

# **Arboricultural Report**

**– Tree report in accordance  
with BS5837: 2012**

**Land adjacent to 26 High Street**

**Silkstone**

**South Yorkshire**

**S36**

**18<sup>th</sup> September 2017**

Reference: **JC/053/170918**

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## Summary of report

This report amends our previous October 2016 report JC/053/161006 which was produced without topographical survey information being provided. A topographical survey has now been completed, and in light of this the proposed dwelling is found to be further from the relevant trees than was previously understood. This removes the need for piled foundations.

It remains the case that where the new dwelling's drive crosses RPAs – and beyond – a porous and load-spreading cellular confinement sub-base is to be used. This will be installed before all other construction activities, with additional protective sheeting, to act as ground protection during construction. The new entrance to this drive will be fenced off during construction, with an alternative access point for construction traffic at the north of the site.

Removal of four low branches from the sycamore – amounting to approximately 10% of tree foliage – is required for drive and dwelling clearance.

Parking spaces are situated beyond the canopy dripline to avoid issues of honeydew.

A detailed Arboricultural Method Statement and Tree Protection Plan – with accompanying drawing – will ensure the arboricultural impact is limited to that described above.

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## **1. Introduction**

### **1.1 Terms of instruction**

Jon Coe Tree Services Ltd were instructed by Mr John Wooller to produce a tree report relating to planned construction on land adjacent to number 26 High Street, Silkstone – in South Yorkshire.

### **1.2 Scope of survey**

The key requirements identified were to establish the condition of the trees on site, and the constraints presented by these, in accordance with BS5837: 2012<sup>1</sup> '*Trees in relation to design, demolition and construction: Recommendations*' (referred to herein as BS5837: 2012<sup>1</sup>). This was not a detailed risk assessment survey.

The survey included any trees that the site visit determined could be affected by development of the site within the outline supplied.

### **1.3 Documents supplied by client**

A red line outline of the site was supplied by email at the time of instruction. A topographical survey was supplied by email prior to the production of this revised report (survey 3884JA by CT Surveys, Wakefield).

Design Space Architects provided a new layout drawing with topographical survey information, by email on 11th December 2017 (see Appendix G).

### **1.4 Items included within this report**

The main report describes, in this order: the collection of data; summary of data; arboricultural impact; arboricultural method statement; tree protection and other relevant issues. It is followed by references and the appendices.

### **1.5 Essential documents supplied within this report**

Central to the purpose of this report are the Tree Schedule (Appendix A), Tree Constraints Data (Appendix B), Tree Constraints Plan (Appendix F),

and the Arboricultural Method Statement and Tree Protection plan (Appendix I, and sections 5 and 6)

## **1.6 Qualifications and experience**

The survey and report were carried out by Jon Coe, who holds a BSc (Honours) degree in Arboriculture from Myerscough College, Professional-grade membership of the Arboricultural Association, and Associate membership of the Institute of Chartered Foresters.

Jon undertakes many shorter courses as part of his commitment to professional development. These have included the following Arboricultural Association courses:

- BS5837: Tree surveying and categorisation
- BS5837: Tree assessment for planning applications
- BS5837: Managing trees on construction sites

Jon has thirteen years of continuous experience working in the arboricultural industry.

## **1.7 Caveats and limitations**

This report is for the use of the client only. Its use or reproduction by any other party is forbidden without the author's prior written consent.

No reliance should be given to any non-arboricultural observations, which are made from the standpoint of a layperson.

The survey was solely concerned with the requirements of BS5837: 2012<sup>1</sup>.

The survey was not a risk assessment survey, and it considered tree health only so far as necessary to fulfil the requirements of BS5837: 2012<sup>1</sup>.

The survey and all observations were made from ground level only.

No soil samples were taken.

On occasion, stem diameter measurements were not possible or practical, and in these cases a conservative estimate (i.e. favouring a larger RPA) was made, and recorded as such. Such cases included where there are a

large number of small stems in a small multi-stemmed tree, or where trees are surrounded by dense or thorny undergrowth.

Observations were valid at the time they were made. However, trees are dynamic and growing structures that experience changes affected by time, weather and other factors.

This report's purpose is to advise on the possibilities and priorities for the sustainable retention of trees within the planning process. In all cases, Jon Coe Tree Services Ltd advise strongly against any pre-emptive felling, or other tree works carried out prior to the granting of planning approval.

## **2. Data collection**

### **2.1 Site visit**

The survey was conducted on 19th September 2016. At the time of surveying it was dry with good visibility.

### **2.2 The site**

The survey area is a vacant plot of land in the centre of Silkstone. To the west, the plot borders on the public highway and pavement (High Street). On all other sides of the plot are residential properties, separated from the plot by their tarmac drives

The existing site layout can be seen in the Tree Constraints Plan (Appendix F). It is currently unmanaged rough grass and scrub with brambles. The site generally slopes, gradually, from north-west (high) to south-east (low).

### **2.3 The trees**

Three trees are located just off-site, beyond the site's south-west corner.

Near to the south-east corner are two particularly small and insignificant trees or shrubs.

Individual tree's details are recorded in the Tree Schedule (Appendix A) and the Tree Constraints data (Appendix B). Findings are summarised in section 3.1.

## **2.4 Survey method**

The survey was conducted without reference to any development proposal. Each tree was given a tree identification number, as shown on the Tree Constraints Plan (Appendix F).

Trees details were recorded against locations on the supplied topographical survey.

The species of each tree was recorded. Common names are used in the Tree Schedule (Appendix A), with a list of botanical names supplied in Appendix C.

Tree height was estimated in metres (m), to the nearest 0.5 m (rounded up) - or the nearest metre for trees above 10 m. At regular intervals, or for trees where precise height is likely to be important, it was recorded using the 'Measure Height' Android app; this has been checked for accuracy using a Suunto clinometer, to which it bears close comparison.

Stem diameter was measured in millimetres (mm) using a diameter tape, in accordance with the conventions detailed in Annex C of BS5837: 2012<sup>1</sup>, which in most cases is at 1.5m above ground level.

Crown spread was recorded at the four cardinal points, to the nearest 0.5m (rounded up) - using a laser range-finder (Leica Disto D810).

Where it was likely to be relevant, height and direction of growth of the first major branch, was estimated to the nearest 0.5 m.

Where it was likely to be relevant, height of canopy clearance was recorded to the nearest 0.5 m. This was necessarily an estimate, as canopy clearance is not usually consistent around the whole tree; a figure for the typical low point around the canopy was therefore estimated. Where appropriate, minor or epicormic branch growth was disregarded, in order to better portray the situation so far as clearance was concerned. Where

canopy cover extends both on and off site (i.e. boundary trees), the on-site value for canopy clearance was used unless otherwise stated.

Age class was assessed according to the five possible categories listed in BS5837: 2012<sup>1</sup>. These are young, semi-mature, early-mature, mature and over-mature.

Structural and physiological condition of trees were separately assessed and summarised using five possible categories: poor, moderate, fair, good, very good. More specific observations on condition were noted under 'Observations'.

'Observations' included details of specific structural and physiological issues, notes on past and suggested future management, and problems currently presented by the trees.

An estimate was made (in years) of the potential remaining contribution that each tree could offer, in its current situation, without a need for significant tree surgery operations.

Each tree was categorised according to the guidance given in BS5837: 2012<sup>1</sup> (Appendix D). Retention categories of A, B, C or U were allocated (in descending order of tree quality), with an additional sub-category of 1, 2 or 3 that defines whether the principal category was allocated for arboricultural, landscape or cultural reasons respectively.

### **3. Summary of data**

#### **3.1 Trees**

The survey includes five trees and shrubs.

Near to the plot's south-east corner are a particularly small and insignificant plum, and an overgrown and sprawling redcurrant.

Beyond the plot's south-west corner, just off-site, are three trees. One is a large sycamore, which is reasonably prominent in the surrounding streetscape. It is a reasonable example of the species, though by no means remarkable. Immediately west of this sycamore, a Leylandii and a laburnum are growing suppressed beneath the sycamore's canopy - the laburnum is also over-run with dense ivy.

It is understood that both the sycamore and laburnum are subject to Tree Preservation Orders.

### **3.2 Retention categories**

Retention categories have been assigned in accordance with the criteria in BS5837: 2012<sup>1</sup> (see Appendix D).

Tree 3 (the sycamore) is assigned retention category B.

The remainder of the trees on site lack the qualities required to raise them above the level of category C.

### **3.3 Below ground constraints**

The Root Protection Areas (RPAs) are the areas in which construction and activities related to the construction process should ideally not take place, in order to protect the trees' root systems. Where such activities cannot be avoided, it is often possible to incorporate design measures that prevent the damage that may occur to the tree's health and stability through soil compaction, level changes, root severance and contamination. Sections 6 and 7 of BS5837: 2012<sup>1</sup> outline methods for protecting RPAs during the construction process - and for building within them where this is unavoidable.

RPAs are generically calculated as an area equivalent to a circle with a radius 12 times the stem diameter, in accordance with section 4.6.1 of BS5837: 2012<sup>1</sup>; this also provides methods for calculating the combined stem diameter of multi-stem trees.

In accordance with BS5837: 2012<sup>1</sup>, the RPAs listed in the Tree Constraints data (Appendix B) have been determined from the stem diameter by using Table 4 (Appendix E), whose values are themselves extracted from Table D.1 in Annex D of the standard (BS5837: 2012<sup>1</sup>). Stem diameters are rounded up to align with those in Table 4; potentially to the trees' benefit.

### **3.4 Above ground constraints**

Data for crown spread is listed in the Tree Constraints Data (Appendix B). Additionally, the Tree Schedule (Appendix A) contains data on canopy clearance, and the height of the first major branch (where applicable).

## **4. Arboricultural Impact Assessment**

### **4.1 Overview of the impact of proposed development on trees on this site**

The proposed development will result in the loss of a particularly small and insignificant plum tree and a redcurrant shrub.

Specialist drive construction will protect the rooting areas of three trees just off-site at the south-west corner. These measures extend significantly beyond the largest of the circular Root Protection Areas (RPAs) - in recognition of the fact that surrounding off-site tarmac may have encouraged more extensive root growth within the plot.

Proposed minor pruning of the largest tree for drive clearance is well within acceptable limits.

### **4.2 Trees losses**

Trees 4 (plum) and 5 (redcurrant) will be lost due to this proposal. Both are particularly insignificant category C trees/shrubs.

### **4.3 Impact on Tree 3**

#### **(a) Rooting**

Tree 3's rooting area is to be protected using the following engineering solution that is recommended in BS5837: 2012 <sup>1</sup>. This protection will extend significantly beyond the nominally circular Root Protection Area (RPA) - in recognition of the fact that surrounding off-site tarmac may have encouraged more extensive root growth within the plot.

- Where the drive crosses tree 3's RPA – and beyond this – a permeable and load-spreading cellular confinement sub-base will be used to avoid compaction of the rooting area soil (see section 5.3).

**(b) Pruning**

Removal of four low branches is required to give sufficient clearance for the drive and house. This will leave no pruning cut larger than 170 mm diameter, and will result in loss of approximately 10% of tree foliage – well within acceptable limits given this tree's life stage and vitality.

**(c) Honeydew**

By providing two parking spaces beyond tree 3's canopy dripline, future issues of honeydew on vehicles are largely avoided.

**4.4 Impact on Trees 1 and 2**

The protection afforded to tree 3's rooting area will be equally provided to trees 1 and 2, whose on-site RPAs are contained entirely within the limits of tree 3's RPA.

Some minor pruning of branch ends on tree 1 (leylandii) may be required to give sufficient drive clearance.

Tree 2's canopy is entirely off-site, so no pruning is required.

## **5. Arboricultural Method Statement**

### **5.1 Scheduling**

The various components of this Method Statement are arranged sequentially, in the order in which they should be carried out. To ensure the planned protection of trees, it is essential that this sequence is followed.

### **5.2 Tree surgery**

The following pruning of tree 3 (sycamore) is required to give sufficient clearance for drive and house:

- Removal of the four lowest north to north-west facing branches - this will involve no pruning cut exceeding 170 mm diameter, and will leave a canopy that extends approximately 4 m from the drystone wall, giving vertical clearance of 4 to 5 metres at its northern edge. It is very important that only the above listed works are carried out – this tree is subject to a Tree Preservation Order (see section 7.1).

Some minor pruning of overhanging branch ends on tree 1 (leylandii) may be required to give sufficient drive clearance. This tree is not protected.

All tree removals and all pruning operations should be carried out in accordance with the various guidance in BS 3998: 2010 Tree work – Recommendations <sup>8</sup>.

### **5.3 Installation of Cellweb or similar**

Prior to all other construction activities it is essential that the drive has been completed as shown on the Arboricultural Method Statement and Tree Protection drawing (Appendix I). In the areas indicated on that drawing, the drive should be constructed on a sub-base of a permeable and load-spreading cellular confinement system (Cellweb or similar), as recommended in BS5837: 2012<sup>1</sup>. The exact specification and method of installation should be determined by the selected supplier, following an assessment of site conditions and expected loads. Many suppliers will visit site to assess conditions and produce site-specific specifications, and also subsequently to supervise the correct installation of their system.

**Where removal of scrub or turf is required to accommodate the cellular sub-base, this should be done using hand tools only.**

There are several manufacturers of permeable and load-spreading cellular confinement systems that may be appropriate. These include (amongst others):

Cellweb (Geosynthetics) - [www.geosyn.co.uk/product/Details/cellweb-tree-root-protection/f8b9be29-d617-4de2-9486-99ec382b00e7](http://www.geosyn.co.uk/product/Details/cellweb-tree-root-protection/f8b9be29-d617-4de2-9486-99ec382b00e7)

Geocell – [www.terram.com/products/geocells/tree-root-protection-geocell.html](http://www.terram.com/products/geocells/tree-root-protection-geocell.html)

Treeguard – <http://www.civilsandlintels.co.uk/Products/Geotechnical-Ground-Engineering/Treeguard/>

The cellular sub-base should be filled with 'no fines' angular stone, of a size advised by the manufacturer, to minimise any reduction in gaseous exchange and water ingress.

The cellular sub-base should have a layer of Treetex or similar geotextile beneath it – to be advised by supplier.

The uppermost surface should be a permeable wearing course of large diameter gravel, of a size advised by the manufacturer.

#### **5.4 Installation of temporary sheeting to limit harm from spillages**

During the construction process there is a risk of spillages of concrete, fuels or other liquids. As the drive surface is to be permeable, such spillages could infiltrate into the rooting area – they could also damage the Cellweb or similar from which drive is constructed. To avoid this, the

Cellweb should be covered with some form of temporary impermeable sheeting for the duration of the main build.

### **5.5 Installation of Tree Protection fencing**

A short length of temporary fencing should be installed prior to all other construction activities, as shown in the Arboricultural Method Statement and Tree Protection drawing (Appendix I). This should consist of one or two 2 metre high welded mesh panels on concrete or rubber feet. All weather notices should be affixed on both sides of the fencing with the following (or similar) wording: "No access for construction traffic – to prevent damage to the specialist drive construction and trees' Root Protection Areas beneath".

### **5.6 Accessing site**

The main site access is to be at the north of site – as shown on the Arboricultural Method Statement and Tree Protection drawing (Appendix I).

## **6. Tree Protection Plan**

### **6.1 Timing**

The requirements of this Tree Protection Plan should be implemented in full prior to the commencement of any other construction activities. All parties operating on site, and all those involved in planning construction operations, should be made aware of the requirements of the Tree Protection Plan.

### **6.2 Ground protection**

The permeable and load-spreading cellular confinement system (Cellweb or similar), and temporary covering sheeting, will be installed prior to all other construction activities (see sections 5.3 and 5.4). This will prevent compaction, excavation or contamination of tree rooting areas.

### **6.3 Temporary fencing**

A short section of temporary fencing will prevent construction traffic using the new drive entrance and crossing the specialist drive construction and the Root Protection Areas beneath. Details of the required specification for this fencing are given in section 5.5.

An alternative main access point for construction traffic is shown in the Arboricultural Method Statement and Tree Protection drawing (Appendix I).

## **7. Other observations**

### **7.1 Legal status of trees on site**

It is understood that the site is not in a conservation area, but that the sycamore (tree 3) and the laburnum (tree 2) are both subject to Tree Preservation Orders. The relevant legislation to these matters is contained within the Town and Country Planning Act 1990 <sup>2</sup> and The Town and Country Planning (Tree Preservation) (England) Regulations 2012 <sup>3</sup>.

### **7.2 Wildlife considerations and law**

The requirements the following legislation should also be considered in the planning of any arboricultural operations.

- Wildlife and Countryside Act 1981 <sup>4</sup>
- Countryside and Rights of Way Act 2000 <sup>5</sup>
- The Conservation of Habitats and Species Regulations 2010 <sup>6</sup>
- The Conservation of Habitats and Species (Amendment) Regulations 2011 <sup>7</sup>

One effect of the above legislation is that tree work operations must be planned to avoid disturbance to nesting, breeding or roosting birds, or to bats and their roosts. The nests of wild birds are protected whilst in use, and all 18 bat species found in the UK are afforded European Protected Species status.

### **7.3 Standards of tree work**

Unless otherwise specified, any tree work recommended in this report should be carried out in accordance with the British Standard *BS 3998: 2010 Tree work – Recommendations* <sup>8</sup>.

### **7.4 Contact details – relevant parties**

In the event of queries, the project arboriculturist is Jon Coe, who can be contacted on 07747 664560 or [jon@joncoetreeservices.co.uk](mailto:jon@joncoetreeservices.co.uk)

## Reference List

1. British Standards Institution (2012) *BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations*. London, BSI Standards Ltd.
2. *Town and Country Planning Act 1990*. London, HMSO.
3. *The Town and Country Planning (Tree Preservation) (England) Regulations 2012*. London, HMSO.
4. *Wildlife and Countryside Act 1981*. London, HMSO.
5. *Countryside and Rights of Way Act 2000*. London, HMSO.
6. *The Conservation of Habitats and Species Regulations 2010*. London, HMSO.
7. *The Conservation of Habitats and Species (Amendment) Regulations 2011*. London, HMSO.
8. British Standards Institution (2010) *BS 3998: 2010 Tree work – Recommendations*. London, BSI Standards Ltd.

## Appendices

### Appendix A: Tree Schedule (excluding Root Protection Areas and crown spread)

**Table 1** (overleaf) contains data for all trees, excluding Root Protection Areas and crown spread details – which are found in Appendix B.

**Condition categories, in ascending order of quality:**

*poor – moderate – fair – good - very good*

Tree Number	Species (common name)	Height (m)	1st major branch - height (m) and direction	Canopy clearance (m)	Life stage	Condition (structural / physiological)	Observations, and suggestions for management	Remaining contribution (years)	BS retention category
1	Leylandii	7	not relevant	0.5	Early Mature	Fair , Good	Suppressed.	20+ Years	C1
2	Laburnum	10	not relevant	4.5	Mature	Fair , Fair	Ivy obscures much of tree. Growing into phone wires.	10+ Years	C1
3	Sycamore	14	2, N	1.5	Mature	Fair , Good	Lowest recorded branch is upsloping, and could be removed without significant harm to tree. Removal of the 4 lowest North to North-west facing branches (Inc. the above) would leave a canopy that extended 4 m from drystone wall, and gave clearance of 4 to 5 metres. This would involve no pruning cut exceeding 170 mm diameter. Foliage loss would be approximately 10%. Ivy obscures much of tree. Growing into phone wires.	20+ Years	B1
4	Plum	6.5	not relevant	1.5	Early Mature	Fair , Good	No significant issues observed	20+ Years	C1
5	Redcurrant	4	not relevant	0	Early Mature	Fair , Fair	No significant issues observed	20+ Years	C1

## Appendix B: Tree Constraints Data: Root Protection Areas (RPAs) and crown spread

**Table 2** (overleaf) contains data for Root Protection Areas and crown spread for all trees – all other tree data is found in in Appendix A.

Tree Number	No. of stems	Diameter (mm) single stem	Diameter (mm) - 2 to 5 stems					Mean stem diameter > 5 stems	Calculated stem diameter (mm)	Radius of nominal circle (from BS5837: 2012 <sup>1</sup> Annex D)	RPA Area (m <sup>2</sup> ) (from BS5837: 2012 <sup>1</sup> Annex D)	Crown spread (m)			
			stem 1	stem 2	stem 3	stem 4	stem 5					north	south	east	west
1	1	250							250	3	28	2.5	1	1.5	3
2	1	500							500	6	113	1	3	0.5	4.5
3	1	620							620	7.5	177	7.5	6.5	7.5	7.5
4	2		80	70					106	1.5	7	2	2	2	2
5	1	100							100	1.2	5	2.5	2.5	2.5	2.5

**Appendix C: Key to botanical names**

Laburnum	- <i>Laburnum anagyroides</i>
Leyland cypress	- X <i>Cupressocyparis leylandii</i>
Plum	- <i>Prunus domestica</i>
Redcurrant	- <i>Ribes</i> spp.
Sycamore	- <i>Acer pseudoplatanus</i>

## Appendix D: Tree retention categories

Trees are assessed for retention categories in the order in which those categories appear in the table below – with all trees initially assessed against the criteria for category 'U', followed sequentially by categories 'A', 'B' and 'C'.

**Table 3** (overleaf) is based on Table 1 of BS5837: 2012<sup>1</sup>; some but not all of the text is necessarily reproduced verbatim.

Table 3.

<b>Trees that are not suitable for retention</b>			
<p><b>Category U</b></p> <p>Trees whose condition means that their retention as living trees beyond 10 years is unrealistic in the context of the current land use</p>	<p>Trees that have a 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 (where, for example, 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.</p> <p>In some circumstances, category U trees may have conservation value which it might be desirable to preserve, despite tree condition.</p>		
<b>Trees whose retention should be prioritised</b>			
	1.	2.	3.
	Predominantly arboricultural merit	Predominantly landscape merit	Predominantly cultural merit (includes conservation value)
<p><b>Category A</b></p> <p>High quality trees, currently with life expectancy of at least 40 years</p>	<p>Trees that are particularly good examples of their species, especially rare or unusual species. Also trees that are essential components of groups or formal or semi - formal arboricultural features (such as an avenue's dominant or principal trees).</p>	<p>Trees, groups or woodlands that have particular visual importance as arboricultural and/or landscape features</p>	<p>Trees, groups or woodlands that have significant conservation, historical, commemorative or other value (such as veteran trees or wood - pasture)</p>

<b>Trees whose retention should be considered (with Category B assuming the greater priority in retention decisions)</b>			
	<b>1. Predominantly arboricultural merit</b>	<b>2. Predominantly landscape merit</b>	<b>3. Predominantly cultural merit (includes conservation value)</b>
<b>Category B</b> Moderate quality trees, currently with life expectancy of at least 20 years	Trees that are excluded from category A due to impaired condition (such as the presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention beyond 40 years. Also trees that simply lack the special quality necessary to merit the category A designation.	Trees present in numbers, often those growing as groups or woodlands, such that their collective rating is higher than that which they might attract as individuals. Also trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees that have material conservation or other cultural value.
<b>Category C</b> Low quality trees, currently with life expectancy of at least 10 years. Also young trees of stem diameter <150mm.	Trees that are unremarkable or of very limited merit, or that have such impaired condition that they do not qualify in higher categories.	Trees growing as groups or woodlands, but without this conferring on them significantly greater collective landscape value. Also trees offering low or only temporary/transient landscape benefits.	Trees lacking any material conservation or other cultural value.

## Appendix E: Calculating Root Protection Areas

**Table 4.** This table was used to establish Root Protection Areas (RPAs) in accordance with section 4.6.1 of BS5837: 2012<sup>1</sup>, and Annex D of the same standard (from which this table's values are drawn). 'Stem diameter' refers to either the measured diameter of single stem trees, or the calculated combined stem diameter of multi-stem trees (BS5837: 2012<sup>1</sup>, 4.6.1).


Stem diameter (mm)	Radius of a uniformly circular RPA (m)	RPA – area (m <sup>2</sup> )	Stem diameter (mm)	Radius of a uniformly circular RPA (m)	RPA – area (m <sup>2</sup> )
75	0.9	3	675	8.1	206
100	1.2	5	700	8.4	222
125	1.5	7	725	8.7	238
150	1.8	10	750	9.0	255
175	2.1	14	775	9.3	272
200	2.4	18	800	9.6	290
225	2.7	23	825	9.9	308
250	3.0	28	850	10.2	327
275	3.3	34	875	10.5	346
300	3.6	41	900	10.8	366
325	3.9	48	925	11.1	387
350	4.2	55	950	11.4	408
375	4.5	64	975	11.7	430
400	4.8	72	1000	12.0	452
425	5.1	81	1025	12.3	475
450	5.4	92	1050	12.6	499
475	5.7	102	1075	12.9	519
500	6.0	113	1100	13.2	547
525	6.3	124	1125	13.5	573
550	6.6	137	1150	13.8	598
575	6.9	150	1175	14.1	625
600	7.2	163	1200	14.4	652
625	7.5	177	1225	14.7	679
650	7.8	191	1250+	15.0	707

## **Appendix F: Tree Constraints Plan**

The Tree Constraints Plan (overleaf) indicates the locations, retention categories, Root Protection Areas and crown spreads of all relevant trees.

A topographical survey was not provided to Jon Coe Tree Services Ltd prior to the survey. The arboricultural surveyor therefore plotted each stem's location himself. This involved triangulation of stem locations using a laser rangefinder and reference landmarks found on site: the accuracy of stem location should not be relied upon to the same extent as with a topographical survey.





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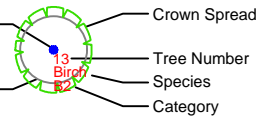
Site: High Street, Silkstone	1:200 @ A3
Drawing Title: Tree Constraints Plan	Rev A, Sept 2017

**Key:**

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

Category

Root Protection Area



Crown Spread

Tree Number

Species

Category

NOTE: Tree numbers marked with an \* have approximate locations.

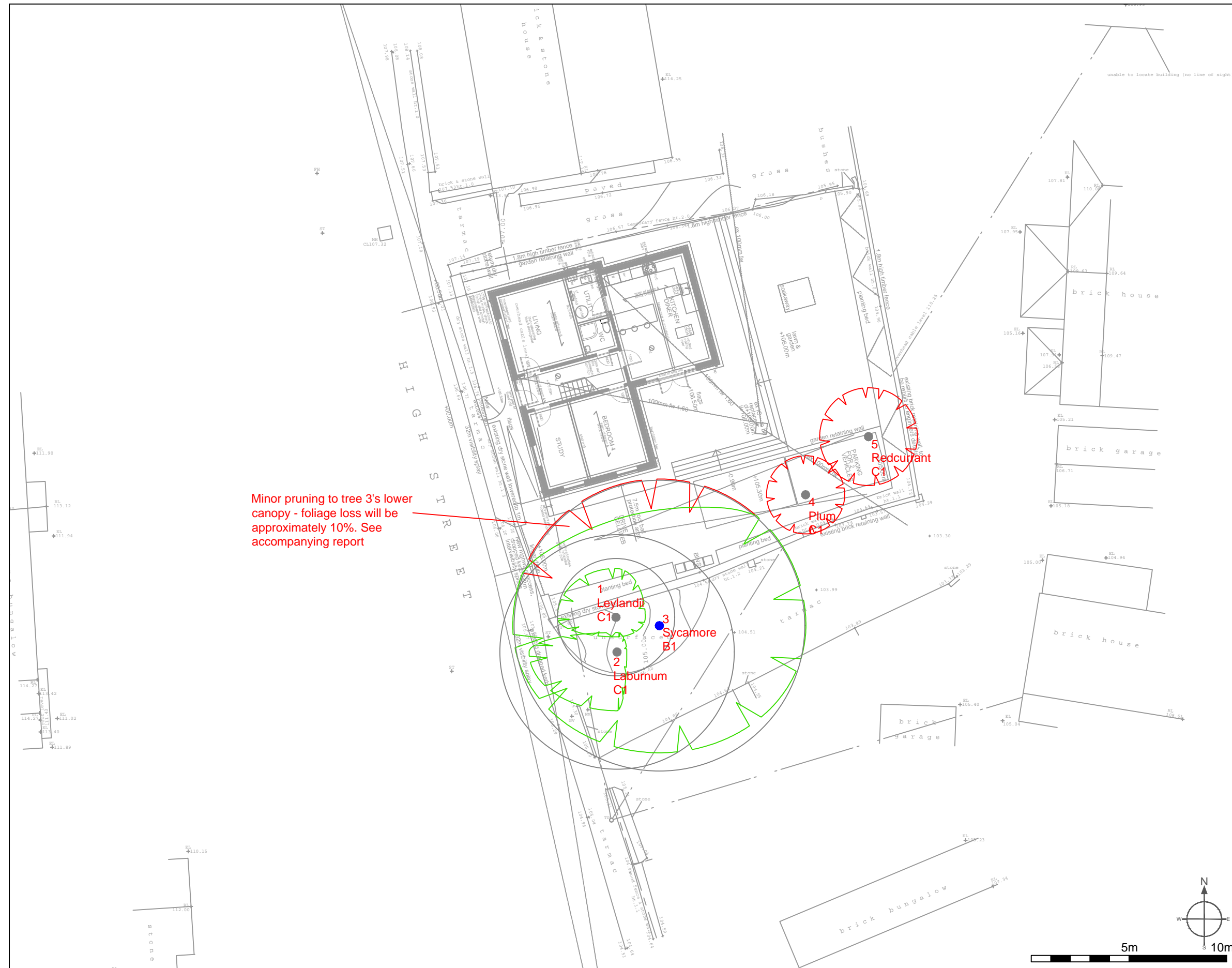
## **Appendix G: Proposed development plan**

The proposed layout overleaf, on which this report's findings are based, was supplied by Design Space Architecture.



## **Appendix H: Arboricultural impact assessment – drawing**

The drawing overleaf illustrates the proposed layout in relation to trees, as referred to in the Arboricultural Impact Assessment (section 4). Neither this drawing nor section 4 stands alone; both should be referred to together.



Minor pruning to tree 3's lower canopy - foliage loss will be approximately 10%. See accompanying report



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Site: High Street, Silkstone 1:200 @ A3  
 Drawing Title: Arboricultural Impact Assessment October 2016

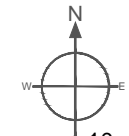
Key:

- Category A
- Category B
- Category C
- Category U
- Tree Proposed for Removal

Category — Crown Spread  
 Tree Number  
 Species  
 Category

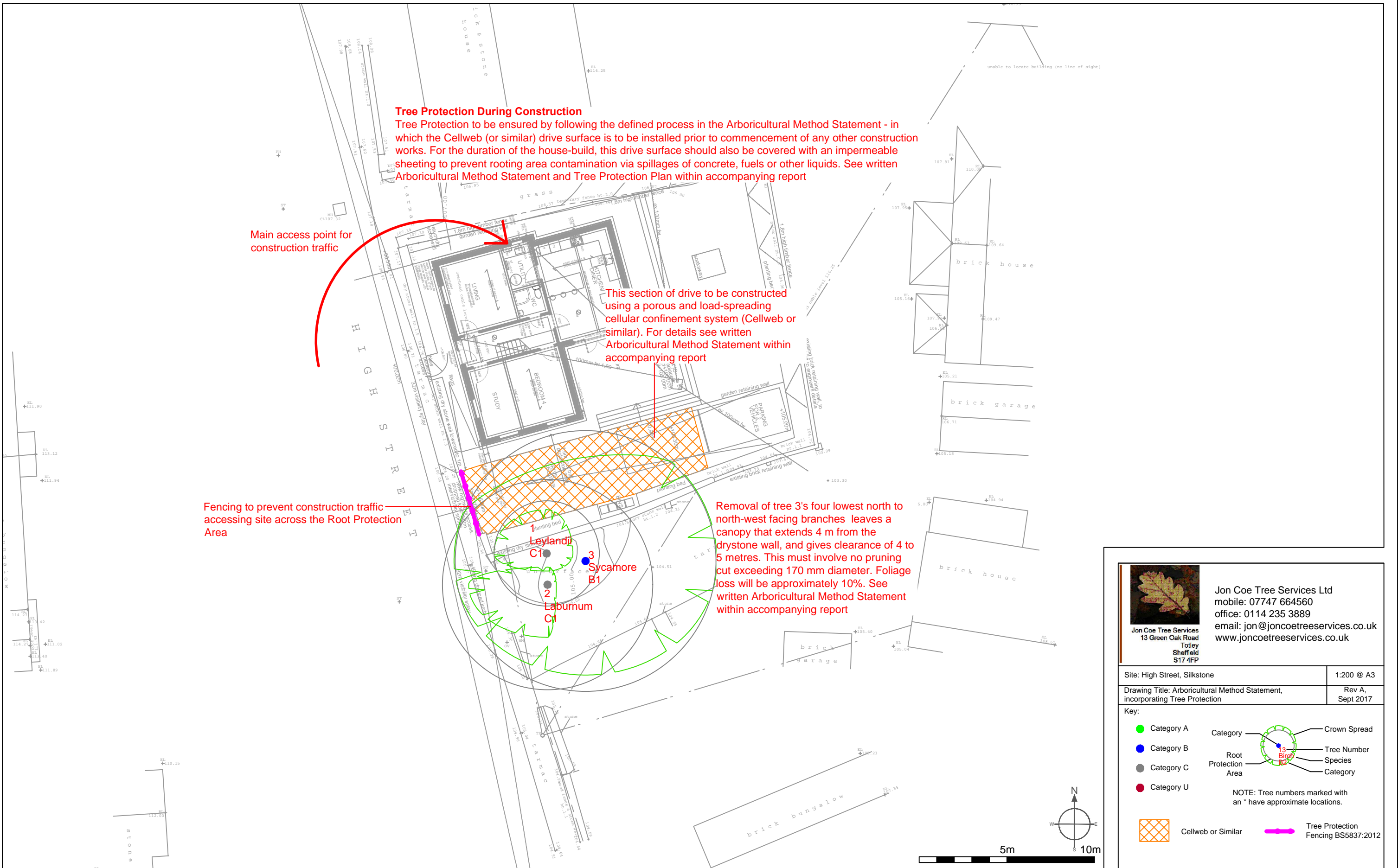
Root Protection Area

NOTE: Tree numbers marked with an \* have approximate locations.



## **Appendix I: Arboricultural Method Statement and Tree Protection - drawing**

The drawing overleaf illustrates a number of the measures described in the Arboricultural Method Statement (section 5) and the Tree Protection Plan (section 6). Neither this drawing nor sections 5 and 6 stand alone; it is essential that they are referred to together.



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Site: High Street, Silkstone	1:200 @ A3
Drawing Title: Arboricultural Method Statement, incorporating Tree Protection	Rev A, Sept 2017

**Key:**

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

Category — Crown Spread  
 Tree Number  
 Species  
 Category

Root Protection Area

NOTE: Tree numbers marked with an \* have approximate locations.

Cellweb or Similar

Tree Protection Fencing BS5837:2012