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Arboricultural & Ecological Consultancy
Chartered Arboriculturalists & Environmentalists

Arboricultural Method Statement

For Trees At

The Former Foulstone School,

Nanny Marr Road, Darfield

- Phase 2, Revision B



For

Partner Construction

Institute of Chartered Foresters
Registered Consultant

Arboricultural Association
Fellow Member

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Document Verification

Document Title	• Arboricultural Method Statement For Trees At The Former Foulstone School, Nanny Marr Road, Darfield - Phase 2, Revision B • For Partner Construction
Prepared By	• Tim Archment ND HND Arb MArborA
Authorised By	• Andrew Watson FLS MICFor CBiol MRSB FArborA CEnv LCGI

Original AMS Phase 1	
Issued 30th August 2016	Authorised - A Watson

Phase 2 AMS	
Issued 11th December 2018	Authorised - A Watson

Revision A	
Issued 18th February 2019	Authorised - A Watson

Revision B	
Issued 1st April 2019	Authorised - A Watson

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   - Existing Trees Shown On Existing Layout (AMS-EXI)
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1. Introduction

1.1 We are instructed by Partner Construction to provide an updated Arboricultural Method Statement (AMS) regarding the protection and management of the significant trees located at The Former Foulstone School, Nanny Marr Road, Darfield. This report is Revision B and relates to phase 2 of the development situated to the south of the site.

1.2 This method statement is a reference document produced to ensure best practice in the management of the trees during the demolition and construction phases of the development and brings together all of the relevant information including the recommendations set out in British standard 5837:2012 – Trees in relation to design, demolition and construction. The method statement must be read in conjunction with our Arboricultural Impact Assessment (Phase 2, Revision B) dated 1st April 2019.

1.3 The method statement forms part of the specification and schedule of works to be issued to the contractor and may form part of the contract documentation.

1.4 This document should be kept on file at the site office and be available for inspection by relevant parties.

2. Protected Status Of Trees

2.1 Trees may be legally protected, this may either be in the form of a Tree Preservation Order (TPO) or that the trees are located within a Conservation area. In addition some tree felling may require a felling licence from the Forestry Commission.

2.2 Potentially large penalties may be enforced for illegally carrying out works on protected trees. It is recommended that checks are made before any works are undertaken and no work should commence until permission has been granted. Please note that there are a number of exemptions from the requirement to obtain a felling licence including land on which full planning permission has been granted by the local authority, however this exemption does not cover land where only outline planning permission has been granted, or on land which has been allocated for residential development within local authority urban and local development plans.

2.3 AllAboutTrees has been able to ascertain with Barnsley Council (the Local Planning Authority), on Tuesday 30th August 2016 that there are no Tree Preservation Orders protecting the trees on the site. The study area abuts the Darfield Conservation Area which affords group 31 and tree 32 protection. Six weeks' notice must be supplied to the Local Planning Authority for any proposed tree work not otherwise approved by any existing relevant

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planning permission. It is an offence to carry out any tree work without giving the required notice.

3. Site Operations Prior To Any Construction Works

3.1 Tree Works

3.1.1 The first arboricultural works on site will be the removal of all the conflicting trees & groups:

- Trees 6-10, 18, 21-25, 27, 29
- Groups 26 & 27

which are identified on the Tree Protection Plan (TPP) by the broken black ring surrounding the tree centre and referred to in appendix 1 of this report.

3.1.2 The stumps may either be ground out using a stump grinding machine or removed as part of the ground excavation works.

3.1.3 Details of any prescribed pruning works are included within Appendix 1 of this report. The tree works should wherever possible be carried out in accordance with BS3998:2010 Recommendations for tree work.

3.2 Protective Barrier Erection

3.2.1 The protective barriers are to be erected prior to the commencement of site works including demolition, soil stripping or movement, bringing onto site of materials, supplies or machinery. Tree works can be undertaken prior to the erection of the barriers.

3.2.2 The barriers must be erected in the position indicated on the Tree Protection Plan (TPP) by the dark blue line and be constructed as per the following specifications.

3.2.3 The barriers should be considered essential and should not be removed or altered without prior recommendation by an Arboriculturalist and approval of the local planning authority (see section 3.2.7).

3.2.4 The barrier should consist of a vertical and horizontal framework of scaffold tubing which is adequately braced to resist impacts. The vertical scaffold tubes need to be placed at a distance not exceeding 3m apart and driven securely into the ground for a minimum depth of 0.6m. Care should be taken when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid any structural roots. The

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weldmesh or Heras panels need to be a minimum 2.0m tall and are securely attached to the scaffold framework with wire or scaffold clamps. The wire or scaffold clamps should be secured on the inside of the barrier to avoid easy dismantling. Panels on rubber or concrete feet are not resistant to impact and should not be used.

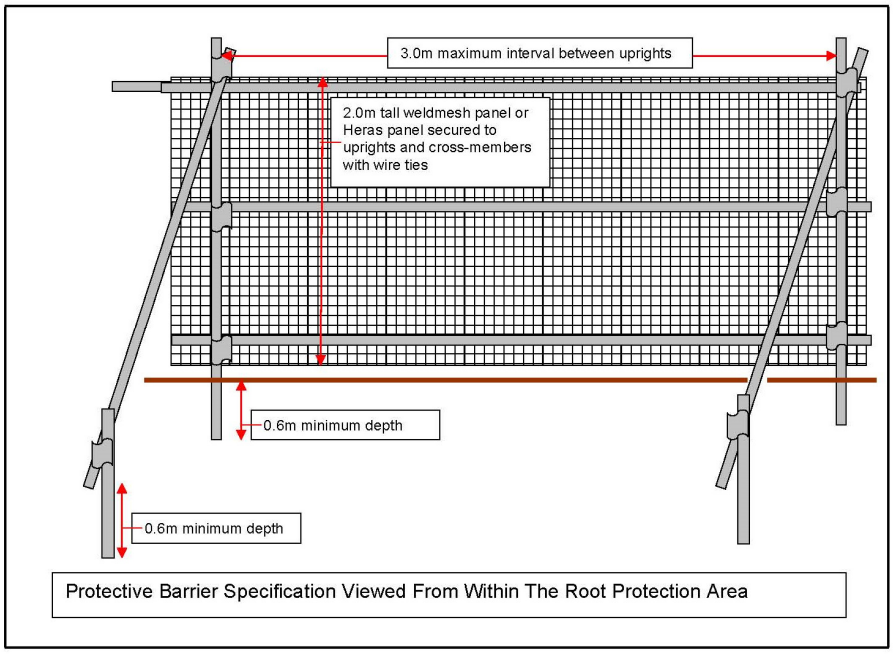


Figure 1- Protective barrier diagram



Figure 2- Example of a barrier erected on a site

3.2.5 No fixing shall be made to any tree and all possible care must be taken to prevent damage to tree roots when locating the posts.

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3.2.6 All types of barriers must be firmly attached to prevent movement by site personnel or vehicles and all-weather signs with the wording "Construction exclusion zone- keep out" should be attached.

3.2.7 Part of the protective barrier around T15 will need to be temporarily removed to allow removal of the flagstones within the RPA. The eastern section must be removed to allow access and must be immediately reinstated following removal of the flagstones.

3.3 Location Of Site Compound & Storage Areas

3.3.1 The contractor's site compound, storage & parking areas must be located outside of the root protection areas (RPAs) of the retained trees.

3.3.2 All site storage areas, especially cement mixing and washing points for plant and vehicles must also be situated outside of the root protection areas (RPA). Where there is a possible risk of polluted water runoff heavy duty plastic sheeting and sand bags must be used to contain spillages and contamination.

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4. Construction Methodology

4.1 Demolition

4.1.1 The demolition work near the trees must be undertaken with great care with every effort made to avoid damage to aerial and underground portions of the tree. Roots frequently grow adjacent to, and underneath structures and surfacing and damage can occur when the roots are physically disturbed or the soil around them is compacted from the weight of machinery or material.

4.1.2 When demolishing structures near to trees the machine should break the walls and roof into the footprint of the building (top down pullback methodology) and avoid any debris falling into the root protection area.
If this is not possible the section of the building adjacent to the tree will need to be demolished by hand.

4.1.3 Existing surfacing should be carefully lifted using either a long reach machine positioned outside of the root protection area or manually using hand tools. Surfacing is broadly defined as any hard surfacing used for vehicular access, parking or pedestrian pathways. Including tarmac, crushed stone, solid stone, compacted aggregate, concrete and timber decking, but excluding compacted soil with no hard covering.

In summary;

- Machines with long reach may be positioned outside of the root protection area (RPA) and used to demolish the building or carefully remove debris providing this does not disturb the RPA or the aerial portion of the tree
- Appropriate hand tools for manual removing debris include pneumatic or powered breaker, sledgehammer, crow or prying bar, pick, mattock, spade, shovel, trowel, fork or wheelbarrow. Secateurs and hand saw should be available to cut any exposed roots. The debris must be moved across existing hard surfacing or temporary ground protection thereby avoiding compaction of the soil.
- If appropriate the below ground structures should be left in place if their removal was to cause excessive root disturbance

4.2 Service Runs

4.2.1 It is assumed that the existing service runs will be exploited where possible, but if new works are required it is important that they comply with the National Joint Utilities Group (NJUG) 'Guidelines for the planning, installation, and maintenance of utility services in proximity to trees' and BS 5837:2012. The excavation of open trenches by machine will be unacceptable within the protective zone of any of the retained trees.

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4.2.2 Wherever possible, services should be routed outside of any retained trees RPA. When this is not possible apparatus should be routed together in a common duct and any inspection chambers sited outside the RPA.

4.2.3 Acceptable techniques for the laying of services in order of preference are:

- **Trenchless-** by use of thrust boring or similar techniques. The pit excavations for starting and receiving the machinery should be located outside of the root protection area. To avoid root damage, the mole should run at a depth of at least 600mm.
  Use of external lubricants on the mole other than water (eg oil or bentinite) should be avoided.

Trenchless Solutions For Installation Of Underground Services					
Method	**Accuracy (MM)**	**Bore (A) diameter (MM)**	**Maximum subterranean length (M)**	**Applications**	**Not suitable for**
Micro tunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway under crossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1200	150	Pressure popes, cables including fibre optic	Gravity fall pipes, e.g. drains and sewers (B)
Pipe ramming	≈150	150 to 2000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling (C)	≈50 (D)	30 to 180 (E)	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5m.

(A) Dependant upon strata encountered
(B) Pit-launched directional drilling can be used for gravity fall pipes up to 20m in subterranean length
(C) Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.
(D) Substantial inverse relationship between accuracy and distance
(E) Figures given relate to single pass: up to 300mm bore achievable with multiple passes

4.2.4 If trenchless insertion is not feasible the alternatives are detailed below in order of preference.

- **Broken trench-** by using hand dug trench sections together with trenchless techniques. It should be limited to practical access and

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installation around or below the roots. The trench must be dug by hand (see following comments re continuous trenching) and only be long enough to allow access for linking to the next section. The open sections should be kept as short as possible.

- **Continuous trench-** the trench is excavated by hand and retains as many roots as possible. The surface layer is removed carefully and hand digging of the trench takes place. No roots over 2.5cm diameter or clumps of smaller roots (including fibrous) should be severed. The bark surrounding the roots must be maintained. Cutting of roots over 2.5cm diameter should not be attempted without the advice of a qualified Arboriculturalist.

  If roots have to be cut, a sharp tool (defined as spade, narrow spade, fork, breaker bar, secateurs, handsaw, post hole shoveller, hand trowel) should be used.

Backfilling

4.2.5 Reinstatement of street works must comply with the code of practice New Roads and Streetworks Act 1991 (Specification for the reinstatement of openings in highways), but where tree roots are involved backfilling should be carefully carried out to avoid direct damage to retained roots and excessive compaction of the soil around them.

4.2.6 The backfill should incorporate an inert granular material mixed with top soil or sharp sand (not builder's sand) around the retained roots. This will allow a measure of compaction for resurfacing whilst creating an aerated zone around the roots.

4.2.7 Roots and in particular fine roots, are vulnerable to desiccation on exposure to air. The roots are at greatest risk when there are rapid fluctuations in the air temperature around them (especially winter diurnal temperatures). It is vitally important that the roots are covered with sacking whilst the trench is open. The sacking should be removed once the trench is backfilled.

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5. Proposed Arboricultural Supervision

5.1 The following programme of supervision is proposed to assist in the preservation and protection of the retained trees during all aspects of the proposed development.

5.2 The supervision arrangements must be sufficiently flexible to allow for the supervision of all sensitive works as they occur. The Arboricultural Consultant's initial role is to liaise with the developer and the council to ensure that the appropriate protective measures are in place before any works commence on site and once the site is active monitor compliance with the Arboricultural conditions and advise on any tree problems that may arise.

Action	Programming	Extent of supervision	Nature of supervision
Pre-commencement meeting with site manager & Council tree officer	Before any site activity commences	Meeting on site Review any updates to the proposal Confirm extent of tree works and protective barrier position.	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Tree works meeting with tree works contractor	Prior to commencement of tree works	Meeting on site to confirm tree works specification and method of working	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Tree works undertaken Finalising tree protection barrier installation	Before any plant enters site or demolition/construction work commences.	Confirm position of the protective barriers have been installed and comply with the Tree Protection Plan (TPP) Provide photographs indicating completed tree protection	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Temporary removal of barrier adjacent to T15 to allow removal of flagstones. Immediate reinstatement of barrier following removal of flagstones	At relevant stage of demolition works.	Site operatives to provides dated / timed photographs showing location prior to works commencing and immediately following completion.	Letter or email confirming results of meeting distributed to relevant parties.
Removal of protective barriers and other tree protection measures	Once construction activities have finished	Meeting with contractor for briefing before removal commences	Site meeting & letter or email confirming results of meeting distributed to relevant parties.

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5.3 Site Management

5.3.1 It is the developer's responsibility to ensure that the details of the Arboricultural method statement and any agreed amendments are known and understood by all relevant site personnel. Copies of the agreed documents must be kept on site at all times and the site manager or other appropriate person must brief all personnel who could impact the trees on the specific tree protection requirements.

5.3.2 This should form part of the site induction procedure and be written into the appropriate site management documents.

For and on behalf of
AllAboutTrees Ltd

Andrew Watson FLS MICFor CBiol MRSB FArborA CEnv LCGI
-Chartered Arboriculturalist & Registered Consultant

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Appendix 1 – Only Trees In Phase 2 Considered

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
Tree 6	White Poplar *Populus alba*	14	4	3	3	2	500	1	7	4 E	Middle aged	Fair	Poor	6	10-20	C - Low	Roots - Soil compaction; Trenching / excavations Stem - Single stemmed; Bark damage; Major cavities; Minor decay Crown - Small / sparse Comments - Limited long term future prospects - Consider removal.	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	20	10	A
Tree 7	White Poplar *Populus alba*	16	6	7	6	6	680	1	5	3 S	Middle aged	Fair	Fair	8.2	20-40	C - Low	Roots - No visual defects; Soil compaction; Increase in soil level Stem - Multiple stemmed at 2m; Old pruning wounds; Tight union Crown - Normal; Minor deadwood Comments - Crown overhangs footpath	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	20	15	A
Tree 8	White Poplar *Populus alba*	16	6	6	5	6	624	2	5	3 S	Middle aged	Fair	Fair	7.5	20-40	C - Low	Roots - No visual defects; Soil compaction Stem - Twin stemmed at 1m; Old pruning wounds Crown - Normal; Overhanging adjacent land Comments - Crown overhangs footpath	This tree is in conflict with the proposed access road design and will need to be removed to facilitate the development.	20	16	A

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
Tree 9	Japanese cherry 'Kanzan' *Prunus serrulata 'Kanzan'*	3	3	3	2	2	220	1	2	1 S	Middle aged	Fair	Fair	2.6	10-20	C - Low	Roots - Soil compaction Stem – Top grafted tree. Multiple stemmed at 1.5 Crown - Normal Comments - Small tree with limited long term value	This tree is in conflict with the proposed access road design and will need to be removed to facilitate the development.	6	9	A
Tree 10	White Poplar *Populus alba*	17	8	7	8	7	670	1	5	3 N	Middle aged	Fair	Fair	8	20-40	B - Moderate	Roots - Soil compaction; Increase in soil level Stem - Multiple stemmed at 2m; Old pruning wounds Crown - Normal; Minor deadwood Comments - Crown overhangs footpath	This tree is in conflict with the proposed access road design and will need to be removed to facilitate the development.	22	17	A
Tree 11	Laburnum *Laburnum anagyroides*	8	5	3	4	2	670	1	4	4 N	Mature	Fair	Poor	8	<10	U - Unsuitable for retention	Roots - Soil compaction Stem - Multiple stemmed at 2m; Tight union; Bark damage; Major cavities; Major cavity. Leans south east. Crown – minor deadwood in canopy. Comments - Limited long term value.	This tree is outside the site boundary on a separate development	12	11	-
Tree 12	Japanese cherry 'Kanzan' *Prunus serrulata 'Kanzan'*	6	4	2	2	2	380	1	3	2 S	Middle aged	Fair	Fair	4.6	10-20	C - Low	Roots - Soil compaction Stem – Top grafted tree. Multiple stemmed at 2m; Tight union; Old pruning wounds	This tree is outside the site boundary on a separate development	8	9	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
																	Crown - Small / sparse Comments - Small tree with limited long term value				
Tree 13	Crab Apple *Malus sylvestris*	3	2	3	3.5	2.5	150	1	2	2 S	Middle aged	Fair	Fair	1.8	10-20	C - Low	Roots - No visual defects Stem - Single stemmed; Old pruning wounds; Bark damage Crown - Normal Comments - Small tree with limited long term value	This tree is outside the site boundary on a separate development	6	8	-
Tree 14	Japanese cherry 'Kanzan' *Prunus serrulata 'Kanzan'*	4.5	2	3.5	3	2	190	1	2	2 N	Middle aged	Fair	Fair	2.3	10-20	C - Low	Roots – Surface roots sustained bark damage. Stem - Multiple stemmed at 2m; Tight union Crown - Slightly unbalanced Comments - Small tree with limited long term value	This tree is outside the site boundary on a separate development	8	9	-
Tree 15	Crab Apple *Malus sylvestris*	3.5	4	4	3	3	210	1	2	2 N	Middle aged	Fair	Fair	2.5	10-20	C - Low	Roots - No visual defects Stem - Multiple stemmed; at 2m; Tight union. Partially included bark Crown - Normal Comments - Small tree with limited long term value	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. The barrier on the east flank will need to be temporarily	6	11	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M) N	S	E	W	Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M) Height	Spread	Priority
																		removed to allow removal of flag paving. Barrier must be immediately reinstated following this. No tree works required at the present time.			
Tree 16	Silver Birch *Betula pendula*	13	4	5	5	5	360	1	4	3 N	Middle aged	Fair	Fair	4.3	20-40	B - Moderate	Roots - Soil compaction; Trenching / excavations Stem - Single stemmed; Old pruning wounds Crown - Normal Comments - Recent ground works from building demolition.	This tree is outside the site boundary on a separate development	17	12	-
Tree 17	Silver Birch *Betula pendula*	17	6	5	6	5	400	1	4	4 N	Middle aged	Fair	Fair	4.8	20-40	B - Moderate	Roots - Soil compaction; Increase in soil level; Trenching / excavations Stem - Twin stemmed at 2m; Slight lean; Old pruning wounds Crown - Normal Comments - Recent ground works from building demolition.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	20	13	-
Tree 18	Ash *Fraxinus excelsior*	13	6	5	6	6	470	1	4.5	2 E	Middle aged	Fair	Fair	5.6	10-20	C - Low	Roots - Soil compaction; Exposed roots; Trenching / excavations Stem - Twin stemmed at 2m; Vertical	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	23	16	A

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
																	Crown - Deadwood Comments - Recent ground works from building demolition.				
Tree 19	Hornbeam *Carpinus betulus*	6	3	3	3	3	220	1	2	2 N	Middle aged	Fair	Fair	2.6	40+	B - Moderate	Roots - No visual defects Stem - Single stemmed; Vertical Crown - Normal	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	18	12	-
Tree 20	Hornbeam *Carpinus betulus*	8	4	3	3	4	330	1	2	2 S	Middle aged	Fair	Fair	4	20-40	B - Moderate	Roots - No visual defects Stem - Single stemmed; Bark damage Crown - Normal	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	18	13	-
Tree 21	Wild Cherry *Prunus avium*	9	5	5	4	5	470	1	5	3 E	Middle aged	Fair	Fair	5.6	20-40	C - Low	Roots - Soil compaction Stem - Multiple stemmed at 2m; Old pruning wounds; Bark damage; Minor decay Crown - Minor deadwood	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	17	14	A
Tree 22	Hornbeam *Carpinus betulus*	10	5	4	4	5	310	1	2	2 E	Middle aged	Fair	Fair	3.7	40+	B - Moderate	Roots - No visual defects	This tree is in conflict with the proposed design and will need	18	13	A

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
																	Stem - Multiple stemmed at 3m; Vertical Crown - Normal	to be removed to facilitate the development.			
Tree 23	Crab Apple *Malus sylvestris*	3	3	1	2	2	160	1	2	2 N	Middle aged	Fair	Fair	1.9	10-20	C - Low	Roots - No visual defects Stem - Single stemmed; Slight lean Crown - Unbalanced Comments - Limited long term value	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	6	6	A
Tree 24	Sycamore *Acer pseudoplatanus*	15	6	5	5	6	650	1	4	4 N	Middle aged	Fair	Fair	7.8	20-40	C - Low	Roots - No visual defects; Soil compaction; Soil erosion Stem - Single stemmed; Ivy covered Crown - Normal; Overhanging adjacent land Comments - Ivy covered stem limited inspection. Damage to adjacent wall structure	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	22	15	A
Tree 25	Common Lime *Tilia X europaea*	17	7	7	6	6	630	1	2	4 N	Mature	Fair	Fair	7.6	20-40	B - Moderate	Roots - No visual defects Stem - Twin stemmed at 2m with tight union. Vertical Crown - Normal; Overhanging adjacent land. Encroaching on service wires. Comments - Stone wall to south of stem.	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	22	17	A

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
Group 26	White Poplar *Populus alba*	14	-	-	-	-	350	1	6	3 E	Middle aged	Fair	Poor	4.2	10-20	C - Low	Roots - No visual defects Stem - Single stemmed; Significant lean Crown - Unbalanced with retained deadwood. Comments - Limited long term future	This group is in conflict with the proposed design and will need to be removed to facilitate the development.	22	14	A
Tree 27	Whitebeam *Sorbus aria*	8	4	4	3	3	300	1	2	3 N	Middle aged	Fair	Poor	3.6	20-40	C – Low	Roots – No visual defects Stem – Multiple stemmed at 2m; Tight union Crown – Normal	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	12	11	A
Group 28	White Poplar *Populus alba*	5	1	1	1	1	150	1	1	2 N	Young	Fair	Fair	1.8	10-20	C – Low	Roots – No visual defects; Soil compaction Stem – Single stemmed; Multiple stemmed Crown – Normal Comments – Natural regeneration along boundary area. No long term value	This group is in conflict with the proposed design and will need to be removed to facilitate the development.	22	14	A
Tree 29	English Oak *Quercus robur*	7	5	5	5	5	330	1	3	2 N	Middle aged	Fair	Fair	4	40+	B – Moderate	Roots – No visual defects Stem – Single stemmed; Multiple stemmed at 2m Crown – Normal Comments – Limited current value yet good prospects	This tree is in conflict with the proposed design and will need to be removed to facilitate the development.	20	16	A
Tree 30	Bird Cherry	8	5	5	5	5	350	1	2	2 W	Middle aged	Fair	Fair	4.2	20-40	C – Low	Roots – No visual defects	This tree is retainable and will be	12	12	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M) N	S	E	W	Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M) Height	Spread	Priority
	Prunus padus																Stem – Multiple stemmed at 2m; Vertical Crown – Normal Comments – Natural regeneration along boundary area.	adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.			
Group 31	Holly Silver Birch Sycamore *Ilex aquifolium, Betula pendula, Acer pseudoplatanus*	9	-	-	-	-	400	1	2	2 N	Middle aged	Fair	Fair	4.8	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed & Twin stemmed; Vertical Normal; Crown – Overhanging slightly into site (up to 2.5m) Comments – Line of trees. Situated in adjacent land beyond significant wall structure. Group includes one birch and one sycamore. Located within Darfield Conservation Area.	This group is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	20	-
Tree 32	Common Lime *Tilia X europaea*	17	6	6	7	7	640	1	3	3 N	Middle aged	Fair	Fair	7.7	20-40	B – Moderate	Roots – No visual defects Stem – Twin stemmed at 2m; Old pruning wounds; Bark damage; Partially included bark Crown – Normal; Overhanging into site by approximately 3.5m.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	17	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiol-ogical Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
																	Comments – Situated beyond boundary; behind significant wall structure Located within Darfield Conservation Area.				
Tree 33	Sycamore *Acer pseudoplatanus*	17	4.5	6.5	8.5	8.5	600	1	5	4 E	Mature	Fair	Fair	7.2	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	16	-
Tree 34	Hybrid Black Poplar *Populus x canadensis*	16	3.5	4.5	10	5.5	620	1	6	4 E	Mature	Fair	Fair	7.4	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	16	-
Tree 35	London Plane *Platanus X hispanica*	16	5	4	9.5	8.5	580	1	5	5 E	Middle aged	Fair	Fair	7	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP.	22	18	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M) N	 S	 E	 W	Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M) Height	 Spread	Priority
																	Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	No tree works required at the present time.			
Tree 36	Ash *Fraxinus excelsior*	17	7.5	3.5	12.5	8	650	1	6	4 E	Mature	Fair	Fair	7.8	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	18	-
Tree 37	Common Lime *Tilia X europaea*	14	4	4	6.5	4	430	1	2	3 E	Middle aged	Fair	Fair	5.2	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	13	-
Tree 38	Sycamore *Acer pseudoplatanus*	17	6	6.5	9	7	670	1	4	4 E	Mature	Fair	Fair	8	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP.	22	18	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
																	Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	No tree works required at the present time.			
Tree 39	London Plane *Platanus X hispanica*	16	7.5	4.5	9.5	8	800	1	4	5 E	Mature	Fair	Fair	9.6	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	19	-
Tree 40	Common Lime *Tilia X europaea*	17	5	5	6.5	5	580	1	4	4 E	Middle aged	Fair	Fair	7	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	15	-
Tree 41	Sycamore *Acer pseudoplatanus*	15	5	6	6.5	5	560	1	4	5 E	Middle aged	Fair	Fair	6.7	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP.	22	13	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M)				Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiological Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M)		Priority
			N	S	E	W													Height	Spread	
																	Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	No tree works required at the present time.			
Tree 42	Whitebeam *Sorbus aria*	12	2.5	5	6	2.5	440	1	4	5 E	Middle aged	Fair	Fair	5.3	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	15	10	-
Tree 43	Ash *Fraxinus excelsior*	17	5.5	5.5	10.5	8.5	570	1	5	5 E	Mature	Fair	Fair	6.8	20-40	B – Moderate	Roots – No visual defects Stem – Single stemmed; Vertical Crown – Normal; Overhanging into site. Comments – Situated beyond boundary, on slightly lower level. Only given cursory inspection.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP. No tree works required at the present time.	22	17	-
Tree 44	Common Lime *Tilia X europaea*	17	4.5	4.5	5.5	4.5	600	1	3	4 E	Mature	Fair	Fair	7.2	20-40	B - Moderate	Roots - No visual defects Stem - Single stemmed; Vertical Crown - Normal; Overhanging into site.	This tree is retainable and will be adequately protected by the protective barrier as indicated by the blue line on the TPP.	22	16	-

Tree No.	Species Common Name *Latin Name*	Height (M)	Crown Spread (M) N	 S	 E	 W	Trunk Dia (MM)	No. Of Stems	Height Of Lower Canopy (M)	First Sign Branch (M) (Position)	Age	Physiol-ogical Condition	Structural Condition	Root Prot Area Radii (M)	Estimated Remaining Contribution (Years)	Tree Quality Assessment	Comments	Maintenance	Ultimate Size For Species (M) Height	 Spread	Priority
																	Comments - Situated beyond boundary, on slightly lower level. Only given cursory inspection.	No tree works required at the present time.			

Appendix 2(1)

Glossary of Terms

1	**Reference number:**	An individual identifying number
2	**Species:**	Species identification is based on visual field observations and lists the common name. In some cases the botanical name will be used where there is no common alternative. On in-depth surveys the botanical name only may be used
3	**Height:**	Height is estimated to the nearest metre. On computerised surveys this may be within a range of heights. When measured height is required, a clinometer is used to measure to the nearest metre
4	**Diameter:**	Trunk diameter measured at 1.5 metres from ground level to the nearest centimetre. In some surveys this is indicated as a range
5	**Spread:**	Measurement of canopy from the trunk to the nearest metre in four directions, North, South, East, and West in metres
6	**Lower crown Clearance:**	Height in metres of crown clearance above adjacent ground level
7	**Age:**	Either an estimate (or statement if accurately known) of the age of the tree, classified as:
	Y	= Young tree, established tree usually up to one third of expected ultimate height & spread
	MA	= middle aged, usually between one third and two thirds of ultimate height & spread
	M	= Mature, more or less at full height but still increasing in girth & spread
	OM	= Over mature, grown to full size and becoming senescent,
	V	= Veteran tree, individuals surviving beyond the typical age range for the species
8	**Physiological Condition:**	Good = Healthy tree with good vitality, Fair = Moderate health and vitality normal or slightly less for species and age Poor = Poor shape or form - signs of decline in crown, may have structural weakness. Dead = dead or dying tree
9	**Structural Condition:**	Good = No visible structural defects Fair = Only minor structural defects Poor = Defects which may need to be rectified or regularly monitored Remove = Severe defects which may result in immanent failure or collapse
10	**Management Recommendations:**	General comments on the condition of the tree or group and any action required. potential for wildlife habitats
11	**Estimated Remaining Contribution:**	Safe Useful Life Expectancy (SULE): in some cases the age ranges are modified Short: 0 – 10years Medium: 10– 20 Years Intermediate: 20-40 Long: 40 + years
12	**Tree Quality:**	Assessment of tree quality see following cascade chart for details
13	**Priority:**	A - Works to achieve an acceptable level of safety or required to facilitate the development B - Works to achieve higher levels of arboricultural management. C - To improve the aesthetic appearance.
12	**Ultimate Size:**	Taken from Arboriculture Research Note 8490ARB or NHBC Standards Chapter 4.2 as appropriate The Normal Ultimate Height in an Urban Situation in metres**.** Ultimate spread of the Crown in metres.
13	**Root Protection Area:**	The distance at which the protective barrier should be erected measured in radii from the centre of the trunk in metres.

14 Pruning: Pruning shall be defined as the removal of living or dead parts of a plant by the Contractor. Such parts may be soft growth, twigs, branches, limbs or sections of the tree trunk. The cut material may vary from small to large in size.

15 Crown Cleaning: Cleaning out is defined as the removal of dead, dying or diseased branchwood, broken branches or stubs left from previous tree surgery operations (see also 16 Deadwooding) together with all unwanted objects, which may include ivy (if specified) and/or other climbing plants, nails, redundant cable bracing, rope swings, tree houses and windblown rubbish from the tree, and any such debris from any cavities within the tree.

16 Deadwood Removal: Dead-wooding shall be defined as the removal of all dead and dying branches and limbs from the tree.

17 Crown Lifting: Crown lifting shall be defined as the removal of all soft growth and branches or parts thereof which are below or which extend below the height specified in the tender documents. It is recognised that the resultant canopy base might not be one single level but might be stepped to allow for different clearances, for example where a tree overhangs both the footway and the road where different height clearances are required.

18 Crown Reduction: Crown reduction shall be defined as the reduction of the complete outline dimension of the canopy, from the tips of limbs and branches to the main trunk, by pruning growth to an acceptable branch, twig or but to leave a flowing silhouette.

Appendix 2(11) Cascade Chart For Assessing Tree Quality

Category and definition Trees to be considered for retention	Criteria – Subcategories			Identification on plan
	1. Mainly arboricultural values	**2. Mainly landscape values**	**3. Mainly cultural values, including conservation**	
Category High = A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially, if rare or unusual, or those that are essential components of groups, or 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)	Green
Category Moderate = B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	Blue
Category Low = C **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 benefits	Yellow
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation			
Category = U Trees unsuitable for retention Those of 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 U 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 • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease) or very low quality trees suppressing adjacent trees of better quality • Habitat reinstatement may be appropriate (e.g. U category trees used as a bat roost- installation of bat box in nearby tree)			Red



AllAboutTrees

Arboricultural & Ecological Consultancy
Chartered Arboriculturalists & Environmentalists

The Old School
Quarry Lane
Butterknowle
Co Durham
DL13 5LN

Telephone 0191 3739494 / 01388 710481

Email – info@allabouttrees.co.uk
www.allabouttrees.co.uk

Registered in England & Wales No. 5301671
Registered Office: The Old School, Quarry Lane, Butterknowle, Co Durham
DL13 5LN