



Project: 19_5837_10_12
Site: SK11 0SR, Rudyard Road, and Gun Hill Road
Client: Mr M Edge and Mrs P Edge.



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Document Title:	Arboricultural Implications Assessment
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Date:	Version number:	Summary of changes:
7/11/2019	1.0	First Issue

Distribution.

Approved by:	Signature	Date:	Version:
Matt Harmsworth	MH	7/11/2019	1.0
Martin Edge	ME	7/11/2019	1.0

Re-Survey Date.

Survey Type:	Lifecycle:	Re-survey Date:
BS5837: 2012	Planning Only	N/A

Report no: 19_5837_10_12

Date: 7th November 2019

FAO: Mr M Edge and Mrs P Edge

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Arboricultural implications assessment to BS 5837 2012 of trees at: SK11 OSR, Rudyard Road, and Gun Hill Road

1. Scope

- 1.1 We have recently been instructed to undertake an appraisal of mature tree cover at land adjacent to SK11 OSR, Rudyard Road, and Gun Hill Road
- 1.2 The data was collected to the British Standard BS5837 'Trees in Relation to Design, Demolition and Construction - Recommendations' 2012.
- 1.3 The survey has been commissioned to offer guidance on the arboricultural constraints with a view to the future development of the site.
- 1.4 The trees were inspected on the 29th of October 2019 following the guidance in the British Standard by Paul Billany. The crowns and stems were inspected from the ground using the 'Visual Tree Assessment (VTA)' method; no invasive techniques were used at this stage. Although a sounding hammer was utilised to determine the presence of any decay.
- 1.5 The site was assessed and data was collected on no tree groups, one woodland blocks and ten individual trees. Trees were grouped or designated woodlands as per the allowance in the British Standard when the area in question was uniform in terms of species, age or geography.

Executive Summary:

The tree survey for the woodland block has recorded 10 individual trees and one woodland block.

Some tree safety works are required to safeguard the adjacent public highway.

Construction of a property on stilts within the woodland is proposed. Whilst this is possible and we would support the proposals as innovative and groundbreaking, it is not without arboricultural challenges.

Access and egress to the site is tricky both for current management and also for future construction. Service runs will need to be carefully considered so as to avoid travelling through the woodland.

A full and detailed arboricultural method statement will be required to support any planning application.

Photographic Plates.



Aerial photographic plate showing the surveyed block.



Photographic plate showing one of the many mature Beech trees adjacent to the highway.



General view showing the density of the woodland block.



General view showing the site entrance.



Photographic plate showing a cavity and decay present in one of the beech trees.

2. Site Conditions & Site Surroundings

- 2.1 The site is situated 1.2km southeast of Heaton and 2.2km southeast of Rushton Spencer in the Cheshire East Council control area. The site is located on the junction of three roads and has a rural feel.
- 2.2 The site is home to a small mixed deciduous woodland of beech, oak and silver birch.
- 2.3 The wider locality is predominantly arable and grazing farmland. The site is accessed via a small timber five bar gate in the southeast corner of the plot.
- 2.4 A desktop assessment has highlighted that site is not within a Conservation Area and but there are individual TPO protected trees as a woodland group.
- 2.5 All desktop assessment data was cross checked and validated on the 12th November 2019 using the web portal provided by Cheshire East Council and cross checked with the DEFRA MAGIC database and the Staffs Moorland interactive map.

https://maps.cheshireeast.gov.uk/ce/webmapping?&e=396193.49&n=361756.48&layers=LU_S_TPO_PNT_current.LU_S_TPO_POLY_current&s=2500.00&bm=oscolour&pinx=396084&piny=362355&pintext=SK110SR&pincolor=bubble_blue

<https://staffs Moorlands.gov.uk/smdc-aurora>

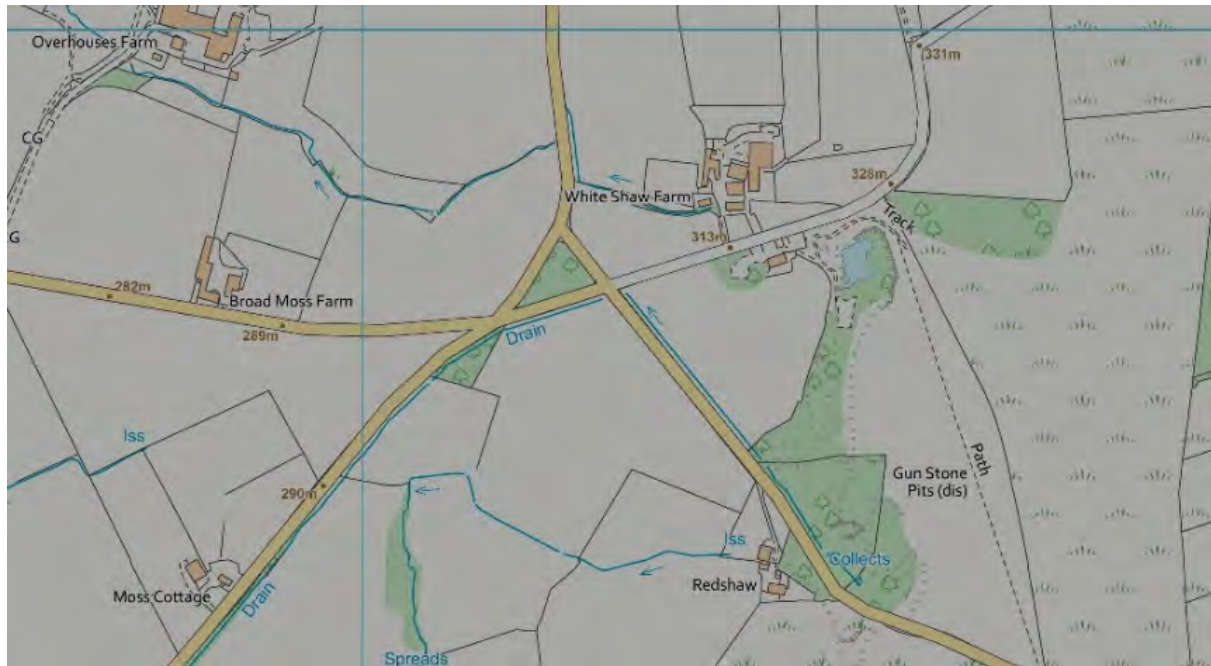


Image plate showing the desktop analysis results of the surveyed plot.

- Is my property in a Floodzone?
- Listed Buildings
- Green Belt
- Section 106 Agreements
- Sites of Special Scientific Interest (SSSIs)
- Article 4 Directions
- Is my property in a Smokeless zone?

Find by

- Find by Planning Reference
- Find by Decision Date
- Find 'In progress' by Ward
- Find 'In progress' by Parish

Planning Applications

- ☐ Applications In Progress
- ☐ Application Decided

Planning Constraints

- ☐ Smoke Control Zones
- ☐ Floodzone 2
- ☐ Floodzone 3
- ☐ Green Belt
- ☐ Listed Buildings
- ☐ Conservation Areas
- ☐ Protected Trees
- ☐ Peak Park in SMDC
- ☐ Article 4 Directions
- ☐ Section 106 Agreements
- ☐ Sites of Special Scientific Interest (SSSIs)
- ☐ Other Local Land Charges
- ☐ Registerable planning decisions
- ☐ Ancient Woodland
- ☐ Ancient Monuments
- ☐ Land Charge Register Enforcement

Protected Trees

Name: SM300W1

Description: Woods Junction of Rudyard Road & Gun Hill Road

Date made: 20/7/2016

Act: Section 198 Town & Country Planning Act 1990

Date confirmed: 20/7/2016

Notes:

PLEASE NOTE - Tree Preservation Order (TPO) and conservation data shown, whilst based on registers, is not a legal document and is supplied for information purposes only. If you are thinking of undertaking any work to a tree, we would advise that you contact the Council for further advice call the Arboricultural Officer or email the location of the tree or trees to trees@highpeak.gov.uk. Whilst every effort is made to ensure the accuracy of the data, which is supplied in good faith, the council will not accept any liability sustained as a result of reliance thereon. Peak District National Park Authority also have TPO's within Staffordshire Moorlands which are not listed here and you should also check with them.

[Further information and contact:](#)

Wards

Ward: Dane Ward

[Click here for Councillor Information:](#)

- 2.6 Works to protected trees require consent from the local planning authority. In the case of TPO's an application must be made. In the case of conservation areas a notification must be made. TPO applications take up to eight weeks, conservation area notifications take six weeks.
- 2.7 Certain exemptions apply; for example the removal of deadwood. In the case of dangerous trees 5-days written notice should be given to the local authority (in the cases of immediate danger the work should proceed, but the local authority contacted as soon as possible afterwards) with the works evidenced by photographs and video where possible.
- 2.8 It should be noted that planning consent overrides protected trees, where the works or removal are necessary for development to proceed and have been highlighted in the tree survey documents.
- 2.9 Bats. Under current legislation it is an offense to 'intentionally or recklessly disturb a bat' or 'damage, destroy or block access to the resting place of any bat'. For further details consultation must be made with the Statutory Nature Conservancy Organisation. Where relevant any current ecological surveys for the site will take precedence in this matter. Bat habitat was noted on site.
- 2.10 Birds. It is an offense to kill, injure or take any wild bird; or take, damage or destroy the nest of any wild bird while it is in use or being built. Therefore work likely to disturb nesting birds must be avoided from late March to August.



Photographic plate showing one of the few oak trees.

3. The Tree Population

3.1 BS5837: 2012 Tree Categorisation:

BS5837: 2012 sets out the methodology for surveying trees on potential development sites in order to identify them within a prioritised system of retention categories, as summarised below and given in full within the BS5837: 2012 Cascade Chart for Tree Retention.

A Category Trees of high quality and value in such a condition as to be able to make a substantial contribution for a minimum of 40 years.

B Category Trees of moderate quality and value in such a condition as to make a significant contribution for a minimum of 20 years.

C Category Trees of low quality and value currently in adequate condition to remain until new planting could be established and expected to remain for a minimum of 10 years, or young trees with a stem diameter less than 150mm measured at 1.5 meters above ground level.

U Category Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural or forestry management.

3.2 Additionally, BS5837: 2012 provides subcategories 1-3 within the category system outlined above which indicate the area(s) in which a tree or group retention value lies. An explanation of these values is given within the BS5837: 2012 Cascade Chart for Tree Retention.

1 - Retention values that are mainly arboricultural

2 - Retention values that are mainly landscape.

3 - Retention values that are mainly cultural, including conservation.

3.3 In line with BS5837: 2012, A and B category trees should be considered as a constraint on site and provide a substantial contribution to the site. As a result, A and B category trees should be retained and incorporated into the scheme where possible.

3.4 Generally C and U category trees are considered to be of low quality or are young specimens that can be readily replaced and therefore should not be a constraint in terms of future development.

3.5 However, it is generally considered desirable to retain trees wherever reasonably possible to ensure continuity of tree cover and to provide a mature landscape to the development.

3.6 Tree cover at the site is predominantly mixed broadleaves and dominated by an upper crown of mature to over mature beech trees which exhibit forest growth form. Many have asymmetric crown bias toward the adjacent roads.

- 3.7 The survey contains details of ten individual trees, no tree groups and one woodland blocks. The comments including species, age, condition and the BS5837:n2012 retention category for each individual tree and group of trees are provided in detail in the Tree Schedule (data tables). The full data collection methodology is appended behind the data tables.
- 3.8 The location of each individual tree and their associated constraints are illustrated on the appended Tree Constraints Plan.
- 3.9 Trees on site generally contribute to the local landscape value and this small woodland block forms an important piece of landscape. The woodland is privately owned with a small five bar gate access way.

4. Trees & Construction - General Issues

- 4.1 This report has been prepared to inform the design layout of potential development and should be submitted with a planning application. When and if full plans become available this report should be updated to include a full arboricultural implications assessment (AIA).
- 4.2 Due to the changing nature of trees and other site circumstances this report and recommendations are limited to a one year period. Similarly, this report could be invalidated if any alterations are made to the site that could change the conditions as seen at the time of inspection.
- 4.3 Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have not been addressed by this report. Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage.
- 4.4 Typically, about 80% of roots will be found in the upper 500mm of soil and often extending well beyond the canopy spread. The threat to the trees by development comes from:
 - (a) root severance or fracture
 - (b) compaction of the soil, preventing gaseous exchange and moisture percolation
 - (c) possible change to moisture gradients due to surface water run-off or interception
 - (d) physical damage to low branches and trunk.
 - (e) damage from chemical run-off from construction activities

The consequences for the tree of such damage are:

- (i) instability, if severe enough
- (ii) entry points for pathogenic fungi at wounds / fractures
- (iii) loss of vitality due to reduced oxygen, mineral and moisture take-up; all leading to
- (iv) root death, and
- (iv) a general decline or possible death of the tree.

5. Tree Constraints

- 5.1 Constraints imposed by trees during development, both above and below ground need to be considered within the site layout design. Protection is afforded to the tree by defining a Root Protection Area (RPA) within which no development activity should take place. The size of the RPA is defined in the British Standard and relates to trunk diameter. The RPA is normally the minimum position for placement of tree protective fencing. The data tables hold a column figure as an offset in meters from the stem that the root protection area extends to.
- 5.2 Nominally the RPA is represented by a circle around the tree. The area of the RPA may however, subject to the consideration of the arboricultural consultant, and be altered to a polygon in order to reflect the site conditions and requirements. For example, existing hard surfaces and foundations are likely to restrict or limit root growth while good quality soil may promote and extend root growth.
- 5.3 In the case of this woodland, the entire forest floor and redline boundary can be considered populated with both structural and fibrous root mass.
- 5.4 Root Protection Areas primarily relate to below ground constraints (root protection). Other constraints that must be considered include:
- The current as well as ultimate height and spread of a tree
 - Large trees close to a building, particularly a dwelling, can cause apprehension to owners/occupiers that result in pressure for tree removal or inappropriate pruning. Buildings should be sited allowing for the species height, spread and overall habit
 - Species characteristics; i.e. density of foliage, fruit-fall, susceptibility to honeydew drip, or branch drop. Trees are shedding organisms. The leaves of some species may cause problems with blocking of gullies and gutters. Fruit may cause slippery patches and honeydew drop can affect surfaces (particularly cars).
If conflicts may arise detailed design may address such issues, such as non-slip paths, use of car-ports, provision of leaf guards or grilles etc.
 - The potential impact on direct and diffuse light of a particular location of land; shading of buildings by trees can be a problem, especially where rooms require natural light, in addition open spaces such as gardens and sitting areas should be designed to meet requirements for direct sunlight (for at least part of the day)
 - Infrastructure requirements in relation to trees e.g. easements for underground or above ground apparatus and visibility splays
 - Space for the provision of new planting or landscaping
 - The proposed end use of space within Root Protection Areas
 - The requirement to protect overhanging canopies of trees that overhang or extend beyond Root Protection Areas

6. Structures within the RPA of trees

- 6.1 In the development layout design structures should be positioned outside of RPAs as far as practicable. In some exceptional instances there may be an overriding justification for construction within the RPA. In such cases technical solutions may be available to minimise to an acceptable level of disturbance to the tree or trees. Where such technical solutions may be relied upon full details will need to be included within a method statement. Advice must be sought from a suitably qualified arboriculturalist to develop a solution.
- 6.2 In some cases it may be unavoidable to place permanent hard surfacing within an RPA (for example the placement of an access driveway or parking area). In such cases the following should apply:
- No excavation of the soil should take place, other than scraping of the turf/vegetation layer
 - Any design must avoid compaction, allowing an even distribution of weight
 - New hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA
- If the proposed surface is likely to require de-icing salt then run-off should be directed away from the RPA
- Permeable hard surfacing can result in soil moisture saturation for long periods (resulting in root death). Where there is a risk of water-logging a design should incorporate land drainage
- 6.3 Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems (cell-web). Piles, pads or elevated beams can support bridges over RPAs. In all cases full specifications and methodology must be included within a supporting method statement.



Photographic plate showing they typical block structure and dense self set regeneration.

7. The Proposals

- 7.1 Provided to us for comment are some initial sketch plans appended and entitled as Heaton 1F and Heaton 1E PDF's.
- 7.2 Whilst we acknowledge that an AIA should inform layout, in many cases domestic tree surveys for construction projects do not get commissioned until either the application has been submitted and refused OR pre-application advice highlights the requirement OR the application has been rejected on arboricultural grounds.
- 7.3 In the case of this plot, the clients are seeking arboricultural advice at an early stage and are very keen to retain and protect the tree cover on site.
- 7.4 As drawn the plan is to construct a building on piles thus minimizing the requirement for excavation and removing the need altogether for traditional strip foundations.
- 7.5 A full arboricultural method statement will be required to clearly set out how the trees will be retained and protected throughout the construction phase and the appropriate location for a CEZ for the siting of site cabins. Once plans develop thought will be required to achieve service runs without strip excavation.
- 7.6 In the short term, access to the woodland should be confined to the existing accessway and the siting of any woodland workshop/site cabin should utilise cellweb back filled with clean stone. A method statement for this is appended.
- 7.7 In terms of woodland management, some tree safety works are required to safeguard the road and the dense self set regeneration can be thinned to best stems. It is important to retain some regeneration for succession planning.



8. Limitations

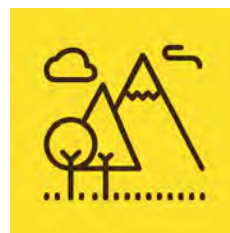
- 8.1 ROAVR Environmental has prepared this Report for the sole use of the above named Client/Agent in accordance with our terms of business, under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us.
- 8.2 This Report may not be relied upon by any other party without the prior and express written agreement of ROAVR Environmental. The assessments made assume that the land use will continue for their current purpose without significant change. ROAVR Environmental has not independently verified information obtained from third parties.
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Should you require any further information, please do not hesitate to contact us at any time.

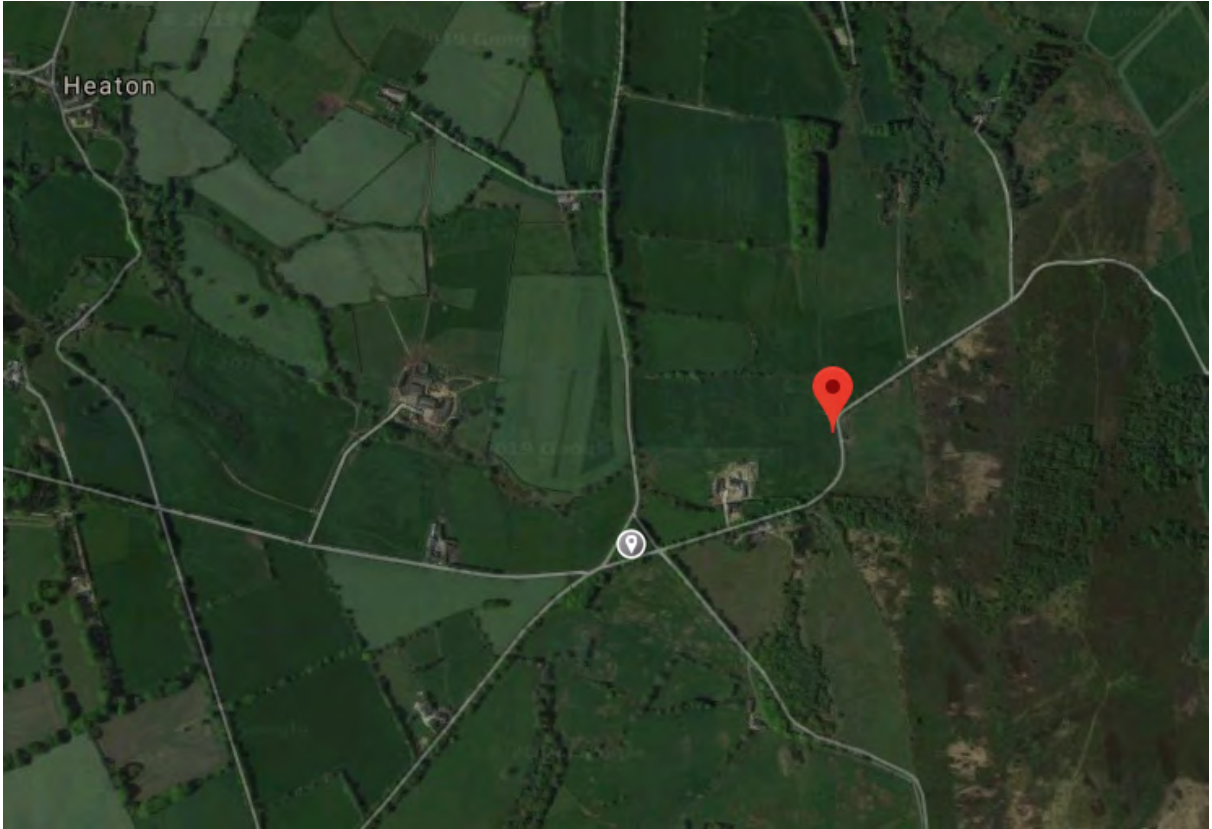
Mr. M Harmsworth tech.arbor.a, DipRS
Consultant Arborist

Matt Harmsworth

Prepared by: Matthew Harmsworth.
Checked by: Jill Taylor



Appendix 1 – Site Location



Appendix 2 – Cellweb Method Statement

ACCESS ROADS, HAUL ROUTES, DRIVEWAYS AND PARKING AREAS

Where construction of a hard surface has been approved within the CEZ, or within the RPAs of retained trees, a no-dig system must be used to prevent damage to tree roots from excavation, ground compaction or loss of ground permeability.

Vegetative growth may be removed by hand, reduced using herbicide applications or carefully scraped away. Soil scraping must not exceed a depth of 50mm and, should substantial tree root presence be encountered, must be abandoned in favour of the other 2 listed methods of vegetation clearance.

Ground levels can only be adjusted by up-filling; that is, filling in of hollows and/or undulations with a porous material that still permits water and oxygen to reach the soil below. Examples are sharp sand (no fines), clean crushed stone (no fines), gravel chips (no fines) or a mix of any of the former with good topsoil.

Terram or equivalent geotextile must be laid over the surface to be covered and pegged into position.

A Cellweb or equivalent Cellular Confinement System is then placed over the Terram, and secured as per manufacturer's instructions.

An aggregate sub-base material 20 to 40mm in size (no fines) is then used to fill the cells of the Cellweb to the required depth (100mm for pedestrian traffic or domestic car parking, 150mm for commercial car parking, and 200mm for frequent traffic including HGVs, or for heavy duty haul routes).
*200mm depth

Cellweb is recommended for the Leek site to cope with long term access and parking arrangements without degradation, and to offset and possible ground compaction caused by construction related plant/vehicle movement.

The sub-base can be gently compressed.

Final surfaces can be chosen from a range of options but must be porous and must be approved by the LPA. It is usually appropriate to apply final surface treatments following completion of construction operations – as a part of the landscaping works.

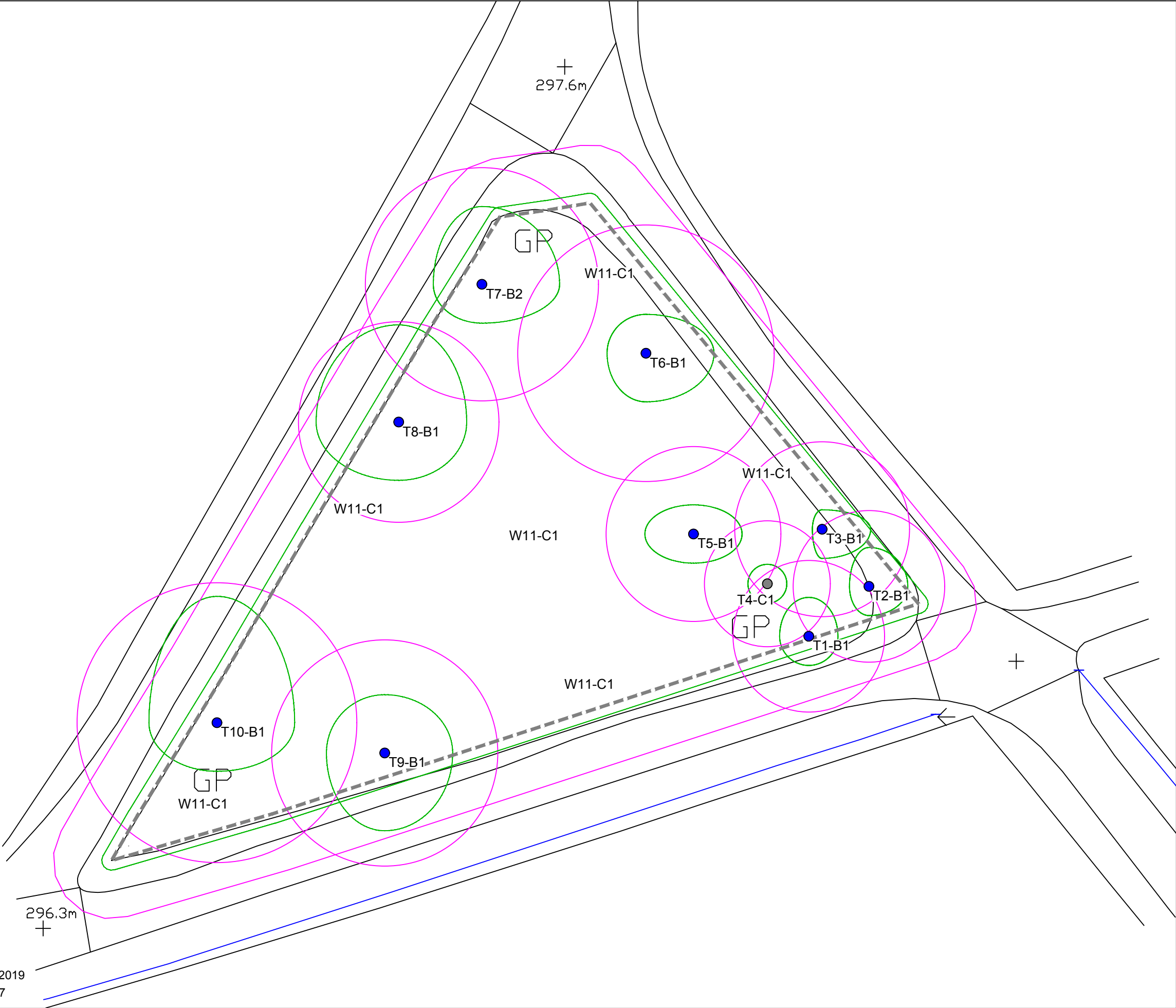
Appendix 3 – Arboricultural Data Tables

Tree Number	Species	Age Class	DBH	Height (crown height)	N	E	S	W	Condition	Life Expectancy	Physical Description	Managment Recommendations	RPA offset from stem.
T1	Quercus robur (Common Oak)	M	650	13(5)	4	3	3	3	Poor	10+	Poor shape & form. Low vitality. Declining. Tree located within hard surface area. Dieback in crown. Low bud/leaf density. Broken branches in crown.At entrance area	Limited long-term prospects; fell.	7.8
T2	Quercus robur (Common Oak)	M	650	13(4)	4	4	3	2	Fair	20+	Low vitality. Declining. Leaning North. Dieback in crown. Low bud/leaf density. Broken branches in crown.At entrance compacted base signs of old mechanical damage to base	Monitor	7.8
T3	Quercus robur (Common Oak)	M	750	15(5)	2	5	3	1	Fair	20+	Poor shape & form. Low vitality. Declining. Dieback in crown. Low bud/leaf density. Broken branches in crown; mechanical damage to base of stem; partially occluded gate furniture	Monitor	9
T4	Quercus robur (Common Oak)	M	540	16(4)	2	2	2	2	Fair	20+	Poor shape & form. Low vitality. Declining. Dieback in crown. Low bud/leaf density. Broken branches in crown.At entrance way poor shape lack of growth due to surround trees	Monitor	6.48
T5	Quercus robur (Common Oak)	M	750	14(7)	3	5	3	5	Fair	40+	Poor shape & form. Low vitality. Declining. Part of linear group. Dieback in crown. Low bud/leaf density; forest growth form.	Monitor	9
T6	Fagus sylvatica (Beech)	M	1100	13(10)	4	7	5	4	Good	20+	Good structure, form and vitality	No works required	13.2
T7	Fagus sylvatica (Beech)	M	1000	14(6)	3	8	8	4	Good	20+	Good structure, form and vitality	No works required	12
T8	Fagus sylvatica (Beech)	M	860	15(6)	5	10	7	6	Fair	20+	Poor shape & form. Leaning North.heavy Low branches to North over road	Reduce end weight over road	10.32
T9	Fagus sylvatica (Beech)	OM	970	16(7)	6	7	8	6	Poor	<10	Poor shape & form. Low vitality. Declining. Leaning North. Decay present on stem. Fungal brackets visible on stem. Cavity on stem. Dieback in crown. Low bud/leaf density.Large cavity in base with fungus	Fell for safety	11.64
T10	Fagus sylvatica (Beech)	OM	1200	13(7)	13	8	5	7	Fair	20+	Declining. Leaning North. Stem divides above 1.5m.Significant branch to North overhang Road	Fell for safety	14.4
W11	Fagus sylvatica (Beech)	M	500	14(8)	1	1	1	1	Fair	20+	Low vitality. Coppice.woodland Group approx 55 trees mainly beech and oak. Couple of birch regen on exterior of site in poor condition. Lots of young self set regeneration.	Thin to best stems	To crown edges

Arboricultural Data Tables Terms

Tree Number	Reference number (T1, T2 etc for trees / G1, G2 etc for tree groups / H1, H2 etc for hedgerows)
Species	Common name
Height	Height of tree to the nearest metre
DBH	Diameter of stem (mm) at breast height (1.5 metres above ground)
RPA radius (m)	The radial measurement of the Root Protection Area in metres indicating the minimum distance from the centre of the trees stem to the recommended position of the protective (Heras) fencing.
RPA (m2)	The Root Protection Area, measured in square metres. This measurement is directly proportional to and calculated from the trees DBH measurement as specified in section 4.6 of BS 5837 (2012) Trees in relation to design, demolition and construction – Recommendations.
Crown Spread	The maximum spread of the trees canopy measured from the stem in four directions (North, East, South, West)
Age class	The estimated age class of the tree (relative to species) ○ Y - Young ○ SM - Semi-mature ○ EM - Early-mature ○ M - Mature ○ LM - Late-mature
Comments	A brief description of the tree which refers to tree form, condition, health and significant defects. Comments regarding environmental conditions affecting the tree (e.g. ground conditions) will also be included where relevant.
Preliminary management recommendations	Recommendations (made with respect to the development proposals if available) for removal, retention and/or remedial arboricultural works.
Estimated remaining years	Estimated safe, usable life expectancy
Category grade	Tree categorisation based on section 4.5 of BS 5837 (2012) Trees in relation to design, demolition and construction – Recommendations. Four categories are used (A, B, C, U) with categories A, B & C being assigned one of three separate sub categories (1, 2 or 3): A – Trees of high quality with an estimated remaining life expectancy of at least 40 years. B – Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. C – Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm Subcategories: 1: Mainly arboricultural & aesthetic qualities 2: Mainly landscape qualities 3: Mainly cultural values, including conservation U – 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

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
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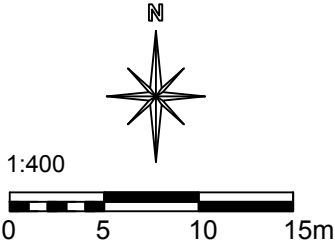
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Tree Constraints Plan
showing existing layout with
tree categories and root
protection zones.

BS5837:2012 Tree Categories

-  **Category A**
Trees of high quality with an estimated remaining life expectancy of at least 40 years
-  **Category B**
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
-  **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
-  **Category U**
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
-  **BS 5837:2012 Root Protection Area**
Note: The RPA limits for some groups may be represented by a dashed/hatched category coloured line.
-  **Tree**
Showing Canopy extents, category colour, tag number (with category) and optional indication arrow showing bearing of first significant branch.

Tree/Group/Hedge numbering: 1-6.



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Client	Mr and Mrs Edge		
Project	Land at Leek		
Drawing Title	Tree Constraints Plan		
Scale	Date	DB	CB
1:400@A3	Nov 2019	CS	MH
Drawing Number	Rev		
19_5837_10_12	1		