arbtech

Arboricultural Survey to BS5837:2012

Judith Anita Kimberley.

207-209 Manchester Road,
Thurlstone,
Sheffield,
S36 9QS.

10 February 2023

Alan Thompson FdSc (Arb) M.Arbor.A

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If this report has been released electronically the appendices referred to herein can be found in the annexed zip folder/s as .pdf files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans are annexed separately as A0, A1, A2 or A3 as appropriate.

1. Introduction

Arbtech Consulting Limited (Arbtech) received written instruction in January 2022 from Judith Anita Kimberley to attend 207-209 Manchester Road, Thurlstone, Sheffield, S36 9QS (site) to undertake an arboricultural survey a to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a Schedule of trees, Tree Constraints Plan.

I am Alan Thompson, an arboricultural consultant at Arbtech Consulting Ltd. I undertook the tree survey on 1st February 2023 and subsequently have produced this summary of my findings. I have over 13 years' arboricultural experience in both local authority and private practise environment, and also hold the LANTRA professional tree inspection certificate.

The advice below and appended is underwritten by our Professional Indemnity insurance for the business practice of Arboricultural Consultancy in the sum of one million Pounds Sterling in each and every claim.

Table 1: Documents referred to.

Document	Reference No.
Survey base drawing	Topographical Survey - 22334
LPA pre-app comments	N/A
British Standard 5837:2012	"BS5837"
Tree Survey Schedule	Arbtech TS 01
Tree Constraints Plan	Arbtech TCP 01

2. Survey

Survey: An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Alan Thompson on 11th January 2023, conditions were cold & overcast.

During the survey I categorised the trees using "Table 1 – Cascade chart for tree quality assessment" of the BS5837:2012 (see Appendix 1).

A total of 15No. individual trees, 1No. hedge and 7No. groups of trees were surveyed. Details for each of the trees surveyed are provided in the Schedule of Trees (see Appendix 2).

Table 2: Documents upon which this tree survey has been based.

Document	Originator	Reference Number	Title
Survey Base Plan	Silkstone Surveys	22334	207-209 Manchester Road

Limitations: The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and advanced decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, laser, and GPS devices. Where this was not possible, measurements are estimated.

Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees condition relative to their present context (*i.e. not in relation to the proposed development*).

Legal Status: No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

* For more information on the surveyed trees please see Arbtech Consulting Ltd, Tree Survey Schedule (Appendix 1), Tree Survey Report and Tree Constraints Plan.

Survey Site/Extents

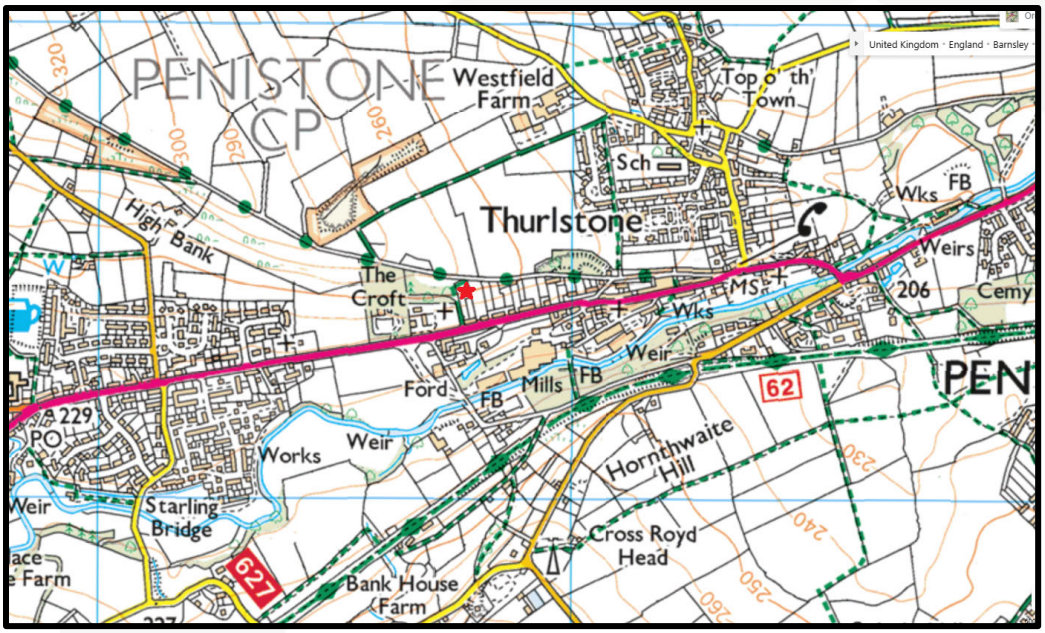

Figure 1: Ordnance Survey of location (Bing Maps)

Figure 2: Aerial Image of site with approximate red line boundary (Google Maps)

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3. BS5837:2012 Scope

This standard recognises that there can be problems for development close to existing trees which are to be retained, and of planting trees close to existing structures. This standard sets out to assist those concerned with trees, in relation to construction, to form balanced judgements. It does not set out to put arguments for or against development, or for the removal or retention of trees. Where development, including demolition, is to occur, the standard provides guidance on how to decide which trees are appropriate for retention, on the means of protecting these trees during development, including demolition and construction work, and on the means of incorporating trees into the developed landscape.

4. Methodology

The methodology used to assess the trees was the British Standard 5837:2012 'Trees in Relation to Construction' tree survey method. The aim of the survey is to establish which trees are moderate and good quality; suitable for retention and justifying protection. And which trees are low or poor quality; either undesirable or unsuitable to retain and protect.

The tree survey includes all trees included in the land survey red line boundary plan, as well as any that may have been missed, and it should categorize trees or groups of trees, including woodlands for their quality and value within the existing context, in a transparent, understandable, and systematic way. Where the arboriculturist has deemed it appropriate, the trees have been tagged with small metal or plastic tags, placed as high as is convenient on the stem of each tree.

Whilst master plan proposals for the development of the site might be available, the trees have been surveyed without taking these into consideration. All detailed design work on site layout should take into consideration the results of the tree survey (and the TCP).

Trees forming groups and areas of woodland (including orchards, wood pasture and historic parkland) are identified and considered as groups where the arboriculturist has determined that this is appropriate, particularly where they contain a variety of species and age classes that could aid long-term management. It is often expedient to assess the quality and value of such groups of trees as a whole, rather than as individuals. However, an assessment of individuals within any group has been undertaken if they are open-grown or if there is a need to differentiate between them.

The quality and value of each tree or group of trees has been recorded by allocating it to one of the four categories: A, B, C, or U (highest to lowest quality respectively). The categories are differentiated on the tree survey plan by colour, or by suffixing the category adjacent to the tree identification number on the TCP.

The survey schedule lists all the trees or groups of trees. The following information is also provided:

a) reference number (to be recorded on the tree survey plan);
b) species (common or scientific names);
c) height in meters (m);
d) stem diameter in millimetres (mm) at 1.5m above adjacent ground level or immediately above the root flare for multi-stemmed trees;
e) branch spread in meters taken at the four cardinal compass points;
f) height of crown clearance above adjacent ground level in meters (m);
g) age class (newly planted, young, semi-mature, early mature, mature, over mature);
h) physiological condition (e.g. good, fair, poor, decline and dead);
i) structural condition (e.g. good, fair, poor or not visible);
j) comment about the tree, its location and preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat;
k) The retention category referring to the quality and useful contribution in years; **U** = <10yrs; **A** = >40yrs; **B** = >20yrs; **C** = >10yrs. The retention subcategory referring to the type of amenity; 1 = Arboricultural; 2 = Landscape; 3 = Cultural including conservation (see Appendix 1 Cascade chart for tree quality assessment).

5. Definitions

Arboriculturist

An arboriculturist (or arboricultural consultant) is a person who has, through relevant education, training, and experience, gained recognized qualifications and expertise in the field of trees in relation to construction.

Tree Survey

A tree survey should be undertaken by an arboriculturist and should record information about the trees on a site independently of and prior to any specific design for development. As a subsequent task, and with reference to a design or potential design, the results of the survey should be included in the preparation of a tree constraints plan, which should be used to assist with site layout design.

Tree Constraints Plan

A TCP is plan, typically delivered as an AutoCAD drawing (.DWG file format), prepared by an arboriculturist for the purposes of layout design showing the root protection area and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

Root Protection Area

An RPA is a layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m^2.

Construction Exclusion Zone (also termed Tree Protection Zone)

A construction exclusion or tree protection zone is an area based on the RPA (in m^2), identified by an arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.

Arboricultural Impact Assessment (AIA)

This is a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Tree Protection Plan (TPP)

A TPP is plan, typically delivered as an AutoCAD drawing (.DWG file format), prepared by an arboriculturist showing the finalized layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement, which can be shown graphically.

Arboricultural Method Statement (AMS)

This is a methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree. The AMS is likely to include details of an on-site tree protection monitoring regime.

6. Limitations

Trees were inspected from using visual observation from ground level only. Trees were not climbed or inspected below ground level. Inaccessible trees will have best estimates made about the location, physical dimensions, and characteristics. Trees have been grouped where BS5837 guides us that it is expedient to do so. Trees have been excluded from the survey if they are found by us to be sufficiently far away from the proposed developable area or if they are outside of the red line boundary plan showing the expectations of our client for the extent of the survey. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order ("TPO"), and those trees without. This is principally because a detailed planning consent overrides any TPO protection. Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

7. Appendices

The following documents were released to the Client as appendices to this report:

- Survey Schedule (.PDF)
- Tree Constraints Plan drawing (.DWG & .PDF)

If you require clarification of information contained herein, please do not hesitate to contact us via 01244 661170.

Yours Sincerely,

Alan Thompson
Senior Consultant

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Appendix 1: Table 1 Cascade chart for tree quality assessment

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories when appropriate			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in 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 serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. 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, or very low quality trees suppressing adjacent trees of better quality. *NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.*			Dark red
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
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; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominate 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).	Light green
Category 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 remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention of 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.	Mid blue
Category C **Trees of low quality** with an estimated remaining 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 value.	Trees with no material conservation or other cultural value.	Grey

Appendix 2: Schedule of Trees

BS5837:2012 Tree Survey

Client: Judith Anita Kimberley
Project: 207-209 Manchester Road, Thurlstone, Sheffield, S36 9QS.
Survey Date: 01/02/2023
Surveyor: Alan Thompson

ARBTECH

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Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
G1										Estimated Measurements	
A Group - -	6.5	1	130	N 2.5 E 2.5 S 2.5 W 2.5	3 3 3 3	Y	A: 7.6 R: 1.55	Good	C: Fair S: Good B: Good	Group is comprised of five young/early mature trees. Species are ash, sycamore and hawthorn Measurements given are estimated averages for the group.	C.2 40+ yrs
G2										Estimated Measurements	
A Group - -	16	1	480	N 6.5 E 6.5 S 6.5 W 6.5	4.5 4.5 4.5 4.5	SM	A: 104.2 R: 5.75	Good	C: Good S: Good B: Good	Off site boundary group is comprised of six semi mature sycamore trees. Measurements given are estimated averages for the group.	B.1.2 40+ yrs
G3										Estimated Measurements	
Common Holly *Ilex aquifolium*	5.5	1	90	N 2 E 2 S 2 W 2	0.5 0.5 0.5 0.5	EM	A: 3.7 R: 1.08	Good	C: Good S: Good B: Good	Lapsed boundary holly hedgerow. Measurements given are estimated averages for the group	C.2 40+ yrs
G4										Estimated Measurements	
Cherry Laurel *Prunus laurocerasus*	3.5	6	245 (Eq)	N 3.5 E 3.5 S 3.5 W 3.5	0.5 0.5 0.5 0.5	SM	A: 27.1 R: 2.93	Good	C: Good S: Good B: Good	Group is comprised of 2 multi stem cherry laurel shrubs. Measurements given are estimated averages for the.	C.2 20+ yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
G5										Estimated Measurements	
A Group - -	15	1	480	N 6 E 6 S 6 W 6	4.5 4.5 4.5 4.5	SM	A: 104.2 R: 5.75	Good	C: Good S: Good B: Good	Off site group is a small wooded area comprised of approximately 40 semi mature. Species are predominantly sycamore interspersed with occasional ash and birch. Measurements given are estimated averages for the group.	**B.1.2** 40+ yrs
G6										Estimated Measurements	
A Group - -	14	1	480	N 6 E 6 S 6 W 6	4 4 4 4	SM	A: 104.2 R: 5.75	Good	C: Good S: Good B: Good	Off site group is comprised of six semi mature trees. Species are sycamore and ash. Measurements given are estimated averages for the group.	**B.1.2** 40+ yrs
G7										Estimated Measurements	
Common Ash *Fraxinus excelsior*	9	1	350	N 4 E 4 S 4 W 4	3 3 3 3	EM	A: 55.4 R: 4.19	Good	C: Good S: Good B: Good	Off site group is comprised of eight early mature ash trees. Measurements given are estimated averages for the group.	**B.2** 40+ yrs
H1										Estimated Measurements	
Cherry Laurel *Prunus laurocerasus*	2	1	60	N 0.5 E 0.5 S 0.5 W 0.5	0.2 0.2 0.2 0.2	EM	A: 1.6 R: 0.71	Good	C: Good S: Good B: Good	Well maintained laurel hedgerow. Measurements given are estimated averages for the hedge.	**C.2** 20+ yrs
T1											
Sycamore *Acer pseudoplatanus*	10.5	5	538 (Eq)	N 3 E 5 S 6 W 5	5 5 3.5 4	EM	A: 130.9 R: 6.45	Good	C: Good S: Good B: Good	Self seeded tree showing good vigour.	**B.2** 40+ yrs
T2											
Sycamore *Acer pseudoplatanus*	10	5	562 (Eq)	N 4.5 E 5.5 S 5.5 W 5	4.5 4 4.5 4	EM	A: 142.9 R: 6.74	Good	C: Good S: Good B: Good	Self seeded tree showing good vigour.	**B.2** 40+ yrs

Age Classifications:
N Newly planted
Y Young
SM Semi-mature
EM Early Mature
M Mature
OM Over Mature

Condition:
C Crown
S Stem
B Basal area

Stems:
Ø Diameter
(Eq) Equivalent stem diameter using BS5837:2012 definition

207-209 Manchester Road, Thurlstone, Sheffield, S36 9QS.

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T3										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	11.5	3	509 (Eq)	N 6.5 E 6 S 4.5 W 5	4.5 3.2 6 3.5	SM	A: 117.3 R: 6.11	Good	C: Good S: Ivy B: Good	Off site tree could not be fully inspected, stem diameter measurement is estimated. Thick ivy is spreading throughout tree's stem into crown.	**B.1** 40+ yrs
T4										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	14	1	500	N 5.5 E 5.5 S 3 W 6.5	5 5 6 3.5	SM	A: 113.1 R: 6	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected, stem diameter measurement is estimated.	**B.1** 40+ yrs
T5										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	16	1	500	N 3.2 E 7 S 7 W 6.5	8 3.5 7 5	SM	A: 113.1 R: 6	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected, stem diameter measurement is estimated.	**B.1** 40+ yrs
T6										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	7.5	1	300	N 1.5 E 4 S 6 W 4	7 4.5 5 4.5	SM	A: 40.7 R: 3.59	Good	C: Fair S: Good B: Good	Tree's crown is heavily suppressed by neighbouring tree to the north.	**C.1** 20+ yrs
T7										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	16	1	480	N 6 E 6 S 6 W 6	4 6 6 6	SM	A: 104.2 R: 5.75	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected, stem diameter measurement is estimated.	**B.1** 40+ yrs
T8											
Downy Birch *Betula pubescens*	9	5	390 (Eq)	N 3.5 E 4 S 4 W 3	6 2.5 2.5 6	M	A: 68.7 R: 4.67	Good	C: Good S: Good B: Good		**B.2** 20+ yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T9										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	16.5	1	450	N 3 E 6 S 8 W 5	7 3 2.5 5	SM	A: 91.6 R: 5.39	Good	C: Good S: Good B: Good	Off site tree, forms part of eastern edge of woodland group. Tree could not be fully inspected and measurements given are estimated.	**B.1** 40+ yrs
T10										Estimated Measurements	
Common Silver Fir *Abies alba*	21	1	580	N 5 E 5 S 6 W 6	5 3 3 5	M	A: 152.2 R: 6.96	Good	C: Good S: Good B: Good	Off site tree, forms part of eastern edge of woodland group. Tree could not be fully inspected and measurements given are estimated.	**B.1** 40+ yrs
T11										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	15.5	1	460	N 5.5 E 6 S 5.5 W 5	4 3 5 7	SM	A: 95.7 R: 5.51	Good	C: Good S: Good B: Good	Off site tree, forms part of eastern edge of woodland group. Tree could not be fully inspected and measurements given are estimated.	**B.1** 40+ yrs
T12										Estimated Measurements	
Common Oak *Quercus robur*	12.5	1	500	N 5 E 8 S 6.5 W 5	3.5 3.5 5 6	SM	A: 113.1 R: 6	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected and measurements given are estimated.	**B.1** 40+ yrs
T13										Estimated Measurements	
Sycamore *Acer pseudoplatanus*	11	6	441 (Eq)	N 5 E 5.5 S 5 W 4.5	3 4 4 4	EM	A: 88 R: 5.29	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected and measurements given are estimated.	**B.2** 40+ yrs
T14										Estimated Measurements	
Common Ash *Fraxinus excelsior*	9	1	340	N 4.5 E 4.5 S 4.5 W 4.5	2.5	EM	A: 52.3 R: 4.08	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected and measurements given are estimated.	**B.2** 40+ yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

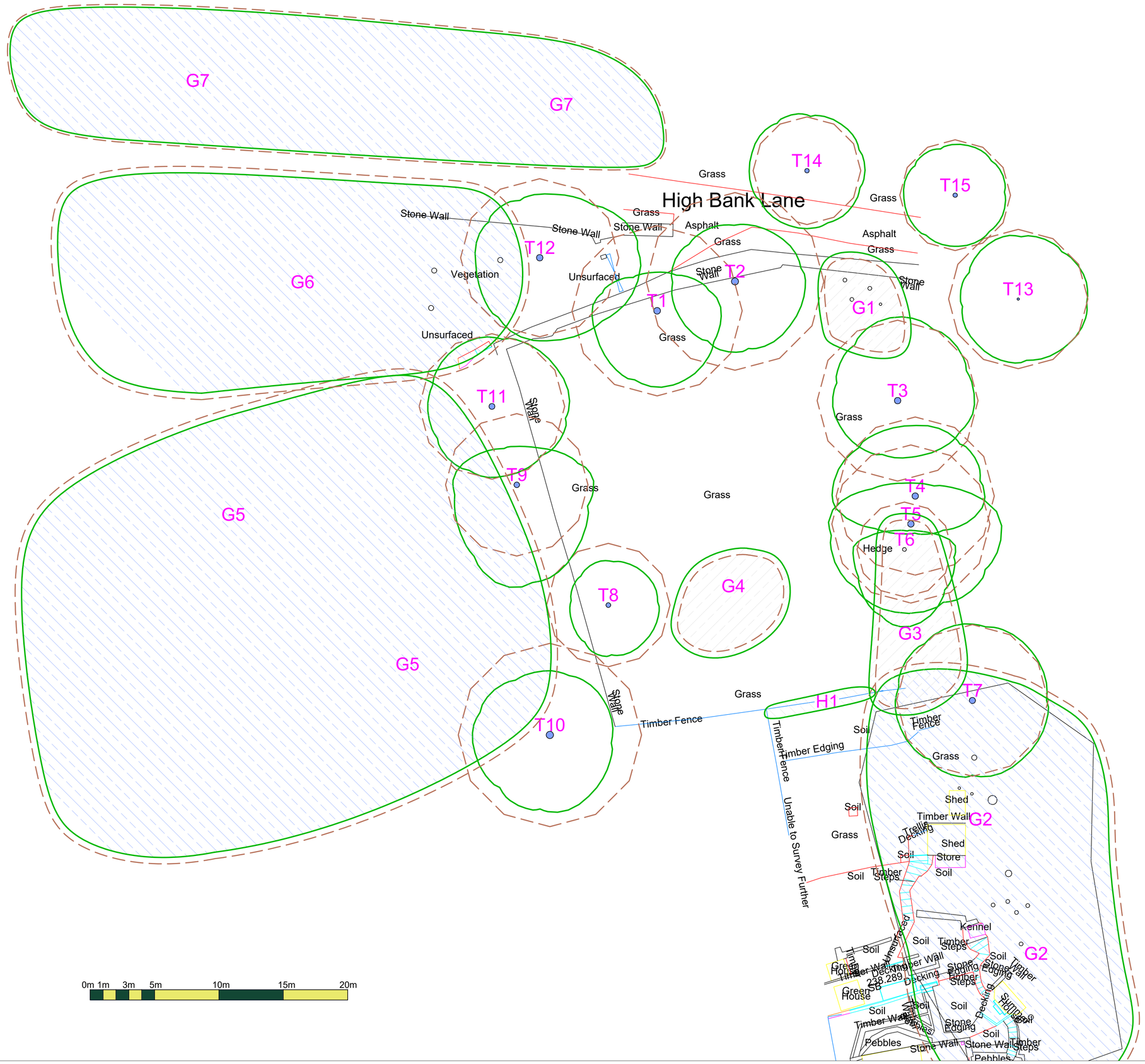
Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m2) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T15										Estimated Measurements	
Common Ash *Fraxinus excelsior*	8.5	1	350	N 4 E 4 S 4 W 4	3 3 3 3	EM	A: 55.4 R: 4.19	Good	C: Good S: Good B: Good	Off site tree could not be fully inspected and measurements given are estimated.	**B.2** 40+ yrs

Age Classifications:	N	Newly planted	EM	Early Mature	**Condition:**	C	Crown	**Stems:**	Ø	Diameter
	Y	Young	M	Mature		S	Stem		(Eq)	Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area			

Appendix 3: Tree Constraints Plan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Timber

8. Document Production Record

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