

Arboricultural Impact Assessment

Bryn y Ffynnon
Old Road
Bwlchgwyn
Wrexham

Ref:
AIA/BFB/01/20
Revision

Date:
16th January 2020

Commissioned by:
Mr D. Edwards
on behalf of
Blueprint Architectural LTD

Prepared by
S. Shields

Arboricultural Impact Assessment

Bryn y Ffynnon

Old Road

Bwlchgwyn

Wrexham

This Arboricultural Impact Assessment has been prepared in accordance with the protocols, standards and procedures set out in BS 5837: 2012 'Trees in relation to design, demolition and construction'.

Planning permission is being sought to develop site to provide a detached residential dwelling along with parking, amenity space and improved access..

All trees on and immediately adjacent to the site have been surveyed and assessed in accordance with the recommendations of BS5837: 2012. The survey six individual trees and two groups of trees, one hedgerow and one shrub group, ranging in quality from moderate (3) to low (6) and (1) unsuitable for retention in the current context.

The proposed development would require the removal of 4 category C trees and 1 category C shrub group.

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Date	Revision	
16 th January 2020		Issued for planning

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Instruction

- 1.1 Shields Arboricultural Consultancy received instructions from Mr D. Edwards on behalf of Blueprint Architectural LTD to undertake an arboricultural impact assessment at the above property. The client or their agents may copy and distribute this report as required for the purpose of applying for planning permission for or preparing any documents or plans for this or future applications at this site.
- 1.2 Planning permission is being sought to develop site to provide a residential dwelling along with parking and access. A site plan ref: N031/005 has been provided and is considered in this report.

Scope & Limitations

- 2.1 The purpose of the report is to assess the environmental and amenity values of all trees on or adjacent to the area affected by the proposed development and is based on a site assessment undertaken 9th January 2020 by S. Shields, principal consultant Shields Arboricultural Consultancy. The report will assess the long-term contribution that the trees can make to the area and the arboricultural implications of retaining them and seek to find a satisfactory juxtaposition between the trees and the new development. The report will assess the potential impact that may arise as a result of the proposed construction works and make recommendations for protecting trees, hedges and shrubs where appropriate
- 2.2 The report is prepared in accordance with the recommendations of the British Standard Document BS 5837: 2012 'Trees in Relation to Construction'.
- 2.3 This report is not an ecological assessment and does not identify habitats or constitute a protected species survey.

Statutory Controls & Obligations

- 3.1 Forestry Act; the felling of trees is controlled by the Forestry Act, which requires that a felling licence is obtained prior to cutting down any trees. The Forestry Act does not apply to the felling of trees growing within an orchard, private garden, churchyard or public open space. The Forestry Commission has the responsibility for enforcing the Forestry Act.
- 3.2 Tree Preservation Orders & Conservation Areas; Local Authorities have specific powers under the Town & Country Planning Act 1990 as amended, to protect trees through the use of Tree Preservation Orders. Where trees are protected under such orders it is a criminal offence (subject to any exemptions for which provision may be made by the act or order) to undertake, cause or permit the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of trees except with the consent of the local planning authority. Similar controls apply to all trees growing within a designated Conservation Area.
- 3.3 Bats, wild birds and other protected species; The Wildlife & Countryside Act & the Conservation (Natural Habitats & C.)

Regulations make it an offence to disturb or destroy bats and bat roosts and wild birds and their nests. Other species of plant and animal are also protected. These creatures often inhabit trees and sufficient care must be taken to ensure they are not affected during forestry and arboricultural works.

Site description

- 4.1 The proposed development is at on land adjacent to Bryn Y Ffynnon, a detached residential dwelling set in a large private garden. The development site is currently part of the garden area of the property and is to the south of the existing dwelling. The site is accessed via a shared private drive off Old Road, Bwlchgwyn. The site has boundaries with the garden of Bryn Y Ffynnon to the north and with open countryside to the east, south and west. The site is at an elevation of 320m AOD, and slopes down from south west to north east with a moderate gradient. The site is exposed to the south and east.
- 4.2 There are a number of trees on the site, mainly around the boundaries and there is an old hedgerow along part of the east boundary and a shrub group adjacent to the entrance to the site. There is an area of blackthorn scrub on adjacent land to the south. There are also a number of mature trees in the adjacent garden.



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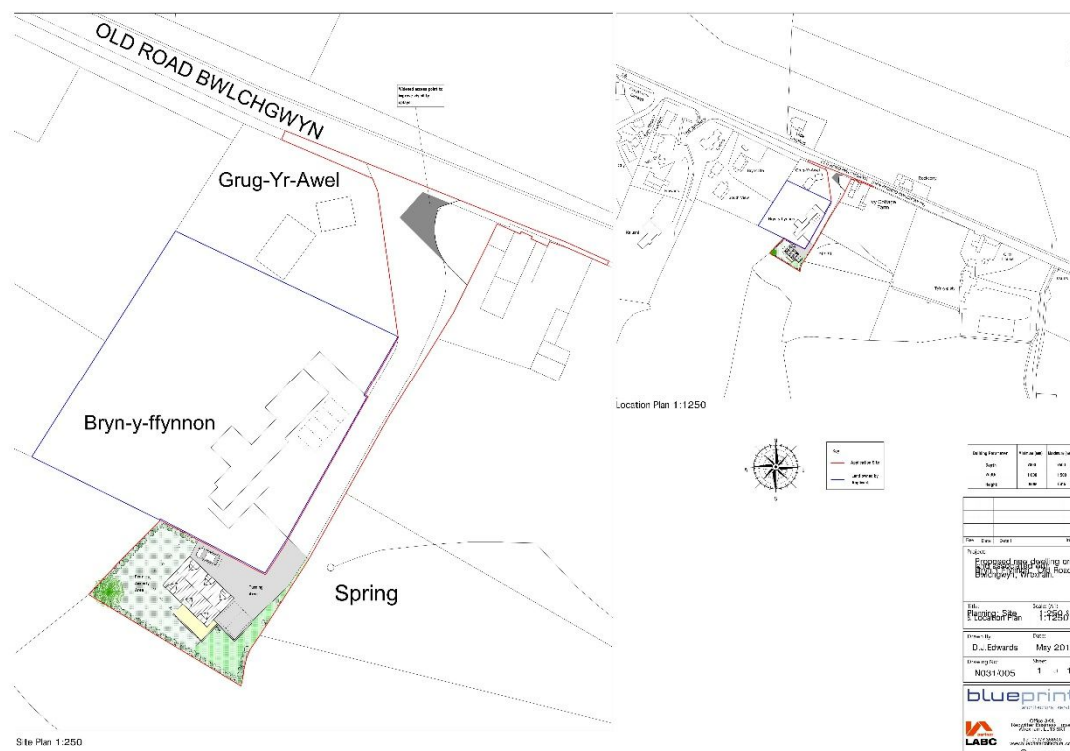
Soils

- 4.3 The site is moderately free draining and geological maps indicate a Diamicton Till drift over a sandstone bedrock. There are no significant impediments to rooting on the site.

*NB. This soil assessment is undertaken in situ using visual and manual techniques and is **only** for the purpose of establishing the influence of site soils on tree growth. The assessment **must not** be relied upon to inform any engineering decisions.*

Development Proposal

- 5.1 Planning permission is being sought to develop site to provide a detached residential dwelling along with parking, amenity space and improved access.



Tree Survey Methodology

- 6.1 All trees within and adjacent to the site have been assessed where they are within 15 m of any area that may be disturbed as a result of the proposed development and have a stem diameter over 75mm at 1.5 metres. Measurements have been taken in accordance with the procedures and protocols set out in BS 5837: 2012 and the Forest Mensuration Handbook. Height measurements are approximate unless otherwise stated. Trees have been assessed as individuals, groups or woodlands as appropriate. Where access to trees has been restricted, either as a result of their situation on private land or where vegetation or ground conditions are unfavourable, an estimation of trunk diameter has been made. This entails using a set of callipers to approximate the measurement. Estimates are rounded up to provide a margin. This technique has only been used where there is a sufficient buffer between the RPAs and any area disturbed by development. Where trees are in woodlands or groups only the outside edge trees are assessed unless there are larger trees with RPAs or crowns that would overlap the edge trees.
- 6.2 BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term

viability for retention on a development site. There are four categories, A,B,C & U.

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

- 1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.
- 2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.
- 3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)

- 1 Trees that might be included in a higher category but are downgraded because of impaired condition.
- 2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.
- 3 Trees with clearly identifiable conservation or other cultural benefits.

Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.

Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.

The most significant or valuable trees are placed in the categories, A & B. Site design should make provision to retain trees in these categories and most Local Planning Authorities will insist upon this (or in exceptional circumstances will require that significant compensation planting is incorporated into the design), whilst trees that should not be a constraint to development are recorded with a C category. Trees categorised as U are in a poor condition and should be removed prior to the commencement of work.

- 6.3 Where trees are to be retained, it is necessary to ensure that they are suitably protected to avoid damage during the construction phase of the development. It is also important to consider any long term implications; such as issues with shading or leaf litter that may arise as a result of tree retention.
- 6.4 To ensure that trees are not adversely affected by the construction works it is necessary to:
 - a. The avoidance of physical damage to the aerial parts of the trees (i.e. Impact and other damage to trunk and branches)

- b. The avoidance of damage to retained trees as a result of the severance or other physical damage to their roots
- c. Preserve of the character of the soil, through the avoidance of any activity that would cause it to become compacted or otherwise disturbed or disrupted, and to avoid contamination by potentially harmful substances
- d. To ensure free gaseous exchange is permitted between the upper layers of soil and the atmosphere
- e. To ensure adequate (but not excessive) water supply to the soil and hence to tree roots

This would normally be achieved by establishing an area, known as a construction exclusion zone (CEZ) around each tree. The CEZ is derived from the root protection area (RPA) and the crown spread of the tree. The RPA represents the area occupied by the tree's root system and is calculated for each tree based on its stem diameter and the ground conditions present taking account of and any impediment to rooting. The RPA should represent the most probable position of the tree's root system.

The CEZ must be considered sacrosanct and be maintained completely undisturbed. No construction should take place within this area and it should not be used for storage of materials or fuels. Access for vehicles machinery or personnel is prohibited and to ensure that it is not damaged by construction activity it must be suitably protected during the construction phase, using robust fencing or alternative ground protection methods, to prevent disturbance and damage occurring.

- 6.5 In addition to the implications that a new development may have for existing trees it is also important to assess any long-term issues or concerns that may arise as a result of retaining trees close to a new dwelling or structure. This can include problems associated with leaf litter and other debris that may fall from trees, the potential that a tree has to cause damage to a structure in the future, any on-going maintenance requirements that may arise and the level of shade that the tree may cast, it is particularly important to consider the effects of shading where trees are to the south of houses and gardens. Trees can also cause feelings of apprehension to the occupiers of nearby buildings and can have an over bearing impact on a property if adequate space is not provided.
- 6.6 The report assesses all trees with regard to their size, position and natural characteristics, and taking into account of their future growth makes provides recommendations as to their long-term suitability for retention.

Arboricultural Assessment

- 7.1 Full details of the tree surveyed are provided in appendix A. and their relative positions, crown spreads, root protection areas are indicated on the attached plans.
- 7.2 No checks have been undertaken to establish the status of the trees with regards to Tree Preservation Orders or Conservation Areas, however all the trees may be subject to the Forestry Act (see section 3.1) and some hedges subject to the Hedgerow regulations (see section 3.3). No trees or hedges should be felled, lopped, topped or in otherwise removed or damaged without prior permission from the relevant authority.
- 7.3 The survey recorded six individual trees two groups of trees, one hedgerow and one shrub group which are categorised as follows:

Category	Quantity
Category A: Trees of high quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years)	0
Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)	3
Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.	6
Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.	1

Arboricultural merits and the significance of the trees in the landscape

- 7.4 The on-site trees are relatively minor specimens, mainly providing amenity to the site.
- 7.5 There are no veteran trees or areas of ancient woodland on or adjacent to the site.

Design Considerations

- 7.6 The site design should seek to incorporate the category B trees into the layout.
- 7.7 In addition to ensuring that the trees are not damaged by the construction process, consideration should also be given to the future implications associated with the retention and planting of the trees in the terms of their influence on the new properties. To ensure a harmonious relationship between the trees and the proposed dwellings it is necessary to allow adequate separation so that the trees do not exert an overbearing influence, are so close as to promote worries about tree safety and avoid problems associated with leaf litter and shading.

- 7.8 It is particularly important to consider the effects of shading where trees are to the south of houses and gardens and a tree shading plan showing the position of the tree's shadow at 12pm on March 21st and June 21st is provided with this report to assist with site layout design. Ideally the layout should take account of existing retained trees and any new planting, with consideration to their ultimate size and density of the foliage and that garden areas should be designed to meet the normal requirement for direct sunlight for at least part of the day. Building Research Establishment guide to good practice (BR209) Site Layout Planning for Daylight and Sunlight advises that, in order to appear reasonably sunlit a dwelling should have at least one main window wall that faces within 90° of due south and that on this wall, all points on a line 2m above ground level are within 4m of a point which receives at least a quarter of the annual probable sunlight hours. The guide also advises that for gardens to appear adequately sunlit, no more than two-fifths and preferably no more than a quarter should be prevented from receiving any sunlight on 21st March. In this case the trees are relatively small in height and to the west of the proposed dwelling and are unlikely to cause and significant obstruction to sunlight and daylight except in late evening.
- 7.9 To ensure that trees do not become overbearing or exert a dominating effect on a property it is recommended that no occupied property is sited within a distance from the trunk equivalent to 50% of the mature height of a tree (see appendix A), which should be increased to 60% if the tree is directly to the south of a property. There should also be a distance of at least 1.5 metres from the edge of the crown to the building at the closest point, this must take account of the ultimate spread of the tree. No more than 40% of a garden area should be beneath the crown of a tree, and the remaining area should not be shaded by the tree.

Arboricultural Impact

Impact	Category A	Category B	Category C	Category U
Tree Removal			T1, T2, T3, T4, S10	G6
Facilitative Pruning Required				
RPA Encroachment				
Potential Shading				
Proximity Issues				

- 7.10 The proposed development would require the removal of four trees and one group of shrubs, all relatively minor specimens in terms of their landscape and public amenity value and would have little impact on the wider amenity of the area. It is also recommended that the category U group is removed as it is not sustainable to retain it in this location.
- 7.11 Shading and proximity are unlikely to be a significant issue on this site.

- 7.12 All services are to be located outside the RPAs of existing retained trees or, if this is not possible, to be installed in accordance with NJUG 10 guidance.

Landscaping of the Development

- 7.14 The development provides some opportunity for additional planting on the site and there would be a nett gain in tree number and canopy cover.

Arboricultural Operations

Permission to remove any tree must be obtained from the Local Planning Authority and must not be undertaken until all pre-commencement conditions have been discharged.

- 8.1 Other than the removal of poor quality and dead trees, no tree removal or pruning is required to implement this site design, however should tree work be desired, subject to any planning constraints, it is recommended that the work should be undertaken by a suitably qualified person, holding public liability insurance for the sum of £5,000 000. All operators must hold relevant NPTC certificates. A site specific risk assessment must be prepared and operators must work to a health and safety method statement. The use of Arboricultural Association Approved Contractors www.trees.org.uk/find-a-professional/Directory-of-Tree-Surgeons is recommended.
- 8.2 The contractor undertaking the work is responsible for any loss or damage arising as a result of the operations and agrees to indemnify the owner against such occurrences.

Arboricultural Method Statement

- 9.1 This arboricultural method statement (AMS) sets out the details of tree protection measures afforded to the retained trees on and adjacent to the site.
- 9.2 This document should be read in conjunction with the Tree Protection Plan ref: BFB-TPP-OL-01-20. The TPP indicates the construction exclusion zone (CEZ) that must be maintained around each retained tree. These areas must remain undisturbed during the construction process and must be protected using suitable fencing or ground protection as specified.
- 9.3 Copies of the TPP & the AMS must be available on site and all tree protection requirements explained to all persons undertaking activities on the site during the site induction process.
- 9.4 All tree protection measures must be installed and inspected prior to bringing onto the site any plant, materials or equipment or undertaking any construction works or demolition or any arboricultural works. The LPA must be informed in writing once the tree protection measures are installed.
- 9.5 The site is to be inspected by the consulting arboriculturalist in accordance with the schedule of inspections (see 9.17).

- 9.6 All measurements are given in metric using standard abbreviations.

Fencing and Ground Protection

- 9.7 The TPP indicates the position of all protective fences.
- 9.8 Protective fencing will comprise herras fencing or as agreed with the Local Planning Authority.
- 9.9 Ground protection to be specified if required.
- 9.10 The protective fencing and ground protection must be inspected on installation and will remain in place until completion of the construction phase and then only removed with the consent of the LPA.
- 9.11 Other than works approved in writing by the LPA, no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

General Precautions

- 9.12 No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10m of the trunk of a tree that is to be retained or within any part of the CEZ. Spills kits, suitable for the type fluids, fuels and chemicals stored on site must be available on site and site operatives must have training in their use.
- 9.13 No fires will be lit within 20m of the trunk of any tree that is to be retained.
- 9.14 Storage and mixing areas, contactor parking and all site huts must be outside the CEZ.
- 9.15 Access to the work area is via the main site entrance and must not traverse the CEZ.
- 9.16 All service and drainage routes, below or above ground must avoid the CEZ. All services are to be installed in accordance with NJUG volume 4 Guidelines.
- 9.17 To ensure that all tree protection measures are properly installed and maintained the site shall be monitored by Shields Arboricultural Consultancy to the following schedule. Details of the findings and photographic evidence of the site inspection visits will be reported to the LPA by email within 24 hrs of the visit. All tree protection measures must remain in place until development work is completed and only removed after receiving written confirmation from the LPA.

Schedule of Inspection

1. TBA
- 9.18 Prior to the commencement on site of any work, a competent person is to be appointed to monitor the day to day activities on site. In the case of a tree being damaged or where an unexpected event arises it will be for this person to contact Shields Arboricultural Consultancy to seek advice on contingency measures.

Conclusion

- 10.1 The proposed development will not have a significantly detrimental impact on the arboricultural resource or amenity of the area.

S.J.A. Shields

Uni Cert For. & F.P. (Bangor)

P. Dip. Arb. (RFS), MSc. Arb. & Urban For. (UCLan)

M.Arbor.A, MICFor.

Chartered Forester

16th January 2020

Arboricultural Assessment

Ref. No.	Species	Top Height	Stem Dia mm	N	E	S	W	CC	Age	Rem Cont	Cat	RPA m ²	Notes	AIA
T1	Fraxinus excelsior (Ash)	12	360	4.8	3.9	4.4	3.9	2	M	10+	C1	59	Condition: Fair Notes: Decay point in stem base.	A minor specimen with limited value as part of the background landscape. Will be removed as part of the proposed development. Any loss of amenity will be mitigated through new planting on the site.
T2	Betula pendula (Silver Birch)	4	125	2.2	3.1	3.5	1	1	M	10+	C1	7	Condition: Fair Notes: Suppressed by adjacent tree.	A minor specimen with limited value as part of the background landscape. Will be removed as part of the proposed development. Any loss of amenity will be mitigated through new planting on the site.
T3	Betula pendula (Silver Birch)	7	220	4.7	2.5	4	1.5	1.5	M	10+	C1	22	Condition: Fair Notes:	A minor specimen with limited value as part of the background landscape. Will be removed as part of the proposed development. Any loss of amenity will be

														mitigated through new planting on the site.
T4	Salix caprea (Goat Willow)	6	190 120 200 120	4.9	3	4	3.2	1.5	M	10+	C1	48	Condition: Fair Notes: Multi-stemmed specimen.	A minor specimen with limited value as part of the background landscape. Will be removed as part of the proposed development. Any loss of amenity will be mitigated through new planting on the site.
T5	Acer pseudoplatanus (Sycamore)	9	440	4.9	4.1	3.5	2.5	3	M	20+	B2	88	Condition: Good Notes:	Reasonably attractive feature would add maturity to the tree cover in the garden, post-development. Tree can be retained and protected to the required standard.
G6	Crataegus monogyna (Hawthorn)	3	200	3	3	3	3	0	OM	<10	U	18	Condition: Poor Notes: Old outgrown hedgerow, part collapsed.	Recommend removal on arboricultural management grounds.
T7	Acer pseudoplatanus (Sycamore)	8	310 300	5.1	3.9	4.7	3	1.5	M	20+	B2	84	Condition: Good Notes:	As T5
G8	Chamaecyparis lawsoniana (Lawson Cypress) Prunus avium (Wild Cherry)	12	300	3.2	6	3.7	3	0	M	20+	B2	41	Condition: Good Notes: Well-established group of trees,	Reasonably predominant group of trees provide screening between the existing dwelling and

													predominantly conifer. Outside the site to the north.	the site. Can be retained and protected to the required standard through the development.
H9	Crataegus monogyna (Hawthorn)	1.2	50	2	2	2	2	0	OM	10+	C3	1	Condition: Good Notes: Native species hedge along the east boundary of the site, with significant gaps. The hedgerow does not meet the criteria to be considered important under sections 6, 7 & 8 of part two of the Hedgerow Regulations.	Minor hedgerow, could be restored through enrichment planting as part of the landscaping of the development.
SG10	Mixed Shrubs	2	50	2	2	2	2	0	M	10+	C2	1	Condition: Good Notes: Minor shrub group.	Small group of mixed shrubs planted to the adjacent entrance to the site. Will be removed to facilitate improvements to the access road. Any loss of amenity will be mitigated through new planting on the site.

Ultimate Heights of Main Species

Ash 12

Sycamore 12

Lawson Cypress 14

Notes

BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term viability for retention on a development site. There are four categories, A,B,C & U.

Category A: Trees of high quality with an estimated life expectancy of at least 40 years.

- 1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.
- 2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.
- 3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality with an estimated lifespan of at least 20 years

- 1 Trees that might be included in a higher category but are downgraded because of impaired condition.
- 2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.
- 3 Trees with clearly identifiable conservation or other cultural benefits.

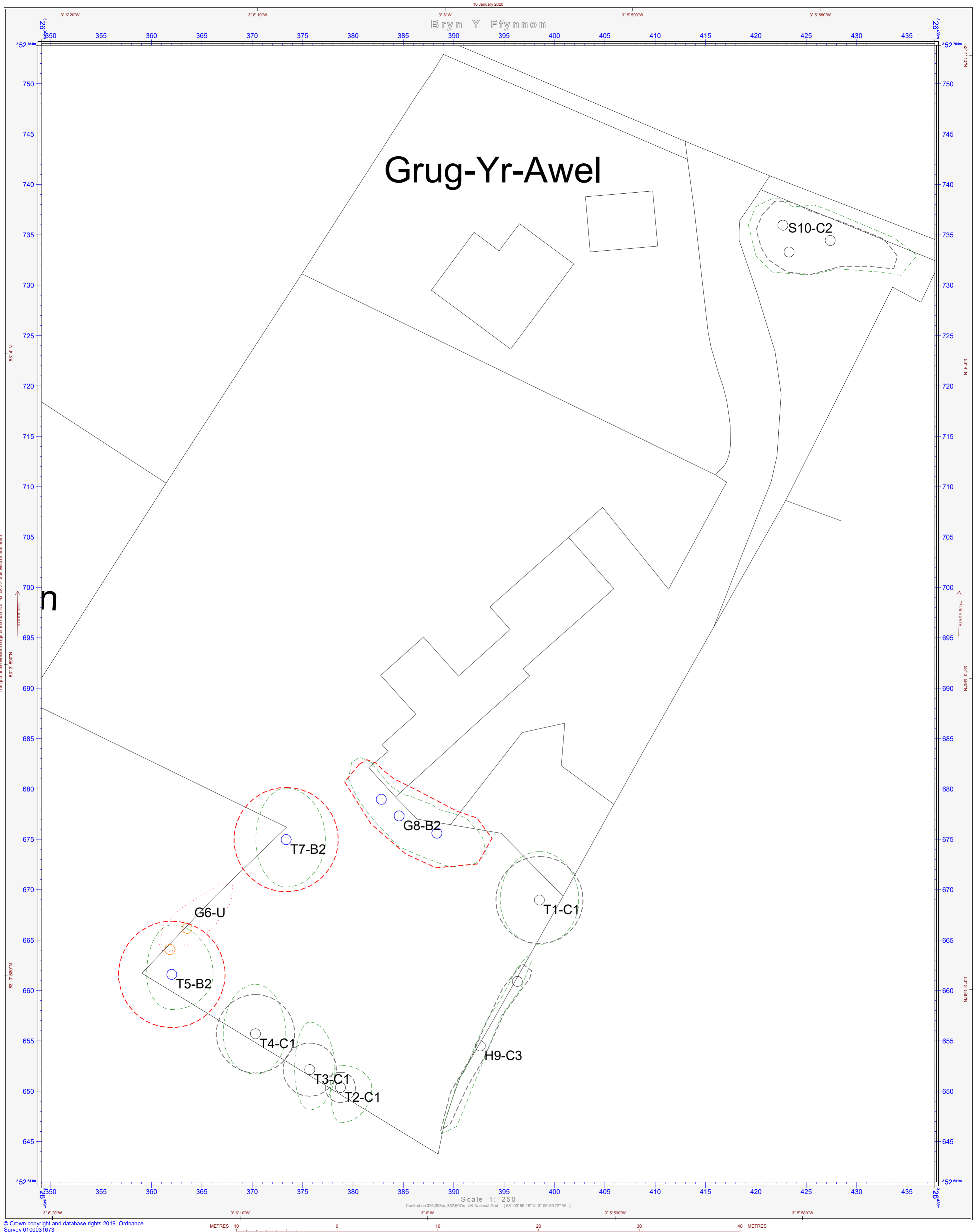
Category C: Trees of low quality with an estimated lifespan of at least 10 years or young trees with a stem diameter below 150mm.

Category U: Trees in such a condition that they cannot realistically be retained as living in the context of the current land use for longer than 10 years. *NB. Category U trees can have an existing of potential conservation value which it might be desirable to preserve.*

Bat potential has been assessed in accordance with the guidance provided in BS 8596:2015 and is at the level of a non-specialist scoping survey. This assessment is for preliminary advice and does not negate the requirement for a specialist ecological survey

Key

Tag No	Identification number for tree	Species	Species of tree
Top Height	Estimated height of tree	Stem Dia.	Diameter of stem at 1.5 metres
Stems	Number of stems	N, E, S, W	Crown spread at compass points
CC	Crown Clearance	FSB	Direction of first significant branch
Rem. Cont	Remaining safe life expectancy in years	RPA	Root protection area in m ²
Cat.	BS Category (see above)	AIA	Arboricultural Implication Assessment
Age	Y - Young Trees SM Semi Mature EM Early Mature M Mature LM Late Mature exceeds normal life expectancy for species VET Veteran Tree		
Condition	Good Relatively free from defects and / or major pests and diseases Fair Some defects, which could be addressed through tree surgery or minor pests or early symptoms of diseases Poor Substantial defects or terminal decline Dead Dead		



Shields Arboricultural Consultancy

Tree & Woodland Management Solutions

Tree Constraints Plan

Bryn Ffynnon
Old Road
Bwlchgwyn
Wrexham

KEY

-  Cat B Tree
-  Cat C Tree
-  Cat U Tree
-  Canopy
-  RPA
-  RPA Cat C

Drawing No: BFB/TCP/01/20/01

Drawn By: S. Shields

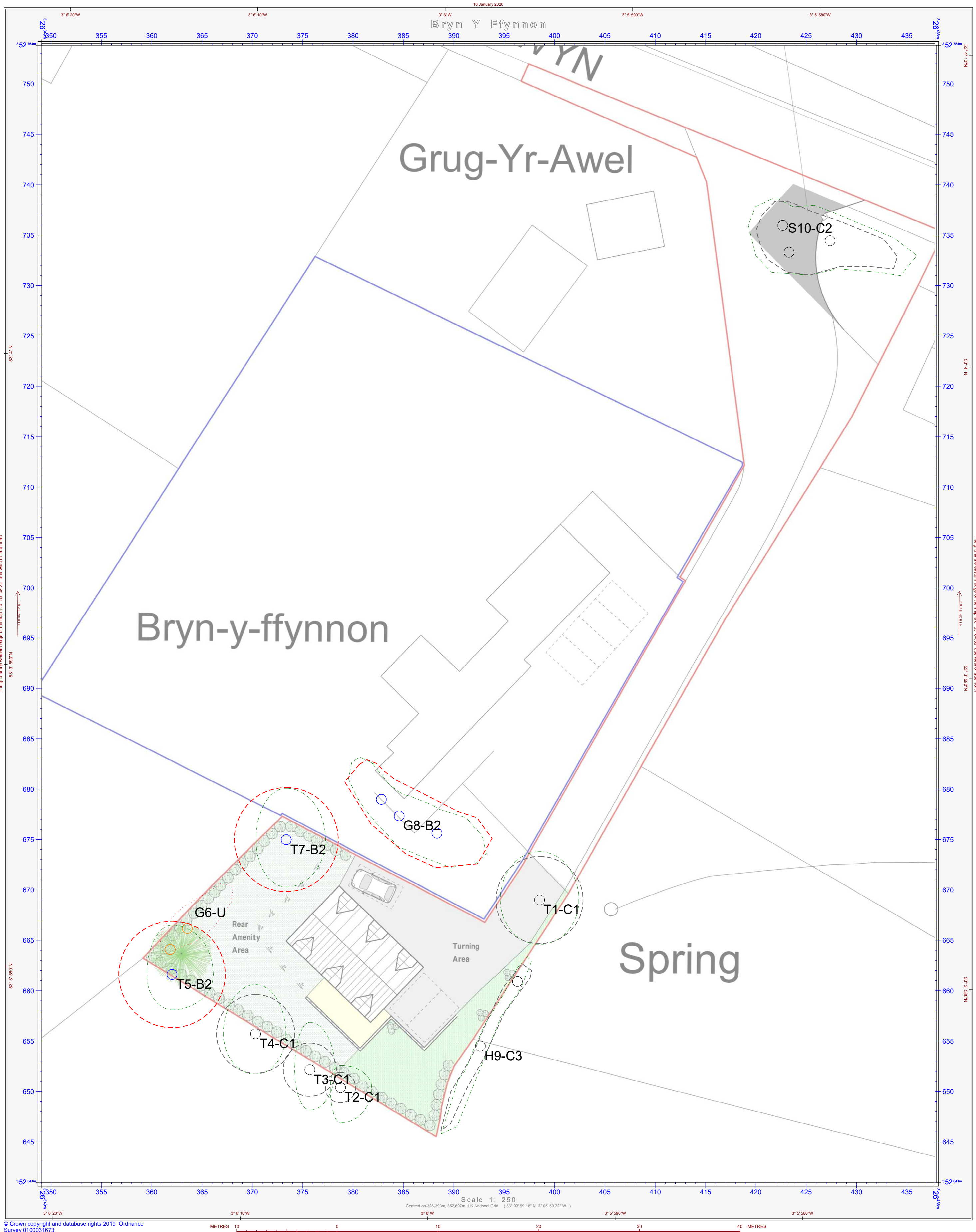
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Tree & Woodland Management Solutions

Tree Constraints Plan

Overlay
Bryn Ffynnon
Old Road
Bwlchgwyn
Wrexham

KEY

- Cat B Tree
- Cat C Tree
- Cat U Tree
- Canopy
- RPA
- RPA Cat C

Drawing No: BFB/TCP/OL/01/20/01

Drawn By: S. Shields

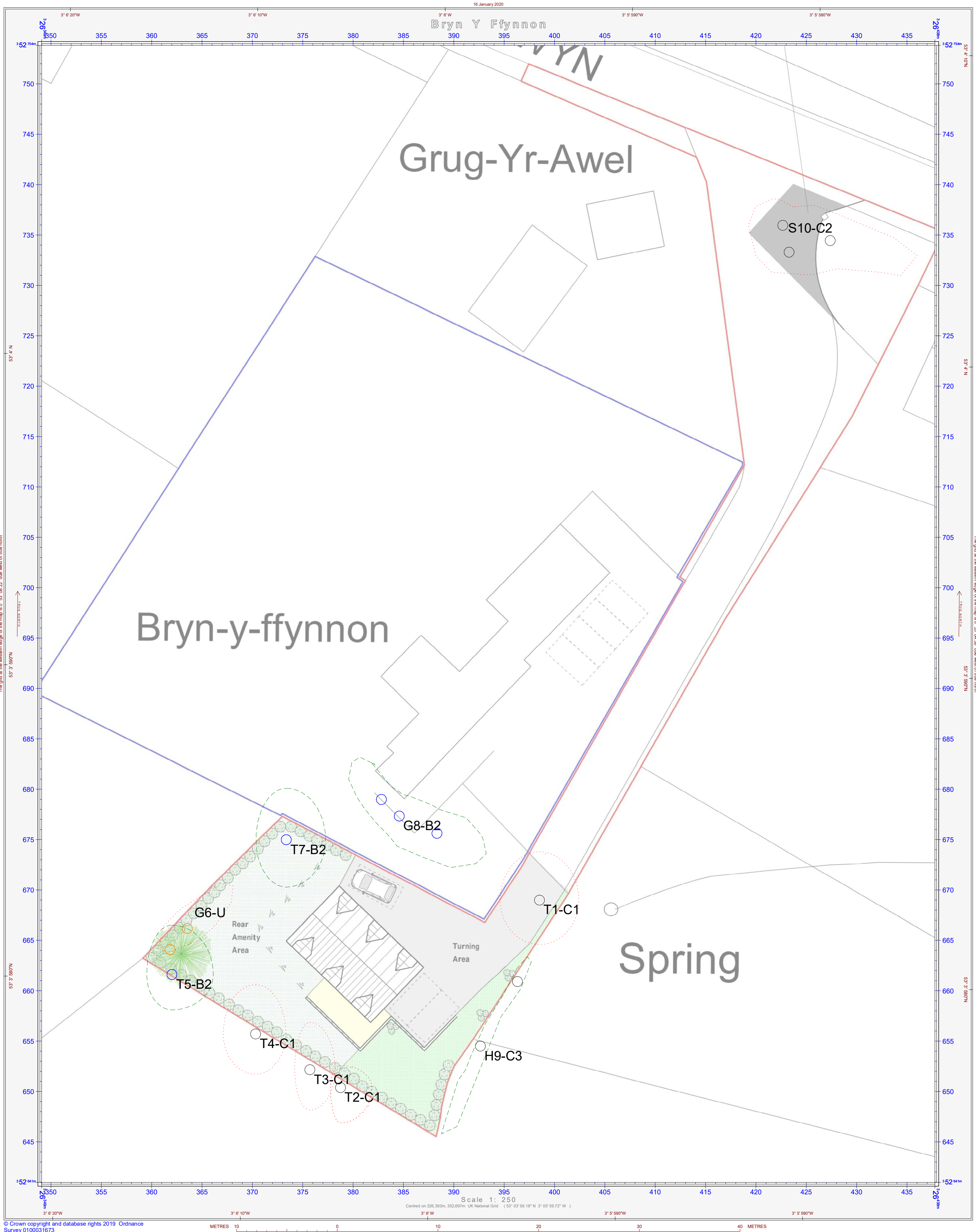
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Tree & Woodland Management Solutions

Tree Removal Plan
Overlay
Bryn Ffynnon
Old Road
Bwlchgwyn
Wrexham

- KEY
- Cat B Tree
 - Cat C Tree
 - Cat U Tree
 - Canopy
 - Trees for Removal
 - RPA

Drawing No: BFB/TRP/OL/01/20/01

Drawn By: S. Shields

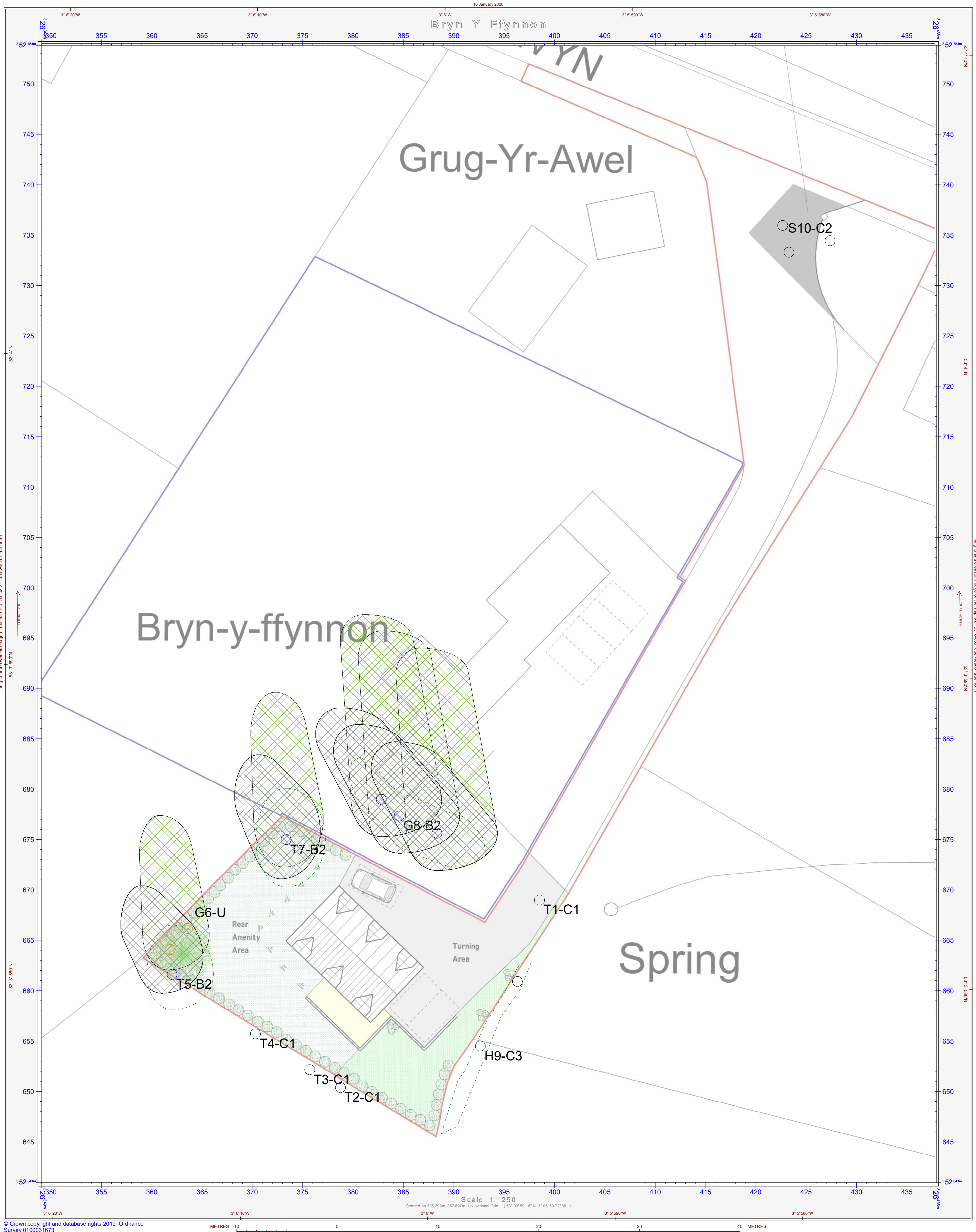
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Tree & Woodland Management Solutions

Tree Shade Plan
Overlay
Bryn Ffynnon
Old Road
Bwlchgwyn
Wrexham

KEY

- Cat B Tree
- Cat C Tree
- Cat U Tree
- Canopy
- Tree Shadow 12 pm March 21st
- Tree Shadow 12pm June 21st

Drawing No: BFB/TSP/OL/01/20/01

Drawn By: S. Shields

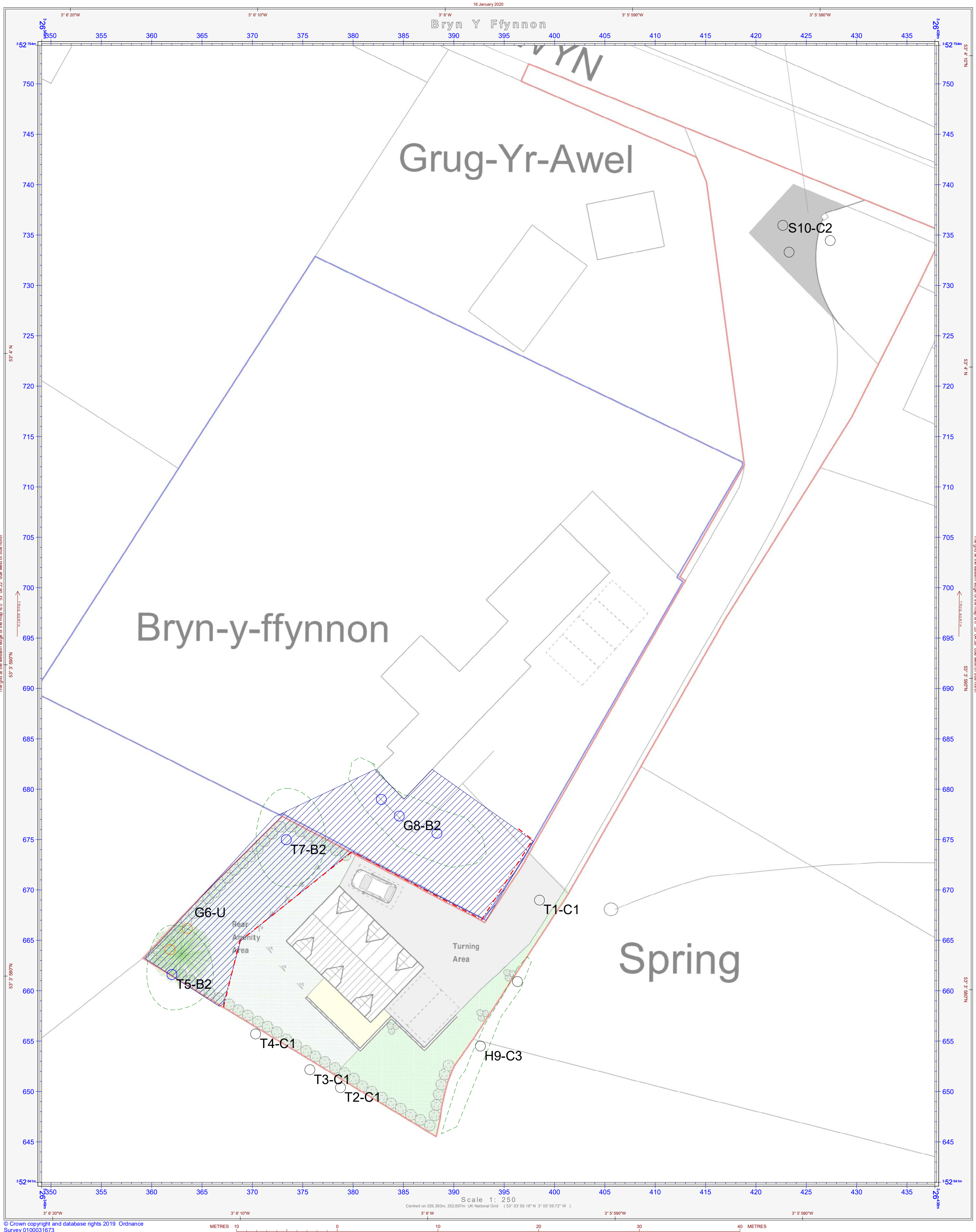
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Tree & Woodland Management Solutions

Tree Protection Plan

Overlay
Bryn Ffynnon
Old Road
Bwlchgwyn
Wrexham

KEY

- Cat B Tree
- Cat C Tree
- Cat U Tree
- Canopy
- CEZ
- Fencing

Drawing No: BFB/TSP/OL/01/20/01

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