

Arboricultural Impact Assessment-Promenade House Garden Enhancements

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Section 1: Introduction

- 1.1. This report has been prepared by Tyler Grange Group Limited on behalf of Stride Treglown. It sets out the findings of a detailed BS5837:2012 Tree Quality Survey completed by a suitably qualified surveyor on the 27th February 2024.
- 1.2. The red line application boundary is shown at Figure 1 below, and is also included on the Landscape General Arrangement plan attached as Appendix 3. The baseline tree survey included all trees on and adjoining the site.
- 1.3. The context for this survey and arboricultural assessment is in relation to a proposed 10m x 6m tent supported by a combination of permanent supporting pole (with shallow foundations) and temporary (moveable) tent posts with associated guy ropes and pegs. The proposed location and detailed specifications of the tent are provided at Appendix 2 of this report.
- 1.4. The site comprises an ornamental garden with mixed tree and shrub species including young and establishing individuals to mature, specimen trees. The largest tree is a specimen cedar to the NW corner. The site is enclosed by continuous evergreen hedgerow extending along the perimeter from the south to north-west corner of the site. Trees and shrubs are positioned adjacent to a central grassed lawn with associated ornamental planting and hard landscaping, comprising concrete slab footpaths which are positioned to the east close to the Promenade House and the main access path which runs along the northern side of the building.



Figure 1. Indicative Red Line Application Boundary and Blue Line Survey Boundary (Google Earth 2024 ©).



Scope of Report

- 1.5. The tree survey, coupled with a review of local planning policies, has helped inform the alignment and specification of the proposed tent installation, both in terms of minimising necessary tree loss and Root Protection Area (RPA) impacts resulting from vertical tent poles that pierce the ground, and necessary compensation measures required to remain compliant with Bristol's Tree Replacement Policy.
- 1.6. Following a thorough assessment of tree constraints, an optimum location for the tent has been achieved which results in the fewest tree removals, pruning works, and works to occur inside retained RPAs, especially the highest quality and value cedar tree (T1).

Survey Findings

1.7. Findings for all captured trees are detailed in the Tree Survey Schedule (See Appendix 1). This provides a tabulated record of all survey data including reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the observed relative arboricultural value(s) of each feature captured.

Statutory Designations Check

- 1.8. According to Bristol City Council (BCC) Local Plan Policies Map, the site is not located in a Conservation Area. There are no veteran trees nor Ancient Woodland designations relevant to the site, according to Natural England and their 'MAGIC' interactive online mapping tool.
- 1.9. Confirmation from BCC is required directly to confirm whether the site has any Tree Preservation Orders (TPOs) given this information is not readily available online.



Section 2: Desk Study

Planning Policy Context

2.1 Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Applicable arboricultural planning policy that relates to the site is set out below at a National and Local level.

National Planning Policy Framework (NPPF)

- 2.2 The National Planning Policy Framework (NPPF) was updated in December 2023 and is a material consideration in planning decisions and outlines the Government's planning policies for England, setting out how these are expected to be applied. The consideration for existing trees and woodlands in the context of planning and new development is set out within Section 12 'Achieving well-designed and beautiful places' and Section 15 'Conservation and Enhancing the Natural Environment'.
- 2.3 Section 12, paragraph 136 states that "Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users".
- 2.4 Section 15, paragraph 180 provides a series of prerequisites to inform how planning policies and decisions should contribute to and enhance the natural and local environment. This includes "recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland".
- 2.5 Section 15, paragraph 186 highlights a series of principles that local planning authorities should apply when determining planning applications, stating that "if significant harm biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused".



Local Planning Policy

- 2.6 The site is located within the authority of Bristol City Council. The planning policies relevant to arboriculture are detailed below:
- 2.7 Policy BCS9: 'Green Infrastructure' of BCC Core Strategy (Adpt June 2011):

"The integrity and connectivity of the strategic green infrastructure network will be maintained, protected and enhanced.

Individual green assets should be retained wherever possible and integrated into new development. Loss of green infrastructure will only be acceptable where it is allowed for as part of an adopted Development Plan Document or is necessary, on balance, to achieve the policy aims of the Core Strategy. Appropriate mitigation of the lost green infrastructure assets will be required".

2.8 <u>Policy DM17:</u> 'Development Involving Existing Green Infrastructure' of Bristol Local Plan- Site Allocations & Development Management Policies (Adpt July 2014).

"All new development should integrate important existing trees. Where tree loss or damage is essential to allow for appropriate development, replacement trees of an appropriate species should be provided, in accordance with the tree compensation standard below:"

Trunk Diameter of tree lost to development (cm measured at 1.5 m)	Number of replacement trees
<15	0-1
15-19.9	1
20-29.9	2
30-39.9	3
40-49.9	4
50-59.9	5
60-69.9	6
70-79.9	7
80+	8



Section 3: Arboricultural Impact Assessment

3.1 The proposed tent parameters as illustrated in Figure 2 below, have been referenced when considering the various aspects of the proposal. The tree constraints data, especially the sensitive Root Protection Areas (RPAs) of retained trees, have informed the tent parameters with the intention of reducing invasive operations as much as possible.

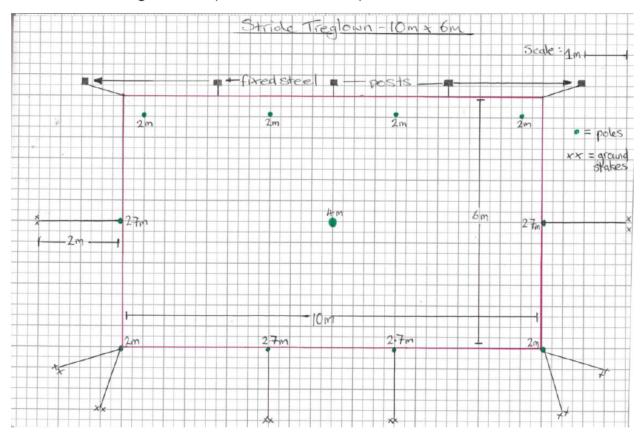


Figure 2: Indicative Tent Sketch Aerial Plan of the Fixed and Unintrusive Pole Locations



Tree Removals and Pruning Works

3.2 Trees to be retained and removed are shown on the TRRP. Table 1 below specifies the expected tree removals and pruning works required to facilitate the tent installation as well as the quantity of new trees needed to comply with the council's tree replacement policy.

Table 1: Proposed Tree Removals and Pruning Works to Facilitate the Tent Installation

Tree Reference Number	BS5837 Tree Category Grading	Description of Loss	No. Tree Replacements to Comply with Policy Requirements		
T2, T3, T5	С	Removal of 3no. low quality trees comprising two semi-mature holly and a single elder tree. All trees are <20cm DBH.	1 per tree removed		
H10	С	Partial hedgerow removal by a linear segment of approximately 3m.	0-1		
Т6	С	Crown lift pruning by up to 1m via removing a few lower branches on the western canopy extent to achieve a 3m canopy height clearance to accommodate the north-eastern corner tent pole (of 2.7m maximum height).	n/a		
Т8	В	Crown lift pruning by up to 0.5m via removing a few lower branches on the western canopy extent to achieve a 3m canopy height clearance to accommodate the south-eastern corner tent pole (of 2.7m maximum height).	n/a		

Tree Compensation Recommendations

3.3 In accordance with the council's tree replacement policy a total of 4no. standard trees are recommended to provide adequate compensation for the 3no. trees and hedgerow segment removal. Four replacement trees are shown within the existing retained planting beds on the Landscape General Arrangement Plan (156459-STL-XX-XX-DR-L-09000_PL_PL01) included as Appendix 3 of this report. Supplementary native shrub planting is also proposed between the retained pathway and main building, which will also contribute to ensuring a net gain in the site's tree coverage is achieved. Furthermore, due to the heavily shaded location of the trees proposed for removal and their hindered physiological condition, it is anticipated that the new trees will offer better arboricultural merits owing to their readily observable and more conducive positioning for healthier long-term establishment.



Works within Root Protection Areas (RPAs)

- 3.4 A Tree Protection Plan (TPP) is appended to this report which sets out the appropriate ground protection measures required during the ground preparation, pole foundations, and tent erection stages. The prescribed protection measures follow the recommendations for construction mitigation as detailed within Table 2 below in order to safeguard trees from RPA impacts.
- 3.5 The only aspect of the proposal that is expected to penetrate the existing soil surface are the 5no. fixed steel poles located along the north side of the tent, which will be located close to the site's perimeter retaining wall. The remaining poles and guy ropes which will not be permanently fixed and are expected to only potentially involve very minor soil surface layer puncturing which will have a negligible impact on RPAs.

Table 2: Expected RPA Impacts, Mitigation and Protective Measures to Facilitate the Tent Installation

Tree Reference Number	Description of Works & Anticipated Impacts	Mitigative and Protective Measures
T1	Minor peripheral RPA impacts due to the installation of the 5 permanent steel poles along the northern site perimeter. The 5 steel posts (100 x 100mm box sections) will be set in concrete foundations comprising maximum dimensions of 400 x 400 x 1200mm (depth), base filled with hardcore and shingle before concrete pouring. The exact foundation depth (≤1200mm) is to be confirmed during excavation depending on the site conditions.	The proposed no-dig sub-base and hoggin-bound gravel surface layer finish layer to not exceed coverage by 20% of an entire individual RPA area. Steel post foundations to be dug manually using handhelp tools only under arboricultural supervision (watching brief) to ensure no significant roots over 25mm diameter are severed. Once dug, a suitable membrane will be laid inside the foundation before the hardcore infill to prevent concrete leaching into the surrounding soil volume inside or close to RPAs. Utilise a suitably-rated cellular confinement system for installing the permeable sub-base material with the surface finish laid above, to minimise soil compaction long-term, applying a no-dig methodology as illustrated below in Figure 3.
T1, T6, T8	Proposed tent floor installation comprising 75mm sub-base material with a hoggin-bound gravel surface layer finish.	Install non-invasive edge supports surrounding the tent base surface layer to avoid potential root impacts. All loose topsoil movement inside the RPA required for the no-dig sub-base installation to be completed sensitively using hand-held tools only. All tent materials and poles to be stored outside exposed RPAs. No topsoil or steep pole foundation arisings to be shifted and stored inside any RPA during or after the tent is installation. Specifically, no additional green



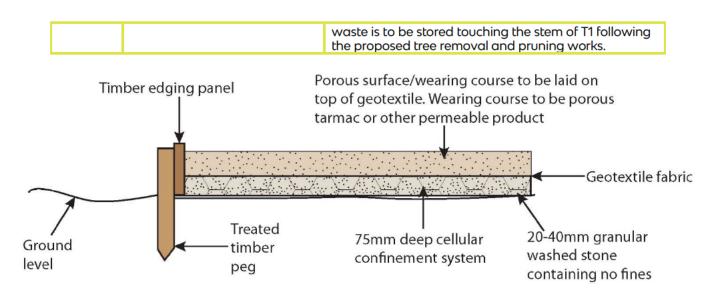


Figure 3: Recommended No-Dig Tent Floor Foundation Methodology Approach.

Ground Protection Matting

T1, T8, H11

Suitably-rated ground protection matting is necessary to be laid surrounding the tent foundation footprint, as shown on the TPP, in order to mitigate soil compaction within the untouched areas of RPA during all working aspects.

The ground protection matting specification is advised to comprise of porous rubber matting, such as the example illustrated in Figure 4 below. The ground protection will link

to the existing retained concrete paving access route, ensuring all personnel movement during the works are not tracking over unprotected RPA (grassed/ open soil areas), as repeated footfall with materials and equipment being carried could result in undue compaction.

No heavy materials or equipment should ever be stored upon this ground matting for extended periods of time unless it is suitably rated to withstand such loads.

Matting to be installed following the approved tree removal and pruning works.



Figure 4: Example 'ECOMAT' Rubber Ground Protection.

General Site Precautions and Requirements



- Cutting down, uprooting, damaging or otherwise destroying any tree that is proposed for retention is prohibited;
- No access will be permitted inside tree protection / non-intervention areas (unless authorisation is obtained in writing from the LPA or overseen by project arborist). Appropriate signage will also be implemented along the tree protection fencing to highlight to contractors the need for careful working methods and importance of establishing construction exclusion zones;

All retained trees

- No materials, equipment or debris will be stored within the RPA at any time and no
 fires will be lit on site. If during construction, there are any excessive levels of dust
 build-up on retained trees then trees must be hosed down immediately with a clean
 water supply;
- Notice boards, telephone wires or other services must not be attached to any part of retained trees;
- Materials which will contaminate the soil (e.g. concrete, cement, chemicals) must not be permitted within, or close to RPAs of retained trees. To avoid any associated damage or injury occurring to the trees as a direct result of contact with contaminants, works including cement mixing, will not be permitted inside or uphill from RPAs of any retained tree;

Procedures for Incidents

All Trees

If any breach of the approved construction methodology occurs or if during the operations that any tree roots above 25mm are identified during the working area, then the project arboriculturist must be contacted immediately to assess the situation using clear photo or video evidence of the incident provided by the relevant personal on site at the time. It may be decided that the arboriculturist should mobilise to site to investigate further and advise on any new suitable working methodologies to prevent incurring damage to tree roots. Any preventative action and details of agreed remedial works must be recorded and reported to the LPA.

- The TRRP shows how the site's most notable and valuable tree (T1) can be retained with limited RPA impacts as detailed above subject to appropriate mitigative measures.
- 3.7 The site access to be used throughout the tent installation involves the use of the existing concrete flags laid parallel to the northern boundary. This path will act as suitable ground protection for pedestrian movement during the development, for within the RPAs of T6 and T8. No concrete flags are to be lifted or replaced inside the RPAs of retained trees to avoid disturbances or the need for supplementary RPA protection measures. To improve the site access for safety (ensuring non-slip), laying rubber matting alike the prescribed ground protection above would be appropriate.



Plans

Plan 1: Tree Constraints Plan (165749_P01)

Plan 2: Tree Retention and Removal Plan (16574_P02)

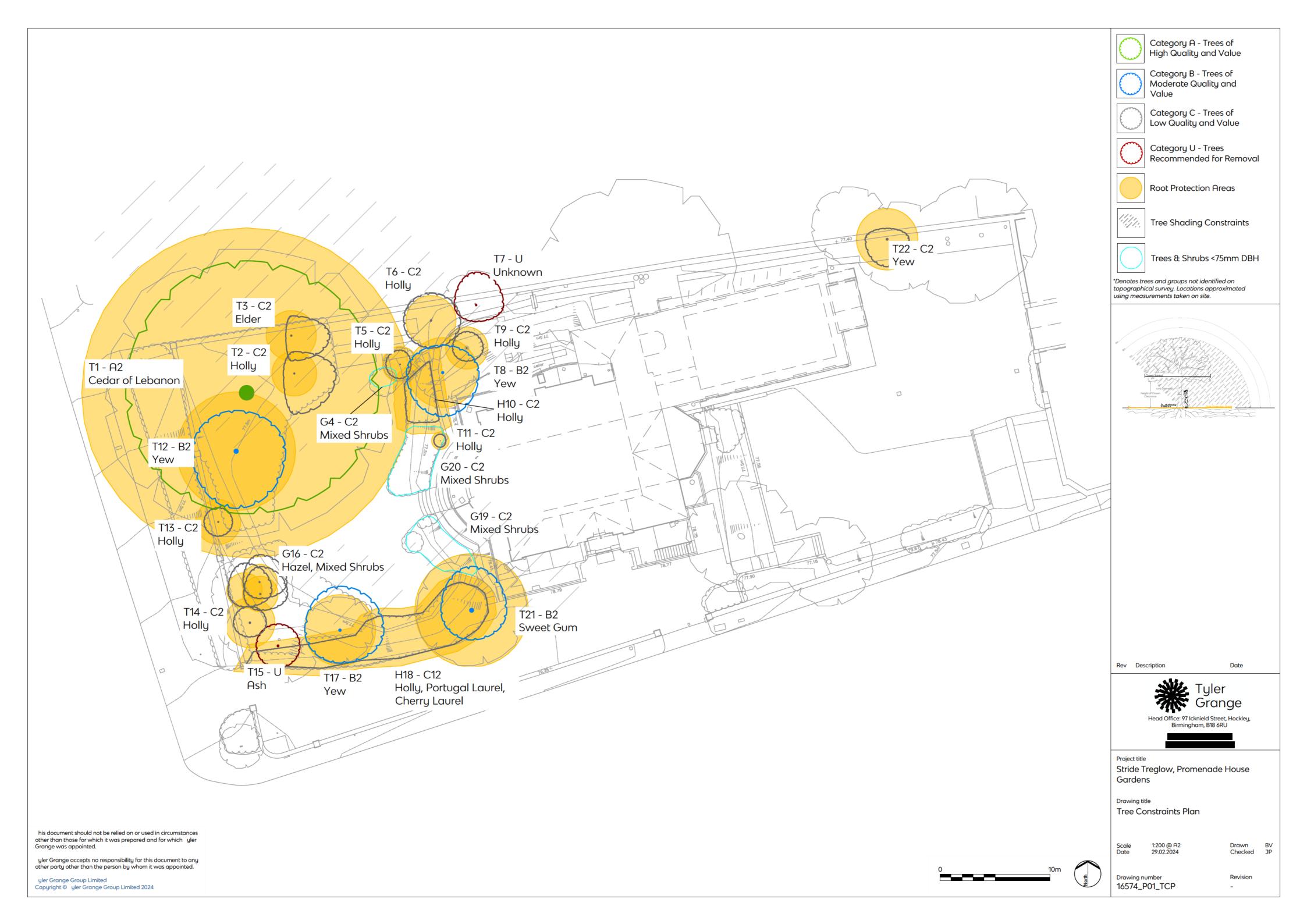
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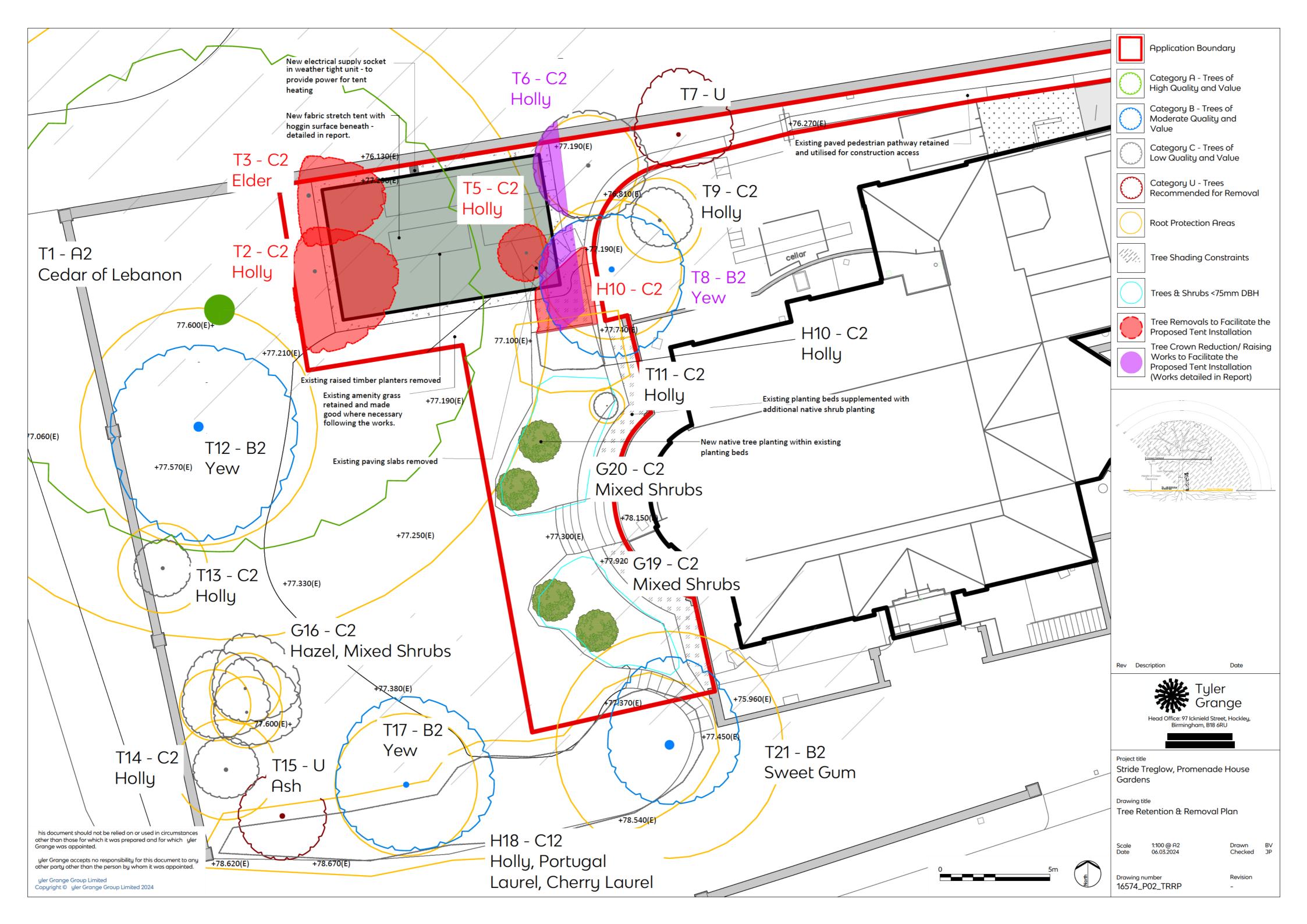
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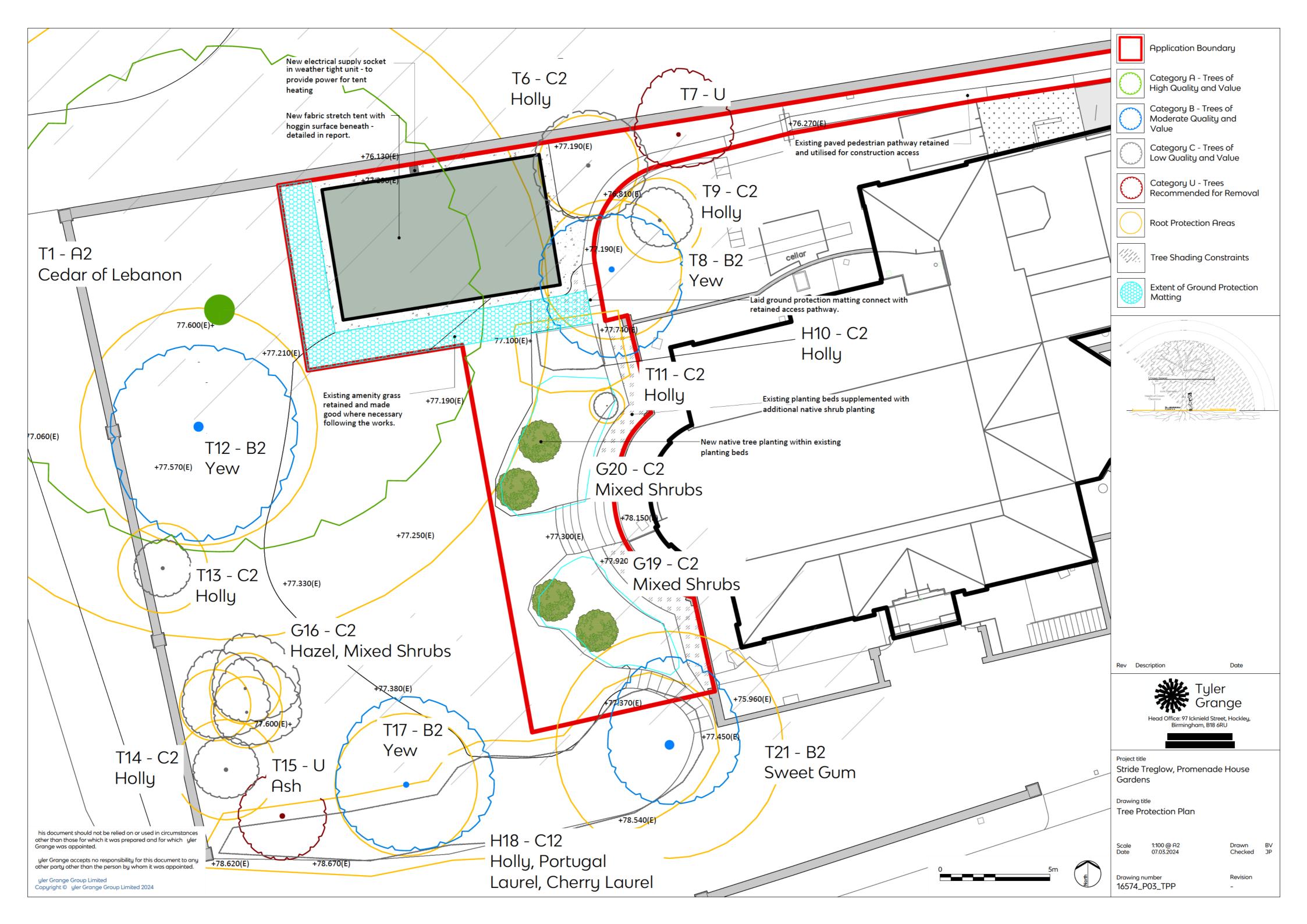
Appendix 1: Tree Survey Schedule (16574_TSS01)

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Tree	Common Species Name	Height (m)	t Trunk Diameter (mm)	Stem	Cı	Crown Spread (m			Height of Crown	Age Class	Physiological Condition	Structural	BS5837	Comments/Preliminary Management	RPA	Root Protection
Number				Count	N	Ε	S	W	Clearance (m)		Condition	Condition	Category	Recommendations	Radius (m)	Area (m2)
T1	Cedrus libani (Cedar of Lebanon)	21m	1390	1	12.00	12.00	11.00	11.00	4.80	Mature	Good	Good	A2	No obvious significant defects. Good quality with high landscape value. Historic minor crown reduction pruning, good recovery. Multiple cobra branch braces in canopy. Historic large stem branch pruning wounds almost fully occluded. Large historic branch tear on mid-lower stem. Green waste stored close to stem, branch and compost garden arisings. RPA likely offset to S and E due to retaining wall to north and West. Retaining wall to north approx. 4.8m away from stem, West approx.	15.0	707
T2	Ilex aquifolium (Holly)	5m	80, 150	2	2.00	3.80	3.70	1.00	1.00	Semi Mature	Fair	Fair	C2	Low quality and value. Small with limited current landscape value. Plotted by eye on plan. Location estimated. Spindly habit. Sparse foliage. Dieback in crown.	2.0	13
ТЗ	Sambucus nigra (Elder)	5m	180,60	2	1.80	3.50	2.30	0.50	0.50	Semi Mature	Fair	Fair	C2	Low quality and value. Small with limited current landscape value. Plotted by eye on plan. Location estimated. Poor shape and form. Dieback in crown.	2.3	16
G4	Mixed Shrubs (Mixed Shrubs)	1m	30-50	1	0.50	0.50	0.50	0.50	0.00	Young	Good	Good	N/A	Small, garden ornamental shrubs and Herbaceous plants <40mm in diameter. Soil landscaping area with 3 plants present including Lavender.	.6	1
T5	llex aquifolium (Holly)	7m	135	1	1.30	1.00	1.30	1.30	1.00	Semi Mature	Fair	Good	C2	Low quality and value. Small with limited current landscape value.	1.6	8
Т6	llex aquifolium (Holly)	7m	190	1	2.50	2.70	2.50	2.50	2.00	Early Mature	Good	Good	C2	Moderate quality and value. Small with limited current landscape value. Ivy on stem. Ivy in crown.	2.3	16
π	Unknown (Unknown)	7m	90,160,80	3	3.00	2.50	1.50	2.00	3.00	Semi Mature	Poor	Poor	U	Dead. Declining in health and condition. Poor shape and form. Weak and suppressed. Unbalanced crown shape. Paving slabs close to stem in RPA. Species unknown. Ivy on stem.	2.4	18
Т8	Taxus baccata (Yew)	7m	265	1	2.50	3.30	4.00	3.30	2.50	Semi Mature	Good	Good	B2	Moderate quality and value. Kerb close to stem base. Located on bank. Multiple stems above 1.5m. Scattered deadwood Path slabs close to stem. Rooted on sloped ground. Canopy clearance to NW is 3m. Clearance to S is 2m due to topography		32
Т9	llex aquifolium (Holly)	8m	160	1	1.50	1.50	1.20	1.30	2.80	Early Mature	Fair	Good	C2	Low quality and value. Small with limited current landscape value. Ivy on stem and in canopy.	1.9	12



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	Common Species Name			Stem	Crown Spread			n)	Height of Crown	Age Class	Physiological	Structural	BS5837	Comments/Preliminary Management	RPA	Root Protection
Number		(m)		Count	N	E	S	W	Clearance (m)		Condition	Condition	Category	Recommendations	Radius (m)	Area (m2)
H10	Ilex aquifolium (Holly)	2m	50,55,60,65	4	0.50	0.50	0.50	0.50	0.00	Semi Mature	Good	Fair	C2	Low quality and value. Small with limited current landscape value. Regularly crown reduced. Path alongside eastern canopy extent with no live canopy due to shading from yew tree and path proximity pruning.	1.4	6
T11	llex aquifolium (Holly)	1m	50,45	2	0.60	0.50	0.60	0.60	0.00	Young	Good	Good	C2	Small, garden ornamental shrubs.	.8	2
T12	Taxus baccata (Yew)	7m	450	1	3.70	4.50	5.20	4.00	0.50	Early Mature	Good	Good	B2	Good quality, but of moderate value due to small size. Provides some screen. stem diameter inaccessible due to lower branches and goodcharacteristic tree form with dense canopy and low ascending branches.	5.4	92
T13	llex aquifolium (Holly)	9m	170	1	1.30	1.30	1.30	1.30	3.00	Semi Mature	Good	Good	C2	Small with limited current landscape value.	2.0	13
T14	llex aquifolium (Holly)	8m	190	1	1.50	1.50	1.30	1.50	3.50	Semi Mature	Good	Good	C2	Small with limited current landscape value.	2.3	16
T15	Fraxinus excelsior (Ash)	11m	165,105,110,95	4	2.00	2.00	2.00	2.00	5.00	Semi Mature	Fair	Fair	U	Declining in health, likely due to Ash Dieback Disease.	2.9	27
G16	Corylus avellana (Hazel),Mixed Shrubs (Mixed Shrubs)	4m	75,80,60,50	4	2.50	2.50	1.50	1.50	1.70	Semi Mature	Good	Good	C2	Low quality and value. Small with limited current landscape value.	1.6	8
T17	Taxus baccata (Yew)	8m	270	1	4.00	4.00	3.00	3.20	3.20	Semi Mature	Good	Good	B2	No obvious significant defects. Moderate quality and value.	3.2	33
H18	llex aquifolium (Holly),Prunus lusitanica (Portugal Laurel),Prunus laurocerasus (Cherry Laurel)	3m	80	1	1.00	1.00	1.00	1.00	0.00	Semi Mature	Good	Good	C12	No obvious significant defects. Moderate quality and value. Provides some screen.	1.0	3
G19	Mixed Shrubs (Mixed Shrubs)	1m	50	1	0.50	0.50	0.50	0.50	0.00	Young	Good	Good	N/A	Small, garden ornamental shrubs. Includes newly planted Birch sp. Approx 40mm diameter.	6	1
G20	Mixed Shrubs (Mixed Shrubs)	1m	50	1	0.50	0.50	0.50	0.50	0.00	Young	Good	Good	N/A	Small, garden ornamental shrubs.	.6	1
T21	Liquidambar styraciflua (Sweet Gum)	10m	430	1	4.00	3.20	2.70	2.80	4.50	Early Mature	Fair	Good	B2	Moderate quality and value. Roadside tree, of value in the streetscene. Stem divides above 1.5m. Heavily crown reduced. Crudely lopped. Suppressed canopy due to recent major crown reduction pruning. Located in hedgerow; stem inaccessible for inspection and measurement.	5.2	84

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Tree Number	Common Species Name	Height (m)	nt Trunk Diameter (mm)	Stem Count	Crown Spread (m)			Height of Crown Clearance Age Class	Physiological Condition	Structural Condition	BS5837	Comments/Preliminary Management	RPA	Root Protection		
				Count	N	E	S	W	(m)		Condition	Condition	Category	Recommendations	Radius (m)	Area (m2)
T22	Taxus baccata (Yew)	5m	160, 170	2	1.00	2.00	2.50	2.00	1.20	Semi Mature	Fair	Fair	C2	Low quality and value. Part of linear group. Unbalanced crown shape. Close to retaining wall. RPA restricted by wall and car parting hard surfacing. Cohesive canopy with dead Cherry tree along wall within RPA.	2.8	25

3



