

HEADBOLT LANE STATION, LIVERPOOL.

Tree Survey Report

Prepared for

Buckingham Group Contracting

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Appendices

Appendix A: Figures (issued separately to the report)

- Figure 1 Location of Trees

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

Appendix C: Schedule of Existing Trees

Document History

This document has been issued and amended as follows:

Version	Date	Description	Created By	Verified By	Approved By
P01	12 th October 2020	Draft for client	Miranda Cowan (Tech Arb Ass)	Neil Lee – Gallon Principle Ecologist	Neil Lee – Gallon Principle Ecologist
P02	27 th October 2020	Section 2,2 amended	Liam Fullard (Ecologist) and Miranda Cowan (Tech Arb Ass)	Miranda Cowan (Tech Arb Ass)	

Notice:

This document and its contents have been prepared and are intended solely for Buckingham Group Contracting, in relation to a rail car park and new running railway line at Headbolt Lane Kirby Station, Liverpool.

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1 Introduction

1.1 Background

This Tree Survey Report has been prepared on behalf of Buckingham Group 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 proposed extents of the works are shown as Figure 1.1.

The Tree Survey was undertaken on the 5th October 2020 by Miranda Cowan Ecology Ltd (Technician Arboricultural Association) and in accordance with '*Tree in relation to design, demolition and construction – Recommendations*', BS 5837:2012'.

A topographic plan was provided for the eastern extent of the proposed works, which forms the location of the proposed new railway station. No plan was available for the residential area directly east of Kirkby Station, which relates to the proposed new running railway line.

Figure 1.1: *Proposed Extent of Works*



The requirements of the Tree Survey was to:

- Record the location of trees and gather dimensional information, i.e. tree height and girth size;
- To make notes of tree condition and assign the arboricultural value of trees relative to arboriculture, landscape and cultural factors;
- Calculate the Root Protection Area (RPA) of individual trees to inform the conceptual design; and,
- Make recommendations for tree retention and identify trees with hazardous features for remediation.

2 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.

2.2 Tree Preservation Orders and Conservation Areas

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 27th October 2020. There are no TPO's shown to be present on the railway line or within the area of the proposed new railway station. There is one small TPO area to the north of the existing Kirkby railway station, which will not be impacted by the scheme (Figure 2.1). Other TPO areas are present within the wider landscape and do not have direct ecological connections to the scheme.

A Conservation Area is present to the north of the existing Kirkby railway station and is not located within the railway line boundary (Figure 2.1). This conservation area will not be impacted upon by the scheme.

Figure 2.1: TPO and Conservation Areas in proximity to the Scheme (knowsley.gov.uk accessed 27/20/2020)



2.3 Tree Retention Value

Based on information collected during the survey, 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.

2.4 Root Protection Area

The Root Protection Area (RPA) for individual trees was determined using BS5837:2012 calculation methods. The RPA's are represented on Figure 1 (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 Schedule of Existing Trees

3.1 Schedule of Existing Trees

The location of trees is shown as Figure 1 (Appendix A) with the supporting tree data included as Appendix C. fourteen trees and six 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 area 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 to G4 include mature common ash *Fraxinus excelsior* and pedunculate oak *Quercus robur* as the most notable and mature specimens. Sycamore *Acer pseudoplatanus* is also a frequent species, although is often multi-stemmed to indicate past felling operations along Network Rail land. The tree groups also comprise of dense hawthorn *Crataegus monogyna* scrub communities and young self-seeded trees.

Tree group G2, G5 and G5 mostly include trees associated with adjacent land ownership such as residential properties. In these cases, the tree canopies extend onto Network Rail land.

All individual trees and tree groups within the survey area are of moderate arboricultural value.

3.2 Photographic Plates

Plate 1: poplar trees within amenity grassland



Plate 2: typical example of grouped trees on the railway embankment, although shrub communities largely dominate.

