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**Arboricultural Impact Assessment
Arboricultural Method Statement
Tree Constraints Plan,
&
Tree Protection Plan**

20 Watford Road, Radlett, WD7 8LE.

Report Title: Arboricultural Impact Assessment, Arboricultural Method Statement, Tree, Constraints Plan, Tree Removal Plan & Tree Protection Plan.

Report Status: Final v1.0

Job No: P4735J2775

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1. INTRODUCTION

1.1. BS5839:2012

The current British Standard for trees in relation to design, demolition, and construction is BS5837:2012. This became current in May 2012, and supersedes the old 2005 standard.

1.2. Terms and Definitions

1.2.1. 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.

1.2.2. Arboricultural Method Statement (AMS)

Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in the loss of, or damage to a tree to be retained.

1.2.3. Arboriculturist

Person who has through relevant education training and experience, gained expertise in the field of trees in relation to design, demolition, and construction.

1.2.4. Competent Person

Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task which is being approached.

1.2.5. Construction

Site-based operations with the potential to affect existing trees.

1.2.6. Construction Exclusion Zone (CEZ)

Area based on the root protection area (2.7) from which access is prohibited for the duration of the project.

1.2.7. Root Protection Area (RPA)

Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain a tree's viability, and where the protection of roots and soil structure is treated as a priority.

1.2.8. Services

Any above or below-ground structure or apparatus required for utility provision.

1.2.9. Stem

Principal above-ground structural component(s) of a tree that supports its branches.

1.2.10. Structure

Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.

1.2.11. Tree Protection Plan

Scale drawing, informed by descriptive text where necessary, based on the finalised proposals, showing trees for retention, and illustrating the tree and landscape protection measures.

1.2.12. Veteran Tree

Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

1.3. The Proposal/Relevant History

The proposal, in this instance, is to demolish the existing buildings on site shown in red on the tree constraints plan (Figure 1). Then to construct a new apartment complex with the associated access and underground parking areas as shown using the purple colour also on the tree constraints plan (Figure 1). This will include a separate outbuilding for a gym at the bottom of the rear garden.

1.4. Brief and Purpose

This report has been commissioned by Roundbush Services Ltd to;

- Survey the trees on site in accordance with BS5837:2012.
- Detail the arboricultural implications of the proposed project.
- Present an effective tree protection strategy for the duration of the development.
- Provide the necessary arboricultural information to accompany a planning application to the Hertsmere Borough Council.

1.5. Scope

The trees have been surveyed in accordance with the BS. Trees on and immediately adjacent to the site with a stem diameter over 75mm have been included.

A full hazard assessment of the trees (including the assessment of decay or defects and their implications), has not been undertaken as this is considered beyond the scope of this report. Any obvious hazards and defects have, however, been identified in the Tree Survey Schedule and appropriate works recommended for action.

1.6. Documents Supplied/Used

Document	Supplied by	Format/Reference
225-C-102d Site Plan Proposed	Roundbush Services Ltd.	DWG

1.7.**Site Details****2.**

The application site is currently a large plot of land with a detached dwelling on it. The rear garden has a terraced area just behind the dwelling leading down to a tennis court with some out buildings at the bottom of the garden. There is a long cypress hedge to the western boundary in the rear and some high quality trees to the east and the very front of the site near to the road. There are also some cypress hedges at the front.

2. TREE SURVEY

2.1. Survey Summary

Total number of trees	10+ G8, G9, G12, G13 & G15
Category A	1
Category B	4 + G15
Category C	5 + G8, G12 & G13
Category U	0

2.2. Survey Method

The trees were surveyed on 14/11/2023.

Locations of the trees were plotted using the site plan provided.

All trees were inspected from ground level only using widely accepted Visual Tree Assessment techniques, and no trees were climbed during the survey.

No trees were internally investigated. Should a more detailed inspection be required then this will be pointed out in the recommendations on the survey schedule.

2.3. Tree Details

With regard to their desirability for retention, the trees surveyed have been graded with their trunks colour coded on the tree constraints plan, and tree protection plan using the criteria contained in BS5837:2012. A summary of this grading is as follows.

A= Light Green. Trees of high quality and value, in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested in the British Standard). Usually worthy of consideration as a material constraint to any proposed development.

B= Mid Blue. Trees of moderate quality and value in such a condition as to make a significant contribution (a minimum period of 20 years is suggested in the British Standard). Usually worthy of consideration as a material constraint to any proposed development.

C= Grey. Trees of low quality and value, in adequate condition condition to remain until new planting could be established (a minimum of 10 years is recommended in the British Standard), or trees with a stem diameter below 150mm. Not usually worthy of consideration as a material constraint to any proposed development.

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

In our survey schedule, the RPA for each tree is indicated as the radius of a circle as well as in M². This is also plotted on the tree constraints plan and tree protection plan denoted by a heavy black line which merges the individual RPAs together where there is more than one tree.

Section 4.6 of BS5837:2012 provides for the shape of the RPA to be modified from the starting point of a circle to account for site features such as hard surface treatments where root growth may be restricted, as long as the total remains the same. In this case, no RPAs were modified.

Please Note: The facility for offsetting an RPA by 20% for open grown trees was withdrawn on May 01st 2012.

2.4. Legal Protection Status of Trees.

Type of Protection	Details/Reference
Conservation Area	No
Tree Preservation Order	Yes T6, T11 & T14
Planning conditions requiring tree retention	No

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1. Summary of Impact Assessment

Total number of trees surveyed	10+ G8, G9, G12, G13 & G15
Number of trees to be removed	4 + G8, G12 & G15
Number of trees to be pruned	0
Number of trees with RPA incursions	1

3.2. Removal of trees

T1, T2, T3, T4 G8, G12 & G14 will be removed due to direct conflict with the proposed development.

3.3. Tree Works

Apart from the tree removals specified in section 3.2 of this report, no tree work is required for the current proposal to be completed.

3.4. Incursions into RPAs

In many instances, a low degree of root disturbance can be deemed to be acceptable. Where incursions can be fully invasive, or low level invasion can sometimes be achieved by the use of specialist methods to limit the degree of disturbance. The table details the incursions and how they are to be dealt with. In our plan for tree removal I have modified the RPA of T2 so that the retaining wall along the western side of the application site has been taken into account. This is permitted by BS5837:2012.

Incursions into RPAs of retained trees		
Type of incursion	Tree number	Precautions to be taken
Hard surfacing for access and parking areas.	T14	Although this hard surfacing is replacing what is already there, a cellular confinement system with permeable finishing layer will be used as shown on the TPP
Bin store	T14	The bin store is on what is now driveway. A raft foundation will be used due to its relative light weight.

3.5. Light and Proximity Issues

There are no unmitigated light or proximity issues attached to the current proposal.

3.6. Mitigation

Although there is no statutory requirement for any mitigation planting in this instance, there is a replanting scheme to plant a number of small specimen trees once construction is completed.

3.7. Conclusion

Assuming full compliance with the AMS in this report, the net arboricultural impact is acceptable.

4. ARBORICULTURAL METHOD STATEMENT

4.1. Introduction

During the development process, the tree protection measures set out in this method statement must be adhered to in order to safeguard the retained trees. The principles below are specifically designed to offer a significant degree of protection to both the root systems and aerial parts of the trees for the duration of the works.

A copy of this method statement must be made available on site at all times until the cessation of any demolition, construction, and landscaping work, and the site personnel will be made familiar with the key implications of this AMS.

It should be remembered that powers were granted to Local Planning Authorities in 2005, which allow them to serve Temporary Stop Notices if agreed protection measures are strayed away from before work is completed. This can be extremely costly and very time consuming.

4.2. Pre-commencement Meeting

I do not believe that a pre-commencement meeting will be required in this instance.

4.3. Sequencing and Supervision

Activity	Level of monitoring/supervision required
Installation of tree protective fencing.	Signing off of tree protection measures by the project arboricultural consultant.

4.4. Site Precautions

The following points will be observed at all times:

1. No fires will be lit within 15m of any retained tree on or around the site
2. No access will be permitted inside the tree protection fences
3. No materials, equipment, or waste will be stored inside the tree protection fencing at all
4. Notice boards, telephone cables, or other services will not, under any circumstances, be attached to retained trees
5. Material which contaminate soil, such as concrete, diesel oil, vehicle washings and even builders sand, will not be allowed to enter the RPA of any retained tree

4.5. Carrying out tree works

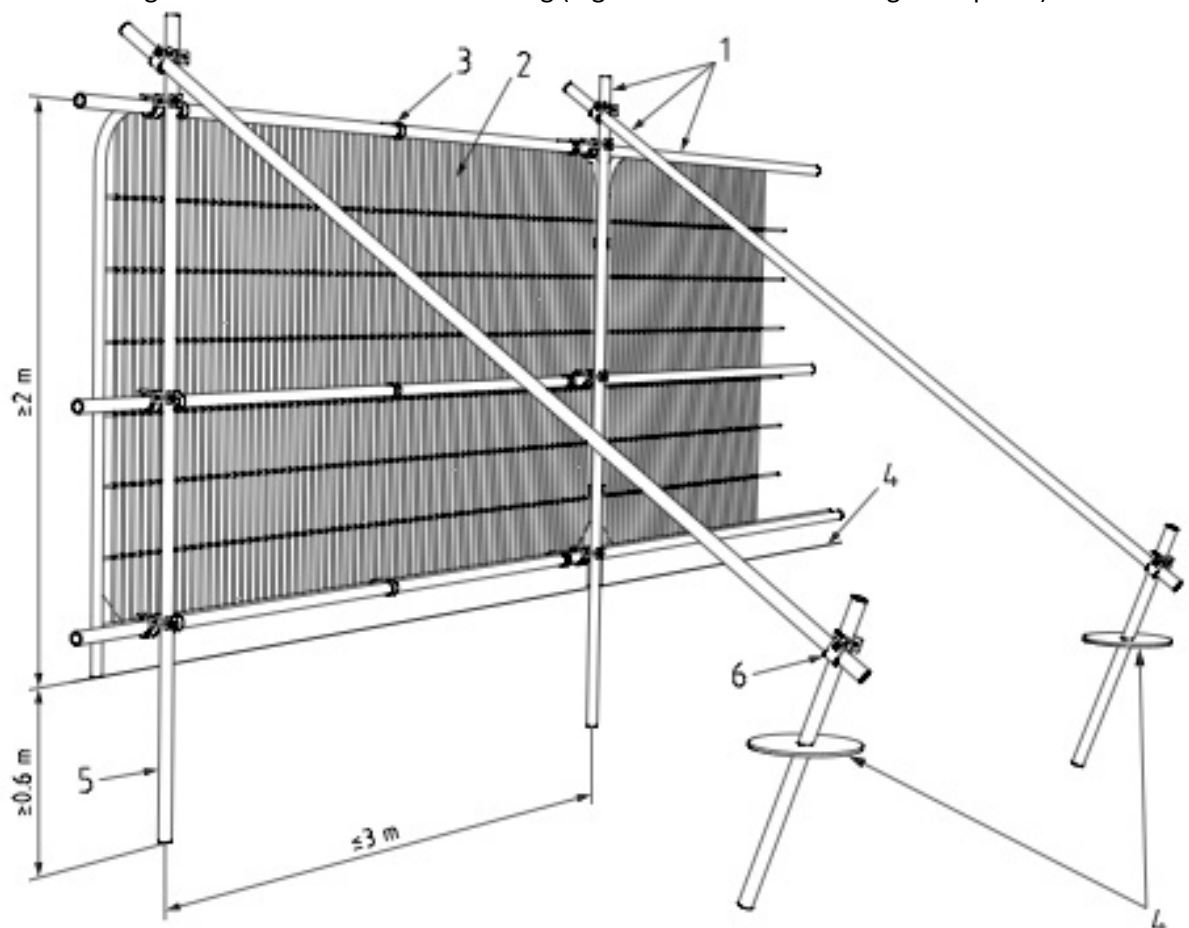
All tree works, where required, will be carried out in accordance with BS3998:2010 (Recommendations for Tree Works), and to the current arboricultural best practice. Tree works will be carried out by a suitably qualified and insured contractor. The contractor will be solely responsible for carrying out their own site risk assessment prior to the commencement of work.

If at any time during the development a need for additional tree works is highlighted to facilitate the proposed works or access for machinery/plant, the Arboricultural Consultant will be contacted to advise on appropriate works and liaise with the LPA as necessary.

4.6. Protective Fencing and Ground Protection

The required tree protective fencing should be installed to fence off the construction exclusion zone(s), or CEZ, shown on the tree protection plan (Figure 2). This must only be altered or moved as agreed in writing by the Local Planning Authority following advice from a competent Arboricultural Consultant.

The Tree Protective fencing will be 2.4m Heras fencing as specified in the BS. The fencing will be supported by a scaffold framework with supporting struts firmed into the ground on the side of the trees. The purpose of the supports is to prevent the fencing being moved during the development. Clear signs will be attached to the fencing (e.g. Tree Protective Fencing – Keep Out).



Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Where there is already hard surfacing within the RPAs of retained trees, it will be left in place while construction is in progress. Once construction is completed, the finishing layer will be removed and a new finishing layer will be applied to the existing sub layer. This will have no negative impact on the retained trees.

4.7. Site Access

Site access will only be available via the existing site entrance on Watford Road for construction purposes. This will be the entrance furthest away from T14 on our survey.

4.8. Demolition Work

Once the approved tree protection measures are in place, demolition will be carried out in the normal way. All waste from demolition will be stored away from the RPAs of all retained trees until it can be removed for disposal.

4.9. Underground Services

New underground services will be routed into the footprint of the new buildings in the usual way. This is particularly important where the service run need to reach the new gym/garden room. Here it will cross the tennis court as shown using the orange line on the tree protection plan. The surface of the tennis court will then be reinstated. The existing surface of the tennis court will act as ground protection while this is being done.

Run off water will be routed into soak aways, the position of which will be agreed with the LPA before work commences.

4.10. Foundations and Construction

As the foundation for the current proposal for the main apartment complex doesn't cause an RPA incursion, no specially engineered solutions will be required in this instance.

The bin stores will be replacing impermeable hard surfacing which is currently the driveway, so a raft foundation will be used for this.

The parking spaces for visitors is a direct replacement of the old hard surfacing, but this will be replaced with a cellular confinement system with a permeable finishing layer. The installation will be as follows: -

STAGE 1 GROUND PREPARATION

6. Remove vegetation using a suitable foliar herbicide.
7. Fill any hollows with sharp sand or 4-20mm angular stone (note that ground levels must not be lowered).
8. Place geotextile membrane over area to be surfaced ensuring a 300mm overlap.
9. Mark out the areas to be protected with edging detail.

STAGE 2 INSTALLATION OF CELLULAR CONFINEMENT

1. Place cellular confinement web on top of geotextile membrane.
2. Expand cellular confinement web to required length and pin to the ground. Fix cellular confinement panels together using the manufacturers approved method.

STAGE 3 FILLING CELLULAR CONFINEMENT

1. Fill cellular confinement with a 4 to 20mm washed angular stone.
2. Allow 25mm overfill for any settlement of stone into the cells.
3. If the area is to be trafficked immediately, as is the case where it will be used as ground protection during construction, increase the surcharge of stone to a maximum of 50mm over the cell walls.

STAGE 4 FINISHING LAYERS

1. Install geotextile membrane on top of stone surcharge or overfill.
2. Spread a maximum thickness of 50mm of sharp sand.
3. Install the appropriate finishing layer as specified and approved in the planning application.

4.12. Amendments

Issues may arise on development sites that require amendments to the previously agreed tree protection details. Any amendments to this AMS will be approved in writing by the LPA prior to being implemented. Copies of paperwork relating to any amendments will be communicated by the Arboricultural Consultant to the Client and LPA.

**This concludes the advice given in this report
Compiled and presented by
Jon Harper cert.Arb (RFS)**

TREE SCHEDULE

Tree Survey Schedule

Date: November 13th 2023

Site: 20 Watford Road

Surveyor: Jon Harper cert.Arb (RFS)

- = Category A trees
- = Category B trees
- = Category C trees
- = Category U trees

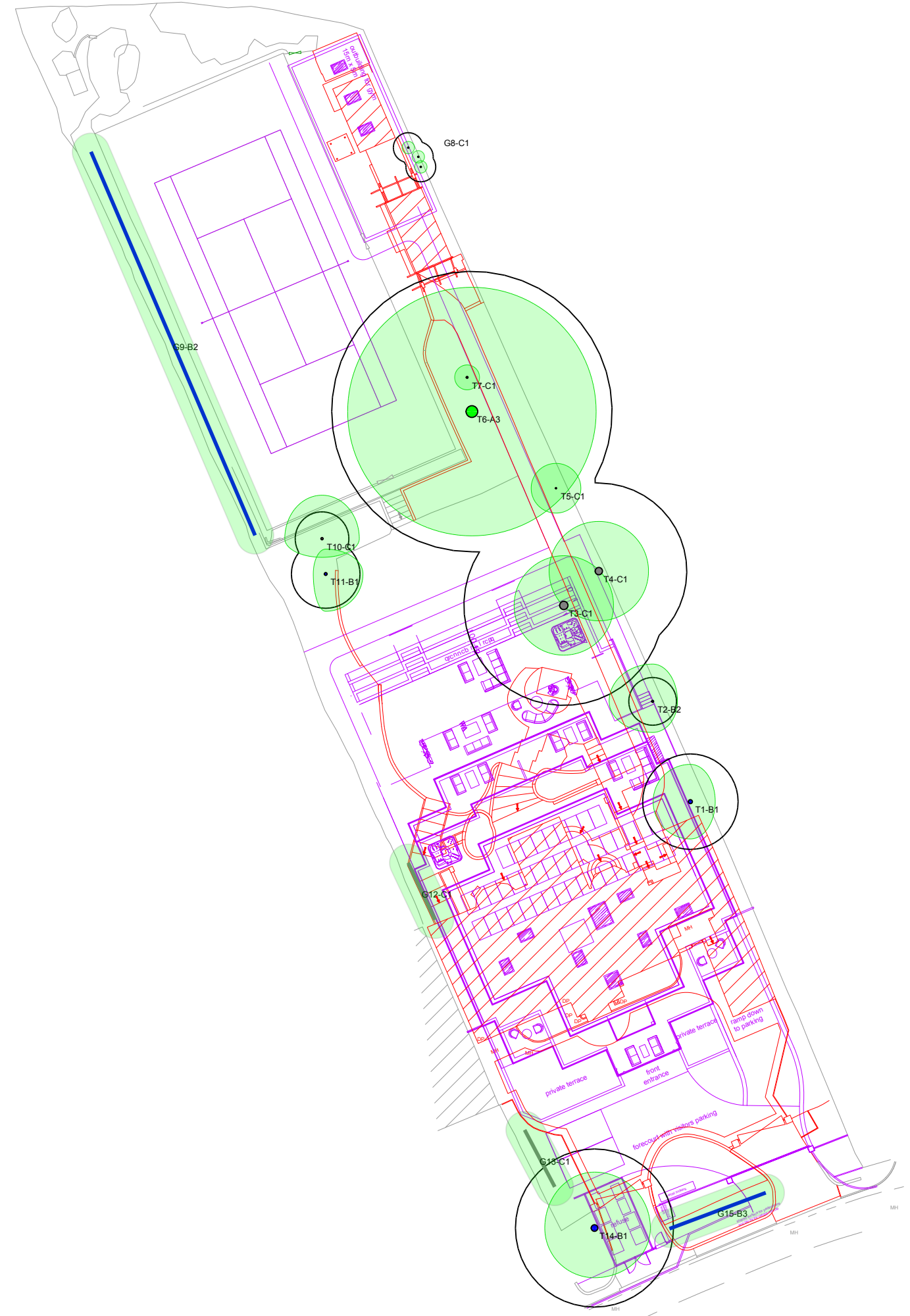
Type (Tag)	Name	Age	Category	Diameter (Stems)	Height (L/Hgt)	North	East	South	West	Condition	Life Exp	Comments	Recommendations	RPR	RPA
T1	Chamaecyparis lawsoniana (Lawson Cypress)	M	B1	320(1)	9(3)	3	2	3	3	Good	20	None at present.	None at present.	3.84	46.33
T2	Prunus avium (Wild Cherry)	M	B2	160(1)	4(2.5)	3	2	2.5	3.5	Good	20	None at present.	None at present.	1.92	11.58
T3	Chamaecyparis lawsoniana (Lawson Cypress)	M	C1	670(1)	13(4)	4	4	4	4	Fair	20	Low bud/leaf density.	None at present.	8.04	203.1
T4	Chamaecyparis lawsoniana (Lawson Cypress)	M	C1	590(1)	13(4)	4	4	4	4	Fair	20	Low bud/leaf density.	None at present.	7.08	157.5
T5	Prunus lusitanica (Portugal Laurel)	M	C1	265(7)	5(2)	2	2	2	2	Fair	10	Multiple stems at ground level.	None at present.	3.18	31.77
T6	Quercus robur (Common Oak)	M	A3	940(1)	17(6)	10	10	10	10	Good	40	None at present.	None at present.	11.28	399.78
T7	Ilex aquifolium (Holly)	M	C1	150(1)	5(2)	1	1	1	1	Fair	10	Low bud/leaf density.	None at present.	1.8	10.18
G8	Chamaecyparis lawsoniana (Lawson Cypress)	EM	C1	100(1)	4(1.5)	0.5	0.5	0.5	0.5	Fair	10	Part of linear group.	None at present.	1.2	4.52
G9	Chamaecyparis lawsoniana (Lawson Cypress)	M	B2	250(1)	12(2)	3	3	3	3	Fair	20	Part of linear group.	None at present.	3	28.28
T10	Acer pseudoplatanus (Sycamore)	EM	C1	180(1)	9(4)	3.5	3	1.5	3	Fair	10	None at present.	None at present.	2.16	14.66
T11	Pinus sylvestris (Scots Pine)	M	B1	230(1)	11(4)	2	3	3	1	Good	20	None at present.	None at present.	2.76	23.93
G12	Chamaecyparis lawsoniana (Lawson Cypress)	M	C1	350(1)	9(3)	2.5	2.5	2.5	2.5	Fair	10	Too close to the house	None at present.	4.2	55.42
G13	Chamaecyparis lawsoniana (Lawson Cypress)	SM	C1	100(1)	4(1.5)	1	1	1	1	Fair	10	None at present.	None at present.	1.2	4.52
T14	Tilia X europaea (Common Lime)	M	B1	530(1)	13(4)	4.5	4.5	4	4	Good	20	None at present.	None at present.	6.36	127.09
G15	Chamaecyparis lawsoniana (Lawson Cypress)	M	B3	380(1)	8(2.5)	4	4	4	4	Good	20	Part of linear group.	None at present.	4.56	65.33

TREE CONSTRAINTS PLAN

(Figure 1)

Notes & Legend:

- Category A trees ● Category B trees ●
- Category C trees ● Category U trees ●
- RPAs Trees to be removed (red crowns and numbers)
- BS5837 Specification Ground Protection
- No Dig Permeable Hard Surface Treatment
- Tree Protective Fencing —●—●—●—●—●—●—●—●—●—
- Proposed development —



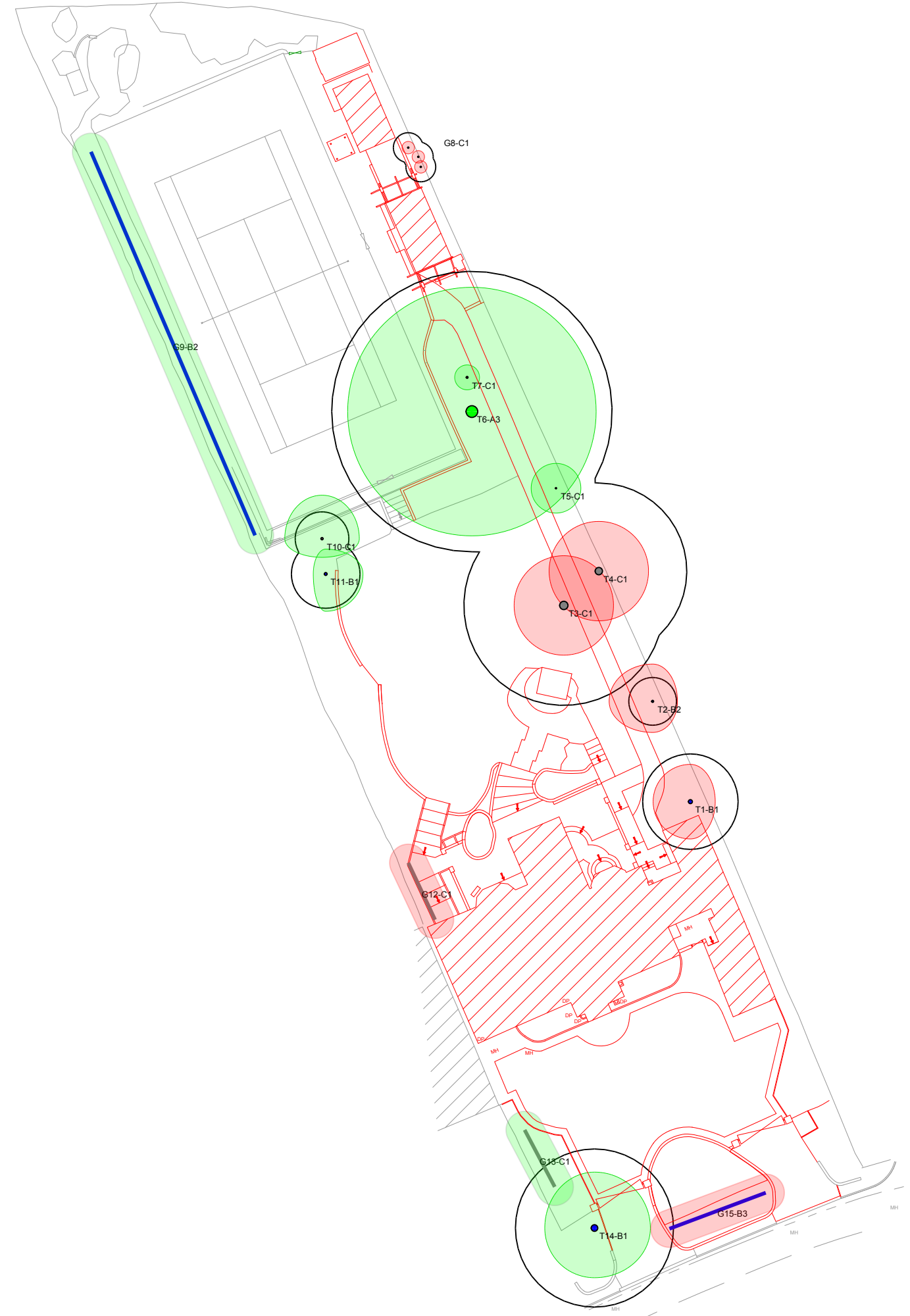
Jomas Associates Ltd. Unit 24 Sarum Complex, Salisbury Road, Uxbridge, UB8 2RZ. Email: info@jomasassociates.com Tel: 0333 305 9054 www.jomasassociates.com	
Client:	Date: November 13th 2023
Roundbush Services Ltd.	Ref: Figure 1
Site: 20 Watford Road Radlett	Scale @ A3: 1:400
	Title: Tree Constraints Plan

TREE REMOVAL PLAN

(Figure 2)

Notes & Legend:

- Category A trees (Green circle)
- Category B trees (Blue circle)
- Category C trees (Grey circle)
- Category U trees (Red circle)
- RPAs (White circle)
- Trees to be removed (red crowns and numbers) (Red circle with dot)
- BS5837 Specification Ground Protection (Red circle with dot)
- No Dig Permeable Hard Surface Treatment (Blue square)
- Tree Protective Fencing (Blue line with dots)
- Proposed development (Yellow square)



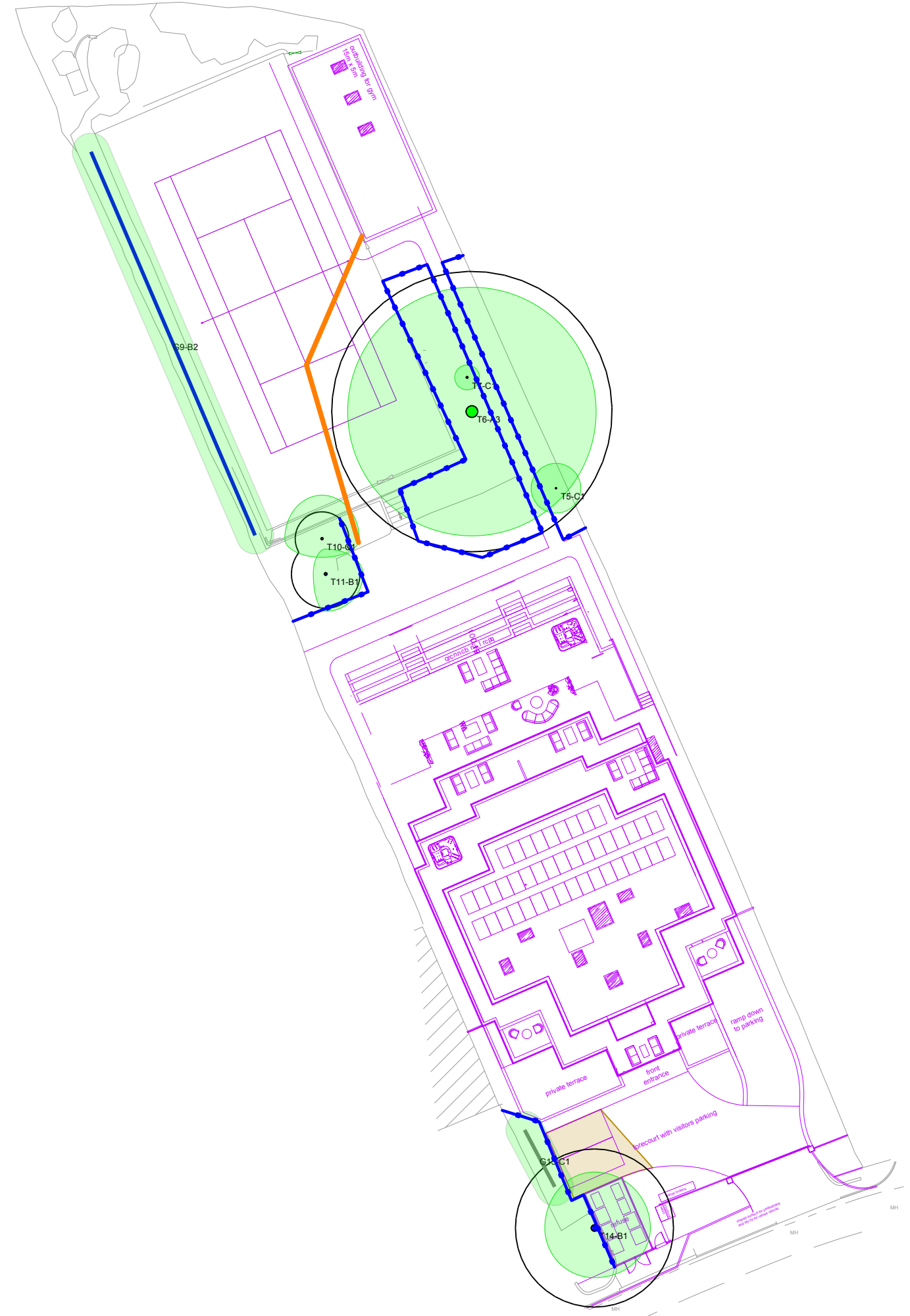
Jomas Associates Ltd. Unit 24 Sarum Complex, Salisbury Road, Uxbridge, UB8 2RZ. Email: info@jomasassociates.com Tel: 0333 305 9054 www.jomasassociates.com	
Client:	Date: November 13th 2023
Roundbush Services Ltd.	Ref: Figure 2
Site: 20 Watford Road Radlett	Scale @ A3: 1:400
	Title: Tree Removal Plan

TREE PROTECTION PLAN

(Figure 3)

Notes & Legend:

- Category A trees ● Category B trees ●
- Category C trees ● Category U trees ●
- RPAs Trees to be removed (red crowns and numbers)
- BS5837 Specification Ground Protection
- No Dig Permeable Hard Surface Treatment
- Tree Protective Fencing —●—●—●—●—●—●—●—●—●—
- Proposed development —
- Underground Services —



Jomas Associates Ltd. Unit 24 Sarum Complex, Salisbury Road, Uxbridge, UB8 2RZ. Email: info@jomasassociates.com Tel: 0333 305 9054 www.jomasassociates.com	
Client:	Date: November 13th 2023
Roundbush Services Ltd.	Ref: Figure 3
Site: 20 Watford Road Radlett	Scale @ A3: 1:400
	Title: Tree Protection Plan