Arboricultural
Impact Assessment

The Barn
Bank Hall Drive
Chapel-en-le-Frith
High Peak

Godwin's Arboricultural Limited
www.godwins.co.uk

SUMMARY

Nine individual trees, one group of trees and one hedge were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* three individual trees were recorded as retention category 'B'; and a mixture of four individual trees, one group of trees and one hedge were recorded as retention category 'C'.

The trees were generally found to be in a good to fair condition however; two individual trees (**T5** and **T6**) were classified as retention category 'U' (unsuitable for retention). Tree **T5** is diseased and poses a high risk of failure, **T6** is in a fair to poor condition and the risk of failure to this tree would increase with the removal of **T5** due to the exposed location of the site. It is therefore considered that **T6** should also be removed as it would become a potential hazard.

No trees will require removal as a direct result of the proposed development. It is understood that the removal of **T5** and **T6** will be mitigated as part of a post development planting scheme of well-structured new trees that will add to the quality of the area and integrate the proposed development into the surrounding landscape.

The retained trees will be protected to *British Standard BS5837:2012* to ensure that they remain in a healthy condition during and post development. The *Tree Protection Plan* to the rear of this report highlights the recommended tree protection measures.

Any arboricultural work undertaken should be done so by a competent arborist in line with *British Standard BS3998:2010 Tree Work*, and after permission has been granted to do so by the local planning authority.

CONTENTS

1. Introduction

1.1. Project outline

1.1.1 This report has been produced in accordance with *British Standard 5837: 2012 Trees in relation to design, demolition and construction* to achieve a harmonious and sustainable relationship where tree retention or planting is proposed in conjunction with nearby construction (site-based operations with the potential to affect existing trees).

1.2. Scope of this report

1.2.1 This report has been produced to comply with planning requirements where trees are to be considered as part of a proposed development. In order to achieve this, arboricultural constraints have been identified and a detailed plan (*Tree Constraints Plan*) has been produced showing the location, root protection areas and retention category of trees within the site.

1.2.2 In addition, this report provides an *Arboricultural Impact Assessment* that evaluates the direct and indirect effects of the proposed development, and where necessary makes recommendations for mitigation measures. This report also includes a *Tree Protection Scheme* and *Tree Protection Plan* that demonstrates how the retained trees will be protected during construction, and where tree protection measures are to be implemented.

1.2.3 This report does not form part of a tree safety inspection. In order to manage the safety and risk from trees it is advised that trees are inspected in detail for this purpose by an arboriculturist using a suitable risk management strategy.

1.3. Survey details

1.3.1 A ground level inspection was undertaken by Godwin's Arboricultural Limited on 8th December 2016, recording the position of all trees within the site with a stem diameter of 75 mm or more, measured at 1.5 m above highest adjacent ground level. The position of trees with an estimated stem diameter of 75 mm or more that overhang the site or are located beyond the site boundaries within a distance of up to 12 times their estimated stem diameter were also recorded. For individual trees the crown spread taken at four cardinal points; for woodlands or substantial tree groups the overall extent of the canopy was recorded.

1.3.2 Tree positions were plotted using a topographical plan supplied by the client, which is the basis for which the *Tree Constraints Plan* has been prepared.

2. Arboricultural Constraints

2.1. Tree condition

2.1.1 Nine individual trees, one group of trees and one hedge were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* three individual trees were recorded as retention category 'B'; and a mixture of four individual trees, one group of trees and one hedge were recorded as retention category 'C'.

2.1.2 The trees were generally found to be in a good to fair condition however; two individual trees (**T5** and **T6**) were classified as retention category 'U' (unsuitable for retention). Tree **T5** is diseased and poses a high risk of failure, **T6** is in a fair to poor condition and the risk of failure to this tree would increase with the removal of **T5** due to the exposed location of the site. It is therefore considered that **T6** should also be removed as it would become a potential hazard.

2.1.3 Please see *Appendix 1* for the detailed list on existing species, age class, dimensions and condition of trees within the site, and *Appendix 2* for an explanation of retention category criteria. Tree locations can be seen on the *Tree Constraints Plan* at the rear of this report (*Drawing 1*).

2.1.4 The inspection of several trees and groups was restricted as detailed at *Appendix 1*. However, sufficient tree related data were collected to fulfil the requirements detailed within the scope of this report.

2.2 Root Protection Areas

2.2.1 The tree Root Protection Area (RPA) is a layout design tool indicating the area around a tree that, along with the tree stem and branches, must be considered during development. The protection of the roots and soil structure within the RPA should be treated as a priority. The RPA of each tree or group is marked on the *Tree Constraints Plan* at the rear of this report.

2.3 Tree protection status

2.3.1 A statutory tree protection enquiry was made with High Peak Borough Council on 9th January 2017. It is understood that the site does not contain any Tree Preservation Orders and that the site in not located within a Conservation Area.

2.3.2 **Due to the large potential penalties for illegally carrying out work to protected trees, it is essential that no works are undertaken to any trees within the site, including works to category 'U' trees, prior to consideration and approval of the proposed works by the local planning authority (High Peak Borough Council) regardless of whether the trees are currently protected or not.**

3. Arboricultural Impact Assessment

3.1. The proposed development

3.1.1 The proposed development will consist of converting the existing barn with adjacent car parking and installing a driveway of stone chippings. A proposed layout drawing has been supplied by the client, and is the basis for which this impact assessment has been prepared. Please see the *Tree Protection Plan* to the rear of this report for the proposed layout details.

3.2. Tree removal and proposed mitigation measures

3.2.1. All of the trees surveyed trees could be protected throughout the construction phase, however trees **T5** and **T6** have been recommended for removal due to their condition. Therefore, no trees shall require removal as a result of the construction of the proposed development.

3.2.2. It is understood that the removal of **T5** and **T6** will be mitigated as part of a post development planting scheme of well-structured comprised of two new Beech trees that will add to the quality of the area and integrate the proposed development into the surrounding landscape.

3.3. Pruning works

3.3.1. No pruning works shall be required to enable the construction of the proposed development.

3.4. Site construction traffic and demolition works

3.4.1. To protect the trees from construction site traffic (including demolition works) the remaining trees should be protected by a temporary protective barrier (see *Section 4.2*), put in place prior to any construction activity. The barrier will ensure that the trees remain in a healthy condition during and after development.

3.4.2. Several of the retained trees are located beyond topographical site features and/or existing boundary fencing/walls and away from the proposed development area. As such, these trees shall not require protection via temporary protective barriers as they are already are provided protection due to their inaccessible location that is remote from the proposed construction activity.

3.5. RPA beyond the protective barriers

3.5.1. A section of RPA from tree **T4** extends beyond the temporary barrier and into the site access point. However, it should be noted that the RPA of this tree is currently located beneath an existing vehicle access point, and as such the proposed works would not put the tree under any increase pressure during the construction phase.

3.6. Hard surfaces within the RPA

3.6.1. A section of RPA from tree **T7** extends beyond the temporary barrier and existing boundary fence and into the area proposed for a hard surface turning point; it should be noted that this area is currently utilised by vehicles, and the proposed surface will be built up upon this existing surface. In addition, it is understood that the finished surface will be stone chippings, which will allow the continued diffusion of soil moisture, air and nutrients to the tree roots.

3.7. Post development impacts

3.7.1. No soil samples were taken during the site visit. It is recommended that soil assessment it undertaken by a competent person to determine whether the soil is shrinkable, and that foundation design is undertaken in line with detailed guidance given in the National House Building Council (NHBC) publication *Building near trees, Chapter 4.2*.

4. Tree Protection Scheme

4.1. Tree works prior to development

4.1.1. Care should be taken to ensure during tree removal or remedial work that damage to the retained trees and/or disturbance to the RPA is avoided. Precautions should include dismantling techniques to reduce the risk of accidental damage, and ground protection measures where excessive pedestrian movements or use of plant and machinery might lead to compaction.

4.1.2. All tree works, as described in *Appendix 1*, should be carried out in accordance with *BS 3998: 2010 Recommendations for tree work*, and after permission has been granted to do so by the local planning authority.

4.1.3. It is essential that those appointed to undertake any tree works carry out adequate checks to ensure that no statutory laws are contravened during tree work operations.

4.2. Tree protection barriers

4.2.1. Once the tree works have been completed, all trees that may be affected by construction activity and are being retained on site should be protected by barriers before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. No hardcore, rubble of soil from groundworks should be located within the protective barriers.

4.2.2. It should be confirmed by the project arboriculturist or local authority that the barriers have been correctly set out on site, prior to the commencement of any other operations.

4.2.3. The protected area should be regarded as off limits, and once installed barriers should not be removed or altered without prior recommendation by the project arboriculturist and, where necessary, approval from the local planning authority.

4.2.4. Please see *Appendix 4* for suggested barrier construction detail. It is recommended that in this instance the protective barrier shown in *Figure 1* would be appropriate. The suggested location for protective fencing is shown on the *Tree Protection Plan* (*Drawing 2*).

4.2.5. Where it is proposed to demolish existing buildings and structures close to retained trees, the buildings should be collapsed onto its existing footprint in a direction away from any retained trees.

4.2.6. Contractor parking, contractor facilities and any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of the RPA of any retained tree.

4.3. Hard surfaces within the RPA

4.3.1. It is recommended that for the hard surface adjacent to tree **T7** this area is constructed using a no-dig method of construction; the suggested method for this can be found at *Appendix 5*.

4.3.2. The removal of any existing hard surface must be carried out in a cautious fashion avoiding the use of heavy machinery where possible. Any tree roots exposed within the RPA must be left as intact as careful digging with hand tools will allow.

4.4. Utilities within the RPA

4.4.1. Wherever possible, utilities, manholes and inspection chambers should be routed outside of the RPA of retained trees. Where this is not possible, detailed plans showing the proposed routeing should be drawn up. In such cases, trenchless insertion methods should be used, with entry and retrieval pits being sited outside the RPA.

4.4.2. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs. It is also preferable to keep utilities together in common ducts to avoid multiple excavations.

4.4.3. Above-ground apparatus (including CCTV cameras and lighting) should be sited to avoid the need for detrimental tree pruning. Tree branches can be pruned back with care to provide space. Pruning should be undertaken in accordance with *BS 3998:2010*.

4.5. Post construction phase

4.5.1. When the development phase is complete and the site machinery has been removed, the local planning authority should be invited to inspect the site to give approval for the removal of the tree protection measures.

4.5.2. Soil compaction should be avoided around existing vegetation, including retained trees and in areas where new tree planting is proposed.

4.5.3. Heavy mechanical cultivation such as rotavation should not occur within an RPA as this will damage tree roots. Any cultivation operations should be undertaken carefully by hand in order to minimize damage to the tree, particularly the roots.

4.5.4. The use of herbicides within the vicinity of existing trees should be appropriate for the type of vegetation to be removed. Care should be taken to avoid any damaging effects upon retained trees, and consideration must be given to the extent that applied herbicides will have on all vegetation within an applied area.

Client: Mr Rick Curtis
Project No: AIA.12584
Issue: 01

Date Issued: 10th January 2017
Status: FINAL

Signed for on behalf of Godwin's Arboricultural Limited:

R Godwin

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Appendix 1. Tree Schedule

Tree No.	Species	Age	Stems at 1.5m	Stem Dia (mm)	Height (Crown Hgt) (m)	FSB (D) (m)	Branch Spread (m) N	E	S	W	Observations	Cond	Life Exp	Tree Work Recommendations	Root Protection Area (RPA) Radius (m)	Area (m^2)	Retention Category
H 1	Crataegus monogyna (Hawthorn)	Semi-mature	1	50	1.2(0)	0(N)	0.5	0.5	0.5	0.5	Linear boundary hedge. Well maintained.	Good to Fair	40+	No action required.	0.6	1.13	C
T 2	Crataegus monogyna (Hawthorn)	Young	1	75	1.5(0.5)	0.5(S)	1	1	1	1	Balanced crown.	Good to Fair	40+	No action required.	0.9	2.55	C
G 3	Acer pseudoplatanus (Sycamore),Aesculus hippocastanum (Horse Chestnut)	Young	1	100	2.5(1)	1(S)	2	2	2	2	Individuals crowns restricted by group.	Good to Fair	40+	No action required.	1.2	4.52	C
T 4	Acer pseudoplatanus (Sycamore)	Mature	1	650	15(3)	5(W)	6	5.5	6	6	Asymmetrical crown. Occasional pruning wounds. Tree RPA located within hard surface area.	Good to Fair	40+	No action required.	7.8	191.16	B
T 5	Aesculus hippocastanum (Horse Chestnut)	Mature	1	930	16(4)	5(W)	6	5	5	7	Decay fungus (Kretzschmaria deusta) at base. Tree grows into adjacent tree (T6).	Poor	<10	Remove for arboricultural reasons.	11.16	391.32	U
T 6	Acer pseudoplatanus (Sycamore)	Mature	1	640	15(4.5)	5(E)	7	7.5	4.5	6	Asymmetrical crown. Occasional pruning wounds. Crown entwined with adjacent tree (T5), with many bark abrasions down the stem and from crossing and included branches.	Fair to Poor	10+	Unsuitable for retention - limited life expectancy.	7.68	185.32	U
T 7	Aesculus hippocastanum (Horse Chestnut)	Mature	1	1,100	16(2.5)	4(W)	8	8	7.5	7.5	Balanced crown. Occasional pruning wounds. Tree RPA located within hard surface area.	Good to Fair	40+	No action required.	13.2	547.46	B
T 8	Fagus sylvatica (Beech)	Mature	1	650	16(5)	4(N)	7.5	7.5	7.5	7.5	Situated on adjacent land. Limited inspection - restricted access. Tree RPA located within ground level change.	Good to Fair	40+	No action required.	7.8	191.16	B
T 9	Salix caprea (Goat Willow)	Semi-mature	1	200	6(3)	3(E)	3	3	2	2	Situated on adjacent land. Limited inspection - restricted access. Tree RPA located within ground level change.	Good to Fair	40+	No action required.	2.4	18.1	C

Tree No.	Species	Age	Stems at 1.5m	Stem Dia (mm)	Height (Crown Hgt) (m)	FSB (D) (m)	Branch Spread (m) N	E	S	W	Observations	Cond	Life Exp	Tree Work Recommendations	Root Protection Area (RPA) Radius (m)	Area (m^2)	Retention Category
T 10	Sorbus aucuparia (Rowan)	Semi-mature	1	120	4(2)	2(E)	2.5	2	1.5	1.5	Situated on adjacent land. Limited inspection - restricted access. Tree RPA located within ground level change.	Good to Fair	40+	No action required.	1.44	6.52	C
T 11	Sorbus aucuparia (Rowan)	Semi-mature	1	120	4(2)	2(E)	2	2	1.5	1.5	Situated on adjacent land. Limited inspection - restricted access. Tree RPA located within ground level change.	Good to Fair	40+	No action required.	1.44	6.52	C

Appendix 2. Explanatory Notes

A2.1. Tree statistics and measurements

Survey record	Description
Tree No.	Unique tree reference number. (T) = Individual tree, (G) = Group of trees or woodland that form cohesive arboricultural features, (H) = Hedgerows and substantial internal or boundary hedges.
Species	Species listed by scientific name, with (common name).
Age	Life stage – Young, Semi-mature, Early-mature, Mature, Over-mature and Veteran.
Stem Count	Number of stems recorded at 1.5m above ground level.
Stem Diameter	Stem diameter recorded in millimetres at 1.5 meters above ground. Where the tree is multiple stemmed, each stem has been recorded.
Height (Crown Height)	Height of the tree in metres – to the closest 0.5m. Average canopy height in brackets, e.g. 10(3).
First Significant Branch	Existing height above ground level of first significant branch and direction of growth, e.g. 3(N)
Branch Spread	Branch spread, taken as a minimum at the four cardinal points – North, East, South and West.
Observations	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay, physical defect or historic pruning).
Cond	Condition of the tree recorded as Good, Good to Fair, Fair, Fair to Poor, Poor or Dead.
Life Exp	Life Expectancy - classed as less than 10 years, 10 plus years, 20 plus years, or more than 40 years.
Tree Work Recommendations	Recommended tree works – including those made to enable the proposed development.
RPA Radius	Radius of the root protection area, when plotted as a circle centred on the base of the stem.
RPA Area	Total area of RPA in metres squared, e.g. 100m^2.
Retention Category	See below – A2.2.

A2.2. Tree retention categories

Retention category and definition	Criteria
U (marked in red on the Tree Constraints Plan) = trees for removal.	Trees 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.
A (marked green on the Tree Constraints Plan) = Trees of high quality	Trees of high quality with an estimated remaining life expectancy of at least 40 years.
B (marked in blue on the Tree Constraints Plan) = Trees of moderate quality	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
C (marked in grey on the Tree Constraints Plan) = Trees of low quality	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Appendix 3. Report Limitations & General Guidelines

A3.1 Where the inspection of trees was limited (*see Appendix 1*), the 'Tree statistics and measurements' (*Appendix 2.1*) are estimated, and observations, condition and life expectancy are based on an inspection from the available vantage point.

A3.2 It is recommended that qualified and experienced companies are sort when appointing tree work contractors and they should be approved under the Arboricultural Association Approved Contractors scheme. It is essential that all appointed tree work contractors have adequate Public Liability, Products Liability and Employers Liability Insurance. All tree works must conform to the current BS 3998 *"Recommendations for Tree Work"*.

A3.3 This report is based upon a visual ground inspection, any defects seen by a tree work contractor, that were not apparent to the tree surveyor at the time of our inspection must be brought to the attention of Godwin's Arboricultural Ltd immediately.

A3.4 Godwin's Arboricultural Ltd will not accept liability for works undertaken by third party companies. All necessary checks must be made by the appointed tree work contractor prior to undertaking any works to ensure that no statutory tree protection measures or relevant laws are contravened.

A3.5 The validity, accuracy and findings of this report are directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third party data will be undertaken. Godwin's Arboricultural Ltd will not be responsible for the recommendations within this report where essential data are not made available, or are inaccurate.

A3.6 The assessment and works recommendations relate to conditions found at the time of our inspection. Any significant alteration to the site post our site inspection but pre submission for planning that may affect the trees present, or have a bearing on the planning implications (including level changes, hydrological changes, storms, extreme climatic events or site works) will necessitate a re-assessment of the trees and the site.

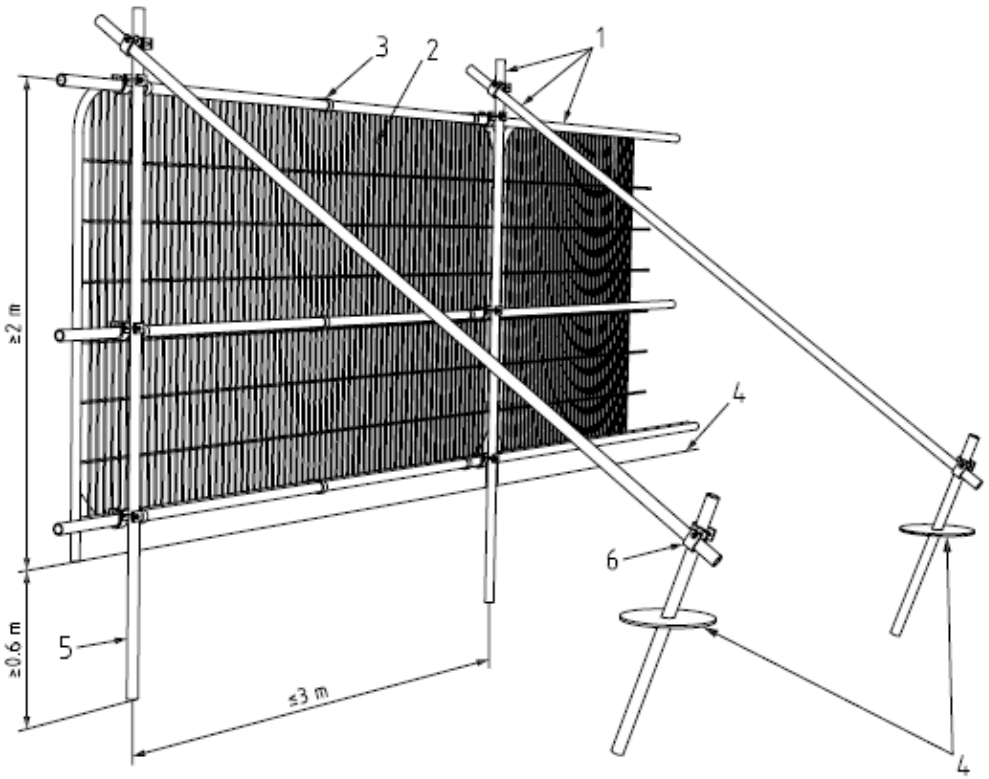
A3.7 This report has been carried out in order to inform the planning process, and not to assess the potential hazards and risks posed by trees. Where clear and obvious hazards have been observed to accessible trees, these have been addressed in the works recommendations. Where inspections were limited by restrictions such as stem ivy, understory vegetation, limited access, epicormic growth or being located on adjacent land, any form of tree condition assessment was restricted. A full assessment of the levels of risk posed by trees can only be informed by considering site use together with assessing any hazards present within a tree.

A3.8 Trees are dynamic structures that continue to develop and decline; in addition, changes in site use are likely to occur during and as a result from the proposed development. On this basis, regular tree risk assessments are advised.

A3.9 Godwin's Arboricultural Ltd plans are to scale whenever possible but care should be taken when measuring from a plan without first checking the original data.

Appendix 4. Protective Barrier Construction

A4.1 The default specification for protective barriers should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated below. The vertical tubes should be spaced at a *maximum* interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots.

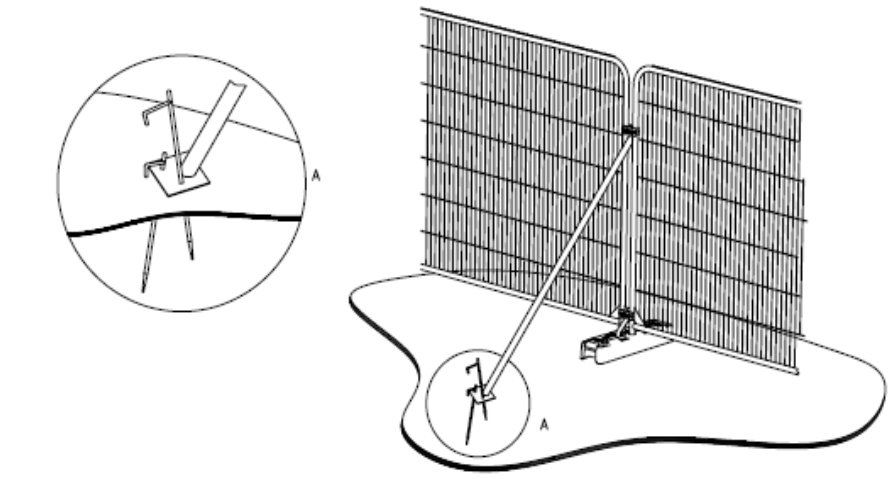


Key

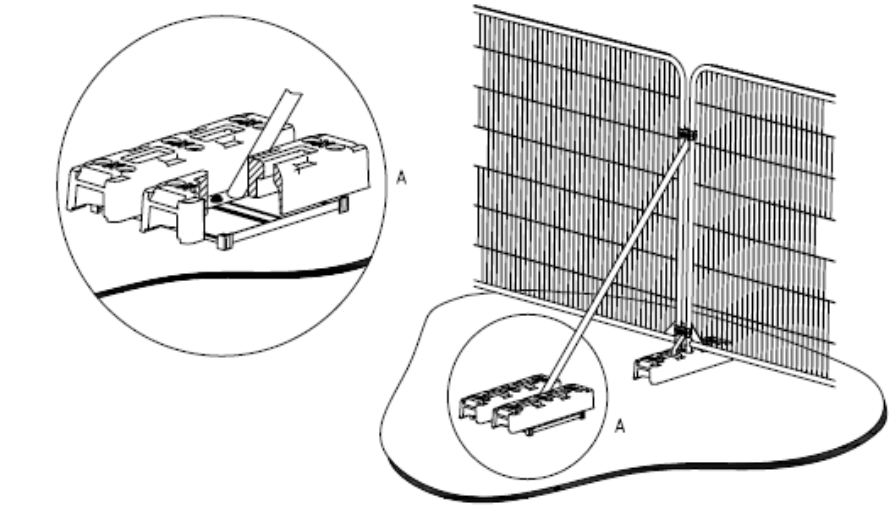
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 1. Default protective fencing barrier to BS 5837: 2012.

A4.2 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification may be adopted. This system includes 2 m tall welded mesh panels on rubber or concrete feet, secure enough to provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 2a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 2b).



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Figure 2. Examples of above-ground stabilizing systems

Appendix 5. No-Dig Construction Method

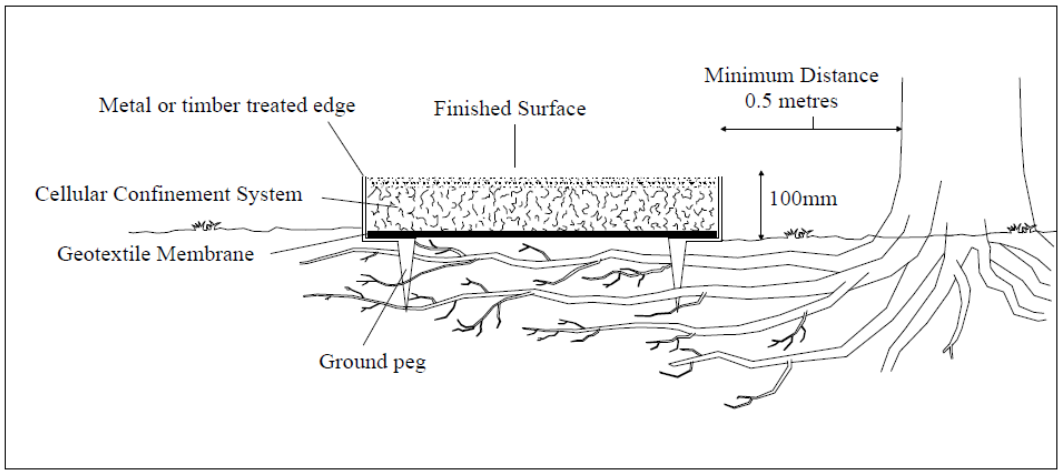
A5.1 This method statement outlines the technique for constructing a no-dig surface within the RPA of a retained tree. The design of such a construction needs to be sensitive to the requirements of tree roots, substantial enough to withstand the expected levels of traffic and practicable in terms of ease of fabrication.

A5.2 We are not qualified to recommend any particular construction method in terms of durability or structural integrity and any proposed construction should be approved by a qualified structural engineer prior to implementation, however, with regards to trees, we make to following comments:

- Severance of roots and soil compaction should be avoided.
- Air and water must be able to diffuse into the soil beneath the engineered surface. Toxic substances which could leach into the ground must be avoided, as should substances which affect the pH value of the soil, for example limestone.

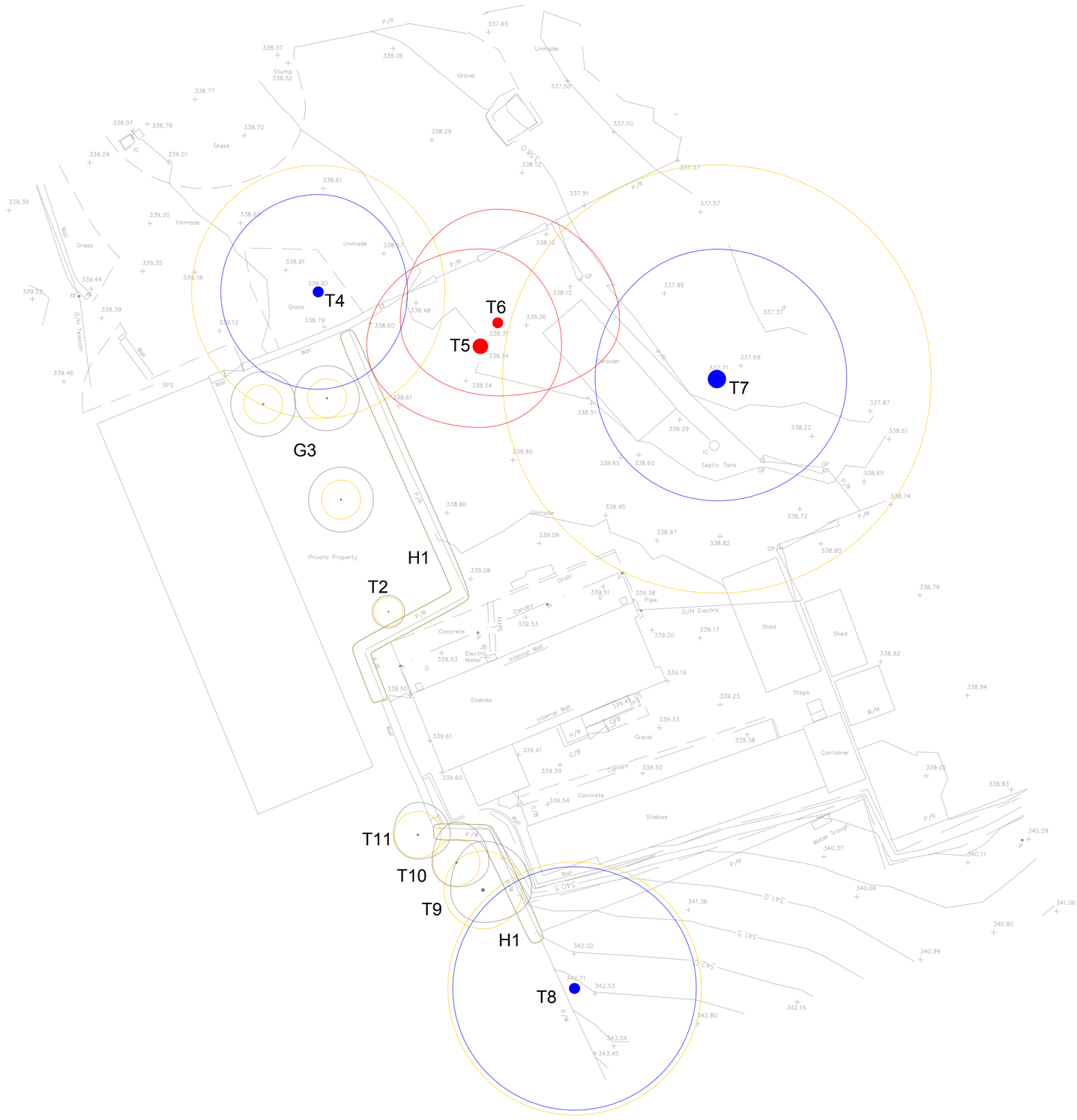
A5.3 The no-dig method involves construction of a surface with no excavation, soil stripping or site grading. All construction takes place above ground level.

A5.4 Existing ground vegetation may be killed using a suitable herbicide. Care must be taken to select a herbicide which does not damage the tree roots within the treated area. Once the vegetation has died, the dead organic matter should be removed. This helps prevent the future build-up of anaerobic conditions or settlement due to decomposition.



Example of a no-dig surface.

Drawing 1. Tree Constraints Plan



KEY

N

T = Individual tree
G = Group of trees
H = Hedge

RETENTION CATEGORIES:
British Standard BS5837:2012
Please refer to Appendix 2 of the report for category definitions.

- CATEGORY A: Tree of HIGH quality
- CATEGORY B: Tree of MODERATE quality
- CATEGORY C: Tree of LOW quality
- CATEGORY U: Tree UNSUITABLE for retention
- Root Protection Area (RPA)

Project:

The Barn
Bank Hall Drive
Chapel-en-le-Frith

Title:

Tree Constraints Plan

Drawing No:

TCP.12584.01

Scale:	1:200 @ A2
Drawn by:	RG
Approved by:	KG

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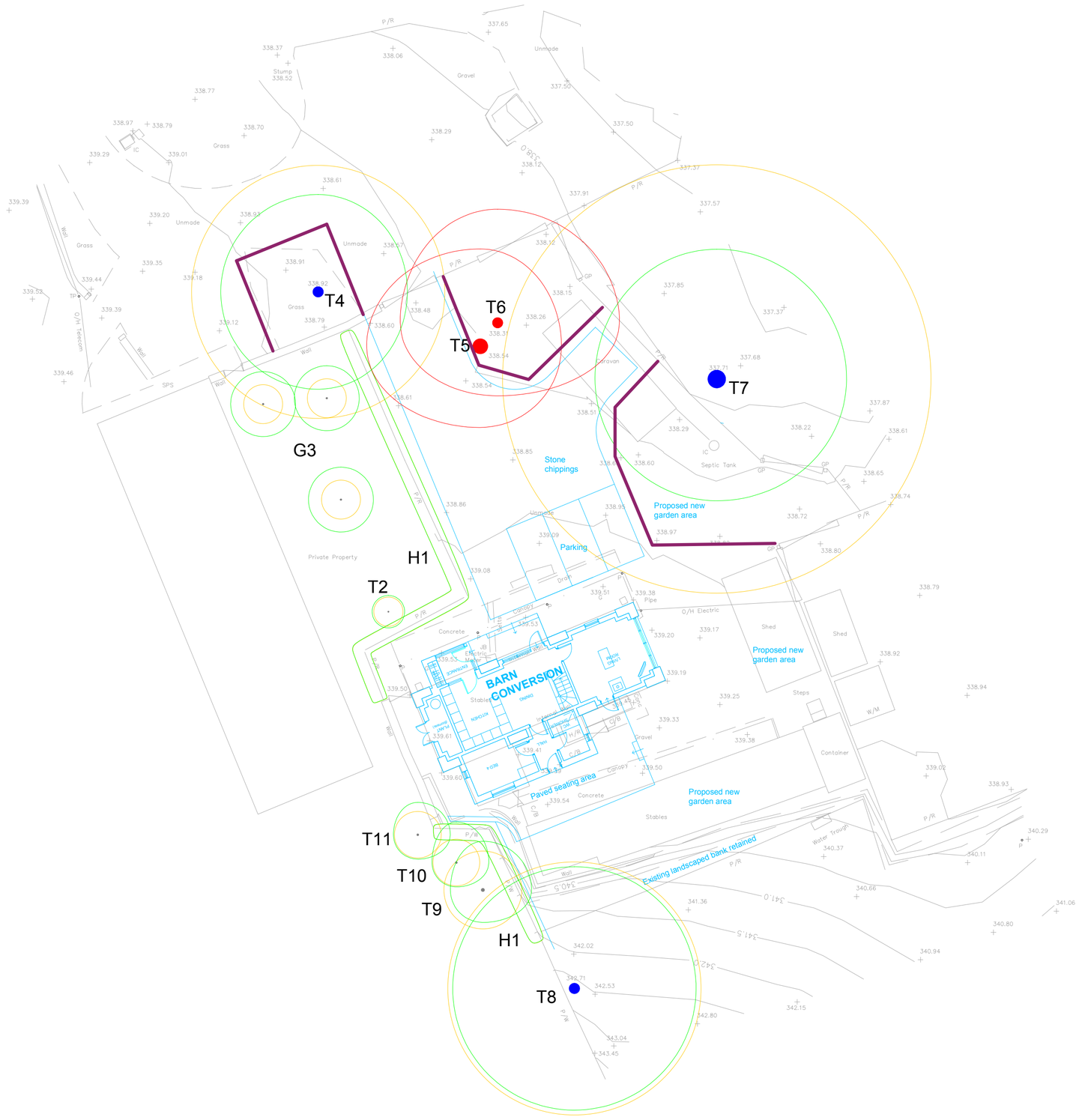
Drawing 2. Tree Protection Plan



KEY

N

T = Individual tree
G = Group of trees
H = Hedge

- Proposed development layout
- Tree to be RETAINED
  Stem colour is retention category
- Tree to be REMOVED
  for arboricultural reasons
- Tree proposed for REMOVAL
  Stem colour is retention category
- Root Protection Area (RPA)
- Protective barrier position

Project:

The Barn
Bank Hall Drive
Chapel-en-le-Frith

Title:

Tree Protection Plan

Drawing No:

TPP.12584.01

Scale:	1:200 @ A2
Drawn by:	RG
Approved by:	KG

Godwin's Arboricultural Ltd

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