Land at The Street, Acton Turville

Arboricultural Report containing:

- **Arboricultural constraints**
- **Arboricultural impact assessment (AIA)**
- **Tree protection**
- **Arboricultural method statement**

On behalf of
Mark Richardson

Prepared by:
Chris Wright. ***M.Arbor.A.***
Arboricultural Consultant
March 2024

Content

1.0 Instructions/Scope

Silverback Arboricultural Consultancy have been instructed to compile an arboricultural report containing tree survey, tree constraints plan, arboricultural impact assessment, tree protection plan and arboricultural method statement regarding trees growing within an area of land at The Street, Acton Turville GL9 1HH. This report is intended to accompany a planning application relating to the construction of a three new residential dwellings and associated works on the site. This document has been produced to demonstrate that the implications of the proposed development, to the existing trees, has been fully considered during the detailed design process.

1.1 Recommendations for the safeguarding of trees in close proximity to development are set out in, BS5837:2012 Trees in relation to design, demolition and construction – Recommendations. We have therefore carried out the assessment of the trees in accordance with that document

1.2 Specifically, this report and the accompanying information are supplied to:

- Identify the constraints that trees on and adjacent to the site present to the development of the site, to inform the site design process.
- Present information regarding the above ground constraints (crown spreads) and below ground constraints (Root Protection Areas – RPAs), in a Tree Schedule and on a Tree Constraints Plan
- Assess the impact of the proposed development on the trees on or adjacent to the site, and the impact that retained trees will have on the site post development.
- Identify trees to be removed, trees to be retained and specify measures necessary to protect retained trees during the construction phases of the development.
- Recommend necessary remedial tree works to be undertaken to trees that will be retained prior to commencement of the construction phases of the development.
- Present information regarding the location of protective barriers or fencing and ground protection on a Tree Protection Plan
- Identify special engineering, excavation or protection measures intended to minimise the impact on retained trees where the site design layout requires a breach of the Root Protection area, (RPA)

- Provide an Arboricultural Method Statement for the recommended works detailing measures which should be implemented to protect retained trees during the construction phases of the development.

1.3 This report was compiled by Chris Wright *M.Arbor.A.* a professional member of the Arboricultural Association and Certified Lantra Professional Tree Inspector with over 30 years' experience in the industry.

1.4 The report is based on a ground level assessment of the trees. Except where stated, all dimensions are estimated. We were not presented with any information on the soil type and no soil samples have been taken. An arboricultural consultant surveyed the site on Tuesday 26th March 2024. The weather was bright with good visibility.

1.5 Documents Provided

- Topographic survey
- Proposed site layout dwg Nº 2254-TYP-SP02 Rev P3

2.0 Survey Methodology

The survey includes tree and shrubs with a stem diameter over 75mm at 1.5m height, located within the area shown on the plan included in this report.

2.1 All inspections were made from ground level with the use of binoculars, sounding hammer and metal probe where necessary, using the Visual Tree Assessment method (Mattheck & Breloer 1995). The presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could affect the structural integrity of the trees have been noted.

2.2 Tree numbers have been noted on the plan. The following details were recorded for each tree and are included in the tree schedule sheets accompanying this report:

Number: an identity number for each tree, prefixed with a 'T' which cross references locations shown on the plan with the tree survey sheets. Where several trees, normally of the same species, are located close together and are similar in character and requirements, they have been treated as a Group under a single Number, prefixed with a 'G'

Species: common name and botanical name in *italics*

Tree Height: approximate height in metres

Stem Diameter: diameter measured in millimetres, taken at 1.5m above ground. Where the tree is multi-stemmed the diameter is calculated in accordance with BS5837:2012

(# estimated dimensions for off-site or inaccessible trees)

Crown spread: approximate spread in metres taken at the four main compass points N, S, E, W

Crown clearance: approximate height from ground to lowest part of canopy

Age class: Young, Semi-Mature, Early Mature, Mature, Over-Mature, Veteran

Structural condition: Good, Fair, Poor

Physiological condition: Good, Fair, Poor, Dead

Observations : observations noted during tree inspections

Preliminary recommendations: recommended action to ensure the health and safety of the tree.

Remaining contribution (years): <10**,** 10+, 20+, 40+

BS Cat- category grading in accordance with BS 5837:2012

A - trees of high quality with an estimated remaining life expectancy of at least 40 years.

B - trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

C - trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm

U - trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS Sub Cat - sub-category grading in accordance with BS 5837:2012

1- Mainly arboricultural qualities

2- Mainly landscape qualities

3- Mainly cultural values including conservation

RPA – **R**oot **P**rotection **A**rea - measured in metres from the centre of the tree stem

2.3 Presentation of the Data Collected

- Data collected regarding individual trees and groups of trees are presented in the Tree Schedule table in appendix 1 in accordance with BS5837:2012 Trees in Relation to Construction – Recommendations.
- The data significant to the proposed site layout is also presented on the Tree Constraints Plan (Drawing Number 240327-AT-TCP-NB (appendix 2) and Arboricultural Impact Assessment Plan (Drawing Number 240327-AT-AIA-NB (appendix 3).

- All other relevant data are presented within the main body of this report.
- Trees have been allocated an individual tree number. This tree number is used to identify individual trees and/or groups of trees throughout this report, within the Tree Schedule and on all plans presented in the appendices of this report.

3.0 Report Limitations

Trees are living, dynamic organisms that can be affected by external conditions. It is therefore not possible to state with any certainty that a tree is safe.

3.1 No internal decay devices, or other invasive tools to assess tree condition, were used. No soil excavation or root inspection was undertaken.

3.2 This report has not considered the effect that trees or vegetation may have on the structural integrity of adjacent buildings or structures.

3.3 The survey contained within this report is not a tree safety inspection. It has been carried out to inform the planning process. Where clear and obvious hazards have been observed, these have been addressed in the recommendations contained within the tree schedule sheets (appendix 1). A full assessment of the levels of risk posed by trees would be informed by considering site use together with hazards present within the aerial parts of a tree(s). Changes in site use are likely to occur during, and result from, the proposed development. In the light of these changes, regular tree risk assessments are advised.

3.4 Tree condition can change rapidly, the recommendations contained within this report are based on the condition of the tree at the time they were inspected. Any amendments to the design or position of the proposed development will invalidate this report

3.5 While this appraisal is not a tree risk assessment it nonetheless considers observed structural defects of the inspected trees to inform conclusions regarding their retentive worth.

4.0 Legal duty

It is the responsibility of the tree owner to ensure that their tree(s) is in a safe and stable condition, including the effects of root activity, through duty of care in the *Occupiers Liability Act (1957 & 1984).*

4.1 The Wildlife and Countryside Act, 1981 makes it an offence to disturb a nesting bird or recklessly endanger a bat or its roost. Professional advice should be sought, where relevant, before undertaking any recommended works.

4.2 The site is situated within a Conservation Area. Written consent will be required for South Gloucestershire Council prior to the commencement of any works to the trees.

4.3 Under the Conservation Area regulations 2012 the removal of deadwood within living trees is exempt from the requirement to obtain prior written consent from the local planning authority (LPA). Five days' notice must be submitted to the LPA, in writing, prior to the removal of any dead trees or works to dangerous trees, except where the works must be done without delay to ensure public safety.

5.0 Tree and Site Assessment (to be read in conjunction with the survey schedule sheets)

The proposed development is for the construction of three residential dwellings and associated works on the site. The area proposed for development currently comprises industrial unit and surrounding hard surfacing used for the conversion and construction of horse boxes.

5.1 The existing trees stock consists of a mature Ash tree, a linear group of 6x Leyland Cypress on the eastern boundary and a small group of poor quality, self-set Hawthorn adjacent to the site access.

5.2 On inspection, it was found that the Ash tree is in the later stages of Ash dieback disease (*Hymenoscyphus fraxineus)*. This was evident from the amount of deadwood and dieback in the canopy and fallen dead twigs and branches around the base of the tree. There is also extensive epicormic growth present along all the major limbs of the tree which is a stress reaction to the present of the disease.

5.3 Ash dieback disease destroys the tree's phloem and xylem, which results in the tree being unable to move water and nutrients around its structure. This lack of water and nutrient movement will cause the branches of the tree to fail and the tree to 'die back.' The ongoing loss of nutrition and water plus the depletion of energy reserves due to the lack of foliage, causes the tree to become brittle, lose branches and make it susceptible to other pathogens such as Honey Fungus (*Armillaria*).

5.4 It is currently estimated that Ash dieback has a mortality rate of 90% with few trees showing any signs of resistance. (ref: Tree Council Ash Dieback Action Plan Toolkit Summer 2019). The precise speed of decline of any individual tree is currently impossible to predict and will be influenced by other factors including soil type, soil moisture levels and topography.

5.5 The latest evidence nationwide and from local tree surgery teams, is that infected trees can decline rapidly becoming structurally unsound in a matter of months. It is therefore considered that the Ash trees have a very short useful life expectancy and should not be considered as a constraint to any proposed development.

5.6 One tree and two groups of trees were surveyed. Of the trees surveyed one tree was categorized U, the remaining groups of trees were categorized C. The trees were assessed and categorized in accordance with the Cascading Chart of Tree Quality Assessment contained within BS5837:2012.

6.0 Arboricultural Constraints

Trees have a widely spreading, shallow root system. In most cases, the majority of tree roots are situated within the top 600 mm of soil although some roots may extend down to 2m. Small feeder roots can also be expected to extend beyond the outer edge of the canopy. Roots can therefore be easily damaged by construction activity.

6.1 Constraints on the design of the development are presented in the Tree Schedule Sheets (appendix 1) Tree Constraints Plan (appendix 2) and the Arboricultural Impact Assessment Plan (appendix 3). These constraints are also considered in the main body of the report below and recommended remedial works and mitigating measures.

6.2 The Tree Constraints Plan (TCP), (appendix 2), shows the Root Protection Areas (RPAs) for the individual trees identified in the tree schedule tables. This represents the minimum area in m^2 which ideally, should be left undisturbed around each tree were it to be retained. Underground structures, services and other topographical feature, such as different ground levels, can influence root spread and potentially restrict extension growth.

6.3 The TCP also shows a representation of the crown spread of each tree measured in four cardinal directions. The RPA has been calculated in accordance with Section 4.6 of BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.

6.4 Trees Identified for Retention and Removal.

It is proposed to remove G03 to facilitate the proposed development. T01will be removed in accordance with good arboricultural practice. G02 will be retained and protected throughout the proposed works.

6.4.1 **Mitigation**

It is proposed to mitigate for the loss of these trees by the implementation of a landscaping scheme including replacement trees and shrubs to enhance that landscape and visual amenity of the site. The details and specification for the proposed landscaping will be agreed with the Local Planning Authority.

6.4.2 **Trees Outside Site Boundary**

There are no trees outside of the site boundary which are impacted by the proposed development.

7.0 Arboricultural Impact Assessment

7.1 The position of the new dwelling is outside the calculated Root Protection Area (RPA) of all trees proposed for retention. Any excavation or soil compaction in this area could potentially lead to root severance or damage. This could subsequently lead to a reduction in the trees ability to take up water and nutrients, which may lead to a deterioration in the tree's health.
Protective fencing, in accordance with BS5837:2012 will be erected to prevent any un-authorised access into the Root Protection Area (RPA) during the development works.

7.2 Storage and mixing of construction materials could lead to soil compaction of ground contamination through spillage.
All storage and mixing of materials will be undertaken outside the Root Protection Area (RPA) of the retained trees. If considered necessary, due to ground levels, a suitable waterproof ground covering with bunds at the edges to prevent leakage will be laid over the storage, mixing area.

7.3 Overhanging and low branches could potentially be damaged during the erection of scaffolding or during the delivery of materials to site.

The western canopy of G02 will be cut back by approximately 2m. The protective fencing will then enclose the branch spread preventing any potential damage.

7.4 Drainage and service routes in association with the proposed development, have been planned outside the calculated Root Protection Area of any trees proposed for retained.

Should this change, installation of drainage or services runs will be in accordance with Section 7.7 (Underground and above-ground utility apparatus) of BS5837:2012.

7.5 **Shading: -** Potential shading of buildings by retained trees can lead to pressure for the pruning or removal of the trees. *BS5837: 2012 par 5.3* states that proposed buildings should be designed to take account existing trees, their ultimate size and density of foliage, and the effect that these will have on the availability of light.

There are no shading issues associated with the proposed development.

7.6 **Future growth: -** Future extension growth of branches can result in the continuous whipping of branches against the fabric of a building or damage to the roof tiles. Structures should therefore be located with due consideration for a tree's ultimate growth**.**

G02 will be cut back as part of the ongoing management and retained as a hedge.

8.0 Tree Protection

The trees to be retained on site during and after development as listed in Section 6.4 will require both above and below ground protection. Above ground protection may involve remedial tree surgery works. These works, where applicable, are presented in the Tree Schedule Sheets (appendix 1) and are discussed in Section 8.1 below.

8.0.1 Below ground protection measures, based on the root protection areas (RPA), indicated in the Tree Constraints Plan (appendix 2), will involve the erection of tree protection fencing as discussed in Section 8.2. The tree protection fencing is illustrated in Tree Protection Plan (Drawing Number 240327-AT-TPP-NB) (appendix 4)

8.0.2 The potential position of tree roots as indicated in the Arboricultural Impact Assessment Plan (appendix 3) and Tree Protection Plan (appendix 4) are only guidelines based on calculations shown in BS5837:2012 '*Trees in relation to design, demolition and construction – Recommendations'.*

8.1 Recommended Remedial Tree Surgery Works

Remedial tree work specifications are set out in the tree schedule table (appendix 1) and discussed in section 8.1.1 below. All works will be undertaken in accordance with BS3998:2010 Tree Work Recommendations and should be undertaken, by a suitably qualified and experienced Tree Surgery contractor.

8.1.1 The western canopy of G02 will be cut back by approximately 2m to facilitate the proposed development.

8.2 Tree Protection Fencing

The Tree Protection Plan (appendix 4) indicates the location of the proposed tree protection fencing where appropriate. The fencing will create a Construction Exclusions Zone (CEZ) around the retained trees.

8.2.1 The Construction Exclusion Zones will be erected in accordance with the recommendations in Section 6.2 of BS5837:2012. The specification for the fencing is presented in Figure 3 from BS5837:2012 (appendix 5).

8.2.2 It is *essential* that tree protection fencing is erected before any site preparation or construction work be commenced. (Remedial tree works however, should be undertaken before such fencing is erected – See Section 8.1). Once erected the protective fencing will be retained and maintained in position for the duration of the development.

8.2.3 Should any construction activity require the repositioning of the tree protection fencing, advice will be sought from Silverback Arboricultural Consultancy and approval requested from the Local Authority Tree Officer before any of the fencing is altered.

8.3 Underground Drainage and Service Installation

Drainage and service routes in association with the proposed development have been planned outside of any Root Protection Area of retained trees. Should this change installation of drainage or services routes will be in accordance with Section 7.7 (Underground and above-ground utility apparatus) of BS5837:2012.

9.0 Arboricultural Method Statement

This section sets out the basis of the methodology for all works in relation to the proposed development in proximity to trees located within the site boundary.

9.0.1 Copies of the Arboricultural Method Statement document will be available for inspection on site and will form the basis of the management of all works relating to the trees on the site for the Site Agent/Manager following commencement of the project.

9.1 Programme of Works

- Arboricultural works
- Erection of protective fencing
- Construction of new dwelling

9.2 Arboricultural Works

The work recommendations presented in the Tree Schedule (appendix 1) and the recommendations discussed in Section 9.2.1 set out the proposed works to trees within the development site. These works will be carried out before commencement of other site operations including the erection of protective barriers.

9.2.1 The removal of G03 will be undertaken to facilitate the construction of the new dwelling. T01 will be removed in accordance with good arboricultural practice. The proposed tree works will be undertaken by a professional arborist in accordance with the recommendations contained in BS3998:2010. Tree work-recommendations.

9.3 Tree Protection Fencing

BS5837: 2012 recommends the erection of protective fencing around retained trees before development commences. The position of the fencing is calculated using the tree's diameter (DBH) measured at 1.5m up the stem. The area within the fencing is called the Root Protection Area (RPA).

9.3.1 The protective fencing will be erected at the recommended distance contained with BS5837:2012, as indicated on the Tree Protection Plan (TPP) (appendix 4). This will create a Construction Exclusion Zone (CEZ)

9.3.2 The protective fencing will be constructed in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. This will consist of weld mesh panels positioned in rubber feet braced with stabilizer struts secured with ground pins, in accordance with Figure 3 of BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations' (appendix 5).

9.3.3 Once erected the protective fencing will be retained and maintained in position for the duration of the development. If it is necessary to move the protective fencing advice will be sought from Silverback Arboricultural Consultancy and approval requested from the South Gloucestershire Council Tree Officer before any of the fencing is altered.

9.3.4 Weatherproof signage will be attached to the fencing indicating its function as illustrated (appendix 6).

9.3.5 In the CEZ (construction exclusion zone):

- There must be no alteration of ground levels, including soil stripping other than those detailed within this report.
- Any installation of drainage or services will be in accordance with Section 7.7 (Underground and above-ground utility apparatus) of BS5837:2012.
- Oil, bitumen, cement or other harmful materials will not be stored, mixed or discharged within 10m of any retained trees.
- Fires will not be lit beneath or within 10m upwind of tree canopies.

9.4 Supervision and Monitoring

This development will be overseen Silverback Arboricultural Consultancy. If there are any alterations to the proposed working methodology necessary, works will be stopped until the arboricultural consultant has been notified and agreement reached with the Local Planning Authority Tree Officer.

10.0 Contact Details

10.1 Arboricultural Consultant

Chris Wright

Silverback Arboricultural Consultancy

E-mail: chris@silverbackarb.co.uk

10.2 Local Authority Tree Officer

Lea Bending

Arboricultural Officer

South Gloucestershire Council

E-mail: lea.bending@southglos.gov.uk

11.0 References

Mattheck, C. and Breloer, H. (1995). The Body Language of Trees: A handbook for failure analysis. Research for Amenity Trees **4**. HMSO, London.

British Standard 5837:2012 - Trees in relation to design, demolition and construction – Recommendations. British Standards Institution, London

British Standard 3998:2010 - Tree Work Recommendations. British Standards Institution, London

12.0 Appendices

- Tree schedule sheets
- Tree constraints plan
- Arboricultural impact assessment (AIA)
- Tree protection plan
- BS5837:2012 Trees in relation to construction: Recommendations Protective Fencing Detail
- Protective fencing sign

Chris Wright. ***MArborA.***

Principal Consultant

Silverback Arboricultural Consultancy

27th March 2024

Arboricultural Survey Land at Acton Turville

Tree Number	Common name	*Botanical name*	Height (m)	Number of stems	Calculated stem diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Life Stage	Structural Condition	Physiological Condition	Observations	Preliminary Recommendations	Remaining contribution (yrs)	BS Catergory	Root Protection Area Radius (m) Area m2
						N	E	S	W									
T01	Common ash	*Fraxinus excelsior*	12	1	710	5	5	5	5	2	Mature	Fair	Diseased	Growing adjacent to stone wall *Daldinia concentrica* in main stem southeast side at 3m Dieback in the canopy chlorotic, sparse foliage Major deadwood in canopy Evidence of Ash Dieback Disease in canopy AHC 4	No action required at the time of inspection.	<10 years	U	No RPA due to Retention Category of U.
G02	Leyland cypress	*X Cuprocyparis leylandii*	12	1	220	4	4	4	4	0	Mature	Fair	Good	Linear group of 6 trees forming boundary screen Overburdening around base of stems	No action required at the time of inspection.	20-40 Years	C2	Radius: 2.6m. Area: 21 sq m.
G03	Common hawthorn	*Crataegus monogyna*	6	1	100	3	3	3	3	0	Mature	Fair	Good	Linear group of Hawthorn trees forming boundary screen, unable to access stems to fully assess Overburdening around base of stems Suppressed by fence and building Prolific ivy throughout canopy	No action required at the time of inspection.	20-40 Years	C2	Radius: 1.2m. Area: 5 sq m.

Silverback
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Site: Land at Acton Turville

Drawing Title: Tree Constraints Plan | 1:250 @ A3

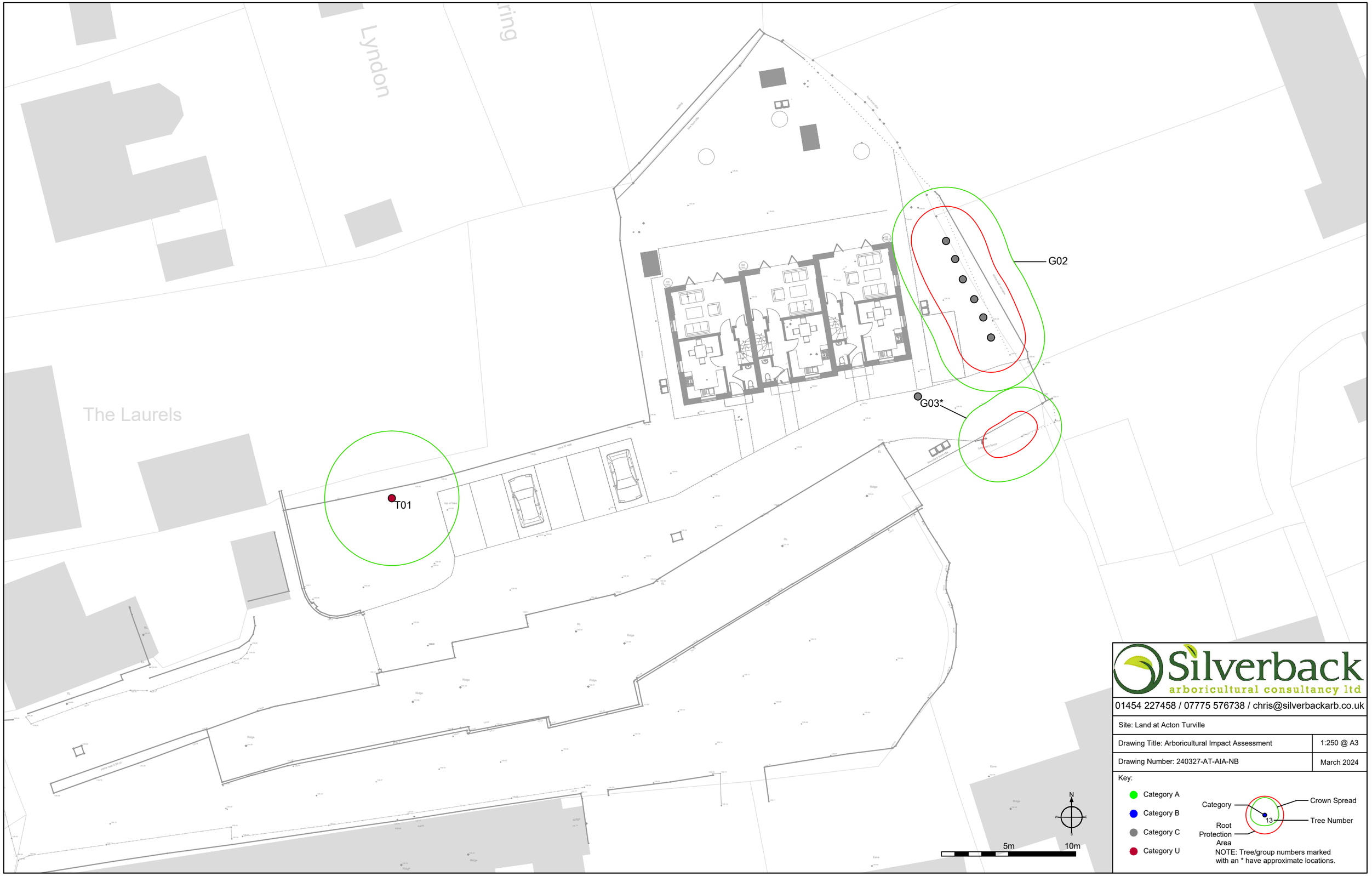
Drawing Number: 240327-AT-TCP-NB | March 2024

Key:

- Category A
- Category B
- Category C
- Category U

Category
Crown Spread
13
Tree Number
Root Protection Area

NOTE: Tree/group numbers marked with an * have approximate locations.



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Site: Land at Acton Turville	
Drawing Title: Arboricultural Impact Assessment	1:250 @ A3
Drawing Number: 240327-AT-AIA-NB	March 2024

Key:

- Category A
- Category B
- Category C
- Category U

Category — 13 — Crown Spread / Tree Number

Root Protection Area

NOTE: Tree/group numbers marked with an * have approximate locations.

Crown spread
to be cut back

G02

G03*

T01

The Laurels

Lyndon

5m 10m

N

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Site: Land at Acton Turville

Drawing Title: Tree Protection Plan	1:250 @ A3
Drawing Number: 240327-AT-TPP-NB	March 2024

Key:

- Category A
- Category B
- Category C
- Category U
- Proposed Tree for Removal

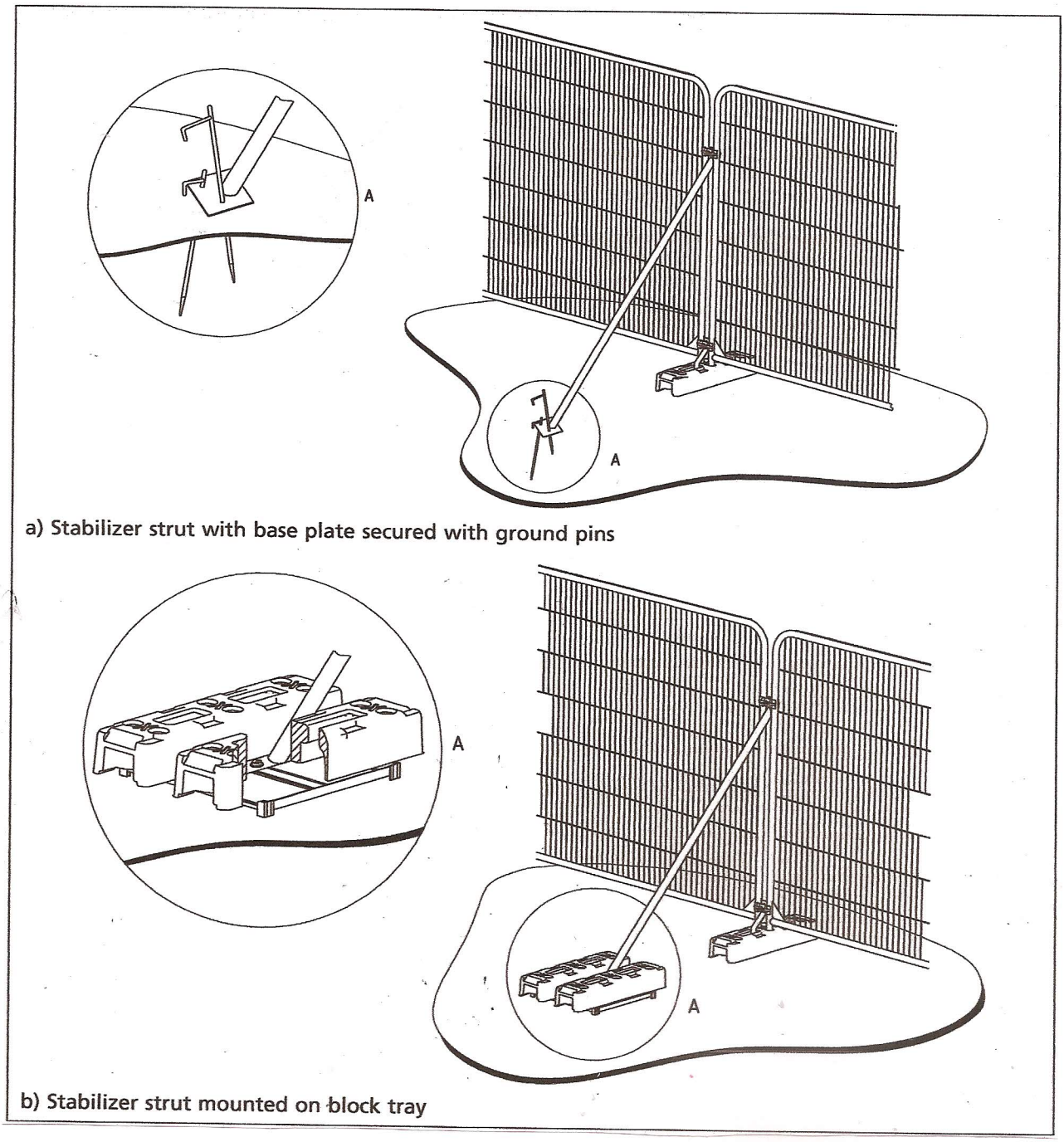
Category
13
Root Protection Area
Crown Spread
Tree Number

- Prune Canopy
- Tree Protection Fencing

NOTE: Tree/group numbers marked with an * have approximate locations.

BS 5837:2012 – TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION – RECOMMENDATIONS

EXAMPLES OF ABOVE-GROUND STABILIZING SYSTEMS



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

Figure 3 **Examples of above-ground stabilizing systems**

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA

KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.

CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY