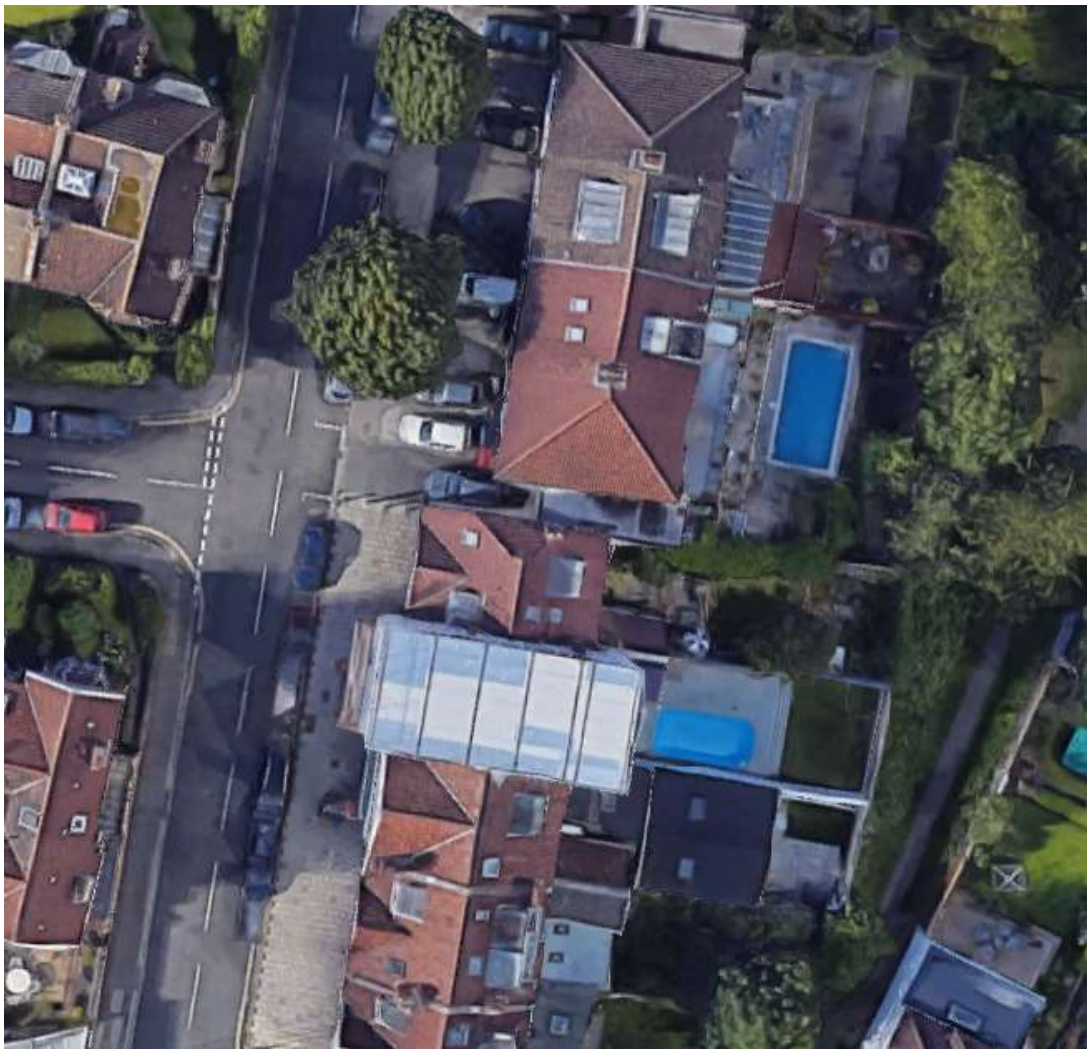
44-46 Coldharbour Road, Bristol

Arboricultural Report containing:

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



On behalf of
Property Acquisition & Investment

Prepared by:
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Arboricultural Consultant
November 2019

Content

1.0 Instructions/Scope

1.1 Silverback Arboricultural Consultancy have been instructed to compile an arboricultural report containing tree survey, tree constraints plan, arboricultural impact assessment and tree protection plan regarding trees within the grounds 44-46 Coldharbour Road, Bristol. This report is intended to accompany a planning application relating to the conversion of the existing buildings to form flats and the construction of a new self-contained dwelling where the existing swimming pool is situated. 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.

1.2 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

1.3 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

1.4 This 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 visited the site on Tuesday 12th November 2019. The weather was overcast with good visibility.

1.5 Documents Provided

- Topographic survey
- Proposed site layout dwg N° 2102 2123 01

2.0 Survey Methodology

2.1 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.

2.2 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 1994). 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.

2.3 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 a number of 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 *(potential height in brackets)*

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

2.4 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 BS5837:20012 Trees in Relation to Construction – Recommendations.
- The data significant to the proposed site layout is also presented on the Tree Constraints Plan (Drawing Number 191115-44-46CHR-TCP-AM (appendix 2) and Arboricultural Impact Assessment Plan (Drawing Number 191115-44-46CHR-AIA-AM (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

3.1 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.

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

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

3.4 The survey contained within this report is not a tree safety inspection. It has been carried out in order 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.

3.5 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

3.6 While this appraisal is not a tree risk assessment it nonetheless takes into account observed structural defects of the inspected trees in order to inform conclusions with regard to their retentive worth.

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4.0 Legal duty

4.1 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).*

4.2 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.

4.3 Searches of Bristol City Council online mapping system showed there are no Tree Preservation Orders or other statutory constraints covering the trees on the site. The public park to the rear, east of the site is within a Conservation Area.

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

5.1 The proposed development is for the conversion of the existing buildings to form flats and the construction of a new self-contained dwelling in the rear garden. The area proposed for development currently consists of existing buildings and patio area with swimming pool at the rear of the property. The rear garden area has been constructed on two levels. The proposed development area, containing the existing swimming pool, is approximately 1.5m higher than the lower tier where the trees are situated.

5.2 There is only two trees growing within the curtilage of the property. T01 is a Wisteria trained to grow along a concrete wall separating the two different garden levels. T02 is an over-mature Goat Willow that, whilst rooted within the boundary of the site, the majority of the main branch structure and canopy spread is over the adjacent park to the east.

5.3 As the proposed development is situated on the higher garden area adjacent to the main building the proposed access for construction will be through the existing garage from Coldharbour Road. It is therefore considered that the proposed works will not impact on the rooting areas of the two trees.

5.4 The different garden areas are separated by a low ornamental concrete wall with one narrow set of steps leading to the lower area with the trees. It is considered that the difference in ground levels and existing wall will prevent any unauthorised access within the root protection area of the trees during the proposed works.

5.5 Two trees growing within the public park, at the rear of the property, were included within to ensure there was no potential impact from the proposed development.

5.6 Five trees were surveyed. Of the trees surveyed one tree was categorized B, one tree was categorized U, the remaining 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

6.1 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

6.2 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.

6.3 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. 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 retain and protect all existing trees throughout the proposed development.

6.4.1 Trees Outside Site Boundary

There are no trees outside of the site boundary, which are affected within the current proposals

7.0 Arboricultural Impact Assessment

7.1 The position of the new self-contained dwelling is outside the calculated root protection area of existing trees. 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 trees health.

The proposed development area is separated from the lower area, containing the trees, by a low ornamental concrete wall. It is considered that no additional protective fencing is required as the different ground levels and existing wall will prevent any unauthorised access within the root protection area of the trees during the proposed 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 water proof 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.

Access for the construction works will be gained through the front of the property via the existing garage.

7.4 Service runs in association with the proposed project have been planned outside of any Root Protection Area of retained trees.

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 or remove of the trees. *BS5837: 2012 par 5.3* states that proposed buildings should be designed to take account of 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**.**

The proposed dwelling is at a sufficient distance from the retained trees for there to be no issues.

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 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), may involve the erection of tree protection barriers as discussed in Section 8.2.

8.0.2 The potential position of tree roots as indicated in the Tree Constraints Plan (appendix 2), and Arboricultural Impact Assessment Plan (appendix 3) 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

No remedial tree works are considered necessary to facilitate the proposed development.

8.2 Tree Protection Fencing

It is considered that no additional tree protection is required as the different ground levels and existing wall will prevent any unauthorised access within the root protection area of the trees during the proposed works**.**

8.3 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.

9.0 Contact Details

9.1 **Arboricultural Consultant**

Chris Wright

Silverback Arboricultural Consultancy

E-mail: chris@silverbackarb.co.uk

9.2 **Local Authority Tree Officer**

Matthew Bennett

Arboricultural Officer

Bristol City Council

E-mail: matthew.bennett@bristol.gov.uk

10.0 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 sheet
- Tree constraints plan
- Arboricultural impact assessment (AIA)

Chris Wright. ***MArborA, Tech Cert.Arbor.A***

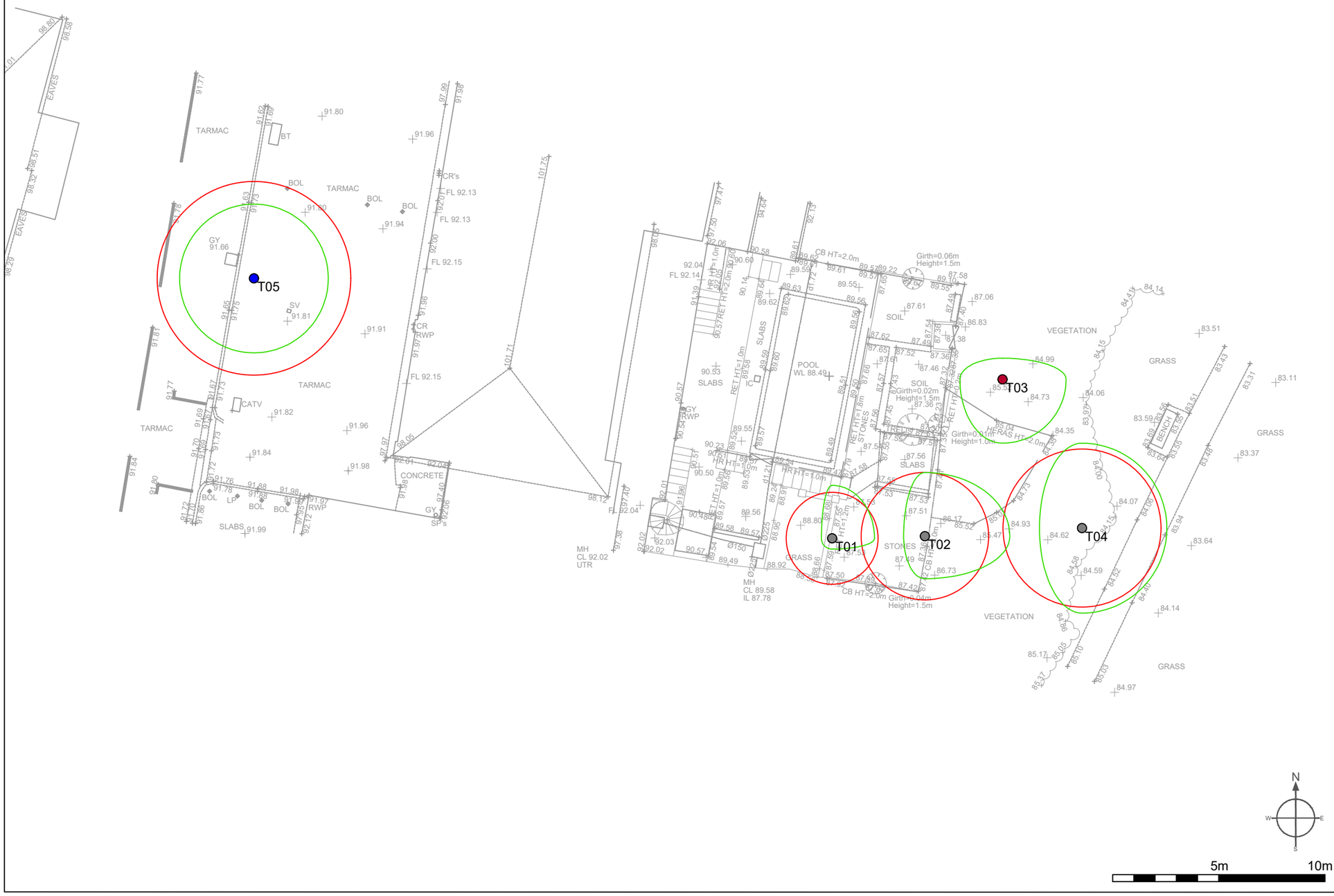
Principal Consultant

Silverback Arboricultural Consultancy

27th November 2019

Arboricultural Survey 44-46, Coldharbour Road, Bristol

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	S	E	W									
T01	Wisteria	Wisteria sp	2	1	180	2.5	2	0.5	0.5	1	Mature	Good	Good	Twin stemmed from base Trained against wall	No action required at the time of inspection.	10+ Years	C2	Radius: 2.2m. Area: 15 sq m.
T02	Willow, Goat	Salix caprea	4	1	250	3	4	2	1	2	Over Mature	Good	Good	Base of stem on property boundary main stemn extending east into neighbouring park Previously pollarded at 3m Potentially unstable root plate, evidence of root heave Hung up snapped branch Suppressed by neighbouring trees	No action required at the time of inspection.	10+ Years	C2	Radius: 3.0m. Area: 28 sq m.
T03	Ash, Common	Fraxinus excelsior	5	2	295	1	3	3	2	1	Early Mature	Fair	Good	Growing in neighbouring land on steep slope 2m lower than site level Twin stemmed from base Included bark at stem union Evidence of Ash dieback disease throughout canopy	No action required at the time of inspection.	<10 years	U	none - due to Retention Category of U.
T04	Cherry, wild	Prunus avium	7	1	310	4	4	4	2		Mature	Good	Good	Growing in neighbouring park Suppressed by neighbouring trees Asymmetric crown Signs of bacterial canker infestation	No action required at the time of inspection.	20-40 Years	C2	Radius: 3.7m. Area: 43 sq m.
T05	Maple, Norway	Acer platanoides	8	1	380	3.5	3.5	3.5	3.5	3	Mature	Fair	Poor	Street tree growing adjacent to highway. Butress roots lifting public footpath No significant defects visible at time of inspection	No action required at the time of inspection.	20-40 Years	B2	Radius: 4.6m. Area: 66 sq m.



Silverback arboricultural consultancy ltd	
01454 227458 / 07775 576738 / chris@silverbackarb.co.uk	
Site: 44-46 Cold Harbour Road	
Drawing Title: Tree Constraints Plan	1-200@A3
Drawing Number: 191115-44-46CHR-TCP-AM	Nov 2019

Key:

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

Category · Crown Spread · Tree Number · 13 · Root Protection Area

N

5m 10m

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Site: 44-46 Cold Harbour Road

Drawing Title: Arboricultural Impact Assessment	1-200@A3
Drawing Number: 191121-44-46CHR-AIA-AM	Nov 2019

Key:

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