



Alveston Hill

Arboricultural Impact Assessment

South Gloucestershire Council

October 2023



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Document history

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Contents

Chapter	Page
1. Introduction	4
1.1. Terms of reference	4
1.2. Site location	4
1.3. Proposed scheme	4
1.4. Scope of works	4
2. Methodology	5
2.1. General	5
2.2. Spatial scope	5
2.3. Data gathering	5
2.4. Survey	5
2.5. Limitations to survey	6
3. Existing site conditions	7
3.1. Existing land use	7
3.2. Existing trees	7
3.3. Site topography	7
3.4. Soil assessment	7
3.5. Statutory protection	8
4. Arboricultural impacts	9
4.1. General	9
4.2. Root protection areas	9
4.3. Scheme details	9
4.4. Arboricultural impacts and mitigation	9
4.5. Preliminary management recommendations	15
4.6. Mitigation measures	15
Appendix A. Key & British Standard 5837:2012 Survey Table	17
A.1. Survey key	17
A.2. Measuring table	19
A.3. BS 5837:2012 cascade chart	20
Appendix B. Tree survey schedule	21
Appendix C. Glossary of terms	30
Appendix D. Statutory protection	33
Appendix E. Tree protection plan drawings	35
Tables	
Table C-1 Glossary Table	30

1. Introduction

1.1. Terms of reference

Atkins Limited (Atkins) has been commissioned by South Gloucestershire Council to undertake a tree survey in accordance with the British Standard BS 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*' in support of a planning application relating to a proposed walking and cycling path between the settlements of Thornbury and Alveston, Gloucestershire.

This report is an Arboricultural Impact Assessment (AIA), focusing on the trees within and adjacent to the extents of the site. It reports on the impacts on the recorded trees from the proposals and is supplemented by the production of Tree Protection Plans (TPPs), which are included within Appendix E of this report.

1.2. Site location

The proposed walking and cycling path runs south from Thornbury Leisure Centre to join the B4061 at Alveston Hill.

The Ordnance Survey national grid reference for a point close to the entrance of the leisure centre is ST 63566 89259.

1.3. Proposed scheme

The scheme proposes the creation of a segregated walking and cycling path to run from the vehicular entrance of Thornbury Leisure Centre southwards to join the B4061 at Alveston Hill.

The layout of the proposals have been overlaid on to the TPPs to determine the impacts of the works on the existing tree stock.

1.4. Scope of works

This report presents arboricultural information captured on 30 March 2023 by Atkins' Principal Arboricultural and Landscape Consultant Adam Atkins, BA (Hons), CMLI, TechCert (ArborA).

The scope of works includes: the survey of trees that could be impacted by the scheme; the preparation of an AIA; and the preparation of TPP drawings which display in graphic form the trees surveyed and the impact of the works.

2. Methodology

2.1. General

This tree survey has been undertaken in accordance with BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*. The Standard gives recommendations and guidance on the relationship between trees and the design, demolition and construction process, setting out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.

BS5837:2012 does not set explicit parameters for measuring the sensitivity of an arboricultural resource; nor does it assess the magnitude of impact of a proposed development on trees (other than by providing a record of the number of trees that would need to be removed to facilitate the development). Rather, the British Standard provides parameters which enable the arboriculturist to assess the quality of all the trees and other arboricultural features that may be affected by the development that is proposed.

Whilst the BS categories are open to varied interpretation, the guidelines in the cascade chart of BS5837:2012 (see insert A. 1 in Appendix A of this report) provide details on how to determine tree qualities and can be used to inform the design process to retain those trees of higher quality where possible.

2.2. Spatial scope

The survey works focused on all trees with the potential to be impacted upon by the proposed works.

2.3. Data gathering

Data were collected in accordance with BS 5837:2012, as outlined in Appendix A of this report. The purpose of the tree categorisation method applied by the arboriculturist was to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained if development is to occur.

For a tree to qualify under any given category, it should fall within the scope of that category's definition as defined in Figure A3 in Appendix A (categories U, A, B, C) and, for trees in categories A to C, it should qualify under one or more of the three sub-categories (1, 2, 3). Sub-categories 1, 2 and 3 are intended to reflect arboricultural, landscape and cultural values, respectively.

The method of measuring diameters is described in Figure A2 in Appendix A. Crown spreads of the surveyed trees were given as an average measurement or to the relevant cardinal points with regards to the proposals. The average measurement was taken from the cardinal point relevant to the direction of the proposed scheme. This level of survey is deemed sufficient by the arboriculturist in order to establish the extent of the crown spread in the direction of the proposals. All crown spread measurements should be taken from the tree survey schedules (Appendix B of this report).

The trees were assessed in line with the Visual Tree Assessment (VTA) method as developed by Mattheck and Breloer (1994). This method is based on the axiom of uniform stress, whereby a tree will grow in response to environmental stimuli to produce a structure that bears forces evenly across its surface. As such an internal defect, such as decay, would initiate a noticeable change in the stem's shape to accommodate the physical change.

2.4. Survey

The approach to the survey involved a ground-level walked assessment.

The location of the trees was plotted using proprietary GIS data capture software on a Trimble hand-held mobile mapper and verified using available aerial imagery.

The trees were numbered sequentially from 001. Individual trees were prefixed with a 'T' (e.g. T001), groups of trees with a 'G' (e.g. G002) and hedges with an 'H' (e.g. H003).

2.5. Limitations to survey

Where access permitted, trees were identified and inspected from ground level only and were not climbed. No invasive examination techniques (such as increment boring, or internal decay detection) were carried out and as such no assessment of the internal condition of the wood of these trees can be given.

Where the main trunks of trees have limited access due to dense vegetation, epicormic growth or are covered with ivy (*Hedera helix*), the inspection of such trees was limited. The category grading for such trees should be considered as provisional. Further inspection may be necessary following the removal of the obstruction.

The tree survey undertaken is not intended to be a tree risk management survey targeting safety-related issues. However, where specific hazards have been identified these have been recorded and management recommendations provided and are detailed within the tree survey schedules (see Appendix B of this report).

The BS5837:2012 does not include arguments for or against development, or for the removal or retention of trees. Where development is to occur, the standard provides guidance on how to decide which trees are appropriate for retention.

Only limited topographic survey information was available at the time of the survey, and so in the majority of cases the accuracy of the tree locations will relate directly to the accuracy of the available aerial imagery and the GIS data capture software being used. As such, *the accuracy of the tree locations is potentially open to discrepancies, and their locations may need verifying.*

The report does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, or with regard to possible hazards presented by trees surveyed.

Trees are living organisms subject to changes outside human control. Trees and their environment alter with the seasons and it is as well to inspect trees whilst in full leaf and when out of leaf. Following harsh or unexpected weather conditions, or heavy storms it is also prudent to inspect trees. Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of human influence and other factors may be involved.

3. Existing site conditions

3.1. Existing land use

The proposed walking and cycling path passes through the grounds of the Thornbury Leisure Centre to the north, west and south sides of the main building. The leisure centre site is busy with both vehicular and pedestrian activity. The route then continues south through two fields containing livestock at the time of the survey before joining the B4061 at Alveston Hill. Where it passes through the two fields, the road runs closely adjacent to an existing public footpath route.

3.2. Existing trees

A variety of trees were recorded in the survey. Ash, field maple and hazel were prominent species. Most of the trees, including the planted amenity trees around the leisure centre, were at the mature or early-mature life stage; almost all were in good or fair condition.

One tree was categorised under BS criteria as being a 'Category A' tree – a tree “of high quality with an estimated remaining life expectancy of at least 40 years”. This was a good specimen of field maple T013 beside the farm track that runs to the west of the leisure centre.

The major concentration of older trees of good quality was found along the side of the B4061 near the south end of the scheme, running north from a point where the road bends opposite the entrance to Marlwood Grange. Growing close to a small watercourse, they include some imposing large pollards of ash and sycamore. These trees were mostly recorded in groups G003 and G005, and mostly as 'Category B' trees, being “of moderate quality with an estimated remaining life expectancy of at least 20 years”.

The broadleaf plantation G008 to the south of the leisure centre was also recorded as a Category B group. Including ash, sycamore, birch and grey poplar, this group was displaying fair vitality despite limited recent management evidenced by ivy-clad stems and occasional snapped stems.

Other Category B features include the planted amenity trees around the frontage of the leisure centre, such as the mixed broadleaf group G020, and the mature hedge H007, consisting principally of multi-stemmed hazel with hawthorn, blackthorn and occasional ash, which divides the two fields at the centre of the site.

Trees categorised as '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 150mm” – include the roadside vegetation on Alveston Hill, a mix of elm, hazel and hawthorn; and also a handful of ash trees, including larger specimens such as T018, which were displaying symptoms indicative of the early onset of ash dieback disease.

Finally, two standing dead trees (the elm G001-A and willow G020-A) were recorded as '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” – and recommended for removal.

3.3. Site topography

Ground levels along the length of the scheme rise steadily from north to south, becoming steeper in the southern of the two fields crossed by the route. Topographic survey data show the following levels: 52.03 metres above sea level (masl) at the vehicular entrance to the leisure centre, at the north end of the route; 53.29 masl in the area of hardstanding to the south of the leisure centre; 59.57 masl where the route punches through hedge H007; and 80.8 masl where the route joins the B4061 Alveston Hill.

3.4. Soil assessment

No soil assessment was carried out on site by the Arboriculturist, although baseline data on the British Geological Survey website (<http://www.bgs.ac.uk>) indicate that the site has a varied sedimentary bedrock geology consisting primarily of “Tintern Sandstone Formation - Sandstone” in the northern part of the site, and “Mercia Mudstone Group – Mudstone” to the south.

Where clay-based soils are present, the ground may be susceptible to volumetric changes resulting from the uptake and release of moisture by tree roots, which may influence any potential foundation development.

3.5. Statutory protection

Trees may be protected through a Tree Preservation Order (TPO). The law on TPOs is in Part VIII of the Town and Country Planning Act 1990 as amended and in the Town and Country Planning (Tree Preservation) (England) Regulations 2012.

A TPO is made by a local planning authority in respect of a tree(s) as the tree is considered to bring amenity value to the surrounding area. A TPO makes it an offence to cut down, uproot, lop, top, wilfully damage or wilfully destroy a protected tree without authorisation.

The Arboricultural Officer at South Gloucestershire District Council has confirmed in an e-mail dated 26 September 2023 that that *no trees at the Alveston Hill site are subject of a TPO* (see Appendix D).

Trees in a conservation area that are not protected by a TPO are protected under the provisions in section 211 of the Town and Country Planning Act 1990. There is a requirement to notify the local planning authority six weeks before carrying out certain work on such trees, unless an exception applies.

Interactive mapping on the South Gloucestershire District Council website (accessed 26 September 2023) indicates that *the site is not located within a conservation area* (see Figure D2)

While it is outside of the scope of this tree survey to comment on the confirmed or likely presence of protected animal species, it is against the law to disturb bats or their roosts under the Conservation of Habitat and Species Regulations (2010). Likewise, nesting birds are protected by the Wildlife and Countryside Act (1981) (as amended). If protected species are discovered, then works should cease immediately and Natural England should be contacted for advice.

4. Arboricultural impacts

4.1. General

This report takes into account the trees adjacent to the proposed works and assesses their condition and suitability for retention. The report is supplemented by the TPP (Appendix E of this report), which presents in graphic form the trees recorded as part of the survey, their specific reference numbers and the impacts of the works.

The TPPs are drawing numbers 5220316-ATK-ARB-TPP-1/2/3.

The tree survey schedules within Appendix B of this report cover all the trees recorded as part of this assessment in line with the *BS 5837:2012* guidance.

4.2. Root protection areas

The Root Protection Area (RPA), as defined in the *BS 5837:2012*, is the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority. This area should be protected from disturbance “in order to avoid unacceptable damage to the tree as a result of severance or asphyxiation of the root system”.

The recommended minimum area (m²) to avoid potentially harmful disturbance has been calculated and entered into the tree schedules (see Appendix B of this report) for all trees. The RPA for each individual tree has been illustrated on the TPP as a circle centred on the tree’s stem, while the RPAs of the tree groups and hedgerows have been illustrated as an offset from the outer edge of the canopy line.

This representation of the RPA does not take into account pre-existing site conditions or other factors that can influence or modify the shape and disposition of tree roots. Accordingly, the Arboriculturist may make modifications or judgements on the likely extents of RPAs, where through professional judgement it is deemed likely that the root zones have been restricted in a certain direction because of limiting factors such as topography, drainage or the presence of existing built infrastructure. No such modifications have taken place for this report.

4.3. Scheme details

The proposed works are illustrated on the TPPs and are as described at section 1.3. The tree removals are marked on the TPPs.

4.4. Arboricultural impacts and mitigation

The table below outlines the impacts of the proposals on the tree stock on site and likely mitigation measures required to facilitate the works. Table 4.1 below summarises the impacts on the trees.

Table 4.1 – Arboricultural impact table

Group / Tree No.	Species	Cat.	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation
			Cons.	Cond.	Canopy	RPA	
G001	Roadside group – lapse hedgerow	C2	X	n/a	X	X	Walking and cycling route passes through linear group at road side; HERAS-type protective fencing to be erected prior to start of all works to protect crowns and RPAs of trees to be retained; <u>19m of group to be removed.</u>

Group / Tree No.	Species	Cat.	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation
			Cons.	Cond.	Canopy	RPA	
G001-A	Elm	U	n/a	(X)	n/a	n/a	Tree not affected by proposed works (removal advised due to tree being dead).
T002	Ash	B2	n/a	n/a	X	X	Tree adjacent to proposed works, but not directly affected; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
G003	Mixed broadleaf group	B2	n/a	n/a	X	X	Group adjacent to proposed works, but not directly affected; HERAS-type protective fencing to be erected prior to start of all works to protect crowns and RPAs of trees.
G003-A	Ash	B2	n/a	n/a	X	X	RPA of tree closely adjacent to proposed works; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
G003-B	Ash	B2	n/a	n/a	X	X	As G003-A
G003-C	Sycamore	B3	n/a	n/a	X	X	As G003-A
G003-D	Sycamore	B3	n/a	n/a	X	X	As G003-A
T004	Field Maple	C3	n/a	n/a	X	X	As T002
G005-A	Ash	B2	n/a	n/a	X	X	Tree adjacent to proposed works; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
G005-B	Ash	B2	n/a	n/a	X	X	As G005-A
G006	Garden boundary trees	B2	n/a	n/a	X	X	Group adjacent to proposed works, but not directly affected; HERAS-type protective fencing to be erected prior to start of all works to protect crowns and RPAs of trees.
G006-A	Ash	B2	n/a	n/a	X	X	Tree within G006 – see above.
H007	A Hedgerow	B2	X	n/a	X	X	Walking and cycling route passes through hedge line; HERAS-type protective fencing to be erected prior to start of all works to protect sections of hedge to be retained; <u>14m of hedge to be removed.</u>

Group / Tree No.	Species	Cat.	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation
			Cons.	Cond.	Canopy	RPA	
H007-A	Ash	B2	n/a	n/a	n/a	n/a	Tree not impacted by proposed works.
G008	Broadleaf plantation	B2	n/a	n/a	X	X	Walking and cycling route passes through north-east edge of group. No trees identified for removal, no-dig construction approach to be adhered to in order to facilitate their retention. HERAS-type protective fencing to be erected prior to start of all works to protect crowns and RPAs of trees to be retained; Possible requirement for facilitation pruning to enable works access, the extents of any works would need to be agreed prior to construction.
G008-A	Field Maple	B2	n/a	n/a	X	X	Tree adjacent to proposed works, but not directly affected; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
G008-B	Ash	B2	n/a	n/a	X	X	As G008-A.
G009	A Group	C2	X	n/a	X	X	Walking and cycling route passes through east edge of group; HERAS-type protective fencing to be erected prior to start of all works to protect crowns and RPAs of trees to be retained; Possible requirement for facilitation pruning to enable works access; <u>327m² of tree group to be removed.</u>

Group / Tree No.	Species	Cat.	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation
			Cons.	Cond.	Canopy	RPA	
T010	Field Maple	C2	n/a	n/a	X	X	<p>Trees T010 to T013: design to be adjusted to locate walking and cycling path at greater distance (min. 1m, and 1.5m for T013) from stems of these trees. In all cases the mitigation guidelines set out here apply.</p> <p>Tree closely adjacent to proposed walking and cycling path – path encroaches into eastern edge of RPA;</p> <p>No excavation permitted within RPA of tree – no-dig construction method to be utilised within area indicated on TPP;</p> <p>HERAS-type protective fencing to be erected prior to start of all works to protect stem and RPA of tree;</p> <p>Possible requirement for facilitation pruning to enable works access.</p>
T011	Ash	C2	n/a	n/a	X	X	<p>Path edge less than 1m from trunk;</p> <p>Design adjustment / mitigation measures as per T010;</p>
T012	Ash	B2	n/a	n/a	X	X	<p>Path edge less than 1m from trunk;</p> <p>Design adjustment / mitigation measures as per T010;</p>
T013	Field Maple	A2	n/a	n/a	X	X	<p>Path edge less than 1m from trunk;</p> <p>Design adjustment / mitigation measures as per T010;</p>
G014	A Group	C2	n/a	n/a	X	X	<p>Group adjacent to proposed works, but not directly affected;</p> <p>HERAS-type protective fencing to be erected prior to start of all works to protect crowns and RPAs of trees.</p>
G014-A	Hazel	B2	n/a	n/a	n/a	n/a	<p>Tree not affected by proposed works.</p>
G014-B	Hazel	B2	n/a	n/a	X	X	<p>Tree closely adjacent to proposed works;</p> <p>HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.</p>

Group / Tree No.	Species	Cat.	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation
			Cons.	Cond.	Canopy	RPA	
G014-C	Hazel	B2	n/a	n/a	X	X	As G014-B
T015	Ash	B2	n/a	n/a	n/a	n/a	Tree not affected by proposed works.
T016	Ash	C2	n/a	n/a	X	X	Tree adjacent to proposed works, but not directly affected; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
T017	Ash	C2	n/a	n/a	X	X	Tree adjacent to proposed works; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
T018	Ash	C2	n/a	n/a	X	X	Tree closely adjacent to proposed junction of walking and cycling path; HERAS-type protective fencing to be erected prior to start of all works to protect crown and RPA of tree.
T019	Sycamore	C2	n/a	n/a	X	X	As T019

Group / Tree No.	Species	Cat.	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation
			Cons.	Cond.	Canopy	RPA	
G020	A group	B2	X	n/a	X	X	<p>Group G020: where feasible, design to be adjusted by moving walking and cycling path approximately 1200mm to east to enable retention of as many trees within group as possible. In all cases the mitigation guidelines set out here apply.</p> <p>Trees closely adjacent to proposed walking and cycling path on both sides of path – c.5no trees in footprint of path as design stands;</p> <p><i>No excavation permitted</i> within RPAs of trees – no-dig construction method to be utilised within area indicated on TPP;</p> <p>HERAS-type protective fencing to be erected prior to start of all works to protect stems and RPAs of trees;</p> <p>Possible requirement for facilitation pruning to enable works access.</p> <p><u>6no trees to be removed based on current design layout.</u></p>
G020-A	White willow	U	(X)	X	n/a	n/a	<p>Dead tree.</p> <p><u>1no tree to be removed.</u></p>
H021	A hedge	C2	X	n/a	X	X	<p>All of hedge line except northern end section in footprint of proposed walking and cycling route;</p> <p>HERAS-type protective fencing to be erected prior to start of all works to protect section of hedgerow to be retained;</p> <p><u>50m of hedge to be removed.</u></p>
<p><u>Key:</u></p> <p>Group/ Tree number – Tree reference in the tree survey. Species – Common name for species. Cat – BS 5837:2012 Category rating. Removal due to - Cons – Construction, Cond – Condition. An X or n/a (not applicable) dependent on appropriate action or impact. Mitigation required for - Canopy or for RPA (Root Protection Area). An X or n/a indicates appropriate actions as a result of the impacts on the tree(s).</p>							

The impacts of the proposals have been quantified as accurately as possible given the information available at this time. At present the proposed works would require the removal of the following trees:

- 'Category A': **none**
- 'Category B': **6no** individual trees (6no trees in group G020), and **14m** of hedge H007 to be removed;
- 'Category C': **19m** of lapsed hedgerow group G001 and **327m²** of tree group G009 and **50m** of hedge H021 to be removed;
- 'Category U': **1no** individual tree (G020-A) to be removed.

The impacts of the Scheme have been limited where possible by positioning the route outside of the constraints of the recorded trees. Where trees have been identified for removal, this is due to the trees being located directly in the footprint of the works, in particular where individually recorded trees have their stem positions within the layout of the route. Accordingly, these trees have been identified for removal, however, it is advised, where feasible, that localised design changes be considered in these locations to allow the retention of more trees.

No TPO trees have been identified for removal. The trees identified for removal are mainly moderate-quality or low-quality trees. The low-quality trees (BS Category C) should generally not hinder the development, given their limited age or reduced useful remaining life expectancy.

The use of a no-dig construction approach is advised in certain locations to reduce the impacts on trees and to enable their retention, this is discussed further in section 4.6. This approach, along with other bespoke mitigation measures, would need to be agreed within an Arboricultural Method Statement and could be secured by planning condition.

As part of the proposed Scheme compensation planting has been proposed to offset the tree loss with 34no. new trees and 315m of new hedgerow.

4.5. Preliminary management recommendations

The tree survey schedules (see Appendix B) show management recommendations for those trees which at the time of the survey were identified as requiring management intervention.

4.6. Mitigation measures

'No-dig' surface construction

'No-dig' construction methods have been prescribed for locations where the proposed walking and cycling route passes through the RPAs of trees and close to the stems. This is likely to mean the use of a cellular confinement system such as Cellweb, manufactured by Geosynthetics (further information: <http://www.geosyn.co.uk/product/cellweb-tree-root-protection>). The use of a cellular confinement system will ensure that the loads placed upon it will be laterally dissipated rather than transferred to the soil and roots below. The walls of the cells are perforated and when combined with the infill of clean angular stone, enable free movement of water and oxygen, ensuring that nutrient supplies to the tree roots are maintained. This will enable a number of trees, such as , to be retained where their removal would otherwise be required.

Concrete

It should be noted that due to the highly alkaline and toxic leachate produced during the curing of wet concrete, concrete should not be poured within trees' RPAs unless an impermeable liner has been installed to contain the concrete.

Appendices

Appendix A. Key & British Standard 5837:2012 Survey Table

A.1. Survey key

Tree No: Sequential reference number given to the tree or group of trees as shown on the tree survey drawings.

Species: This is the common name given to the tree. The botanical name is sometimes given.

Height (Ht.): tree height from the base of the tree to its full stem height, measured in metres (m). Measurements are taken to the nearest half metre.

Stem diameter (mm): measured in accordance with Figure A2 below. Measurements are rounded to the nearest 10mm.

Branch spread (m): measurement of crown spread to the four cardinal points; if the crown is balanced a single measurement is given. Crown spread plotted on the tree survey drawings. Measurements are taken to the nearest half metre.

1st significant branch and direction of growth (m): measurement of the height of the first significant branch above ground level, given in metres and direction of growth e. g. 2. 4-N

Canopy height (m): height of the canopy above ground level. Measurements are taken to the nearest half metre.

Life stage: The following abbreviations are used:

Y = Young trees <1/5 life expectancy.

SM = Semi-Mature trees 1/5 – 2/5 life expectancy.

EM = Early Mature trees 2/5 – 3/5 life expectancy.

M = Mature trees 3/5 – 4/5 life expectancy

OM= Over-Mature trees >4/5 life expectancy

Vitality: Good, fair, poor or dead

Good – a tree with little or no obvious physiological defects; leaf density and colour are typical for the species, bud, flower and fruit production are good and there are no signs of dieback at any point throughout the crown.

Fair – a tree with moderate physiological defects; leaf density is less than typical for the species, leaf cover is chlorotic, bud, flower or fruit production are deficient, there are signs of minor dieback within the crown, there is a moderate degree of deadwood within the crown.

Poor – a tree with major or multiple physiological defects; evidence of extensive crown thinning, bud, flower or fruit production is poor or missing, there are signs of advanced dieback throughout the crown, there is extensive or major deadwood throughout the crown.

Dead – a tree that has died due to either old age, drought, disease, pest infestation, physical damage to the main stem or rooting system, or a combination of these factors.

General observations, particularly of structural and/or physiological condition: e. g. observations of any decay and physical defect.

Preliminary management recommendations: any identified preliminary management to rectify defects recorded in general observations. These may include the need for further detailed inspection, or works to address immediate hazard to life or property.

Estimated remaining contribution, in years:

<10

10+

20+

40+

Category grading: As per BS 5837:2012 chart in accordance with Figure A3 below.

A – Illustrated as light green (RGB code 000-255-000)

B – Illustrated as mid blue (RGB code 000-000-255)

C – Illustrated as grey (RGB code 091-091-091)

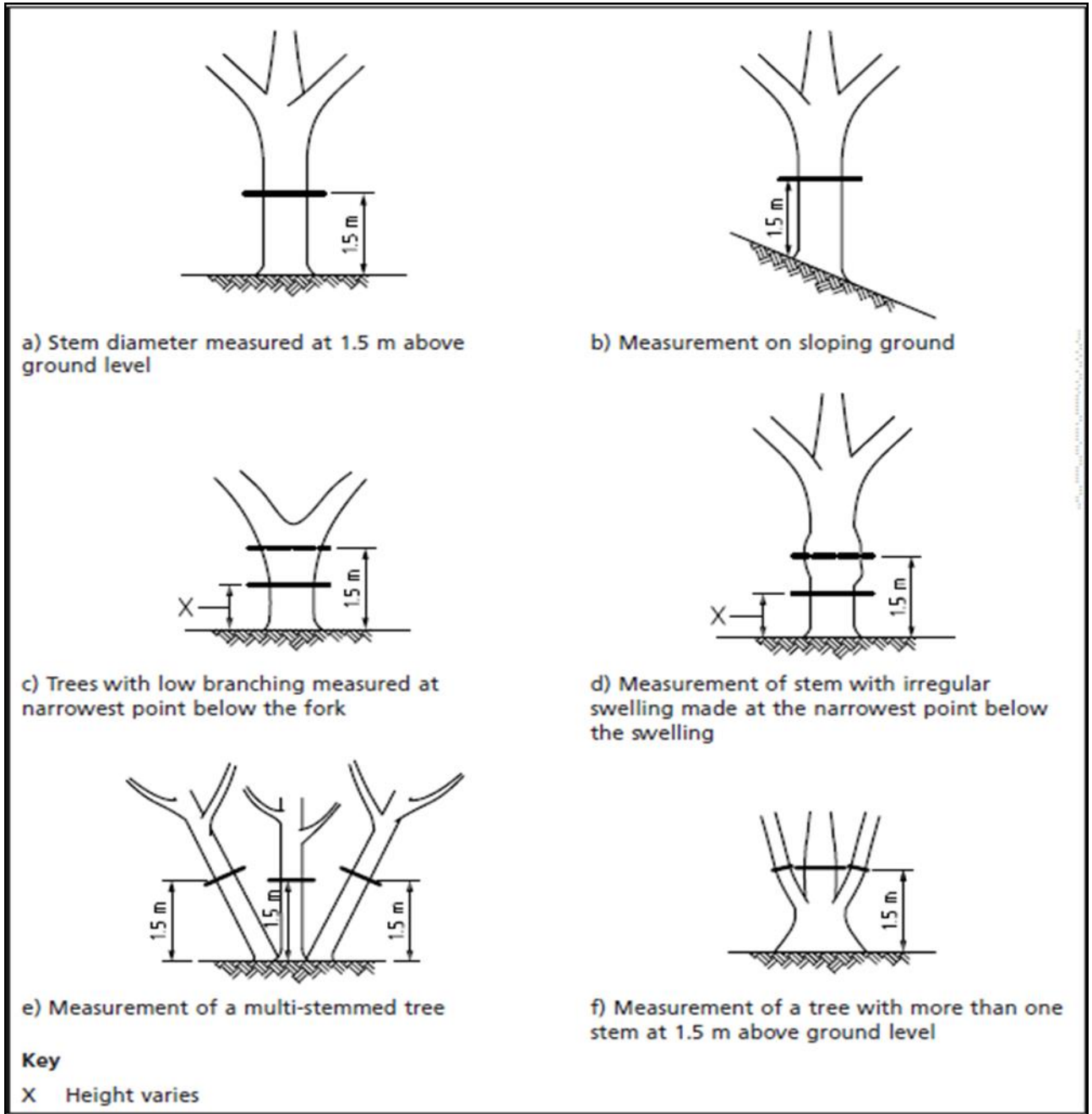
U – Illustrated as dark red (RGB code 127-000-000)

Root Protection Area (m²): plotted around each of the category A, B and C trees on relevant drawings, illustrating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability. The protection of the roots and soil structure is treated as of paramount importance.

(Note: Red hash tag '#' will denote that a measurement is estimated)

A.2. Measuring table

Measurement of tree stems dependant on tree form.



A.3. BS 5837:2012 cascade chart

Cascade chart for tree quality assessment from BS 5837:2012

Table 1	Cascade chart for tree quality assessment			Identification on plan
Category and definition	Criteria (including subcategories where appropriate)			
Trees unsuitable for retention (see Note)				
<p>Category U</p> <p>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</p>	<ul style="list-style-type: none"> 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 infested 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 <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>			See Table 2
Trees to be considered for retention				
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	<p>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)</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	See Table 2
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	<p>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</p>	<p>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</p>	<p>Trees with material conservation or other cultural value</p>	See Table 2
<p>Category C</p> <p>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</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories</p>	<p>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</p>	<p>Trees with no material conservation or other cultural value</p>	See Table 2

Appendix B. Tree survey schedule

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
G001	Roadside group	8	300	4.5	4.5	4.5	4.5	0.5	1	SM-EM	Fair	Linear vegetation on roadside verge, at south end on bank rising from road but, towards north end, above a 1400mm high stone retaining wall; elm and multi-stemmed hazel, occasional hawthorn and elder; occasional trees ivy-clad; flail-managed above pavement; vitality of elm mixed - location of one standing dead tree recorded individually; elsewhere, stumps of felled stems and occasional collapsed stems	Remove any collapsed stems or larger deadwood if adjacent to proposed works	10+	C2	3.6
G001-A	Elm	8	280	3	3	3	3	1	1	EM	Dead	Dead tree	Remove	<10	U	n/a
T002	Ash	15	750	10.5	12	8.5	7	2.5	2.5	M	Fair	On road side of field boundary fence; mostly good occlusion of wounds where limbs removed at crown break, but established decay at lost limb wound at 1800mm, west side; in crown, occasional sub-75mm diameter deadwood, frequent bacterial cankerous growths on stem and branches, and frequent young epicormic growth - but reasonable overall vitality	Remove larger deadwood if adjacent to proposed works	20+	B2	9

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
G003	Mixed broadleaf group	16	450	6	6	6	6	2	2	SM-M	Good to fair	Mixed broadleaf vegetation beside ponds and at road side; mature specimens of oak, ash; beside ponds, goat willow and dense bramble; trees intermittent, becoming more continuous to north, with uniform line of sycamore with multi-stemmed hazel, where a small stream runs on west side; frequent mutual crown suppression	Remove larger deadwood if adjacent to proposed works	20+	B2	5.4
G003-A	Ash	16	1100	9	9	9	9	2	2.5	M	Good	Ivy-clad roadside pollard	No works required at time of survey	20+	B2	13.2
G003-B	Ash	14.00	1200	8	8	8	8	2	3	M-OM	Fair	Ivy-clad roadside pollard; established decay at pollard bolling; crown slightly sparse	No works required at time of survey	20+	B2	14.4
G003-C	Sycamore	10	1200	3	6	3	3	2	2	M-OM	Fair	Pollard to west of field boundary fence, recently re-pollarded c.4m above original boll	No works required at time of survey	20+	B3	14.4
G003-D	Sycamore	13	1200	7	8	6	6	2	2	M	Good	Pollard to west of field boundary fence; vast pollard bolling, western section mostly lost, due to decay and/or proximity to lighting column and telecoms cables; remaining growth all to east	No works required at time of survey	20+	B3	14.4

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
T004	Field Maple	6	400	5	6	6.5	4	2.5	2	OM	Fair	Compact tree in field, with small stream close on west side; burred bole hollow to 2m on west side; frequent pockets of established decay at old branch failure wounds; decent crown vitality still	No works required at time of survey	10+	C3	4.8
G005-A	Ash	16	350 + 320	3	13	10	2.5	5	3	M	Good	Pair of ashes in field, close to stream, 1.5m apart; five stems in total, mutual crown suppression; stems leaning, limbs extending, and crown growth mostly to east, away from large trees to west	No works required at time of survey	20+	B2	5.8
G005-B	Ash	16	450 + 350 + 260	6	10	8	4	2.5	2	M	Good	See G005-A	No works required at time of survey	20+	B2	7.6
G006	Garden boundary trees	to 16	to 400	7	7	7	7	2	2	EM-M	Good to fair	Intermittent larger trees growing along boundary of residential properties, less frequent and more ornamental to south; ash and sycamore prominent; on field side of tree line, a line of blackthorn and hazel with occasionally dense bramble; dimensions shown are indicative and for larger trees	No works required at time of survey	20+	B2	4.8
G006-A	Ash	16	500	8	10	7	8	4	4	M	Good	Larger specimen, crown extending to east	No works required at time of survey	20+	B2	6

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
H007	A Hedgerow	8	to 400	5	5	5	5	0	0	M	Good	Mature field boundary hedgerow, for most of length on 1m high bank; multi-stemmed hazel dominant, with hawthorn, blackthorn; occasional ash, with semi-mature sycamore encroaching at west end; ivy abundant	No works required at time of survey	20+	B2	4.8
H007-A	Ash	10	120 x 8	4	4	4	4	1	1	M	Good	Several stems rising from large coppice stool and limbs extending laterally near ground level		20+	B2	4.1
G008	Broadleaf plantation	18	400	4.5	4.5	4.5	4.5	4	4	EM	Good	Triangular plantation on gently mounded ground, to east of track; deep ditch along south edge; mixed broadleaf species including ash, sycamore, birch, grey poplar; limited recent management, most trees ivy-clad; occasional snapped stems; occasional large hawthorn and hazel at track side; vitality, including ashes, generally fair; dimensions shown are indicative	No works required at time of survey	20+	B2	4.8
G008-A	Field Maple	15	540	4	5	4	5	2-W	3	M	Good	On shallow bank at track side, pre-dating plantation; densely ivy-clad; frequent sub-50mm diameter deadwood in lower crown	Remove larger deadwood if adjacent to proposed works	20+	B2	6.5

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
G008-B	Ash	15	500	10	9	9	6.5	6-W	4	M	Good	Tall specimen, initial lean to north-west, correcting; densely ivy-clad to near top	No works required at time of survey	20+	B2	6
G009	A Group	5	280	3	3	3	3	0.5	0.5	Y-M	Good to fair	Small species trees close to track edge - multi-stemmed hazel, hawthorn, dog rose; plentiful ivy; occasional propped or collapsed stems; some past cutting back of larger branches from track; at north end, by car parking area, crude topping of several hawthorn as group merges into unkempt amenity planting and small cluster of laurel; area by bin store occupied by remains of 1200mm diameter windthrown ash, with large root plate at west end; sycamore saplings encroaching to north-west; destructive management only	No works required at time of survey	10+	C2	3.4
T010	Field Maple	13	280	4	4	4	4	2-W	3	EM	Good	On chestnut paling fence line, small diameter deadwood in lower crown area	No works required at time of survey	10+	C2	3.4
T011	Ash	14	290	2	6	6	3	4-W	4	EM	Good	With T012, pair of tall ashes; T012 upright and dominant, with ivy-clad T011 leaning to south	No works required at time of survey	10+	C2	3.5
T012	Ash	16	310	5.5	5.5	5.5	5.5	7	7	EM	Good	See T011	No works required at time of survey	20+	B2	3.7

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
T013	Field Maple	15	510	7.5	7	5	7.5	5-W	5	M	Good	Upright specimen with dense crown and good form; ivy recently severed on stem	No works required at time of survey	40+	A2	6.1
G014	A Group	6	250	3	3	3	3	1	1	EM-M	Fair	Unmanaged vegetation along gently mounded strip between track and stream; hazel dominant, with larger specimens recorded separately; occasional hawthorn, goat willow; abundant ivy, frequent bramble; dimensions shown are indicative	No works required at time of survey	10+	C2	3
G014-A	Hazel	7	600	6	6	6	6	0	3	M	Good	Large multistem on stream bank; diameter indicative	No works required at time of survey	20+	B2	7.2
G014-B	Hazel	7	600	6	6	6	6	0	3	M	Good	As G014-A	No works required at time of survey	20+	B2	7.2
G014-C	Hazel	7	600	6	6	6	6	0	3	M	Good	As G014-A	No works required at time of survey	20+	B2	7.2
T015	Ash	16	390	6	2	7	8	3.5-SE	3.5	EM	Good	At track side, ivy-clad stem leaning away from neighbours to east; 100mm diameter dead branch to south-east overhangs track	Remove dead branch	20+	B2	4.7

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
T016	Ash	16	380	7	6	5	5	4	4	EM	Fair to poor	Located on west bank of stream, upright form; low-vitality crown has frequent sub-50mm diameter deadwood in lower crown area, and sprinkling of young epicormic growth	Remove deadwood above track if adjacent to proposed works	10+	C2	4.6
T017	Ash	17	300 + 300 + 300	8	8	5	8	4-S	2	M	Fair	Amid dense vegetation - no access to base; ivy-clad to mid-stem height; three stems rising from crown break at 1500mm; minor deadwood, and one larger deadwood branch extending to east	Remove larger deadwood if adjacent to proposed works	20+	C2	6.2
T018	Ash	17	550	10	10	9	9	2-E	3	M	Fair to poor	Amid dense vegetation - no access to base; large tree displaying early symptoms of ash dieback - flush of epicormic growth, frequent sub-75mm diameter deadwood, mostly in lower crown area	Remove larger deadwood if adjacent to proposed works	10+	C2	6.6
T019	Sycamore	15	260	3	5	4	2	2	2.5	SM	Good	Lanky specimen suppressed to west by large neighbour; ivy-clad to mid-stem	No works required at time of survey	20+	C2	3.1
G020	A group	16	450	5.5	5.5	5.5	5.5	2.5	2.5	EM	Good	Amenity group on both sides of path; crown-lifted; species include Norway maple, <i>Sorbus</i> species, hybrid black poplar; stems densely ivy-clad; 1 no dead willow recorded separately; dimensions shown are indicative	No works required at time of survey	20+	B2	5.4

Tree no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				1st major branch height (m) / Direction	Canopy height	Life stage	Vitality	General observations Structural and/or physiological condition	Preliminary management recommendations	Established remaining contribution	Category grading	Root Protection Area radius M
				N	E	S	W									
G020-A	White willow	18	450	7	7	7	7	2	2	EM	Dead	Dead tree	Remove	<10	U	n/a
H021	A hedge	To 3	150	1.5	1.5	1.5	1.5	0	0	EM	Good	Mixed broadleaf hedge including hawthorn; not recently cut at time of survey; tallest at north end, lower (c.1200mm height) beneath trees	No works required at time of survey	10+	C2	1.8

Appendix C. Glossary of terms

Table C-1 Glossary Table

Term	Description
Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Adaptive Growth	The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone
Amenity Value	The environmental and landscape benefits of trees as opposed to their commercial value for timber
Ancient Woodland	Sites which have been wooded since at least 1600, as defined by English Nature and recognised as being of high nature conservation value, whether managed or not. They may be semi-natural or replanted.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculture	The study and care of trees and other woody vegetation
Arboriculturist	A person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Cavity	An open wound, characterised by the presence of decay and resulting in a hollow
Co-dominant stems	Where a tree's main stem splits into two leaders, can also be called twin-stemmed.
Competent person	A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	The area based on the root protection area to which access is prohibited for the duration of a project.
Coppice	A traditional method of woodland management in which young tree stems are repeatedly cut down to near ground level. In subsequent growth years, many new shoots will emerge, and, after a number of years the coppiced tree, or stool, is ready to be harvested, and the cycle begins again
Crown clearance	This is the removal of all dead, dying and diseased branches; in addition branches that are cleared away from a specific hazard e. g. live railway line.
Crown lifting	The removal of lower branches to provide a desired amount of clearance above ground level. This can be achieved either by the complete removal of a branch or only parts of which extend below the desired height
Crown reduction	The overall reduction of both the height and spread of the crown.
Decay	Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.
Deadwood	Deadwood is often present within the crown or on the stems of trees. In some instances it may be an indication of ill health; however, it may also indicate natural growth processes. If a target is present beneath the tree, and falling deadwood may cause injury or damage it should be removed; if no target is

Term	Description
	present the deadwood may be retained intact for conservation purposes (insects, fungi, birds etc.).
Epicormic growth	A secondary growth from dormant adventitious buds on the stem or main branches.
Failure	In connection with tree hazards, a partial or total fracture within woody tissue or loss of cohesion between roots and soil.
Hazard beam	A branch that has over-extended in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).
Hung-up limb	Dead or fallen branch from within the crown or from another tree's crown that has failed and been caught up by, and resting on, branches of a tree
Included Bark Junction	Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.
Ivy Growth	Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.
Monolith	A large bulk of standing dead wood. Usually the trunk of the tree or the trunk with the base of the branch frame work. These should be retained for wildlife habitat when the risk is appropriate for the location.
Pollarding	This involves the removal of whole branches to leave only the main trunk. In species such as willows and poplars such significant pruning is acceptable with new branches developing from the pollard heads. Secondary pruning of the new wood can help form a new canopy to the tree several years after the initial pollard
Reaction Wood	Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.
Root Protection Area (RPA)	The layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision.
Stem	The principal above-ground structural component(s) of a tree that supports its branches.
Structure	A manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Structural Defect	Internal or external points of weakness, which reduce the stability of the tree
Sub-dominant stem	A branch within the crown that is not the dominant leader
Suppressed	Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.
TPO	A Tree Preservation Order is an order made by a Local Planning Authority which in general makes it an offence to cut down, lop, top, uproot, wilfully damage or wilfully destroy a tree without first getting permission. Tree Preservation Orders are usually made to protect crowns and RPAs of trees that make a significant contribution to the amenity of an area. They may particularly be made when it is felt that a tree may be under threat.
Tree Constraints Plan	Abbreviated to TCP. Plans showing specific tree constraints including Root Protection Areas and Crown spread.

Term	Description
Tree Protection Plan	Abbreviated to TPP. Scaled drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Visual Tree Assessment	A non-invasive method of examining the health and structural condition of trees. Developed by Claus Mattheck and David Breloer 1994
Wound	Any injury, which induces a compartmentalisation response
Wound Wood	Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term “callus.”

Appendix D. Statutory protection

The Arboricultural Officer at South Gloucestershire District Council has confirmed in an e-mail dated 26 September 2023 that no trees within the site boundary are subject of a TPO.

The nearest group of trees that is subject of a TPO is the group shown outlined in green at Figure D1 (TPO ID 1056, Land to the North of Vilner Lane).

Interactive mapping on South Gloucestershire District Council's *Know Your Place* website (accessed 26 September 2023) indicates that the site is not located within a conservation area (see Figure D2).



Figure D1

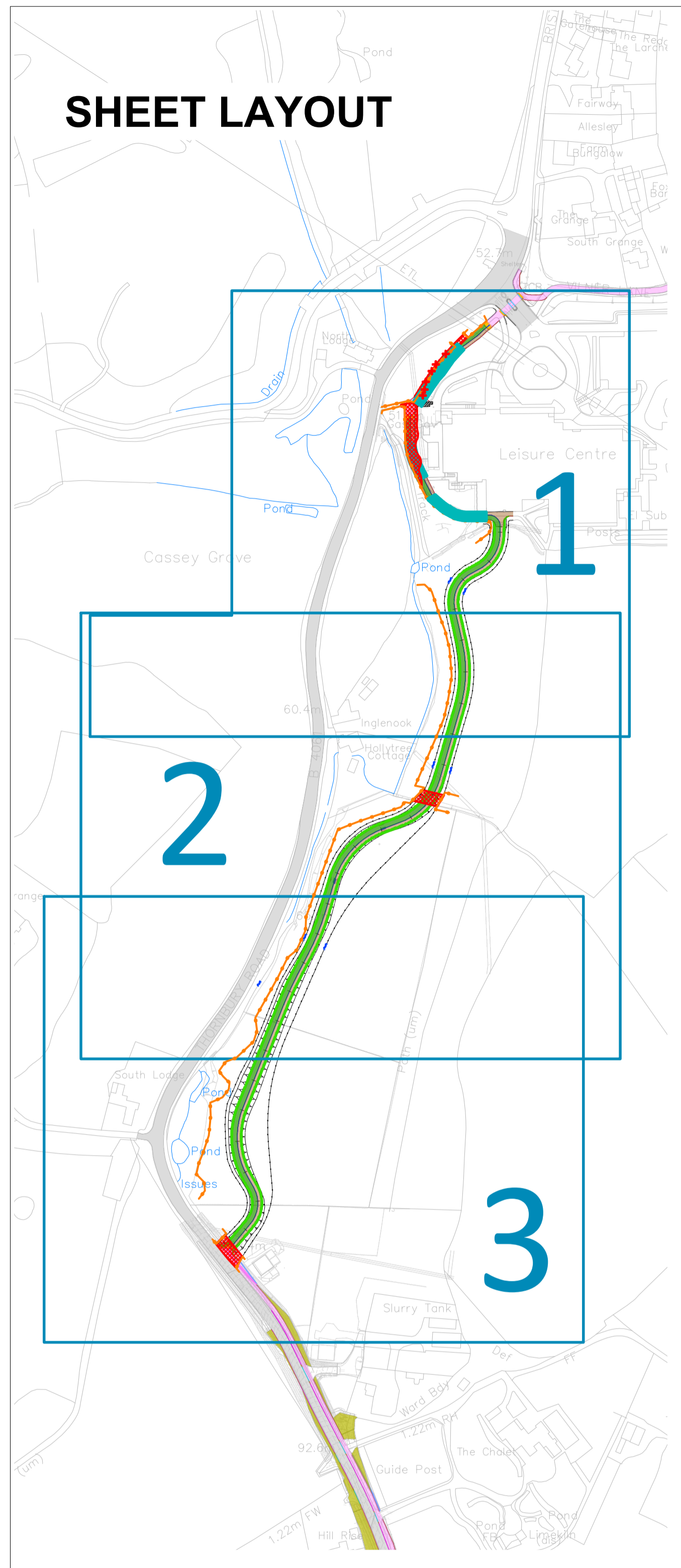


Figure D2: extract from interactive mapping on South Gloucestershire District Council's Know Your Place website (accessed 26 September 2023), showing the southern end of the Thornbury conservation area, hatched bright green. The leisure centre is outlined in blue.

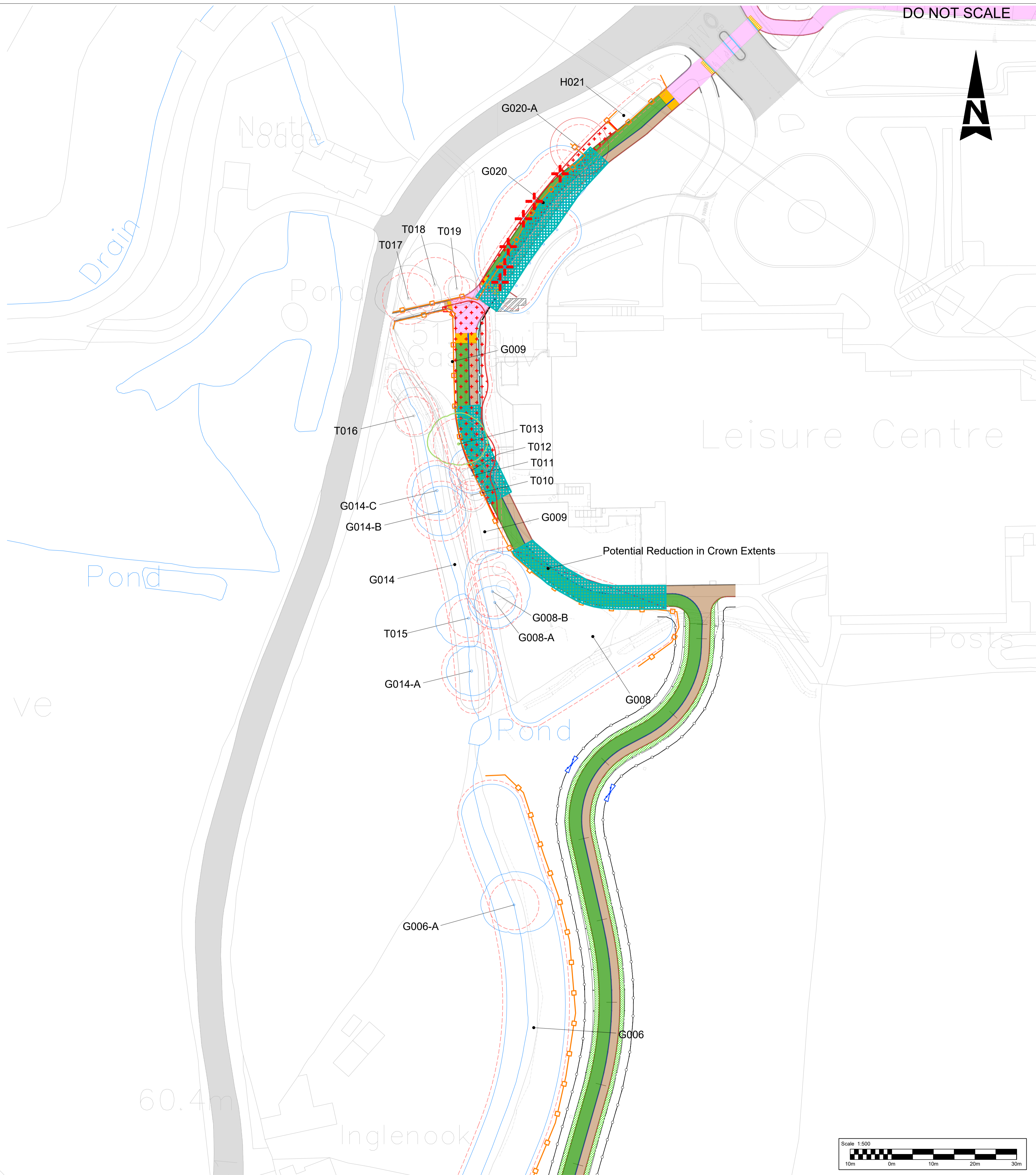
Appendix E. Tree protection plan drawings

Drawing(s) supplied separately.

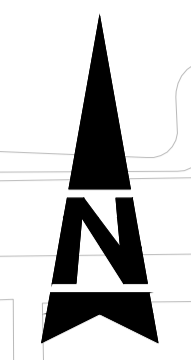
SHEET LAYOUT



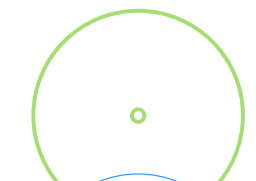
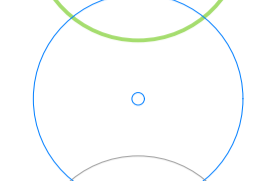
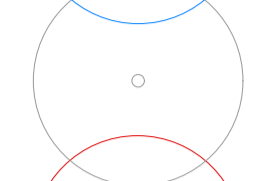
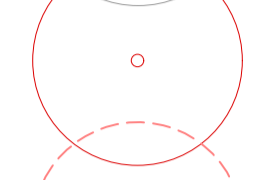
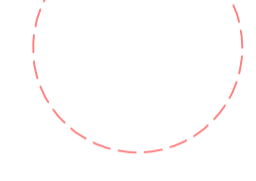
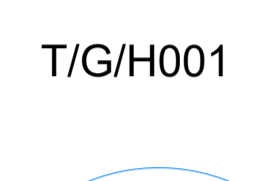
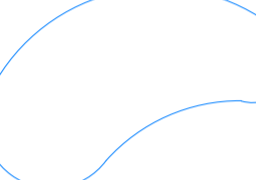

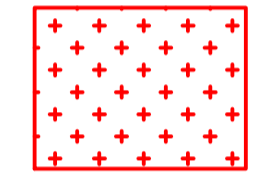
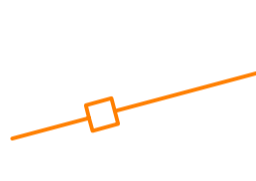


SHEET 1



DO NOT SCALE



KEY (not to scale)

-  Category A tree
-  Category B tree
-  Category C tree
-  Category U tree
-  Root Protection Area (RPA)
-  T/G/H001 Tree/group/hedge reference number
-  Tree group or hedge - colour according to category as above
-  Tree to be removed as part of works
-  Tree group to be removed as part of works
-  Protective fencing (indicative location only)
-  Area of 'no-dig' construction only
-  Proposed works

P01	29/09/23	ORIGINAL	AA	TD	TD
Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: **FIT FOR INFORMATION** Suitability: **S2**

SNC-LAVALIN
Two Chamberlain Square
Birmingham
B3 3AX
Tel: +44 (0)121 483 5000
Fax: +44 (0)121 483 5252
www.atkinsglobal.com
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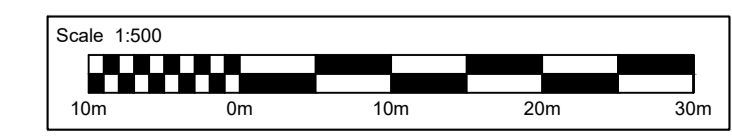
ATKINS
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SOUTH GLOUCESTERSHIRE COUNCIL

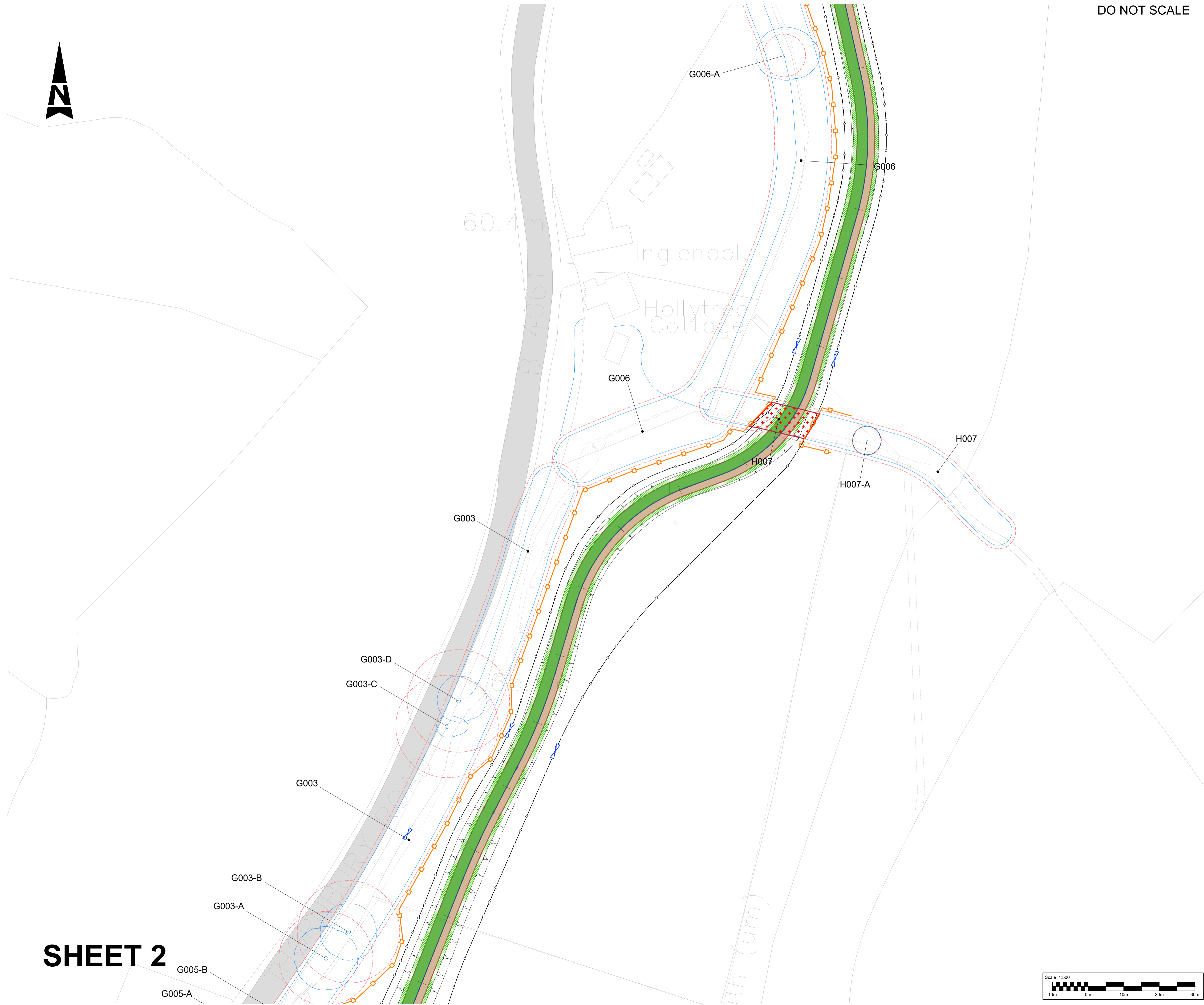
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ALVESTON HILL

Drawing Title:
**TREE PROTECTION PLAN
SHEET 1 OF 3**


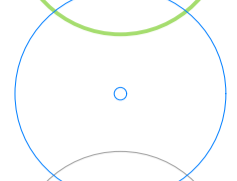
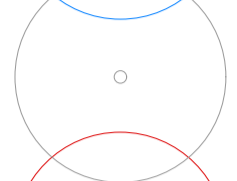
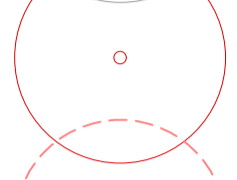
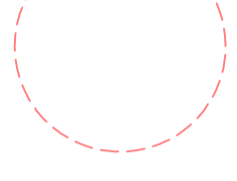

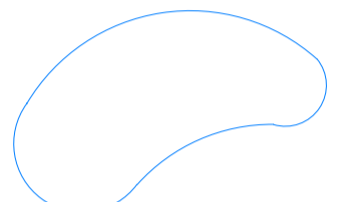

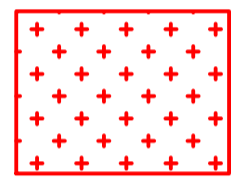
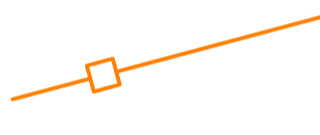
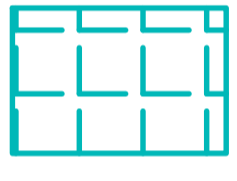
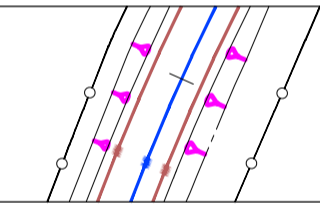
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Original Size	A1	Date	29/09/23	Date	29/09/23	Date	29/09/23	
Drawing Number	5220316-ATK-ARB-TPP-1						Revision	P01



DO NOT SCALE



KEY (not to scale)

-  Category A tree
-  Category B tree
-  Category C tree
-  Category U tree
-  Root Protection Area (RPA)
-  Tree/group/hedge reference number
-  Tree group or hedge - colour according to category as above
-  Tree to be removed as part of works
-  Tree group to be removed as part of works
-  Protective fencing (indicative location only)
-  Area of 'no-dig' construction only
-  Proposed works

P01	29/09/23	ORIGINAL	AA	TD	TD
Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: **FIT FOR INFORMATION** Suitability: **S2**

SNC-LAVALIN
Two Chamberlain Square
Birmingham
B3 3AX
Tel: +44 (0)121 483 5000
Fax: +44 (0)121 483 5252
www.atkinsglobal.com
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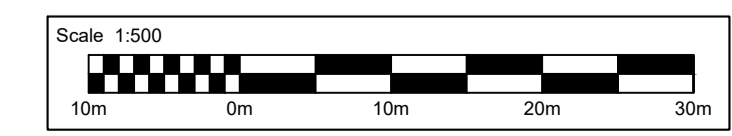
Client:
SOUTH GLOUCESTERSHIRE COUNCIL

Project Title:
ALVESTON HILL

Drawing Title:
TREE PROTECTION PLAN SHEET 2 OF 3

Scale: 1:500	Designed: AA	Drawn: TD	Checked: JH	Authorised: JH
Original Size: A1	Date: 29/09/23	Date: 29/09/23	Date: 29/09/23	Date: 29/09/23
Drawing Number: 5220316-ATK-ARB-TPP-2	Revision: P01			

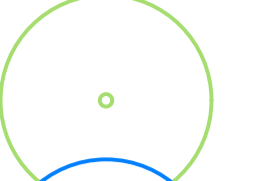

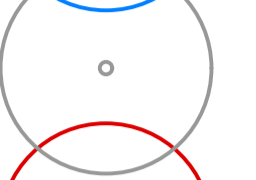

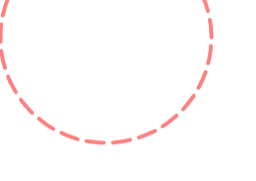
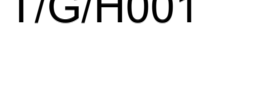
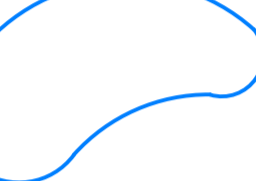

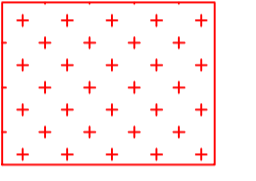

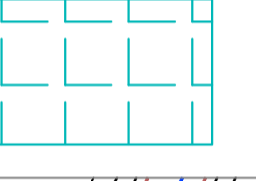
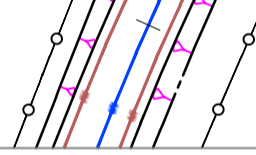
SHEET 2



DO NOT SCALE



KEY (not to scale)

-  Category A tree
-  Category B tree
-  Category C tree
-  Category U tree
-  Root Protection Area (RPA)
-  Tree/group/hedge reference number
-  Tree group or hedge - colour according to category as above
-  Tree to be removed as part of works
-  Tree group to be removed as part of works
-  Protective fencing (indicative location only)
-  Area of 'no-dig' construction only
-  Proposed works

Rev.	Date	Description	By	Chk'd	App'd
P01	29/09/23	ORIGINAL	AA	TD	TD

Drawing Status: **FIT FOR INFORMATION** Suitability: **S2**

SNC-LAVALIN
 Two Chamberlain Square
 Birmingham
 B3 3AX
 Tel: +44 (0)121 483 5000
 Fax: +44 (0)121 483 5252
 www.atkinsglobal.com
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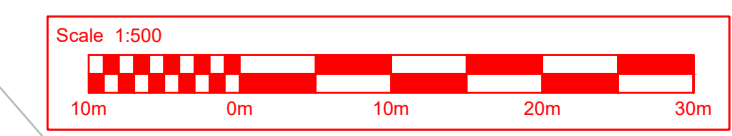
Client:
SOUTH GLOUCESTERSHIRE COUNCIL

Project Title:
ALVESTON HILL

Drawing Title:
TREE PROTECTION PLAN SHEET 3 OF 3

Scale	Designed	Drawn	Checked	Authorised
1:500		AA	TD	JH
Original Size	Date	Date	Date	Date
A1	29/09/23	29/09/23	29/09/23	29/09/23
Drawing Number	Revision			
5220316-ATK-ARB-TPP-3	P01			

SHEET 3



Atkins Limited
Two Chamberlain Square
Birmingham
B3 3AX