

HEADBOLT LANE STATION, LIVERPOOL.

Arboricultural Impact Assessment

Prepared for

Buckingham Group Contracting

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Version V03

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Field surveys have been carried out, these have been restricted to a level of detail required to achieve the stated brief of the work. No part of this report may be copied or duplicated without express permission of Miranda Cowan Ecology Ltd. or NLG Ecology Ltd. and the party for whom it was prepared.

1 Introduction

1.1 Context

This Arboricultural Impact Assessment (AIA) has been prepared on behalf Buckingham Group Contracting who are proposing to construct a new running railway line and a new railway station (Headbolt Rail Station) close to the existing Kirkby Station, in Liverpool. The proposal extents are shown as Figure 1.1.

A Tree Survey to inform the AIA was completed on the 5th of October 2020, with further survey completed on the 28th March 2021. This additional survey involved ground truthing existing survey data and collecting additional data for a widened extent of the proposals.

The Tree Survey and this AIA has been prepared by Miranda Cowan Ecology Ltd (MCIEEM and TechArbA) in association with NLG Ecology Ltd. The approach for the Tree Survey and AIA has adhered to '*Trees in relation to design, demolition and construction – Recommendations*', BS 5837:2012'.

The main objectives for the Tree Survey and AIA are:

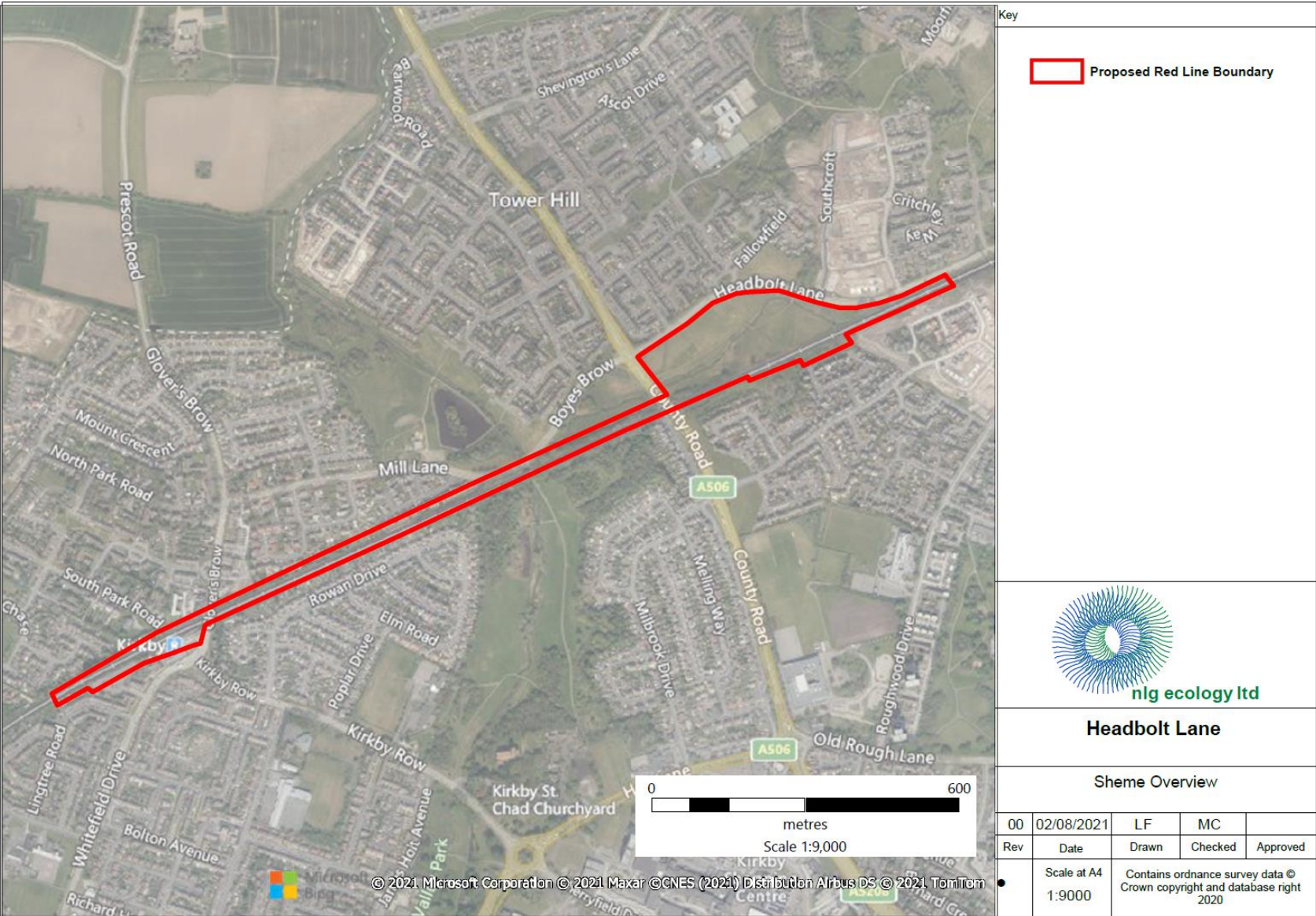
- To record the location of trees and gather dimensional and physiological data relating to tree characteristics and condition.
- Assess tree condition and value (high, medium, low) relative to arboricultural characteristics, the position of trees within landscape context and their cultural / conservation benefits.
- Assess potential impacts upon trees and tree groups relative to the proposed scheme by identifying extent of trees loss and potential indirect impacts such as encroachment to tree roots or canopy extents.
- Outline general best practice to minimise impacts on trees and identify further recommendations to ensure all trees are fully considered with the scheme design.

For the Tree Survey a topographic plan was provided for the eastern extent of the proposed works, which forms the location of the new Headbolt Rail Station. No topographic plans were available for all other remaining extents of the proposed scheme.

This AIA has been based on the likely extent of vegetation removal as informed by the client via email communication and provisional sketches on engineering drawings (170248-ARU-DRG-ECV-000012, Rev P01, Sheet 1-5, ARUP, 20/01/2021).

It is important to note that a full and informed assessment of tree loss can not be completed until site clearance plans are made available. This AIA will therefore require a further updates.

Figure 1.1: Proposed Extent of Works



1.2 Scheme description

A brief description of the works are detailed in the document "Multidisciplinary Survey Requirements for AiP" (Iss. 1.0, 06/03/2020) and drawing number 170248-15854-ZZ-ZZZ-DRG-C-CV-023030, Sheet 1-5, P01 (ARUP, 20/01/2021).

The proposal relates to infrastructure upgrade of Kirkby Station and construction of a new station called 'Headbolt Lane Station'. A new railway line will be installed between the two stations and this will be accompanied by installation of new infrastructure, including demolition and reconstruction of a new platform and substation at Kirkby Station, troughing works, caballing and lighting along sections of the schemes extents.

There is no scheme drawing showing the extent of site / vegetation clearance. Tree loss is therefore based on email communication provided by the client:

- **Headbolt Station to Kirkby Station:** 6m strip of vegetation from either side of the railway cess and 1m strip along the Network Rail boundary fence, both sides of the track. This in certain areas will involve retention of trees along the railway embankment, which extends between 6-10m.
- **Kirkby Station to Fazakerley Sub Station:** 3m strip of vegetation clearance for the Cable Route North side of the track.
- **Bridge 56:** 20m area of vegetation removal on the north side of the bridge to both wing walls, equating to 40m in total?
- **Bridge 55:** Complete de-veg of all 4 wing walls 80m².
- **Headbolt Lane Platforms:** Complete area identified for clearance from the track to Network Rail boundary.
- **Substation Headbolt Lane:** Complete area to be removed of trees.
- **Car Park area including passive provision for compound lay down:** Complete area of trees to be removed and leaving an 8m buffer either side of Kirkby Brook.
- **Access point adjacent to bridge 57 at kirkby Station:** 100m² removal of vegetation.
- **Kirkby Station Northern Platform Extents:** Vegetation removal of the Northern Rail boundary to the east of the Station and localised removal for caballing works.

1.3 Tree Preservation Orders

Tree Preservation Orders (TPO's) are covered by Knowsley Council (knowsley.gov.uk). The interactive government map was accessed on the 11th October 2020 and 4th May 2021, where no TPO's were listed on Network Rail land.

2 Tree Survey Methodology

2.1 Collection of tree data

Table 2.1 lists the survey criteria applied during the tree survey. This involved collecting dimensional data and observational information. Dimensional data includes using a Diameter Class measuring tape for recording tree diameter, use of a Clinometer to determine tree height and use of a standard measuring tape to record the spread of the tree canopy. The survey related to trees with a stem diameter of 75 mm or more measured at 1.5 m above ground level. No internal investigation was carried out or tissue samples were taken from the surveyed trees.

Observational information includes noting features associated with the physiological and structural condition of trees, including the presence of crown die back, weak/split limbs, the presence of fungal fruiting bodies and features associated with past management, such as pruning wounds and cavities.

Trees are self-optimising, living organisms whose health and condition can change rapidly. Even trees recorded as healthy at the time of survey are at risk from unpredictable climatic and man-made events.

Due to the continuous tree and shrub cover along the railway embankment and in the absence of a topographic plan, it was not possible to map out individual trees. Tree groups were otherwise identified relative to their continuous character in terms of tree species and maturity of specimens.

2.2 Tree Retention Value

Trees were assessed in respect of their quality and benefits within the local geographic context and relative to amenity and wildlife value. This was achieved by categorising trees according to their retention value linked with arboricultural, landscape, cultural and conservation qualities. A summary description of the value applied to trees is summarised below, with full assessment criteria included as Appendix B.

- **Category A:** Trees of high arboricultural quality with an estimated remaining life expectancy of at least 40 years. Category A trees should be retained within a proposal site.
- **Category B:** Trees of moderate arboricultural quality with an estimated remaining life expectancy of at least 20 years, or make little visual contribution to the wider landscape, but are integral with a tree group so as to increase collective tree value. Such trees should be retained, where possible.

- **Category C:** Trees of low arboricultural quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm. They generally do not place a constraint on a proposal site, unless they have conservation value.
- **Category U:** Trees 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. Selection for removal however is relative to the position of the tree within the geographic context, i.e. there would be no requirement to remove the tree if it does not pose a risk to the public.

2.3 Root Protection Area

The Root Protection Area (RPA) for individual trees was determined using BS5837:2012 calculation methods. The RPA's are represented on the Location of Trees (Appendix A) and Appendix C (Schedule of Existing Trees). The RPA in this report is drawn from the center of the main stem of individual trees. The RPA for tree groups relates to measuring the largest stems towards their respective margins, which is then merged to encompass intersecting RPA's.

Where a tree canopy spread extends beyond its calculated RPA value, the RPA has been increased accordingly to ensure uniform constraints are presented above and below ground.

Table 2.1: Tree Survey Criteria

Tree ref	Corresponding number on plan – T=Tree/H=Hedge/G=Group
Species	Common name followed by botanical name shown in <i>italics</i>
Height	A measure of the height of the tree using a clinometer.
Stem Diameter at breast height (DBH)	Diameter measured in centimetres at approximately 1.5 m above ground level, depending on topography and tree structure. A specified tape measure is used for this. (MS = Multi-stem tree with diameter measured at base/above root flare)
Crown spread	Taken as a minimum at the four cardinal points, to derive an accurate representation of the crown
Crown clearance	existing height above ground level of: 1) first significant branch and direction of growth (e.g. 2.4-N); 2) canopy, to inform on ground clearance, crown/stem ratio and shading;
Age	Young (Y) Semi-Mature (SM) Early mature (EM) Mature (M) Over Mature (OM) Classification is given in relation to the life expectancy of the specific species.
Structural Condition	Good = No signs of defects or structural weakness Fair = Minor defects not causing structural weakness Poor = severe decay in the main stem or branches structurally weak
Physiological condition	G = Good F = Fair P = Poor D = Dead
General Observations	general observations, particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect), vitality relating to the size, coloration and density of leaf cover.
Life expectancy	estimated remaining contribution, in years (<10, 10+, 20+, 40+);
Retention Category	1=Arboricultural value 2=Landscape value 3=Cultural value 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 A: Trees of high quality with an estimated remaining life expectancy of at least 40 years B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years, or make little visual contribution to the wider landscape 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
Root Protection Area (RPA)	Calculation of the extent of roots growing out from the tree (BS5837:2012).

3 Arboricultural Impact Assessment

3.1 Schedule of Existing Trees

The location of trees are shown as Appendix A with the supporting tree data included as Appendix C. Twenty-three trees and seven tree groups were recorded in the survey area. The majority of individual trees are located within amenity grassland proposed for construction of Headbolt Lane Station. The most notable trees in this area are T1 – T4, which are planted mature poplar species *Populus* sp. All other trees in this area are self-seeded specimens and range from semi-mature to mature.

Tree groups are all associated with the embankment of Network Rail owned land. G1, G2, G3 and G4 include occasional mature common ash *Fraxinus excelsior* and pedunculate oak *Quercus robur*. Sycamore *Acer pseudoplatanus* remains a consistent frequent species and is often multi-stemmed to indicate past felling operations along Network Rail land. The tree groups also comprise of dense continuous hawthorn *Crataegus monogyna* scrub communities and young self-seeded trees.

Tree group G5 and G6 mostly include trees associated with adjacent land ownership such as residential properties. In these cases, the tree canopies extend onto Network Rail land. Group G7 refers to secondary tree growth with multi-stems due to past maintenance of railway embankment.

3.2 Tree Value

All individual trees and tree groups within the survey area are of moderate arboricultural value. This value is applied to the collective screening benefits of the trees within the context of an urban landscape.

3.3 Photographic Plates

Plate 1: poplar trees, T1 – T4 within amenity grassland



Plate 2: typical example of grouped trees (G3 & G4) on the railway embankment, although shrub communities largely dominate.



3.4 Impacts on Trees

Table 3.1 describes impacts on trees relative to the works. The most significant impacts on trees and tree groups are associated with construction of Headbolt Station and Car Park and the proposed new running line between Kirkby Station and Headbolt Station. These construction activities will result in partial removal of G1, G2, G3, G4, G5 and G6. However, other works relating to the Scheme, will include total loss of G1 for the Bridge 55 works.

Construction of Headbolt Station and Car Park will result in the removal of fourteen trees (T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14). Trees located on network rail land to the east of the proposed Headbolt Station will be retained.

Definitions of terms relating to impacts on trees includes:

- **Removal** refers to trees that cannot be realistically retained due to the land take required for the development.
- **Partial Removal** relates to tree groups for where a section of that tree group is to be removed to facilitate the works.
- **Encroachment** relates to trees that can be retained during the works, although risk of having their root system and canopy impacted, and will therefore require protection measures prior to the start of the enabling works.
- **Retained Trees** refers to trees that will not be impacted by the works, although may require protection of the RPA and tree canopy extents.

The extent of tree group loss in terms of hectares is shown as **Table 3.2**. There is currently an extent of 4.35ha. of tree groups throughout the survey extents. Total loss of the tree group extents within Network Rail land is calculated to be 1.62ha, leaving a remaining 2.73ha of tree cover.

The loss of trees mainly associates to sycamore as the dominant tree species throughout all tree groups. There will also be loss of approximately 20 mature common ash and 10 pedunculate oak trees associated with G2, G3 and G4. Hawthorn as a continuous dominant shrub makes up a large proportion of the hectareage of the tree groups.

Loss of trees and shrubs will be most significant in relation to the loss of the current screening benefits of the railway line, which is located on an embankment that is sighted at a higher elevation than the surrounding landscape. Additional impacts relate to reduction in the benefits of carbon absorption within an urban context and the loss of wildlife habitats (reduced biodiversity).

Table: 3.1: Description of Impacts on Trees.

Summary of Works	Impacts on Trees	Removal	Partial removal	Encroachment	Retained Trees
Headbolt Station to Kirkby Station: 6m strip of vegetation from either side of the railway cess & 1m strip along the Network Rail boundary fence, both sides of track. In certain areas trees will be retained on the railway embankment, which extends between 6-10m.	Tree loss most significant for the more established tree groups G1, G2, G3 and G4. These groups include some mature tree specimens in localised areas. Tree groups G5, G6 and G7 support dominant sycamore where the impact is less significant. Potential encroachment of G1, G2, G3 and G4.		G1, G2, G3, G4, G5, G6.	G1, G2, G3, G4, G5, G6.	Unknown
Bridge 56: 20m area of vegetation removal on the north side of the bridge to both wing walls, equating to 40m in total?	Loss of semi-mature sycamore trees and shrubs including sycamore, occasional common ash and pedunculate oak.	-	G3	-	-
Bridge 55: Complete de-veg of all 4 wing walls 80m ² .	Loss of semi-mature sycamore trees and hawthorn shrubs.	G1	G2, G3		
Headbolt Lane Platforms and Substation: Complete clearance from the track to Network Rail boundary. Car Park area including compound lay down: Complete removal, leaving 8m buffer either side of Kirkby Brook.	Loss of scattered trees located on network rail land and adjacent trees within amenity grassland. The most notable trees in terms of maturity and distinctiveness within the landscape include poplar trees T2, T3, T4.	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14			T15, G8
Kirkby Station to Fazakerley Sub Station: 3m strip of vegetation clearance for the Cable Route North side of the track.	No tree loss.				G7

Table: 3.2: Extent of Tree Group Loss.

Ref	Current Extent (ha) of tree group	Extent of Tree Removal within RLB
G1	0.18	0.18 for Bridge 55 works.
G2	0.9	0.2 removal of strip of vegetation at top of embankment.
G3	0.42	0.34 works at Bridge 55 and removal of vegetation at top of embankment.
G4	0.27	0.3 minimal removal / encroachment.
G5	0.32	0.3 removal of strip of vegetation at top of embankment.
G6	0.6	0.3 removal of strip of vegetation at top of embankment.
G7	1.3	No tree loss
G8	0.36	No tree loss
TOTALS	4.35	1.62

4 Conclusion and Recommendations

There is currently an extent of 4.35ha of tree groups throughout the survey extents, with total loss of tree group extents within Network Rail land calculated to be 1.62ha, leaving a remaining 2.73ha of tree cover.

The loss of tree cover is considered to be significant as the current screening and visual benefits of the continuous tree line will be removed. There will also be direct loss of wildlife habitats. The extent of loss will require compensation, involving planting of native tree specimens within the extents of Network Rail land and upon areas of alternative land for where this can be obtained for the long-term benefits of individual and grouped trees.

It is recommended that full consideration is given to the retention of individual trees and tree groups and that the RPA is protected by installation of Tree Protective Fencing. Individual poplar trees T1-T4 and notably large specimens where it is recommended that retention is given high priority.

Partial removal of tree groups has the potential to impact upon adjacent trees, both on the RPA (compaction) and above ground features such as damage to the tree stems and canopy branches. There is also a risk of windthrow, resulting from remaining exposed trees to be blown over from high winds. As such, areas of tree removal will need to be accurately marked out on the ground, with a focus to retain native species such as pedunculate oak and common ash. An appointed arboriculturist will need to be integral to the decision making of trees to retain relative to their arboricultural value and longevity in terms of health.

In respect of common ash, pre-inspections will be required for ash dieback *Hymenoscyphus Fraxinus*. Where evidence of ash dieback is identified the Government's Tree Health Resilience Strategy will need to be adhered to. (www.gov.uk/government/publications/ash-tree-research-strategy-2019). This guidance states that trees that are not effected by ash dieback should be retained. Regeneration of unaffected trees should also be encouraged.

With regards to third party land, it is understood that trees associated with residential properties will remain untouched. Consideration will therefore be required as to how these trees will be protected during the works. i.e. where to place Tree Protective Fencing in the context of the schemes working extents.

To reflect proactive action towards compensation of tree loss, it is recommended that a landscape plan is created in collaboration with the arboriculturist and ecologist. Once the design has been formalised and this AIA updated, an Arboricultural Method Statement (AMS) to specify the methods for tree removal, tree works and tree protection will be required. The AMS will need to be prepared in accordance with BS 5837:2012 and *Tree Work – Recommendations* (BS 3998:2010). The AMS will can be produced in accordance with best effort to retained tree cover within the scheme extents.

5 References

British Standards Institute, 2012. British Standard 5837: 2012 Trees in relation to design, demolition and construction – Recommendations. London: BSI Ltd.

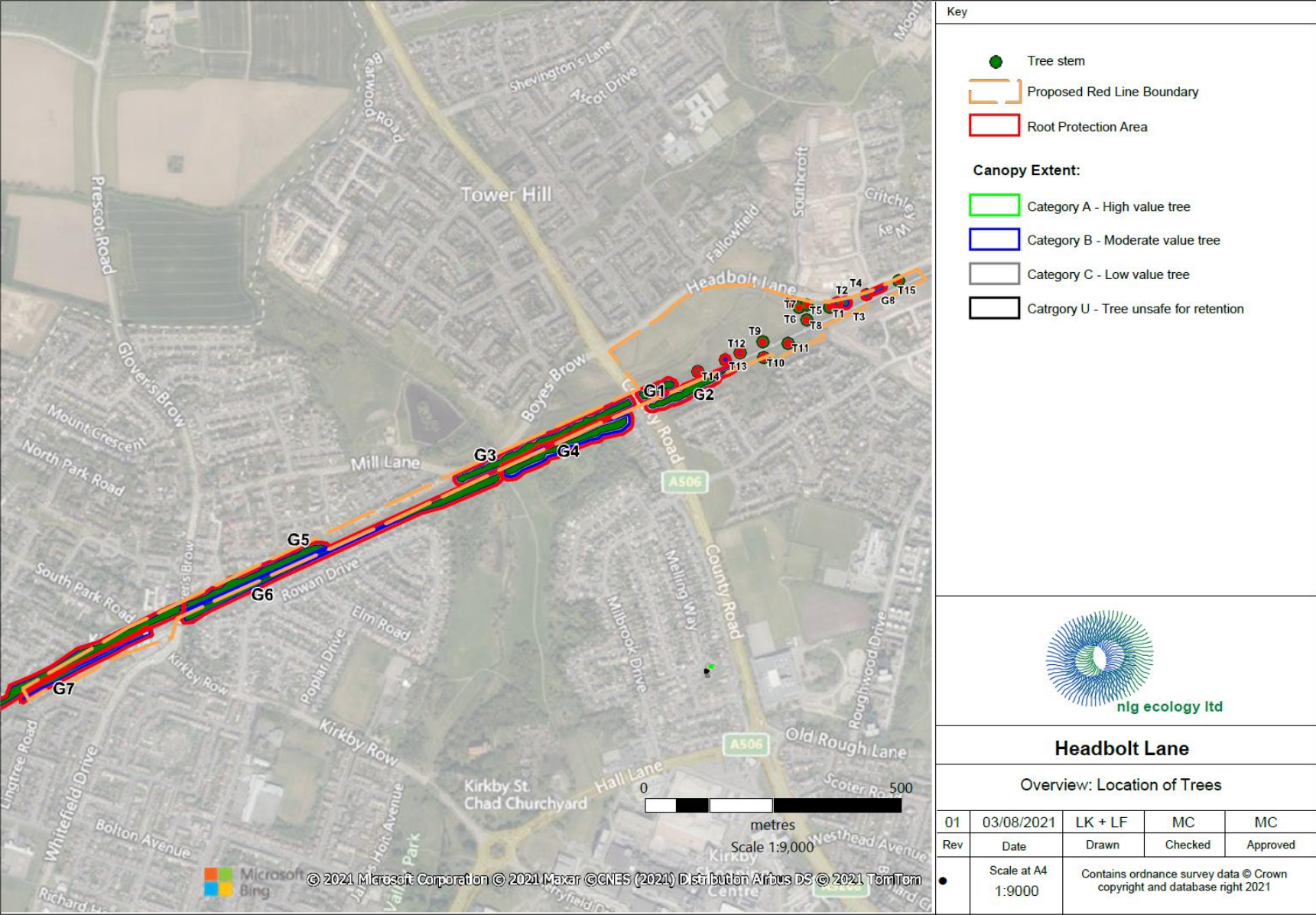
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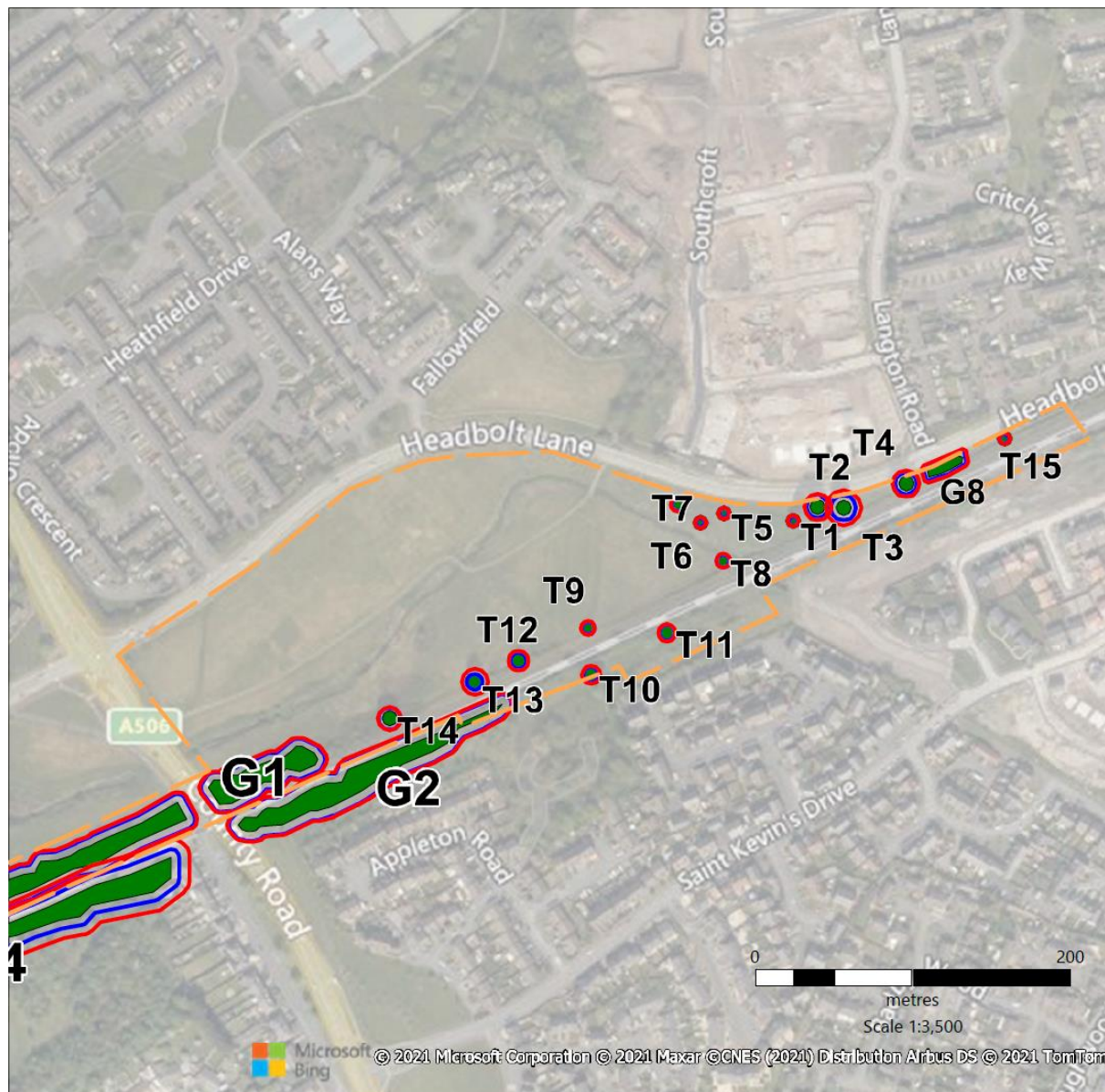
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Mattheck, C., 1994. The Body Language of Trees, Research for Amenity Trees No 4. London: TSO.

Appendices

Appendix A: Tree Survey Plans.





Key

- Tree stem
- Proposed Red Line Boundary
- Root Protection Area

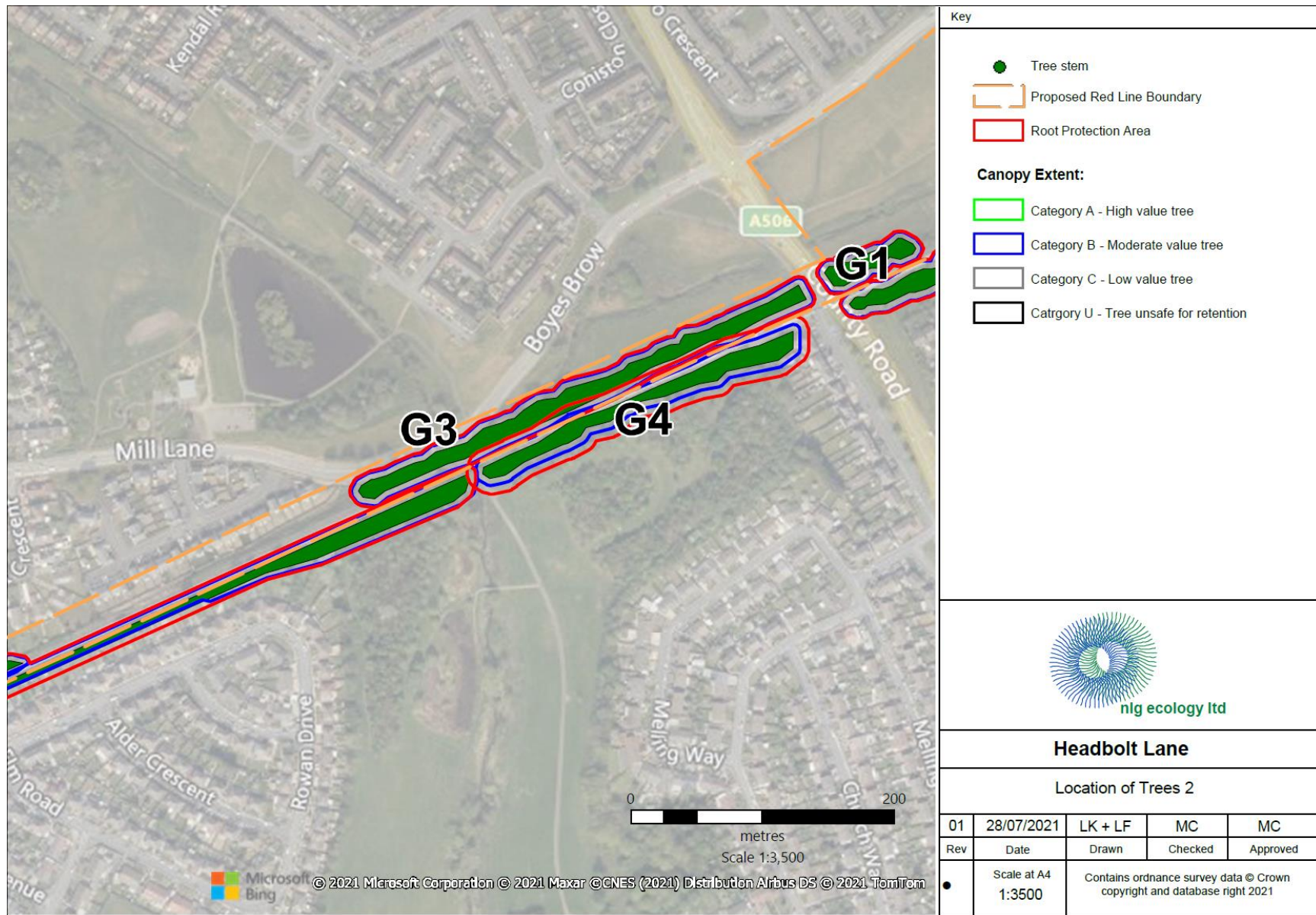
Canopy Extent:

- Category A - High value tree
- Category B - Moderate value tree
- Category C - Low value tree
- Category U - Tree unsafe for retention

Headbolt Lane

Location of Trees 1

01	03/08/2021	LK + LF	MC	MC
Rev	Date	Drawn	Checked	Approved
•	Scale at A4 1:3500	Contains ordnance survey data © Crown copyright and database right 2021		





Appendix B: Cascade Chart for Tree Quality Assessment (British Standards Institute, 2012)

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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			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

Appendix C: Schedule of Existing Trees

Schedule of Existing Trees														
Tree Ref	Species	Height (m)	DBH (mm)	Branch Spread (N,E,S,W)				Crown Height (m)	Age Class	Struct Cond.	Physiol Cond.	General Observations	Category	RPA Radius Circle
T1	Poplar species <i>Populus</i> sp.	17	290	3	3	3	3	3	SM	F	F	Small tree with upright leading stem, balanced canopy spread. Even distribution of leaves with no discoloration.	B1	3.5
T2	Poplar species <i>Populus</i> sp.	21	710	7	7	7	7	2	M	G	G	Upright leading stem, wide-spreading balanced canopy spread. Evidence of an old occluded pruning would on main stem, approximately 3 m above ground level. Small attached branches (c. 30 mm) within canopy extent.	B1	8.5
T3	Poplar species <i>Populus</i> sp.	23	930	8	7	5	7	2.5	M	G	G	Upright leading stem, balanced canopy spread. Even distribution of leaves with no discoloration.	B1	11.2
T4	Poplar species <i>Populus</i> sp.	22	710	7	7	7	7	2	M	G	G	Upright leading stem, balanced canopy spread. Even distribution of leaves with no discoloration.	B1	8.5
T5	Silver birch <i>Betula pendula</i>	6	140	3	3	3	3	2.5	SM	G	G	Self-seeded single tree located in a field, upright leading stem and balanced canopy spread.	B2	1.7
T6	Common ash <i>Fraxinus excelsior</i>	7	180(a)	3	3	3	3	2	SM	F	F	Small multi-stemmed tree, four co-dominant leading stems. Balanced canopy spread.	B2	2.2

Schedule of Existing Trees														
Tree Ref	Species	Height (m)	DBH (mm)	Branch Spread (N,E,S,W)				Crown Height (m)	Age Class	Struct Cond.	Physiol Cond.	General Observations	Category	RPA Radius Circle
T7	Common ash <i>Fraxinus excelsior</i>	5	200(a)	4	4	4	4	1	SM	F	F	Small multi-stemmed tree, four co-dominant leading stems, likely to have been coppiced in the past with co-dominant stems reflecting re-growth. Balanced canopy spread.	B2	2.4
T8	Pedunculate oak <i>Quercu robur.</i>	5	150	4	4	4	4	0.5	SM	G	G	Small compact tree with a wide canopy extent for its height. Even distribution of leaves, no discoloration.	B1	1.8
T9	Common ash <i>Fraxinus excelsior</i>	10	260	4	4	4	4	2	M	G	G	Tree located on directly next to, although outside of the Network Rail fence boundary. The tree has two co-dominant leading stems and a balanced crown.	B1	3.1
T10 28m / 57ch	Pedunculate oak <i>Quercu robur.</i>	9	480	5	5	5	5	2.5	M	G	G	Tree located within Network Rail land. A small growing tree with a sizable girth, wide-spreading and compact branch and leaf growth.	B1	5.8
T11 28m / 59ch	Sycamore <i>Acer psuedoplatanus</i>	9	330	5	5	5	5	0.5	SM	G	G	Self-seeded specimen located within Network Rail land. Upright leading stem and balanced crown.	B1	4.0
T12 28m / 61ch	Pedunculate oak <i>Quercus robur.</i>	15	530	5	5	5	5	3	M	G	G	Tree with upright leading stem and balanced crown. Abundant branching and even distribution of leaf cover.	B1	6.4
T13 28m / 62ch	Poplar species <i>Populus</i> sp.	17	690	5	5	5	5	0	M	G	G	Tall specimen located outside Network Rail land. The tree has an upright	B1	8.3

Schedule of Existing Trees														
Tree Ref	Species	Height (m)	DBH (mm)	Branch Spread (N,E,S,W)				Crown Height (m)	Age Class	Struct Cond.	Physiol Cond.	General Observations	Category	RPA Radius Circle
												leading stem and abundant even branching throughout.		
T14 28m / 65ch	Elm species <i>Ulmus</i> sp.	16	610	7	7	7	7	0.5	M	G	G	Mature wide reading specimen outside of the Network Rail boundary fence. The tree has dense branching and two co-dominant leading stems. There are minor (30-40mm) branches attached to the main canopy.	B1	7.3
T15	Ornamental beech <i>Fagus</i> sp.		230	3	3	3	3	2	EM	G	G	Upright tree with balanced crown, located outside Network Rail land. Even distribution of leaf cover and good color and leaf vitality.	B1	2.8
G1 28m/ 69ch to 28m/ 71ch	Common ash <i>Fraxinus excelsior</i> Sycamore <i>Acer psuedoplatanus</i> Goat willow <i>Salix caprea</i> Pedunculate oak <i>Quercus robur</i> Hawthorn <i>Crateagus monogyna</i>	10-16	460(a)	5	-	5	-	0	SM-M	G	G	Small tree group located on a steep railway embankment, within the Network Rail fence boundary. The dominant species include common ash and sycamore, with goat willow present at the toe of the slope and there is abundant hawthorn as the main shrub layer species. Minor decay of small (30mm) canopy branches, overall tree group densely arranged with no obvious major physiological defects.	B2	5.5
G2 28m / 61ch	Pedunculate oak <i>Quercu robur</i> Sycamore	10-	500(a)	6	-	6	-	0	SM-M	G	G	Only a small number of trees, including pedunculate oak and sycamore are	B2	6.0

Schedule of Existing Trees														
Tree Ref	Species	Height (m)	DBH (mm)	Branch Spread (N,E,S,W)				Crown Height (m)	Age Class	Struct Cond.	Physiol Cond.	General Observations	Category	RPA Radius Circle
to 28m/ 71ch	<i>Acer psuedoplatanus</i>											located within Network Rail land, upon the railway embankment. The majority of the specimens are located at 28m / 71ch.and 28m/69ch. Interspersed between the trees is continuous scrub. There are also trees along outer perimeter of the Network Rail fence, which links to a tree lined golf course.		
G3 28m/ 74ch to 29m/ 6ch	Pedunculate oak <i>Quercu robur</i> Sycamore <i>Acer psuedoplatanus</i> Common ash <i>Fraxinus excelsior</i> Crack willow <i>Salix fragilis</i>	9-16	540(a)	-	-	6	-	0	SM-M	G	G	Tree group located on Network Rail embankment slope, trees mostly mature and regularly spaced. Eight common ash, ten pedunculate oak, three willow trees and two sycamore were counted, which included the more mature specimens. There is a break in the group where Simonswood Brook flows under the railway, where there is also a bridge. A number of sycamore specimens are ivy clad.	B1/2	6.5
G4 28m/ 74ch to 29m/ 6ch	Pedunculate oak <i>Quercu robur</i> Sycamore <i>Acer psuedoplatanus</i> Common ash <i>Fraxinus excelsior</i> Goat willow <i>Salix caprea</i> Cherry <i>Prunus</i> sp. Hawthorn <i>Crateagus monogyna</i>	9-16	540(a)	6	-	6	-	0	SM-M	G	G	Ten common ash, six pedunculate oak, three willow trees, three sycamore and one cherry were counted, which included the more mature specimens. All trees did not display any signs of obvious decay. The trees are also interspersed with hawthorn shrubs.	B1/2	6.5

Schedule of Existing Trees														
Tree Ref	Species	Height (m)	DBH (mm)	Branch Spread (N,E,S,W)				Crown Height (m)	Age Class	Struct Cond.	Physiol Cond.	General Observations	Category	RPA Radius Circle
G5	Sycamore <i>Acer psuedoplatanus</i>	11	450(a)	-	-	6	-	0	Y-SM	G	G	A narrow railway section adjacent to the line and adjoining gardens of residential dwellings. The tree group comprises of the occasional sycamore, scattered amongst continuous scrub.	B2	5.4
G6	Leyland cypress <i>Cupresses x leylandii</i> Sycamore <i>Acer psuedoplatanus</i> Cherry <i>Prunus</i> sp. Hawthorn <i>Crateagus monogyna</i> .	9-17	450(a)	-	-	6	-	0	SM	G	G	Tree group comprises mostly of boundary trees to residential properties. There is hawthorn present along length of tree group. Due to the age of trees there has been no development of significant decay that would reflect physiological defects.	B2	5.4
G7	Sycamore <i>Acer psuedoplatanus</i> Willow <i>Salix</i> sp	7-14	375	4.5	4.5	4.5	4.5	0	Y-SM	G	G	Secondary tree growth with multi-stems due to past maintenance of railway embankment. Trees interspersed with shrubs and occasional trees associated with third party land, which are located in residential gardens.	B2	4.5
G8	Removed as outside boundary	4-9	320	4	4	4	4	0	Y-SM	G	G	Secondary tree growth with multi-stems due to past maintenance of railway embankment. Trees interspersed with shrubs and occasional trees associated with third party land, which are located in residential gardens.	B2	3.8

(e) indicates where the dimensional data of a tree has been estimated. (a) indicate that an average measurement is taken of a given tree group. This is due to site accessibility and health and safety implications on the railway.