

Arboricultural Method Statement

BE1031.1a

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1. Introduction

1.1. Background

Bagshaw Ecology Ltd have been instructed by Martin Venning to produce an Arboricultural Method Statement in relation to a proposed development of the land adjacent to 2 Wellfield Road, Huddersfield HD3 4AY.

The development proposals include the demolition of an existing coach house building, and subsequent construction of a detached residential property, which will be of similar dimensions to the existing building.

1.2. Site Details

The site is located at OS grid reference SE 12356 17241 and is accessed west off Wellfield Road. The site is bound by Wellfield Road to the east, and the garden areas of residential properties on all other aspects.

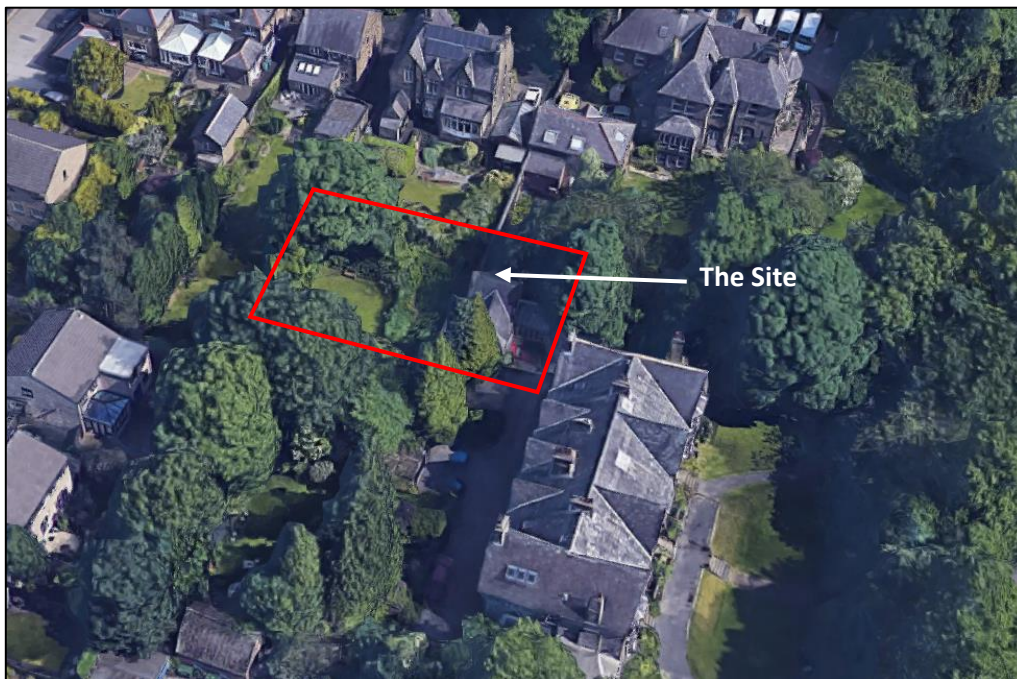


Figure 1: Aerial imagery showing approximate boundary of the site and surrounding area (Google Earth Pro, 2019)

2. Methods

2.1. Desk Based Study

The local council was consulted to determine if any trees on the site and immediately adjacent to the site are protected by Tree Preservation Orders (TPOs) and/or are within Conservation Areas. Cranfield (2019) was consulted as to the soil type of the surrounding area.

2.2. Site Survey

The site survey was carried out on Monday 20th May 2019. At time of survey there were persistent and heavy showers.

The survey was carried out by Jack Delaney. Jack Delaney has worked within the arboricultural industry for ten years, holds an FdSc in Arboriculture, and is a Technician member of the Arboricultural Association.

All trees on site were inspected from ground level, using the Visual Tree Assessment (VTA) method (Mattheck *et al*, 2015). Any notable defects of trees were recorded, although the site survey did not constitute a full tree safety assessment.

Tree heights and crown clearances were measured to the nearest 0.5m with a clinometer. Crown spreads of trees were measured on their, north, east, south and west aspects to the nearest 0.5m.

The diameter at breast height (DBH) of trees was measured to the nearest 10mm. This was used to calculate the root protection area (RPA) of trees using methods prescribed in BS5837: 2012:

- For single stem trees, the RPA was calculated as a circle with a radius 12 times the DBH.
- For trees with 2-5 stems, the RPA was calculated using the formula:

$$RPA = \sqrt{(\text{Stem 1 DBH})^2 + (\text{Stem 2 DBH})^2 + \dots + (\text{Stem 5 DBH})^2}$$

- For trees with 6 or more stems, the RPA was calculated using the formula:

$$RPA = \sqrt{(\mu \text{ DBH})^2 \times \text{number of stems}}$$

In accordance with BS5837: 2012, trees were classified as either A, B, C or U, using the criteria shown in Table 1. Trees are further classified by the subcategories 1, 2 and 3, depending upon whether they have mainly arboricultural qualities, landscape qualities, or cultural values. The additional subcategory does not affect the retention value of the tree, e.g. a Category A2 tree does not have a higher value than a Category A1 tree.

Table 1: BS5837 Cascade Chart (adapted from British Standards, 2012)

Category	Definition	Retention	Colour code
Category 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.	Highly desirable	Light green
Category B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years; trees lacking the special quality to merit category A designation.	Desirable	Dark blue
Category C	Trees of low quality with an estimated remaining contribution of at least 10 years, or 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.	Feasible, but should be removed if posing a constraint to development	Grey
Category U	Trees that have serious, irremediable, structural and/or physiological defects, including those that will become unviable after removal of other category U trees.	Unfeasible	Dark red

2.3. Constraints

The survey was constrained by the season in which it took place. Some pathogens of trees, in particular fruiting bodies of decay fungi, are only visible at certain times of year.

3. Results and Assessment

3.1. Desk Based Study

According to the website of Kirklees Metropolitan Council (2019), T1 and T2 are afforded legal protection by Tree Protection Orders (TPOs).

Cranfield (2019) states that the surrounding area consists of freely draining, slightly acid loamy soils. No further detailed soil analysis was carried out as part of the survey.

3.2. Tree Population Assessment

The site survey identified a total of six trees with the potential to be affected by the development proposals.

The trees on the site include three Category B trees of moderate-quality and three Category C trees of low-quality. There were no Category A trees of High-quality, or Category U trees with estimated life expectancies of <10 years identified on the site.

Table 2: Summary of Tree Categories

Category	Description	Tree/group numbers	Totals
A	Trees of high-quality which should where possible be retained throughout any proposed development	-	-
B	Trees of moderate-quality which should where possible be retained throughout any proposed development	T1, T2, T6	3 Trees
C	Trees of low-quality which should not be considered a constraint to development	T3, T4, T5	3 Trees
U	Trees which should be removed for sound management reasons, regardless of proposals	-	-
Total:			6 Trees

Tree data can be viewed in **Appendix 1: Tree Survey Schedule**. Images of trees can be viewed in **Appendix 2: Images of Trees**. Tree locations can be viewed in **Appendix 3: Tree Protection Plan**.

Tree species on and adjacent to the site include Leyland cypress *Cupressus x leylandii*, beech *Fagus sylvatica*, sycamore *Acer pseudoplatanus* and orchard apple *Malus domestica*.

4. Arboricultural Method Statement

4.1. Timing of Works

The phasing of works should be carried out in accordance with Table 3, below.

Table 3. Timing of Works

Stage	Works
1	Site induction
2	Carry out tree removals and facilitative pruning works
3	Install temporary tree protection fencing
4	Inspection by an arboricultural consultant
5	Carry out construction works (including the application of battered pile foundations – as specified in Appendix 4: Tree Protection Plan)
6	Remove tree protection fencing once works completed
7	Final inspection by arboricultural consultant

4.2. Site Induction

Prior to works commencing, all contractors should attend a site induction. All contractors should be briefed on arboricultural concerns arising from the development proposals, including tree root protection areas (RPAs). This method statement should be issued to all contractors on the site.

4.3. Tree Removals and Facilitative Pruning

To make the development proposals feasible, T3 will necessitate removal.

T3 is situated in front of a proposed porch entrance, and therefore will necessitate removal in order to allow unobstructed access to the property.

T3 is a Category C tree of low-quality, and as such should not be considered a constraint to the development.

In addition, T1 and T2 will necessitate facilitative pruning, in order to create sufficient headroom for the proposed building:

- T1 currently overhangs the existing porch structure and will necessitate crown raising to 6m in order to facilitate the development proposals.
- T2 currently overhangs the existing building which is to be demolished, with the extremities of branches touching the roof; as such T2 will necessitate crown raising to 6m to facilitate the development proposals. In addition, all epicormic growth from the main stem to 4m should be removed.

According to the website of Kirklees Metropolitan Council (2019), T1 and T2 are afforded legal protection by Tree Protection Orders (TPOs). As such, consent should be verified with Kirklees Metropolitan Council prior to the commencement of works.

Killing or damaging a protected tree is a criminal offence and can result in an unlimited fine.

All tree works, including tree removals, should be carried out by a fully insured and suitably qualified arboricultural contractor who is able to comply with BS3998: 2010 – Tree Works: Recommendations.

4.4. Root Protection Area (RPAs) affected by the Development

In addition to tree removals and facilitative pruning, the RPA of three trees will be impacted by the development.

The RPA of T1 and T2 will be encroached upon by the proposed building by approximately 12% and 21% respectively.

Retention of the above trees is considered feasible, however, as the existing foundations are to be proposed to be replaced, these must incorporate a design which will minimise any potential impact upon tree roots, i.e. mini pile foundations.

Although a large proportion of the RPA of T2 will be impacted by the proposals, since the existing building and porch already encroach upon this portion of the RPA - providing that mini pile foundations are used in this region - it is anticipated that the impacts upon the tree will be minimal.

Although the RPA of T4 will also be encroached upon the footprint of the proposed building, since this is a Category C tree of low-quality - of which retention has been requested by the developer – application of specialist foundations in this region is considered out of proportion to the trees retentive value.

4.5. Tree Protection Fencing

Prior to machinery entering the site, it will be necessary to ensure that all of the retained trees on the site are adequately protected. This will require the installation of temporary of tree protection fencing between the building and adjacent trees, as is specified in **Appendix: 3 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 3m and driven securely into the ground. Onto this framework, welded mesh panels should be fixed (see Fig. 2, on the following page).

Laminated waterproof A3 signs should be fixed securely to fencing panels on each enclosure at 9m 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.

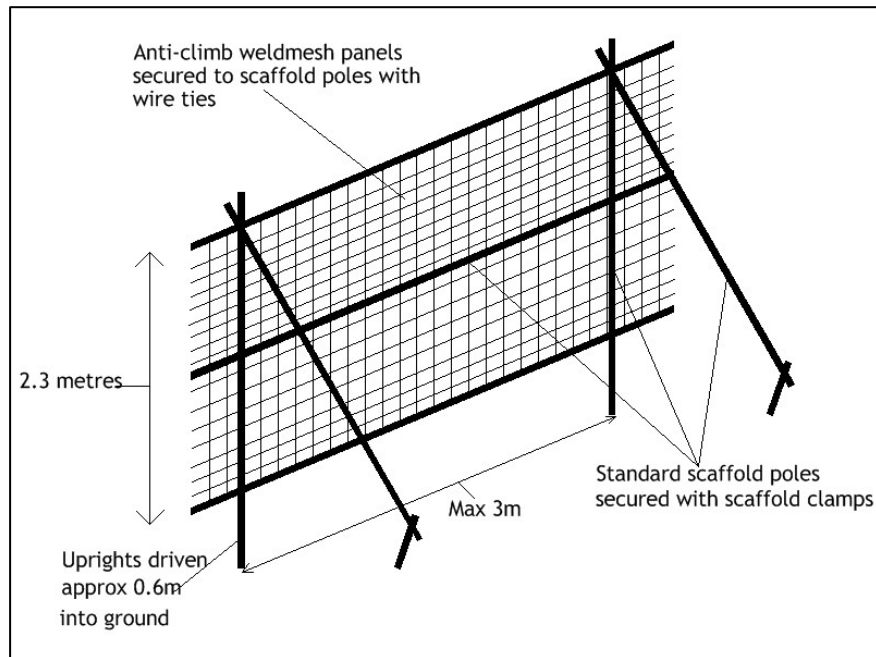


Figure 2. Temporary Protective Fencing

4.6. General Precautions

No materials hazardous to tree health, such as oil, bitumen or cement should be stored within the protective fencing. Where possible this area should be extended to 10m away from the tree protection fencing.

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.

No fires should be lit within 20 metres of the protective fencing.

If any breach in the tree protection measures occurs it is the site manager's responsibility to report this to an arboricultural consultant so the appropriate measures may be taken. As there are trees afforded protection by TPOs on the site, any breach in the tree protection resulting in the death of or damage to trees could result in a criminal offence being committed.

4.7. Supervised works and further inspection

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

- Once the tree protection fencing has been installed to determine if it is satisfactory.
- Upon completion of the development works.

After each inspection a letter should be submitted by the arboricultural consultant to the local authority tree officer to confirm if the method statement has been followed correctly and if trees have not been adversely affected by construction works.

5. References

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

British Standards (2012). BS5837: 2012 - Trees in Relation to Design, Demolition and Construction: Recommendations. British Standards Institute, London

British Standards (2014). BS8545: 2014 – Trees: from Nursery to Independence in the Landscape. British Standards Institute, London

Kirklees Metropolitan Council (2019) Interactive Mapping Service [online]. Available at: >www.kirklees.gov.uk/ < [accessed 20th June 2019]

Cranfield (2019). *Interactive Soilscape Viewer* [online]. Available at: >www.landis.org.uk< [accessed 20th June 2019]

Google Earth Pro (2019). *Google Earth* [online]. Available at: >www.google.co.uk/earth< [accessed 20th June 2019]

Johnson, O., More, D. (2004). *Collins Tree Guide*. London: HarperCollins

Mattheck, C., Bethge, K., and Weber, K. (2015). *The Body Language of Trees*. The Karlsruhe Research Institute, Karlsruhe (Germany)

Appendices

Appendix 1: Survey Schedule

A plan of the tree locations can be viewed in **Appendix 3: Tree Protection Plan**.

Key			
Species	Common name following Johnson & More (2004)	Age	EM – Early mature; tree in 2/3 of estimated lifespan M – Mature; tree in 3/3 of estimated lifespan OM – Over mature; tree that has exceeded its natural life span V – Veteran tree
Height	Measured to nearest 0.5m		
CC	Height of crown clearance, measured to nearest 0.5m		
Stems	Number of stems bifurcating below 1.5 metres		
DBH	Diameter at breast height (1.5m), in centimetres	SULE	Safe useful life expectancy of tree, in years
Crown spread	Measured to nearest 0.5m	Category	See BS5837 cascade chart (Table 1)
Age	Y – Young sapling/newly planted tree SM – Semi-mature; tree in 1/3 of estimated lifespan	#	Denotes estimated value

Individual Trees

Tree No.	Species	Height	CC	Stems	DBH	Crown Spread				Age	Comments	SULE	Category
						N	E	S	W				
T1	Sycamore <i>Acer pseudoplatanus</i>	12.5	3	1	56	5	5	6	5.5	Mature	Ivy established on main stem to 5.5m. Branches overhang existing porch structure. Lacks qualities for Category A Classification.	>40	B1

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Tree No.	Species	Height	CC	Stems	DBH	Crown Spread				Age	Comments	SULE	Category
						N	E	S	W				
T2	Beech <i>Fagus sylvatica</i>	12	4	1	53	7.5	4	4	5.5	Mature	Bifurcates at 2m, into multiple co-dominant leaders. Extensive epicormic on main stem to 4m. Branches to south touch existing building. Extensive epicormic on lower main stem. Situated on raised bed area, with retaining wall to south partially collapse. Existing hard standing within RPA to south – RPA offset by 10% to north-east.	>40	B1
T3	Leyland cypress <i>Cupressus x leylandii</i>	10	0	1	17 25 27 26	3	2.5	2.5	2	Mature	Bifurcates at 0.2m, into multiple co-dominant stems. Branches to north encroach upon existing building. Limited arboricultural merit, though client would like to retain for wind break.	11-20	C1
T4	Leyland cypress <i>Cupressus x leylandii</i>	10	0	1	46	2	1	2	2	Mature	No major visible defects, though of limited arboricultural merit. Client would ideally like to retain for windbreak.	11-20	C1
T5	Orchard apple <i>Malus domestica</i>	0	1.5	2	15 14	3	3	2	2.5	Semi-mature	Bifurcates at 0.1m into two co-dominant stems. Limited arboricultural merit.	11-20	C1

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Tree No.	Species	Height	CC	Stems	DBH	Crown Spread				Age	Comments	SULE	Category
						N	E	S	W				
T6	Sycamore	14	4	1	60	6	7	6.5	7	Mature	Dense vegetation at base of tree restricting inspection of main stem and basal area - estimated DBH. No major visible defects, though lacks qualities for Category A classification.	>40	B1

Appendix 2: Images of Trees



Plate 1: T1



Plate 2: T2



Plate 3: T3



Plate 4: T4



Plate 5: T5



Plate 6: T6

Appendix 3: Tree Protection Plan

Project:	Wellfield Road
Drawn by:	Jack Delaney
Date:	25th June 2019
Scale:	1:100 @ A1

Do not scale off this drawing - to be reproduced in colour only

Key:

Category B trees of moderate quality	
Root protection area (RPA)	
Tree stem	
Tree canopy	
Category C groups of low quality	
Root protection area (RPA)	
Tree stem	
Tree canopy	
	Trees necessitating removal shown with dashed line
	Mini Pile Foundations
	Tree Protection Fencing

