BS 5837 Pre- Development Tree Quality Assessment, Arboricultural Impact Assessment & Method Statement

The Jubilee, Simmondley Lane, Glossop, SK13 6NR

Report prepared by Ross Cannon
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8/3/17

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SUMMARY

Treeplan was instructed by CAN.DID Architecture to undertake a pre-development tree survey (following recommendations *in British Standard 5837:2012 Trees in relation to design, demolition and construction*) to ensure trees were fully considered through the development process.

The site to be surveyed was The Jubilee, Simmondley Lane, Glossop, SK13 6NR.

The development proposal is the demolition of the existing public house and the construction of three detached dwellings.

Two trees were surveyed and their details recorded. Tree related details and my management recommendations are found in Appendix 4.

A Tree Protection Plan, found in Appendix 5 shows the trees, their canopy extent, root protection areas and recommended location of tree protective fencing to ensure the health and longevity of retained trees through the development.

No surveyed trees need to be removed in order to enable the development. Some pruning of branch stubs is recommended. No root protection areas will be impacted by the development.

Based on the following discussions, and provided all the technical recommendations in this report are followed, I consider any proposed development can be carried out in accordance with the guidance in the British Standard: BS 5837, *Trees in relation to design, demolition and construction – Recommendations* (2012).

1. INTRODUCTION

1.1 Instruction

CAN.DID Architecture instructed me to undertake a pre-development tree survey following recommendations in *British Standard 5837:2012 Trees in relation to design, demolition and construction* (hereafter BS 5837) at The Jubilee, Simmondley Lane, Glossop, SK13 6NR (hereafter referred to as 'the site').

1.2 Qualifications & Experience of Author

The author of this report is Ross Cannon. Conclusions and recommendations of this report are based on my site observations and experience. I have experience and qualifications in Forestry and Arboriculture which are summarised in Appendix 1.

1.3 Documents, Communications & Information Supplied

CAN.DID Architecture provided me, by email with the following documents.

- pdf & dwg – Current and Proposed Site Plan ref: RG196/PL01

1.4 Surveying Methodology & Report Limitations

A summary of the survey methodology and report limitations is included in Appendix 2.

1.5 Plans Associated with this Report

A Tree Protection Plan has been annotated to include tree related data relevant to the recommendations found within BS 5837. The annotations are superimposed on the provided OS base plans and are found in Appendix 5.

2. REFERENCES, PLANNING POLICY AND GUIDANCE

2.1 National Policy

Section 197 in the Town and Country Planning Act 1990 makes it the duty of local planning authorities, 'in the interests of amenity,' to protect trees, when granting planning permission, by imposing conditions or serving Tree Preservation Orders (TPOs). Planning Policy Statements (PPS) also provide guidance on the acceptability of proposed development.

2.2 British Standard: BS 5837, Trees in relation to design, demolition and construction – Recommendations (2012)

BS 5837 contains guidance on how to assess trees in or close to proposed development sites and what information to include in a pre-development arboricultural report for submission with a planning application. Appendix 3 contains relevant extracts from BS 5837.

3. SITE VISIT & OBSERVATIONS

3.1 Site Visit

The tree survey was undertaken alone on 4 March 2017. The weather was clear with no visibility constraints.

3.2 Site Description

The Jubilee is a detached building with gardens to the north and west. A car park is found to the east. A hedge is found to the north within which three even aged stems of an early mature Oak are found – these have been recorded as two trees.

3.3 Tree Observations

- The details of two trees are recorded here
- These trees are marked on the Tree Protection Plan in Appendix 5

3.4 Soil Type

Section 4.3 of BS 5837 states that a soil assessment should be undertaken by a competent person to determine structure, pH and composition to inform new planting as well as 'shrinkability'. I am not a soil scientist and therefore recommend a specialist in this field is consulted before the foundation design stage.

4. TREE SURVEY

4.1 Tree Survey

A survey was undertaken in accordance with section 4.4.2.5 of BS 5837. The following information was recorded where site conditions allowed and can be found in Appendix 4:

- A sequential tree (or group of trees) number
- Species
- Height
- Stem diameter(dbh) at 1.5m above ground level
- Canopy/branch spread at the four cardinal compass points
- Canopy height above ground
- Height of first significant branch and direction of growth
- Age class
- Physiological (tree health) condition
- Structural condition
- Condition (tree) comments
- Preliminary management
- Root protection area as a radius and in m^2
- Estimated remaining contribution in years/life expectancy
- BS Retention category

4.2 Tree Categorisation

Section 4.5.2 of BS 5837 states *'The purpose of the tree categorisation method, which should be applied by an arboriculturist, is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring'*.

There are four retention category's, U, A, B and C, with sub category's 1, 2 & 3 to reflect arboricultural, landscape or cultural values respectively. The category colours as given below are represented on all maps and plans to aid removal/retention and site design.

- Category U – Trees in such **poor** condition that they cannot realistically be retained in the context of the current land use for greater than 10 years.
- Category A – Trees of **high** quality with an estimated life expectancy of at least 40 years.
- Category B – Trees of **moderate** quality with an estimated life expectancy of at least 20 years.
- Category C – Trees of **low** quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter of less than 150mm.

Category U trees are those that should be removed in the short term and should not be considered further in the planning process unless there is ecological/habitat value. All other category trees are material considerations in the planning process.

4.3 Tree Constraints

4.3.1 Above Ground Constraints – Tree Trunk and Canopy

The trees current canopy/crown spread is marked on plans to aid site design. Consideration needs to be made to the following pre-development:

- Species characteristics such as evergreen or deciduous, honeydew (sap) drip, fruit fall
- Shade potential
- Potential incompatibilities between layout and trees proposed for retention
- Working/access space needed for construction phase
- Protection of tree canopies from machinery impact or scaffold clearance
- Infrastructure requirements- easements, lighting, solar collectors, CCTV

4.3.2 Below Ground Constraints – Root Protection Area

BS 5837 states a *'root protection area (RPA) is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority'*.

For single stems the RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

The RPA is plotted on plans as a circle, but where pre-existing site conditions are considered to have altered the rooting area a polygon will be produced.

The default position is that proposed structures should be located outside the RPA's of retained trees. If operations are proposed within the RPA, the arboriculturist should:

- Demonstrate that the tree can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA
- Propose a series of mitigation measures to improve the soil environment that is used by the tree for growth

If utility operations within the RPA are proposed consideration should be given to NJUG4 (National Joint Utilities Group Volume 4 (Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees)).

5. TREE SURVEY FINDINGS

A survey schedule listing the tree specific findings and measurements is found in Appendix 4.

5.1 Species Composition

- Two trees were surveyed and their details recorded
- Species found were Oak

5.2 Age Class

- Both were early mature in age, not fully grown but of seed bearing age

5.3 Tree Physiological (Health) Condition

- Both were of normal health.

5.4 Tree Categorisation Results

The following results are for all the six site trees.

• Category U – Trees in **poor condition** –	0 %	0 TREES RECORDED
• Category A – Trees of **high** quality --	0 %	0 TREES RECORDED
• Category B – Trees of **moderate** quality -	50 %	1 TREE RECORDED
• Category C – Trees of **low** quality -	50 %	1 TREE RECORDED

5.5 Trees Amenity Value

The site trees are early mature in age and up to 14m tall. They can be viewed from adjacent property and the public highway.

No individual tree is of high amenity value but they do combine to improve the general greening of the area. Amenity value has the potential to increase as their canopy size increases.

5.6 Tree Protection Status

No check has yet been undertaken.

6. ARBORICULTURAL IMPACT ASSESSMENT

6.1 Development Proposals

The development proposal is the demolition of the existing public house and the construction of three detached dwellings.

6.2 Above Ground Constraints – Tree Trunk and Canopy

The surveyed trees do not need to be pruned or removed in order to enable the development. There is adequate clearance between the southern canopy and the proposed, low canopy height is also high to the south, at 7.5m.

Both trees have seen some heavy pruning to their south, leaving branch stubs. It is recommended that these are pruned back to the main stem or the most appropriate pruning point.

The trees will have to have their stems/trunks and canopies protected from development related activity by the installation of tree protective fencing – see section 7.4 below

6.3 Below Ground Constraints – Root Protection Area (RPA)

The proposed development would not impinge within the RPA's of any trees.

Trees will have to have their rooting areas protected from development related activity by the installation of tree protective fencing.

6.4 Tree Work Standard

Tree work should be undertaken following guidance found in British Standard 3998:2010 Tree Work – Recommendations.

6.5 Contractor/Construction Operations & Equipment

Site access and storage will be from a combination of the road to the west and east off the existing car parking area depending on the stage of the development.

6.6 Impact on Amenity

The proposed development will not alter the amenity value of the trees surveyed.

7. ARBORICULTURAL METHOD STATEMENT

7.1 Project Arboriculturist

BS 5837 recommends the appointment of a Project Arboriculturist to ensure that site trees are fully considered during the development process. The Project Arboriculturist' for this development is Ross Cannon, whose contact details are at the rear of this report. Any tree related enquiry, no matter how minor should be directed to them. Consultation is often time well spent.

7.2 Requirements to Protect Retained Site Trees

It is **essential** that the following methodologies are followed in order that the proposed development is not to have a significant impact on the retained trees

7.3 Tree / Ground Protection – Generic Precautions

I suggest enforcing these general precautions within the retained trees RPAs during the construction phase:

- No soil disturbance, including compaction
- No change in the soil level, by stripping or filling
- No excavation, without prior discussion with the Project Arboriculturist and/or the Local Planning Authority
- No redirection of surface water runoff into or out of the RPA
- No temporary buildings, sheds, or offices, without prior discussion with the Project Arboriculturist and/or the Local Planning Authority
- No storage of materials or fuel
- No dumping of materials, whether into a skip or onto the ground
- No fires within 10m of the RPA or tree canopy, whichever is greater
- No refuelling of mechanical equipment
- No storage or mixing of cement
- No washing of cement mixers within or uphill of the RPA
- Follow the guidance contained within the National Joint Utilities Group Volume 4 (Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2, 2007); www.njug.org.uk) when installing underground services inside or other excavation in the RPA of a tree.

7.4 Tree Protective Fence – Construction Exclusion Zone

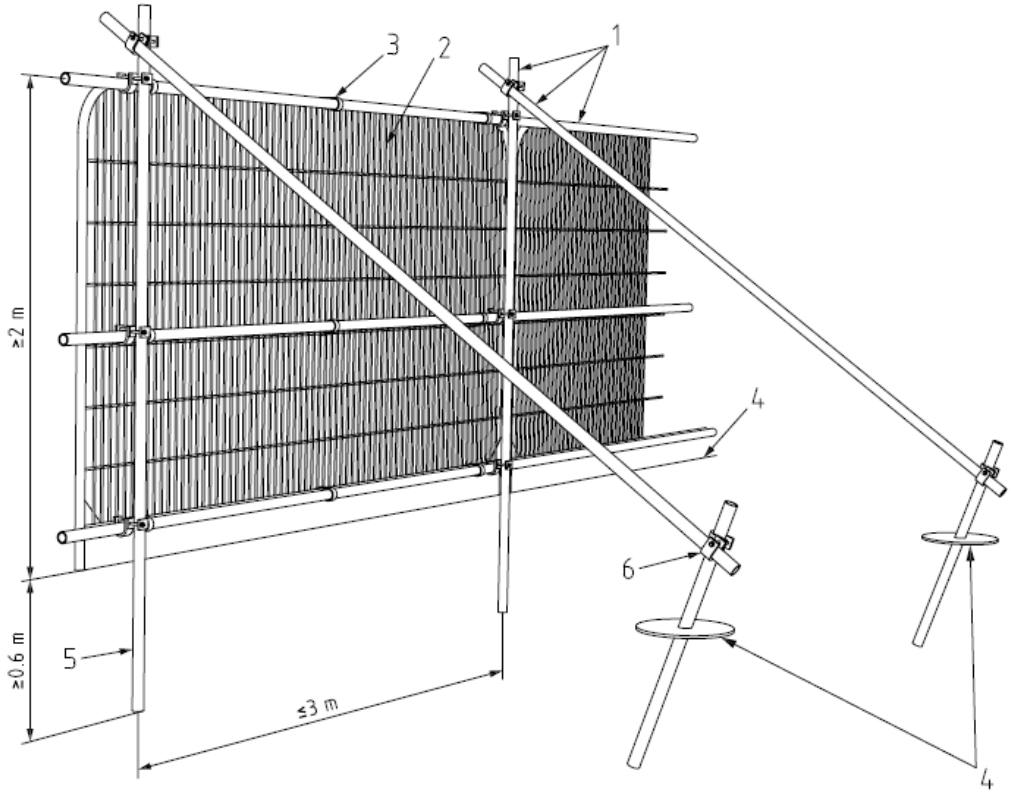
Protective fencing should be erected along the line shown on the Tree Protection Plan in Appendix 5. The area inside this fence becomes the 'Construction Exclusion Zone'.

This fence will prevent construction activity that could cause damage occurring close to the retained trees. No plant, equipment or vehicles should operate inside the protective fencing without suitable ground protection and agreement from the Project Arboriculturist or Local Planning Authority. Further to this no activities as listed in Section 7.3 above should occur inside the protective fence/construction exclusion zone.

This fence is to be installed before any plant or vehicle comes on site or soil stripping occurs.

This product is to remain in situ until all construction work (up to and including all electrical and decorating) is completed. It will be removed as one of the final operations on site.

The diagram below demonstrates the required fence specifications of BS 5837.



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

7.5 Ground Operations within RPA

Any works to remove and replace existing fencing within the RPA of the surveyed trees must be undertaken my hand, with site operatives using hand tools and wheel barrows.

The construction of footings for boundary walls should be avoided. Discussion with the client has suggested that concrete posts and kick board fence would impact the potential rooting areas less than a brick wall on a strip foundation.

7.6 Responsibilities

All enquiries relating to trees should be addressed to the Project Arboriculturist, no matter how trivial. Consultation is time well spent.

Responsibility	Title	Name	Organisation	Contact
Building design	Architect	R Lowe	CAN.DID Architecture	Ric_lowe@outlook.com
Local Planning Authority (LPA)	Arboricultural Officer		HPBC	planning@highpeak.gov.uk
Site trees	Project Arboriculturist	Ross Cannon	Treeplan	07599 358 056 tree@treeplan.co.uk
Protective fencing, ground protection and building	Builder/Developer	TBC		

7.7 Order of Works

This list should be followed to ensure the health and longevity of the retained trees. Where operations need to be carried out that are not listed here then consideration should be made to the retained trees. Contact the Project Arboriculturist if in any doubt. **Keep this document, in its entirety in site office so it can be reviewed and an auditable series of operations is maintained.**

Stage	Operation detail	Responsible person	Completion signature & date
1	Install temporary tree protective fence, as per section 7.4 above and Tree Protection Plan in Appendix 5. Inform Project Arboriculturist who will inspect, agree location/recommend alteration, photograph and email copies to LPA	Builder to liaise with Project Arboriculturist	
2	Seek LPA consent to remove temporary fencing at the end of the development when all plant and materials removed	Builder	

8. GENERIC LEGAL CONSIDERATIONS

8.1 Protected Trees

Where a tree preservation order protects these trees, or they are located in a conservation area, or protected by planning conditions, it will be necessary to obtain permission from or notify the local planning authority (LPA) before carrying out any work, except for certain exemptions. The tree management conclusions and recommendations in this report are considered to be acceptable but clients must be aware that the LPA may take an alternative view and can refuse permission.

8.2 Wildlife Conservation Legislation

Most bird's nests have legal protection while in use; also, bats and their roosts have legal protection whether in use or not.

Tree surgeons and forestry contractors should be aware of their duties under the following legislation. Wildlife & Countryside Act 1981 & Countryside & Rights of Way Act 2000.

8.3 Tree Safety

Owners of trees have a duty of care, in so far as is reasonably practical to ensure their trees do not harm others. Reasonable management appropriate to the size of the tree stock and the resources available to the landowner are expected by the courts. For more advice visit http://www.forestry.gov.uk/forestry/infd-7t6bpp

9. CONCLUSIONS

Based on the above discussions, and provided all the technical recommendations in this report are followed, I consider any proposed development can be carried out in accordance with the guidance in the British Standard: BS 5837, *Trees in relation to design, demolition and construction – Recommendations* (2012).

A suitable and workable Method Statement detailing the order of works, responsibilities which include a protective fencing specification has been provided to ensure the longevity of retained trees.

If the client, project team, local authority or consultee have any queries then please contact me on the details below.

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8/3/17

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APPENDIX 1

The Qualifications and Experience of the Author, Ross Cannon

1. Qualifications

In 2001 I was awarded a National Diploma in Urban Forestry.

In 2006 I was awarded the Arboricultural Associations Technicians Certificate.

In 2011 I became a Technical Member of the Arboricultural Association.

2. Experience

I have been working and studying within the field of arboriculture since 1999, first as a tree surgeon and latterly in an advisory capacity. Between 2001 and November 2007 I was a tree surgeon for a large local authority. Between November 2007, and December 2008 I worked as a Tree Surveyor and then Arboricultural Officer for Leeds City Council. This involved various large-scale tree condition and management surveys and carrying out detailed tree inspections. Between December 2008 and December 2011 I was a Trees & Woodlands Officer for the Yorkshire Dales National Park Authority administering tree preservation orders, trees in conservation areas and providing advice to the development control section on matters relating to trees in relation to proposed development. From December 2011 to June 2012 I was an Arboricultural Consultant with Treescapes Consultancy Ltd. in Cumbria and was involved with a number of commissions covering a variety of different aspects of arboriculture including surveying and making management recommendations to landowners as well as evaluating tree quality on development sites. From June 2012 to present I have been working solely for Treeplan undertaking tree consultancy services for landowners, architects, developers and consultancies.

3. Continuing professional development

I attend courses, conferences, seminars and workshops run by land management, forestry and arboricultural organisations, colleges and universities. I have been a member of the Arboricultural Mortgage & Insurance User Group since 2006, Consulting Arborist Society since 2009 and the Subsidence Forum since 2014.

APPENDIX 2

Survey Methodology, Tree Risk Assessment & Report Limitations

Trees were inspected using the 'Visual Tree Inspection' methodology (Mattheck). No decay detection equipment was used.

Methodology of survey is in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendation and is not a tree hazard, tree risk or subsidence/subsidence potential survey.

All vertical and horizontal measurements were taken using laser rangefinder or metal tapes, which I consider are accurate enough for the purpose of this report.

Maps and plans are for illustrative purposes only to inform site design and planning requirements.

Trees are living and dynamic structures subject to extreme weather, vandalism, physical, chemical and biological changes that can quickly have an impact on a tree's condition and its growing environment. As such, even with robust tree inspections unforeseen changes, hidden defects and resulting structural failures can occur. All trees have a tolerance to the expected weather at a site they have grown in, but even then healthy defect free trees can still fail in extremes of weather.

This report is valid for one year from the date given on the front page or in the header or footer under normal weather conditions and site conditions.
The validity of this report ceases

- after a significant weather event, such as but not limited to severe winds, extremes in temperature, floods and drought not normal for the area.
- an outbreak of a virulent pest or disease which the author cannot foresee.
- pruning or works recommended are not undertaken to British Standard 3998:2010 or to the specification recommended in the report.
- if groundwork operations/level changes or use are/have been undertaken, that I was not aware of, within the vicinity of the trees that could alter their rooting environments, such as but not limited to underground utility work that doesn't meet the recommendations in NJUG 10 or British Standard 5837:2012 or their successors.
- significant change in on or off site conditions, such as, but not limited to adjacent tree/building removal, ground/surface water alteration.

No attempt has been made to assess soil subsidence/heave risk potential, nor should any be construed.

This survey and report is for the recipient(s) named in the Introduction only; any third-party relying on the contents of this report does so entirely at their own risk.

I recommend that the trees are inspected at least every year or after any significant weather event by a suitably qualified and insured arboricultural consultant.

APPENDIX 3

Trees and the Planning System (Development)

A copy of table B.1 from BS 5837 is found below. Trees whether subject to statutory protection or not are material considerations taken into account when dealing with planning applications. Table B.1 provides some advice to both developers and local planning authorities (LPA) on the appropriate amount of information required during the application process. Minimum detail includes information that is expected, additional information identifies further details that might be reasonable be sought by the LPA.

Table B.1 – Delivery of tree-related information into the planning system

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions) Tree retention/removal plan (finalised) Retained trees and RPA's shown on proposed layout Strategic hard and soft landscape design, including species and location of new planting Arboricultural impact assessment	Existing and proposed finished levels Tree protection plan Arboricultural method statement – heads of terms Details for all special engineering within the RPA and other relevant construction details
Reserved Matters/ Planning conditions	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method. Dimensioned tree protection plan Arboricultural method statement – detailed Schedule of works to retained trees, e.g. access facilitation pruning Detailed hard and soft landscape design	Arboricultural site monitoring schedule Tree and landscape management plan Post-construction remedial works Landscape maintenance schedule

APPENDIX 4

Tree Data Schedule

Tree Data – Glossary

N, S, E, W = Compass direction

= An estimated measurement.

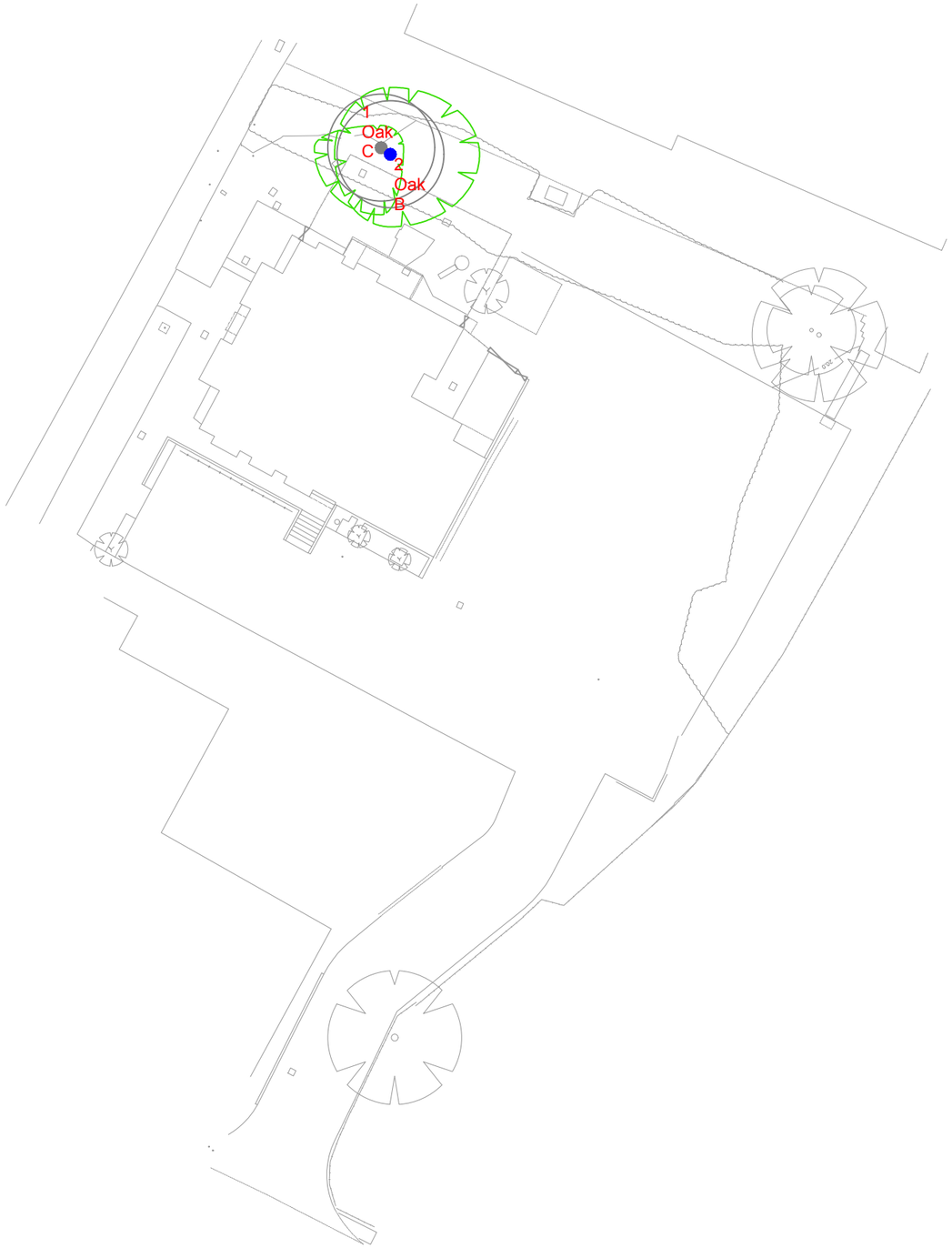
1. Tree Number/ tags - Individual tree = T+ Number, Group of trees = G+ Number
2. Species - Common and or scientific names where appropriate
3. Height - Over all tree height, measured in M
4. Diameter at breast height - Measurement of stem @1.5m in mm
5. Canopy spread - Extent of tree branches taken at each compass point in m.
6. Low canopy height - Height of lowest branch above the ground.
7. Height of first significant branch and its direction of growth
8. Age Class / Life Stage - Y =Young, SM= Semi mature, EM=Early Mature, M= Mature, OM=Over Mature, V= Veteran.
9. Physiological condition - Good = Normal growth, Fair = Reduced twig extension, but other than that few signs of ill health, Poor = Small internodes, thinning canopy, Dead.
10. Structural Condition – Comment on defects or issues that could affect tree or tree part stability
11. Condition comments - Significance of physiological and structural condition
12. Preliminary management
13. Root Protection Area - As per section 4.6 of BS 5837(2012).
14. Estimated remaining contribution in years - More than 40 years, 20-40, 10-20, less than 10
15. U or A to C Category grading - See BS 5837(2012) Table 1 For details of each Category

TREE NO.	SPECIES	HEIGHT (m)	DBH (mm)	CANOPY SPREAD (M)				LOW CANOPY HEIGHT	FIRST SIG. BRANCH	AGE CLASS	PHYSIOLOG. CONDITION	STRUCTURAL & CONDITION COMMENTS	PRELIMINARY MGMT	RPA RADIUS / RPA M^2	REMAIN. YEARS CONTRIB.	CATEGORY
				N	E	S	W									
1	Oak	14	400	2	2	6	6	8	2	EM	G	Crown raised to 7.5m on SSW side, branch stubs Suppressed by T2	If permission given prune branch stubs to main stem or most appropriate point	4.8 72	30	C
2	Oak	14	400	6	8	6.5	5	8	2	EM	G?	? Ivy prevents full inspection. Crown raised to 7.5m on SSW side, branch stubs Two stems, single canopy	If permission given prune branch stubs to main stem or most appropriate point. Sever ivy at trees base to allow a thorough investigation in the future	4.8 72	40	B

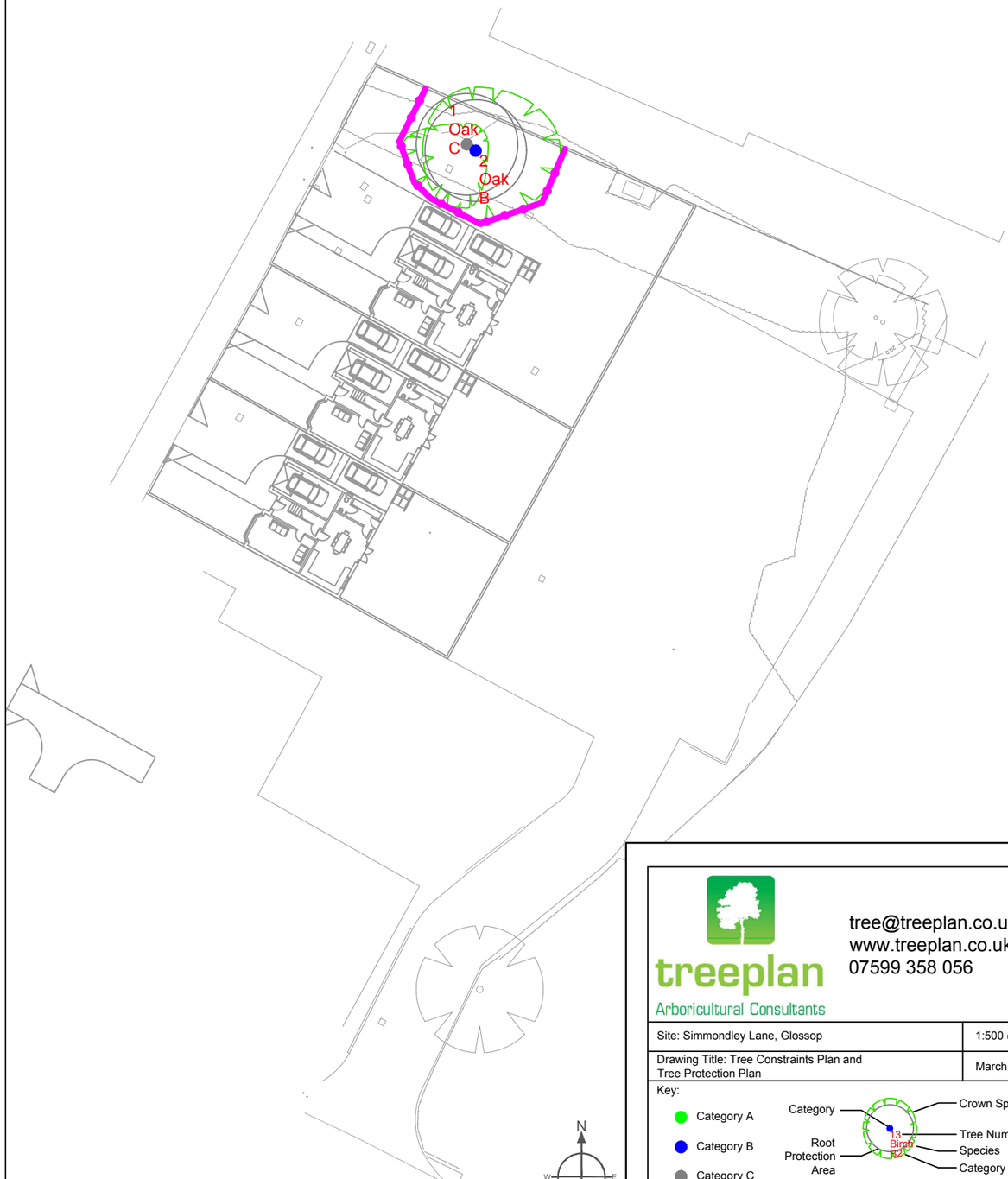
APPENDIX 5

Tree Plans

Tree Protection Plan – showing location of temporary protective fencing



EXISTING SITE PLAN



PROPOSED SITE PLAN

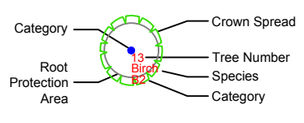
tree@treeplan.co.uk
www.treeplan.co.uk
07599 358 056

treeplan
Arboricultural Consultants

Site: Simmondley Lane, Glossop	1:500 @ A3
Drawing Title: Tree Constraints Plan and Tree Protection Plan	March 2017

Key:

- Category A
- Category B
- Category C
- Category U



Tree Protection Fencing