HAMPS VALLEY LIMITED

BS 5837:2012 Tree Survey Report

& Arboricultural Impact Assessment

Location;

Barn opposite Draycott Arms Pub,
Cheadle Rd,
Draycott in the Moors,
ST11 9RQ
Staffordshire

Date of Inspection;

30th March 2017

Commissioned by;

Phillip Boardman

Survey carried out by;

Kristian Turner. FdSc Arb. Tech Arbor A
Arboriculturual Association Professional Tree Inspector.

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1.0:Summary

1.1: Hamps Valley Ltd Tree Experts was commissioned in March 2017 by Phillip Boardman to conduct a preliminary tree survey under the guidelines of **BRITISH STANDARDS 5837:2012** *Recommendations for trees in relation to design, demolition and construction.* (BS5837) and an Arboricultural Impact Assessment (AIA) of the proposed development of an existing building, a barn opposite the Draycott Arms public house, Draycott in the moors, Staffordshire.

1.2: The primary purpose of this report is to make an appraisal of the trees that stand on the afore mentioned land The barn. This report evaluates the condition and amenity value of the trees assesses any constraints they may impose on re-development proposals. This report provides information on any tree that should be removed and how the trees being retained should be protected during the development process.

1.3: The tree survey of the application site was carried out by Kristian Turner (of Hamps Valley Ltd) on the 30th March 2017 during daylight hours.

1.4: The appraisal found that of the four individual trees and a group of three trees surveyed, one is of a standard that it should be considered a restraint on planning, two trees should be removed and replaced as part of the development, one tree and the group of trees should be removed regardless of development.
T4 a mature Sycamore should be retained and protected prior to any work commencing. T2 & T3 should be removed and replaced with suitable species as part of the development. T1; a semi mature Sycamore and TG5 a group of semi mature Sycamores should be removed regardless of development.

Any trees to be retained should be protected taking into account the minimum distances for tree protection barriers advocated in BS5837:2012. See Chapter 6 for the extent of such protective barriers required around each of the retained trees.

1.5: Full details of arboricultural works recommended for the trees are listed in the Tree Data Tables in Appendix 3 of this report.

For further information on this survey and report, contact;
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2.0:Introduction

2.1: Background and commission

Hamps Valley Ltd Tree Experts was commissioned in March 2017 by Phillip Boardman to conduct a preliminary tree survey under the guidelines of **BRITISH STANDARDS 5837:2012** *Recommendations for trees in relation to design, demolition and construction.* (BS5837) and an Arboricultural Impact Assessment (AIA) of the proposed development of an existing building opposite the Draycott arms, Draycott in the Moors, Staffordshire.

Our current understanding of the proposed development is that it will include:

- Site clearance works including tree removal.
- Landscaping and road building.
- Extension of existing building.
- Amenity landscaping and planting.

2.2: Aims of the survey

This arboricultural assessment aims to

- evaluate the condition and amenity value of the trees on site.
- advise on how the trees are likely to impact on the proposed development.
- advise on how the proposed development is likely to impact upon the trees.
- provide information on any trees that should be removed.
- provide information on how those trees being retained should be protected during development process.

2.3: Site Context

The is located on the South side of the Cheadle road in Draycott. It is elevated from the road by a layer of bed rock at a height of 1.5m at the entrance with the dropping away to the West. Through the site entrance, on the left is a retaining wall. This wall runs South and then West, parallel with the building at a distance of 4.5m. Dropping in height from 2.5m to 0.5 m it eventually turns South again near the West end of the barn. Trees T1, T2, and T3 are located on top of this wall. As the wall turns South the ground between it and the barn levels and opens into a large flat area. There is a vehicle track that runs around the South of the building from the entrance to the open ground.
The survey area and location are shown in Fig 1. The survey site, opposite the Draycott Arms and adjacent to The Rocks is shown in Fig 2.

Fig 1: Red arrow showing the location of site. The Barn, Cheadle Road. (Google maps 2017)

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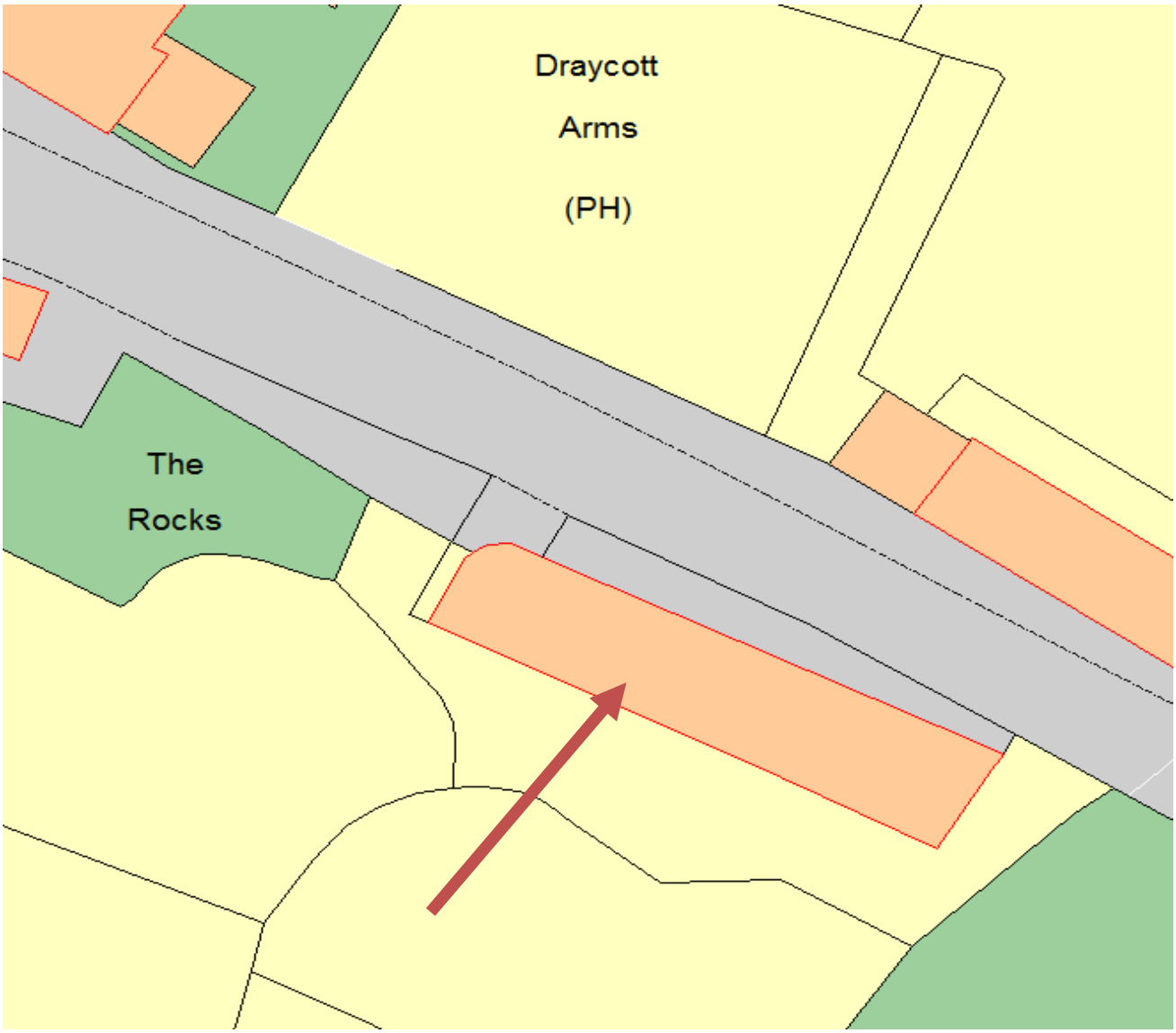


Fig 2: Survey Site. The red arrow pointing to the Barn.

3.0: Survey Methodology, Collection and Assessment of Data

3.1: Survey Methodology

The site was surveyed by Kristian Tuner, 30th March 2017. The inspection only consists of a visual tree assessment, no decay detection or other specialised equipment was used. The survey was carried out from ground level. The weather during the survey was overcast with intermittent spells of sunshine.. Visibility was good, although occasionally impeded by the low morning sun.

3.2: Tree height, crown spread and canopy height were estimated; a tape measure was used for all other dimensions, although in some instances the undergrowth prevented access to the trees in this case all of the tree measurements were estimated.
Data was collected to comply with the recommendations of BS5837:2012 *Trees in relation to construction* (BS5837).

3.3: Trees are dynamic living organisms and although their health and structure can be assessed, an absolutely safe assessment is not realistic as unpredictable failure can never be ruled out. Trees are also susceptible to climatic conditions and more extreme weather, including high winds, drought and snow. These conditions can cause healthy trees to fail. Hamps Valley Ltd cannot be held liable for any such failures. It would be advisable to re-inspect after any period of severe weather. Therefore this report is only valid in relation too; the weather, the condition of the trees and the condition of the site on the day of the investigation.

3.4: No soil samples were taken for analysis on this investigation.

3.5: Any site information, history or legal descriptions given are taken as accurate.

3.6: The report is only valid as a whole, any alterations or omissions invalidate it entirely. The report is valid for six months only. Any legal matters that arise from this report are not the responsibility of Hamps Valley Ltd and the consultant is not required for any further testimony or investigations unless relevant new arrangements are made.

3.7: **Survey personnel**. Kristian Turner has 14 years experience working with trees in the Arboricultural industry. He currently holds a FdSc in Arboriculture after studying at the Central University of Lancashire, is a Technician grade member of the Arboricultural Association and is a Professional Tree Inspector through the Arboricultural Association.

4.0: Data Collection

The tree location plan is shown appendix 1.

4.1: The trees are plotted individually and have their root protection area (RPA) and canopy spread shown with the tree identifiers.

4.2: Key to report

4.3: Reference number

4.4: Species name is given as the common

4.5: The height is the measurement from ground level to the highest point of the tree to the nearest meter.

4.6: Stem diameter at 1.5m from ground level given in mm. # denotes estimated measurement (where access is unattainable)

4.7: Crown spread given at North (N), East (E), South (S), West (W) in meters.

4.8: Height of the first significant branch and direction of growth in meters (2m W) and the height of the canopy in meters.

4.9: The age of the tree as categorised in one of the following age brackets;

Young (Y), Semi-mature (SM),

Mature (M), Over mature (OM), Veteran (V).

4.10: General observations of the structure and physiological condition.

4.11: Estimated remaining contribution, in years (<10, 10+, >20, >40, 40+)

4.12: Category U or A to C grading (Table 1)

Table 1; Tree assessment categories.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where 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 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 (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 it might be desirable to preserve; see 4.5.7.*			See Table 2
	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 dominant 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)	See Table 2
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 remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for 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	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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 benefits	Trees with no material conservation or other cultural value	See Table 2

Table 2: Category Grading of Trees on Site

Abbreviation	Description	Category	Colour Code
U	Trees which should be removed irrespective of any development proposal	Fell	Dark red
A	Trees of high quality whose retention is most desirable	High	Light
B	Trees of moderate quality whose retention is desirable	Moderate	Mid blue
C	Trees of low quality which could be retained	Low	Grey

5.0: Tree Survey

5.1: General observations

The British Standard BS5837:2012 *Trees in Relation to Design, Demolition and Construction - Recommendations'* gives recommendations and guidance of the principals that should be applied during the development process to achieve a satisfactory juxtaposition of trees with structures. With regard to the design issues and the assessment of trees on development sites, BS 5837 recognises in section 5.1.1 that:

> *"The constraints imposed by trees, both above and below ground (see Note to 5.2.1) should inform the site layout design, although it is recognized that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal."*

5.2: BS5837 also adds in 5.1.2 that:

> *"As trees can affect and be affected by many aspects of site operations, during the conception and design process the project arboriculturist should be involved in ongoing review of layout, architectural, engineering and landscape drawings. All members of the design team should be made aware of the requirements for the successful retention of the retained trees and should make provision for these throughout the development process."*

5.3: BS5837 advises that the physical size of trees can: dominate new development and give rise to concern about safety, cause obstruction of light and views, and incite objections about falling leaves and debris. These factors are most important when taking into consideration the juxtaposition of trees and new development, and usually this can only be resolved by allowing sufficient space for the trees or by removing the trees.

5.4: The Trees

For the purpose of this report the trees have been treated as;

- 4 individual trees
- 1 group of trees

5.5: Tree T1 Semi-mature Sycamore, multi stemmed. Poor fork at 1 m. Poor specimen. Growing on top of the highest point of the retaining wall. This tree will be damaging the retaining wall, the wall may become dangerous at this height.

5.6: Tree T2 Mature Holly, multi stemmed. Canopy is down to the floor. The tree is growing on a lower part of the retaining wall. This tree will be affecting the wall but will not be a safety issue.

5.7: Tree T3 Semi mature Sycamore, low canopy, reasonable shape tree. Growing on a lower part of the retaining wall. This tree will be affecting the wall but will not be a safety issue

5.8: Tree T4 Mature Sycamore, a large and good specimen. There is Ivy growing on the main stem. this should be removed and the main fork re-inspected by an arboricultural consultant. The crown is touching the roof of the barn in places. It has some broken branches and cavities throughout but looks in fair health.

5.9: Trees TG5; Semi mature Sycamores, a couple of multi-stemmed sycamores growing on the road side of the barn. These trees have poor fork unions near the base. They have several stems that are touching the barn. They are not good specimens and will grow to be a hazard to the road due to the weak forks at the base not coping with the weight and movement of the different stems and shallow rooting on the rock bed.

5.11: All other tree information will be found in the Tree Data Table, appendix 3.

6.0: Barriers and Surfaces

6.1: Protective barriers

Barriers for the protection of trees on development sites should be fit for the purpose of excluding construction activity and be appropriate to the type and proximity of the work. In particular, attention should be paid to ensure that such barriers remain rigid and complete during all phases of development. In most instances, barriers should consist of rigid framework comprising vertical post and horizontal rails well braced to resist impacts. An appropriate fence type should then be securely fixed to this framework with clamps or wire. . The protection of the subject trees and their subsequent health and future potential is totally dependent upon all persons operating within the site. Communications are vitally important to ensure that all parties understand the reasons for tree protection and the existence of the barriers.

6.2: It is imperative that these barriers, as specified in British Standard BS 5837 2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations'*, should be put up around the retained trees prior to the commencement of any construction operations. It is expected that the erection of tree protection barriers will be conditional on on the approval of a planning application that calls for their use. To avoid any ambiguity the precise location of the tree protective barriers should be agreed on site with the local authority arboricultural officer and then marked out clearly on the ground.

6.3: Location of protective barriers: British Standard BS 5837 advocates the use of "root protection areas" (RPAs), formed by calculating a circle 12x the stem diameter for single-stem trees . For trees with multiple stems one of two calculations should be used

a) For trees with two to five stems. the combined stem diameter should be calculated as follows:

$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$$

b) For trees with more than five stems, the combined stem diameter should be calculated as follows:

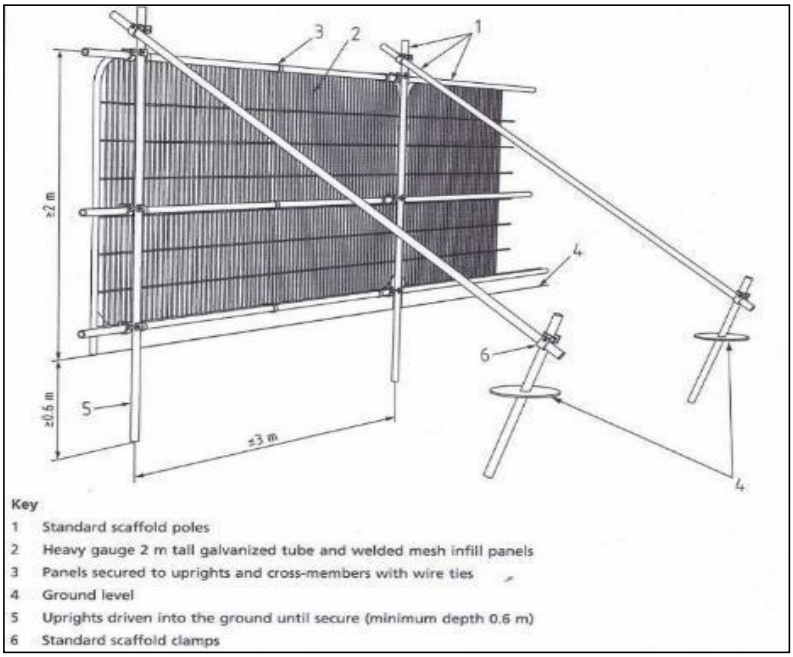
$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

Table 3: example RPA dimensions from BS5837:2012

Single stem diameter mm	Radius of nominal circle m	RPA m²	Single stem diameter mm	Radius of nominal circle m	RPA m²
75	0.90	3	675	8.10	206
100	1.20	5	700	8.40	222
125	1.50	7	725	8.70	238
150	1.80	10	750	9.00	255
175	2.10	14	775	9.30	272
200	2.40	18	800	9.60	290
225	2.70	23	825	9.90	308
250	3.00	28	850	10.20	327
275	3.30	34	875	10.50	346
300	3.60	41	900	10.80	366
325	3.90	48	925	11.10	387
350	4.20	55	950	11.40	408
375	4.50	64	975	11.70	430
400	4.80	72	1 000	12.00	452
425	5.10	81	1 025	12.30	475
450	5.40	92	1 050	12.60	499
475	5.70	102	1 075	12.90	519
500	6.00	113	1 100	13.20	547
525	6.30	124	1 125	13.50	573
550	6.60	137	1 150	13.80	598
575	6.90	150	1 175	14.10	625
600	7.20	163	1 200	14.40	652
625	7.50	177	1 225	14.70	679
650	7.80	191	1 250+	15.00	707

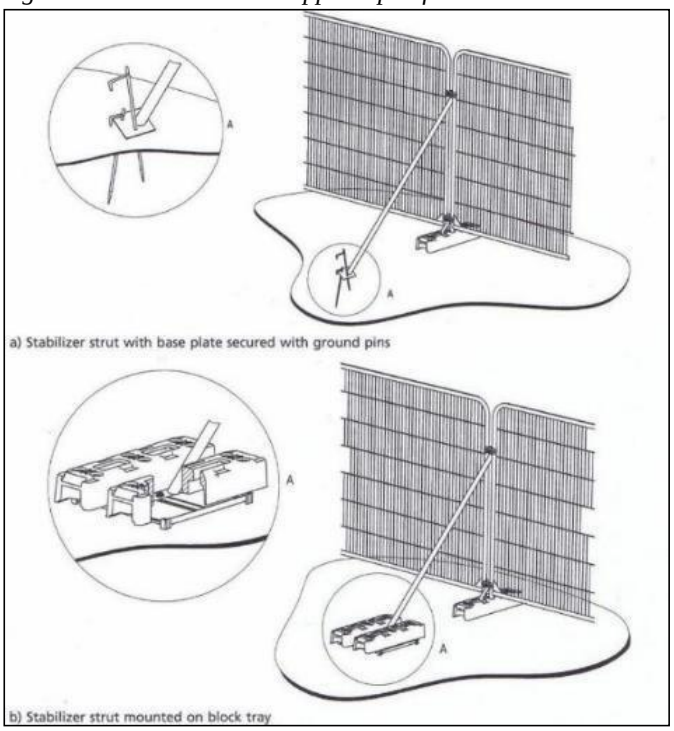
6.4: Specification for the tree protection barriers: The default specification for tree protection barriers should normally consist of a vertical and horizontal scaffold framework, well braced to resist vehicle impacts. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, proprietary welded mesh panels ('heras') 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. The general specification for the protective barriers is outlined in Fig 3:

Fig3: Specification for protective barriers



6.5: In this case, the site circumstances may not necessitate the default level of protection and it may be possible to agree an alternative specification with the local planning authority. For example, 2m tall 'Heras' panels on rubber or concrete feet would provide an adequate level of protection from cars, vans, pedestrians and manually operated plant machinery in certain areas. The fence panels could be joined together using anti-tamper couplers, installed so that they can only be removed from inside 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

Figures 4a and 4b- Panel support specifications



6.6: Whatever the level of protection utilised, no storage of materials or any construction operations should occur within any of the fenced off areas. Ideally, a notice similar to that shown below should be attached to the barriers.

Figure 5: Example of notice to be erected

6.7: Prohibited Activities

The following activities shall not be carried out under any circumstances:

a. no fires to be lit on site within 10m of the nearest point of the canopy of any retained tree on or adjacent to the proposal site;
b. no equipment, signage, fencing etc. shall be attached to or be supported by any retained tree on or adjacent to the application site;
c. no temporary access within designated RPA without the prior written approval of the LPA;
d. no mixing of cement, dispensing of fuels or chemicals within 10 metres of the tree stem of any retained tree on or adjacent to the application site;
e. no soakaways to be routed within the RPA of any retained tree on or adjacent to the application site;
f. no stripping of topsoil, excavations or changing of levels to occur within the RPA of any retained tree on or adjacent to the application site;
g. no topsoil, building materials or other to be stored within the RPA of any retained tree on or adjacent to the application site; and
h. no alterations or variations of the approved works or tree protection schemes shall be carried out without the prior written approval of the district planning authority.

6.8: Methodology - excavation with RPAs

To avoid damage to tree roots, the existing ground levels should be retained within the RPAs of all trees. The ground within the RPAs of the trees should not be disturbed, and the topsoil should remain. Consequently, it may be necessary to undertake any excavation works within RPAs by hand. As a general rule, tree roots with a diameter of 25 mm or less can be severed cleanly (by use of a handsaw or sharp secateurs) without any detrimental effect to the health and stability to the tree. However, if roots of a diameter greater than 25 mm are encountered, the local authority Arboricultural Officer and/or Arboricultural Consultant should be consulted as to implications their severance would present to the health and stability of the tree. If this method is employed, it would be prudent to prepare a simple method statement based on the enclosed guidance taken from National Joint Utilities Group (NJUG) Publication Volume 4: 2007 '*Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.*

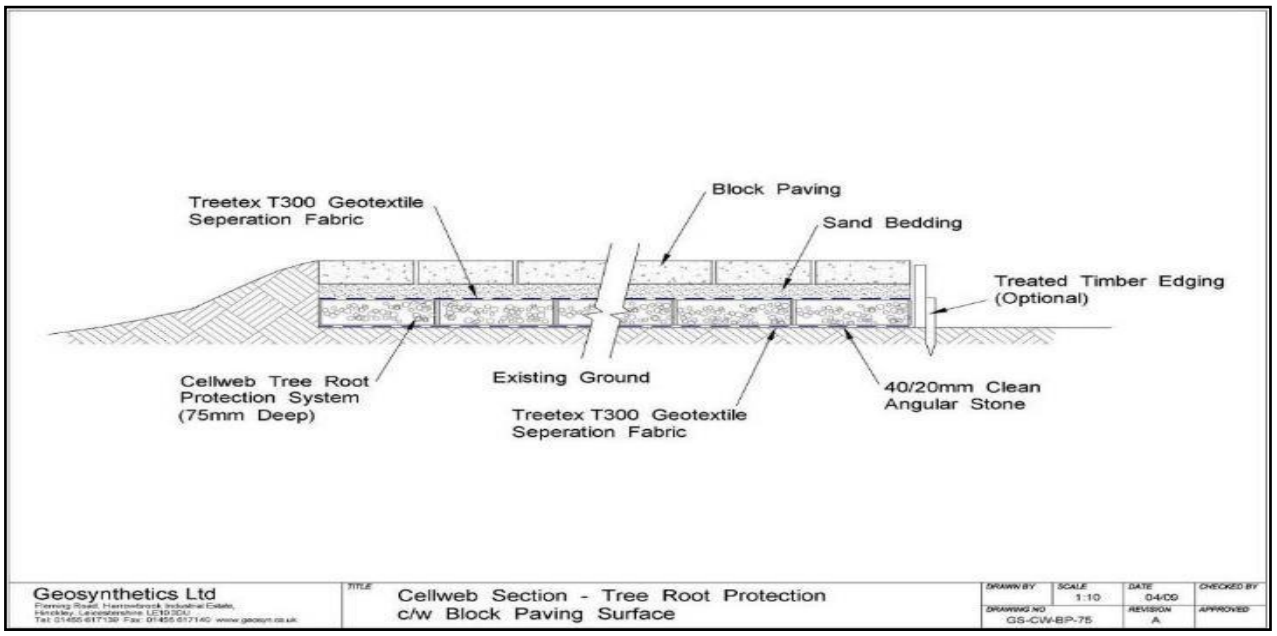
6.9: Methodology - temporary ground protection within RPAs -

It may be impossible for installation of the new vehicular access. Any such access may result in changes to the existing soil structure with corresponding damage to the health and condition of the tree's root system. Section 9.3 of BS5837:2012 makes provision for such situations by recommending that access/working zones within the protection areas may be acceptable when created by using a combination of barriers and appropriate ground protection: In this instance steel road plates or an alternative system such as 'Groundtrax' should be utilised.

6.10: Methodology - special surfaces

When the proposed driveway is installed in the vicinity of it is possible that roots may be encountered. Within the RPAs of these trees any possible root injury can be mitigated by the utilisation of 'special surfaces' incorporating a 'no dig' methodology as recommended in Arboricultural Practice Note 12: 2007 "Through the Trees to Development " (APN 12). Cellular confinement systems such as 'Geoweb' and 'Cellwebb' can be used to implement the principals of APN 12 (Figure 6).

Figure 6 – Example special surface



6.11: When utilised correctly with free draining aggregates and a permeable surface, these cellular confinement systems provide a shallow and free draining base that support the passage of vehicles whilst allowing water and oxygen to permeate down to tree roots. This enables a 'no dig' construction technique to be used avoiding the severance of trees roots and preventing soil compaction around tree. This method of surface construction is specifically designed for use within the RPAs of retained trees.

6.12: Please note it is important not to treat the example above as finalised specification. It is provided as an indication of construction methods suitable for use to reduce damage to the root systems of retained trees by soil compaction and direct mechanical injury. It is therefore recommended that a qualified and competent engineer assess the suitability of the recommended specifications and finalise the details prior to commencement of any works.

6.13: Scaffolding

The erection of any scaffolding within the RPA of any tree must be verified with the architect after agreement with the local planning authority. The weight and downward pressure during use of any scaffolding within the RPA of any tree must be supported on bearers of a sufficient size, such as scaffolding boards. The aim of the bearers is to spread the working load across the RPA. The access point for the scaffolding should be outside the RPA.

7.0: Structural Damage

7.1: The potential risk for any direct or indirect structural damage to the proposed development being associated with the trees on and adjacent to the site is dependent on diverse factors, such as: tree species and age, soil type, foundation depth, climate, etc. This complex interaction of tree, soil, building and other influencing factors is so inherently unpredictable, that any accurate prediction of such incidence is impractical without detailed investigation and is outside the remit of this report and it is recommended that a structural engineer be consulted on this matter. Further information on this can be found in the following papers:

(i) National House Building Council (NHBC) Standards Chapter 4.2 Building near trees,

(ii) Building Research Establishment (BRE) Digest 63 Soils and foundations: 1,

(iii) Building Research Establishment (BRE) Digest 64 Soils and foundations: 2,

(iv) Building Research Establishment (BRE) Digest 67 Soils and foundations: 3,

(v) Building Research Establishment (BRE) Digest 240 Low-rise buildings on shrinkable clay soils: Part 1,

(vi) Building Research Establishment (BRE) Digest 241 Low-rise buildings on shrinkable clay soils: Part 2,

(vii) Building Research Establishment (BRE) Digest 242, Low-rise buildings on shrinkable clay soils: Part 3 and;

Building Research Establishment (BRE) Digest 298 Low-rise building foundations; the influence of trees in clay soil

8.0: Conclusions and Tree Protection Plan

8.1: T1& TG5, Remove regardless of development. T1 will cause continual damage to the retaining wall, this will become a safety issue due to the height of the wall at this point. TG5 have very poor stem growth form, with future growth these trees will become a safety issue for the highway.

8.2: T2 & T4, Holly and Sycamore. Although neither of these trees has poor growth they are both growing on top of the retaining wall and give a lot of shading to the shed. It is recommended that they be removed and replaced with suitable species. Once the building work has finished and any work to the retaining wall has been completed, two trees should be planted in a similar position except a gap of two meters from the wall should be given for growth. It is recommended that the new trees from species with either slow growth, low growth form or that can be easily pruned to maintain a height, i.e. fruit trees or ornamental Acers etc.

8.3: T4 Sycamore. This tree is subject to a tree preservation order (TPO) and therefore any work carried out must have written permission from the district council tree officer. The Ivy should be removed from the tree, after this the main fork should be re-inspected by an arboricultural consultant. The tree should be crown raised over the barn to give 3m clearance to allow for work

to be carried out and prevent further damage to the barn. This should be done by removal of smaller secondary branches and the removal of two low limbs with a diameter of approx 250mm. The remaining crown should then be balanced including the removal of the lowest limb on the South side with approx diameter of 200mm. The lowest limb on the West side, over the power cables, has a defect along it. This limb should be reduced by 20% too suitable points to alleviate the weight. Crown clean the rest of the tree to remove any major deadwood, broken branch stubs and defective branches. A climbing inspection is required to inspect the cavity on the Northeast limb. The tree should then be retained and protected by barriers as shown in chapter 6, at the points shown in appendix 2. The root protection area (RPA) of this tree spreads along the vehicle track around the barn. The roots will have grown accustomed to the compacted soil with in this area however it may be prudent to use a material such as Geoweb as shown in chapter 6 before any construction work takes place, this can be left down as a base for any drive way put to prevent further compaction. Using an Arboricultural consultant to check ground protection and RPA barriers is recommended.

8.4 The RPA of T4 is not in the normal pattern of a circle around the tree due to location of walls and barriers that roots cannot penetrate. Therefore the RPA has been re-drawn, in accordance with BS5837:2012 to a different shape with the same size area.

8.5: Any trees for retention should have substantial barriers erected to protect the RPA.

8.6: The removal of trees and new developments can affect the local landscape. The loss of trees and the impact of new developments can lessened by the planting of new trees that are a suitable species and the correct distance from existing buildings, proposed developments and any utilities above and below ground.

8.7: Having a planting scheme proposed in the planning application can help the LPA to visualise the finished project.
For advice on suitable planting species and locations please use a professional arboricultural consultant working to BS 5837:2012

8.8: Any recommended tree work should be carried out by fully insured and qualified arborists to the British Standards for tree work BS: 3998. 2010.

8.9: Tree protection plan
The erecting of RPA barriers and laying of ground cover should be carried out before any demolition or construction work begins. The barriers should be placed in the locations shown in appendix 2 along with the area requiring ground cover. Any cement mixing should be done on plastic sheeting with any waste or waste from washing the machine taken from site.

9.0: Other Considerations

9.1: Trees Subject to Statutory Controls

Certain trees on the site are may be covered by a Council Tree Preservation Order It will be necessary to check this before work commences The works specified above are necessary for reasonable management and should be acceptable to the local authority. However, tree owners/ managers should appreciate that they may take an alternative point of view and have the option to refuse consent.

9.2: Felling Licence

The felling of trees in the United Kingdom is controlled by the Forestry Commission under the Forestry Act 1967. A 'felling licence' from the Forestry Commission is normally required to fell growing trees, although in any calendar quarter up to 5 cubic metres in any quarter can be felled without licence providing not more than 2 cubic metres are sold. However, certain types of felling are exempt such as the removal of trees that are dead, dying, dangerous and or causing a nuisance.

9.3: Trees outside the Property

Full co-operation and liaison with tree owners will be required to conduct the recommended works on any trees included in this report that are not within the ownership of the applicant. The implications of non-cooperation requires legal interpretation and are beyond the scope of this report. By common law, branches from trees on adjacent properties extending over boundaries can be pruned back to the boundary line without the permission of the owners. However, the material belongs to the tree owner and the same guidance on statutory controls apply, as discussed in section 5.1.

9.4: Implementation of Tree Work

When appointing a tree contractor, only suitably qualified and experienced companies should be used. Always ensure that the contractor carries adequate Public and Products Liability Insurance, along with appropriate Employer's Liability Insurance. The contractor should carry out all tree works to BS 3998:1991 *Recommendations for Tree Work*, as modified by more recent research findings.

9.5: Replacement Trees

Ideally, replacement trees should be planted in mitigation for any being lost and to supplement those existing. For the most effective impact these trees should be 'Extra Heavy Standard Trees' conforming to British Standard 'Nursery Stock BS 3936: Part 1 1992, with a stem girth of 14 to 16 cm at 1m from ground level and a minimum height of 350 cm. They should be secured with twin stakes and cross strut, with tie and flat back spacer. Ideally, an irrigation/aeration pipe should be installed and the soil surface mulched at a radius of 0.5 m from the base of the tree.

9.6: Wildlife

All operations should take account of wildlife needs and be planned to take advantage of weather conditions and season for minimum damage and disturbance.

9.7: Bats

Specific consideration should be given to the possible presence of roosting bats, which are protected under British law by the Wildlife and Countryside Act (WCA) 1981 (as amended), and bats are classified as European Protected Species under The Conservation (Natural Habitats, &c.) Regulations 2010. This makes it an offence to kill, injure or disturb a bat and to destroy any place used for rest or shelter by a bat. The Countryside and Rights of Way Act (CRoW) 2000 strengthens protection given by the WCA and covers 'reckless' damage or disturbance to a bat roost.

9.8: Breeding Birds

Any proposed tree removal should be carried out outside the bird nesting season (which runs approximately from March to September inclusive) to avoid adverse impacts to any nests present. Any proposed works that cannot be timetabled out with the bird nesting season must be immediately preceded by a check for active nests immediately prior to works commencing – this should be undertaken by a suitably-experienced bird ecologist. Clearance works should only take place once this ecologist has confirmed that no active bird nests will be affected by the works. If active nests were found then working restrictions would be put in place until all chicks had fledged. All wild birds and their nests, whilst in use, are protected under the WCA 1981 (as amended) from harm or destruction during the nesting season.

9.9: Future considerations

The remaining trees should be inspected on a regular basis by a qualified arboriculturist. Trees are living organisms whose health and condition can change rapidly. The conclusions and recommendations of this report are valid only for a period of one year. This period of validity maybe reduced in the case of any change in conditions to, or in proximity to, the trees.

10.0: Bibliographical References

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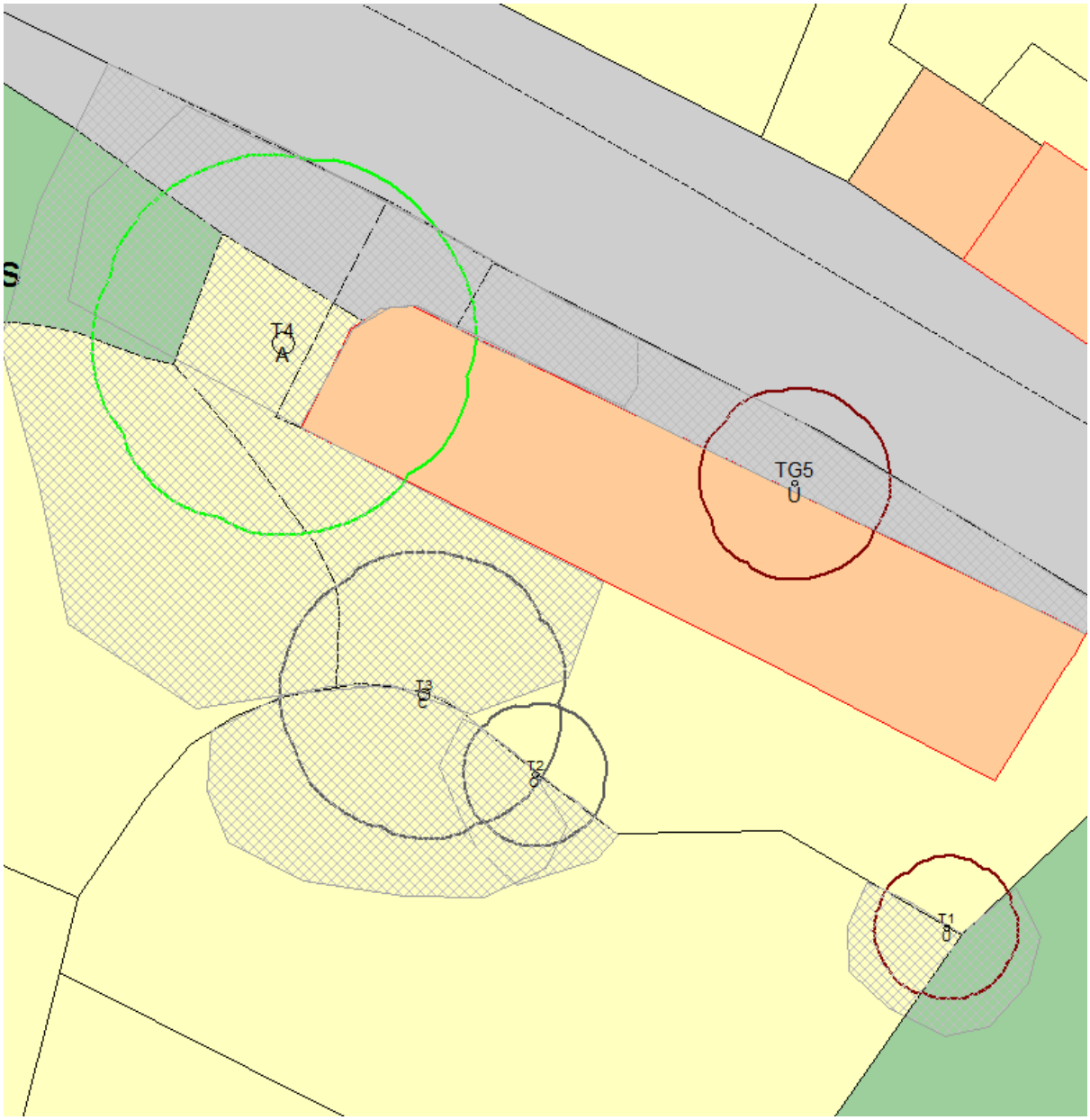
Appendix 1 A plan of the trees on site. The RPAs shown as the shaded areas. The crown spread in coloured outlines. Only T4 is to be retained.



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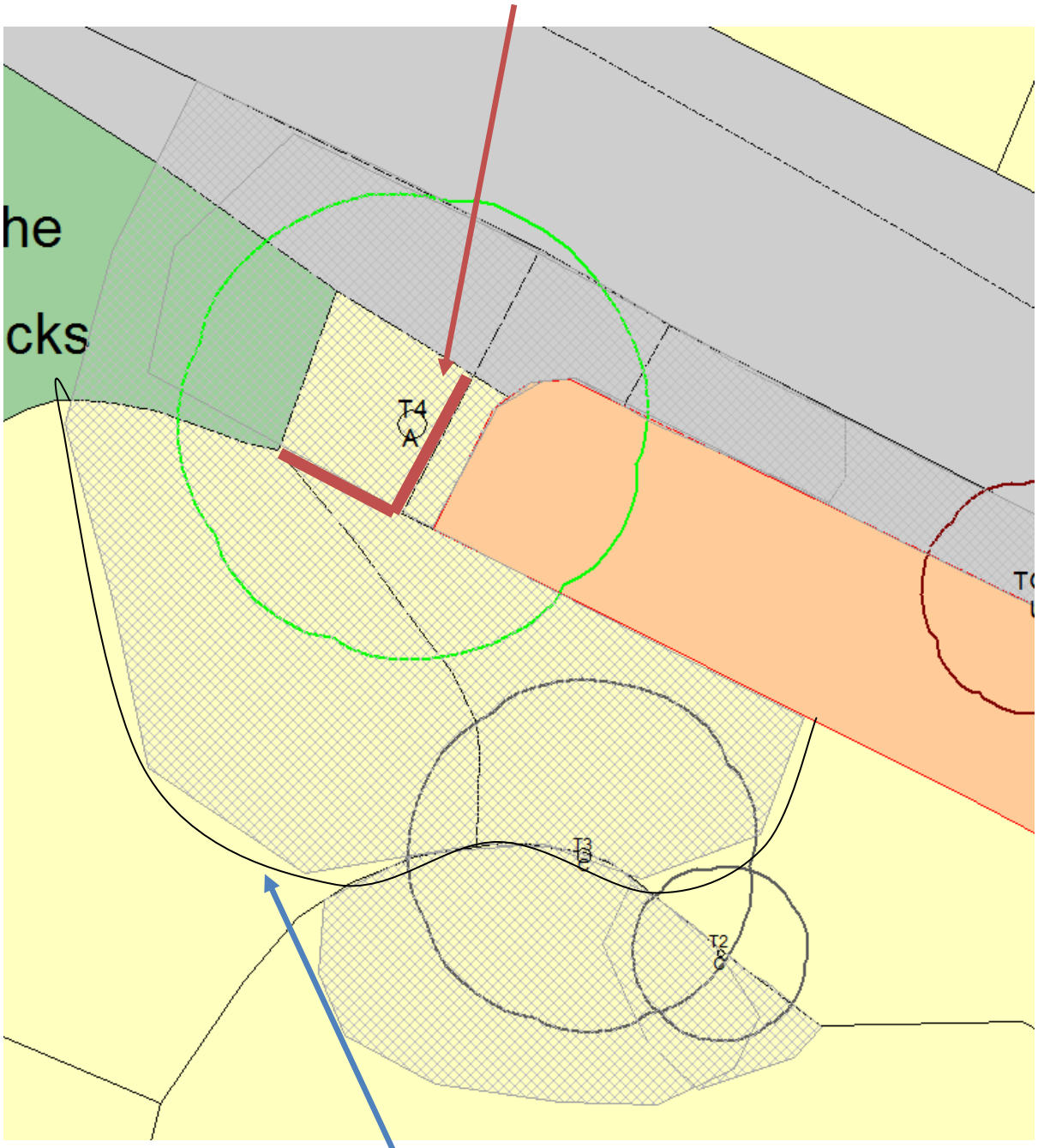
Appendix 2, The RPA barriers, and ground protection.

RPA barriers



Ground protection area.

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