

Clayton Vale

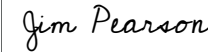
Landscape and Ecological Management Plan

Network Rail

December 2022



Approval and Authorisation

	Name	Job Title	Signature
Prepared By:	Anna Barnes	Senior Landscape Architect	
Checked By:	Tom Hurlstone	Associate Director Landscape	
Approved By:	Tom Hurlstone	Associate Director Landscape	
Authorised By:	Jim Pearson	Environment Manager TRU Alliance	

Document Identity and Metadata Information

This information is a mandatory requirement.

Scope of Document:

- ☐ All of Northern Programmes
☐ Northern Programmes Enhancements
☐ Northern Hub
☐ North West Electrification
☒ Transpennine Route Upgrade
☐ Northern Powerhouse Rail

Document Category:

Report

Applicable Grip Stage(s):

ALL / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8

Briefing Required:

☐

Security Classification:

OFFICIAL

Document History

Version	Date	Modification	Originator
P01	16/09/2022	Draft Issue	AB
P02	27/09/2022	Second Issue	AB
P03	21/11/2022	Third Issue	AB
P04	01/12/2022	Fourth Issue	AB

Implementation

The latest version of this document shall supersede any previous versions.

Compliance

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1. INTRODUCTION

1.1. Background

1.1.1 The wider TRU Development aims to deliver faster more frequent and more reliable services between York and Manchester via Leeds and Huddersfield, and improve connections between key towns and cities across the north of England. The consented development is part of a wider Development of works to improve drainage of the railway line for an approximately 300 m stretch of the line adjacent to the northern boundary of Clayton Vale Country Park (CVCP), to the west of the Clayton Bridge level crossing in Manchester. This is required to alleviate a saturated track foundation problem and prevent the railway from flooding in this location. Part of these works are within the railway line itself and within Network Rail's (NR) land ownership. As such these works benefit from NR's permitted development rights under Part 8 of the Town and Country Planning (General Permitted Development) (England) Order 2015. However, part of the site is proposed to be within CVCP, which is in the ownership of Manchester City Council (MCC). Therefore, planning permission is sought for this element.

2. PURPOSE OF THIS DOCUMENT

2.1.1 This Landscape and Ecological Management Plan (LEMP) has been prepared to discharge planning condition 4 and 5 attached to the planning permission for the development (detailed below) and includes the following details:

- A plan of ecological mitigation details including areas of new plantings and details of any habitats created or enhanced;
- Implementation timetable and a programme for initial aftercare, long-term management and maintenance responsibilities for a period of five years post-completion; and
- Details of organisation(s) responsible for maintenance and monitoring.

2.1.2 It is the intention that this document is used by appointed contractors to undertake the work detailed herein.

3. THE DEVELOPMENT

3.1.1 The site is located west of Berry Brow to the north west of Droylsden. The nearest postcode for the site is M40 1GR. The site is located 80 m north of the River Medlock in the north east corner of Clayton Vale Country Park and the site's northern boundary is located adjacent to the Manchester Victoria and Huddersfield Railway Line. The site is centred on grid reference E388928, N399580.

3.1.2 The site is irregular in shape and covers an area of approximately 766 m² (0.08 hectares). The elevation of the site is approximately 61.5 m to 72 m AOD, sloping towards the south. The site predominantly comprises public open space which is vegetated and a public hardstanding footpath through the centre of the site orientated east to west. The north of the site is located within Network Rail owned land.

3.1.3 The site is surrounded by the following current land uses:

- North: Manchester Victoria and Huddersfield Railway Line (adjacent) beyond which are residential properties with gardens (30 m);
- East: Berry Brow (adjacent), electricity sub station (adjacent) and residential properties (20 m);
- South: Public open space in the form of Clayton Vale Country Park (adjacent) and the River Medlock (80 m); and

- West: Public open space in the form of Clayton Vale Nature Reserve (adjacent).

3.1.4 Network Rail is proposing to develop a parcel of land as part of the Works (hereafter referred to as the 'Development') and will include the creation of a new attenuation tank within the Network Rail boundary and a drain linking the attenuation tank with an existing watercourse within Clayton Vale Nature Reserve.

4. MANAGEMENT AIMS

4.1.1 The management aims set out below are intended to protect those landscape and ecological features of greatest ecological value once the Development is completed and operational.

- Aim 1: To Implement Avoidance and Mitigation Measures for Important Ecological Features;
- Aim 2: To Enhance the Ecological Value of the Site;
- Aim 3: Provide a Framework for Ongoing Monitoring and Management of the Site;
- Aim 4: To Monitor the Efficacy of the LEMP;
- Aim 5: Define Roles and Responsibilities for implementing the LEMP; and
- Aim 6: To Contribute to Biodiversity Net Gain where practicable to do so.

5. BASELINE CONDITIONS

5.1.1 The Development site and surrounding area were surveyed on 30th June 2021 and 10th November 2021 by a suitably qualified ecologist.

5.1.2 An Ecological Impact Assessment¹ (EcIA) was produced in February 2022. The EcIA included an ecological desk study, provided by Greater Manchester Ecology Unit (GMEU) and 'extended' UK Habitat Classification (UK Hab)² survey of the Site was undertaken to characterise habitats and assess for the potential presence of protected/notable sites, species and habitats. During this survey, a search for common non-native invasive plant species³ was also undertaken, in addition to a ground based Preliminary Roost Assessment (PRA) for roosting bats in relation to buildings and trees. Furthermore, any evidence of other protected species or groups encountered during the survey were recorded⁴.

5.1.3 Habitats were characterised using the UKHab system. A condition assessment of those habitats present on Site was undertaken using the Biodiversity Metric 3.0 – Technical Supplement⁵ and findings are presented in a separate Biodiversity Net Gain Assessment⁶.

5.2. Site Habitats

5.2.1 Habitats on Site (**Figure 1, Appendix A**) are comprised of:

¹ Clayton Vale Park: Ecological Assessment Report (February 2022). Network Rail

² UK Habitat Classification Working Group (2018). *UK Habitat Classification User Manual* at <https://ukhab.org/ukhab-documentation/>.

³ Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

⁴ Species listed under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended); Schedules 2 and 4 of The Conservation of Habitat & Species Regulations 2017 (as amended); species of Principal Importance listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; and species listed in the Greater Manchester Biodiversity Action Plan.

⁵ Panks et al., (2021) Biodiversity metric 3.0: Auditing and accounting for biodiversity – Technical Supplement, Natural England (JP029).

⁶ Clayton Vale Park: Biodiversity Net Gain Assessment (September 2022). Network Rail

- Developed land; sealed surface;
- Woodland;
- Rivers; and
- Grassland.

5.3. Badgers

5.3.1 GMEU returned three recent records of badger *Meles meles* from within 1 km of the Site. These records all related to a sighting in Clayton Vale LNR, approximately 900 m to the west of the Site in 2010 and 2012.

5.3.2 However, no evidence for the presence of badgers was found within the Site. No field signs (e.g. paths, footprints, latrines, foraging marks) or setts were observed. Woodland within the Site provides foraging opportunity for badgers, but sett creation is unlikely because of lack of cover (for example few areas of dense understorey) and high disturbance from dogs. Badgers are not considered to be a potential constraint for the development and are not considered further in this LEMP.

5.4. Bats

5.4.1 GMEU returned 34 recent records for bats from within 1 km of the Site. The closest record to the Site was of a 'pipistrelle sp.' roost in a house approximately 300 m to the north-west. No granted EPS licences were identified through desk study.

5.4.2 No evidence for the presence of bats was found during the survey (e.g. sightings of individuals, droppings or urine staining around roost features). The presence of a bat roost within the Site is considered unlikely as there are no buildings, structures or trees within the Site with potential roost features present. Trees on Site were considered young or semi-mature individuals. The trees on site were evaluated as a group rather than a detailed individual inspection, although inspection was given to those trees within the site boundary. However, as a precautionary measure, the woodland habitat is considered to offer low potential to support roosting bats.

5.4.3 The Site is considered to offer low potential for foraging and commuting bats for the wider local bat population.

5.5. Breeding birds

5.5.1 GMEU returned 20 recent records of notable bird species from within 1 km of the Site.

5.5.2 The following species were noted within the woodland area of the Site during the survey: long-tailed tit *Aegithalos caudatus*, robin *Erithacus rubecula*, great tit *Parus major*, magpie *Pica pica* and dunnoek *Prunella modularis*. One of these species, dunnoek, is notable as species of principal importance listed under Section 41 of the NERC Act 2006. The other species are common and widespread and are not currently of conservation concern. All may nest within the woodland, scattered trees and scrub of the Site.

5.6. Great crested newt

5.6.1 GMEU returned no records or granted EPS licences of great crested newt *Triturus cristatus* from within 1 km of the Site.

5.6.2 No ponds are located within the Site. There is one pond within 250m of the Site. The pond is

located 60m south the Site and found to have ‘below average’ suitability for great crested newts⁷. An eDNA survey of this pond was unable to be undertaken due to seasonal constraints.

5.6.3 All woodland, scrub, and unmown grassland habitat throughout the Site has potential to support great crested newts because it offers foraging and sheltering opportunity. A precautionary approach is to be undertaken in the absence of surveys on the pond, it is possible that great crested newts use the habitats on Site for foraging and/ or refuge.

5.7. Reptiles

5.7.1 GMEU returned no recent records for reptiles from within 1 km of the Site.

5.7.2 Site habitats are sub-optimal for reptiles because they lack a good mosaic of short and long sward vegetation mixed with open ground for basking and areas for shelter and refuge (for example log-piles). They are also highly disturbed, particularly by dogs. There is a low probability that common and widespread species (slow-worm *Anguis fragilis* and common lizard *Zootoca vivipara*) may be present in small numbers. Therefore, a precautionary approach will be adopted.

5.8. Riparian Mammals and White-clawed Crayfish

5.8.1 GMEU returned no records or granted EPS licences of riparian mammals (otter *Lutra lutra* and water vole *Arvicola amphibius*) or white-clawed crayfish *Austropotamobius pallipes* from within 1 km of the Site.

5.8.2 Habitat within the survey area is highly unlikely to support these riparian and aquatic species. This includes the watercourse, which is too short, modified and disturbed to support otters and/or water voles; and lacks the water quality, and structural diversity in substrate and bank characteristics to support white-clawed crayfish. There is a small possibility that the River Medlock, which flows adjacent to the southern boundary of the survey area, supports some or all of these species. In particular, there could be transient presence of otters. Nevertheless, the Development is highly unlikely to affect the River Medlock. Riparian mammals and white-clawed crayfish are not considered to be a potential ecological constraint for the development and are not considered further in this LEMP.

5.9. Invasive non-native plants

5.9.1 GMEU returned no recent records of invasive non-native plant species from within 1 km of the Site.

5.9.2 Three invasive non-native plant species were recorded within the Site. Japanese Knotweed was present in the woodland (**Appendix A, Figure 1, Target Notes 2-4**). Himalayan balsam was present in the woodland and occasionally around the margins of the grassland (**Appendix A, Figure 1, Target Notes 1, 5 and 6**). Curly waterweed *Lagarosiphon major* was present in the pond.

6. ECOLOGICAL MITIGATION AND AVOIDANCE MEASURES

6.1.1 To meet legal compliance and demonstrate good practice environmental measures with regard to nature conservation, the following standard pollution prevention guidelines will be implemented, to minimise impacts on retained habitats on Site and within the local area:

⁷ Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

- Refine construction compounds as far as possible to minimise temporary vegetation clearance;
- Temporary fencing to be used to clearly delineate retained habitat to be protected during the construction period;
- Careful siting and appropriate bunding of storage facilities for fuel and hazardous materials avoiding sensitive habitats;
- Delivery of oils and fuels to be supervised at all times to avoid risk of spillage;
- Dust build up and mud deposits should be avoided and stockpiled material to be covered or stored within a contained area to enable run-off to be treated;
- Use of drip trays when filling smaller containers from tanks or drums to avoid spillage entering the ground or drainage systems;
- Works to be undertaken during daylight hours or lighting to be controlled to ensure there is minimal light spill on habitats used by nocturnal species (e.g. foraging and commuting bats); and,
- The use of British Standards Best Practice Guidelines to reduce disturbance resulting from noise, surface run-off and vibration during construction works.

6.1. Protection and Retention of Habitats

6.1.2 The Development includes the retention of habitats where possible to minimise habitat loss. Retained habitat areas within the landscape proposals comprise:

- Woodland; and,
- Grassland.

6.2. Habitat Creation and Landscaping

6.2.1 The Development includes the creation of the following habitats to compensate for temporary and permanent losses arising from the Development and provide long term enhancement.

- Native Woodland mix;
- Native shrub planting; and
- Species Rich Neutral Grassland Mix (Germinal WFG4 Neutral Soils).

6.2.2 These will be planted in line with the objectives outlined in section 5.3 to maximise biodiversity benefit and are shown in the Landscape Soft Planting Plan WIE15642-174-ZZ-XX-DR-L-741000 (**Appendix B**). Native soft landscaping is proposed where possible to maintain wildlife corridors. Species have been selected to provide foraging resource (e.g. food source for birds, nectar source for invertebrates).

6.3. Protection and Mitigation for Protected Species

6.3.1 Good working practice methods for specific protected species below are set out within this LEMP:

- Bats;
- Birds (Breeding);
- Great crested newt; and
- Reptiles.

Bats

6.3.2 No evidence for the presence of bats was found during the survey. However, as a precautionary measure, the woodland habitat is considered to offer low potential to support roosting, foraging and commuting bats.

6.3.3 To ensure legal compliance, as part of the Natural England European Protected Species Mitigation (EPSM) licence all trees that will be affected by the development will be checked for the presence of potential roost features prior to the commencement of the relevant works. If potential roost features of moderate or high suitability for bats were to be discovered, then further surveys to determine the presence/likely absence of bats would be necessary. If potential roost features of low suitability for bats were to be discovered, then no further survey would be necessary (but 'soft-felling' of the tree would be required whereby the stem/limb with the potential roost feature is lowered to the ground and left in situ for at least 24 hours to allow any bats potentially present to escape under their own volition).

6.3.4 In the unlikely event that any night work is required directional lighting will be used to direct light away from surrounding vegetation in line with standard guidance⁸.

Birds

6.3.5 Vegetation and ground clearance works associated with the Development should be undertaken outside of the core bird nesting season, which runs from 1st March to 31st August inclusive. If this is not possible, then a check for active nests would need to be carried out no more than 24 hours prior to the clearance. If an active nest were to be found, then a 'no disturbance' exclusion zone would need to be established, and maintained, around the nest until it had been proven that it was no longer active. All checks must be completed in line with Network Rail's Breeding Bird and Nest Check Guidance found in **Appendix C**.

Great crested newt

6.3.6 Since the initial Site survey concluded that great crested newt may be present on Site, the Development will follow good working practice to avoid harm to great crested newt as below.

6.3.7 Immediately prior to works starting on Site, all suitable habitats on Site must be checked by an SQE for great crested newt presence. Work will not be permitted to start at the Site until hand searching has been completed.

6.3.8 Hand searching must include carefully checking within and underneath any potentially suitable refuges such as leaf piles, log piles, tree trunks, bush stems and within coppice stools.

6.3.9 Any piles of wood brash rubble on Site must be dismantled by hand and immediately removed from the working area with an SQE on hand to provide advice prior to the works. Where it is non-essential to remove potential refuges to undertake works, these must be left undisturbed. Should work be undertaken during winter, the Site must be cleared and made unsuitable for great crested newt in the preceding active period (typically March to October; weather permitting). No works can be undertaken during the hibernation period, without the Site being confirmed as having been made unsuitable for great crested newt by the SQE.

6.3.10 No licence is required.

⁸ Bat Conservation Trust (2018) Guidance Note 8 Bats and Artificial Lighting in the UK

Reptiles

6.3.11 Since the initial Site survey concluded that common reptiles may be present on Site, the Development will follow good working practice to avoid harm to reptiles. Precautionary working methods outlined for great crested newt above in paragraphs 6.3.7, 6.3.8 and 6.3.9, can also be applied to avoid any potential harmful impacts of the Development on reptiles.

6.3.12 No licence is required.

6.4. Management of Invasive Non-Native Plants

6.4.1 Invasive non-native species in the form of Japanese knotweed and Himalayan balsam have been identified within the Site.

6.4.2 An Invasive Species Management Plan (ISMP) primarily aimed at the treatment of Japanese Knotweed, although it will also facilitate removal of Himalayan Balsam, has been prepared, see **Appendix E**.

6.4.3 The Site's Environment Manager will be responsible for implementing and monitoring compliance with the ISMP through regular site meetings. Requirements for records will also be set out in the ISMP.

6.4.4 In addition, the following guidance will also be followed:

- Network Rail Invasive Species Guidance; and
- Network Rail Japanese Knotweed Guidance.

6.5. Protection and Mitigation for Retained Trees

6.5.1 All works will be undertaken in accordance with the recommendations set out in the Arboricultural Impact Assessment (AIA) associated with the Development (document ref. 151667-TSA-00-TRU-REP-W-LP-000054) which is contained as **Appendix D**.

6.5.2 A number of trees are to be retained in proximity to construction work, and therefore tree protection will be required to mitigate for potential above and below ground impacts and ensure these trees are retained successfully. The factors which most commonly result in below ground damage affecting oxygen diffusion (and therefore must be avoided) include:

- Compaction of the ground;
- Any change in soil levels (even if temporary), including ground excavation and soil stripping;
- Covering the root zone with impervious surfaces;
- Changes in the water table level or ground saturation; and
- Damage by the direct toxicity of phytotoxic materials, dust and runoff.

6.5.3 A Construction Exclusion Zone (CEZ) will be established around the retained trees, where no unauthorised access or construction operations (including Site compounds/facilities/storage of materials) are permitted to protect the ground from compaction or excavation and canopies from physical damage. This will be secured by means of temporary protective fencing with weatherproof signage.

6.5.4 Following the principles set out in section 6.2.2 of BS5837, these barriers should be "fit for the purpose of excluding construction activity and appropriate to the degree and proximity of the work taking place around the retained trees". Due to the limited space available on site, and the topography, in this instance it is proposed that the CEZ will be secured using a combination of an immovable

physical barrier along the top edge of the embankment with blue Netlon down the slope.

6.5.5 All weather notices should be secured to the barrier, examples of which are contained in Appendix F of the AIA (**Appendix D**).

6.5.6 The location of these barriers is shown on the Tree Retention and Protection Plan contained as Appendix B of the AIA (**Appendix D**).

6.5.7 The smallest plant possible should also be used in proximity to these retained trees to avoid damage to overhanging canopies. Access around the Site during any works will be carefully managed to protect the existing trees to be retained, requiring care 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 the trees.

6.5.8 Furthermore, vehicle, plant and pedestrian access will be required within the Root Protection Areas (RPAs) of some of the retained tree, and therefore to facilitate this whilst still providing adequate protection to the trees, temporary ground protection will be installed. This will follow the principles set out in section 6.2.3 of BS5837 and as summarised below:

- for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
- for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane; an
- for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

6.5.9 The location where ground protection will be required is shown in Appendix B of the AIA (**Appendix D**).

6.5.10 Other key precautions to be taken in proximity to the trees to be retained include:

- No materials shall be stored under the canopies of retained trees;
- No oil, diesel, bitumen, cement, solvents or other material likely to be injurious to a tree shall be stored any closer than 5m from the edge of the canopy of any trees;
- Fires shall not be lit near the canopy of any tree;
- Trees to be retained shall not be used as anchorages for any equipment or construction activity;
- Notice boards, telephone cables or other services shall not be attached to any part of a tree;
- Care shall be exercised when using cranes or similar equipment near the spread of the canopy of a tree; and
- Allowance shall be made for any slope of the ground so that damaging materials do not run towards trees.

7. SOFT LANDSCAPE MONITORING AND MANAGEMENT OBJECTIVES

7.1. General Management and Monitoring Objectives

7.1.1 Soft landscape management across the Site will be achieved through implementing the following general objectives in order to maximise the biodiversity value on site, habitat proposals can be found within the Landscape Soft Planting Plan provided in **Appendix B**:

- Apply good horticultural and ecological practice to all operations. Horticultural practice will include the use of peat-free composts, biodegradable mulches and soil conditioners. The use of pesticides (insecticides, fungicides and slug pellets), appropriate herbicides (non-residual (glyphosate-free)) and chemical fertilisers will be discouraged and any weed removal will be undertaken by hand;
- Promote healthy growth and establishment of all plants;
- Ensure consistent control of invasive weeds;
- Promote optimum display and flowering periods and stem colour;
- Ensure development of optimum plant form, shape, and planting density;
- Provide protection against pests and diseases;
- Promote wildlife value and species diversity where appropriate;
- Ensure planting is managed to maintain its function to provide landscape integration, nature and biodiversity value, connectivity for the benefit of wildlife, visual amenity and visual screening;
- Ensure the new landscape reflects the local landscape character and is in keeping the surrounding area;
- Ensure long term commitment to replacement of defective plant material;
- Review opportunities for introduction of new species or replacement of exhausted species where appropriate, in line with original design intentions;
- Keep planting areas neat and clean in appearance at all times, weed and litter free, and allow specified species to develop free from unnecessary competition;
- Manage planting to ensure clear forward visibility is maintained along transport and pedestrian access routes;
- Prevent damage to and protect as necessary existing paving, buildings, fitments, and utilities;
- Ensure all areas of hard surfacing are left in a clean condition, free from any soil, mud, leaves, cuttings and plant arisings;
- Ensure that the works themselves do not cause inconvenience or danger to users/visitors; and
- Where ground remediation is carried out to remove contaminated material, it will be replaced with clean material and the landscape will be reinstated where appropriate to match the pre-existing planting and vegetation to maintain the amenity of the area that is remediated.

7.2. Habitat Specific Management Objectives (Enhanced/ New Habitats)

7.2.1 Management objectives for proposed habitat areas to enhance the Site are set out below:

Trees

- Ensure that good horticultural practice is employed to encourage the long-term health and vitality of all trees;
- Trees to be managed for nature conservation and biodiversity value, connectivity for wildlife, landscape integration, visual amenity and visual screening value;
- Ensure well-balanced crowns and natural shape;
- Ensure horticultural techniques are employed which use a variety of mulches and organic fertilisers and which minimise the use of chemicals and peat wherever possible; and
- Maintain forward visibility alongside access routes.

Shrub Mix

- Ensure that good horticultural practice is employed to encourage long term health and vitality of all shrub areas;
- Thin / re-space plants in order that they have sufficient room to develop;
- Shrubs to be managed for nature conservation and biodiversity value, connectivity for wildlife, landscape integration and visual amenity value;
- Maintain a clean and safe environment;
- Ensure horticultural techniques are employed which use a variety of mulches and organic fertilisers and which minimise the use of chemicals and peat wherever possible; and
- Maintain forward visibility alongside access routes.

Species Rich Neutral Grassland

- Create a structured grassland with grass tussocks creating a series of microclimates across the habitat, thus encouraging a diversity of floral and faunal species;
- Grassland to be managed for nature conservation and biodiversity value, connectivity for wildlife, landscape integration and visual amenity value;
- Allow the meadow sward to meet and link up the native shrub and tree planting and enhance the wildlife corridor function of the hedgerows; and
- Maintain forward visibility alongside access routes.

8. SOFT LANDSCAPE MANAGEMENT SPECIFICATION

8.1.1 Full detailed Landscape Soft Planting Plan indicating full planting specification, including layout, species, number, density and size of trees, shrubs and seed mix and sowing rates, including extensive use of native species are provided in **Appendix B**. This includes any areas of grass seeding.

8.1.2 Detailed maintenance and management specifications to maintain the ecological value of those retained and newly created habitats to be implemented as part of the Development over an initial five year period are provided below.

8.1. Proposed Shrubs

8.2.1 General management specifications for the areas of proposed shrubs are detailed in **Table 1** below.

Table 1: General Management Specifications for Native Shrubs

Specification	Frequency and Timings
Mowing to suppress seedling shrubs, so maintaining the balance with open areas.	Annually during years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season.
Shrub planting areas to be kept in weed free condition during initial establishment period by means of hand weeding and use of non-residual herbicide (glyphosate-free), as necessary.	During years 1 to 5 undertake biannual control of general weed growth during April/ May and July.
Ensure no encroachment onto access routes. Cut back dead, dying, disease and broken branches. Inspect every year for H&S reasons. Prune to maintain sight lines if required and remove arisings.	Annually during years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season.
The interface between shrub and other habitats is important. A diverse, long interface provides shelter and a variety of aspects, optimising microhabitat provision. Interfaces between open habitats and shrub can be maintained using grazing, mowing or flails.	During years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season.
Decaying wood is important for invertebrates and fungi and may be underrepresented. Standing dead wood can be created by ring barking. A proportion of retained logs or tightly stacked brash may be beneficial.	During years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season.
Shrub planting areas to be kept in weed free condition during initial establishment period by means of hand weeding and use of non-residual herbicide (glyphosate-free), as necessary.	During years 1 to 5 undertake biannual control of general weed growth during April/ May and July.
Remove unwanted invasive weeds from all new shrub areas where restricting natural growth and development of new planting by means of hand weeding and non-residual herbicide (glyphosate-free) application, as necessary.	During years 3 to 5 undertake control of invasive weed growth during May.
Report presence of invasive species: - Giant Hogweed; - Cotoneaster; - Floating Pennywort;	During years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season. Check undertaken during each scheduled maintenance visit. Report sightings of invasive pests

Specification	Frequency and Timings
- Himalayan Balsam; - Japanese Knotweed; - Robinia pseudoacacia; - Buddleia. or pests/diseases including Chalara Dieback of Ash and seek further specialist advice to prevent spread and allow effective management and/or eradication.	or diseases to overseeing authority e.g. FERA or DEFRA etc. as necessary.
Adjust and replace all planting canes and guards to allow healthy establishment of all new planting.	During years 1 to 5 during each scheduled maintenance visit. Inspection and management between October and February, to avoid nesting bird season.
Where plants have become sufficiently established remove planting canes, guards and guards and dispose of off-site at a suitable recycling facility.	Annually during years 3 to 5 during September/October. (All remaining canes and planting shelters to be removed in year 5.) Inspection and management between October and February, to avoid nesting bird season.
Identify new plants which have failed to establish and investigate cause of failure. Submit proposals to alleviate future planting failures.	Annually during years 1 to 5 during September/October. Inspection and management between October and February, to avoid nesting bird season.
Undertake replacement planting in accordance with original specifications (unless otherwise agreed). Note: Maintenance tasks for all new planting to be re-set to year 1, (incl. weed control, watering, staking etc.)	Annually during years 1 to 5 November to February. Inspection and management between October and February, to avoid nesting bird season.
Re-firm plants affected by wind-rock, frost heave or snow.	During each scheduled maintenance visit. Inspection and management between October and February, to avoid nesting bird season.
Record and report instances of damage by mammals (e.g. rabbits/deer) and submit proposals to alleviate.	During each scheduled maintenance visit. Inspection and management between October and February, to avoid nesting bird season.
Collect litter and foreign materials and dispose of off-site to a suitable recycling facility (where possible).	Monthly

8.2. Proposed Trees

8.3.1 General management specifications for the areas of proposed trees are detailed in **Table 2** below.

Table 2: General Management Specifications for Trees

Specification	Frequency and Timings
Minimum 750mm diameter area around all new trees to be kept in weed free condition during initial establishment period by means of hand weeding and use of non-residual herbicide (glyphosate-free), as necessary.	During years 1 to 5 undertake general weed control during April, June and September.
Adjust and replace all stakes, ties and tree guards to ensure healthy establishment of all new tree planting.	During years 1 to 5 during each scheduled maintenance visit.

Specification	Frequency and Timings
Where trees have become sufficiently established, remove tree stakes, guards and ties and dispose of off-site at a suitable recycling facility.	Check annually during years 3 to 5 during September/ October. (All remaining plant stakes and ties to be removed at year 5).
Undertake formative pruning to new tree planting to: - ensure adequate railway, access track and footpath clearances are maintained; ensure development of a single, strong leader shoot; - alleviate duplicating/crossing branches; - ensure balanced canopy development/natural form; - remove all sucker and epicormic growth as necessary; - tidy torn branch stubs; - undertake progressive crown lifting to achieve 1/3 clear stem to 2/3 canopy, up to a maximum clear stem of 3.0m height. Pruning works to be undertaken by an Arboricultural Association Approved Contractor in accordance with BS3998:2010 Tree work – recommendations.	Annually during years 1 to 5 following planting. Inspection and management between October and February, to avoid nesting bird season.
Record and report presence of ill-health, stress or pests/ diseases within new tree planting and seek further specialist advice to prevent spread and allow effective management and/or eradication	Check undertaken during each scheduled maintenance visit. Report siting of invasive pests or diseases to overseeing authority e.g. FERA or DEFRA etc. as necessary. Inspection and management between October and February, to avoid nesting bird season.
Identify new trees which have failed to establish and cause of failure. Submit proposals to alleviate future planting failures.	Annually during September/ October.
Undertake replacement tree planting in accordance with original specifications (unless otherwise agreed). Note: Maintenance tasks for all new planting to be re-set to year 1, (incl. weed control, watering, staking etc.)	Annually during years 1 to 5 November to February. Inspection and management between October and February, to avoid nesting bird season.
Report presence of invasive species: - Giant Hogweed; - Cotoneaster; - Floating Pennywort; - Himalayan Balsam; - Japanese Knotweed; <i>Robinia pseudoacacia</i>; - Buddleia. or pests/diseases including Chalara Dieback of Ash and seek further specialist advice to prevent spread and allow effective management and/or eradication.	During years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season. Check undertaken during each scheduled maintenance visit. Report sightings of invasive pests or diseases to overseeing authority e.g. FERA or DEFRA etc. as necessary.
Collect litter and foreign materials and dispose of off-site to a suitable recycling facility (where possible).	Monthly

8.3. Proposed Species Rich Neutral Grassland

8.4.1 General management specifications for the areas of proposed species rich grassland which are

detailed in **Table 3** below.

Table 3: General Management Specifications for Grassland

Specification	Frequency and Timings
Undertake seasonal cutting of grassland areas to a height of 75mm. Turn and dry the cut arisings over period of 3-5 days. Rake off arisings from sward and take to a suitable recycling facility.	Biannually in March/ April and August/ September
Cutting grass within 300mm of tree trunks to be undertaken by hand ensuring no mechanical damage occurs to tree trunks or guards.	Biannually in March/ April and August/ September
Report presence of invasive species: • Giant Hogweed; • Cotoneaster; • Floating Pennywort; • Himalayan Balsam; • Japanese Knotweed; • <i>Robinia pseudoacacia</i>; • Buddleia. or pests/diseases including Chalara Dieback of Ash and seek further specialist advice to prevent spread and allow effective management and/or eradication.	During years 1-5 as required. Inspection and management between October and February, to avoid nesting bird season. Check undertaken during each scheduled maintenance visit. Report sightings of invasive pests or diseases to overseeing authority e.g. FERA or DEFRA etc. as necessary.
Collect litter and foreign materials and dispose off-site to a suitable recycling facility (where possible).	Litter bins (where provided) – weekly General paths and access tracks – every two weeks. Remaining areas – within two weeks of reporting (e.g. fly-tipping away from access tracks etc.)

9. MONITORING THE EFFICIENCY OF THE LEMP

9.1.1 Given the extent and type of those habitats to be provided, no specific ecological monitoring is considered to be required in this instance.

9.1.2 Notwithstanding the above, general condition monitoring of the areas of soft landscaping to be provided should be undertaken and recorded to ensure that the aims and objectives set out within this LEMP are met. The general condition monitoring does not need to be undertaken by an ecologist, but by a competent person with sufficient authority and time on Site to influence activities that may affect biodiversity, as well as monitor the measures that have been put in place.

10. INITIAL AFTERCARE, LONG-TERM MANAGEMENT AND MAINTENANCE RESPONSIBILITIES

10.1.1 Roles and responsibilities for implementation of those management and maintenance prescriptions detailed within this LEMP for the initial period of five years post-completion are set out within **Table 4**.

Table 4: Roles and Responsibilities

Role	Responsibility (organisation)
Securing of funding to ensure long-term delivery of management	Network Rail
Implementation of management and maintenance prescriptions	Network Rail (sub-contracted to ecological consultant)
Monitoring and Reporting	Network Rail (sub-contracted to ecological consultant)

11. ANNUAL MAINTENANCE PROGRAMME

11.1.1 **Table 5** shows the annual maintenance activities.

Table 5: Annual Maintenance Activities

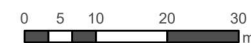
Activity	J	F	M	A	M	J	J	A	S	O	N	D
Proposed Tree Planting												
Annual Inspection												
Inspect for Invasive Species												
Specialist to treat/remove Invasive Species												
Inspect for Damages												
Weed Control												
Artificial Irrigation												
Inspection of Stakes/Ties												
Replacement of Stakes/Ties												
Formative Pruning												
Inspect for Plant Failure												
Replacement Planting												
Manual Grass Cutting (within 300mm of trunk)												
Arboricultural Works												
Proposed Shrub Planting												
Annual Inspection												

Activity	J	F	M	A	M	J	J	A	S	O	N	D
Inspect for Invasive Species												
Specialist to treat/remove Invasive Species												
Inspect for Damages												
Pruning												
Replacement Planting												
Waste Collection												
Weed Control												
Artificial Irrigation												
Inspection of Canes / Shelters												
Proposed Species Rich Neutral Grassland												
Annual Inspection												
Inspect for Invasive Species												
Specialist to treat/remove Invasive Species												
Inspect for Damages												
Meadow Grass Cutting												
Weed Control												
Artificial irrigation												

APPENDIX A – BASELINE CONDITIONS

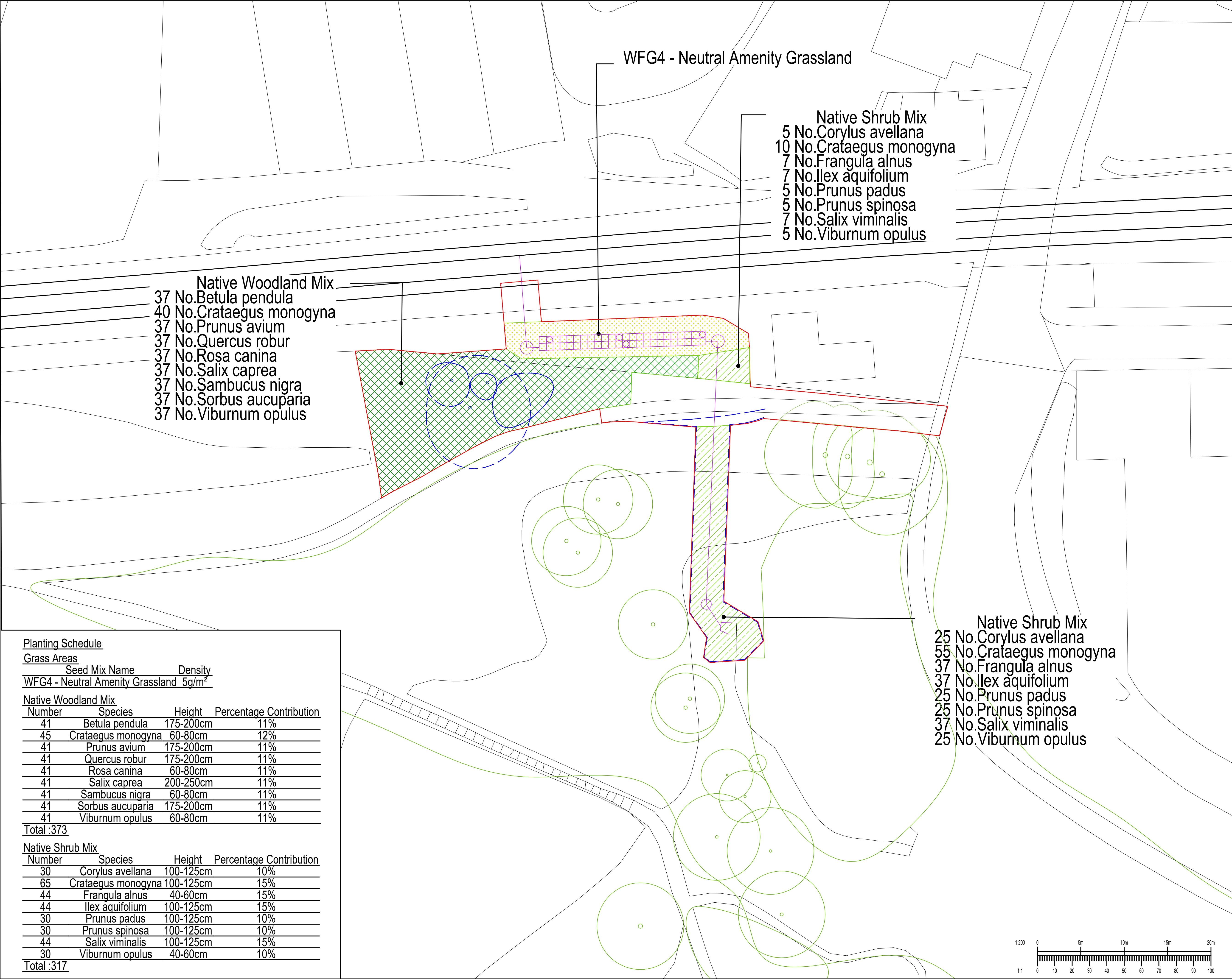


- Site Boundary
- Survey Area
- w1f7 - Other Lowland Mixed Deciduous Woodland *
- g3c - Other Neutral Grassland
- g3c5 - Arrhenatherum Neutral Grassland with Scattered Trees and Scattered Scrub
- r1a6 - Other Eutrophic Standing Waters
- r2b - Other Rivers and Streams
- u1b - Urban, Developed Land, Sealed Surface
- u1b6 - Other Urban Developed Land, Railway Ballast
- Scattered Tree
- Target Note
- * Habitat of Principal Importance



Project Details	WIE15642-174: Clayton Vale Park
Figure Title	Habitat Features Plan
Figure Ref	WIE15642-174-GIS-EC-1C
Date	February 2022
File Location	\\s-rf-wiel-projects\wie15642\174\gis\ec

APPENDIX B – LANDSCAPE SOFT PLANTING PLAN



KEY

- RED LINE BOUNDARY
- RETAINED TREES AND GROUPS
- TREES TO BE REMOVED
- PROPOSED NATIVE WOODLAND MIX
- PROPOSED NATIVE SHRUB MIX
- PROPOSED NEUTRAL GRASSLAND REINSTATED

NOTES

FOR TREES RETAINED, REMOVED AND PROTECTED PLANS REFER TO ARBORICULTURAL DRAWINGS:

- 15642-156-WIE-ZZ-XX-DR-V-77-007
- 15642-156-WIE-ZZ-XX-DR-V-77-008

FOR ARBORICULTURAL IMPACT ASSESSMENT REFER TO:

- 151667-TSA-00-TRU-REP-W-LP-000054

FOR LANDSCAPE & ECOLOGICAL MANAGEMENT PLAN REFER TO:

- WIE1562-174-R4-1-1-Clayton Vale LEMP

PS03	01.12.22	ISSUED FOR PLANNING	AB	TH
PS02	16.11.22	DRAFT FOR COMMENT	AB	TH
PS01	16.09.22	ISSUED FOR PLANNING	AB	TH
Status	Date	Description	By	CHK

Amendments

Project

CLAYTON VALE

Title

LANDSCAPE
SOFT PLANTING PLAN

Client

NETWORK RAIL

Merchants House Wapping Road Bristol BS1 4RW
t 0117 937 8200
mail@watermangroup.com www.watermangroup.com

Status

PLANNING

Designed By	AB	Director	TH	Waterman Ref	WIE15642
Drawn By	AB	Date	2022	Scales @ A1	1:200

Project	Originator	Volume	Level	Type	Role	Number	Revision
WIE15642-174-ZZ-XX-DR-L-741000	PS03						

Planting Schedule

Grass Areas

Seed Mix Name	Density
WFG4 - Neutral Amenity Grassland	5g/m ²

Native Woodland Mix

Number	Species	Height	Percentage Contribution
41	Betula pendula	175-200cm	11%
45	Crataegus monogyna	60-80cm	12%
41	Prunus avium	175-200cm	11%
41	Quercus robur	175-200cm	11%
41	Rosa canina	60-80cm	11%
41	Salix caprea	200-250cm	11%
41	Sambucus nigra	60-80cm	11%
41	Sorbus aucuparia	175-200cm	11%
41	Viburnum opulus	60-80cm	11%

Total :373

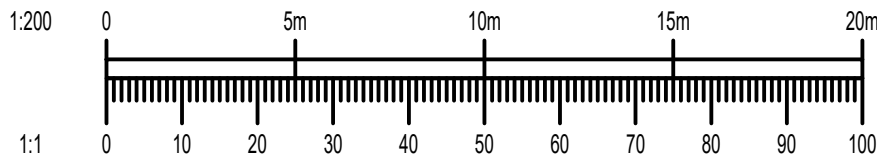
Native Shrub Mix

Number	Species	Height	Percentage Contribution
30	Corylus avellana	100-125cm	10%
65	Crataegus monogyna	100-125cm	15%
44	Frangula alnus	40-60cm	15%
44	Ilex aquifolium	100-125cm	15%
30	Prunus padus	100-125cm	10%
30	Prunus spinosa	100-125cm	10%
44	Salix viminalis	100-125cm	15%
30	Viburnum opulus	40-60cm	10%

Total :317

Native Shrub Mix

- 25 No.Corylus avellana
- 55 No.Crataegus monogyna
- 37 No.Frangula alnus
- 37 No.Ilex aquifolium
- 25 No.Prunus padus
- 25 No.Prunus spinosa
- 37 No.Salix viminalis
- 25 No.Viburnum opulus



APPENDIX C – NETWORK RAIL NESTING BIRD GUIDANCE

ENVIRONMENTAL GUIDANCE NOTE:

Nesting Birds & Vegetation Works

Introduction

It is important that Network Rail undertake vegetation works to ensure the safe and efficient running of the network. However, it is also important to be aware of the potential threat that vegetation works pose to nesting bird species. A number of Network Rail activities could affect nesting birds if carried out during the breeding season. These include scrub clearance, tree felling, bridge maintenance and even grass cutting. Birds generally nest between March and August, but it is important to always be aware of the risks, as there will be geographical variations in bird behaviour and they are protected if nesting at **ANY** time of the year.

Legislation

With regard to birds and their nests the key pieces of legislation in the UK are the **Wildlife and Countryside Act 1981 (as amended)** (the 1981 Act) and the **Countryside and Rights of Way Act 2000** (the 2000 Act). Under the 1981 Act, all wild birds, their eggs and their nests are protected. Additional protection is given to certain rare bird species, as listed on Schedule 1 of the 1981 Act (refer to Appendix 1). The police have prime responsibility for enforcing this legislation and more recently some police forces have employed Wildlife Liaison Officers specifically tasked with enforcing this legislation. Furthermore, the RSPB has an Investigations Department who will assist the police.

Offences

Section 1(1) of the Wildlife and Countryside Act 1981 states that a person is guilty of an offence if they intentionally:

- (a) kill, injure or take any wild bird;
- (b) take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- (c) take or destroy an egg of any wild bird.

Section 1(2) of the 1981 Act makes it an offence for a person to have in their possession or control:

- (a) any live or dead wild bird or any part of, or anything derived from, such wild bird; or
- (b) an egg of a wild bird or any part of such an egg.

Section 1(4) imposes a special penalty onto any person convicted of an offence under subsection (1) or (2) where the species involved is a bird included in Schedule 1.



Poor Vegetation Management
– may pose a safety risk



Well Managed Lineside
– reduces the risk

Under Section 1(5) a person is guilty of an offence and liable to a special penalty if they intentionally:

- (a) disturb any wild bird in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- (b) disturb dependent young of such a bird.

Furthermore, the Countryside and Rights of Way Act 2000 (Schedule 12) makes it an offence to “recklessly” disturb such a bird.

Exceptions

The law allows some defences and within Section 4(2) of the 1981 Act, a person shall not be guilty of an offence if he persuades the court that the act (e.g. destruction of a bird’s nest) was the incidental result of a lawful operation and could not reasonably have been avoided. Moreover, within Section 4(3) an authorised person shall not be guilty of an offence by reason of the killing or injuring of any wild bird, other than a bird included in Schedule 1, if he proves to the courts satisfaction that his action was necessary for the purpose of preserving public health or public or air safety.

Licences

The legislation does allow for a licence to be obtained for anything done for the purposes of preserving public health or public or air safety if it is done under and in accordance with the terms of a licence granted by the appropriate authority. Known as a ‘Section 16’ licence, it can be obtained from: the Department for Environment, Food and Rural Affairs (Defra) for England only; the National Assembly for Wales Agriculture Department (NAWAD) for Wales; and the Scottish Executive Environment and Rural Affairs Department (SEERAD) in Scotland and a licence must be applied for at least 20 working days before operations. A general licence (refer to Appendix 2) may be obtained from the Defra website for species of birds listed in Schedule 2 Part II, but is only valid in England.

Vegetation Works Guidance

There is no reference in the Wildlife and Countryside Act 1981 to specific dates when vegetation work cannot be carried out. This is intentional as birds may nest at different times depending on variables such as geographic location and the weather. NOTE: The only dates quoted in the 1981 Act refer to the closed season for certain bird species listed in Schedule 2 Part II of the Act – not to be confused with the nesting season.

Vegetation management activities must be planned to avoid committing an offence in the first place rather than relying on the available statutory defence as outlined in ‘Exceptions’ and ‘Licences.’ It must be recognised that vegetation operations required as a result of poor planning might not be acceptable to the courts as falling within the statutory defence.

Essential Safety Work

Where there are nesting birds it is not essential to obtain a licence for works required for the purposes of preserving public health or public or air safety. However, if a licence is not obtained prior to the removal of vegetation, and a company’s actions are challenged, then the actions have to be defended in court by that company. But, if a licence is obtained from Defra prior to any vegetation works in the nesting season, then the company carrying out the vegetation works in accordance with the terms of the licence cannot be prosecuted. However, there can still be implications in terms of reputation.

There are very few situations where preserving public safety will mean that works might go ahead without a licence, but these may include: signal sighting and where a tree is in imminent danger of falling and causing an accident.

Planning Vegetation Works

To reduce the risk of prosecution, where at all possible vegetation work should be carried out in the late autumn/winter or a survey of the area carried out to assess the likelihood of nesting birds being present. This survey would need to be carried out by a competent person and identify areas where birds may be nesting – this information can be used to populate a licence application. Immediately prior to operations, work sites should be checked for presence of nesting birds to enable work to be delayed or exclusion zones to be set up. Essential safety work should be carried out in accordance with the advice given above.

Vegetation operations include not only tree felling but also any tree surgery, scrub clearance and any activities impacting on vegetation, such as spoil dumping. It must be remembered that birds nest in trees, shrubs, scrub and on the ground. They can also nest in bridges and buildings, and along watercourses.

Update the Network Rail Asset Register by sending any new records of protected bird species on Network Rail land to the Region Asset Information Manager and the Region Environment Manager.

Contractual Issues

All Network Rail contracts specify that contractors should comply with legislation. Contractors should therefore arrange to carry out vegetation works with this in mind and any work specification should include measures to avoid any contravention of legislation. Decisions must be made concerning the timing of the operations, whether they could be delayed, whether work may damage nests (or otherwise break the law) and whether it is appropriate to apply for a licence.

Licences, advice and further information can be applied for from:

England

Wildlife Administration Unit
Defra
Burghill Road
Westbury-on-Trym
BRISTOL
BS10 6NJ

www.defra.gov.uk
08459 33 55 77

Wales

National Assembly for Wales
Agriculture Department
Food Farming Development Division
Yr Hen Ysgol Gymrag
Ffordd Alexandra
ABERYSTWYTH
Ceredigion
SY23 1LD

www.wales.gov.uk
02920 825 111

Scotland

Environment and Rural Affairs Department (ERAD)
PEP2 Division
Branch 2 – Agricultural Pollution, Pesticides and
Pest Control
Pentland House
47 Robbs Loan
EDINBURGH
EH14 1TY

www.scotland.gov.uk
0131 556 8400

If nesting birds may be affected by any proposed work:

- comply with the procedures established in Environment Management System Procedure Template: **Network Rail EMS Part 2 Protected Species** (RT/EMS/(REGION)/PRC/09).
- you may also need to consult English Nature, Scottish Natural Heritage or the Countryside Council for Wales if you are working near species protected in Schedule 1.
- read the **Network Rail Biodiversity Action Plan** species guidance sheet 7, 'Birds.'

Before work starts on a site where birds are present or may be present, brief all site personnel to ensure they are aware of any special working restrictions (such as areas to fence off and protect) and the appropriate procedures to follow.

Further Information

The RSPB provides a guidance note "Wild Birds and the Law - A Plain Guide to Bird Protection Today," a copy of which is held by the Head of Environment or is available at www.rspb.org.uk

This worksheet is intended as a basic general guide for working on Network Rail land and should not be used as a substitute for professional, ecological or legal advice where necessary

APPENDIX I

Schedule I – List of Protected birds protected by special penalties at all times.

Avocet	Grebe, Slavonian	Sandpiper, Wood
Bee-eater	Greenshank	Scaup
Bittern	Gull, Little	Scoter, Common
Bittern. Little	Gull, Mediterranean	Scoter, Velvet
Bluethroat	Harriers (all species)	Serin
Brambling	Heron, Purple	Shorelank
Bunting, Cirl	Hobby	Shrike, Red-backed
Bunting, Lapland	Hoopoe	Spoonbill
Bunting, Snow	Kingfisher	Stilt, Black-winged
Buzzard, Honey	Kite, Red	Stint, Temminck's
Chough	Merlin	Stone-curlew
Corncrake	Oriole, Golden	Swan, Bewick's
Crake, Spotted	Osprey	Swan, Whooper
Crossbills (all species)	Owl, Barn	Tern, Black
Divers (all species)	Owl, Snowy	Tern, Little
Dotterel	Peregrine	Tern, Roseate
Duck, Long-tailed	Petrel, Leach's	Tit, Bearded
Eagle, Golden	Phalarope, Red-necked	Tit, Crested
Eagle, White-tailed	Plover, Kentish	Treecreeper, Short-toed
Falcon, Gyr	Plover, Little-ringed	Warbler, Cetti's
Fieldfare	Quail, Common	Warbler, Dartford
Firecrest	Redstart, Black	Warbler, Marsh
Garganey	Redwing	Warbler, Savi's
Godwit, Black-tailed	Rosefinch, Scarlet	Whimbrel
Goshawk	Ruff	Woodlark
Grebe, Black-necked	Sandpiper, Green	Wryneck
	Sandpiper, Purple	

DEFRA

Department for
Environment,
Food & Rural Affairs

WLF100088

WILDLIFE AND COUNTRYSIDE ACT 1981

LICENCE TO KILL OR TAKE CERTAIN BIRDS, INCLUDING THE TAKING, DAMAGING OR DESTRUCTION OF THEIR NESTS OR THE TAKING OR DESTRUCTION OF THEIR EGGS.

The Secretary of State for Environment, Food and Rural Affairs, in exercise of the powers conferred on him by Section 16(1)(i) and (5) of the Wildlife and Countryside Act 1981, after consultation with English Nature and being satisfied that as regards the purpose set out at paragraph 1 that there is no other satisfactory solution, hereby grants the following licence: -

PURPOSES

1. The purpose for which this licence is granted is preserving public health or public or air safety
2. Subject to the terms and conditions below, this licence permits any authorised person to kill, injure in the course of attempting to kill or take any of the wild birds listed in this paragraph, or to take, damage or destroy the nests or eggs of the said birds, for the purpose set out in paragraph 1 below. The wild birds are: -

Crow	<i>Corvus corone</i>
Collared Dove	<i>Streptopelia decaocto</i>
Great Black-backed Gull	<i>Larus marinus</i>
Lesser Black-backed Gull	<i>Larus fuscus</i>
Herring Gull	<i>Larus argentatus</i>
Jackdaw	<i>Corvus monedula</i>
Jay	<i>Garrulus glandarius</i>
Magpie	<i>Pica pica</i>
Feral Pigeon	<i>Columba livia</i>
Rook	<i>Corvus frugilegus</i>
House Sparrow	<i>Passer domesticus</i>
Starling	<i>Sturnus vulgaris</i>
Woodpigeon	<i>Columba palumbus</i>

TERMS AND CONDITIONS

3. This licence only applies to the killing, injuring in the course of attempting to kill in accordance with this licence, taking, damaging or destroying (as mentioned in paragraph 1 above) by means which are not prohibited by Section 5 of the Wildlife and Countryside Act 1981, or the use of a cage trap or net, with the minimum of distress to the birds.

4. Every cage trap, used under the authority of this licence, shall be inspected by an authorised person on a daily basis when the cage trap is in use except where this is not possible because of severe weather conditions e.g. as a result of heavy snowfall. In such cases, every effort must be made to inspect the cage trap as soon as possible. At each inspection any birds caught in the trap shall be removed from it.

5. Where cage traps are left in the open but not in use, they must be rendered incapable of holding or catching birds.

6. This licence applies to England and is valid, unless previously revoked, for the period from **1 January 2003 to 31 December 2003.**

DEFINITION

7. "Authorised person" has the same meaning as in section 27 of the Wildlife and Countryside Act 1981.

8. In this licence "wild bird" means any bird of a kind that is ordinarily resident in or is a visitor to Great Britain in a wild state, and any game bird.



SARAH JONES

Authorised by the Secretary of State
for the Environment to sign in that
behalf

Department for Environment
Food and Rural Affairs
European Wildlife Division
Species Conservation Branch
Room 1/08
Temple Quay House
2 The Square
Temple Way
Bristol BS1 6EB

1 January 2003

Tel: 0117 372 8903

NOTES

1. Failure to comply with the terms and conditions of this licence may lead to an offence.

2. The Scottish Executive in respect of Scotland and the National Assembly for Wales in respect of Wales have issued a licence in similar terms.

3. Where the action licensed includes the use of firearms, it is the authorised person's responsibility to ensure that he complies with all relevant legislation.

Important note: If at any point you are uncertain as to how to proceed, **STOP** and seek advice from an ecologist

Observer name		Date	dd/mm/yy
SSOWP reference		Fault or S/R number	
ELR and mileage start		ELR and mileage end	
Location (local name)		Direction (UP / DN)	
Time survey started	hh:mm	Time survey finished	hh:mm
Weather conditions (this will affect the activity of any birds present)	Cloud  Clear - 1 Cloudy - 2 Overcast - 3	Rain  None - 1 Drizzle - 2 Showers - 3	Wind  Calm - 1 Light - 2 Breezy - 3
	Visibility  Good - 1 Moderate - 2 Poor - 3		

Record any birds or nests seen in the proposed work site, plus any exclusion zones created. If safe to do so, check whilst walking through the actual vegetation to be cleared (facing traffic).
 Birds = X; Nests = (N); Observation = ●; Exclusion zones = 

mileage.....

length.....

mileage.....

Comments

width.....

Actions

Nests (with or without birds); mark up exclusion zone around nest and extend zone to include adjacent habitat [this may be to the fence-line]

Guidance Notes

When to check

- Dawn to 08:00
- Ideally on first day at work site (but up to 1 week prior to the planned work)
 - **NB: for emergency, safety critical work undertake check immediately prior to operations**
- Ideally in good weather only
- Check before any activity that could impact nesting birds, e.g.:
 - Tree work
 - Shrub / scrub work
 - Ditch maintenance
 - Rock-face cleaning
 - Construction / ground disturbance

Recording birds

- Walk slowly – 2 minute walk then stop for 10 minutes to observe
 - Repeat for length of work site
- Mark on plan all locations where observation took place (●)
- Take 1 hour to complete the check for every 220 yards
- Check 10 metres beyond extent of planned vegetation work
- Record every bird seen & heard within the proposed work site with a X
- Record every suspected nest/nest site within the proposed work site with this symbol (N)
 - Photograph any likely evidence
- Mark exclusion zones on check form with a solid line ()
 - Extend zone to include adjacent 'cover' or to the fence
 - Photograph marked exclusion zone(s)

Records

- Be aware, records may be subject to external scrutiny
- If no checks are undertaken, demonstration of compliance with legislation could be challenged

Examples

mileage 25.0320

length 100m

track

boundary

mileage 25.0220

width 15m

Comments

Number of nests in dense gorse bush at top end of work site. Photos taken

Important note: If at any point you are uncertain as to how to proceed, **STOP** and seek advice from an ecologist

Observer name		Date	dd/mm/yy
SSOWP reference		Fault or S/R number	
ELR and mileage start		ELR and mileage end	
Location (local name)		Direction (UP / DN)	
Time survey started	hh:mm	Time survey finished	hh:mm
Weather conditions (this will affect the activity of any birds present)	Cloud  Clear - 1 Cloudy - 2 Overcast - 3	Rain  None - 1 Drizzle - 2 Showers - 3	Wind  Calm - 1 Light - 2 Breezy - 3
	Visibility  Good - 1 Moderate - 2 Poor - 3		

Record any birds or nests seen in the proposed work site, plus any exclusion zones created. If safe to do so, check whilst walking through the actual vegetation to be cleared (facing traffic).
 Birds = X; Nests = (N); Observation = ●; Exclusion zones = 

mileage.....

length.....

mileage.....

Comments

track

boundary

width.....

Actions

Nests (with or without birds); mark up exclusion zone around nest and extend zone to include adjacent habitat [this may be to the fence-line]

Guidance Notes

When to check

- Dawn to 08:00
- Ideally on first day at work site (but up to 1 week prior to the planned work)
 - **NB: for emergency, safety critical work undertake check immediately prior to operations**
- Ideally in good weather only
- Check before any activity that could impact nesting birds, e.g.:
 - Tree work
 - Shrub / scrub work
 - Ditch maintenance
 - Rock-face cleaning
 - Construction / ground disturbance

Recording birds

- Walk slowly – 2 minute walk then stop for 10 minutes to observe
 - Repeat for length of work site
- Mark on plan all locations where observation took place (●)
- Take 1 hour to complete the check for every 220 yards
- Check 10 metres beyond extent of planned vegetation work
- Record every bird seen & heard within the proposed work site with a X
- Record every suspected nest/nest site within the proposed work site with this symbol (N)
 - Photograph any likely evidence
- Mark exclusion zones on check form with a solid line ()
 - Extend zone to include adjacent 'cover' or to the fence
 - Photograph marked exclusion zone(s)

Records

- Be aware, records may be subject to external scrutiny
- If no checks are undertaken, demonstration of compliance with legislation could be challenged

Examples

mileage 25.0320

length 100m

track

boundary

Comments

Number of nests in dense gorse bush at top end of work site. Photos taken

mileage 25.0220

width 15m

APPENDIX D – ARBORICULTURAL IMPACT ASSESSMENT (AIA) (DOCUMENT REF. 151667-TSA-00-TRU-REP-W-LP-000054)

Infrastructure Projects

Northern Programmes



Transpennine Route Upgrade

Work Package 1 – Manchester Victoria to Stalybridge

Clayton Vale Park

ELR: MVL1 3miles 20 Chains (approx.)

Arboricultural Impact Assessment Report

Network Rail

Reference No: 151667-TSA-00-TRU-REP-W-LP-000054

Issue Date: 03/03/2022

Version: P03



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Approval and Authorisation

	Name	Job Title	Signature
Prepared By:	Richard Harris MArborA	Associate Director	
Checked By:	Lara Knapman	Technical Director	
Approved By:	Lara Knapman	Technical Director	
Authorised By:	Jim Pearson	Network Rail Environment Manager	

Document Identity and Metadata Information

This information is a mandatory requirement.

- Scope of Document:
- ☐ All of Northern Programmes
 - ☐ Northern Programmes Enhancements
 - ☐ Northern Hub
 - ☐ North West Electrification
 - ☒ Transpennine Route Upgrade
 - ☐ Northern Powerhouse Rail

Document Category: **Report**

Applicable Grip Stage(s): 3

Briefing Required: ☐

Security Classification: **OFFICIAL**

Reference:	151667-TSA-00-TRU-REP-W-LP-000054
Version:	P03
Date:	18/02/2022

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Document History

Version	Date	Modification	Originator
P01	17/12/2021	First Issue	RH
P02	08/02/2022	Client comments considered and adopted where appropriate.	RH
P03	18/02/2022	Further comments from NR considered and adopted.	RH

Reference:	151667-TSA-00-TRU-REP-W-LP-000054
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Implementation

The latest version of this document shall supersede any previous versions.

Compliance

This document is mandated across the 'scope' detailed in section document identity, scope and metadata.

Specific authority not to comply with this document can be requested from the Approval Signatory using the Technical Query process found with the Common Data Environment (CDE).

Disclaimer

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All references made within this document were considered correct at time of approval.

Supply

Copies of this document are available electronically via the Common Data Environment but shall be deemed uncontrolled once printed.

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1. INTRODUCTION

- 1.1.1 This Arboricultural Impact Assessment (AIA) has been produced by Waterman Infrastructure & Environment Limited (Waterman) and pertains to a land parcel adjacent to the railway corridor in Clayton Vale Park, Clayton, Manchester (MVL1 3m 20 ch (approx.); central Ordnance Survey national grid reference (OSNGR) SJ 88949 99538). The area surveyed was approximately 1.5 ha and is hereafter referred to as the 'Site'.
- 1.1.2 Works (hereafter referred to as the 'proposed works') will include the creation of a new attenuation tank within the Network Rail boundary and a drain linking the attenuation tank with an existing watercourse within Clayton Vale Nature Reserve.
- 1.1.3 The purpose of this AIA is to evaluate the direct and indirect effects of the proposed works on the tree stock present both on and adjacent to the Site. In line with Annex B of BS5837, it also contains sufficient information to be submitted in support of any planning application pertinent to the Site and the design layout shown in **Figure 1** of this report.
- 1.1.4 Tree surveys in accordance with *British Standard BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations*¹ (BS5837) have been undertaken at the Site to identify constraints posed by existing trees where it is felt they may be impacted by proposed works. The above and below ground constraints posed by the canopy shape and subterranean rooting area of the surveyed trees are described within **Appendix E** of this report and are supplemented by Arboricultural Constraints Plans which are included in **Appendix A** of this report.

¹ BS5837:2012 Trees in relation to design, demolition and construction – Recommendations, 2012, British Standards Institution.

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2. TREE SURVEY METHODOLOGY

- 2.1.1 A tree survey of the Site was carried out by a qualified and experienced Arboriculturist on 10th November 2021. The tree survey methodology followed the recommendations set out in BS5837.
- 2.1.2 In the absence of a topographical survey, the tree survey is based upon the National Tree Map provided by Bluesky International Limited. The locations of individual trees and the start and end points of groups, woodlands and hedgerows were plotted using proprietary Geographical Information System (GIS) data capture software on Global Positioning System (GPS)-enabled hand-held mobile devices, with the National Tree Map, GIS locations and aerial imagery used to substantiate tree locations.
- 2.1.3 The survey involved collecting the following information on all trees with a stem diameter over 75mm in diameter located within the Site.

2.2 Tree numbers

- 2.2.1 Individual trees surveyed were given the prefix 'T'. Trees have been grouped where they form cohesive aerodynamic (i.e. companion shelter), visual (i.e. screening) or cultural (i.e. parkland) arboreal features of similar quality, as identified by the prefix 'G'. Woodlands have been recorded with the prefix 'W'. The term 'feature' is used within this report to collectively refer to trees and groups within the Site.

2.3 Species

- 2.3.1 Species are listed by both their common name and Latin name in the Schedule of existing trees in Appendix B and by their common name only in the body of the report.

2.4 Height

- 2.4.1 Tree heights are approximate and estimated in metres. For grouped features, the maximum height has been recorded.

2.5 Stem diameter

- 2.5.1 The stem diameter of single stemmed trees is measured at 1.5m above ground level and given in millimetres. The diameter measurement of multi-stemmed trees is shown as a measurement of each major stem present. Where stems fork or swell, the measurement is taken at the narrowest point below the fork or swelling. Where access to the trunk of a tree is not available, an estimation of the stem diameter was made.
- 2.5.2 Where trees are recorded as groups, the average stem diameter has been recorded.

2.6 Crown spread

- 2.6.1 Radial crown spread of individual trees is given in metres to the nearest 0.5m (rounded up). Where average measurements are used for all four cardinal points, this has been taken from the cardinal point relevant to the direction of the Site and is deemed sufficient by the Arboriculturist to establish the extent of the crown spread in the direction of any future proposals. For significant trees or trees with unbalanced canopies, crown spread has been recorded for each of the four cardinal points. Where direct access was not available, the spread is a visual estimate.

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2.7 First significant branch height and canopy

- 2.7.1 The height and direction of growth of the first significant branch is recorded along with the average height above ground in metres of the main canopy. These are measured to the nearest half metre (rounded up) for dimensions up to 10m and the nearest whole metre for dimensions over 10m.

2.8 Age class

- 2.8.1 The age of each tree is defined as follows:

- Young (Y): Within the first 1/4 of useful life expectancy
- Semi-mature (SM): Within the second 1/4 of useful life expectancy
- Early Mature (EM): Within the third 1/4 of useful life expectancy
- Mature (M): Within the fourth 1/4 of useful life expectancy
- Over Mature (OM): Tree has exceeded normal life expectancy
- Veteran (V) Tree displaying veteran characteristics²

2.9 Physiological and structural condition

- 2.9.1 The physiological and structural condition of each tree and tree group is described, highlighting specific features. The survey involved ground level examination of the external features of the trees. The structural condition for each feature is described as being Good, Fair or Poor and the physiological condition is described as Good, Fair, Poor, Moribund or Dead.
- 2.9.2 Where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc. Where identified, signs of substantial defects or debility have been recorded. Where access to a feature was not possible, an estimation of physiological and structural condition has been made.

2.10 Estimated Remaining Contribution (ERC) in years

- 2.10.1 The Estimated Remaining Contribution (ERC) for each feature is based on species and the existing physiological and structural condition of the tree. The ERC may affect proposed development layout because the longer the tree is likely to live, the greater the contribution it will make and the greater the need for retention.

2.11 Category Grading

- 2.11.1 Each feature was given a Category Grading in accordance with BS5837 to reflect the overall arboricultural value. Further details of the tree categorisation method can be found in **Appendix D** and Section 4 of this report.

² <http://www.ancienttreeforum.co.uk/ancient-trees/what-are-ancient-veteran-trees/>

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2.12 Preliminary management recommendations

- 2.12.1 Any recommendations made for management of the trees (for example, tree surgery) prior to development are not a 'specification' for tree work. These recommendations are proposed on the basis that they are undertaken by a qualified arboricultural contractor, such as those listed in the Arboricultural Association's Approved Contractors Directory (www.trees.org.uk). Any work undertaken by the contractor should be in accordance with best practice, such as the European Tree Pruning Guide³, or required by BS3998: 2010 'Tree work – recommendations'⁴.
- 2.12.2 Where management recommendations are made, they are accompanied by a recommended timeframe in which they should be undertaken.

³ European Tree Pruning Guide, 2001, Arboricultural Association

⁴ BS3998:2010 'Tree work - recommendations', 2010, BSI

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3. LIMITATIONS

- 3.1.1 Where access restrictions were encountered, trees were recorded from positions of safety or from available vantage points.
- 3.1.2 Trees were visually identified and inspected from ground level only with no climbing, boring or core sampling undertaken. All measurements are metric and approximate. Species identification and any comments made are based on observable factors present at the time of inspection and are subject to seasonal constraints.
- 3.1.3 The validity and accuracy of tree locations is directly related to the accuracy of the National Tree Map, available aerial imagery and GPS-enabled GIS data capture software used. As such, the accuracy of the tree locations shown in **Appendix A** and **B** may need verifying where reliance is to be placed on exact locations for construction purposes. Where tree groups have been illustrated as an outline, this covers the extents of the tree group and does not illustrate the locations of individual trees within.
- 3.1.4 This report is concerned with the arboricultural features of the Site only. Ground condition/history information has not been consulted as part of this assessment (such as history of ground disturbance, root damage, changes in soil levels, previous utility installations or changes in site conditions) unless otherwise stated.
- 3.1.5 This report is not intended to confirm the safety (or otherwise) of surveyed trees or tree groups or be a tree risk management survey. References to defects or potential safety issues are not exhaustive and are intended as a guide only to inform the provision of further resources/more detailed investigations. The persons(s) responsible for the management of trees surveyed as part of this report are recommended to commission a separate Tree Condition Survey by a suitably qualified and experienced person in order to manage the health and safety aspects of trees under their control and discharge their reasonable 'Duty of Care' owed under the Occupiers' Liability Act 1984⁵.
- 3.1.6 This report does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, with regard to the possible hazards presented by the trees surveyed. Furthermore, the design and construction of new foundations should be informed by appropriate soil sampling and laboratory testing in accordance with Chapter 4.2 of 'Building Near Trees' of the National House Building Council's Standards⁶.
- 3.1.7 Owing to the changing nature of trees as living organisms and other site circumstances, the results detailed in this report are reflective of the date of capture. Any alteration to the surveyed areas or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

⁵ Occupiers' Liability Act 1957 and 1984. HMSO

⁶ <http://www.nhbc.co.uk/Builders/ProductsandServices/TechZone/NHBCStandards/>

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4. EXISTING TREE DATA

4.1 Quality Category Grading

4.1.1 Each arboricultural feature was given a Category Grading in accordance with the principles of BS5837. The Category Gradings are defined according to the following criteria, which are further divided into sub-categories based on arboriculture, landscape and/or historic/cultural value, as defined within BS5837 and contained at Appendix C. Table 4-1 summarises the arboricultural features within the Site by category;

- **Category Grading A:** Trees of high quality and value (with an estimated remaining life expectancy of at least 40 years);
- **Category Grading B:** Trees of moderate quality and value (with an estimated remaining life expectancy of at least 20 years);
- **Category Grading C:** Trees of low quality and value (with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter less than 150mm); and
- **Category Grading U:** Trees which are 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.

4.2 Existing tree stock

- 4.2.1 The tree stock considered within this report predominantly forms a well-established area of woodland growing on an embankment face to the south of the railway. In general, that woodland comprises an area of early mature trees with the dominant species being common ash, although other species such as alder, grey poplar, English oak, silver birch and hybrid black poplar are also present. This woodland is referred to as woodland W22 in the tree survey schedule contained as **Appendix E**.
- 4.2.2 Within and adjacent to W22 a number of trees have been recorded as individual trees in **Appendices A, B and E**. These trees were recorded as individual trees as they were felt to be significantly different, in either size or species, to the general nature of the trees within the woodland.
- 4.2.3 To the south-west of the Site, the surveyed trees formed a woodland belt along the banks of the River Medlock and there were also a number of scattered trees within a more formal part of Clayton Vale Nature Reserve. These trees were recorded as this area was originally being considered for access to the Site, however this is no longer the case and the trees will therefore be unaffected.



Photograph 1: View looking east along railway boundary with W22 to the left and trees T9 to T12 in the background



Photograph 2: Trees T1 to T4

- 4.2.4 A summary of arboricultural features recorded within, or immediately adjacent to, the Site is provided in Table 4-1. Further details of each feature can be found in **Appendix E**.

Table 4-1 Summary of arboricultural features by category

Type of feature	Number of features by BS5837 category				
	Cat. A	Cat. B	Cat. C	Cat. U	Total
Trees	0	27	7	2	36
Groups	1	2	1	0	4
Woodlands	2	0	0	0	2
Total	3	29	8	2	42

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5. ARBORICULTURAL CONSTRAINTS

5.1 Root Protection Area

- 5.1.1 The Root Protection Area (RPA) of a tree is defined in BS5837 as 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”. For single stemmed trees it is equivalent to a circle with a radius 12 times the stem diameter when measured at 1.5m above ground level. BS5837 outlines the calculation of RPA as follows:

$$RPA(m^2) = \left(\frac{\text{stem diameter (mm)} @ 1.5 m \times 12}{1\ 000} \right)^2 \times \pi (3.142)$$

- 5.1.2 Trees with more than one stem originating below 1.5m above ground level are given an aggregate stem diameter using either of the following two calculations as outlined in BS5837. This diameter is then used in the above calculation to estimate RPA:

- a) For trees with two to five stems:

$$\sqrt{(\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2}$$

- b) For trees with more than five stems:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

- 5.1.3 The RPA of existing tree stock is an important material consideration when considering site constraints and planning development activities.
- 5.1.4 The RPAs of all trees surveyed as individual features is shown in **Appendices A and B** as a yellow circle around each tree. For tree groups and woodlands, RPAs have been omitted. In practice, the RPAs of trees within grouped features are considered unlikely to extend further than the canopy spread recorded.
- 5.1.5 Unless there is overriding justification, construction activities, materials storage or changes in level should be avoided within the RPA of a retained tree. This is because these operations have the potential to damage or kill the tree, the safe retention of which may be a condition of a forthcoming planning approval.

5.2 Ancient woodland

- 5.2.1 A search of the Multi-Agency Geographic Information for the Countryside (MAGIC) website⁷

⁷ <https://magic.defra.gov.uk/MagicMap.aspx>

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indicates no designated ancient woodland is present within the Site.

5.3 Statutory designations - Tree Preservation Orders and Conservation Areas

- 5.3.1 Under Part VII of the *Town and Country Planning Act 1990* and as amended in the *Town and Country Planning (Tree Preservation) (England) Regulations 2012*, local planning authorities (LPA) are given the powers to protect trees, groups of trees and woodlands through the provisions of a Tree Preservation Order (TPO). TPOs make it an offence (with limited exceptions) to cut down, top, lop, uproot, wilfully damage or wilfully destruct a protected tree without the local planning authority's written consent.
- 5.3.2 All trees with a stem diameter above 75mm in diameter when measured at 1.5m above ground level are also afforded protection if they are located within a Conservation Area.
- 5.3.3 A check carried out in January 2022 with Manchester City Council has confirmed that none of the surveyed trees are afforded protection through the provisions of a TPO and no part of the site is located within a Conservation Area, though it is acknowledged that the area is designated as a country park by MCC.

5.4 Soil type

- 5.4.1 A detailed soil assessment was not undertaken as part of the tree survey exercise, however a desk-top study using the Cranfield University 'Soilscapes' mapping portal⁸ has indicated that the soil within the Site may have a significant clay content.
- 5.4.2 The combination of shrinkable soils and trees and shrubs can represent a hazard to structures that require special consideration. Depending on the findings of any soil investigations, and the juxtaposition between any proposed structures and the existing trees stock, it is recommended that guidance such as that contained within *Chapter 4.2 - 'Building Near Trees'* of the *National House Building Council's Standards 2019* is followed. This is particularly pertinent if the soil is found to have a significant clay content as foundation design of new buildings/structures (i.e. new access ramps) may need to be adapted to take account of existing trees and proposed tree planting.

6. ARBORICUTURAL IMPACT ASSESSMENT

- 6.1.1 This assessment has been undertaken based upon a sketched site layout provided by email on the 13th December 2021 and shown as **Figure 1** below.
- 6.1.2 The relationship between the Proposed Development and the existing tree stock has been assessed taking into account existing site-specific factors such as topography, waterbodies and existing built form.
- 6.1.3 Table 6-1 identifies the impact of the Proposed Development on those trees under the following headings:
- **Trees unaffected by the Proposed Development:** These are trees which are unaffected by the works and can therefore safely be retained. These trees are still likely to require protection through the placement of Tree Protection Barriers;

⁸ <http://www.landis.org.uk/soilscapes/>

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- **Trees to be retained but requiring additional protection:** Trees fall into this category where the assessment has identified that they can be retained, but additional protection measures may be required to ensure their continued health and structural integrity. This is usually where works are proposed within their RPA or below their crowns; and
- **Trees to be removed:** Trees will need to be removed if they are so close to proposed works that the impact of the works on the roots or crowns of the tree will render the retention of the tree unviable; if they create an unacceptable constraint on occupants of the site post construction (shading, nuisance etc.); or for reasons of sound arboricultural management.

Figure 1 Proposed Site Layout.

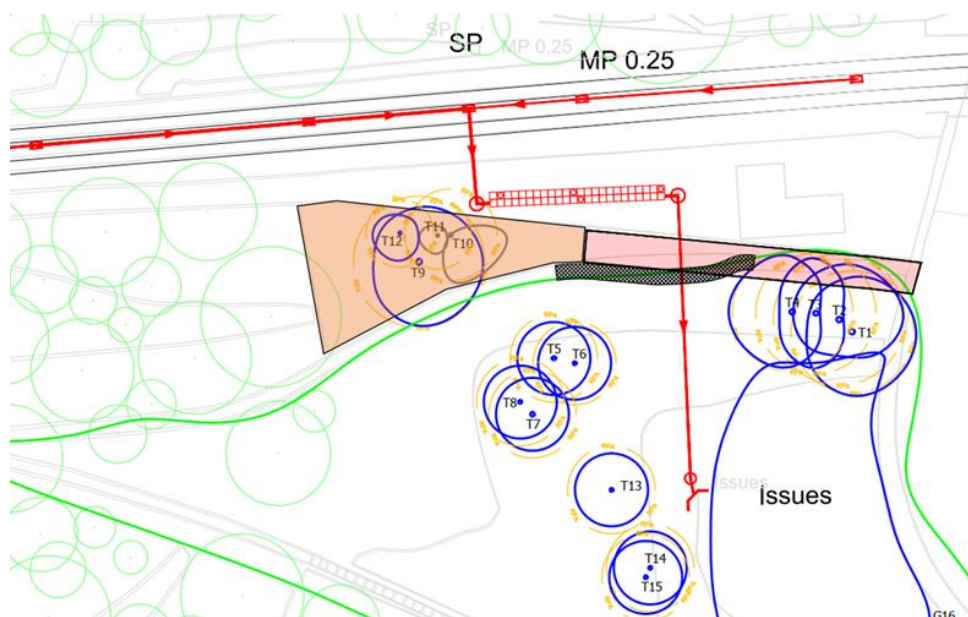


Table 6-1 Arboricultural impacts

	Tree numbers			
	Cat. A	Cat. B	Cat. C	Cat. U
Trees unaffected by the Proposed Development	G29, W36	T5, T6, T7, T8, T13, T14, T15, G16, T17, T18, T19, T20, T21, T23, T24, T26, T27, G31, T33, T37, T38	T30, T32, T34, T35,	T25, T28
Trees to be retained but requiring additional protection	N/A	T1, T2, T3, T4	N/A	N/A
Trees to be removed	W22 (in part)	T9, T12	T10, T11	N/A

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6.2 Proposed tree works

- 6.2.1 Table 6-1 and **Appendix B** provides details of all trees and tree groups which will be removed to facilitate the Proposed Development.
- 6.2.2 These tree works will not be undertaken until full planning permission has been granted for the Proposed Development and they will be undertaken by a suitably qualified, experienced and insured tree works contractor with the works compliant with best practice, such as the European Tree Pruning Guide⁹, or required by BS3998: 2010 'Tree Work – Recommendations'¹⁰.
- 6.2.3 Tree work will be timed to avoid the general bird nesting season where practicable and other potential ecological constraints with legally protected species, subject to consultation with an ecologist. In all events Network Rail's guidance on vegetation works and conducting bird nesting checks will be complied with. In the event nesting birds are identified, a suitable exclusion zone will be put in place that will allow nesting birds to fledge before de-vegetation can continue.
- 6.2.4 If required, tree surgery work on trees with deadwood, cavities, split/lifted bark and dense ivy should be carried out under an Ecological Watching Brief. Care will be taken not to damage any surrounding vegetation to be retained.

6.3 Site Monitoring

- 6.3.1 A retained Arboricultural Consultant will be appointed prior to the commencement of any works on Site. Their purpose will be to ensure compliance with all agreed tree protection measures. As a minimum, a pre-commencement site meeting should be held with a representative of the appointed contractor(s), the retained Arboricultural Consultant and a representative of Manchester City Council (if required). The purpose of this meeting will be to agree the location and design of any tree protection barriers, as well as to agree the need for / frequency of any on-going arboricultural clerk-of-works visits. This is particularly important on this site due to the proposed design of the tree protection barriers (refer to paragraph 6.4.3 for details).

6.4 Tree protection measures

- 6.4.1 Arboricultural features T1 to T9, T13 to T20 and W22 (in part), are to be retained in proximity to construction work, and therefore tree protection will be required to mitigate for potential above and below ground impacts and ensure these trees are retained successfully. The factors which most commonly result in below ground damage affecting oxygen diffusion (and therefore must be avoided) include:
- Compaction of the ground;
 - Any change in soil levels (even if temporary), including ground excavation and soil stripping;
 - Covering the root zone with impervious surfaces;
 - Changes in the water table level or ground saturation; and

⁹ European Tree Pruning Guide, 2001, Arboricultural Association

¹⁰ BS3998:2010 'Treework - Recommendations', 2010, BSI

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- Damage by the direct toxicity of phytotoxic materials, dust and runoff.

- 6.4.2 A Construction Exclusion Zone (CEZ) will be established around the retained trees, where no unauthorised access or construction operations (including Site compounds/facilities/storage of materials) are permitted to protect the ground from compaction or excavation and canopies from physical damage. This will be secured by means of temporary protective fencing with weatherproof signage.
- 6.4.3 Following the principles set out in section 6.2.2 of BS5837, these barriers should be “fit for the purpose of excluding construction activity and appropriate to the degree and proximity of the work taking place around the retained trees”. Due to the limited space available on site, and the topography, in this instance it is proposed that the CEZ will be secured using a combination of an immovable physical barrier along the top edge of the embankment with blue Netlon down the slope.
- 6.4.4 All weather notices should be secured to the barrier, examples of which are contained in **Appendix F**.
- 6.4.5 The location of these barriers is shown on the Tree Retention and Protection Plan contained as **Appendix B**.
- 6.4.6 The smallest plant possible should also be used in proximity to these retained trees to avoid damage to overhanging canopies. Access around the Site during any works will be carefully managed to protect the existing trees to be retained, requiring care 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 the trees.
- 6.4.7 Furthermore, vehicle, plant and pedestrian access will be required within the RPAs of trees T1 to T4, and therefore to facilitate this whilst still providing adequate protection to the trees, temporary ground protection will be installed. This will follow the principles set out in section 6.2.3 of BS5837 and as summarised below:
- for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
 - for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;
 - for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.
- 6.4.8 The location where ground protection will be required is shown in **Appendix B**.
- 6.4.9 Other key precautions to be taken in proximity to the trees to be retained include:
- No materials shall be stored under the canopies of retained trees;

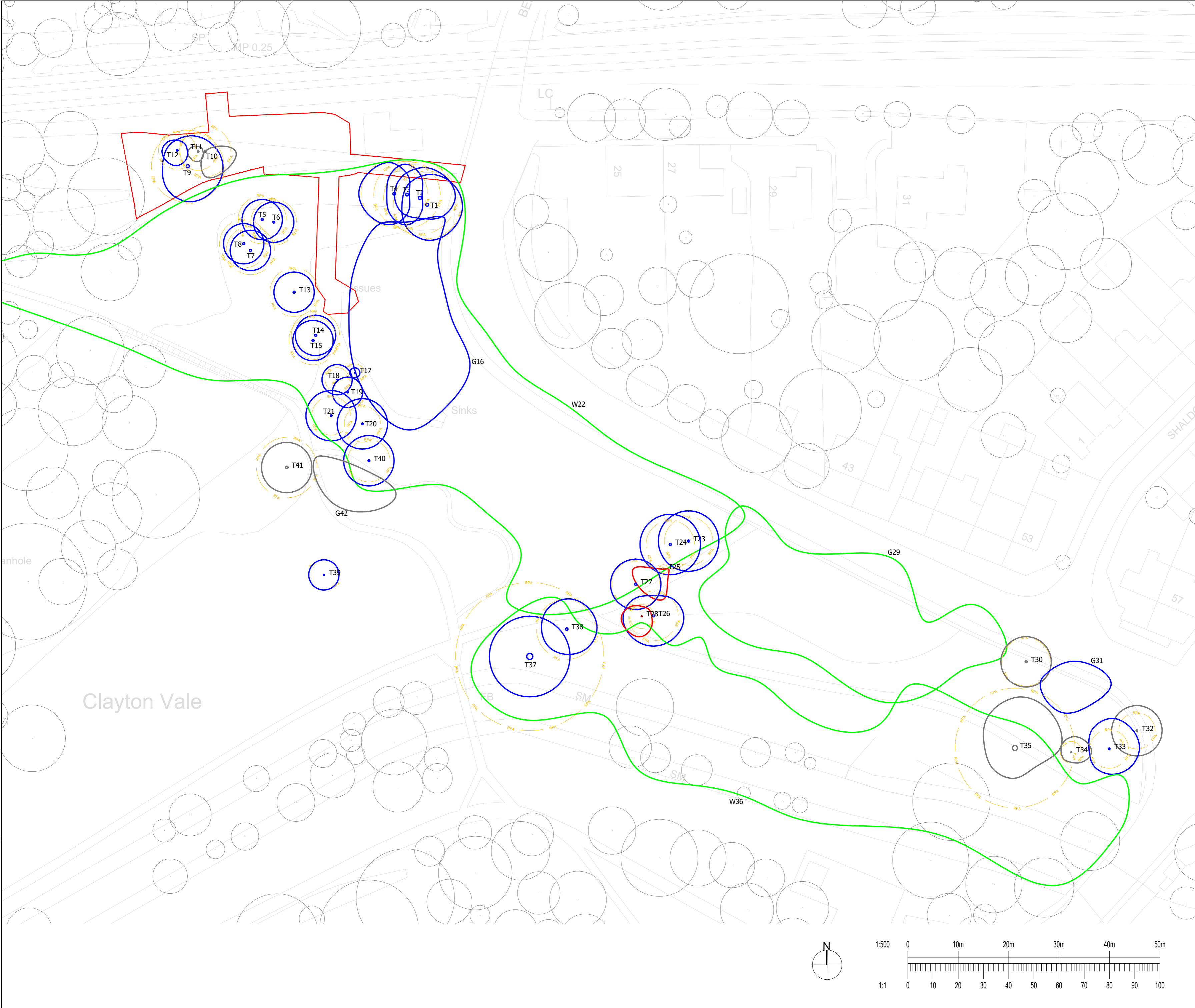
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- No oil, diesel, bitumen, cement, solvents or other material likely to be injurious to a tree shall be stored any closer than 5m from the edge of the canopy of any trees;
- Fires shall not be lit near the canopy of any tree;
- Trees to be retained shall not be used as anchorages for any equipment or construction activity;
- Notice boards, telephone cables or other services shall not be attached to any part of a tree;
- Care shall be exercised when using cranes or similar equipment near the spread of the canopy of a tree; and
- Allowance shall be made for any slope of the ground so that damaging materials do not run towards trees.

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APPENDIX A – ARBORICULTURAL CONSTRAINTS PLAN (DRAWING REF 15642-WIE-ZZ-XX-DR-V-77-007)



This drawing should not be scaled. Dimensions to be verified on site.
Any discrepancies should be referred to the Engineer prior to work being put in hand.

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Pickfords Wharf, Clink Street, London SE1 9DG t 020 7928 7888 f 03333 444 501

GENERAL NOTES

SITE BOUNDARY

CATEGORY GRADE A
Trees of high quality

CATEGORY GRADE B
Trees of moderate quality

CATEGORY GRADE C
Trees of low quality

CATEGORY GRADE U
Trees unsuitable for retention

ROOT PROTECTION AREAS (RPA)

NOTE:

- ALL TREE LOCATIONS ARE INDICATIVE ONLY
- RPAs ARE NOT SHOWN FOR TREE GROUPS AND WOODLANDS AS THE RPAs OF TREES WITHIN GROUPED FEATURES ARE CONSIDERED UNLIKELY TO EXTEND FURTHER THAN THE CANOPY SPREAD RECORDED

P01	01.12.21	PLANNING ISSUE	DC
Rev	Date	Description	By
Amendments			
Project CLAYTON VALE			
Title ARBORICULTURAL CONSTRAINTS PLAN			
Client NETWORK RAIL			
 Crown House 2-8 Gloucester Road Redhill Surrey RH1 1FH t 01738 449 801 mail@watermangroup.com www.watermangroup.com			
Status PLANNING			
Designed By RH		Checked By RH	Waterman Ref WIE15642-156
Drawn By DC		Date DECEMBER 2021	Scales @ A2 1:500
Project - Originator - Volume - Level - Type - Role - Number			Revision
15642-163-WIE-ZZ-XX-DR-V-77-007			P01

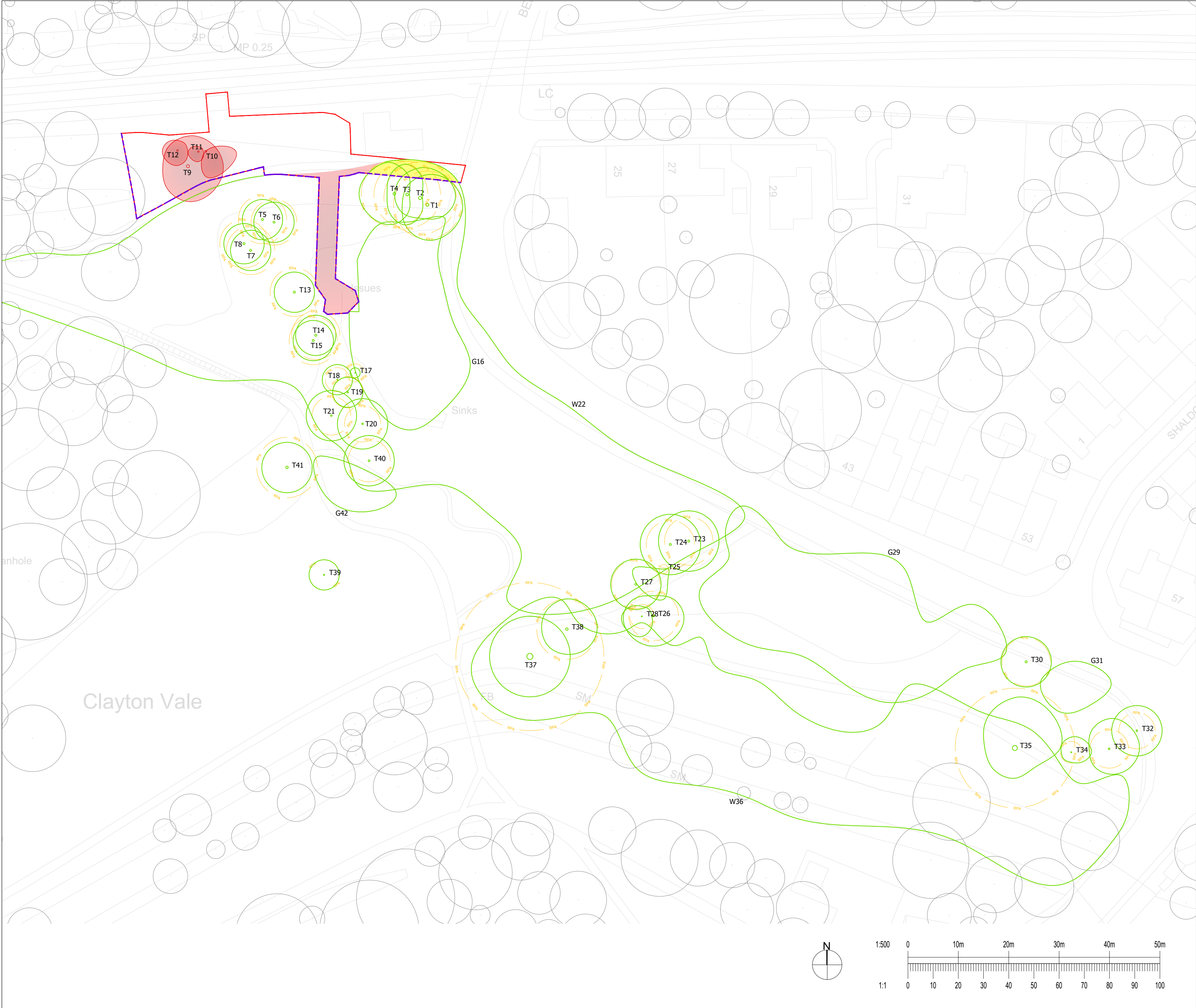
A2-Wat-BS-S, Basemap with Trees, Clayton Vale Arbevolve Export_DC

File Path \\H:\wiel\Projects\WIE15642 TRU Phase 2 Stage 1\10017_CAD\77_Arb\

Reference:	151667-TSA-00-TRU-REP-W-LP-000054
Version:	P03
Date:	18/02/2022

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APPENDIX B – TREE RETENTION AND PROTECTION PLAN (DRAWING REF DRAWING REF 15642-WIE-ZZ-XX-DR-V-77-008)



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GENERAL NOTES

SITE BOUNDARY

TREES TO BE RETAINED

TREES TO BE REMOVED

ROOT PROTECTION AREAS (RPA)

TREE PROTECTION BARRIERS

TEMPORARY GROUND PROTECTION

NOTE:

- ALL TREE LOCATIONS ARE INDICATIVE ONLY
- RPAs ARE NOT SHOWN FOR TREE GROUPS AND WOODLANDS AS THE RPAS OF TREES WITHIN GROUPED FEATURES ARE CONSIDERED UNLIKELY TO EXTEND FURTHER THAN THE CANOPY SPREAD RECORDED

P01	17.12.21	PLANNING ISSUE	DC
Rev	Date	Description	By
Amendments			
Project CLAYTON VALE			
Title TREE RETENTION AND PROTECTION PLAN			
Client NETWORK RAIL			
			
Crown House 2-8 Gloucester Road Redhill Surrey RH1 1FH t 01738 449 801 mail@watermangroup.com www.watermangroup.com			
Status PLANNING			
Designed By	RH	Checked By	RH
Drawn By	DC	Date	DECEMBER 2021
Waterman Ref			WIE15642-156
Scales @ A2			1:500
Project - Originator - Volume - Level - Type - Role - Number			Revision
15642-163-WIE-ZZ-XX-DR-V-77-008			P01

A2-Wat-BS-S, Basemap with Trees, Clayton Vale Arbevolve Export_DC

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Reference:	151667-TSA-00-TRU-REP-W-LP-000054
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APPENDIX C - RELEVANT POLICY AND LEGISLATION**Network Rail policies**

The Network Rail Asset Management Policy (January 2018) states that ‘assets [including property and other items that have a distinct value to the organisation], systems and networks will be managed in accordance with sustainable development principles include due consideration of long-term financial, societal and environmental impacts.’

The Network Rail Environment Policy (September 2017) states that significant environmental impacts will be identified and managed appropriately, and that land will be managed sustainably including consideration of impacts on biodiversity.

Manchester City Council Core Strategy

Manchester City Council’s Core Strategy¹¹ includes the following policies relevant to trees;

Policy EN9 – Green Infrastructure which states *“new development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises and in accordance with current Green Infrastructure Strategies the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management.*

Key features of Manchester’s green infrastructure will include:

- *The continued development of a network of green spaces, water bodies, canals, paths and cycleways, with priority given to those parts of the City where there is an identified existing lack of open space. The Council will seek to protect existing street trees and promote new planting, particularly where this can enhance green links in the urban area.*
- *The continued maintenance and management of the Rivers Mersey and Irwell and their tributaries, for example the River Irk, River Medlock, Chorlton Platt Gore, Gatley Brook, Moston Brook and adjoining land, with regard to their multiple functions including recreation, flood management, and biodiversity.*
- *The provision of new, and improvements to the quality and accessibility of existing green infrastructure assets, to mitigate for any loss of green infrastructure as a result of development such as the Metrolink extension programme.*
- *The encouragement of green roofs, green walls, tree planting and other forms of green infrastructure to allow for the adaption to climate change in heavily urbanised areas.*

¹¹ https://secure.manchester.gov.uk/downloads/download/5672/core_strategy

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New green infrastructure provision should be an exemplar of best practice and innovation in terms of both its design and management.”

Policy EN15 – Biodiversity and Geological Conservation which states “*The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the City. Particular consideration will be given to:*

- *sites with international or national designations for their biodiversity value. Manchester contains one Site of Special Scientific Interest (SSSI) (Cotteril Clough); there is a Special Area of Conservation (SAC) and an SSSI just over the border in Oldham (both on the Rochdale Canal within Oldham);*
- *other sites of biodiversity value, including Sites of Biological Importance (SBIs) and Local Nature Reserves (LNRs); Manchester currently has 35 SBIs (including the Rochdale and Ashton Canals) and 7 LNRs; priority habitats found within Manchester, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP);*
- *protected and priority species, as listed in the Manchester Biodiversity Strategy and included in the Greater Manchester Biodiversity Action Plan (GM BAP); sites that are recognised for their geological importance;*
- *the Council’s objective to protect and conserve the City’s existing trees and woodlands and the aim for a net increase in trees across the City.”*

Tree Preservation Orders (TPOs)

TPOs are administered by Local Planning Authorities (LPA) and are made to protect trees which bring significant amenity benefit to the local area. All types of tree, tree species and sizes can be protected and a TPO can protect a single tree, tree groups, all trees within a defined area (Area TPO) or a woodland (Woodland TPO).

A TPO is a written order which makes it a criminal offence without the authority’s permission (liable to an unlimited fine) to:

- Cut down, top, lop, uproot, wilfully damage or wilfully destroy a tree protected by that order; or
- Cause or permit such actions.

In the Secretary of State’s view, cutting roots is also a prohibited activity which requires the authority’s consent. Applications to carry out works to trees covered by TPOs need to be submitted to the LPA for approval, via forms which can be found on the Planning Portal, however LPA consent is not required for carrying out work on trees subject to a TPO so far as such work is necessary to implement a Statutory Order. An exception to the TPO legislation exists where a Statutory Order (i.e. TWAO) has been granted showing the loss of (or work to) TPO trees is required to implement the permitted scheme.

Conservation Areas

Normal TPO procedures apply if a tree within a Conservation Area is protected by a TPO. If a tree within a Conservation Area is not protected by a TPO and is above 75mm in trunk diameter when measured at 1.5m height, written notice must be given to the LPA for any proposed work, describing what work is proposed, at least six weeks before the proposed work date. This is called a ‘Section 211 notice’ which gives the LPA an opportunity to consider whether the tree should be subject to a TPO.

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However, a Section 211 notice and LPA consent is not required for carrying out work on trees subject to a TPO so far as such work is necessary to implement a Statutory Order.

Felling licences

To fell trees, a felling licence from the Forestry Commission is required. It is an offence to fell trees, including in advance of a planning application, without a licence if an exemption does not apply. Exemptions include:

- Locations (gardens, orchards, churchyards or designated open spaces);
- Type of tree work (lopping, topping, pruning and pollarding);
- Volume and diameter of trees to be felled (less than 5 cubic meters in one calendar quarter, trees of a girth at 1.3m height of less than 80mm, 100mm if thinning and 150mm if coppicing);
- Other permissions (such as having planning permission granted); and
- Statutory/legal requirements (there is a real or immediate threat of danger or abatement of nuisance, to prevent the spread of a pest/disease, to comply with an Act of Parliament (including a TWAO) or undertake your duties as a statutory service provider (gas, water, electric).

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APPENDIX D – CASCADE CHART FOR TREE QUALITY ASSESSMENT (EXTRACT FROM BS5837)

Category and Definition	Criteria			Identification on Drawing
<u>Category U</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 trees (i.e. 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; and - 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.			DARK RED
Category and Definition	Criteria - Subcategories			
	1 - Mainly Arboricultural Values	2 - Mainly Landscape Values	3 - Mainly Cultural Values, including Conservation	
<u>Category A</u> Trees of high quality with an estimated remaining life expectancy minimum of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of 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)	LIGHT GREEN
<u>Category B</u> 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 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	MID BLUE
<u>Category C</u> Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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	GREY

APPENDIX E – SCHEDULE OF EXISTING TREES

No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Landscape Value	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T1	Hybrid black poplar (<i>Populus x euramericana</i>)	25m	560mm	N6m E7m S7m W5m	15m	15m SE	M	Good	Good	Moderate	40+	Part of group of 4 trees adjacent to entrance; highly visual.	B (1)	6.7m	141.9m ²
T2	Hybrid black poplar (<i>Populus x euramericana</i>)	25m	600mm est	N6m E7m S4m W5m	15m	15m SE	M	Good	Good	Moderate	40+	Part of group of 4 trees adjacent to entrance; highly visual.	B (1)	7.2m	162.9m ²
T3	Hybrid black poplar (<i>Populus x euramericana</i>)	25m	550mm est	N6m E3m S6m W4m	10m	11m W	M	Good	Good	Moderate	40+	Part of group of 4 trees adjacent to entrance; highly visual.	B (1)	6.6m	136.8m ²
T4	Hybrid black poplar (<i>Populus x euramericana</i>)	22m	550mm est	N6m E3m S6m W7m	10m	8m W	M	Good	Good	Moderate	40+	Part of group of 4 trees adjacent to entrance; highly visual.	B (1)	6.6m	136.8m ²
T5	Common Ash (<i>Fraxinus excelsior</i>)	20m	400mm est	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland.	B (2)	4.8m	72.4m ²
T6	Common Ash (<i>Fraxinus excelsior</i>)	20m	380mm est	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland.	B (2)	4.6m	65.3m ²
T7	Grey poplar (<i>Populus canescens</i>)	20m	400mm	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland; exposed and damaged roots.	B (2)	4.8m	72.4m ²
T8	Grey poplar (<i>Populus canescens</i>)	20m	400mm est	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland.	B (2)	4.8m	72.4m ²
T9	Hybrid black poplar (<i>Populus x euramericana</i>)	25m	600mm est	N6m E7m S7m W5m	15m	15m SE	M	Good	Good	Moderate	40+	One of larger trees in woodland.	B (1)	7.2m	162.9m ²
T10	Goat willow (<i>Salix caprea</i>)	11m	420mm	N0m E6m S5m W0m	5m	5m E	M	Good	Fair	Moderate	20+	Crown has been previously lopped.	C (2)	5.0m	79.8m ²
T11	Goat willow (<i>Salix caprea</i>)	8m	310mm	N1m E1m S2m W2m	5m	5m E	EM	Fair	Poor	Low	10+	Crown has been previously topped.	C (1)	3.7m	43.5m ²
T12	Goat willow (<i>Salix caprea</i>)	8m	310mm	N2mE2mS3mW3m	5m	6m E	EM	Fair	Fair	Moderate	10+	Woodland tree.	B(2)	3.7m	43.5m ²



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No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear- ance	Height to 1st Branch	Life Stage	Physi- ology	Structure	Landscape Value	Est. Years	Comments	Cate- gory	RPA Radius	RPA m2
T13	Common Ash (<i>Fraxinus excelsior</i>)	20m	400mm est	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland.	B (2)	4.8m	72.4m ²
T14	Common Ash (<i>Fraxinus excelsior</i>)	20m	400mm est	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland.	B (2)	4.8m	72.4m ²
T15	Grey poplar (<i>Populus canescens</i>)	20m	400mm	4m	8m	6m	SM	Good	Good	Moderate	40+	One of larger trees in woodland.	B (2)	4.8m	72.4m ²
G16	Common Ash (<i>Fraxinus excelsior</i>)	20m	Avg 270mm est	N/A			EM	Good	Fair	Moderate	40+	Group of ash growing on bank within wider woodland.	B (3)	3.2m	33.0m ²
T17	Common alder (<i>Alnus glutinosa</i>)	11m	150mm est	1m	6m	5m	Y	Fair	Fair	Moderate	40+	Woodland tree.	B (2)	1.8m	10.2m ²
T18	Common alder (<i>Alnus glutinosa</i>)	11m	200mm	3m	6m	5m	SM	Fair	Fair	Moderate	40+	Woodland tree.	B (2)	2.4m	18.1m ²
T19	Common alder (<i>Alnus glutinosa</i>)	11m	260mm est	3m	6m	5m	SM	Fair	Fair	Moderate	40+	Woodland tree.	B (2)	3.1m	30.6m ²
T20	Common Oak (<i>Quercus robur</i>)	12m	300mm est	5m	6m	5m	SM	Good	Good	Moderate	40+	Woodland tree.	B (2)	3.6m	40.7m ²
T21	Common Oak (<i>Quercus robur</i>)	12m	320mm est	5m	6m	5m	SM	Good	Good	Moderate	40+	Woodland tree.	B (2)	3.8m	46.3m ²
W22	Silver birch (<i>Betula pendula</i>) , Common Ash (<i>Fraxinus excelsior</i>) , Grey poplar (<i>Populus canescens</i>) , Goat willow (<i>Salix caprea</i>) , Common alder (<i>Alnus glutinosa</i>) and Hazel (<i>Corylus avellana</i>)	20m	Avg 300mm	N/A			EM	Good	Good	High	40+	mixed broadleaf woodland growing around gully.	A(1)	3.6m	40.7m ²



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No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Landscape Value	Est. Years	Comments	Category	RPA Radius	RPA m2
T23	Common Horse Chestnut (<i>Aesculus hippocastanum</i>)	18m	400mm est	6m	2m	2m	EM	Fair	Fair	High	20+	Woodland edge tree.	B (2)	4.8m	72.4m ²
T24	Common Horse Chestnut (<i>Aesculus hippocastanum</i>)	18m	400mm est	6m	2m	2m	EM	Fair	Fair	High	20+	Woodland edge tree.	B (2)	4.8m	72.4m ²
T25	Common Horse Chestnut (<i>Aesculus hippocastanum</i>)	4m	600mm	N0m E1m S6m W6m	2m	2m	EM	Poor	Fair	High	20+	Woodland edge tree; leader lost at 2m agl.	U	7.2m	162.9m ²
T26	Common Ash (<i>Fraxinus excelsior</i>)	18m	410mm	N4m E6m S6m W6m	5m	5m S	EM	Fair	Fair	Moderate	40+		B (1)	4.9m	76.0m ²
T27	Common Ash (<i>Fraxinus excelsior</i>)	18m	400mm	5m	5m	5m S	EM	Fair	Fair	Moderate	40+	Woodland edge tree.	B (1)	4.8m	72.4m ²
T28	Common Ash (<i>Fraxinus excelsior</i>)	12m	200mm est	N2mE2mS4mW4m	2m	2m S	SM	Poor	Fair	Low	<10	Significant dieback at branch ends; epicormic throughout crown.	U	2.4m	18.1m ²
G29	Sycamore (<i>Acer pseudoplatanus</i>) , Horse chestnut (<i>Aesculus hippocastanum</i>) and Common Ash (<i>Fraxinus excelsior</i>)	18m	Avg 400mm	N/A			EM	Good	Good	High	40+	Roadside group; canopies extend beyond RPA.	A (1)	4.8m	72.4m ²
T30	Common Ash (<i>Fraxinus excelsior</i>)	12m	400mm	5m	3m	2.5m NW	SM	Fair	Fair	Moderate	10+	roadside tree; dieback at branch ends.	C (1)	4.8m	72.4m ²



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No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clearance	Height to 1st Branch	Life Stage	Physiology	Structure	Landscape Value	Est. Years	Comments	Category	RPA Radius	RPA m2
G31	Sycamore (<i>Acer pseudoplatanus</i>) and Common alder (<i>Alnus glutinosa</i>)	10m	Avg 300mm est	N/A			SM	Good	Good	Moderate	40+	Roadside group.	B (1)	3.6m	40.7m²
T32	Common Ash (<i>Fraxinus excelsior</i>)	12m	300mm	5m	3m	2.5m NW	SM	Fair	Fair	Moderate	10+	Roadside tree; dieback at branch ends.	C (1)	3.6m	40.7m²
T33	Common Oak (<i>Quercus robur</i>)	12m	320mm	N6m E6m S5m W4m	1.5m	2m NE	SM	Good	Good	Moderate	40+	Slightly leaning trunk.	B (1)	3.8m	46.3m²
T34	Common alder (<i>Alnus glutinosa</i>)	8m	180mm	N3m E4m S2m W2m	2m	2.5m NE	Y	Fair	Fair	Low	40+		C (1)	2.2m	14.7m²
T35	Crack willow (<i>Salix fragilis</i>)	25m	990mm	N10m NE10m S6m W6m	2m	2m NE	OM	Fair	Poor	High	10+	Large tree; multi-stemmed from 2m; some stems collapsed; suspected stem decay.	C (1)	11.9m	443.4m²
W36	Common Ash (<i>Fraxinus excelsior</i>), Common alder (<i>Alnus glutinosa</i>) and Goat willow (<i>Salix caprea</i>)		Avg 350mm est	N/A			M	Good	Good	High	40+	Riverside woodland alongside footpath.	A(1)	4.2m	55.4m²
T37	Crack willow (<i>Salix fragilis</i>)	25m	6 stems @ 500mm est	N8m E8m S8m W8m	2m	2m NE	OM	Fair	Poor	High	10+	Multi-stemmed from base; unable to view lower trunk due to ivy.	B (2)	14.7m	678.6m²
T38	Crack willow (<i>Salix fragilis</i>)	20m	500mm	N6m E6m S5m W5m	10m	5m	M	Good	Good	Moderate	20+	Unbalanced crown biased to the N.	B (1)	6.0m	113.1m²
T39	Common alder (<i>Alnus glutinosa</i>)	6m	250mm	3m	2.5m	2m E	SM	Good	Good	Moderate	40+		B (1)	3.0m	28.3m²
T40	Sycamore (<i>Acer pseudoplatanus</i>)	10m	350mm	5m	3m	3m S	SM	Good	Good	Moderate	40+	Woodland tree.	B (2)	4.2m	55.4m²

Reference:	151667-TSA-00-TRU-REP-W-LP-000054
Version:	P03
Date:	18/02/2022

W1 Clayton Vale Park – Arboricultural Impact Assessment

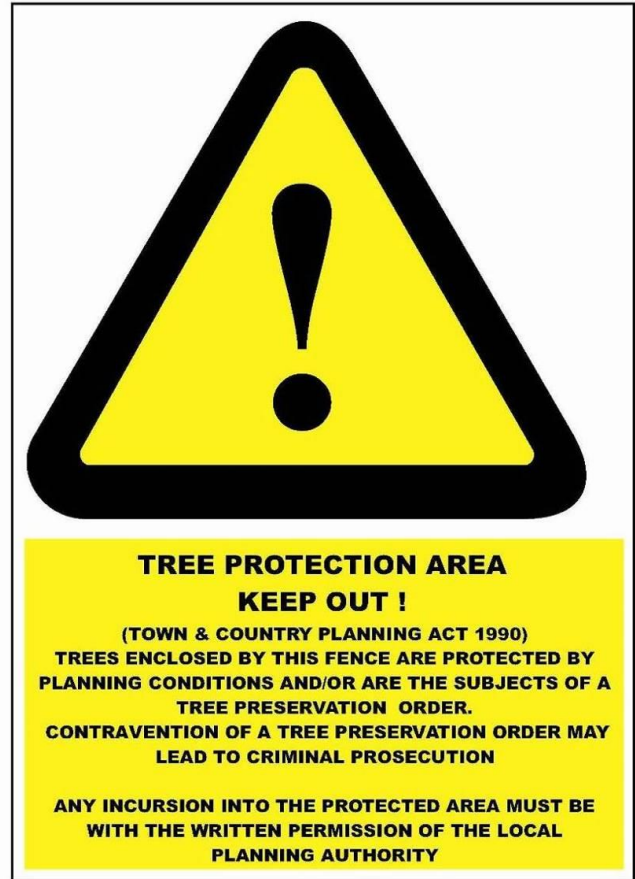
No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Structure	Landscape Value	Est. Years	Comments	Cate-gory	RPA Radius	RPA m2
T41	Common alder <i>(Alnus glutinosa)</i>	10m	4 stems @ 250mm est	5m	3m	2m	EM	Fair	Fair	Low	40+	Multi-stemmed from base.	C (1)	6.0m	113.1m²
G42	Common Ash <i>(Fraxinus excelsior)</i> and Common Hazel <i>(Corylus avellana)</i>	5m	Avg 100mm	N/A			Y	Good	Good	Moderate	40+		C (2)	1.2m	4.5m²

Notes

- Trees have not been subject to a full arboricultural inspection for safety, with respect of both existing and proposed site uses/users (targets);
- Any management recommendations in this report are subject to presence of nesting birds or protected species (e.g. bats);
- Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998(2010) Tree work – Recommendations (BS3998);
- Fieldwork survey information provided within this table is subject to seasonal/access constraints as listed within the Limitations section of this report;
- N/A - measurement not accessible/applicable;
- Positions of all trees and tree groups within the accompanying drawings are indicative based on the absence of a topographical survey;
- Unless otherwise stated, all group dimensions are an estimated average; and
- This schedule should be read in conjunction with the Arboricultural Constraints Plan in Appendix A.

W1 Clayton Vale Park – Arboricultural Impact Assessment

APPENDIX F – EXAMPLE OF TREE PROTECTION SIGNAGE





Network Rail
Infrastructure Projects – Northern Programmes

Square One
4 Travis Street
Manchester
M1 2NY

www.networkrail.co.uk

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APPENDIX E – INVASIVE SPECIES MANAGEMENT PLAN



Invasive Species Management Plan



ARUP



**INVASIVE SPECIES MANAGEMENT PLAN****DOCUMENT CONTROL****Document Approval**

Document Title	Invasive Species Management Plan			
ProjectWise Ref.	151667-TSA-00-TRU-PLN-W-EN-000001			
Revision	Originated by		Checked by	
P01	Name Job Title	Signature Date	Name Job Title	Signature Date
	Ranjit Soomal		Jim Pearson	
	Alliance Environment Manager	22/10/2019	Principal Environment Manager	18/06/2020
	Approved by			
	Name Job Title	Signature Date	I confirm that the above document(s) are approved for issue.	
Prakash Patel				
	Senior Project Manager	19/06/2020		

Revision History

Rev.	Originator	Checker	Approver	Date	Comments
P01	RS	JP	PP	22/10/2019	First Issue



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**INVASIVE SPECIES MANAGEMENT PLAN**

1 Introduction

The invasive species management plan has been prepared to support the Transpennine Route Upgrade (TRU). It is primarily aimed at the treatment of Japanese Knotweed but does also consider the possibility of encountering other invasive species that may require other treatment.

The Transpennine Route Upgrade (TRU) is a comprehensive programme of works to upgrade and re-energise one of Britain's oldest railways. The Transpire Alliance is responsible for this transformation West of Leeds.

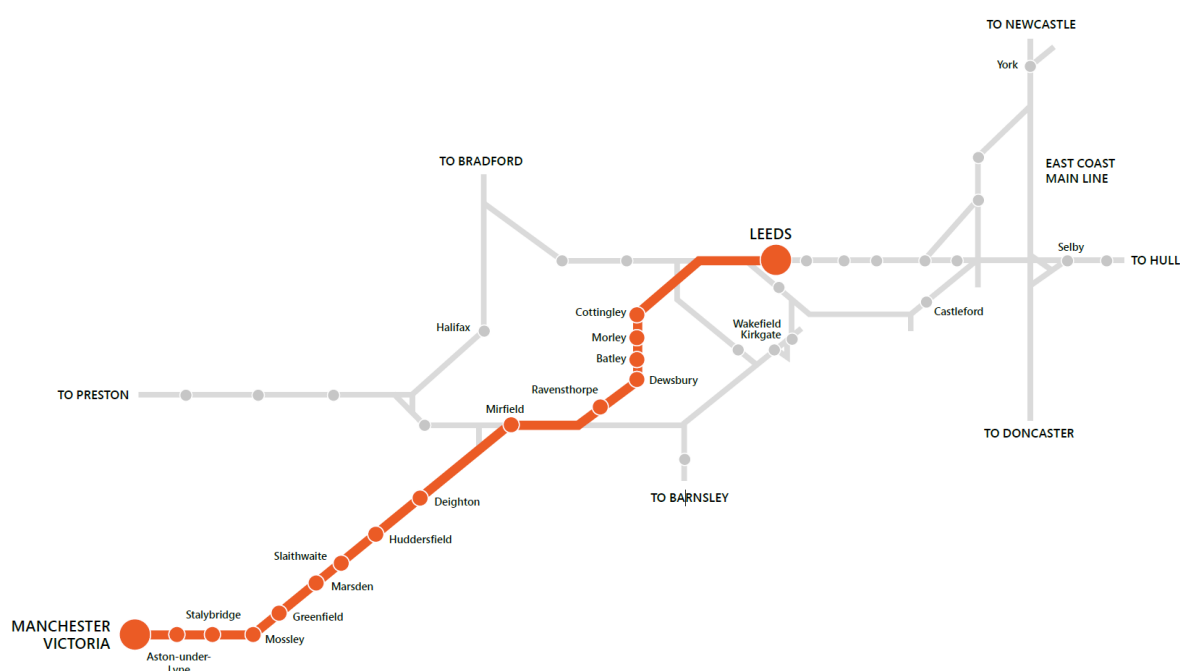


Figure 1.1 – TRU: West of Leeds route

This Invasive Species Management Plan covers the management of worksites in the vicinity of invasive and injurious weeds to ensure compliance with legislation, policy and to meet the following requirements:

- Network Rail contract requirement environment [NR/SP/ENV/015]
- Network Rail guidance sheets (Appendix A to this document)
- BAM Nuttall Limited
- Amey plc

**INVASIVE SPECIES MANAGEMENT PLAN**

2 Legislation, Policy and Network Rail guidance

It is an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on schedule 9 of the Wildlife and Countryside ACT 1981 (as amended)

3 Survey Findings

Plant species listed on Project Mapper were recorded adjacent to the railway during the Phase 1 Ecology survey and Transpennine route fencing and de-vegetation programme.

Invasive species have been identified at various intervals through the route. Known locations are identified on Project Mapper. Environmental & Ecological | Nature Conservation | Invasive Species.

It should be noted that all known invasive species locations are entered onto project mapper. The location of any Works Package Plan should be checked for environmental risk on project mapper that includes the location of invasive species. If additional locations are identified on site, these should be reported to the Alliance Environment Manager.

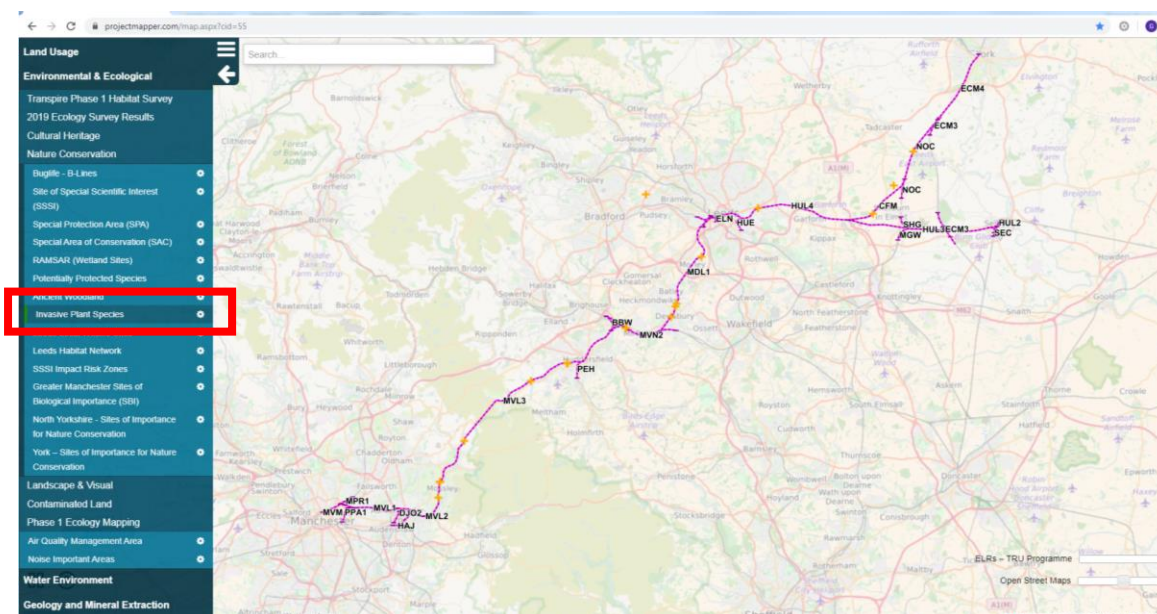


Figure 1.2 – TRU: Project Mapper Location



INVASIVE SPECIES MANAGEMENT PLAN

4 Roles & Responsibilities

All staff will have a responsibility to abide by the ecological legislation and rules that are relevant to the Site.

➤ Project Manager

- It is the Project Manager's responsibility to ensure all personnel on site have received a Site Induction (to include identification of Japanese knotweed and locations of known stands on the site) and further appropriate environmental training.
- The Project Manager is responsible for ensuring the invasive species management practices contained in this plan are adhered to on site, including the appropriate fencing of known stands, the procurement of suitably qualified invasive species management contractors and appropriate disposal of any invasive species contaminated waste. The Project Manager has overall responsibility for the effective management of TRU employees and all subcontractors, and ensuring the Japanese knotweed management practices within this document are carried out.
- Ensuring all relevant environmental updates from the Alliance members and applicable regulatory authorities are disseminated to project personnel.

➤ Alliance Environment Manager

- Responsible for providing ecological advice to the project team and monitoring compliance with the Invasive Species Management Plan through regular Site meetings
- Provision of ecological training including Invasive weed management and identification to the project management team;

➤ Environment Champion

- Environment Champion will provide briefings/toolbox talks to ensure all personnel are aware of the location of invasive species and the appropriate mitigation measures for each work area or route section.

➤ Commercial Manager

- Ensuring sub-contractors and suppliers are aware of their environmental obligations whilst on TRU. In particular, responsible for ensuring herbicide application contractors are appropriately qualified and experienced.



INVASIVE SPECIES MANAGEMENT PLAN

- All site personnel
 - Responsible for operating to the requirements of this plan. Reporting any additional suspected stands of Japanese knotweed or other invasive species to the Site Supervisor or Project Manager. Conducting their work so as to avoid known stands of invasive species and taking appropriate measures to prevent further spread of the plants.
- All suppliers/ sub-contractors
 - All subcontractors will be made aware of the location of invasive species and their obligations regarding it whilst on site. Any subcontractors using machinery/vehicles working in the vicinity of the Japanese knotweed will be expected to ensure the wheels, equipment and stabilisers are clean and free of invasive species



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5 Safety and PPE

Gloves shall be worn and skin covered at all times to prevent contact with invasive or injurious weeds.

Hand cleaner should be used prior to eating and drinking.

Appropriate protective clothing should be worn for all work in the proximity of giant hogweed. The sap of giant hogweed is poisonous and can be harmful to the touch, causing blistering and long term discolouring to the skin when activated by sunlight.

**INVASIVE SPECIES MANAGEMENT PLAN**

6 Management of Invasive Species

6.1. Prevention of Spread of Invasive Species

Japanese knotweed, Himalayan balsam, giant hogweed, rhododendron ponticum and cotoneaster horizontalis have been identified throughout the Transpennine route.

Japanese Knotweed treatment is dealt with in detail in the following sections with images shown in Appendix A to assist with on-site identification.

Giant Hogweed is an injurious plant that will cause skin blistering if handled. Under no circumstances should this plant be handled unless as designated for removal as defined in the relevant Work Package Plan. Appendix A (Part 2) includes Network Rail guidance on Giant Hogweed and includes images of the plant to aid with on-site identification.

6.2. General Principles

De-vegetation should not occur for any reason if Japanese Knotweed or Giant Hogweed are present and the treatment is not identified in this guidance or in the Work Package Plan.

Localised stands of Japanese Knotweed can be treated as per this plan unless identified for site-specific treatment in the Work Package Plan.

If in doubt, always check with the Alliance Environment Manager.

6.3. Japanese Knotweed: Permanent Civil Works (large)

Japanese Knotweed may be present in locations where permanent civil works must be located. These are unique occurrences and such works during construction should be supported by a specialist report that details treatment and removal as identified during the design phase. Either the Japanese Knotweed would already have been removed as part of early works or its onward treatment will be detailed in the Work Package Plan. An example of this may be the landing stage for a footbridge.

If in doubt, please discuss a specific location with the Alliance Environment Manager.

6.4. Japanese Knotweed: Permanent Civil Works (small)

Follow the procedure as outlined below for "Temporary Works Ground or Site Investigation".



INVASIVE SPECIES MANAGEMENT PLAN

In addition, the location of such works in the vicinity of Japanese Knotweed should be recorded in the Safety File on the completion of works for onward management by the Network Rail maintainer.

Small civil works might include electrification gantry locations or LOC cabinets.

If in doubt, please discuss a specific location with the Alliance Environment Manager.

6.5. Japanese Knotweed: Temporary Works Site Investigation

Temporary Works Ground or Site Investigation

It is permissible to sink a borehole or trial pit within or adjacent to a stand of Japanese Knotweed when no other alternative is acceptable if the following process is complied with. It should be assumed that excavated soil within a stand of Japanese Knotweed or within 7m of a visible stand may be contaminated (have the ability on its own to grow additional Japanese Knotweed from root material in the soil).

The initial de-vegetation of Japanese Knotweed as may be required to facilitate the borehole should be conducted as a careful cut 30cm above ground level with the Japanese Knotweed plant then laid on visqueen as described below or placed carefully on / in the stand of Japanese Knotweed that is not be affected by the borehole location.

The remaining crown of the plant (30cm height to ground level) and root structure under the ground must be carefully excavated and temporarily placed on an appropriate sheet (visqueen or plastic) before the borehole can be inserted as required. Once the borehole has been completed this material should be replaced in the original excavation by preference but then within the stand of Japanese Knotweed still standing as may be required.

Invasive species arisings and contaminated material must not be deposited within 10m of any water body (stream, river, canal, lake, pond, open drain, culvert).

Plant and tools/equipment (including sheeting) used in the vicinity of Japanese Knotweed should be decontaminated after use and before leaving site. This should be done using a water wash/spray, particular siting of wash area at ingress and egress of site should be agreed with the Construction Environment Manager. It is critical that the wash area is into the existing stand of Japanese Knotweed but in all events should be sited over 10m from any water body or protected site such as a Site of Special Scientific Interest (SSSI).

All boots and clothing of operatives will be decontaminated before leaving site. This should be done by brushing off any debris into the stand of Japanese Knotweed (including seeds, mud and plant fragments) and using a water wash for boots. Wash should be by clean water only, Chemicals such as bleach or pesticide should NOT be used for decontamination in case of run off.



INVASIVE SPECIES MANAGEMENT PLAN

Where excavating within a Japanese knotweed area, photographic evidence of machine and equipment washdown will be provided and recorded in the shift reports and made available to the Alliance Environment Manager

6.6. Japanese Knotweed: close to works and access

Vehicles with caterpillar tracks should not be used within cordoned off Japanese Knotweed areas.

Vehicles leaving the area should either be confined to haulage routes protected by root barrier membranes as described in Section 6.7 below, (geotextile), or be pressure washed.

Vehicles used to transport contaminated soils that are destined for disposal, must be thoroughly pressure-washed in a designated wash-down area before being used for other work.

Noting that JK roots may grow up to 7m from any visible stand, protection of the ground adjacent to JK stands may be required if the ground is likely to be disturbed by vehicle movements. In this circumstance the haul route should be protected by a root barrier membrane if likely to be disturbed by vehicles. Root barrier membranes will need to be protected from damage by vehicles with a layer of sand above and below them, topped with a layer of hard-core or other suitable material as specified by an engineer.

Detail of work methodology in areas with known Japanese Knotweed will be included in Work Package Plans and Task Briefs.

6.7. Japanese Knotweed: Storage of materials

For Japanese Knotweed, it must be assumed that all soil within 7m of the plant is contaminated.

If materials containing any Japanese Knotweed re stockpiled, the spoil heap should be placed on a fabric membrane in an approved area (within the contaminated site).

Material that is or may be contaminated must not be moved from one site to another.

Materials contaminated with any invasive species must not be stored within 10m of any water body (stream, river, lake, pond, canal, open drain, culvert) or protected site such as a SSSI.

If working in an area of Japanese Knotweed, both existing stands and temporary storage of contaminated material, the area should be taped or fenced off and clearly labelled as Japanese Knotweed with "Do not Enter" signs erected.



INVASIVE SPECIES MANAGEMENT PLAN

6.8. Himalayan Balsam: general requirements

Himalayan Balsam clearance should ideally take place from September to May when the plants are not in flower. The flowering season and more importantly seeding season is generally from July to August and Himalayan Balsam removal should be avoided in these 2 months.

When working with Himalayan Balsam, plants in seed should not be moved, but cut and bagged in situ to prevent spread of seed.

However, it should be noted that Himalayan Balsam can be pulled at any time of the year with the added precaution of bagging and removing only when the plant is potentially in seed, generally from July to August. At all other times of the year, Himalayan Balsam can be pulled from near the root and laid down in existing stands that do not affect the works.

6.9. Waste Disposal

Any contaminated soil or plant material is classified as controlled waste and will be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation and siting the appropriate European Waste Category code, complying with section 34 of the Environmental Protection Act 1990.

Waste contractors shall be informed of any presence of invasive species in waste materials. Waste from invasive plants and soil must be kept separate from other wastes, ideally with physical segregation and appropriate labelling.

Giant hogweed waste or invasive species treated with herbicides will require disposal following hazardous waste regulations.

All bags and skips containing materials contaminated with invasive species shall be sealed or covered when being moved.

Materials contaminated with invasive species shall not be taken away by SCO.

**INVASIVE SPECIES MANAGEMENT PLAN**

7 Training

To ensure that all Site personnel are aware of the importance of the mitigation proposals for each of the above species, the Alliance Environment Manager will provide a short Tool Box Talk (TBT) to all Site personnel prior to commencement of any works in a particular route section (as determined by the Work Package Plan and Task Briefing). The Alliance Environment Manager will outline their role and responsibilities to the Site personnel, including the powers that they have to stop works should any impacts occur to ecological features outside those described in this document.

The TBT will include details of the responsibility of site personnel to record and report sightings of notable species (including invasive species) within the Site that have previously been unrecorded (or where stands have extended in size).

The TBT will include details about the reporting of incidents during the works such as accidental dispersal of pollutants or invasive plant species.

All site personnel attending the TBT will sign an attendance sheet.

Information regarding invasive species will also be included in the site induction.

Only suitably qualified and experienced personnel or subcontractors will be allowed to undertake invasive weed control methods.



INVASIVE SPECIES MANAGEMENT PLAN

8 Records

The following records will be kept

- Copies of qualifications of those applying herbicide
- Documentation of the date of herbicide application/ other control methods as described in this procedure
- Where herbicides are applied, documentation detailing the herbicide and active ingredient used, and the application rate
- Location of invasive species must be logged and Alliance Environment Manager informed
- Site induction and Toolbox Talk records of attendance (in relation to invasive species briefings)
- Site Inspection Report Forms
- COSHH datasheets for herbicides
- Cross reference to Site Waste Management Plan- details of any invasive species contaminated material taken off site, waste contractor transporting the waste and the details of the receiving site.
- New details of invasive species should be recorded onto ProjectMapper



INVASIVE SPECIES MANAGEMENT PLAN

Appendix A: Network Rail invasive species guidance sheets

Part 1: Network Rail Japanese Knotweed guidance

[151667-TSA-00-TRU-PLN-W-HSQ-000002](#)

Part 2: Network Rail Giant Hogweed guidance

[151667-TSA-00-TRU-PLN-W-HSQ-000003](#)

Part 3: Invasive species general guidance

[151667-TSA-00-TRU-PLN-W-HSQ-000004](#)

Network Rail
Kings Place
90 York Way
London
N1 9AG

www.networkrail.co.uk