

Arboricultural Impact Assessment

WC-240.1a

Land adjacent to 52 Tower Street,
Barnsley S70 1QS



W O O D S A G E
C O N S U L T I N G

Woodsage Consulting Ltd

Unit 2, Hey End Farm, Luddendenfoot, Halifax,
West Yorkshire HX2 6JN

T: 07962401997

E: info@woodsage.co.uk

W: <https://woodsage.co.uk>



Report type:	Arboricultural Impact Assessment
Report reference:	WC-240.1
Revision:	a
Client:	Chris and Sue Barton
Site address	Land adjacent to 52 Tower Street, Barnsley S70 1QS
Grid reference:	SE 34361 05294
Report prepared by:	Jack Delaney MICFor MArborA
Date:	31 st January 2024

Limitations of use and copyright

This document has been prepared with all reasonable skill, care, and diligence, within the terms of the contract with the addressee. Woodsage Consulting Ltd accepts no responsibility to third-parties to whom this report may be made known. All rights in this report are reserved. The contents and format of this document are for the exclusive use of the addressee in dealing with this site.



Contents

EXECUTIVE SUMMARY	3
1. INTRODUCTION	4
1.1. INTRODUCTION & SCOPE OF REPORT	4
1.2. SITE DETAILS	4
1.3. TOPOGRAPHY	5
1.4. DESK BASED STUDY AND PLANNING CONTEXT	5
1.5. DEVELOPMENT PROPOSALS.....	5
2. METHODS.....	6
2.1. SURVEY DETAILS	6
2.2. SURVEY PERSONNEL	6
2.3. SURVEY METHODOLOGY.....	6
2.4. CONSTRAINTS.....	7
3. SURVEY RESULTS AND OBSERVATIONS	8
3.1. TREE POPULATION OBSERVATIONS AND AMENITY VALUE.....	8
3.2. TREE CATEGORISATION.....	8
4. IMPACT ASSESSMENT.....	9
4.1. TREE REMOVALS	9
4.2. TREE ROOT PROTECTION AREAS (RPAS).....	9
4.3. SHADE ANALYSIS	9
4.4. SERVICES AND OTHER CONSIDERATIONS	9
5. RECOMMENDATIONS	10
5.1. TREE WORKS.....	10
5.2. LEGAL CONSTRAINTS.....	10
5.3. TREE PROTECTION	10
5.4. MITIGATION.....	11
5.5. ADDITIONAL INFORMATION.....	11
REFERENCES.....	12
APPENDICES.....	13
APPENDIX 1: TREE SURVEY SCHEDULE	13
APPENDIX 2: IMAGES OF TREES.....	15
APPENDIX 3: OUTLINE ARBORICULTURAL METHOD STATEMENT (AMS)	17
APPENDIX 4: TREE CONSTRAINTS PLAN	22
APPENDIX 5: SHADE ANALYSIS PLAN.....	23
APPENDIX 6: TREE PROTECTION PLAN (1).....	24
APPENDIX 7: TREE PROTECTION PLAN (2).....	25



Executive Summary

Woodsage Consulting Ltd have been instructed by Chris and Sue Barton to carry out an Arboricultural Impact Assessment of the land adjacent to 52 Tower Street, Barnsley S70 1QS, in relation to the proposed development of the site.

The proposals are to construct a detached dwelling, with associated gravel driveway, and car parking, garden, and patio areas.

According to information provided on the website of Barnsley Metropolitan Borough Council (2024), none of the trees located on or immediately adjacent to the site are subject to tree preservation orders (TPOs), and the site is not located within a conservation area.

The site survey identified a total of eight trees and two groups of trees with the potential to be affected by the proposed development; these include two category B trees of moderate-quality, two category C trees and two groups of low-quality, and four category U trees with safe useful life expectancies of less than 10 years.

The proposed development will necessitate the removal one category B tree of moderate-quality, one category C group of low-quality, and one category U tree with a SULE of less than 10 years.

Geo-cellular confinement has been recommended on a proposed section of the driveway - within the root protection area (RPA) of a category B tree - to mitigate the impacts of soil compaction upon tree roots.

The RPAs of the retained trees are to be suitably protected throughout the development process by temporary tree protection fencing.

To enhance the amenity of the site, it is recommended that a minimum of two trees and one hedgerow are included within a post-development planting scheme.

Providing the recommendations made within this report are followed, the development is considered achievable, with minimal impact in arboricultural terms to the site and surrounding area.



1. Introduction

1.1. Introduction & Scope of Report

- 1.1.1.** Woodsage Consulting Ltd have been instructed by Chris and Sue Barton to carry out an Arboricultural Impact Assessment of the land adjacent to 52 Tower Street, Barnsley S70 1QS, in relation to the proposed development of the site.
- 1.1.2.** The purpose of this report is to allow the local planning authority (LPA) to assess information regarding trees at the site as part of the planning submission, and to demonstrate to the LPA that appropriate consideration has been given to the subject of trees as part of the development proposals.
- 1.1.3.** In accordance with *BS 5837: 2012: Trees in Relation to Design, Demolition and Construction - Recommendations* (hereafter referred to as *BS 5837: 2012*), this report sets out to:
- Assess the quality and value of the trees on and immediately adjacent to the site.
 - Identify trees for removal and/or retention, in consideration of the development proposals (where feasible, removals will be restricted to the less significant specimens on site).
 - Prescribe tree protection measures where necessary, which will ensure the successful retention of the retained trees at the site; in accordance with *BS 5837: 2012*, these measures will be further detailed in an Outline Arboricultural Method Statement (AMS).
 - Prescribe preliminary recommendations for mitigation tree planting.
- 1.1.4.** The contents of this report are concerned with arboricultural issues alone; although other disciplines such as engineering and ecology may be referenced, it is important to gain advice from an appropriate expert on these matters.

1.2. Site Details

- 1.2.1.** The site, which is shown in **Fig. 1.1**, below, is centred on OS Grid Reference SE 34361 05294, and lies within the market town of Barnsley. The site is accessed east off Tower Street.



Figure 1.1: Aerial imagery showing the approximate boundaries of the site outlined in red (Google Earth, 2024).

- 1.2.2.** The site covers approximately 949 m², and is currently comprised of unused scrubland.
- 1.2.3.** The site is bound by residential properties to the north and east, and by Tower Street to the south and west.



1.3. Topography

- 1.3.1.** The site lies at an approximate altitude of 160 m above sea-level.
- 1.3.2.** The topography of the site slopes gently from the south to the north. There is also a steep banking to the west of the site, at the boundary with Tower Street.

1.4. Desk Based Study and Planning Context

- 1.4.1.** Cranfield (2024) states that the site and surrounding area consists of Soilscape 6; these are slightly acidic, loamy soils, that are freely draining. No further detailed soil analysis was carried out as part of the survey.
- 1.4.2.** According to information provided on the website of Barnsley Metropolitan Borough Council (2024), none of the trees located on or immediately adjacent to the site are subject to tree preservation orders (TPOs), and the site is not located within a conservation area.

1.5. Development Proposals

- 1.5.1.** The proposals are to construct a detached dwelling, with associated gravel driveway, and car parking, garden, and patio areas.



2. Methods

2.1. Survey Details

2.1.1. The site survey was carried out on Friday the 26th of January 2024. The weather at the time of the survey was fine and dry; the visibility of the trees was not impeded.

2.2. Survey Personnel

2.2.1. The survey was carried out by Jack Delaney. Jack is a Chartered Arboriculturalist (Member of the Institute of Chartered Foresters), and has worked in the arboricultural sector for over 15 years. Jack holds an FdSc in Arboriculture, with distinction, and is a Professional Member of the Arboricultural Association. Jack is also a LANTRA qualified Professional Tree Inspector, and is a trained and registered user of Quantified Tree Risk Assessment (QTRA).

2.3. Survey Methodology

2.3.1. Only substantial trees with a stem diameter of 75 mm or above were included as part of the survey, as is recommended in *BS 5837:2012*.

2.3.2. The trees were inspected from ground level, using the Visual Tree Assessment (VTA, Mattheck and Breloer, 1994). Although notable defects of trees were recorded, the site survey did not constitute a full tree safety assessment. No specialist decay detection equipment was used as part of the survey, though sounding and probing tools were used where necessary.

2.3.3. Tree information was collected in accordance with *BS 5837: 2012*, and includes species, height, diameter at breast height (DBH), crown spread, crown clearance, age class, condition, vitality, and safe useful life expectancy (SULE).

2.3.4. Trees were allocated to one of four categories (U, A, B or C) as defined in **Tab. 2.1**, below, to reflect amenity value and suitability for retention, in consideration of the development proposals.

Table 2.1: *BS 5837: 2012* cascade chart (adapted from *British Standards, 2012*).

<i>BS 5837: 2012</i> 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 150 mm; 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	Red

2.3.5. Subcategories 1, 2 and 3 were also given to trees, and reflect arboricultural and landscape qualities, and cultural values, respectively.

2.3.6. Tree heights were measured using a clinometer to the 0.5 m; crown spreads were measured to the north, east, south, and west aspects, using a laser measurer to the nearest 0.5 m.



2.3.7. Where access to trees was obstructed or obscured, DBH, height, and crown spread measurements have instead been estimated.

2.3.8. The DBH of trees was measured at 1.5 m above ground level, and rounded to the nearest centimetre. This was then used to calculate the root protection area (RPA) of trees using methods prescribed in *BS 5837:2012*:

- 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 combined stem diameter was first calculated using the formula:

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

- For trees with 6 or more stems, the combined stem diameter was first calculated using the formula:

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

2.4. Constraints

2.4.1. The survey was constrained by the season in which it took place; certain tree pathogens, for example, the fructifications of decay fungi are only visible at specific times of the year.

2.4.2. The locations of the trees plotted during the survey were aided using a topographical plan of the site; the accuracy of this plan is unknown to the author of this report.



3. Survey Results and Observations

3.1. Tree Population Observations and Amenity Value

- 3.1.1. The site survey identified a total of eight trees and two groups of trees with the potential to be affected by the development proposals.
- 3.1.2. The tree species recorded during the survey include sycamore (*Acer pseudoplatanus*), Lawson cypress (*Chamaecyparis lawsoniana*), Leyland cypress (*Cupressus x leylandii*), ash (*Fraxinus excelsior*), and cherry laurel (*Prunus laurocerasus*).
- 3.1.3. T002, T004, T005, T006, T007, and G002 all appear to be located upon adjacent property, to the north and east of the site.
- 3.1.4. Many of the trees are self-seeded and of low-quality, with reduced SULEs due to substandard pruning works which they have historically endured.

3.2. Tree Categorisation

- 3.2.1. The trees on and adjacent to the site include two category B trees of moderate-quality, two category C trees and two groups of low-quality, and four category U trees with SULEs of less than 10 years.
- 3.2.2. There were no category A trees of high-quality identified at the site.
- 3.2.3. A summary of the BS 5837: 2012 categories of trees at the site is given in **Tab. 3.1**, below.

Table 3.1: Summary of tree categories.

BS 5837: 2012 Category	Description	Tree/Group Numbers	Totals
B	Trees of moderate-quality, which should where possible be retained throughout any proposed development	T001, T002	2 Trees
C	Trees of low-quality, which should not be considered a constraint to development	T006, T007 G001, G002	2 Trees 2 Groups
U	Trees limited life expectancies, which should not be considered a constraint to development	T003, T004, T005, T008	4 Trees
Subtotal:			8 Trees 2 Groups

- 3.2.4. The full results of the survey can be viewed in **Appendix 1: Tree Survey Schedule**. Images of the trees can be viewed in **Appendix 2: Images of Trees**. Tree locations, and the above and below ground constraints posed by trees, can be viewed in **Appendix 4: Tree Constraints Plan**.



4. Impact Assessment

4.1. Tree Removals

- 4.1.1. The proposed development will necessitate the removal of T001, T008, and G001.
- 4.1.2. T001 and G001 are positioned adjacent to a proposed driveway turning head. Excavations of approximately 1 m will be required into the existing levels - within the RPA of T001 and G001 - and therefore retention of these would not be feasible.
- 4.1.3. T008 is positioned within the garden of the property, and is likely to necessitate removal to facilitate the proposed landscaping.
- 4.1.4. T008 and G001 include category C and category U trees of low-quality only; in accordance with *BS 5837:2012*, these should not be considered a constraint to the development.
- 4.1.5. Although the removal of T001, which is a category B tree of moderate-quality, is unfortunate, the proposed development will provide an incentive to plant new trees the site, and to diversify the species and age composition of the local tree population in the process.

4.2. Tree Root Protection Areas (RPAs)

- 4.2.1. The RPA of T002 will be encroached onto by approximately 11% of the total RPA (92 m²).
- 4.2.2. The proposals are considered feasible, with minimal impact to T002, providing that the following mitigation measures are implemented to minimise disturbance to tree roots:
 - All existing vegetation within the RPA of T002 should be removed using hand-operated tools only. As the majority of tree roots are typically found within the first 100 cm of ground level - particular attention should be paid to existing levels - which should be observed and maintained within the RPA of T002.
 - 'No-dig' geo-cellular confinement should be installed – to the specification detailed in **Section 7** of the **Outline Arboricultural Method Statement (AMS)** in **Appendix 3** - in all areas where the driveway passes over the RPA of T002.
 - The strip excavations required during the installation of traditional kerbs can inflict serious damage upon tree roots. Within the RPA of T002 this should be avoided by using alternative methods of edge support; for example, Tanalised® board edging positioned directly on top of existing grade levels, and secured with track or road pins.
- 4.2.3. The temporary tree protection fencing - detailed in **Section 5** of the **Outline AMS** in **Appendix 3**, and illustrated in the **Tree Protection Plans** in **Appendices 6** and **7**- will ensure that the RPAs of the retained trees are suitably protected from development activities.

4.3. Shade Analysis

- 4.3.1. The proposed dwelling is not anticipated to endure significant shading by the adjacent trees.
- 4.3.2. A visual representation of the anticipated shading by trees at the site can be viewed in **Appendix 5: Shade Analysis Plan**.

4.4. Services and Other Considerations

- 4.4.1. At time of writing, details of proposed service routes have not been provided; however, it is assumed that service routes will run from the west, where no tree RPAs will be impacted.
- 4.4.2. Underground services should be installed outside of the RPAs of the retained trees. If there are any areas which conflict with tree RPAs however, this should first be reported to the Project Arboriculturalist, so that appropriate measures may be taken.



5. Recommendations

5.1. Tree Works

5.1.1. T001, T008, and G001 will necessitate removal.

5.2. Legal Constraints

5.2.1. According to information provided on the website of Barnsley Metropolitan Borough Council (2024), T001, T008, and G001 are not subject to TPOs, and the site is not located within a conservation area. However, as the allocation of TPOs can be subject to change, tree protection status should be checked and verified with Barnsley Metropolitan Borough Council prior to the commencement of works. Killing or damaging a protected tree is a criminal offence and can result in an unlimited fine.

5.2.2. 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 *BS 3998: 2010: Tree Works - Recommendations*.

5.3. Tree Protection

5.3.1. Construction, and any other works involving excavations, can cause irreversible damage to trees - particularly those which have reached maturity - which are far less capable of adapting to alterations in their surrounding environment. Whilst above-ground injuries are usually obvious, root damage is often concealed, though can have equally devastating impacts to tree health.

5.3.2. Direct root damage includes root severance, which can be caused by digging of trenches and ditches, and the stripping of topsoil. Indirect damage may involve the raising of soil levels, alterations in drainage patterns, the laying of impervious surfaces, and soil compaction.

5.3.3. Compaction of soils is regarded as the most common cause of death or damage to retained trees on development sites. Soil compaction reduces soil pore space, which in turn reduces soil air, the passage of water and available nutrients. These anaerobic conditions prevent root growth and the proliferation of soil microbes essential to tree health. Symptoms in trees may include crown die-back, sparse and small foliage, and poor extension growth; however, these are usually not evident until well after the occurrence of compaction. Even one pass of a vehicle in wet conditions can cause irreparable soil compaction.

5.3.4. To avoid both direct and indirect damage to the roots of the retained trees, temporary tree protection fencing should be installed throughout the development, and in the following stages:

- Temporary tree protection fencing should be installed prior to ground preparation works commencing, in the locations shown in **Appendix 6: Tree Protection Plan (1)**.
- Once construction of the dwelling has been completed, to facilitate construction of the proposed driveway and car parking area, the tree protection fencing should be repositioned, as directed in **Appendix 7: Tree Protection Plan (2)**.

5.3.5. It is recommended that development works follow the **Outline AMS** provided in **Appendix 3**. This includes the specifications for tree protection fencing, geo-cellular confinement, and other protective measures to be adhered to throughout the development.

5.3.6. As aspects of the development may be subject to change, the **Outline AMS** should be reviewed by the Project Arboriculturalist prior to the commencement of development works.



5.4. Mitigation

- 5.4.1.** The proposed development will necessitate the removal one category B tree of moderate-quality, one category C group of low-quality, and one category U tree with a SULE of less than 10 years.
- 5.4.2.** It is therefore recommended that a minimum of two trees and one hedgerow are included within a post-development planting scheme.
- 5.4.3.** The specifications, locations, and maintenance requirements of the proposed tree planting should be further detailed in a tree planting plan.

5.5. Additional Information

- 5.5.1.** All visual observations and recommendations specified within this document relate to the condition of the trees and surroundings at the time of the survey. As such, any subsequent changes to landform in the proximity of the trees could invalidate the advice given.
- 5.5.2.** Trees provide valuable habitat for wild birds, bats, and many other forms of wildlife. The risks posed to these should be suitably assessed before the recommendations within this report are completed.
- 5.5.3.** Under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and the Wildlife and Countryside Act 1981:
- it is an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or destroy at a nest containing eggs or young.
 - it is an offence to intentionally or recklessly damage or destroy a bat roost site, even if the roost is not occupied at the time.
- 5.5.4.** Trees are dynamic living organisms, and their condition can change rapidly; the information given in this report is therefore valid for a period of 18 months. This period may be reduced if significant changes occur to the trees, or the ground conditions, which surround them.



References

Barnsley Metropolitan District Council (2024) *Interactive Mapping Service* [online]. Available at: >www.barnsley.gov.uk< [accessed 29th January 2024].

British Standards (2010). *BS 3998:2010: Tree Works - Recommendations*. London: British Standards Institute.

British Standards (2012). *BS 5837: 2012: Trees in Relation to Design, Demolition and Construction – Recommendations*. London: British Standards Institute.

Cranfield (2024) *Soilscapes* [online]. Available at: >www.landis.org.uk/soilscapes< [accessed 29th January 2024].

Google Earth Pro (2024). *Google Earth* [online]. Available at: >www.google.co.uk/earth< [accessed 29th January 2024].

Lonsdale, D (2015) *The principles of Tree Hazard Assessment and Management*. Stonehouse: The Arboricultural Association.

Mattheck, C., Breloer, H. (1994). *The Body Language of Trees, a Handbook for Failure Analysis*. London: Her Majesty's Stationary.



Appendices

Appendix 1: Tree Survey Schedule

Table Key																
Tree/Group Ref: Reference numbers, as illustrated in Appendix 4: Tree Constraints Plan								DBH: Diameter at breast height (1.5 m), in millimetres								
Height (Ht.): Overall height of tree, measured to nearest metre								SULE: Safe useful estimated life expectancy of tree, in years								
Crown Spread (CS): Radius of crown to N, E, S, and W aspects, measured to nearest metre								Crown Clearance (CC): Clearance from ground level of lowest branch, measured to nearest metre								
Structural Condition (SC): An assessment of structural condition. G = Good; F = Fair; D = Decaying; C = Collapsing; PD = Physical Defect								Physiological Condition (PC): An assessment of vitality and vigour F = Fair; P = Poor; D = Dead								
Species: Common (and <i>binomial name</i>)								#: Denotes estimated value								
Age	Young (Y): Newly planted or self-seeded tree				Early-mature (EM): Trees in second-third of life expectancy for species type				Over-mature (OM): Mature trees which have entered stages of natural decline							
	Semi-mature (SM): Trees in within first-third of life expectancy for species type				Mature (M): Trees in final-third of life expectancy for species type				Veteran (V): Trees of any age, which display ancient characteristics							
BS 5837: 2012 Categories	Category A: Trees of high-quality with an estimated remaining life expectancy of at least 40 years, and that are particularly good examples of their species type								Category C: Unremarkable trees of low-quality offering limited arboricultural merit and/or of such impaired condition that they do not warrant in higher categorisation							
	Category B: Trees of moderate-quality with an estimated remaining life expectancy of at least 20 years, though lacking the necessary qualities to warrant Category A designation								Category U: Trees which display serious, irremediable, structural and/or physiological defects							

Individual Trees

Tree Ref:	Species	Age	SULE	Ht.	DBH	CS				CC	Comments	PC	SC	BS 5837:2012 Category	Recommendations
						N	E	S	W						
T001	Common ash (<i>Fraxinus excelsior</i>)	SM	40-80	7.5	280	3.5	3.5	3.5	3.5	2	No obvious significant defects.	G	G	B1	Remove tree
T002	Sycamore (<i>Acer pseudoplatanus</i>)	EM	40-80	13	450#	5#	5#	5.5	5	4.5	Situated on adjacent property and unable to access base of tree. Lapsed pollard, with approx. 7 m regeneration growth. Multiple pruning stubs on main stem to 4 m, from previous crown lifting works.	F	F	B1	No works recommended
T003	Common ash (<i>Fraxinus excelsior</i>)	SM	< 5	8.5	400	2.5	4.5	3	1.5	2.5	Regeneration growth from stump of previously felled tree. Extensive decay at base to stump.	F	PD	U	No works recommended



Tree Ref:	Species	Age	SULE	Ht.	DBH	CS				CC	Comments	PC	SC	BS 5837:2012 Category	Recommendations
						N	E	S	W						
T004	Sycamore (<i>Acer pseudoplatanus</i>)	SM	< 5	5.5	420	0	0	0	0	5.5	Standing stem.	P	PD	U	No works recommended
T005	Sycamore (<i>Acer pseudoplatanus</i>)	SM	< 5	5.5	270	0	0	0	0	5.5	Standing stem.	P	PD	U	No works recommended
T006	Lawson cypress (<i>Chamaecyparis lawsoniana</i>)	SM	20-40	6	200#	1#	1#	1	1	0	Positioned on adjacent property and unable to access base of tree. No obvious significant defects, though of limited arboricultural merit, and lacks qualities for higher BS 5837 categorisation.	G	G	C1	No works recommended
T007	Leyland cypress (<i>Cupressus x leylandii</i>)	SM	20-40	5	150	1	1.5	1.5	2	0	No obvious significant defects, though of limited arboricultural merit, and lacks qualities for higher BS 5837 categorisation.	G	G	C1	No works recommended
T008	Sycamore (<i>Acer pseudoplatanus</i>)	SM	< 5	6	250#	2	1	2.5	2.5	2.5	Regeneration growth from stump of previously felled tree. Extensive decay at base to stump. Dense vegetation restricting access to base of main stem.	F	PD	U	Remove tree

Groups of Trees

Group Ref:	Species Composition	Age	SULE	Av. Ht.	Av. DBH	Approx. No. of Stems	CC	Comments	V	SC	BS 5837:2012 Category	Recommendations
G001	Laurel cherry (<i>Prunus laurocerasus</i>)	SM	20-40	3.5	100#	10	0	No obvious significant defects, though of limited arboricultural merit, and lacks qualities for higher BS 5837 categorisation.	G	G	C1	Remove group
G002	Leyland cypress (<i>Cupressus x leylandii</i>)	SM	20-40	6	200#	10	0	Situated on adjacent property and unable to access bases of trees. No obvious significant defects, though of limited arboricultural merit, and lacks qualities for higher BS 5837 categorisation.	G	F	C1	No works recommended



Appendix 2: Images of Trees



Plate 1: T001 (foreground) & G001 (rear)



Plate 2: T002 (rear) & G002 (foreground)



Plate 3: Group containing T003, T004, T005, & T008



Plate 4: Group containing T003, T004, T005, & T008



Plate 5: T006



Plate 6: T007



Appendix 3: Outline Arboricultural Method Statement (AMS)

A3.1 Introduction

- A3.1.1** Woodsage Consulting Ltd have been instructed by Chris and Sue Barton to produce an Outline AMS in relation to the proposed development of the land adjacent to 52 Tower Street, Barnsley S70 1QS.
- A3.1.2** The proposals are to construct a detached dwelling, with associated gravel driveway, and car parking, garden, and patio areas.
- A3.1.3** This Outline AMS should be read in conjunction with the Arboricultural Impact Assessment. (Ref: WC-240.1a).

A3.2 Timing of Works

- A3.2.1** It is not the Project Arboriculturist’s role to determine the timing and implementation of works on site; however, an input into the process can avoid issues once work is underway. The phasing of works should be carried out in accordance with **Tab. A3.1**, below.

Table A3.1: *Timing of Works.*

Stage	Works
1	Site induction
2	Install temporary tree protection fencing, in the locations shown in Appendix 6: Tree Protection Plan (1)
3	Inspection of tree protection measures by the Project Arboriculturalist
4	Carry out construction of the main dwelling
5	Once construction of the main dwelling is completed, reposition the tree protection fencing, as directed in Appendix 7: Tree Protection Plan (2) , to facilitate construction of the proposed driveway
6	Inspection of tree protection measures by the Project Arboriculturalist
7	Remove tree protection fencing once construction works have been completed
8	Final inspection by the Project Arboriculturalist

A3.3 Site Supervision

- A3.3.1** Prior to works commencing, it is the responsibility of the main contractor, or assigned agent, to ensure that details regarding tree protection are understood and adhered to by all site personnel.
- A3.3.2** During the site induction, the final AMS, and a copy of the **Tree Protection Plans** - which can be found in **Appendices 6** and **7** - should be made available to all contractors attending the site.

A3.4 Tree Removals and Pruning

- A3.4.1** Prior to development works commencing, T001, T008, and G001 will necessitate removal.
- A3.4.2** According to information provided on the website of Barnsley Metropolitan Borough Council (2024), T001, T008, and G001 are not subject to TPOs, and the site is not located within a conservation area.
- A3.4.3** However, as the allocation of TPOs can be subject to change, tree protection status should be checked and verified with Barnsley Metropolitan Borough Council prior to the commencement of works. Killing or damaging a protected tree is a criminal offence and can result in an unlimited fine.
- A3.4.4** 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 BS 3998: 2010: Tree Works - Recommendations.



A3.5 Tree Protection Fencing

A3.5.1 Tree protection barriers shall be installed prior to the commencement of development works, and should be fit for the purpose of excluding site personnel and machinery. The default specification should be in accordance with *BS 5837: 2012*.



Figure A5.1: Example of mesh welded type barriers in-situ.

A3.5.2 Specification: Barriers shall be a minimum 2 m high, and should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in **Fig. A5.1**, above, and **Fig. A5.2**, below.

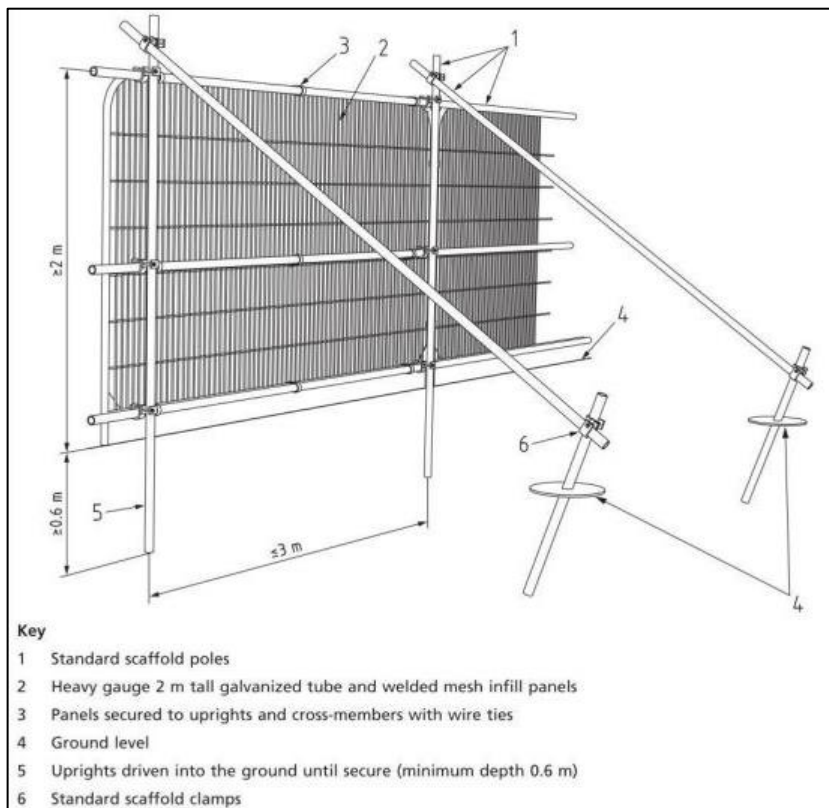


Figure A5.2: Temporary 2 m steel protective fencing.

A3.5.3 The vertical tubes shall be spaced at a minimum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.



A4.5.4 All-weather notices shall be attached to the barriers at 9 m intervals with the words 'TREE PROTECTION ZONE - NO ACCESS' clearly visible.

A4.5.5 Location: Temporary tree protection fencing should be installed throughout the development, and in the following stages:

- Temporary tree protection fencing should be installed prior to ground preparation works commencing, in the locations shown in **Appendix 6: Tree Protection Plan (1)**.
- Once construction of the dwelling has been completed, to facilitate construction of the proposed driveway and car parking area, the tree protection fencing should be repositioned, as directed in **Appendix 7: Tree Protection Plan (2)**.

A4.5.6 The protected areas should be regarded as sacrosanct, and once installed, tree protection fencing should not be removed or altered without prior consultation with the Project Arboriculturist.

A4.5.7 If any breach in the tree protection fencing occurs, it is the Site Manager's responsibility to report this to the Project Arboriculturalist, so that appropriate measures may be taken. Any breach which results in death or damage to the trees could result in a criminal offence being committed.

A3.6 Additional Details

A3.6.1 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 10 m away from the fencing.

A3.6.2 Where there is a risk of polluted water runoff into root protection areas (RPAs), heavy duty plastic sheeting and sandbags must be used to contain any spillages and prevent contamination. No fires should be lit within 20 m of the protective fencing.

A3.6.3 As the majority of tree roots are typically found within the first 100 cm of ground level - particular attention should also be paid to existing levels - which should be observed and maintained within tree RPAs.

A3.6.4 Any unavoidable excavations into the soil within RPAs should be carried out by use of hand-operated tools only, and only under prior approval of the Project Arboriculturalist. No roots > 25 mm in diameter should be severed without first consulting the Project Arboriculturalist.

A3.7 No-dig Geo-cellular Confinement

A3.7.1 The proposed driveway is to be constructed upon a CORE TRP® geo-cellular confinement system, within the RPA of T002. A cross-sectional diagram of the proposed CORE TRP® geo-cellular confinement system can be viewed in **Fig. A7.1**, below.

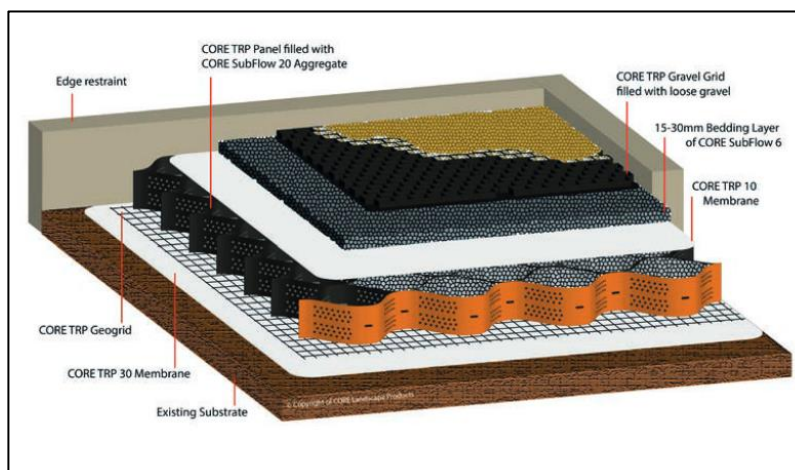


Figure A7.1: Cross-sectional diagram of the CORE TRP® geo-cellular confinement.



A3.7.2 Installation of the geo-cellular confinement system should be carried out using a “no-dig” technique, and shall adhere to the following guidelines:

1. Clear existing vegetation from the surface using hand-operated tools only. The geo-cellular confinement system does not require any further excavation into the soil.
2. Fill any major hollows with a granular material that will remain gas and water-permeable throughout its design life.
3. Cover surface with a non-woven, geotextile separation filtration layer, with a minimum thickness of 300g/m² and a CBR puncture resistance of 4000 N¹.
4. Install CORE TRP® Geogrid.
5. Install CORE TRP® geo-cellular confinement panels, and infill with clean, angular 4/20 mm base aggregate. The infill material should be washed or graded, so that it contains no fine material (fines). The amount of infill that will be required can be estimated using the following calculations:

Quantity of 4/20 stone infill required = m² of coverage x depth of geocells (m) x 2 tonnes



Figure A7.2: CORE TRP® geo-cellular confinement panels infilled with 4/20 mm clean, angular stone.

6. Install CORE TRP® 10 non-woven geotextile separation membrane.
7. Install 15-30 mm bedding layer of CORE SubFlow 6.
8. Install CORE TRP® Gravel Grid and infill with loose gravel.

A3.7.3 Edging is not required for the geo-cellular confinement system but may be required to retain the gravel surface dressing. In this instance, timber sleeper edging will be appropriate, which should be installed directly on top of existing grade levels. The edging shall be held in place with track or road pins placed at 1 m intervals, which shall be concealed by grading into the surrounding levels, using a good quality topsoil.

¹ Geotextiles made from recycled products are becoming increasingly available and can be used in the geo-cellular confinement system providing it has a sufficient tensile strength and puncture resistance.



A3.8 Responsibility and Site Management

A3.8.1 It is the responsibility of the main contractor or assigned agent to ensure that details regarding tree protection are understood and followed by all site personnel.

A3.8.2 It is recommended that inspections by the Project Arboriculturalist are undertaken at the following stages:

1. Once the tree protection fencing has been installed – in the locations shown in **Appendix 6: Tree Protection Plan (1)** – and prior to ground preparation works commencing.
2. Once construction of the dwelling has been completed, and the tree protection fencing has been repositioned to facilitate construction of the driveway, as directed in **Appendix 7: Tree Protection Plan (2)**.
3. Upon completion of the development works.

A3.8.3 After each inspection, a letter should be submitted by the Project Arboriculturalist to the LPA Arboricultural Officer, to confirm if the method statement has been followed correctly, and if trees have not been adversely affected by construction works.

A3.9 Project Arboriculturalist Contact Details

Mr Jack Delaney
Woodsage Consulting Ltd
Unit 2, Hey End Farm,
Shield Hall Lane,
Luddendenfoot,
West Yorkshire HX2 6JN
Tel: 07962401997
Email: info@woodsage.co.uk

Appendix 4: Tree Constraints Plan

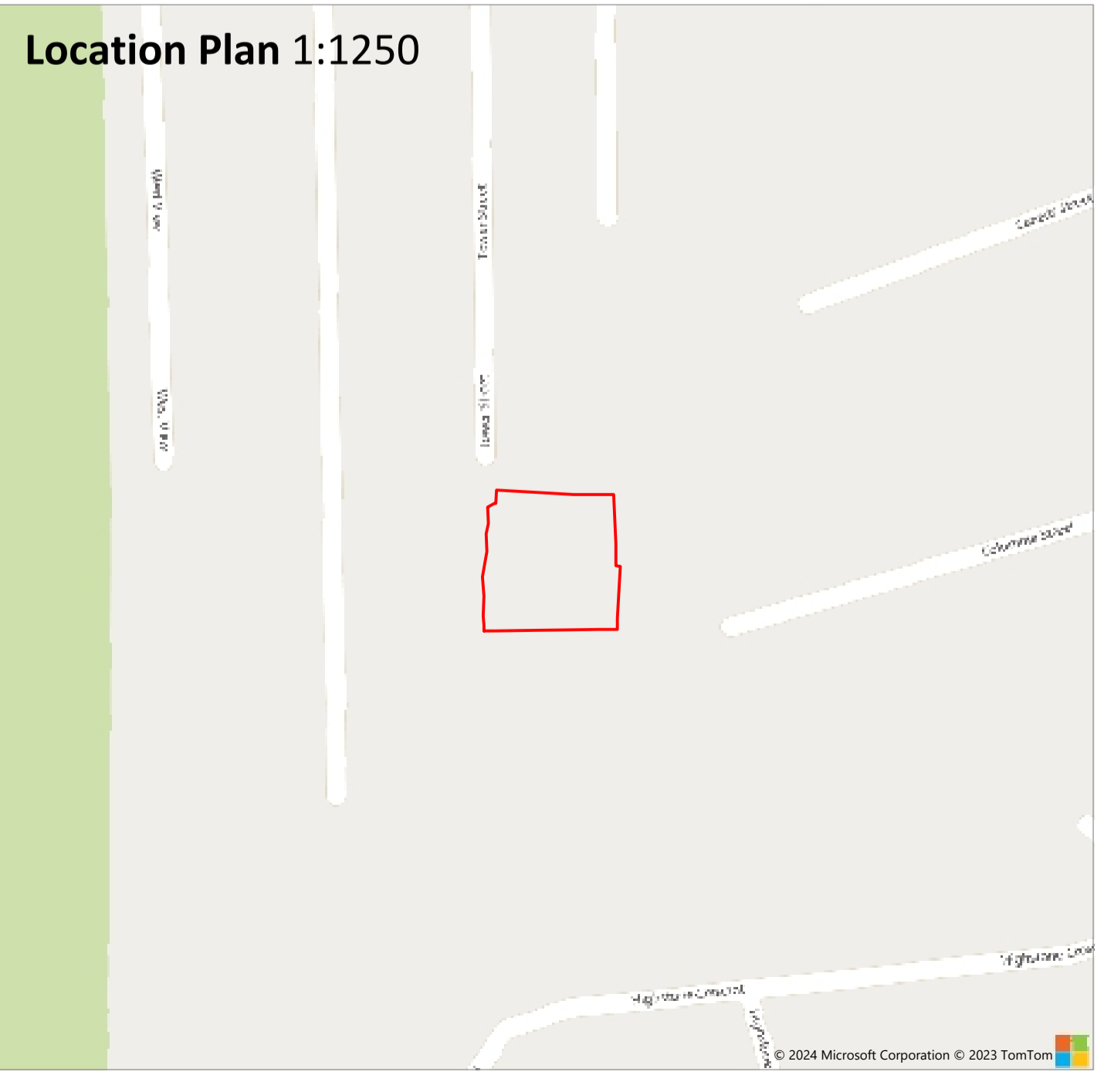
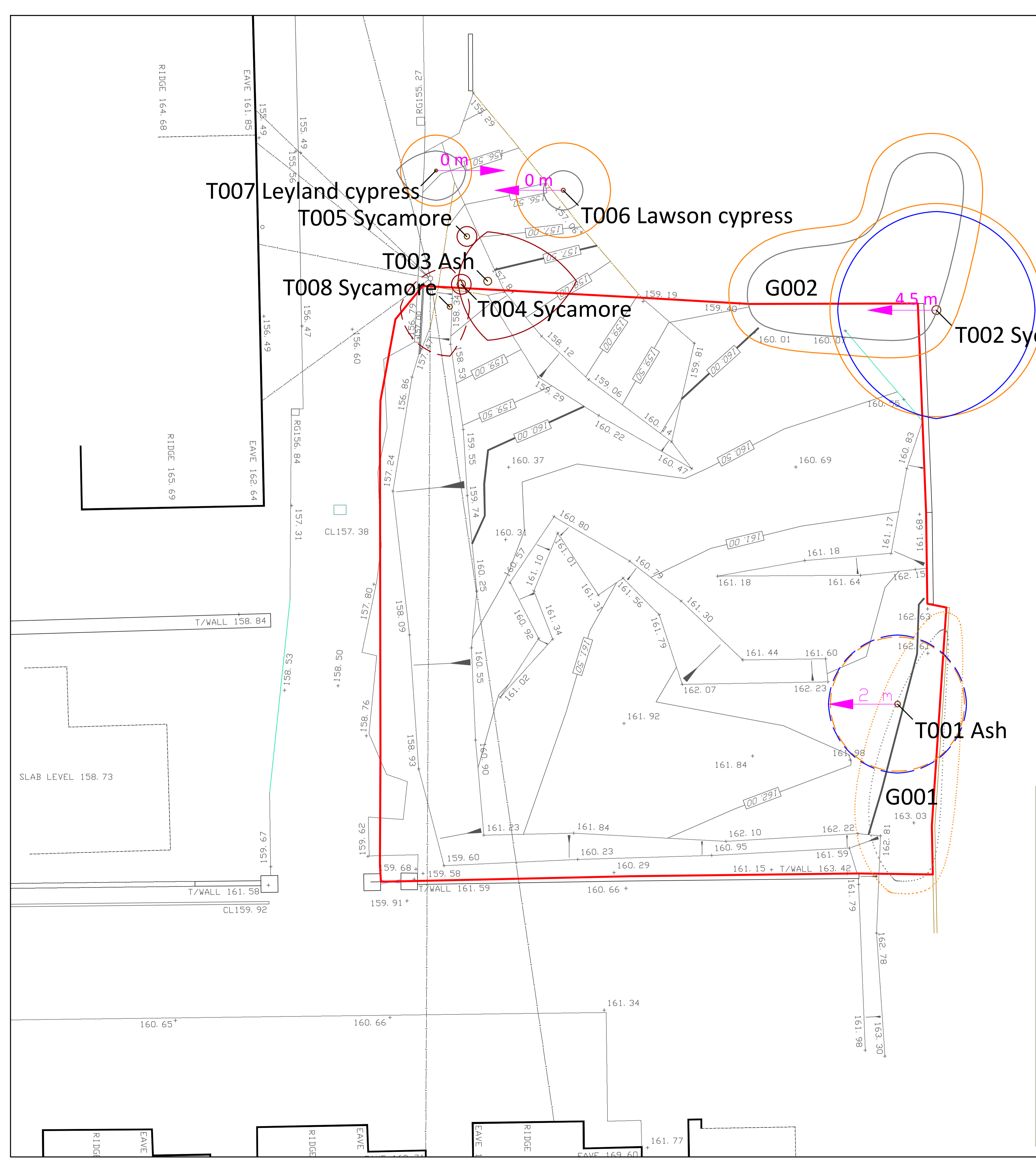
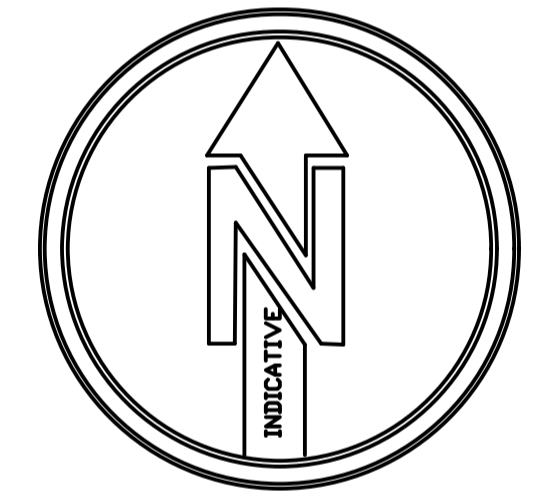
Project:	Tower Street, Barnsley S70 1QS
Drawn by:	Jack Delaney
Date:	31st January 2024
Scale:	1:100 @ A1
Drawing Number:	WC-240.1a.4

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

Map Key:

<p>Category B trees of moderate-quality</p> <p>Root protection area (RPA) — Crown clearance to orientation of symbol Tree stem — Trees necessitating removal shown with dashed line Tree canopy —</p>
<p>Category C trees/groups of low-quality</p> <p>Root protection area (RPA) — Groups necessitating removal shown with dotted line Tree stem — Crown clearance to orientation of symbol Tree canopy —</p>
<p>Category U trees with SULEs of < 10 years</p> <p>Tree stem — Trees necessitating removal shown with dashed line Tree canopy —</p>

Application boundary



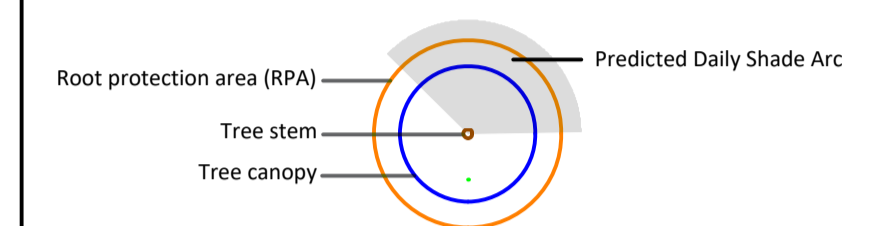
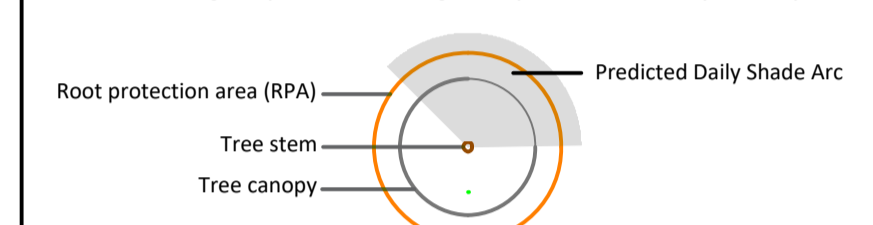
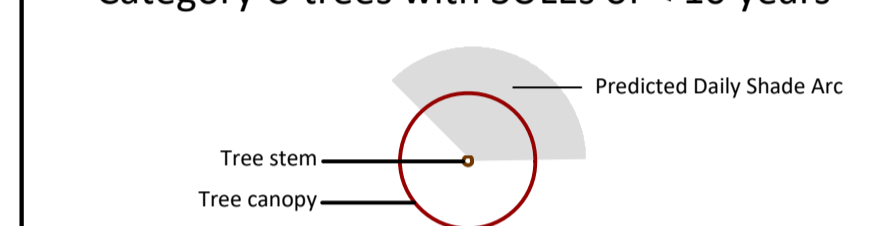
© 2024 Microsoft Corporation © 2023 TomTom

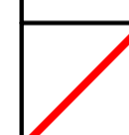
Appendix 5: Shade Analysis Plan

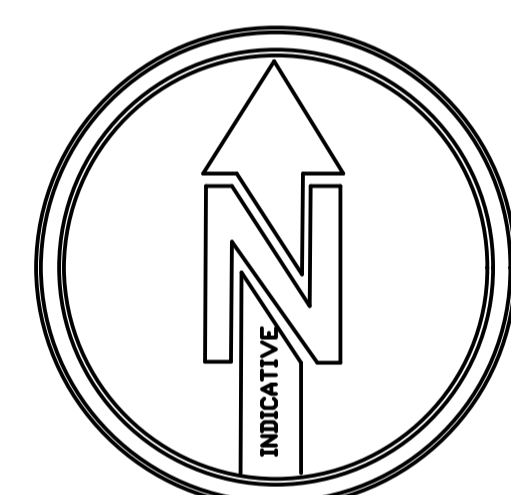
Project:	Tower Street, Barnsley S70 1QS
Drawn by:	Jack Delaney
Date:	31st January 2024
Scale:	1:100 @ A1
Drawing Number:	WC-240.1a.5

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

Key:

Category B trees of moderate-quality	
Category C trees/groups of low-quality	
Category U trees with SULEs of < 10 years	

 Application boundary



T007 Leyland cypress

T005 Sycamore

T006 Lawson cypress

T003 Ash

T004 Sycamore

G002

T002 Sycamore

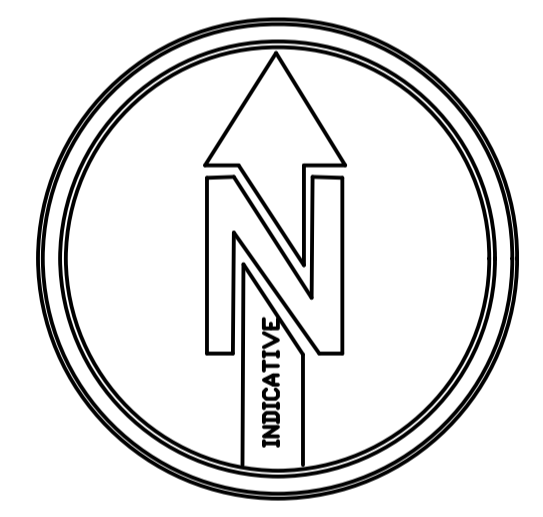
**Appendix 6:
Tree Protection Plan (1)**

Project:	Tower Street, Barnsley S70 1QS
Drawn by:	Jack Delaney
Date:	31st January 2024
Scale:	1:100 @ A1
Drawing Number:	WC-240.1a.6

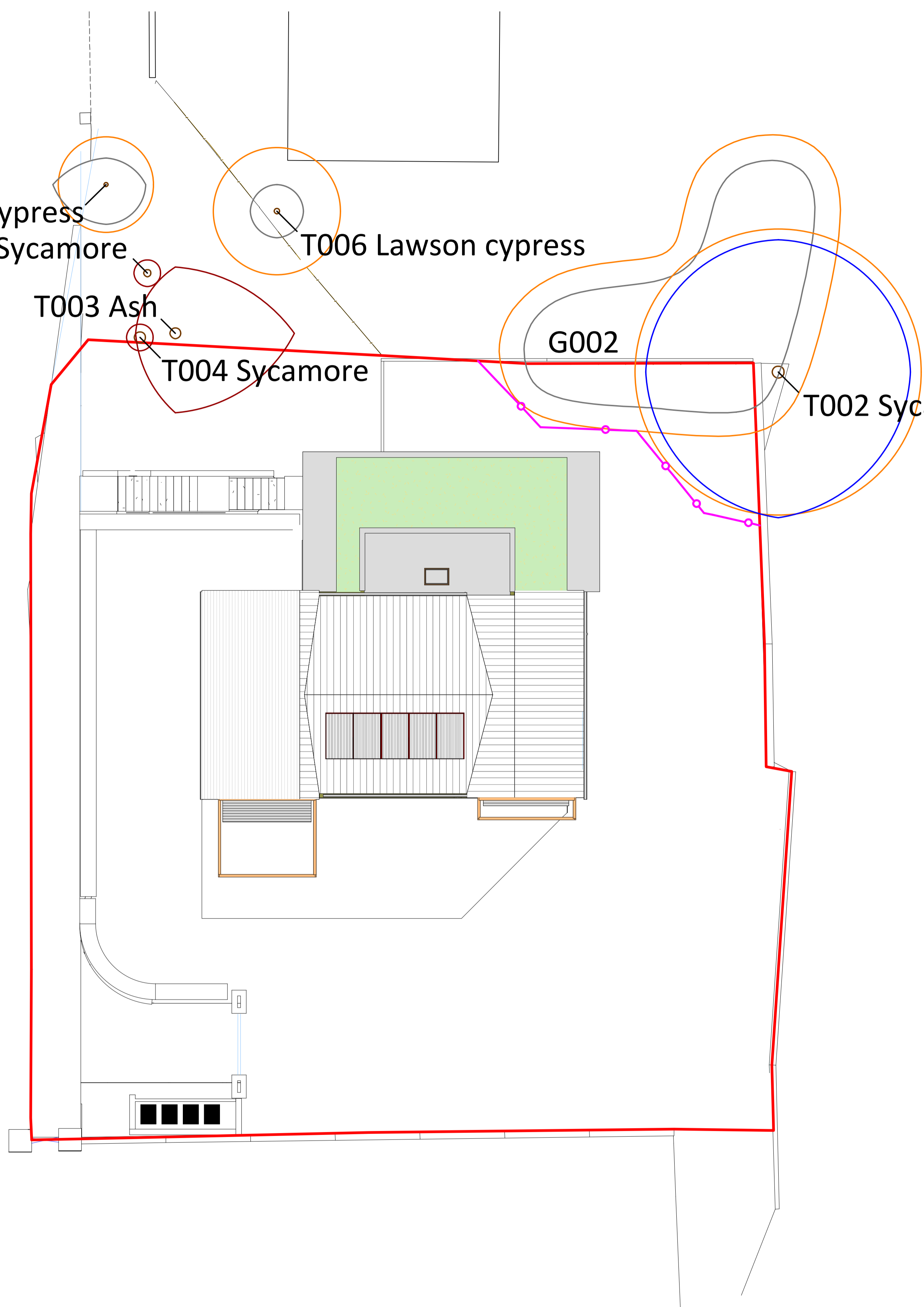
Do not scale off this drawing - to be reproduced in colour only

Map Key:

Category B trees of moderate-quality	
Root protection area (RPA)	
Tree stem	
Tree canopy	
Category C trees/groups of low-quality	
Root protection area (RPA)	
Tree stem	
Tree canopy	
Category U trees with SULEs of < 10 years	
Tree stem	
Tree canopy	
	Application boundary
	Temporary tree protection fencing; refer to <i>Outline Arboricultural Method Statement (AMS)</i> for detailed specification



T007 Leyland cypress
 T005 Sycamore
 T003 Ash
 T004 Sycamore
 T006 Lawson cypress
 G002
 T002 Sycamore



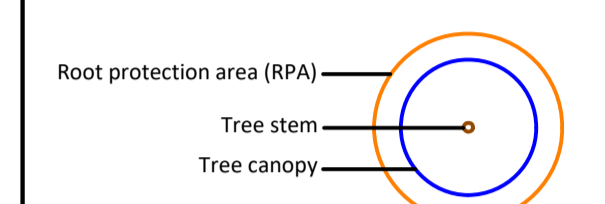
Appendix 7: Tree Protection Plan (2)

Project:	Tower Street, Barnsley S70 1QS
Drawn by:	Jack Delaney
Date:	31st January 2024
Scale:	1:100 @ A1
Drawing Number:	WC-240.1a.7

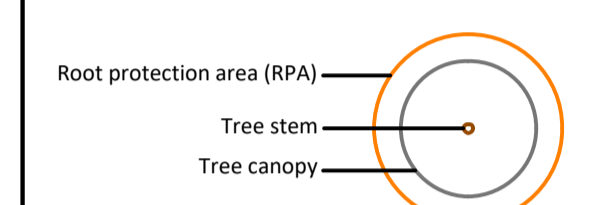
Do not scale off this drawing - to be reproduced in colour only

Map Key:

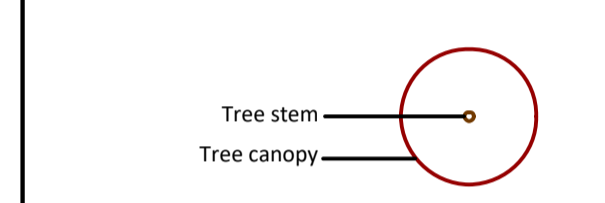
Category B trees of moderate-quality



Category C trees/groups of low-quality



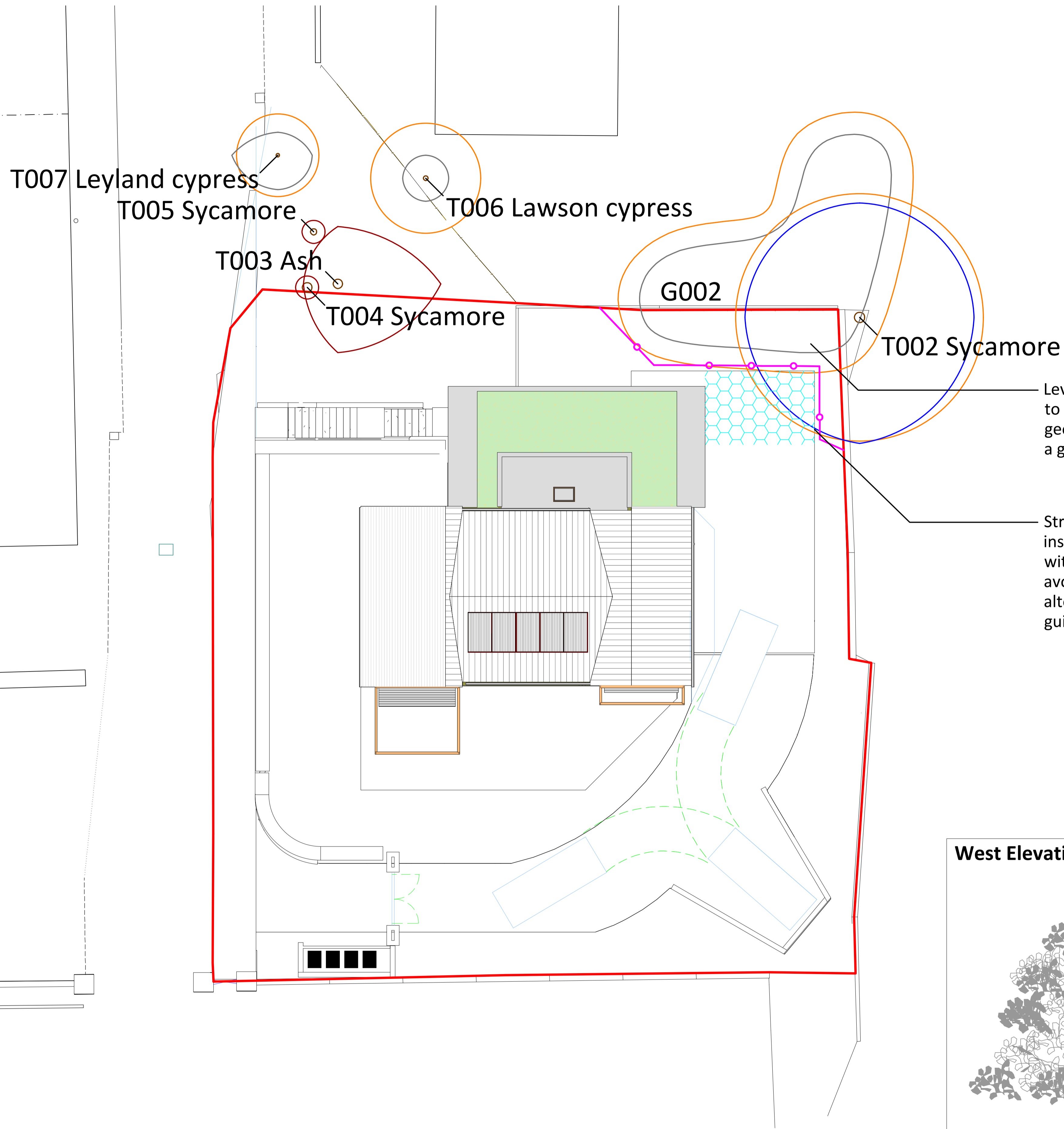
Category U trees with SULEs of < 10 years



Application boundary

Temporary tree protection fencing; refer to **Outline Arboricultural Method Statement (AMS)** for detailed specification

No-dig geo-cellular confinement; refer to **Outline AMS** for detailed specification



Levels within RPA of T002 are to be graded into the geo-cellular confinement using a good quality topsoil

Strip trenching for the installation of traditional kerbs within RPA of T002 to be avoided; installation of alternative edging to follow guidance in the Outline AMS.

West Elevation 1:200

