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BS 5837:2012 Arboricultural Impact Assessment and Arboricultural Method Statement

Rockingham House, Tankersley
for:

Jarvale Construction Ltd.

595.001.ENZ.XX.00.RP.AR.45.102

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BS 5837:2012 Arboricultural Impact Assessment and Arboricultural Method Statement

Project:	Rockingham House, Tankersley
For:	Jarvale Construction Ltd.
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1.0 Non-Technical Summary

1.1 Arboricultural Survey

1.1.1 The site is an existing commercial site within a wider industrial estate along Wentworth Way in Tankersley, comprising a commercial warehouse and hardstanding in the West and an undeveloped area of scrub, trees and grassland in the East. Mature trees line the southern and eastern boundary, merging into the mature woodland that lies to the North of the site.

1.1.2 A tree survey in accordance with BS 5837:2012 was carried out by Enzygo Ltd. in May 2024, recording ten groups of predominantly mature trees both along the site's boundaries and younger trees and scrub across the centre of the site. Where they provide a mature screen along the site's southern and eastern boundary, they are of high value. Trees within the site are of low to moderate value, depending on their maturity. None of the trees within the development are legally protected, however, a TPO protected woodland lies immediately outside the northeastern site boundary.

1.2 Development Proposals

1.2.1 The Client proposes the construction of a second warehouse to the East of the existing one and the reconfiguration of the existing service yard and parking areas in the South.

1.3 Arboricultural Impact Assessment

1.3.1 A total of 960m² of moderate value (Cat. B) groups and 1,960m² of low value (Cat. C) groups would require removal to facilitate all aspects of the development proposals.

1.3.2 Whilst this is expected to have a moderate impact on the canopy cover and character of the site, the retention of a continuous tree belt along the site's boundaries is likely to limit the impact the tree removal will have on the wider landscape.

1.3.3 Unless adequate protective measures are provided to *BS 5837 (2012) Trees in relation to design, demolition and construction* and in accordance with this report, operations linked to the development may have an adverse indirect effect on retained trees on site.

1.4 Arboricultural Method Statement

1.4.1 Protective measures include Access Facilitation Pruning, the erection of a Protective Barrier and the sensitive design and installation of utilities.

1.4.2 Where the effects of tree removal are significant, replacement tree planting should be carried out with a focus on native species and with consideration of any Biodiversity Net Gain requirements for the site.

2.0 Objectives

2.1 Introduction

2.1.1 Enzygo Limited [Enzygo] have been commissioned by Jarvale Construction Ltd. to prepare an Arboricultural Impact Assessment and Arboricultural Method Statement for the Rockingham House site in Tankersley, in support of their planning application for the construction of a new warehouse to the East of the existing building.

2.1.2 This report should assist both the client, their design team and decision makers in understanding the impact of the development proposals both on trees on and in close proximity to the site and subsequent effects on the wider landscape and which measures should be in place to adequately protect retained trees.

2.2 Structure of the Report

2.2.1 **Chapter 2.0** provides a brief description of the site and its location as well as a summary of the existing Arboricultural Survey report on which this report is based.

2.2.2 **Chapter 3.0** gives a brief description of the development and details the direct and indirect impact the proposals are expected to have on existing trees.

2.2.3 **Chapter 4.0** provides full details of any methodologies to be adopted in order to adequately protect any retained trees during construction and safeguard the health and safety of the trees in the future. It further makes recommendations for the mitigation of any adverse arboricultural impact.

2.3 Site Overview

2.3.1 The site is located to the North of Wentworth Way in Tankersley, approximately 1km southwest of Junction 36 of the M1, and 6.5km km south of Barnsley, in an industrial location. Wentworth Way forms the southwestern boundary, the A61 lies immediately behind the woodland strip in the East. Early mature and mature woodland lies to the North and other commercial premises to the West. The site sits within the administrative boundaries of Barnsley metropolitan Borough Council.

2.3.2 The application boundary for the site is approximately 19,089m² [1.9 hectares] and comprises a commercial warehouse and hardstanding in the West and an undeveloped area of scrub, trees and grass in the East. Access to the site is off a small access road which connects to Wentworth Way in the West.

2.4 Arboricultural Survey

2.4.1 A tree survey in accordance with BS 5837:2012 was carried out by Enzygo Ltd. in May 2024, recording ten groups of predominantly mature trees both along the site's boundaries and younger trees and scrub across the centre of the site. Where they provide a mature screen along the site's southern and eastern boundary, they are of high value. Trees within the site are of low to moderate value, depending on their maturity. None of the trees within the development are legally protected, however, a TPO protected woodland lies immediately outside the northeastern site boundary.

2.4.2 The report includes a full tree survey schedule which describes each tree in accordance with BS 5837:2012 clause 4.4.2.

2.5 Project Description

2.5.1 It is understood the planning application is for the development of a new warehouse immediately to the East of the existing Rockingham House, with improved service yard and car parking in the South. Access to the site will be via the existing access off Wentworth Road in the West.

2.5.2 Further details regarding the proposed development can be found in the information submitted with the planning application.

3.0 Arboricultural Impact Assessment (AIA)

3.1 Development proposals

3.1.1 This AIA is based on the development proposals as shown on Southgate and Sarabia Architects' Proposed Site Plan ref. A23026-SASA-Z0-XX-DR-A-91111 revision P02 dated 14th February 2024. Information on any new utilities was not provided at the time this report was prepared.

3.2 Tree removal

3.2.1 A total of 960m² of moderate value (Cat. B) groups and 1,960m² of low value (Cat. C) groups would require removal to facilitate all aspects of the development proposals.

Table 1 –Summary of proposed tree removal

Reference	Area	Reason for removal
G001 (Cat. B)	741m²	Widening of service yard/ car parking
G002 (Cat. B)	219m²	Warehouse construction
G003 (Cat. C)	47m²	Warehouse construction
G004 (Cat. C)	138m²	Warehouse construction
G008 (Cat. C)	931m²	Warehouse construction
G009 (Cat. C)	844m²	Warehouse construction

3.2.2 Tree removal is limited to tree groups and sections of tree groups which are located within the centre of the site, with wide and dense sections of mature tree and shrub belts along eth site's northern, eastern and southern boundary fully retained. Therefore, whilst the effect on the canopy cover of the site is moderate, the visual effect on the surrounding landscape is negligible.

3.3 Residual impact of development on retained trees

3.3.1 Unless adequate protective measures are provided to *BS 5837 (2012) Trees in relation to design, demolition and construction* and in accordance with this report:

- Construction operations near retained trees are likely to cause accidental damage of tree trunks and low hanging branches along the groups retained along the site's boundaries.
- Vehicle and plant movement during construction may further cause ground compaction which could lead to irreversible damage of tree roots and the rooting environment within the RPA of retained trees.

- Excavations for underground services may have an impact where they are proposed within the RPA of retained trees. Proposed above ground services may further conflict with parts of tree canopies.

3.4 Recommendations

3.4.1 All methodologies specified in the Arboricultural Method Statement (AMS) in Chapter 4.0 should be implemented to ensure any retained trees are adequately protected during site set-up and construction.

3.4.2 All site managers and site operatives should be aware of the potential impact of the works on retained trees and follow the protection methodologies specified in the AMS in Chapter 4.0.

3.4.3 Where the effects of tree removal are significant, replacement tree planting should be carried out based on recommendations included on the Tree Protection Plan in Appendix 1. This includes the planting of "*20x native species (9x willow and 11x young/semi-mature)*" as requested by Barnsley Metropolitan Borough Council on 12th February 2025.

4.0 Arboricultural Method Statement (AMS)

This AMS should be read in conjunction with Appendix 1 – Tree Protection Plan.

4.1 Tree Removal and Access Facilitation Pruning

4.1.1 Prior to the site being set-up, a qualified arborist will remove only the trees listed in 3.2 above and shown on the Tree Protection Plan in Appendix 1. They will also carry out any tree works included in the Preliminary Management Recommendations of the Tree Survey Schedule (refer to Arboricultural Survey report by Enzygo dated May 2024).

4.1.2 Any tree works should be carried out in accordance with *BS 3998:2010- Tree works recommendations*. To find a suitably qualified tree surgeon, please refer to the Arboricultural Association's list of Registered Contractors.

4.1.3 Any tree works proposed in the respective survey season should be preceded by a nesting bird and roosting bat check carried out by a suitably qualified ecologist.

4.2 Protective Barrier

4.2.1 Where construction operations are likely to cause damage to above ground parts of retained trees or compaction of the Root Protection Areas (RPA), a protective barrier should be erected prior to commencement of any works on site to create a sacrosanct Construction Exclusion Zone (CEZ). The alignment of the fence should follow the canopy line of the trees or the edges of the RPA, whichever is greater.

4.2.2 Where possible, the CEZ should be extended to include any areas proposed for soft landscaping to minimise compaction in these areas and ensure new planting can establish successfully.

4.2.3 The alignment of the barrier, including indicative setting-out information, is shown on the drawing included in Appendix 1 – Tree Protection Plan.

4.2.4 The protective barrier should be installed in accordance with *BS 5837:2012 Figure 2 Default specification for protective barrier* which consists of a horizontal and vertical scaffold framework that should be braced to resist impact from construction plant and vehicles. Please refer to Appendix 2 – Protective barrier to BS5837:2012 for further information and a detailed specification.

4.2.5 All weather notices should be firmly attached to the barrier to inform any site operatives of the purpose of the fencing, e.g. "Construction Exclusion Zone- No access".

4.2.6 The protective barrier must not be removed or realigned unless in accordance with this report or until all construction work has been completed and all construction vehicles and plant have departed from site.

4.3 Level Changes

4.3.1 The reduction of ground levels and the skimming of ground within the RPA of retained trees is not permitted.

4.3.2 Where it is required to raise levels within the RPA of retained trees, this should be achieved by use of an inert granular material which remains gas- and water-permeable throughout its design life.

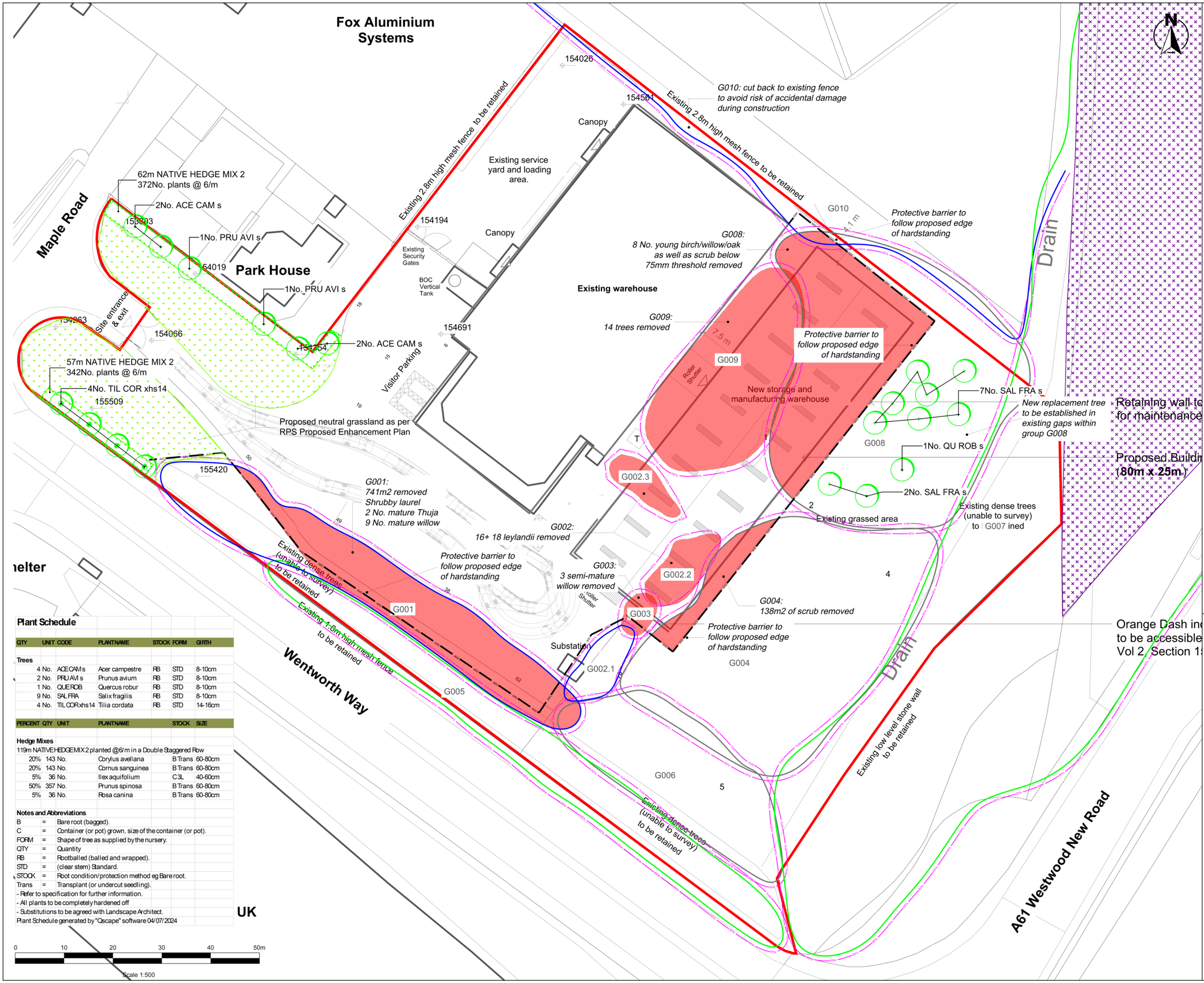
4.4 Installation of Utility Apparatus

4.4.1 Underground services which require excavations should be located outside the Root Protection Areas (RPA) of retained trees, or outside the Tree Protection Zone as shown in Figure 1 of the *National Joint Utility Group (NJUG) Volume 4- Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* (NJUG Volume 4), whichever is greater. Refer to Appendix 3 – NJUG Tree Protection Zone.

4.4.2 Where the location of underground services within the RPA is justified, trenchless solutions should be applied in accordance with *BS 5837:2012 Clause 7.7.2* and *NJUG Volume 4*.

4.4.3 Above ground services, including CCTV cameras and lighting, should be sited and installed to avoid the need for detrimental tree pruning in the short and long-term. Installation of above-ground services should further be carried out in accordance with *BS 5837:2012 Clause 7.7.3* and *NJUG Volume 4*.

5.0 Appendix 1 – Tree Protection Plan



Plant Schedule

QTY	UNIT	CODE	PLANTNAME	STOCK	FORM	GIRTH
Trees						
4	No.	ACECAM s	Acer campestre	RB	STD	8-10cm
2	No.	PRUAVI s	Prunus avium	RB	STD	8-10cm
1	No.	QUEROB	Quercus robur	RB	STD	8-10cm
9	No.	SALFRA	Salix fragilis	RB	STD	8-10cm
4	No.	TILCORxhs14	Tilia cordata	RB	STD	14-16cm

PERCENT	QTY	UNIT	PLANTNAME	STOCK	SIZE
Hedge Mixes					
119m NATIVE HEDGE MIX 2 planted @6/m in a Double Staggered Row					
20%	143	No.	Corylus avellana	B Trans	60-80cm
20%	143	No.	Cornus sanguinea	B Trans	60-80cm
5%	36	No.	Ilex aquifolium	C3L	40-60cm
50%	357	No.	Prunus spinosa	B Trans	60-80cm
5%	36	No.	Rosa canina	B Trans	60-80cm

Notes and Abbreviations

B	=	Bare root (bagged).
C	=	Container (or pot) grown, size of the container (or pot).
FORM	=	Shape of tree as supplied by the nursery.
QTY	=	Quantity
RB	=	Rootballed (balled and wrapped).
STD	=	(clear stem) Standard.
STOCK	=	Root condition/protection method eg Bare root.
Trans	=	Transplant (or undercut seedling).

- Refer to specification for further information.
- All plants to be completely hardened off
- Substitutions to be agreed with Landscape Architect.

Plant Schedule generated by "Qscape" software 04/07/2024

0 10 20 30 40 50m

Scale 1:500

NOTES

- Do not scale from this drawing for construction purposes
- This drawing is to be read in conjunction with all relevant drawings and documents associated with this project.
- All surveyed information including levels and layout is provided by others
- All existing and proposed dimensions, levels and locations to be checked and verified by the main contractor on site prior to the commencement of the works and any anomalies reported to the engineer.

KEY - Tree Impact and Tree Protection Plan

Tree Categories BS 5837 (2012)

- Tree Category A
- Tree Category B
- Tree Category C
- Tree Category U
- Root Protection Area (RPA)
- Barnsley Metropolitan Borough Council Tree Preservation Order ref. 15- W1
- Existing trees/ tree groups removed
- Protective barrier BS 5837 (2012) Figure 2

KEY - Tree Planting and Mitigation Plan
(to be read in conjunction with RPS Biodiversity Net Gain Assessment and Proposed Enhancement Plan)

- Proposed Extra Heavy Standard Tree
- Proposed Standard Tree
- Proposed native hedgerow
- Proposed grass and wildflower meadow planting

Rev	Date	Description	DRA	CHK	APP
PL02	06/03/25	Additonal tree planting to BMBC requirements	VM	VM	GB
PL01	20/06/24	For Planning	VM	VM	GB

Project
Rockingham House
Tankersley

Client
Jarvale Construction Ltd.

Drawing Title
Tree Impacts Plan and
Tree Protection Plan
Replacement Tree Planting Scheme

Status	Date	Scale
For Planning	20/06/24	1:500 @ A2

Drawn	Designed	Checked	Approved
VM	--	VM	GB

DWG No. 595.001.ENZ.XX.00.DR.AR.45.102

Revision PL02

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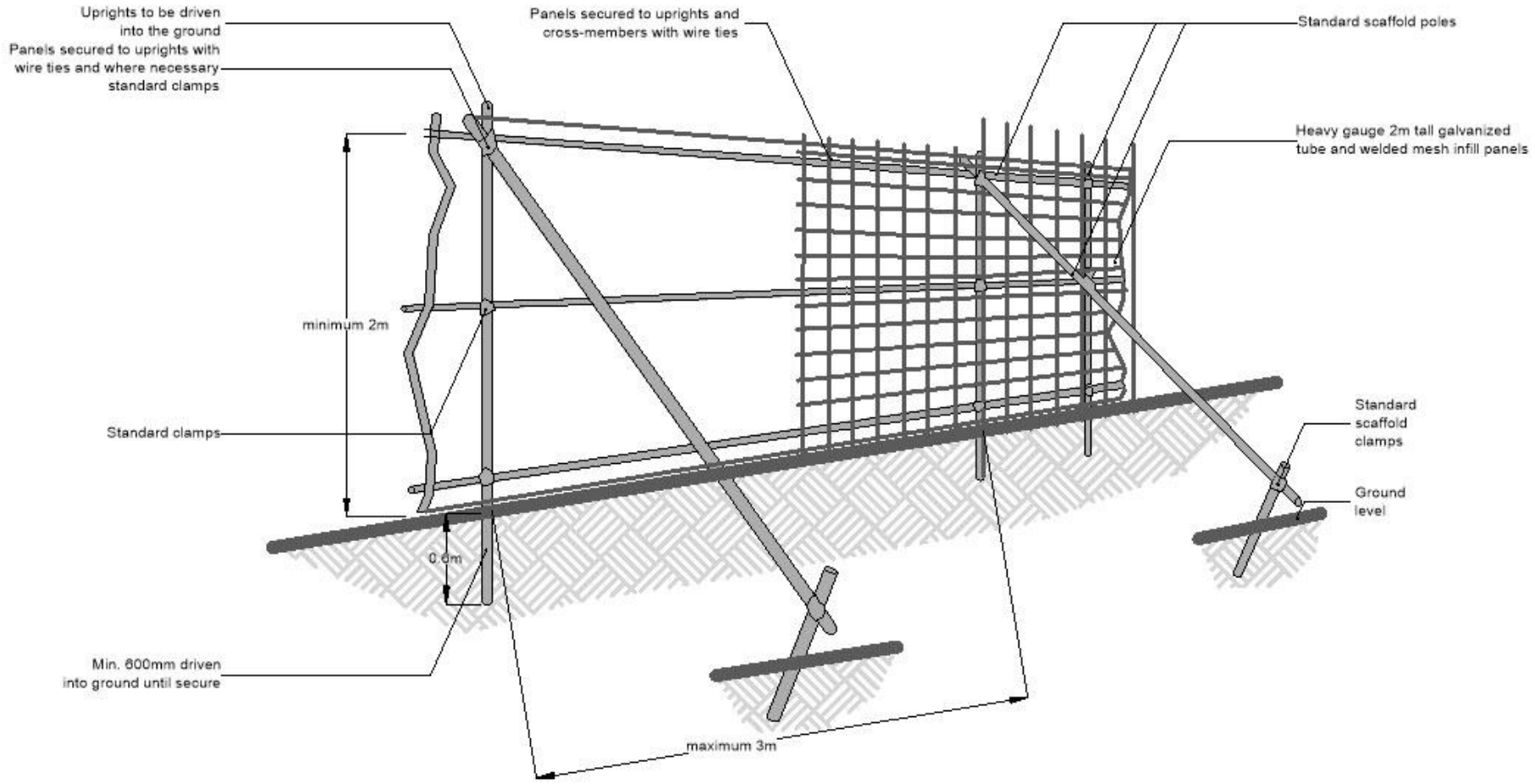
6.0 Appendix 2 – Protective barrier to BS5837:2012

6.1 Default specification for protective barrier

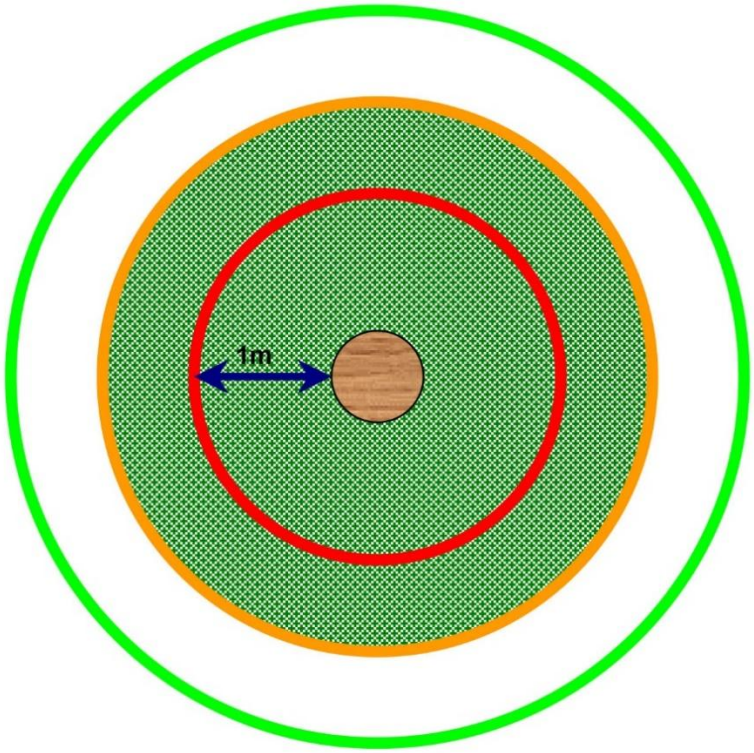


7.0 Appendix 3 – NJUG Tree Protection Zone

The National Joint Utilities Group

NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees

FIGURE 1 – Tree Protection Zone



Key

Trunk of tree

Canopy or branch spread

PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with the local authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.

PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with the local authority Tree Officer if in any doubt.

PERMITTED ZONE – outside of the precautionary zone. Excavation works may be undertaken within this zone, however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

8.0 Appendix 4 – Methodology

8.1 Introduction

8.1.1 This report and all methodologies adopted to carry out the Arboricultural Impact Assessment and Arboricultural Method Statement are based on recommendations outlined in *British Standard (BS) 5837:2012 Trees in relation to design, demolition and construction-Recommendations*. This was published by BSI Standards Limited and came into effect on 30th April 2012. It supersedes BS 5837:2005 which is withdrawn.

8.2 Arboricultural Impact Assessment (AIA)

8.2.1 Once the Tree Survey and Tree Constraints Plan has been prepared and a site layout is available, these are superimposed to establish the potential impact of the development, including the construction phase, on the existing tree stock.

8.2.2 The requirement for tree removal is ascertained where tree stems are located within or very close to proposed building footprints and hard landscape and/or within areas with significant proposed level changes and other works requiring soil movement (incl. excavations).

8.2.3 In a second stage an assessment is carried out of the impact both the construction operations and the development proposals may have of retained trees, including hard landscape in RPA, vertical structures and tree canopies

8.2.4 Using information provided by the client on construction operations, including site access, construction vehicle and plant movement and location of the site compound and material storage areas, the potential impact on both below and above ground parts of retained trees is assessed.

8.2.5 In addition to assessing the impact of the development on existing trees, Enzygo also include an assessment of the impact of existing trees on the future use of the site, including shading, spatial constraints and the use of gardens, open spaces, paths and roads. Potential conflicts between trees and the safety of the site have also been analysed.

8.3 Arboricultural Method Statement (AMS)

8.3.6 The Arboricultural Method Statement (AMS) gives an overview on all methodologies to be adopted to minimise the effects the development, including construction operations, are expected to have on retained trees.

8.3.7 The AMS further includes a full specification for all methodologies which are necessary to protect retained trees.

8.3.8 Methodologies include protective barriers installed to create a Construction Exclusion Zone (CEZ) around retained trees, temporary ground protection where Root Protection Areas (RPA) cannot be fully fenced off, access facilitation pruning where there are conflicts between parts of the canopy and the development, specialist construction methods for buildings within the RPA and any methodologies to be adopted for utilities within the RPA.

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