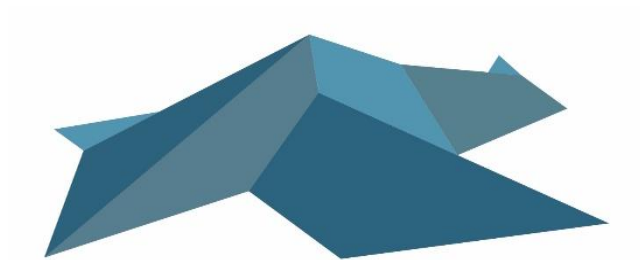


Arboricultural Method Statement

BE-1027-05A

**Former Railway Station and Goods Yard, Netherton,
West Yorkshire, HD4 7HB**



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CONTENTS

1. BACKGROUND	3
2. TIMING OF WORKS	3
3. SITE INDUCTION.....	3
4. TREE WORKS.....	3
5. TREE PROTECTION	4
6. RETENTION OF T29	5
7. GROUND PROTECTION.....	5
8. CONSTRUCTION OF TEMPORARY PERIMETER SWALE	5
9. CONSTRUCTION OF FENCES WITHIN ROOT PROTECTION AREAS	6
10. GENERAL PRECAUTIONARY MEASURES	6
11. FURTHER INSPECTIONS	6
12. PROJECT ARBORICULTURIST DETAILS	6

TABLES AND FIGURES

TABLE 1 TIMING OF WORKS	3
TABLE 2 RECOMMENDED TREE WORKS	4
FIGURE 1 TEMPORARY PROTECTIVE FENCING	4

APPENDIX 1: TREE SURVEY SCHEDULE

APPENDIX 2: TREE PROTECTION PLAN

1. Background

David Watts Associates Ltd have been instructed by Holroyd Homes to produce an Arboricultural Method Statement in accordance with 'BS5837: 2012 – Trees in Relation to Design, Demolition and Construction: Recommendations' at the site at the Former Railway Station and Goods Yard, Station Road, Netherton, HD4 7HB, hereafter referred to as 'the site'.

A previous Arboricultural Impact Assessment and Method Statement in relation to the proposed development has already been produced, and tree removals due to development have been agreed with the local authority. Therefore, this document should be cross referenced with the previous report, but supersedes the method statement section of the document.

Tree data from the Arboricultural Impact Assessment is reproduced in **Appendix 1: Tree Survey Schedule**.

2. Timing of Works

The phasing of works should be carried out in accordance with Table 1, below:

Table 1 Timing of Works

Stage	Works
1	Site induction
2	Carry out tree works
3	Install temporary tree protection fencing and ground protection
4	Inspection by arboricultural consultant
5	Carry out construction works
6	Remove tree protection fencing once works completed
7	Final inspection by arboricultural consultant

3. Site Induction

Prior to works commencing, all contractors will attend a site induction. Contractors must be briefed on arboricultural concerns arising from the development proposals, including tree root protection areas (RPAs). This method statement must be made available to all contractors working on the site.

4. Tree Works

Prior to further works commencing, it is recommended that T7, T9, T22, T24, T25, T26, T27, T28, T35, T36, T40, T47, T48, T50, T65 and G2 are removed.

It is recommended that pruning works are carried out on T1, T2, T56 and T79.

All tree works must be carried out by a suitably qualified and fully insured arboricultural contractor, and should be carried out in accordance with British Standards (2010)¹.

¹ British Standards (2010). *BS3998: 2010 – Tree Works: Recommendations*. British Standards Institute, London

Table 2, below, shows a summary of recommended tree works.

Table 2 Recommended Tree Works

Tree/Group Numbers	Recommended Works
T7, T9, T22, T24, T25, T26, T27, T28, T35, T36, T40, T47, T48, T50, T65 G2	Fell to ground level
G2	Re-pollard at 2.5 m
T56	Crown raise to 4 m
T79	Crown reduce by 2 m on east aspect
T2, T3	Crown raise to 5 m

Of those trees recommended for works, T56, T65 and T79 are afforded protection by TPOs. As such, tree works must not commence unless appropriate consent from the local authority has been granted. Note also, that while at the time of writing other trees recommended for works are not afforded protection by TPOs, this may be subject to change, and therefore any legal designations afforded trees must be verified with the local authority prior to works commencing. Killing or damaging a protected tree is a criminal offence, and can result in an unlimited fine.

5. Tree Protection

Prior to machinery entering the site, it will be necessary to ensure that all trees are adequately protected by the installation of temporary tree protection fencing. This must remain in place during development works. The location of tree protection fencing can be viewed in **Appendix 2: Tree Protection Plan**.

Tree protection fencing should consist of a vertical scaffold framework, well braced to resist impacts. The vertical poles should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be fixed (see Figure 1, below).

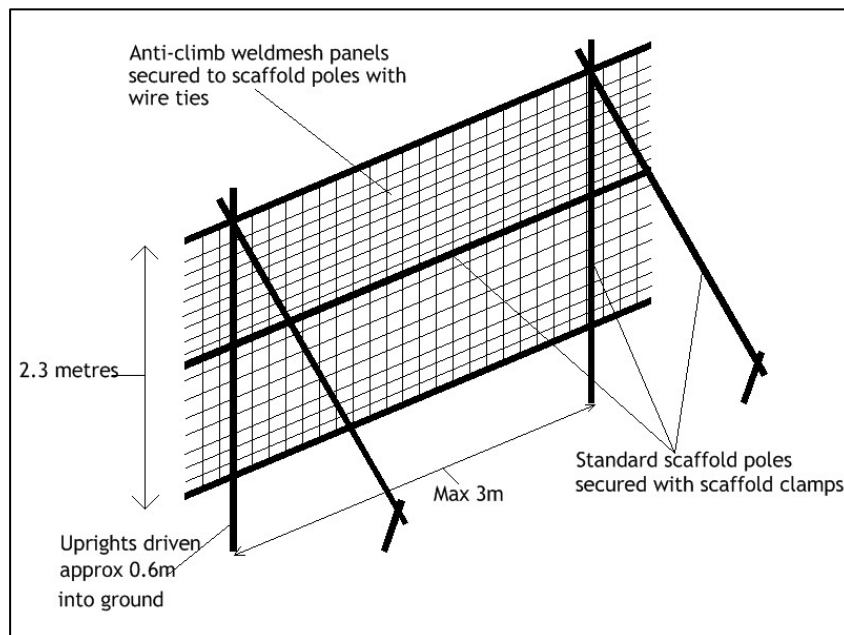


Figure 1 Temporary Protective Fencing

Laminated waterproof A3 signs should be fixed securely to fencing panels on each enclosure at 9 m intervals. The signs should clearly read: 'Protected Tree Zone, no storage or operations within fenced off areas'.

Once the construction works have been completed, the tree protection fencing may be removed. This should be done with care to ensure that no damage to trees is caused.

6. Retention of T29

The previous Arboricultural Impact Assessment recommended the removal of T29 due to significant changes in ground level. After consultation with the local authority tree officer, this tree will now be retained, and the proposals have been revised accordingly.

No significant changes in ground level of this tree will be undertaken. A retaining wall will be constructed at the edge of the RPA to separate the steep drop in ground level leading from the proposed dwelling to the tree. Note also that a timber fence will be constructed within the RPA – details are provided below.

7. Ground Protection

It is not feasible to install temporary protection fencing within the entirety of the RPA of T56. It is therefore recommended that temporary ground protection is installed within this area.

Temporary ground protection should be installed in three stages:

1. A geotextile membrane should be pinned securely to the ground.
2. Onto this should be laid woodchip to a depth of at least 150 mm.
3. Onto this should be placed interlinked scaffold boards (or similar material), well-braced to resist impacts.

The temporary ground protection will be sufficient to withstand pedestrian traffic and the operation of light machinery. No vehicles or machinery over 1 tonne in weight may be driven over this area. If for any reason the operation of vehicles and/or heavy machinery is required within this area, more robust protection will be required and further advice from the project arboriculturist must be sought.

The location of ground protection can be viewed in the Tree Protection Plan. As with tree protection fencing, ground protection must remain in place throughout development works and only be removed once works have been completed.

8. Construction of Temporary Perimeter Swale

Construction of a temporary perimeter swale is proposed to the west of the site. This is positioned outside the RPAs of all trees to be retained on the site. Excavation to construct the temporary perimeter swale must be carried out outside the RPAs of trees; the operation of machinery, vehicles or pedestrian traffic during the excavation work is not permitted.

As with all development work on the site, construction of the temporary perimeter swale may only commence once tree protection fencing is in place, and no setback of the fencing to carry out excavation is permitted.

9. Construction of Fences Within Root Protection Areas

The development works will require the construction of property boundary fences within the RPAs of T29, T30 and T34. Either the tree protection fencing should be setback temporarily during the this stage of works, and returned to its initial position once boundary fencing is installed, or boundary fences should be constructed after all other construction work is completed and the tree protection fencing removed.

Prior to the installation of fence posts, exploratory holes will be dug with a fence auger, Dutch auger or similar. If large structural tree roots >5 cm in diameter are identified, alternative locations for post holes must be sought. This will be achieved by either moving the fencing line forwards or backwards, or using alternative lengths of fence panels between posts.

While constructing boundary fences, no vehicles or heavy machinery will be used within the RPAs of trees. Only handheld tools will be operated within these areas.

10. General Precautionary Measures

Prior to the commencement of development works, a site storage area should be designated. This must be outside the RPAs of trees.

No materials hazardous to tree health, such as oil, bitumen or cement should be stored within the RPAs of trees.

No fires may be lit within the site.

Where there is a risk of polluted water runoff into RPAs, heavy duty plastic sheeting and sandbags must be used to contain any spillages and prevent contamination.

If any breach in the tree protection measures occurs, it is the site manager's responsibility to report this to an arboricultural consultant so that appropriate measures may be taken.

11. Further Inspections

It is recommended that inspections by an arboricultural consultant are undertaken:

- Upon installation of tree protection fencing to determine if it is satisfactory.
- Upon completion of the development works.

After each inspection a letter accompanied by photographic evidence will be submitted by the arboricultural consultant to the local authority tree officer to confirm if the method statement has been followed correctly and whether trees have been adversely affected by construction works.

12. Project Arboriculturist Details

If any issue regarding tree protection arises during the course of development works, the project arboriculturist should be contacted using the details below:

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Appendix 1: Tree Survey Schedule

Key			
Species	Common name and scientific name	Age	Y – Young sapling/newly planted tree
Height	Measured to nearest 0.5 m		SM – Semi-mature; tree 1/3 of mature size
CC	Height of crown clearance, measured to nearest 0.5 m		EM – Early mature; tree 2/3 of mature size
Stems	Number of stems bifurcating below 1.5 m		M – Mature; tree 3/3 of mature size
DBH	Diameter at breast height (1.5 m), in cm		V – Veteran tree
Crown spread	Measured to nearest 0.5 m	SULE	Safe useful life expectancy, in years
Category	See BS5837 cascade chart (Table 1)	#	Denotes estimated value
Average values given for groups of trees			

Individual Trees

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T1	Sycamore	13	6	1	62	2	5	6	5	EM	Bifurcates at 2.5m Included primary branch unions Pruning wounds Minor deadwood	B1
T2	Common ash	12	3	2	39 17	3	4	4	4	EM	Minor deadwood Pruning wounds	B1
T3	Common ash	10	4	2	23 44	4	5	2	3	EM	Included stem unions Knothole at 1.5m on north aspect Pruning wounds Deadwood 100mm diameter Suppressed by adjacent tree	C1
T4	Elder	3	1	6	12 av	3	2	1	2	SM	Crown dieback Decay cavities and bark necrosis on stem	U
T5	Sycamore	10	7	1	29	2	2	3	4	SM	Lean to west Suppressed by adjacent tree Deadwood 100mm diameter	C1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T6	Pedunculate oak	12	5	1	39	4	4	4	6	EM	Deadwood 100mm diameter	B1
T7	Sycamore	14	3	2	39 42	5	7	5	5	EM	Basal cavities on both stems with advanced white rot. Stems visibly moving in wind	U
T8	Pedunculate oak	13	4	1	45	3	3	5	4	EM	Deadwood 100mm diameter	B1
T9	Pedunculate oak	5	5	1	13	0	0	3	4	SM	Suppressed by adjacent trees Lean to west Sparse crown	U
T10	Pedunculate oak	7	4	1	14	1	0	1	4	SM	Suppressed by adjacent trees Lean to west	C1
T11	Pedunculate oak	6	2	1	21	3	1	1	4	SM	Suppressed by adjacent trees Lean to west Exposed compression roots	C1
T12	Pedunculate oak	10	4	1	36	1	3	1	6	SM	Suppressed by adjacent trees Adjacent to steep ban Exposed compression roots Deadwood <100mm diameter	C1
T13	Pedunculate oak	13	6	1	47	4	6	5	7	EM	Deadwood 100mm diameter	B1
T14	Sycamore	12	2	1	46	3	4	2	4	EM	Incremental growth strips on top side of stem Branch wounds on stem Deadwood <100mm diameter	B1
T15	Sycamore	11	4	3	35 44 29	2	4	5	6	EM	Included stem unions Oyster mushroom <i>Pleurotus ostreatus</i> on stem One stem snapped at 7m	C1
T16	Sycamore	12	8	1	49	4	4	4	4	EM	Deadwood 100mm diameter	B1
T17	Pedunculate oak	11	3	2	44 30	5	4	5	5	EM	Primary branch at 7m snapped and hanging	C1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T18	Pedunculate oak	12	6	1	37	3	3	4	3	SM	Suppressed by adjacent trees Exposed compression roots	C1
T19	Pedunculate oak	11	5	1	34	2	1	2	4	SM	Suppressed by adjacent trees Unbalanced crown	C1
T20	Pedunculate oak	8	2	1	16	1	1	1	3	SM	Suppressed by adjacent trees Sparse crown	C1
T21	Sycamore	12	5	1	37	2	2	3	4	EM	Suppressed by adjacent trees Deadwood <100mm diameter	B1
T22	Common lime	8	1	1	37	7	4	5	5	EM	Adjacent to retaining wall Debris around basal area	B1
T23	Sycamore	9	1	2	52 21	5	4	5	6	EM	Rubble in RPA Minor deadwood	B1
T24	Sycamore	7	1	2	20 21	3	2	2	3	SM	Included stem unions Decay at basal area Lean to north Frost cracks on east aspect of both stems from 0.5m to 3m	C1
T25	Sycamore	10	2	3	41 12 9	4	4	4	4	EM	Mechanical damage to smaller stems Old fence included into cambium Branch tear out wounds on stem Minor deadwood	B1
T26	Sycamore	8	3	1	23	3	1	2	2	SM	Fence included into cambium Minor deadwood Suppressed by adjacent tree	C1
T27	Sycamore	9	3	2	28 13	3	3	3	4	SM	Fence included into cambium Minor deadwood	C1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T28	Common lime	9	3	2	29 18	2	5	5	4	SM	Fence included into cambium Crossing branches	C1
T29	Sycamore	12	4	2	52 42	5	5	4	7	EM	Fence included into cambium Minor deadwood	B1
T30	Sycamore	17	4	3	68 50 46	7	7	5	8	EM	Included stem unions	B1
T31	Sycamore	16	4	1	65	5	7	6	9	EM	Knothole at basal area Minor deadwood Snapped tertiary branches	B1
T32	Pedunculate oak	7	4	1	35	4	3	3	4	SM	Deadwood <100mm diameter	B1
T33	Sycamore	11	3	1	44	4	3	3	4	EM	Included primary branch unions Deadwood <100mm diameter	B1
T34	Pedunculate oak	9	4	2	48 51	4	6	5	5	EM	Deadwood 150mm diameter	B1
T35	Goat willow	10	2	2	420 530	4	6	5	7	EM	Deadwood 100mm diameter Decay cavity on primary branch to west	C1
T36	Goat willow	5	1	1	19	2	2	2	2	SM	Rubble around basal area	C1
T37	Pedunculate oak	10	2	1	39	4	3	4	4	EM	Deadwood 100mm diameter	B1
T38	Pedunculate oak	9	3	1	34	4	8	4	5	EM	Located on steep slope Exposed compression roots deadwood <100mm diameter	C1
T39	Pedunculate oak	9	2	1	42	4	7	3	5	EM	Significant deadwood <100mm diameter	C1
T40	Elder	5	1	2	14 27	3	4	3	4	SM	Self-seeded on rubble heap	C1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T41	Sycamore	8	1	2	19 21	3	5	3	3	SM	Included stem unions. Bader setts in rpa.	B1
T42	Goat willow	8	1	3	23 41 28	4	3	4	6	EM	Hazard beam on 3rd stem to west. Badger setts in rpa. Minor deadwood.	C1
T43	Hawthorn	8	1	5	21 14 15 11 12	3	3	2	4	SM	Located on steep slope. One dead stem. Hanging deadwood.	C1
T44	Elder	5	2	1	19	5	1	1	2	SM	Suppressed by adjacent trees. Severe lean to north.	C1
T45	Goat willow	5	2	2	31 28	4	3	2	4	EM	Suppressed by adjacent trees. Subsidence within rpa. Decay on stem.	C1
T46	Pedunculate oak	13	2	1	34	4	4	5	7	SM	Branch wound on primary branch. Minor deadwood.	B1
T47	Elder	4	1	1	15	4	1	1	2	SM	Suppressed by adjacent trees. Severe lean to north.	C1
T48	Elder	6	4	2	14 12	4	3	2	2	SM	Included foreign bodies into stem. Minor deadwood.	C1
T49	Pedunculate oak	13	5	1	51	5	5	8	8	EM	Located atop steep slope. Branch stubs on stem.	B1
T50	Elder	4	4	1	14	2	3	2	2	SM	Proximity to retaining wall.	C1
T51	Pedunculate oak	8	4	1	35	5	4	3	2	EM	Located atop steep slope. Minor deadwood.	B1
T52	Pedunculate oak	9	4	1	35	6	5	5	7	EM	Located atop steep slope. Significant dieback of 2nd stem.	C1
T53	Pedunculate oak	9	4	1	31	5	5	5	7	SM	Minor deadwood.	B1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T54	Pedunculate oak	9	4	1	31	1	4	7	5	SM	Suppressed by adjacent tree.	B1
T55	Pedunculate oak	14	5	1	49	5	5	6	3	EM	Barbed wire included into cambium.	B1
T56	Pedunculate oak	14	1	1	73	8	5	10	9	EM	Dead primary branch at 1m	A1
T57	Hawthorn	7	2	1	15	4	3	3	3	SM	Located on steep slope.	C1
T58	Hawthorn	5	2	1	17	3	6	5	3	SM	No major visible defects	C1
T59	Hawthorn	6	2	1	16	3	4	3	3	SM	No major visible defects	C1
T60	Goat willow	8	2	2	34 24	6	8	3	2	EM	Located on steep slope. Minor deadwood.	C1
T61	Silver birch	9	2	1	24	4	5	4	2	EM	Suppressed, lean to east.	B1
T62	Goat willow	8	0	1	39	6	10	5	5	EM	Decay cavity on stem at 0.5m. Minor deadwood. Lower primary branch touching ground.	C1
T63	Goat willow	9	2	3	41 39, 29	5	6	4	4	M	Located atop steep slope. Severe lean to east.	C1
T64	Goat willow	7	2	2	30 41	2	8	10	1	M	Previously failed. Severe decay on stem. Branches touching existing building .	U
T65	Goat willow	9	2	1	76	5	6	6	1	M	Lifted root plate. Lean to east. 2nd stem removed. Secondary branches over building.	U
T66	Hazel	5	1	1	10	3	4	2	2	SM	Coppiced 2-3 years previously.	C1
T67	Hazel	4	1	1	10	2	2	2	2	SM	Coppiced 2-3 years previously	C1
T68	Goat willow	8	2	1	31	5	4	2	4	EM	Lean to east. Primary branches over existing building.	C1
T69	Pedunculate oak	8	4	1	25	2	3	3	2	SM	Suppressed by adjacent trees.	C1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T70	Pedunculate oak	12	2	3	20 19 20	3	3	3	3	EM	Previously coppiced.	C1
T71	Ash	18	2	2	71 51	10	8	11	7	M	Major deadwood.	A1
T72	Pedunculate oak	8	2	1	27	4	6	3	1	SM	Suppressed by adjacent trees. Lean to east. Located atop steep slope.	C1
T73	Goat willow	6	2	1	25	2	8	2	`	EM	Suppressed by adjacent trees. Severe lean to east.	C1
T74	Pedunculate oak	17	2	1	79	6	12	7	1	M	Located on steep slope. 45 degree lean to east.	B1
T75	Goat willow	7	2	1	19	3	10	1	1	EM	90 degree lean to east.	C1
T76	Ash	8	2	1	19	3	4	2	2	SM	Bacterial canker at basal area.	C1
T77	Ash	5	1	1	14	4	8	1	1	SM	Stem growing at 90 degrees with dogleg at 1m.	C1
T78	Ash	9	2	3	20 18 16	3	4	5	1	SM	Suppressed by adjacent trees. Crossing stems at 2m. Stem epicormic.	C1
T79	Ash	12	2	3	40 25 31	7	8	7	6	EM	Lean to east. Located atop retaining wall. Pruning wounds.	B1
T80	Ash	13	2	1	25	3	1	4	8	SM	Suppressed by adjacent trees. Lean to west.	C1
T81	Ash	9	8	1	39	4	8	9	6	EM	Suppressed by adjacent tree. Located atop retaining wall.	C1
T82	Ash	16	2	1	59	5	8	7	7	EM	Located atop retaining wall.	B1
T83	Ash	12	2	1	34	7	7	8	5	EM	Located atop retaining wall. Major deadwood.	B1
T84	Ash	17	2	1	44	6	7	7	6	EM	Located atop retaining wall.	B1

Tree No.	Species	Height (m)	Crown clearance (m)	No. of stems	DBH (cm)	Crown Spread				Age	Comments	Category
						N	E	S	W			
T85	Ash	16	2	3	29 24 19	5	5	10	3	EM	Lapsed coppice. Located on steep slope.	C1
T86	Sycamore	14	2	2	49 46	5	9	7	5	EM	Located atop retaining wall. Mechanical damage to stem.	C1
T87	Sycamore	14	2	1	39	7	9	8	6	EM	Lapsed epicormic growth. Suppressed by adjacent trees.	B1
T88	Sycamore	13	4	1	36	2	3	6	5	EM	Suppressed. Lean to southwest.	C1

Groups of Trees

Group No.	Species	Av. Height (m)	Crown clearance (m)	No. of trees	Av DBH (cm)	Av. Crown Spread				Age	Comments	Category
						N	E	S	W			
G1	Common ash Sycamore Goat willow Elder	12	3	21	20	3	3	3	3	EM	Early mature and young trees Several dead stems	C1
G2	Sycamore	5	2	6	15	2	2	2	2	SM	Lapsed trees previously pollarded at 1m	C1
G5	Hawthorn	6	2	3	10	3	3	3	3	SM	Linear group of trees	C1
G6	Hawthorn	7	1	4	12	2	3	2	2	SM	Group of four trees	C1
G7	Sycamore	5	0	10	15	2	2	2	2	SM	Group of self-seeded, semi-mature trees	C1

Appendix 2: Tree Protection Plan

