TRII
CONSULTANCY

34B Holden Park Road, Southborough, Royal Tunbridge Wells, Kent, TN4 0ES
Email: b.oates@hotmail.co.uk
Tel: 07736722726 Web: www.triiconsultancy.co.uk

TREE SURVEY ARBORICULTURAL IMPLICATIONS REPORT

29 The Terrace

Barnes

SW13 0NR

17 January 2025

Ref: TC-241209-TSAIR-250117

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SITE	29 The Terrace, Barnes, SW13 0NR		**DOCUMENT REF** TC-241209-TSAIR-250117
CLIENT	Angus McPhie		**DATE OF TREE SURVEY** 14 December 2024
TREE SURVEY ASSESSMENT SYSTEM	BS 5837:2012 *Trees in relation to design, demolition and construction - Recommendations*		**DATE OF REPORT** 17 January 2025
CONSTRAINTS	The site is within the Barnes Green Conservation Area		**PROPOSAL** New electric sliding gates and rear extensions.
CONSULTANT	Ben Oates *TechArborA*	**AUTHOR**	Ben Oates *TechArborA*
LOCAL AUTHORITY	London Borough of Richmond upon Thames		

TERMS OF REFERENCE

Survey the subject trees following BS 5837:2012 to assess their general condition and provide an arboricultural implications report for the proposed development that sustainably safeguards the retained trees' long-term well-being.

C O N T E N T S

1.0 Summary

1.1 The proposal is for rear extensions to the existing house and alterations to the existing access with new electric sliding gates.

1.2 Following BS 5837:2012, I surveyed six individual trees and one hedge growing within or immediately adjacent to the site.

1.3 I have assessed two trees (off-site ash T1 and on-site yew T6) as category 'B. The remaining four trees and the hedge are in category 'C'.

1.4 The beech hedge will be removed to install new gates. A new hedge will be planted at the front.

1.5 The rear extensions and patio extend into the RPA of yew T6 by 13%, and so they do not exceed the recommendations of BS 5837. The patio will be constructed using above soil methods such as a cellular confinement system.

1.6 A temporary Heras fence will protect the yew T6 during construction.

1.7 Materials will be mixed and stored outside of RPAs.

1.8 The proposal will not unacceptably harm any of the retained trees, provided that the tree protection measures I recommend in my report are implemented.

1.9 The proposal is, therefore, sustainable in arboricultural terms.

2.0 Supplied plans

- CD Surveys Ltd. – Topographical Survey, drawing no. SM/2410008, dated October 2024;
- Simon Merrony Architects Co. Ltd. – Proposed Site Plan, dated December 2024.

3.0 Scope of the report

3.1 The purpose of my report is to provide the London Borough of Richmond upon Thames with the arboricultural information necessary to approve the planning application to which this report and appendices relate.

3.2 My report summarises the data I gathered during my tree survey on 14 December 2024. The appendices demonstrate that the arboricultural implications and implementation methods have been fully considered.

3.3 Compliance with my recommendations will ensure that the trees retained within and without the site are adequately safeguarded during construction.

4.0 Survey method

4.1 I conducted my tree survey following British Standard BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* (BS 5837). The details of the trees can be found in Appendix A.

4.2 I inspected the trees based on the visual tree assessment method expounded by Mattheck and Breloer (The body language of trees, DoE booklet Research for Amenity Trees No. 4, 1994).

4.3 I measured the stem diameters of trees in millimetres at 1.5 metres above ground level with a rounded-down diameter tape or estimated where access was restricted or otherwise following Annex C of BS 5837.

4.4 I estimated the height of each tree with a laser hypsometer where line of sight was attainable or estimated where observation was restricted and rounded up to the nearest metre.

4.5 I measured four crown spread radii in the direction of the cardinal compass points, either with a laser rangefinder or estimated by pacing or visually where access was restricted and rounded up to the nearest half metre.

4.6 I categorised the trees according to their size, age, physiological and structural condition, overall arboricultural quality, landscape value, and future potential following the cascade chart for tree quality assessment (Table 1) of BS 5837.

4.7 The appendices to my report set out the trees' root protection areas (RPA), described by their RPA radius derived from section 4.6 of BS 5837.

4.8 I conducted my tree survey from ground level with a monocular.

4.9 I did not take any soil or tissue samples or conduct an internal investigation of the subject trees.

4.10 The positions of the subject trees are shown in appendices C and D. The locations were derived from the supplied plans and the measurements I took during my survey. Please note that the plans are for indicative purposes only.

5.0 Ecology informative

5.1 Bats are protected under the Wildlife & Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to deliberately or recklessly disturb or damage their roosts. Trees should be inspected before any work commences, and if bats are suspected, advice will need to be sought from the Natural England Bat Line on 0845 1300228. Further guidance on bats is available from The Bat Conservation Trust (020 7627 2629).

5.2 As far as possible, tree work should officially avoid the bird nesting season (Natural England) from February until August. However, the busiest time is from 1 March until 31 July.

5.3 Please also be aware that ecology is governed principally by;

- the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000);
- the Conservation of Habitats and Species Regulations 2017 (as amended);
- the Wild Mammals (Protection) Act 1996, and;
- the Natural Environment and Rural Communities (NERC) Act 2006.

6.0 The site

6.1 The site, 29 The Terrace, is a residential property located on the southern side of the River Thames, one hundred metres southwest of Barnes Bridge.

6.2 It has a small front in and out driveway with a small beech hedge. The rear comprises a patio and garden with mixed shrubs. Regarding significant trees, there is only one yew tree within the rear garden, but there is an off-site ash.

6.3 Concerning the British Geological Survey Geology of Britain viewer, the indicated soil parent material is the London Clay Formation, comprised of clay and silt. Clay is shrinkable, so foundation depths must be designed per the National House Building Council guidance.

6.4 Generally, this soil type is a suitable medium for tree root growth, and one would expect a normal root distribution that is not impeded by the soil characteristics and underground obstructions.

6.5 The site is within the Barnes Green Conservation Area.

7.0 The trees

7.1 Following BS 5837:2012, I surveyed six individual trees and one hedge growing within or immediately adjacent to the site.

7.2 I have assessed two trees (off-site ash T1 and on-site yew T6) as category ‘B. The remaining four trees and the hedge are in category ‘C’.

7.3 The details are listed in the tree survey schedule in Appendix A.

8.0 Arboricultural integration

8.1 The primary arboricultural intention is to retain and protect the trees that make the most outstanding positive contribution to the character and appearance of the site and the surrounding landscape, conserving the arboreal appearance of the site's character.

8.2 The beech hedge at the front will be removed and replaced. No other trees will be removed.

9.0 Root protection areas

9.1 The British Standard BS 5837 gives a root protection area (RPA) for each retained tree by reference to section 4.6 of BS 5837. The RPA estimates the area of a root system necessary to sustain the viability of the tree if all other roots outside it were severed.

9.2 It is relevant to note that the RPA is not the entire root system of a tree. Where trees grow without subterranean obstruction, the RPA can represent only half of a tree's radial root system as a rule of thumb.

9.3 The RPA, as specified in BS 5837, effectively implies that trees can tolerate 360º removal of up to half of their radial root system and remain viable. Appendix D shows that the proposal does not require removing half the tree’s root system but retains most of the root system intact outside the RPA. Therefore, the proposal will impact tree roots less than BS 5837 implies trees can tolerate. The proposal includes a localised disturbance of the top turf layer.

9.4 The proposed disturbance within RPA of yew T6 comprises lifting the existing turf, clearing paving slabs, minor excavation, and constructing a new above soil patio. This equates to an RPA coverage of 13% with hard surfacing.

9.5 The extension encroaches the RPA of yew T6 by an insignificant amount, and with the contiguous compensatory root in all other directions, the proposed disturbance will have a negligible affect on its health.

9.6 The extension foundations will be dug by hand, but as it is at the outermost extremity of the yew tree's RPA, so no unacceptable harm will occur.

9.7 Whilst the RPA is essential for minimising cumulative impacts on tree health following disturbance to the rooting environment, if an incursion into the RPA does not significantly reduce the overall assimilative function of the root system, it is unlikely to cause intolerable harm.

9.8 The RPA is usually described as a circle with a radius of the prescribed distance. However, an arboriculturist can modify the shape and position of the RPA to meet individual site conditions according to the probable distribution of the tree roots.

9.9 Localised intrusion into the RPA can occur where the ground is adequately protected following the requirements of section 6.2.3 of BS 5837, where work is carried out to an agreed design and working method, and where contiguous compensatory rooting is preserved.

9.10 The roots at the outermost extremity of yew's RPA will likely be fibrous or below 25 millimetres in diameter, so cutting back cleanly will have a negligible impact on tree health and complies with BS 3998:2010 Tree work— *Recommendations.*

9.11 On the balance of probabilities, it is reasonable to suppose that the undisturbed off and on-site contiguous root systems of the yew T6 will compensate for the RPA encroachment and ensure the tree remains viable long-term. I am satisfied that the proposed encroachment will not compromise the tree's viability and that the proposal, therefore, complies with the recommendations of BS 5837.

10.0 Tree protection measures

10.1 **Tree protection fencing:** Heras fencing will be erected before a site clearance or construction materials are brought to the site. It will remain during the entire construction phase and will be the last material to be cleared from the site on completion.

10.2 No other tree protection installations are required.

10.3 **Mixing and storage:** Chemicals harmful to trees, such as cement, will be stored and mixed on the existing driveway or in areas outside tree RPA.

11.0 Site supervision and monitoring

11.1 As the implications for the trees are minimal, there will be no need for site supervision and monitoring.

12.0 Conclusion

12.1 All the significant trees are retained and protected during construction.

12.2 Only a small hedge is to be removed, which will have no appreciable effect on the area's character and appearance.

12.3 The implications of the proposed extensions, new gates and hard landscaping causes less disturbance within RPA than what BS 5837:2012 implies trees can tolerate, so their construction does not cause unacceptable harm.

12.4 I have considered the information provided and my observations on site. I am satisfied that this scheme is arboriculturally sound and that the long-term well-being of the retained trees will be safeguarded sustainably.

The statements made in this report do not consider the effects of climate extremes, vandalism or accidents, whether physical, chemical or fire. Trii Consultancy cannot, therefore, accept any liability in connection with these factors, nor where prescribed work is not carried out correctly and professionally following current good practice. The authority of this report ceases at any stated time limit within it, or if none declared after two years from the date of the report or when any site conditions change, or pruning or other works unspecified in the report are carried out to, or affecting, the inspected tree or trees, whichever is the sooner.

TC-241209 TSS-241214 BS 5837:2012 Tree Survey Schedule
29 The Terrace, Barnes, London, SW13 0NR

Appendix A

Tree No.	Species	Height (m)	Stem diameter (mm)	Radial crown spread (m)	Crown clearance (m)	Lowest branch (m)	Age class	Physio-logical condition	Structural condition	Arb. Quality	Land-scape value	Potential	Category	RPA	Observations
H1	Beech	2.5	30	N:1 E:1 S:1 W:1	0.5	0	Young	Normal	Remediable	Low	Low	At least 10 years	**C**	Area: 41 sq m.	Hedge.
T1	Ash	15.0	880	N:4.5 E:4.5 S:4.5 W:4.5	3.0	2	Mature	Below average	Irremediable	Low	High	At least 20 years	**B2**	Radius: 10.6m. Area: 353 sq m.	Off-site. Boundary wall constructed with a plinth to bridge the tree roots. Previously topped and subsequently managed as a Pollard. Infected with ash dieback disease (Hymenoscyphus fraxinaeus). Heartwood decay evident in the hollowing of previously pruned branches.
T2	Campbell's magnolia	4.0	110,100	N:2 E:2 S:2 W:2	1.5	0(N)	Young	Normal	Irremediable	Low	Low	At least 10 years	**C**	Radius: 1.8m. Area: 10 sq m.	Small shrub.
T3	Laurel cherry	6.0	180	N:2.5 E:2.5 S:2.5 W:2.5	4.0	3	Young	Normal	Irremediable	Low	Low	At least 10 years	**C**	Radius: 2.2m. Area: 15 sq m.	Off-site shrub.
T4	Deciduous camellia	2.5	80	N:1.5 E:1.5 S:1.5 W:1.5	0.5	0	Young	Normal	Irremediable	Low	Low	At least 10 years	**C**	Radius: 1.0m. Area: 3 sq m.	Ornamental shrub.
T5	Japanese maple	1.5	30	N:1 E:1 S:1 W:1	1.0	0.5	Young	Normal	Irremediable	Low	Low	At least 10 years	**C**	Radius: 0.4m. Area: 1 sq m.	Small ornamental.
T6	English yew	8.5	650	N:4.5 E:4.5 S:4.5 W:4.5	3.5	3	Early mature	Normal	Good	Moderate	Moderate	At least 20 years	**B1,2**	Radius: 7.8m. Area: 191 sq m.	Topiary cone.

TC-241209-TSG-241214 Tree Survey Gallery
29 The Terrace, Barnes, SW13 0NR

Appendix B

H1 P001

T1 P001

Photographs taken by Ben Oates on
14 December 2024

T1 P002

T2 P001

Photographs taken by Ben Oates on
14 December 2024

T3 P001

T4 P001

Photographs taken by Ben Oates on
14 December 2024

T5 P001

T6 P001

Photographs taken by Ben Oates on
14 December 2024

Appendix C

KEY

Tree trunks and crowns

Root protection areas (RPA)

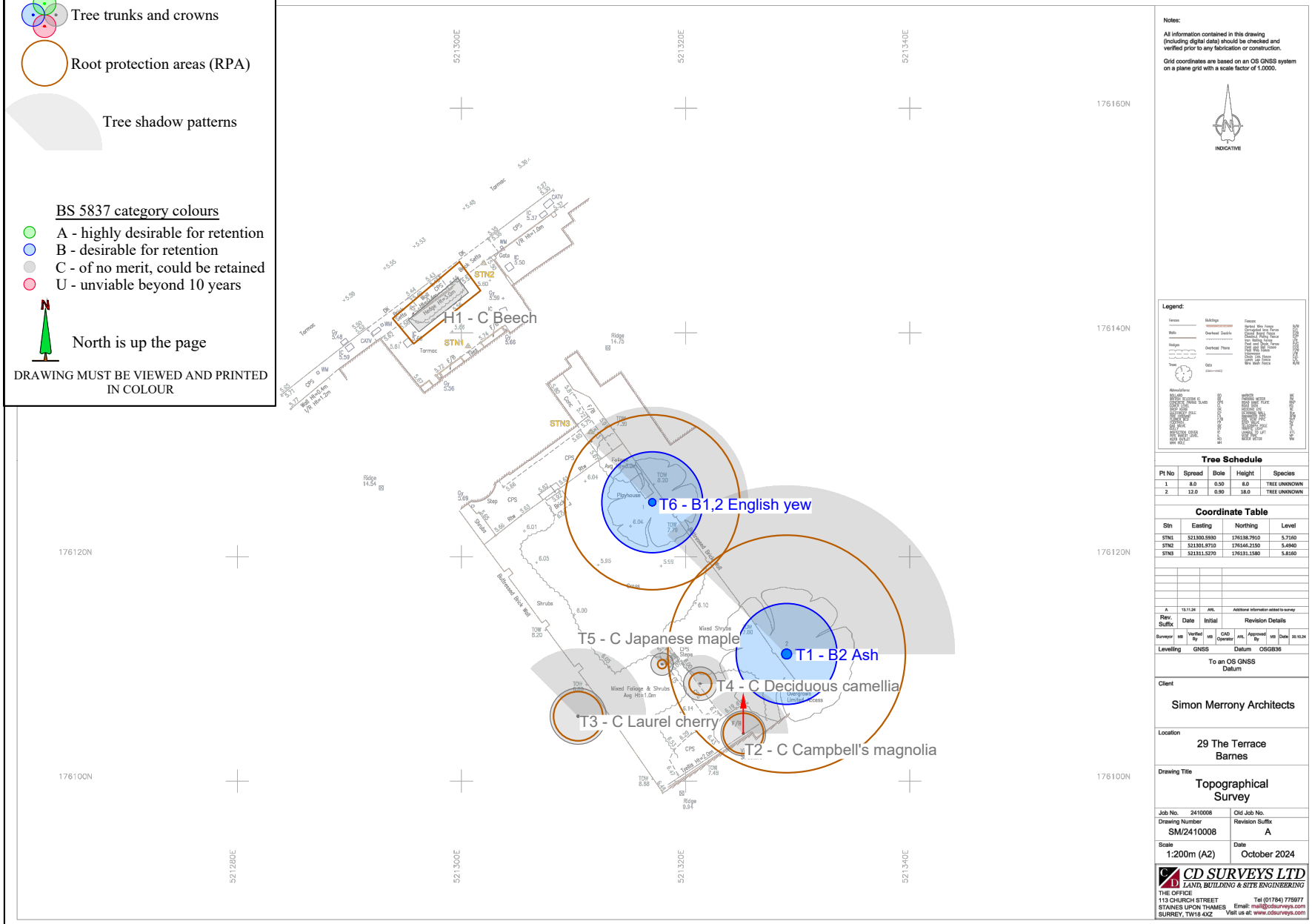
Tree shadow patterns

BS 5837 category colours

- A - highly desirable for retention
- B - desirable for retention
- C - of no merit, could be retained
- U - unviable beyond 10 years

North is up the page

DRAWING MUST BE VIEWED AND PRINTED IN COLOUR



Notes:

All information contained in this drawing (including digital data) should be checked and verified prior to any fabrication or construction.

Grid coordinates are based on an OS GNSS system on a plane grid with a scale factor of 1.0000.

INDICATIVE

Legend:

0m 4m 8m 12m 16m 20m

Tree Schedule

Pt No	Spread	Bole	Height	Species
1	8.0	0.50	8.0	TREE UNKNOWN
2	12.0	0.90	18.0	TREE UNKNOWN

Coordinate Table

Stn	Easting	Northing	Level
STN1	521300.5930	176138.7910	5.7150
STN2	521301.9710	176146.2150	5.4940
STN3	521311.5270	176131.1580	5.8160

Rev. Suffix	Date	Initial	Revision Details
A	13.11.24	ARL	Additional information added to survey

Surveyor MB | Verified By MB | CAD Operator ARL | Approved By MB | Date 30.10.24

Levelling GNSS | Datum OSGB36

To an OS GNSS Datum

Client: Simon Merrony Architects

Location: 29 The Terrace Barnes

Drawing Title: Topographical Survey

Job No.	2410008	Old Job No.	
Drawing Number	SM/2410008	Revision Suffix	A
Scale	1:200m (A2)	Date	October 2024

CD SURVEYS LTD
LAND, BUILDING & SITE ENGINEERING
THE OFFICE
113 CHURCH STREET
STAINES UPON THAMES
SURREY, TW18 4XZ
Tel (01784) 775977
Email: mail@cdsurveys.com
Visit us at: www.cdsurveys.com

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TITLE: Tree Survey Plan

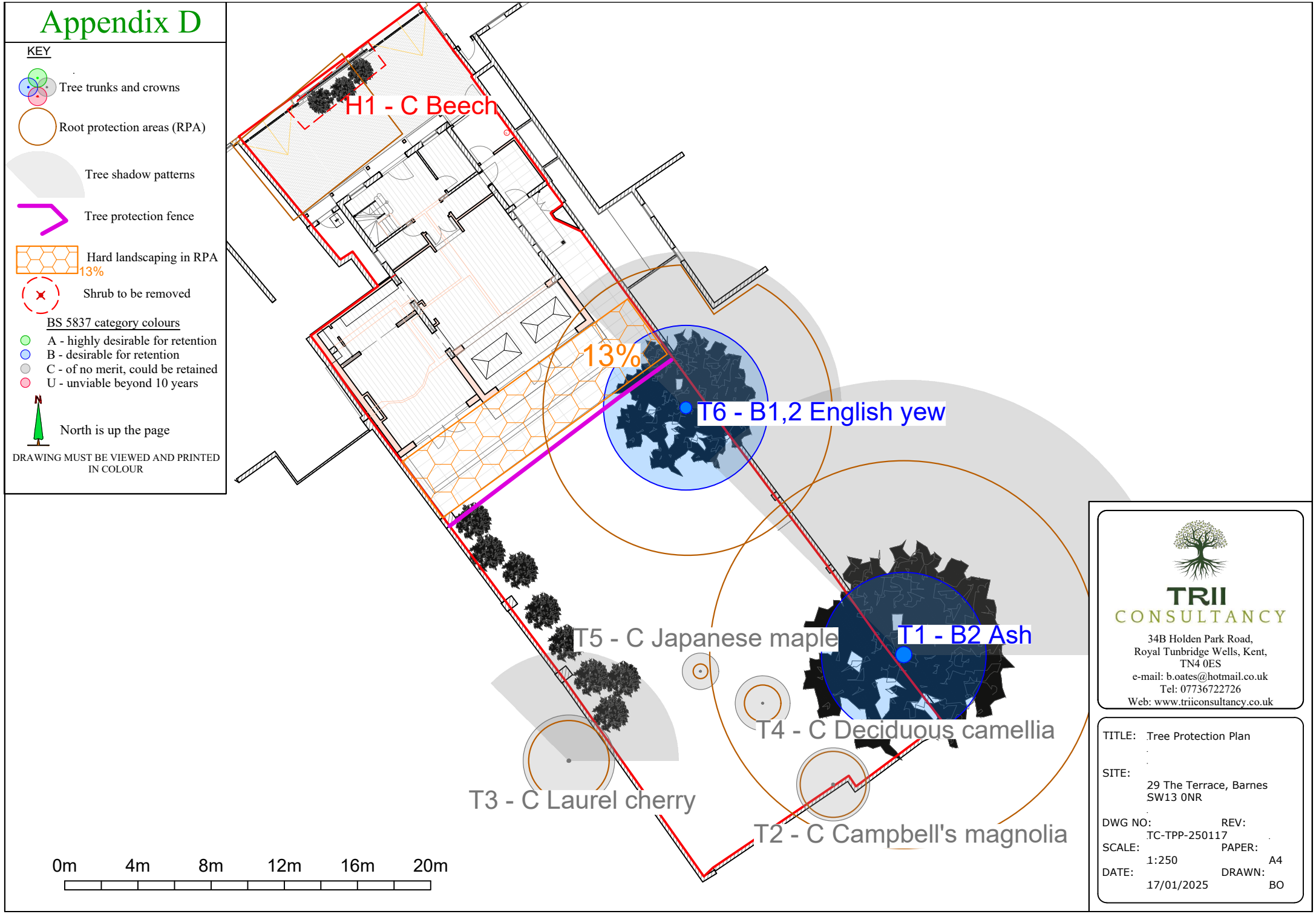
SITE: 29 The Terrace, Barnes SW13 0NR

DWG NO: TC-TSP-250114 REV:

SCALE: 1:500 PAPER: A4

DATE: 14/01/2025 DRAWN: BO

Appendix D



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TITLE:	Tree Protection Plan
SITE:	29 The Terrace, Barnes SW13 0NR
DWG NO:	TC-TPP-250117
REV:	
SCALE:	1:250
PAPER:	A4
DATE:	17/01/2025
DRAWN:	BO