

Arboricultural Impact Assessment

Land at
Bunker Hill Cottages
Berse Road
Bersham
Wrexham

Ref:
AIA/BHC/01/21

Date:
28th January 2021

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

Prepared by
S. Shields

Arboricultural Impact Assessment

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Bunker Hill Cottages
Berse Road
Bersham
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 the site to rebuild the existing listed building to provide a residential dwelling along with access, parking and amenity space. There are a number of trees on the site and these have been surveyed, assessed and categorised in terms of their current and future amenity value for the site, in accordance with BS5837: 2012 guidelines.

The survey identified one individual trees, three groups of trees and one hedgerow which have been categorised as follows. 2 Cat. B (moderate value), 2 Cat. C (low value) and 1 Cat. U (unsuitable for retention).

To facilitate the development of the site would require the removal of one group of trees, category U and a small section of one group of trees, category C. The trees identified for removal are not particularly significant in terms of their landscape, conservation or historic value and the impact of their loss to public amenity would be low. There is potential to undertake new planting on the site.

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Date	Revision	
28 th January 2021		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 rebuild the existing listed building to provide a residential dwelling along with access, parking and amenity space and a site plan EL073/003 has been provided and is considered in this assessment.

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 27th January 2021 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.

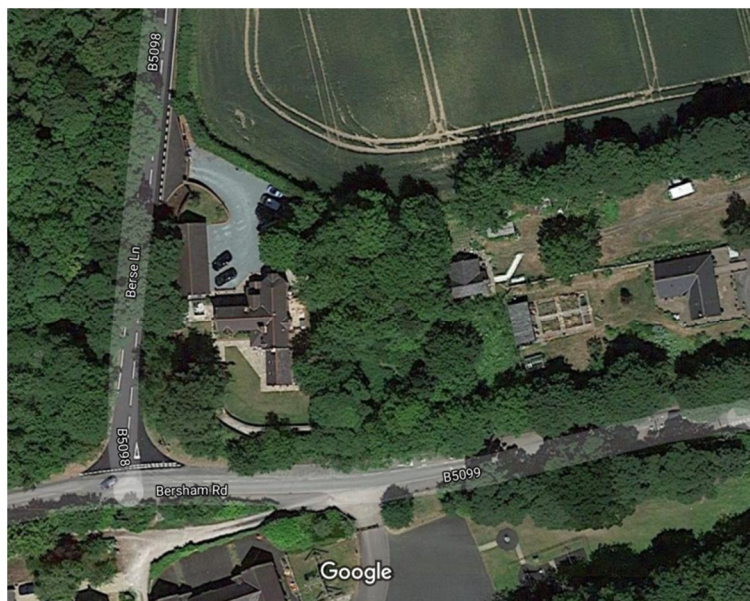
Statutory Controls & Obligations

- 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 Bunker Hill Cottages, which is an existing historic building to the north of Bersham Road, that has fallen into disrepair. The site is accessed via private drive from Berse Road to the west. The site has boundaries with an agricultural field to the north, neighbouring residential properties to the east and west and Bersham Road to the south.
- 4.2 The site is currently overgrown with ruderal trees and vegetation that have become established through lack of maintenance. In addition, there is a group of trees along the south boundary that provide a screen from the road. The site is at an elevation of 105m AOD and is reasonably sheltered.



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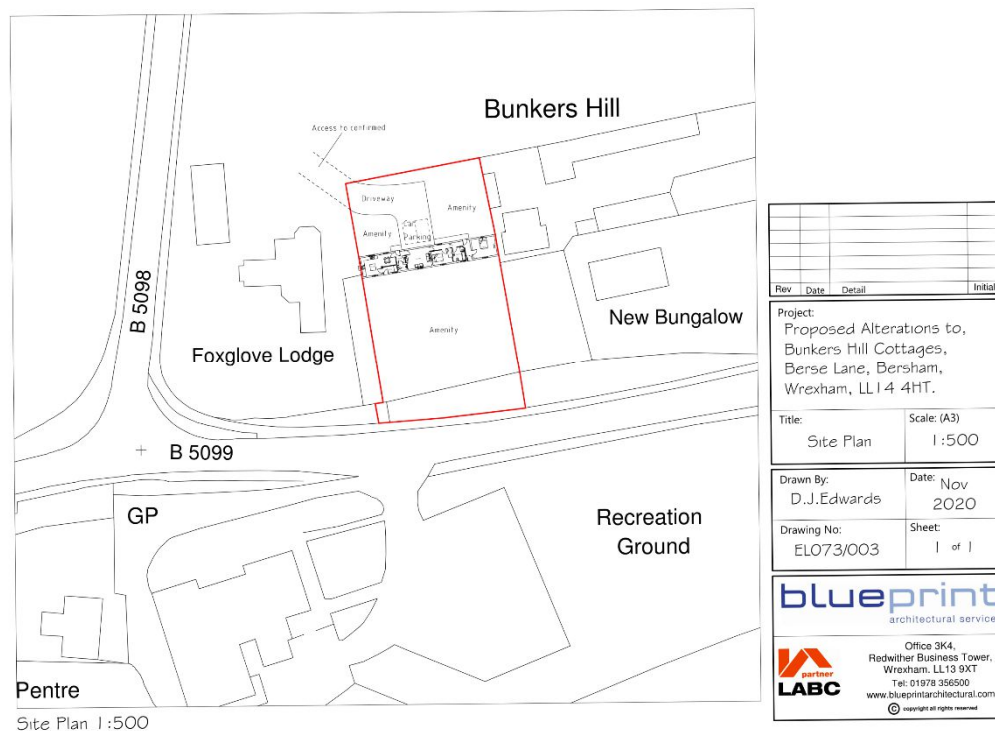
Soils

- 4.3 The site is free draining with no evidence of waterlogging. Geological maps indicate a glacial till drift over an underlying mudstone lithology. There are a number of structures at the site that could influence root development.

*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 rebuild the existing listed building to provide a residential dwelling along with access, parking and amenity space.



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 one individual tree, three groups of trees, and one hedgerow, 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)	2
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.	2
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 There are numerous trees on the site, most of low amenity value and in poor condition or causing damage to existing structures. These do make a minor contribution to the wider landscape, which is semi-rural and defined by groups of trees and areas of small woodlands.
- 7.5 The most prominent trees are the group on the south boundary between the site and the road, which link with other trees along this road frontage. There are no veteran trees or areas of ancient woodland on or adjacent to the site.

Design Considerations

- 7.6 The design should seek to retain the category B group of tree and the south boundary and also T1 and make provision for new planting within the layout.
- 7.7 In addition to the ensuring that the trees are not damaged by the construction process, consideration should also be given to the future implications associated with the retention 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. In this case the retained trees are a considerable distance for the proposed house and the slope of the ground further reduces their influence on the site and it is not considered that they will have any significant impact, however the layout should take account of 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.
- 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 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.
- 7.10 All services both under and over ground must be located outside the CEZ around retained trees. All services must be installed in compliance with NJUG chapter 4 recommendations.

Arboricultural Impact

Impact	Category A	Category B	Category C	Category U
Tree Removal			G3 (small section)	G2
Facilitative Pruning Required				
RPA Encroachment				
Potential Shading				
Proximity Issues				

- 7.11 To facilitate the development of the site would require the removal of one group of trees, category U and a small section of one group of tree, category C. The site layout allows for the retention of the trees on the south boundary. The trees identified for removal are not

particularly significant in terms of their landscape, conservation or historic value and the impact of their loss to public amenity would be low. The majority of these trees are causing damage to the existing structures, including the foundations of the cottages, which are listed. There is potential to undertake new planting on the site, and this could include enrichment planting and management of the groups to the south and west boundaries, along with the planting of specimen trees within the amenity space and hedgerow and tree planting along the north boundary.

Landscaping of the Development

- 7.12 The development provides opportunity to enhance the existing tree stock in the area through additional new planting and any planning approval could be conditional to a Tree Planting Scheme, prepared in accordance with BS8545: 2014 being submitted to the Local Authority.

Arboricultural Operations

Consent 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. Additional consent may be required to remove trees not directly required to implement the approved planning permission.

- 8.1 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: BHC/TPP/OL/01/21. 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.

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- 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.

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

28th January 2021

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)	15	480	3.9	4.7	4.9	4.7	6	M	10+	C1	104	Condition: Fair Notes: RPA restricted by retaining wall and change in ground levels to the south west. Minor decay point in main stem. Potential to contract ash die-back may limit life expectancy to this tree.	Minor feature in the wider landscape but provides amenity to the site. Can be retained and protected to the required standard through the proposed development.
G2	Fraxinus excelsior (Ash), Acer pseudoplatanus (Sycamore), Salix caprea (Goat Willow), Crataegus monogyna (Hawthorn)	17	100 – 550 (avg. 300)	4	4	4	4	4	EM – OM	<10	U	55	Condition: Fair - Poor Notes: Group of ruderal trees, predominantly ash, that have become established on the land through lack of maintenance. Many are multi-stem specimens.	Minor feature of the landscape, with limited public amenity value. Will require removing to facilitate the development. Landscaping of the site will mitigate any loss of amenity.

													A number are growing through or close to the foundations of the existing structures and retaining walls and causing damage. Potential to contract ash die-back may limit life expectancy ash trees in this group.	
T3	Fraxinus excelsior (Ash), Acer pseudoplatanus (Sycamore), Malus (Apple)	13	100 – 450 (avg. 300)	2	2	2	2	1	M	10+	C2	41	Condition: Fair Notes: Row of tree on the west boundary of the amenity area to the south of the proposed building. Potential to contract ash die-back may limit life expectancy ash trees in this group.	Minor feature in the wider landscape but provides a level of screening between the site and the adjacent house. Unlikely to provide a satisfactory boundary treatment for the site and may require management or removal and replacement in the longer term. But can be retained and

														protected to the required standard through the proposed development.
T4	Fraxinus excelsior (Ash) Acer pseudoplatanus (Sycamore),	14	100 – 300 (avg. 200)	2	2	2	2	0	EM - M	20+	B2	41	Condition: Fair Notes: Group of trees, predominantly ash, on area of sloping ground to the south boundary of the site. Potential to contract ash die-back may limit life expectancy ash trees in this group and this should be taken into consideration for future management of this group.	Reasonable significant in the landscape and provides a screen between the site and the highway to the south. This group is over 20m from the development area and will not be impacted by the construction and will not significantly impact on the property in the long-term and can be retained and protected to the required standard through the proposed development.
H5	Fagus sylvatic (Common Beech)	3	100							EM	B2	N/A	Condition: Good Notes: Garden hedgerow.	Minor feature in the wider landscape but provides a level of screening

														between the site and the adjacent agricultural field and defines the boundary of the existing residential curtilage. Can be retained and protected to the required standard through the proposed development.
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Ultimate Heights of Main Species

Ash 17

Sycamore 19

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.

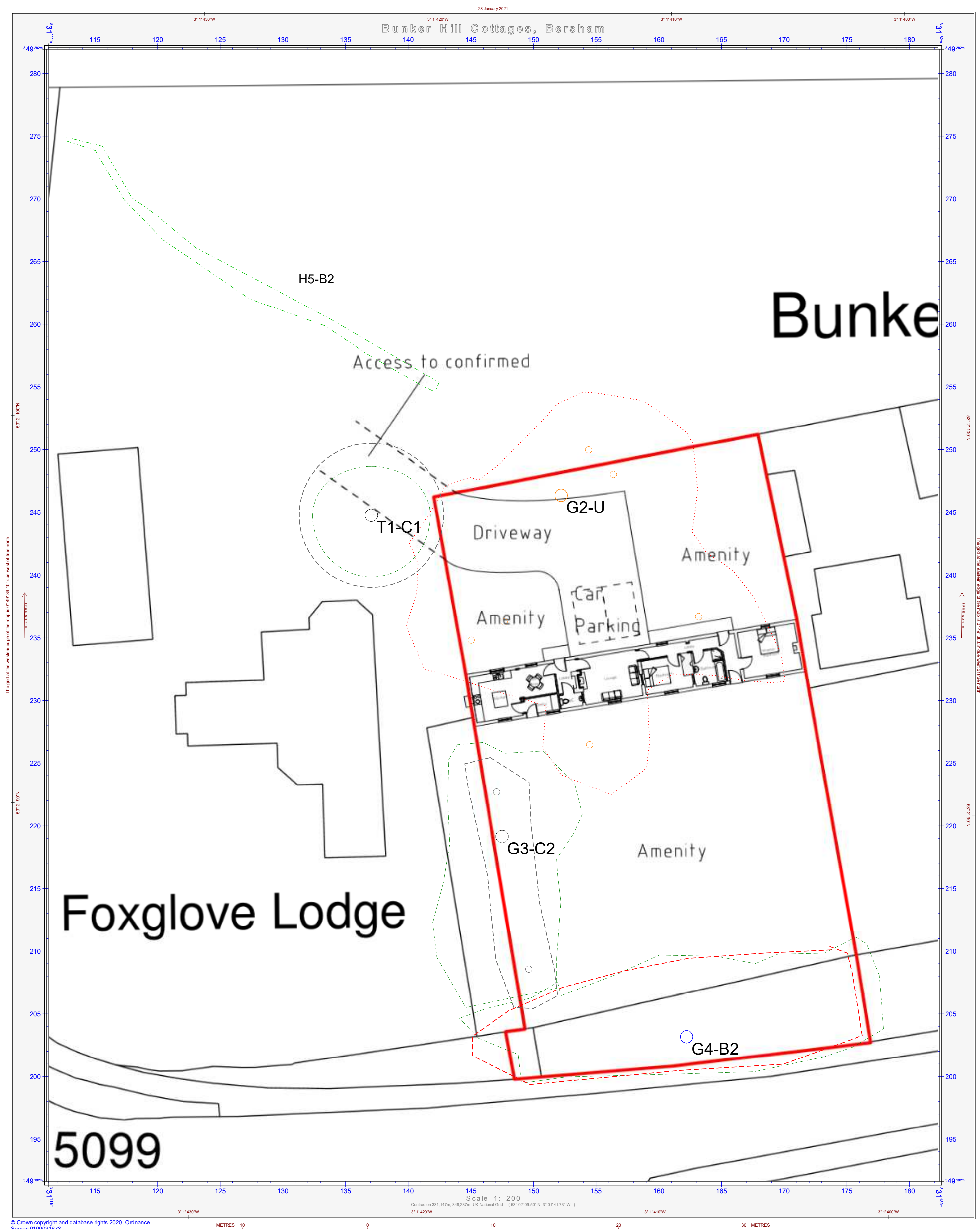
Category C: Trees of low quality with an estimated lifespan of at least 10 years or young trees with a stem diameter below 150mm.

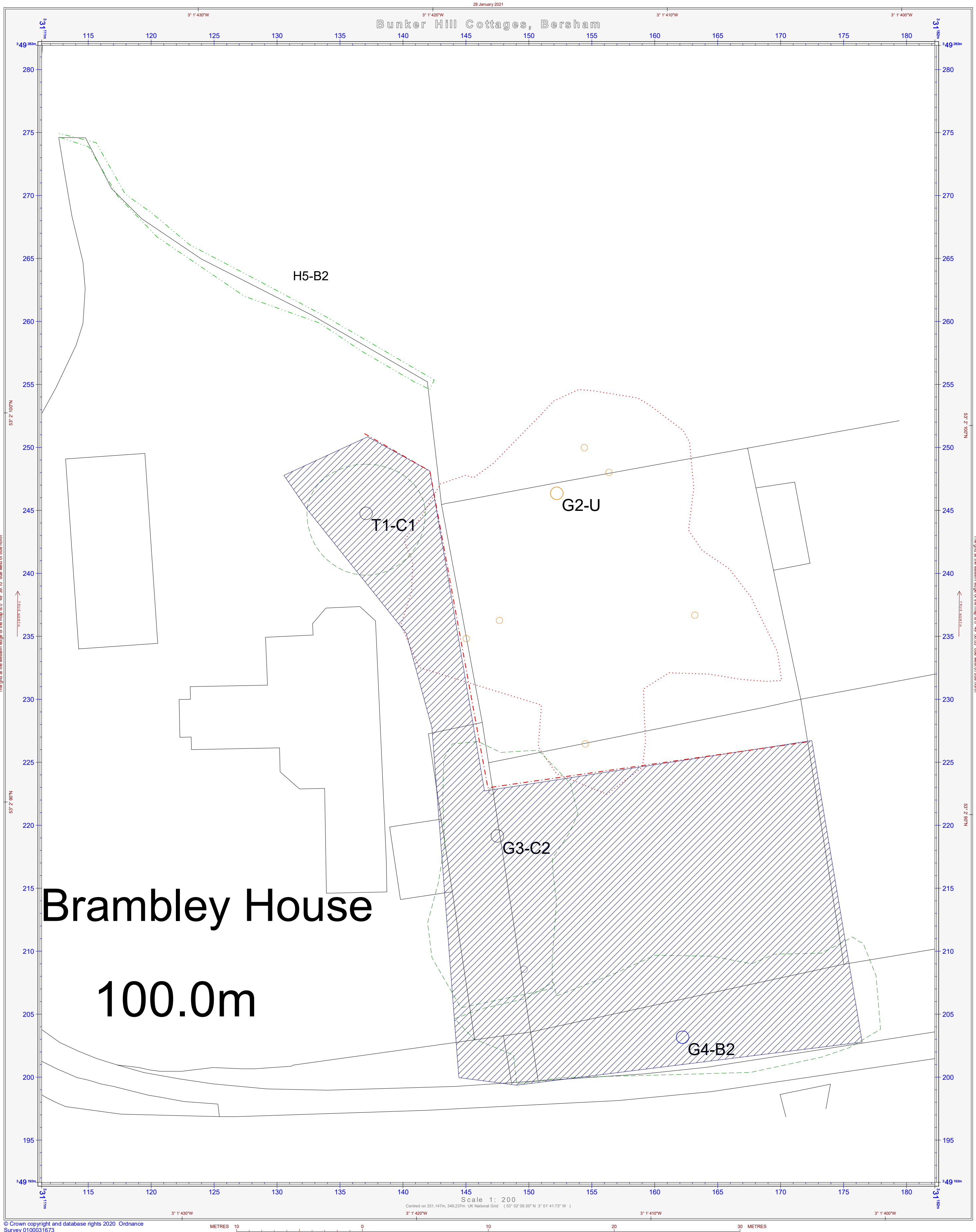
Category U: Trees in such a condition that they cannot realistically be retained as living in the context of the current land use for longer than 10 years. *NB. Category U trees can have an existing of potential conservation value which it might be desirable to preserve.*

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 Protection Plan

Bunker Hill Cottages

Berse Road

Bersham

- KEY
- Cat B Tree
 - Cat C Tree
 - Cat U Tree
 - Canopy
 - Trees for Removal
 - CEZ
 - Fencing

Drawing No: BHC/TPP/OL/01/21/01

Drawn By: S. Shields

Scale: 1:200 @ A2

Date: 28th January 2021

Revision:

Do not scale from this drawing all dimensions to be checked on site

Drawing is colour coded and a monochrome copy should not be relied upon

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