRIGHT

2.12.1 This report was prepared for use by the Clients and their contractors for planning purposes. The report and its appendices may not be copied, modified, or distributed beyond the necessary parties without the written consent of Ligna Consultancy Ltd.

3 ARBORICULTURAL IMPACT ASSESSMENT

ASSESSMENT & APPRAISAL OF IMPACTS

The following section lists and discusses any aspects of the proposed design and its implementation that has the potential to harm nearby trees, and outlines possible mitigation measures:

If approved, the mitigation measures outlined below should be detailed within a Tree Protection Scheme (Arboricultural Method Statement and Tree Protection Plan) prior to the commencement of any development associated works:

3.1 TREES TO BE REMOVED

Affected Trees	Cat. A: - T3 (*Quercus robur*) Cat. B: - T4 (*Carpinus betulus*), T7 (*Quercus robur*), T10 (*Quercus robur*) Cat. C: - T23 (*Carpinus betulus*)
Impact Appraisal & Mitigation	5 trees are to be removed as part of the proposed scheme. 1 tree (T3) of category 'A' value is to be removed. Owing to its high value its retention is the desired outcome, however, this is not deemed possible on this site, therefore, to offset this significant loss, substantial replacement plantings will need to be planted within the site, or in close proximity to the development area. (**see mitigation requirements below**). 3 trees (T4, T7, T10) of category 'B' value are to be removed. Owing to their moderate value, mitigation tree planting should be incorporated into the landscaping of the site (**see mitigation requirements below**). 1 tree (T23) of category 'C' value is to be removed. Owing to its relative small size and low value, no arboricultural mitigation is required. <u>Mitigation</u> Owing to the absence of reliable guidance on mitigation tree planting within the arboricultural sector, the guidance within DEFRA and Natural England's BNG 4.0 metric has been used to quantify requirements for mitigation tree planting. This metric is largely based on canopy biomass, and therefore the size of the removed trees is taken into consideration and assumes that the proposed replacement plantings have the potential to reach a DBH of ~30cm within 30 years. The recommendations for replacement planting included a provision for a ≥10% net gain. **To mitigate against the loss of 1 category 'A' tree, 3 new high-quality heavy-standard trees should be included within the landscaping of the site. It would be beneficial to plant like for like species.**

	To mitigate against the loss of 3 category 'B' trees, 4 new high-quality heavy-standard trees should be included within the landscaping of the site.
Significance *(with mitigation)*	Acceptable with mitigation plantings.

3.2 TREES TO BE PRUNED

Affected Trees	Cat. A: - T28 (*Quercus robur*), T31 (*Quercus robur*), T32 (*Quercus robur*) Cat. B: - T8 (*Quercus robur*), T9 (*Quercus robur*), T11 (*Quercus robur*), T14 (*Quercus robur*), T26 (*Quercus robur*) Cat. C: - T22 (*Carpinus betulus*), T24 (*Carpinus betulus*)
Pruning works	The following trees are to be pruned as part of the proposed scheme. The pruning specification for each tree is shown in the table below: - T8 (B1) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T9 (B1) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T11 (B1) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T14 (B3) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T22 (C1) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T24 (C3) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T26 (B1) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T28 (A2) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T31 (A2) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance. - T32 (A2) - Crown lift tertiary branches and tips to provide the new structure with 1m clearance.
Significance *(with mitigation)*	Negligible

3.3 ROUTING AND INSTALLATION OF UTILITY APPARATUS

Affected Trees	All retained trees
Impact Appraisal & Mitigation	No information has currently been provided for the installation of utility services, therefore, wherever possible, utility apparatus should be routed outside of any RPAs. Failing this, services should be routed together in common ducts, with any inspection chambers being located outside of the RPA.

	Where it is necessary for underground services to intersect an RPA, specialist excavation methods should be used, these can include air spade/ lance or vacuum excavation. In such situations, the design team should consult with Ligna Consultancy Ltd in order to establish a suitable services route and specify the specialist excavation method most suitable.
Significance *(with mitigation)*	Negligible

3.4 INSTALLATION OF FOUNDATIONS (SPECIALIST FOUNDATIONS)

Affected Trees	Cat. A: - T28 (*Quercus robur*), T31 (*Quercus robur*), T32 (*Quercus robur*) Cat. B: - T2 (*Quercus robur*), T5 (*Quercus robur*), T8 (*Quercus robur*), T9 (*Quercus robur*), T11 (*Quercus robur*), T14 (*Quercus robur*), T26 (*Quercus robur*) Cat. C: - T22 (*Carpinus betulus*), T24 (*Carpinus betulus*)
Impact Appraisal & Mitigation	The excavation and installation of the building foundations has the potential to result in significant RPA incursions to the aforementioned trees if standard trench foundations were to be used. Owing to the size of the potential incursions, specialist low impact foundations will need to be used when within an RPA so as to minimise root damage. Suitable options include (a) micro piles, (b) screw piles, (c) small concrete pad foundations. Furthermore, the floor of the building must comprise of a raised concrete slab or raised beams so as to not require excavations for releveling or for the installation of heave protection. <u>Mitigation</u> During the installation of the foundations, nearby trees are vulnerable to indirect damage. This includes: - Soil compaction damage to tree roots and crown damage resulting from machinery (piling rig). To prevent this from occurring, ground protection matting must be used and machinery must at no point operate from within an unprotected RPA. In addition to this, where a piling rig is to be used, this must not require the installation of a traditional piling mat. Instead, temporary ground protection matting or another no-dig solution must be used (and be approved by the project's Arboricultural Clerk or Works). The size of machinery should consider the available canopy clearance if working beneath the crown of a tree. - The floor of the building must utilise a no-dig slab or raised beams so as to avoid the need for excavation/regrading. To achieve a raised slab, the underlying void can be formed by the installation of a Dufaylite clayboard (or similar). This can then be dissolved with water after casting leaving an air gap. To help minimise any difference between existing and proposed FFLs, the existing surfacing and its

	subbase that is present within the footprint of the proposed extension may first be removed (ensuring the underlying soil remains undisturbed). - Where a cast slab floor or concrete pads are to be installed, the pouring of the concrete has the potential to result in the poisoning of nearby tree roots (uncured cement is toxic to plants). To prevent the poisoning of surrounding tree roots, an impermeable membrane must first be laid prior to the pouring of concrete.
Significance *(with mitigation)*	Negligible

3.5 IMPLEMENTATION OF PROPOSED SCHEME

Affected Trees	All retained trees
Impact Appraisal & Mitigation	During the construction process, all retained trees are susceptible to damage from general construction related activities. *In order to reduce the risk of construction damage to the site's retained trees, tree protection barriers, stem protection and temporary ground protection must be installed before the commencement of any site works.*
Significance *(with mitigation)*	Negligible

TREE RELATED SHADING AND NUISANCES

3.6 LONG-TERM IMPACT OF RETAINED TREES ON PROPOSED SCHEME

3.6.1 Shading

3.6.1.1 N/A

3.6.2 Canopy Growth

3.6.2.1 N/A

3.6.3 Nuisances

3.6.3.1 N/A

OPPORTUNITIES FOR NEW TREE PLANTING

3.7 PROVISION OF NEW TREE PLANTINGS

3.7.1 In order to mitigate against the proposed tree losses, the following tree planting is recommended:
- To mitigate against the loss of 1 category 'A' tree, 3 new high-quality heavy-standard trees should be included within the landscaping of the site.

- To mitigate against the loss of 4 category 'B' trees, 5 new high-quality heavy-standard trees should be included within the landscaping of the site.
This recommendation is based on DEFRA and Natural England's BNG 4.0 metric. This is calculation is largely based on canopy biomass, and therefore the size of the removed trees is taken into consideration and assumes that the proposed replacement plantings have the potential to reach a DBH of ~30cm within 30 years. The recommendations for replacement planting included a provision for a ≥10% net gain.

CONCLUSION

3.8 SUMMARY OF THE DEVELOPMENT'S OVERALL IMPACT

3.8.1 The table below summarises the trees which will be lost, pruned, or protected by special measures during the development project.

	Tree Category				
	A	B	C	U	Total
Trees to be removed	1	3	1	-	5
Groups to be removed	-	-	-	-	-
Other Vegetation to be removed	-	-	-	-	-
Groups / Hedges to have sections removed	-	-	-	-	-
Trees to be pruned	3	5	2	-	10
Site clearance	-	-	-	-	-
Routing and installation of utility apparatus	-	-	-	-	-
Instances of trees being affected by the installation of buildings/structures	3	8	2	-	13
Instances of trees being affected by the installation of surfacing	-	-	-	-	-
Number of new tree plantings (minimum)	-	-	-	-	7

3.8.2 Considering the anticipated arboricultural impact from the construction activities associated with the development of the site, and the

implementation of the proposed mitigation measures outlined in this document, the proposed development's arboricultural impact is considered to be **acceptable with mitigation plantings.**

4 APPENDICES

4.1 APPENDICES

4.1.1 The following appendices are included within this document:

No.	Appended Document
1	Tree Survey
2	Site Photos
3	Arboricultural Site Plan (Existing) (P3343-ASP01 V1)
4	Arboricultural Site Plan (Proposed) (P3343-ASP02 V2)

APPENDIX 1
TREE SURVEY

APPENDIX 1 – TREE SURVEY

A1.1 SITE VISIT

i) A site visit was undertaken by Jennifer Sinclair of Ligna Consultancy, on the 20/07/2023

A1.2 METHOD OF DATA COLLECTION

i) Data was collected using the recommendations laid out in British Standard 5837:2012 as a guide. All observations were from ground level without detailed or invasive investigations.

ii) Measurements have been calculated using a laser measurer and diameter tape/calipers. Where this was not possible or reasonably practical, measurements have estimated by eye.

iii) The trees were surveyed and assessed impartially and irrespective of the proposed development. Management recommendations should be implemented regardless of any proposed development for reasons of sound arboricultural management or safety.

iv) The method used for categorising the trees can be seen in section A1.3. This is an improved variation of the method suggested in BS 5837:2012.

v) BS 5837:2012 recommends that better quality (category A and B trees) are retained where possible. Planning permission overrides a Tree Preservation Order and Conservation Area. Furthermore, trees are a material consideration in the UK planning system irrespective of their legal status. Trees in land adjacent to the site are considered where they may be impacted by development; for example, when roots or branches encroach onto the site.

vi) Trees may be recorded as group or woodland where:

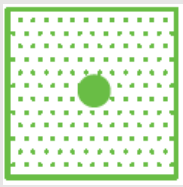
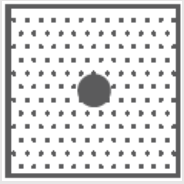
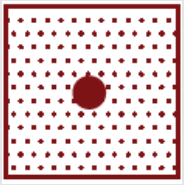
- The canopies touch.
- The trees have more group value than individual merit.
- They are part of a formal landscape feature like an avenue.
- It is impractical to record them individually.

vii) Trees within groups or woodlands etc. are recorded individually where it is necessary to distinguish them from others.

A1.3 SURVEY KEY & GLOSSARY OF TERMS

Term	Definition
Ref.	Tree reference number
Tag	Physical tag attached to some trees with unique identification number (not the same as Ref.)
Species	The trees' scientific and common name
Height	The measured/estimated height of the tree (measured in metres)
Branch Spread	The length of a tree's branches from stem to tip measured from the north, east, south and western sides of the crown.
Crown Clearance	Crown clearance is the measurement of height between the trees branches in the outer third of its crown and the floor. Crown clearance has only been recorded where it is considered to be of relevance to the proposed scheme. The height of the first significant branch is also generally recorded and is discussed where relevant.
DBH	Diameter of a trees' stem, measured as per BS 5837:2012
RPA	The root protection area (RPA) is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Life Stage	A quantification of a trees' state of physical maturity: • Young • Semi-mature • Early-Mature • Mature • Late-mature • Veteran • Dead
Structural	Summary statement relating to the structural condition of a tree: • Good (no apparent problems / normal optimal condition for a tree of its species.) • Fair (minor problems, no instabilities) • Poor (major problems, potential instabilities) • Unstable (extreme problems, likely to result in failure)
Vitality	Summary statement relating to the overall observed vitality of a tree: • Good (no apparent problems / normal optimal vitality for a tree of its species) • Fair (minor / temporary reduction in tree vitality) • Poor (major reduction in tree vitality, often with some branch dieback) • Dead / Dying (extreme / total reduction in tree vitality)
General Management Recommendations	Remedial tree works recommended regardless of whether the site is developed or not.
Facilitation Tree Works	Tree pruning/felling required in order to facilitate the implementation of the proposed development.
Development Related Tree Works	Tree works that are required as part of the proposed scheme.
Tolerance	The relative tolerance the species can show to construction related activities such as root-loss, soil compaction and other development pressures.
Cat.	Categorisation of the tree's value based on the methodology shown in A1.4. This rating takes into account the size, quality, condition, estimated remaining life expectancy and legal status of each tree.

A1.4 TREE CATEGORISATION METHODOLOGY

Category and definition	Criteria / Subcategories			Label on plan
	1 – Mainly arboricultural qualities	2 – Mainly landscape qualities	3 – Mainly cultural values/conservation	
Trees worthy of being a material constraint:				
Category A Trees of high quality, capable of providing a significant contribution to local amenity (usually large in size) and that generally possess an estimated remaining life expectancy of 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)	
Category B Trees of moderate quality and with an estimated remaining life expectancy of 20+ years, that are capable of providing a notable contribution to local amenity but are lacking the condition of category A trees (usually medium to large in size).	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); 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	
Trees worthy of material consideration:				
Category C Trees of a low quality, small size, or incapability to be protected within the legal framework. These trees generally possess an estimated remaining life expectancy of 10+ years.	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	
Trees unsuitable for retention owing to condition:				
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			

A1.5 SUMMARY OF DATA

i) The following woody vegetation was considered to be of note in relation to any development of the site: 35 individual trees.

ii) The following tables show the category distribution and life stage of the trees distributed within the site:

	Tree Category				
	A	B	C	U	Total
Individual Trees	8	17	9	1	35
Groups	-	-	-	-	-
Woodland Groups	-	-	-	-	-
Hedges	-	-	-	-	-
Shrubs	-	-	-	-	-

Table 1 - Table showing category distribution within site.

	Life Stage						
	Young	Semi-Mature	Early-Mature	Mature	Late-Mature	Veteran	Dead
Individual Trees	-	6	6	22	1	-	-
Groups	-	-	-	-	-	-	-
Woodland Groups	-	-	-	-	-	-	-
Hedges	-	-	-	-	-	-	-
Shrubs	-	-	-	-	-	-	-

Table 2 - Table showing life stage distribution within the site.

Ref.	Tag	Species	Height (m)	Crown (N/E/S/W)	Crown Clearance (m)	DBH (mm)	Life Stage	Structural	Vitality	Additional Notes	General Management Recommendations	Priority	Development Related Tree Works	Tolerance	RPA Radius (m)	RPA Area (m^2)	Cat.
T1		Quercus robur (English oak)	20	8.5 / 1.5 / 9 / 10.5	4	650	Mature	Good	Good	Estimated height used.				Moderate - Good	7.8	191.1	B1
T2		Quercus robur (English oak)	20	7 / 7 / 7 / 7	10	637	Mature	Good	Good	Estimated height used. Minor amount of moderate size deadwood predominantly in western crown - low risk posed due to minimal footfall below tree.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	Optional		Moderate - Good	7.6	183.6	B1
T3		Quercus robur (English oak)	20	13 / 7 / 9.5 / 9	4.5	680	Mature	Good	Good	Estimated height. Moderate amount of minor size deadwood throughout crown with multiple moderate size pieces. Low risk posed at the moment due to minimal footfall below tree.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	Optional	Remove	Moderate - Good	8.2	209.2	A2
T4		Carpinus betulus (European hornbeam)	17	5 / 5 / 5 / 5	0.5	292	Mature	Good	Good	Estimated height. Area of cambial damage on eastern side of stem from base to 1.25m across both stems, likely due to mechanical damage. Tree is not adversely affected by this and it is not considered to be of structural concern.			Remove	Moderate	3.5	38.5	B3
T5		Quercus robur (English oak)	20	8.5 / 8.5 / 8.5 / 8.5	3.5	704	Mature	Good	Good	Estimated height. Stem bifurcates at 1m east to west - not considered to be of structural concern. Possibility of ground level changes within RPA and close to stem exposing surface roots that have sustained cambial damage - most likely mechanical damage. Tree is not currently adversely affected.	Monitor vitality.	2 years		Moderate - Good	8.5	224.4	B3
T6		Quercus robur (English oak)	20	5 / 8 / 5 / 5		770	Mature	Good	Good	Estimated height. Ground level changes adjacent to stem (increased), potential for damage caused to tree. Moderate amount of significant size pieces of deadwood in mid crown, most predominantly on northern side - low risk posed due to minimal footfall below tree.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	Optional		Moderate - Good	9.2	268.2	A2
T7		Quercus robur (English oak)	20	7 / 7 / 8.5 / 9	4.5	810	Late-Mature	Good	Good	Estimated height. Significant size cavity on western side of stem from base of tree to ~1.5m x 0.5m. Evidence of internal decay and minor hollowing of stem, unable to fully investigate due to Hornets within stem, although cavity not considered to be of significant structural concern. Monitor vitality and stability of tree, further investigations through picus should be considered. Minor amount of moderate size pieces of deadwood, predominantly in northern and western crown, currently low risk posed due to minimal footfall below tree.	Picus test for structural stability. Shorten moderate size deadwood to 1m length and leave for habitat.	Optional	Remove	Moderate - Good	9.7	296.8	B1

Ref.	Tag	Species	Height (m)	Crown (N/E/S/W)	Crown Clearance (m)	DBH (mm)	Life Stage	Structural	Vitality	Additional Notes	General Management Recommendations	Priority	Development Related Tree Works	Tolerance	RPA Radius (m)	RPA Area (m^2)	Cat.
T8		Quercus robur (English oak)	20	8 / 8 / 8 / 8.5	4	640	Mature	Good	Good				Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	7.7	185.3	B1
T9		Quercus robur (English oak)	20	6.5 / 4.5 / 8.5 / 9	1.8	510	Mature	Good	Good	Estimated height. Minor deadwood throughout crown - low risk posed.			Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	6.1	117.7	B1
T10		Quercus robur (English oak)	13	5 / 0.5 / 5 / 5	2	376	Semi-Mature	Good	Good				Remove	Moderate - Good	4.5	64.1	B3
T11		Quercus robur (English oak)	18	9 / 8 / 6 / 8	4	570	Semi-Mature	Good	Good	Estimated height. Stem forks east to west at 0.5m - not considered to be of structural concern. Minor amount of deadwood with moderate size piece in southern crown - low risk posed due to minimal footfall below tree.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	Optional	Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	6.8	147.0	B1
T12		Quercus robur (English oak)	18	8.5 / 8.5 / 8.5 / 8.5	10	630	Mature	Good	Fair	Estimated height. Moderate amount of deadwood with significant size pieces on eastern side with a slightly thinning crown.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	Optional		Moderate - Good	7.6	179.6	B3
T13		Quercus robur (English oak)	18	3.5 / 3.5 / 3.5 / 3.5	9	260	Semi-Mature	Good	Good					Moderate - Good	3.1	30.6	C1
T14		Quercus robur (English oak)	17	6.5 / 2 / 6.5 / 8.5	2.5	430	Mature	Good	Good	Estimated height. Minor size deadwood throughout crown - low risk posed.			Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	5.2	83.6	B3
T15		Quercus robur (English oak)	20	10 / 10 / 10 / 10	12	670	Mature	Good	Fair	Estimated height. Minor size deadwood throughout crown - negligible risk posed.				Moderate - Good	8.0	203.1	B3
T16		Quercus robur (English oak)	18	4.5 / 4.5 / 4.5 / 4.5		380	Semi-Mature	Good	Good					Moderate - Good	4.6	65.3	B3
T17		Quercus robur (English oak)	18	4.5 / 4.5 / 10 / 10	6	582	Mature	Good	Good					Moderate - Good	7.0	153.2	A2
T18		Quercus robur (English oak)	18	4 / 4 / 4 / 4	10	430	Semi-Mature	Good	Poor	Estimated height. Tree is in a significant state of decline and unlikely to recover.	Monolith to 5m and leave for habitat or remove.	24 months		Moderate - Good	5.2	83.6	U
T19		Carpinus betulus (European hornbeam)	16	4 / 4 / 4 / 4		239	Early-Mature	Good	Good	Estimated height.				Moderate	2.9	25.7	C1
T20		Carpinus betulus (European hornbeam)	16	2 / 2 / 2 / 2		247	Early-Mature	Good	Good					Moderate	3.0	27.5	C1
T21		Carpinus betulus (European hornbeam)	16	3 / 3 / 3 / 3		210	Early-Mature	Good	Good					Moderate	2.5	20.0	C1
T22		Carpinus betulus (European hornbeam)	16	2 / 2 / 4 / 4.5	5	261	Early-Mature	Good	Good				Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate	3.1	30.8	C1
T23		Carpinus betulus (European hornbeam)	14	5 / 5 / 5 / 5		180	Semi-Mature	Good	Good				Remove	Moderate	2.2	14.7	C1
T24		Carpinus betulus (European hornbeam)	9	1 / 3 / 4 / 3		100	Early-Mature	Good	Good				Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate	1.2	4.5	C3
T25		Quercus robur (English oak)	12	4.5 / 4.5 / 4.5 / 4.5	2	230	Early-Mature	Good	Good	Estimated height. Multiple moderate size dead branches in lower canopy - low risk posed due to minimal footfall below tree.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	Optional		Moderate - Good	2.8	23.9	C1
T26		Quercus robur (English oak)	13.5	7 / 7 / 7 / 7	3	490	Mature	Good	Good	Minor size deadwood throughout the crown - negligible risk posed.			Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	5.9	108.6	B1
T27		Prunus spp. (Plum)	4.5	3.5 / 3.5 / 3.5 / 3.5	1.5	110	Mature	Good	Good					Moderate - Good	1.3	5.5	C1

Ref.	Tag	Species	Height (m)	Crown (N/E/S/W)	Crown Clearance (m)	DBH (mm)	Life Stage	Structural	Vitality	Additional Notes	General Management Recommendations	Priority	Development Related Tree Works	Tolerance	RPA Radius (m)	RPA Area (m^2)	Cat.
T28		Quercus robur (English oak)	18	7 / 7 / 7 / 7	5	720	Mature	Good	Good	Estimated height. Hard surfacing, stone wall and railway within RPA. Minor amount of moderate size deadwood throughout crown - moderate risk posed due to footpaths within target zone.	Shorten deadwood with a diameter over 25mm to 1m length and leave for habitat.	24 months	Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	8.6	234.5	A2
T29		Quercus robur (English oak)	17	8 / 8 / 8 / 8	10	510	Mature	Good	Good	Estimated height. Moderate amount of minor size deadwood throughout crown - low risk posed.				Moderate - Good	6.1	117.7	B1
T30		Quercus robur (English oak)	18	4.5 / 4.5 / 4.5 / 4.5		290	Mature	Good	Good					Moderate - Good	3.5	38.0	B1
T31		Quercus robur (English oak)	20	10 / 11 / 6 / 12	9	600	Mature	Good	Good	Estimated height and western crown. Minor deadwood throughout crown - low risk posed.			Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	7.2	162.9	A2
T32		Quercus robur (English oak)	19	10 / 10 / 10 / 10	2.5	650	Mature	Good	Good	Estimated height. Moderate amount of minor size deadwood throughout crown - low risk posed.			Crown lift tertiary branches and tips to provide the new structure with 1m clearance.	Moderate - Good	7.8	191.1	A2
T33		Quercus robur (English oak)	17	5.5 / 5.5 / 5.5 / 5.5	10	500	Mature	Good	Good					Moderate - Good	6.0	113.1	B1
T34		Quercus robur (English oak)	17	8 / 8 / 8 / 8	2.5	710	Mature	Good	Good	Estimated height. Tarmac surfacing atop RPA. Minor size deadwood throughout crown - low risk posed.				Moderate - Good	8.5	228.0	A2
T35		Quercus robur (English oak)	16.5	8 / 8 / 8 / 8		780	Mature	Good	Good	Estimated height. Tarmac surfacing atop RPA. Minor size deadwood throughout crown - low risk posed. Slightly thinning crown, most likely associated with drought stress.				Moderate - Good	9.4	275.2	A2

APPENDIX 2
SITE PHOTOGRAPHS

Note - Below is a selection of site photographs intended for general site context. Should you require supplementary site/tree photographs please contact info@lignaconsultancy.co.uk:

Figure 1 – Looking northwards at the area for the proposed new building.

APPENDIX 2 – SITE PHOTOGRAPHS

Figure 2 – Looking southwards at the area for the proposed new building.

APPENDIX 2 – SITE PHOTOGRAPHS

Figure 3 – Looking southwards at the area for the proposed new building.

APPENDIX 2 – SITE PHOTOGRAPHS

Figure 4 – Looking southwards at the area for the proposed new building.

APPENDIX 3
ARB. SITE PLAN (EXISTING)

T1, English oak, Cat B
T3, English oak, Cat A
T4, European hornbeam, Cat B
T2, English oak, Cat B
T7, English oak, Cat B
T5, English oak, Cat B
T8, English oak, Cat B
T9, English oak, Cat B
T6, English oak, Cat A
T10, English oak, Cat B
T11, English oak, Cat B
T12, English oak, Cat B
T13, English oak, Cat C
T14, English oak, Cat B
T15, English oak, Cat B
T19, European hornbeam, Cat C
T16, English oak, Cat B
T20, European hornbeam, Cat C
T17, English oak, Cat A
T26, English oak, Cat B
T21, European hornbeam, Cat C
T18, English oak, Cat U
T25, English oak, Cat C
T22, European hornbeam, Cat C
T29, English oak, Cat B
T27, Plum, Cat C
T23, European hornbeam, Cat C
T30, English oak, Cat B
T24, European hornbeam, Cat C
T18, English oak, Cat A
T31, English oak, Cat A
T34, English oak, Cat A
T32, English oak, Cat A
T35, English oak, Cat A
T33, English oak, Cat B

Use of This Document

This document should be viewed in conjunction with the relevant arboricultural impact assessment and/or tree survey schedule.

Tree Categorisation & Numbering

The method used for categorising the trees can be seen in Appendix 1 of the Tree Survey/Arboricultural Impact Assessment. The categorisation method used is an improved variation of the method suggested in BS 5837:2012.

BS 5837:2012 recommends that better quality trees (Cat. A & B) are retained where possible. Trees in land adjacent to the site are considered where they may be impacted by development.

The trees considered significant within the context of the development are numbered and assigned a prefix of 'T' or 'G' to describe whether they are an individual or a group, and 'S' or 'H' for a shrub or hedge. Using this identification number, further information for each tree/group can be found within the survey schedule.

Category A : High or exceptional aboricultural, landscape or ecological value. (Worthy of being a material constraint.)

Category B : Moderate arboricultural, landscape or ecological value. (Worthy of being a material constraint.)

Category C : Low quality or small in size. (Not worthy of being a material constraint.)

Category U : Such poor quality or condition that renders it unsuitable for retention. (Not worthy of being a material constraint.)

Root Protection Areas

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPA's) should be plotted around each of the category A, B and C trees. This is a notional depiction of the minimum rooting area in m2 which should be left undisturbed around each tree. The RPA is calculated using the *British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'*, unless otherwise stated within the survey schedule.

Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Root Protection Area (RPA): The notional area around each tree which should be left undisturbed during the development of the site

RPA Incursion: Anticipated incursion into the root protection area of a proposed tree which may result in root loss/damage.

Arboriculturally Sensitive Demolition/ Removal): A structure or surfacing is to be removed using special methods to avoid damage to trees.

Specialist Foundations: Low impact foundations to be used to preserve underlying tree roots.

Further Object Key

Tree Removal: Trees designated for removal will comprise of a red dotted canopy fill.

Buildings/Surfacing to be Removed: Buildings or surfacing to be removed will generally be depicted with a dashed red line

Site Boundary: Extent of site boundary (illustrative only)

Proposed Services Route: Proposed routing for new services (illustrative only)

Ligna Consultancy

Project: Ruislip Lido Railway

Client: Ruislip Lido Railway

Drawing: Arboricultural Site Plan (Existing)

Drawing Ref:	Rev:	Date:
P3343-ASP01	V1	30/05/2025

Scale:	Drawn By:
1:200 - A2	J. Sinclair

Based on: Topographical Survey

APPENDIX 4
ARB. SITE PLAN (PROPOSED)

New Single Storey Storage Building

New Single Storey Control Building

Centreline of New Railway Tracks

T1, English oak, Cat B

New train line will not impact surrounding trees as it will be installled atop the existing surfacing.

T3, English oak, Cat A

T4, European hornbeam, Cat B

T2, English oak, Cat B

T7, English oak, Cat B

T5, English oak, Cat B

New building to utilise minimal dig pile and raised floor foundations.

Crown lift tertiary branches and tips of T8, T9, T11, T14, and T26 to provide the new structure with 1m clearance.

T8, English oak, Cat B

T9, English oak, Cat B

T6, English oak, Cat A

T10, English oak, Cat B

T11, English oak, Cat B

T12, English oak, Cat B

T13, English oak, Cat C

T14, English oak, Cat B

T15, English oak, Cat B

T19, European hornbeam, Cat C

T16, English oak, Cat B

T20, European hornbeam, Cat C

T17, English oak, Cat A

T26, English oak, Cat B

T21, European hornbeam, Cat C

T18, English oak, Cat U

T25, English oak, Cat C

T22, European hornbeam, Cat C

T29, English oak, Cat B

T27, Plum, Cat C

New building to utilise minimal dig pile and raised floor foundations.

T23, European hornbeam, Cat C

T30, English oak, Cat B

Crown lift tertiary branches and tips of T22, T24, T28, T31 and T32, to provide the new structure with 1m clearance.

T24, European hornbeam, Cat C

T28, English oak, Cat A

T31, English oak, Cat A

T34, English oak, Cat A

T32, English oak, Cat A

T35, English oak, Cat A

T33, English oak, Cat B

Use of This Document

This document should be viewed in conjunction with the relevant arboricultural impact assessment and/or tree survey schedule.

Tree Categorisation & Numbering

The method used for categorising the trees can be seen in Appendix 1 of the Tree Survey/Arboricultural Impact Assessment. The categorisation method used is an improved variation of the method suggested in BS 5837:2012.

BS 5837:2012 recommends that better quality trees (Cat. A & B) are retained where possible. Trees in land adjacent to the site are considered where they may be impacted by development.

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Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Root Protection Area (RPA): The notional area around each tree which should be left undisturbed during the development of the site

RPA Incursion: Anticipated incursion into the root protection area of a proposed tree which may result in root loss/damage.

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Further Object Key

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Site Boundary: Extent of site boundary (illustrative only)

Proposed Services Route: Proposed routing for new services

Ligna Consultancy

Project:	Ruislip Lido Railway
Client:	Ruislip Lido Railway
Drawing:	Arboricultural Site Plan (Proposed)
Drawing Ref: P3343-ASP02	Rev: V2 / Date: 05/06/2025
Scale: 1:200 - A2	Drawn By: J. Sinclair
Based on:	Proposed Site Plan (WBA-001-H)

All dimensions should be checked on site. No dimensions to be scaled from this drawing. Please notify us of any discrepancies found. Ligna Consultancy Ltd. cannot be held responsible for inaccuracies in the base drawing in which this plan is based. This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of retained trees.

An architect or structural engineer should be contacted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.

This drawing was produced in colour - a monochrome copy should not be relied upon.

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