



Arboricultural Method Statement

A628 Dodworth Road/Broadway Junction Improvement

Revision D

Addition of clause 3.6 – Prohibition of Use of Vehicles in CEZ

8 Nov 2019

Prepared for:
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1.0 Introduction

- 1.1 A new road layout is proposed at the junction of Dodworth Road with Pogmoor Road in Barnsley. To enable these highway improvements, 76 trees are to be removed, whilst 58 trees are to be retained and about 100 trees planted.
- 1.2 Most of these trees are within a local park, which has a friends-of group, and are in close proximity to one another. The park, and especially the trees, is valued by the local community and therefore the retention of trees is to be planned carefully so that only those trees, other than those identified for removal (see para 1.3), within the footprint of the new highway will be removed and so that adverse effects to neighbouring trees is kept to a minimum.
- 1.3 This statement builds on the work set out in the report **'Tree Survey, Arboricultural Impact Assessment and Method Statement' updated 2 December 2018 by Wainwright Landscape Architecture**. (TSAA report). An extract of the Assessment Table from that report is included as Appendix B of this report to identify quickly what work is to be done to each tree.
- 1.4 This report should also be read in conjunction with Drg No PPP/557/12 - **tree protection plan (TPP)** and the report on bats **'Ecological Impact Assessment Report – A628 Dodworth Road Crossroads Improvement Scheme' by Wildscapes dated 16 November 2018**. (EIA report)

2.0 Root Protection Areas

- 2.1 For each tree or group of trees, an area around the trunk where the roots should remain undisturbed for the health and continued growth of the tree has been calculated. This area is known as the **root protection area (RPA)**. The RPAs have been taken from the TSAA report and are shown on the TPP.

3.0 Protective Fence and Construction Exclusion Zones

- 3.1 Tree protection fencing shall be erected around all those trees or groups of trees to be kept, to include the RPAs. Where trees to be removed are adjacent to those to be kept, the fencing should include those trees to be removed until the tree removal work starts. The purpose of the tree protection fencing is to avoid any damage both to the above ground parts of the trees and to the roots.
- 3.2 Hidden damage can occur to the roots through compaction or spillage of harmful substances. Therefore, before any equipment or material is brought on site, protective fencing should be erected in the locations shown on the TPP to create construction exclusion zones.
- 3.3 The tree protection fencing should be kept in a good and effective condition for the duration of the construction works. The fencing should only be opened up when specific work is to be carried out and in the presence of an arboriculturist.
- 3.4 The protective fencing and barriers should be erected to the standard in para 6.2.2.2 and as Figure 2 of **BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations**.
- 3.5 Within the construction exclusion zone, no equipment, machinery or materials shall be used, stored or burnt.

- 3.6 Vehicles must remain outside the construction exclusion zones. Material to be brought into the areas for the construction of the items listed in section 7.0 must be done without the use of vehicles, unless with the written agreement of the arboriculturist and BMBC Tree Officer.
- 3.7 No fires outside the construction exclusion zone should be lit where the flames might be within 5m of the tree foliage, trunk or branches of a tree to be retained. The location will be dependent on the size of fire and wind direction and strength.

4.0 Ecological Considerations

- 4.1 It is illegal to disturb a bat or group of bats in their roost; to damage or destroy a roost, even if there are no bats present at the time; to obstruct access to a bat roost; or to capture, injure or kill a bat.
- 4.2 It is also illegal to take, damage or destroy the nest of any wild bird whilst it is in use or being built. The bird breeding season starts 1 March and continues through to at least the end of August, the actual dates depending on the weather conditions. Therefore, felling work is restricted to the late Autumn and Winter months.
- 4.3 When planning the work, reference should be made to the 'EAI report, and the recommendations in Section 6 of that report should be followed in full.
- 4.4 Particular note is to be made of the method statement in Appendix D of that report (pages 67 to 69), the location of the trees by grid reference in Appendix B and the suitability for roosting by bats, also in Appendix B of that report.
- 4.5 This information should be cross-referenced to the arboricultural survey via grid references.
- 4.6 In outline, the following measures are to be taken on site:
- 4.7 The potential bat roost trees are to be marked clearly with paint in colours reflecting their suitability as bat roosts (1 high potential, 6 moderate potential, 4 low potential and 3 negligible) before the start of the treework.
- 4.8 Felling is to take place before December.
- 4.9 All trees are to be soft felled, with fellers keeping vigilant for signs of bats.
- 4.10 The high and medium potential trees are to be inspected by a licensed ecologist on the morning that the trees are to be felled.
- 4.11 The felled timber from high, medium and low potential trees is to be left on the ground for 24 hours before being removed.

5.0 Tree Removal

- 5.1 Tree removal work should be carried out by a qualified arboriculturist / experienced tree works contractor.
- 5.2 Where trees with bat roost potential are to be removed, a licensed ecologist is to be present (see section 4.0 Ecological Considerations).

- 5.3 Tree protection fencing is to be erected around those trees to be kept, including their immediate neighbours to be removed. An arboriculturist and possibly the tree officer will be present to confirm which trees to be removed need not be within the tree protection fence. Circumstances where the trees would not need to be included in the fenced area is when canopies are not touching or only lightly touching.
- 5.4 The whole tree is to be removed, including the rootball, cut up and removed from site. If any pieces of tree are to be kept, or small branches chipped, this will be made clear at the start of the tree clearance works.
- 5.5 The work is to be carried out carefully to avoid damage to neighbouring trees, tree roots and structures.
- 5.6 Where branches of trees to be kept are snagged, any breaks are to be cut back neatly to the next branch bark ridge according to recommendations in BS3998:2010.
- 5.7 Where the RPA has been disturbed, the ground is to be lightly consolidated or loosened, whichever is required. In periods of prolonged dry weather, water is to be applied slowly in one application of about 100L per tree.

6.0 Arboricultural Work on Trees to be Retained

- 6.1 All tree work is to be carried out safely, hygienically, using well maintained equipment appropriate for the job, by a qualified arboriculturist and in accordance with **BS 3998:2010 Recommendations for Tree Work**.
- 6.2 Trees requiring work are identified in the table in Appendix B.

7.0 Operations within RPAs

- 7.1 Where work is to be carried out in the RPA, a professionally qualified arboriculturist is to present for specific operations.
- 7.2 The works expected to occur within the RPA are the construction of the gabion wall, the construction of the acoustic fence, ground stabilisation and path works.

A. Construction of Gabion Wall along Northern Boundary with Railway Line

- 7.3 The gabion wall will be 1.5m high and 1m wide, and will be constructed on a foundation of 200mm of MOT Type 1 overlain with 100mm of concrete. The wall foundation will be locally raised in four locations to minimise excavation within the RPA or under the canopy of the trees.
- 7.4 The exact line of the gabion wall will be agreed on site with arboriculturist and BMBC Tree Officer to avoid the RPA where possible and to minimise the impact on the tree roots where the wall passes under tree canopies.

B. Acoustic Fence on Eastern Boundary with Residential Properties

- 7.5 The acoustic fence passes under the canopies of a large group of trees. It will be 3m high (typically a close boarded timber construction). Posts spacing will be adjusted to find the best alignment between trees, to avoid tree stems and roots in excess of 25mm dia, and to reduce impact on the root zone (following NJUG 10 guidelines).
- 7.6 The posts will be driven in, avoiding the need for concrete foundation blocks.

- 7.7 The line will be set out and agreed with the arboriculturist and BMBC Tree Officer before any excavation starts or machinery brought within the construction exclusion zone.
- 7.8 Exploratory holes for posts will be hand dug to an approximate depth of 40cm to check for any structural roots, with an arboriculturist present. If no roots are present, the post will be driven in with a mechanical driver until firm, and the top sawn off to the required height. The excavated soil will then be returned to the hole in two layers, firming each layer thoroughly with the heel.
- 7.9 Once the work is complete, unless in the dormant season (November to March), a high phosphate fertiliser should be applied and worked into the disturbed ground at a rate of 75g/m².

C. Ground Stabilisation Procedure

- 7.10 Where the carriageway and pavements are to be constructed, a grout will be pumped through boreholes into the ground via nozzles at 3m centres to stabilise the existing ground. The resulting ground will be stronger and relatively impermeable.
- 7.11 The grout is a slurry of pfa with 40% water, which will be injected into the ground in lifts of 1m, starting at the base of the landfill, which is up to 12m deep. The grout will naturally penetrate laterally up to 2.5m from the borehole at the greater depths, but will require pressurisation near the surface to achieve the lateral penetration.
- 7.12 The grout will finish 1m below the proposed finished ground surfaces, well below the tree roots which tend to occupy the top 60cm depth of soils.
- 7.13 The boreholes extend 2m beyond the footprint of the highway surfaces.
- 7.14 There are 23 trees where the ground stabilisation works are within the RPA, based on 5m offset behind pedestrian pavement kerb.
- 7.15 Within the RPA, no borehole will be within 2m of a tree trunk at ground level. To avoid damage to the tree trunk and major branches, the borehole will be angled away from the above ground part of the tree at a gradient of 6:1. As the nozzle gets near the surface, there will be no pressurisation in the last 1m lift, to avoid grout entering the top 1m depth of soil.
- 7.16 An arboriculturist will be present when slurry is being injected within any RPA.

D. Path Works

- 7.17 The path is to be constructed from Flexistone or Flexipave, a porous material which allows water to run through to the ground beneath. This will be laid on a type 1 sub-base.
- 7.18 Where the path passes beneath tree canopies, the foundation will not be excavated but the shoulders of the path built up using material excavated from path works elsewhere. The full depth of the path construction will therefore be laid on existing ground levels, thereby minimising any disturbance to tree roots.

8.0 Services

- 8.1 Information on existing utilities to be provided.

APPENDIX A

PPP/557/12 rev D Tree Protection Plan - Main

PPP/557/12-1 rev D Tree Protection Plan – During Construction of Gabion Wall



VEGETATION

- existing mature trees to be kept
- existing shrubs or scrub
- existing tree planted by Friends of Penny Pie Park
- tree to be removed - see below*
- root protection area (RPA)

TREE PROTECTION

- tree protection fence to BS5837:2012 Para 6.2.2.2 and Figure 2, except where site hoardings in place and secure.

CONSTRAINTS

Along northern and western boundaries of park, beneath canopies

- Acoustic wall, gabions, either 1m high or 1.5m high

Along eastern boundary of park, beneath canopies

- Acoustic fence, timber, 3m high

Along southern boundary of park, Pogmoor Road and large poplar in centre of site - grout beneath highway

See Arboricultural Method Statement for 'A628 Dodworth Road/Broadway Junction Improvement' dated August 2019 for details specific to construction of gabion wall, acoustic fence and ground stabilisation works.

Fencing
Barrier as specified in BS5837:2012 Fig 2 to be erected before works starts on site, and to be kept in a good and effective condition for the duration of the works until the works are complete on site. Fence to be outside canopy of all trees to be retained, around the RPA as shown on the drawing. The fence will only be opened up for the carrying out of the following works within the fence, and then immediately re-closed: Ground stabilisation works, gabion wall, acoustic fence, pathworks.

Storage
Storage of material is never to occur within the RPA. Similarly, any transfer of materials harmful to plant growth is not to occur uphill of trees, to avoid risk of spilled material falling downhill into RPA.

Fires
No fires should be lit where they might cause damage to trees. Particular note of wind direction is to be made.

Construction Works
Any construction works within the RPA is to be carried out carefully, minimising disruption to tree roots, and with an arboriculturist present.

Vehicles
No vehicles to enter area within fence. For works within fence, manual handling of materials only unless agreed otherwise.

PATHS AND PAVING TO BE INSTALLED

- 1.8m and 1.2m wide Flexipave paths in linear park
- 3m wide Flexistone path in central area
- route for fairground vehicles with reinforced cross over path

Bird and bat boxes to be installed with assistance of Friends of Penny Pie Park

500m

* 'Tree Survey and Arboricultural Assessment' updated 28 June 2018 by Wainwright Landscape Architecture.

Rev D: 081119. Note on vehicle exclusion added.

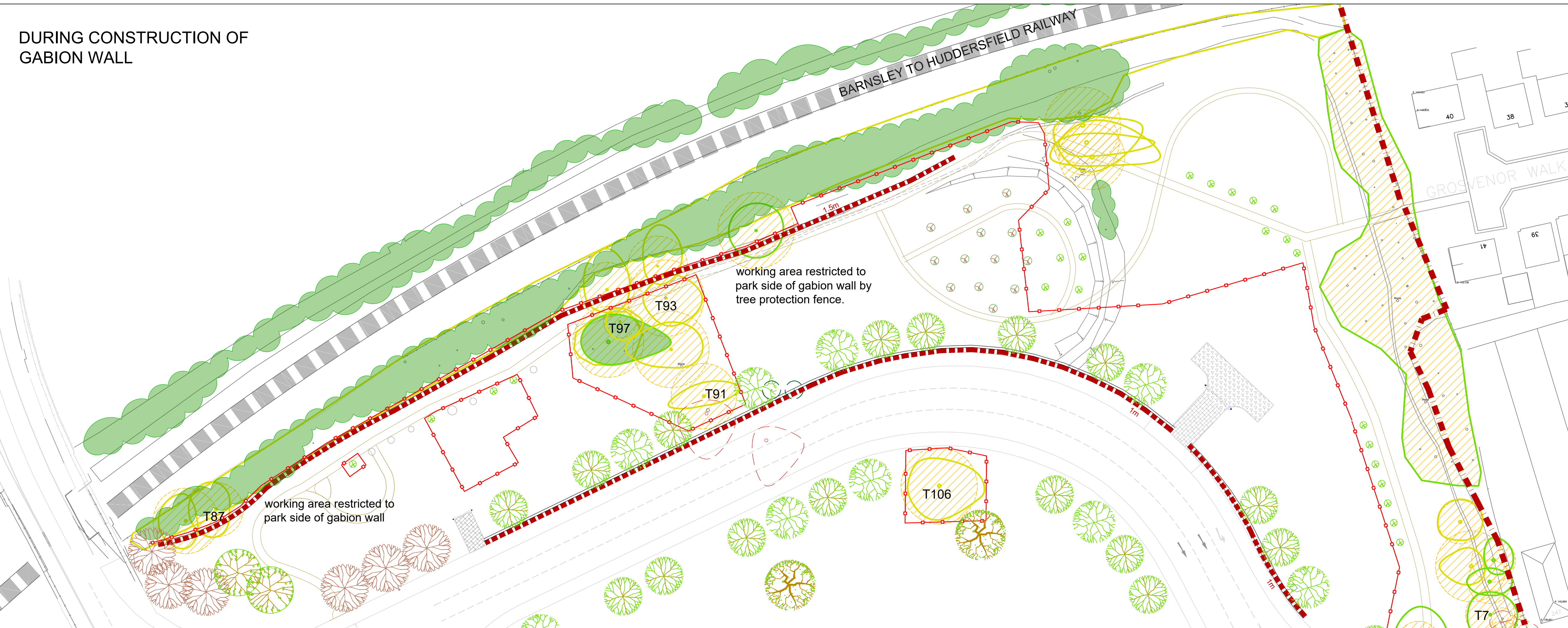
Rev C: 301019. Level of tree protection detailed.

Rev B: 250919. Minor presentation changes

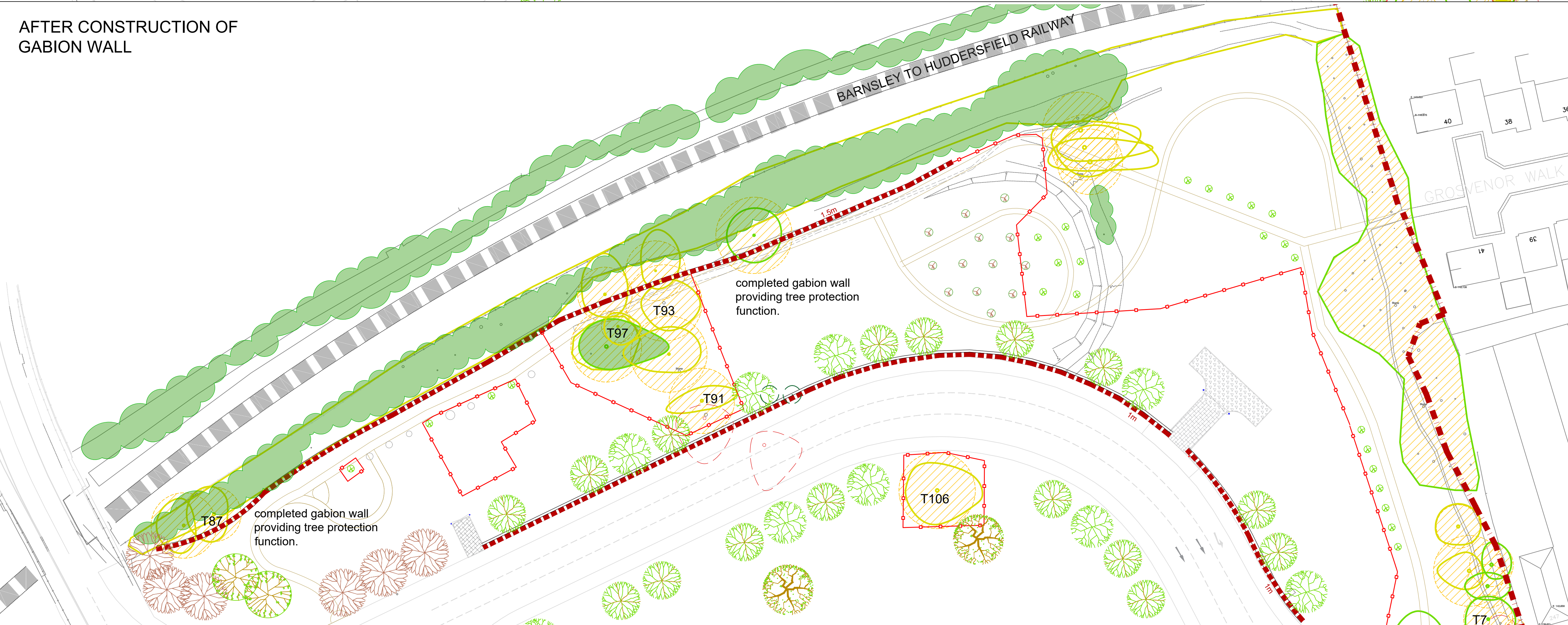
Rev A: 130919. Addition of ground stabilisation notes and key

BARNLEY MBC			
PENNY PIE PARK			
TREE PROTECTION PLAN			
1:1000 @ A3	Aug 2019	KE	PPP/557/12 rev D

DURING CONSTRUCTION OF GABION WALL



AFTER CONSTRUCTION OF GABION WALL



VEGETATION

- existing mature trees to be kept
- T21 Tree reference in Appendix B identifying work to tree.
- existing shrubs or scrub
- existing tree planted by Friends of Penny Pie Park
- tree to be removed - see below*
- root protection area (RPA)

TREE PROTECTION

- tree protection fence to BS5837:2012 Para 6.2.2.2 and Figure 2, except where site hoardings in place and secure.

CONSTRAINTS

Along northern and western boundaries of park, beneath canopies

- Acoustic wall, gabions, either 1m high or 1.5m high

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Rev B: 250919. Minor presentation changes

Rev A: 130919. Addition of ground stabilisation notes and key

	Landscape
BARNLEY MBC	
PENNY PIE PARK	
TREE PROTECTION PLAN DURING CONSTRUCTION OF GABION WALL	
1:1000 @ A3	1:500 @ A1
Aug 2019	KE
PPP/557/12-1	rev D

APPENDIX B

Tree Survey table extract from '**Tree Survey and Arboricultural Assessment**' updated **28 June 2018** by **Wainwright Landscape Architecture** identifying work to trees to be kept.

Ref	Species	Height (m)	Stem Ø (mm)	Branch Spread (m)	Height Crown Clearance (m)	Life Stage	PC	Structural Condition General Observations	Preliminary Management Recommendations	ERC (Yrs)	Grade
T4	Silver birch (<i>Betula pendula</i>)	18	300	N 2 E 5 S 2 W 5	4	Mature	Medium	Frequent dead branches in lower crown	Cut out deadwood	20+	C
T7	Horse chestnut (<i>Aesculus hippocastanum</i>)	18	450	N 5 E 6 S 6 W 5	4	Mature	Good	Well balanced crown, but dense	Crown thin	20+	B
T11	Sycamore cultivar (<i>Acer pseudoplatanus</i> spp)	17	400	N 4 E 3 S 3 W 5	4	Mature	Good	Ivy taking hold on stem. Some poorly pruned branches on east side of canopy	Prune stumps left from poor pruning. Remove ivy	20+	C
T30	Black Poplar hybrid (<i>Populus nigra</i>)	17	400	N 5 E 9 S 6 W 4	4	Mature	Good-mod	Very low, heavy limb to east. Basal growth. Several joints in crown appear damp.	Further investigation of joints required	20+	C
T31	Norway maple (<i>Acer platanoides</i>)	18	450	N 4 E 5 S 5 W 4	4	Mature	Good	Basal growth	Remove basal growth	20+	B
T32	Ornamental Cherry (<i>Prunus</i> spp.)	16	500	N 6 E 5 S 10 W 6	3.5	Mature	Good	Ivy strong on stem. Dense crown, including dead laterals	Remove ivy. Crown thin, removing dead branches	20+	C
T33	Ornamental Cherry (<i>Prunus</i> spp.)	16	300 500	N 5 E 8 S 8 W 5	3.5	Mature	Good	Double stemmed tree. Some ivy on stem	Remove ivy	20+	C

Ref	Species	Height (m)	Stem Ø (mm)	Branch Spread (m)	Height Crown Clearance (m)	Life Stage	PC	Structural Condition General Observations	Preliminary Management Recommendations	ERC (Yrs)	Grade
T47	Norway maple (<i>Acer platanoides</i>)	18	425	N 6 E 4 S 3 W 3	4	Mature	Moderate	Dark area at major joint. Bark partly stripped	Further investigation required	20+	C
T48	Norway maple (<i>Acer platanoides</i>)	18	450	N 5 E 3 S 2 W 3	4	Mature	Moderate	Severe damage to trunk	None, but monitor due to trunk damage	20+	C
T72	Norway maple (<i>Acer platanoides</i>)	18	500 below flare	N 2 E 6 S 8 W 8	4	Mature	Good	Pruned heavily on west for sub-station clearance. Wire passes through crown. Bi-furcates to 2 main stems @ 2m ht. Crack in bark.	Further investigation of bark damage required	20+	C
T76	Weeping willow (<i>Salix babylonica</i>)	18	500	N 6 E 4 S 5 W 7	4	Mature	Good	Strong kink in main stem. Some lower branches broken or damaged. Distinctive tree on roadside	Remove broken branches	20+	C
T87	Goat willow (<i>Salix caprea</i>)	18	600	N 6 E 3 S 6 W 6	2	Over Mature	Poor	On slope of railway cutting. Open structure where main limbs meet stem, substantial rot/decay evident here. Danger of falling limbs towards rail line.	Remove all broken/damaged limbs	10+	C
T91	Black Poplar hybrid (<i>Populus nigra</i> var.)	23	600 below flare	N 3 E 8 S 2 W 8	5	Over Mature	Moderate	Bi-furcates @ 0.6m to one strong and one less strong limb. Broken, drooping limbs to east	Remove broken limbs	20+	C
T93	Black Poplar hybrid (<i>Populus nigra</i> var.)	23	700	N 5 E 8 S 6 W 5	5	Over Mature	Moderate	Broken/dying branches evident in fairly sparse, decaying crown.	Remove broken limbs	10+	C
T97	Crack willow (<i>Salix fragilis</i>)	15	300	N 3 E 5 S 4 W 3	3	Early mature	Moderate	Bark damage, some clumsy pruning. Crown affected by proximity to T97 and T95	Cut back severed limbs to a main limb	40+	C

Ref	Species	Height (m)	Stem Ø (mm)	Branch Spread (m)	Height Crown Clearance (m)	Life Stage	PC	Structural Condition General Observations	Preliminary Management Recommendations	ERC (Yrs)	Grade
T 106	Black Poplar hybrid (<i>Populus nigra</i> var.)	20	700	N 6 E 10 S 8 W 7	3	Over Mature	Moderate	Some heavy limbs, a main lateral broken in western part of crown.	Remove broken limb	10+	C