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Arboricultural Report
BS5837:2021 (Trees in Relation to Design, Demolition & Construction)

Client: Oliver Moir
Site: 9 Ailsa Road, Twickenham, TW1 1QJ.
Date of survey: July 17th 2024
Date of report: September 10th 2024
Surveyor: Jon Harper cert. Arb (RFS)
Report reference: 2024048 v1.0

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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 construct a new garden room as shown using the purple colour on the tree constraints plan (2024048/TCP001) in this report.

1.4. Brief and Purpose

This report has been commissioned by Oliver Moir 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 Richmond 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
P263 (PL) 100.1	Plot Architecture + Design	PDF

1.7.

Executive Summary

The application site consists of a relatively large plot of land with a detached dwelling, a front garden with a driveway and a large rear garden.

There are several mature trees in varying conditions in the rear garden. The site is in a conservation area but there are no tree preservation orders in force.

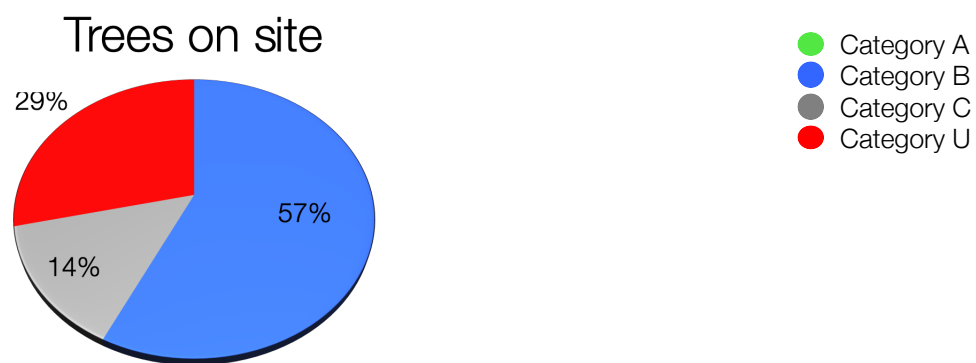
The current proposal is to construct a new garden room at the bottom of the rear garden, which will have both wet and dry services running into it.

There is a root protection area incursion, but a specially engineered solution with a partially piled foundation has been devised that allows the services to be installed without significant disturbance to the RPAs.

2. TREE SURVEY

2.1. Survey Summary

Total number of trees	7
Category A	0
Category B	4
Category C	1
Category U	2



2.2. Survey Method

The trees were surveyed on July 17th 2024.

Locations of the trees were plotted using the site plan provided by Plot Architecture + Design. 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 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	Yes
Tree Preservation Order	No
Planning conditions requiring tree retention	No

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1. Summary of Impact Assessment

Total number of trees surveyed	7
Number of trees to be removed	1
Number of trees to be pruned	2
Number of trees with RPA incursions	2

3.2. Removal of trees

Category A Trees (High Grade)	Category B Trees (Moderate Grade)	Category C Trees (Low Grade)	Category U Trees (Unretainable)
N/A	N/A	N/A	T2

The trees in the table above will be felled to the ground and the stumps will be ground out to prevent damage to the roots of retained trees nearby. The reason for removal may be for either of the reasons below.

- A. There may be a direct conflict with the proposed development.
- B. The trees may not be in a condition that makes them desirable for retention.

Trees to be removed	Impact on the character of the local area.	Mitigation (if any)
T2	None: This is a small dead tree that is not really visible from a public area.	None required

3.3. Tree Works

T1 and T3 will need to be pruned for clearance.

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.

Incursions into RPAs of retained trees		
Type of incursion	Tree number	Precautions to be taken
Foundation for garden room and we services.	T1	A specially engineered solution incorporating wet services will be used see section 4.10 of this report for details

3.5. Light and Proximity Issues

There are no arboricultural light or proximity issues associated with the current proposal once the proposed pruning has been carried out.

3.6. Mitigation Planting

Due to the legal protection status of the application site, there is no statutory requirement for mitigation planting.

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

If the Local Planning Authority deem it necessary, a pre-commencement meeting will be held, attended by the project Arboricultural Consultant, the Site Manager, and the LPA Tree Officer. During this meeting potential problems and protection sequencing can be discussed and it is expected that all aspects of the tree protection measures set out in this AMS will be understood and agreed. Following this meeting, all parties involved will receive an email from the Arboricultural Consultant containing a record of what was discussed and agreed.

4.3. Sequencing and Supervision

Sequencing of events and effective arboricultural supervision are important elements of the tree protection process.

There is no necessity for any direct arboricultural supervision in this instance.

Key Stages:

- AMS issued to Site Manager/Building Company
- AMS to be read by all site personnel to ensure a full understanding of implications. Any raised issues are to be addressed to the project Arboricultural Consultant
- Recommended and agreed tree works to be carried out
- Tree protective fencing and ground protection installed
- Construction work carried out
- Tree protective fencing and ground protection removed
- Landscaping (if any) carried out

Summary of Arboricultural Monitoring and Supervision

Activity	Level of monitoring/supervision required
Erection of tree protective fencing	Signing off of the approved tree protection measures by the project arboricultural consultant prior to any development work commencing
Installation of approved ground protection	

It is also imperative that telephone contact between the site manager and the Arboricultural Consultant is maintained with regard to any tree protection measure issues.

4.4. Site Precautions

The following points will be observed at all times:

- No fires will be lit within 15m of any retained tree on or around the site
- No access will be permitted inside the tree protection fences
- No materials, equipment, or waste will be stored inside the tree protection fencing at all
- Notice boards, telephone cables, or other services will not, under any circumstances, be attached to retained trees
- 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

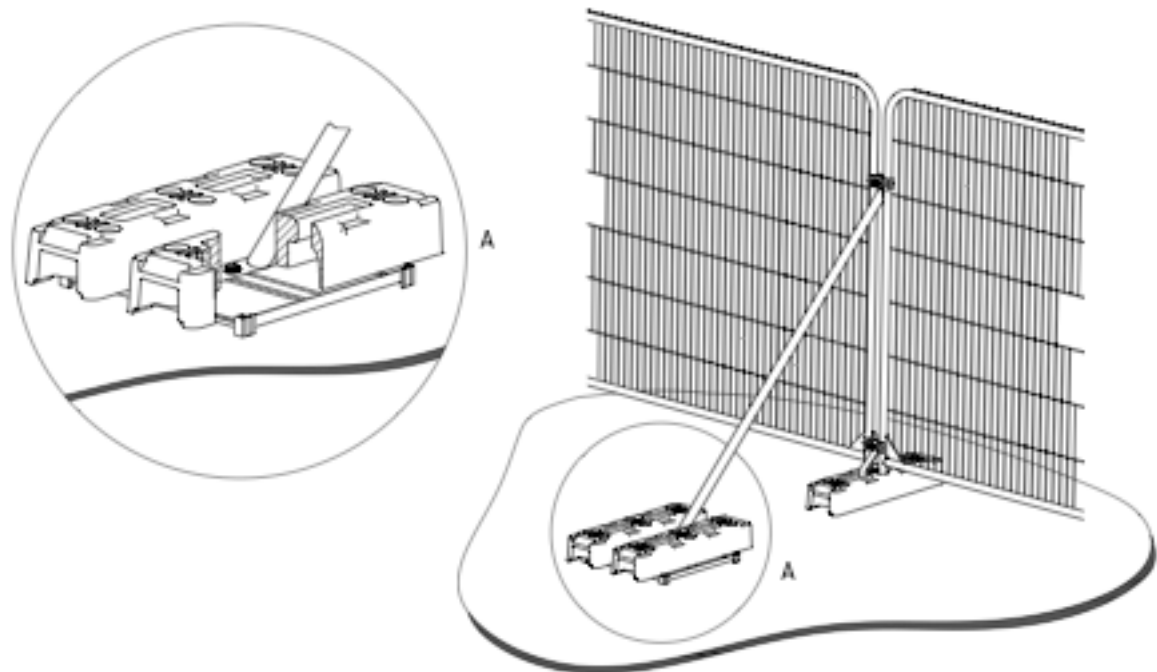
All tree works, where required, will be carried out in accordance with BS3998:2010 (Recommendations for Tree Works), and to the current arboricultural best practice. Tree works will be carried out by a suitably qualified and insured contractor. The contractor will be solely responsible for carrying out 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 concrete or rubber feet 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).



Ground protection will be 18mm thick OSB on top of a 100mm deep compressible layer of wood chip or sharp sand. All of this will be on a geo-textile membrane.

More 18mm thick OSB will be utilised while the piles are being installed.

Scaffolding can be erected on top of this ground protection if required as shown in the image from BS5837:2012 below.

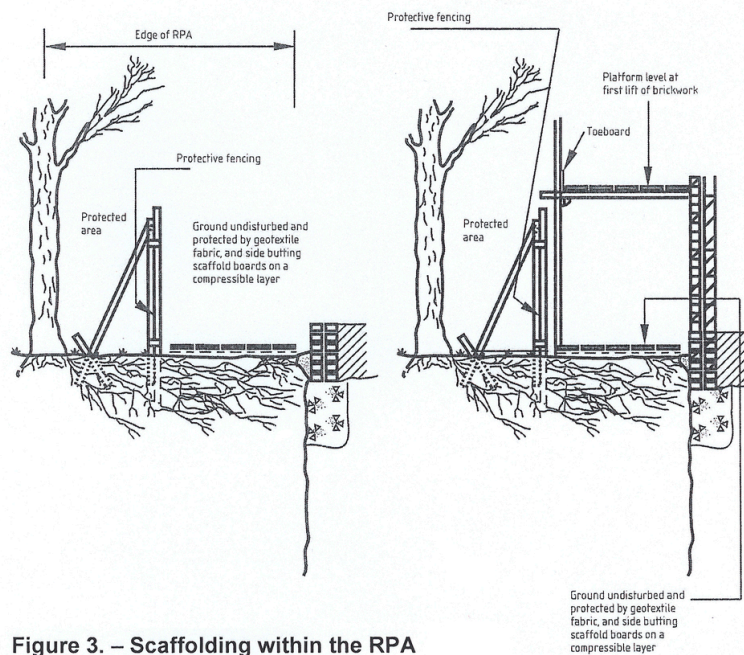


Figure 3. – Scaffolding within the RPA

4.7. Site Access

Site access will only be available via the existing driveway on Ailsa Road for construction purposes

4.8. Demolition Work

Once the approved tree protection measures are in place, demolition, if any, 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

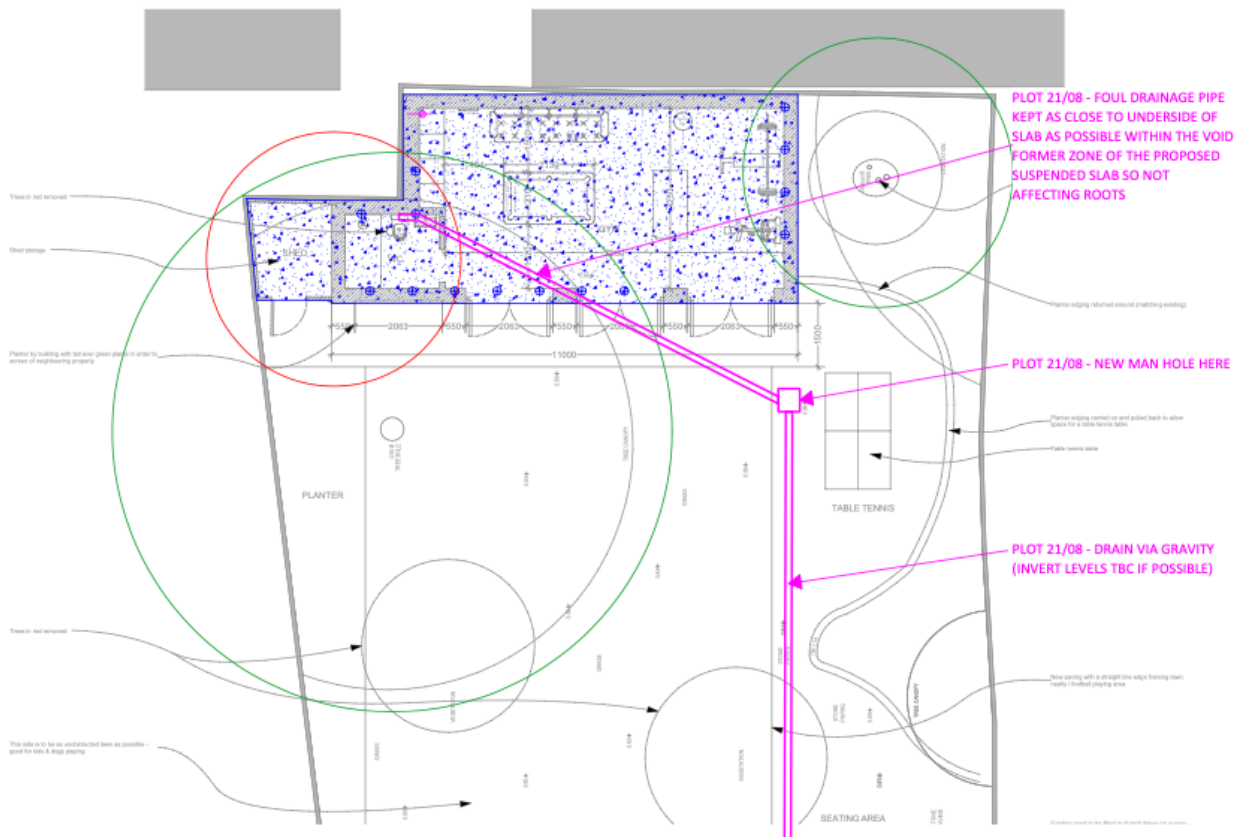
New underground services will be routed into the footprint of the new dwellings avoiding the RPAs of all retained trees as far as possible. Once inside the partially piled foundation system, the services will be contained within the foundation slab, negating the need for any further disturbance to the RPA.

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

Because the foundation of the proposed garden room causes an incursion into the RPAs of two retained trees, a partially piled foundation slab will be used. This has been designed by a structural engi-

neer and they have produced a plan. I have included an image of the specially engineered foundation that is proposed showing the pile positions as well as the route that the services will take within the slab below.



All excavation within the RPAs will be by hand and care must be taken not to damage the protective bark on any roots that may be encountered. If roots are encountered, they must be treated using the methods suggested in section 7.2 of BS5837:2012. I have included an excerpt of this below: -

Roots, whilst exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.

Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability. In the case of roots larger than 25mm in diameter, no further action will be taken until this has been referred to the project arboriculturist.

Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

From BS5837:2012

4.11. Fencing and Landscaping

During the landscaping phase of the development (if any landscaping takes place), the following precautions will be observed:

- No compaction of soil within the RPAs (or where new tree planting is to be carried out).
- No changes in ground levels.
- Unwanted vegetation to be removed manually or using contact herbicides that will not damage existing tree roots.
- No underground irrigation or drainage pipes to be installed
- If soil has been compacted in areas where planting is proposed, measures to improve soil structure (e.g. decompaction) may be necessary to facilitate successful plant establishment.

If any fence posts are installed within the RPAs of retained trees, excavation will be carried under direct arboricultural supervision using hand tools. Posts will be re-positioned if roots in excess of 25mm in diameter are encountered. Post holes will be lined with heavy gauge polythene where concrete is used to safeguard the rooting environment of the trees from the potentially toxic effects of leaching concrete.

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 SURVEY SCHEDULE

Please note that the recommendations on the tree survey schedule have not been considered in relation to the design of any potential proposed development, but are derived from observations made on site.

Tree Survey Schedule

Date: July 17th 2024
Site: 9 Ailsa 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	Morus nigra (Black Mulberry)	M	B1	550(1)	7(3)	5	4	4	4.5	Good	20	None at present.	None at present.	6.6	136.87
T2	Chamaecyparis lawsoniana (Lawson Cypress)	M	U	250(1)	4(2)	2	1	1	2	Dead	<10	Dead.	Remove tree and root.	3	28.28
T3	Ficus carica (Fig)	M	C1	265(11)	4(2)	2	5.5	5	2	Fair	10	Multiple stems at ground level.	None at present.	3.18	31.77
T4	Aesculus hippocastanum (Horse Chestnut)	M	B1	500(1)	12(3)	7	7	7	7	Good	20	None at present.	None at present.	6	113.11
T5	Magnolia (Magnolia)	M	B1	150(1)	5(2)	2	2	2	2	Good	20	None at present.	None at present.	1.8	10.18
T6	Chamaecyparis lawsoniana (Lawson Cypress)	M	U	350(1)	12(2)	2.5	2.5	2.5	2.5	Poor	<10	Low vitality. Declining.	Remove tree and root.	4.2	55.42
T7	Juglans regia (Walnut)	M	B1	600(1)	15(3)	4	4	5.5	5	Good	20	None at present.	None at present.	7.2	162.88

TREE CONSTRAINTS PLAN

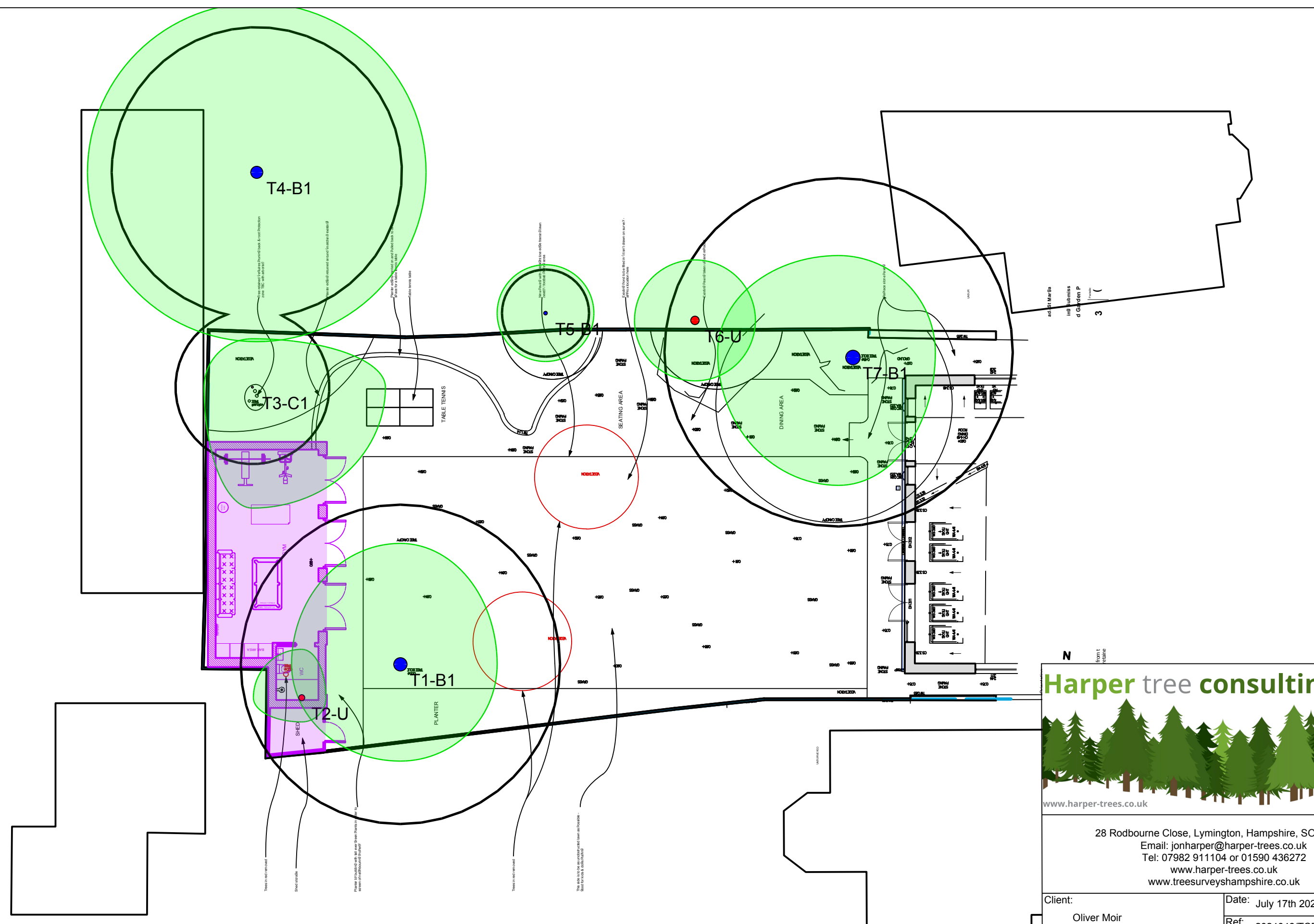
- Category A trees ●
- Category B trees ●
- Category C trees ●
- Category U trees ●

Notes & Legend:

- RPAs
- Trees to be removed (red crowns and numbers)

- BS5837 Specification Ground Protection
- No Dig Permeable Hard Surface Treatment

- Tree Protective Fencing
- Proposed development



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reference

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
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
Client: Oliver Moir	Date: July 17th 2024
Site: 9 Ailsa Road Twickenham	Ref: 2024048/TCP001
	Scale @ A3: 1:150
	Title: Tree Constraints Plan


TREE PROTECTION PLAN


- Category A trees  Category B trees 
 Category C trees  Category U trees  RPAs  Trees to be removed (red crowns and numbers) 

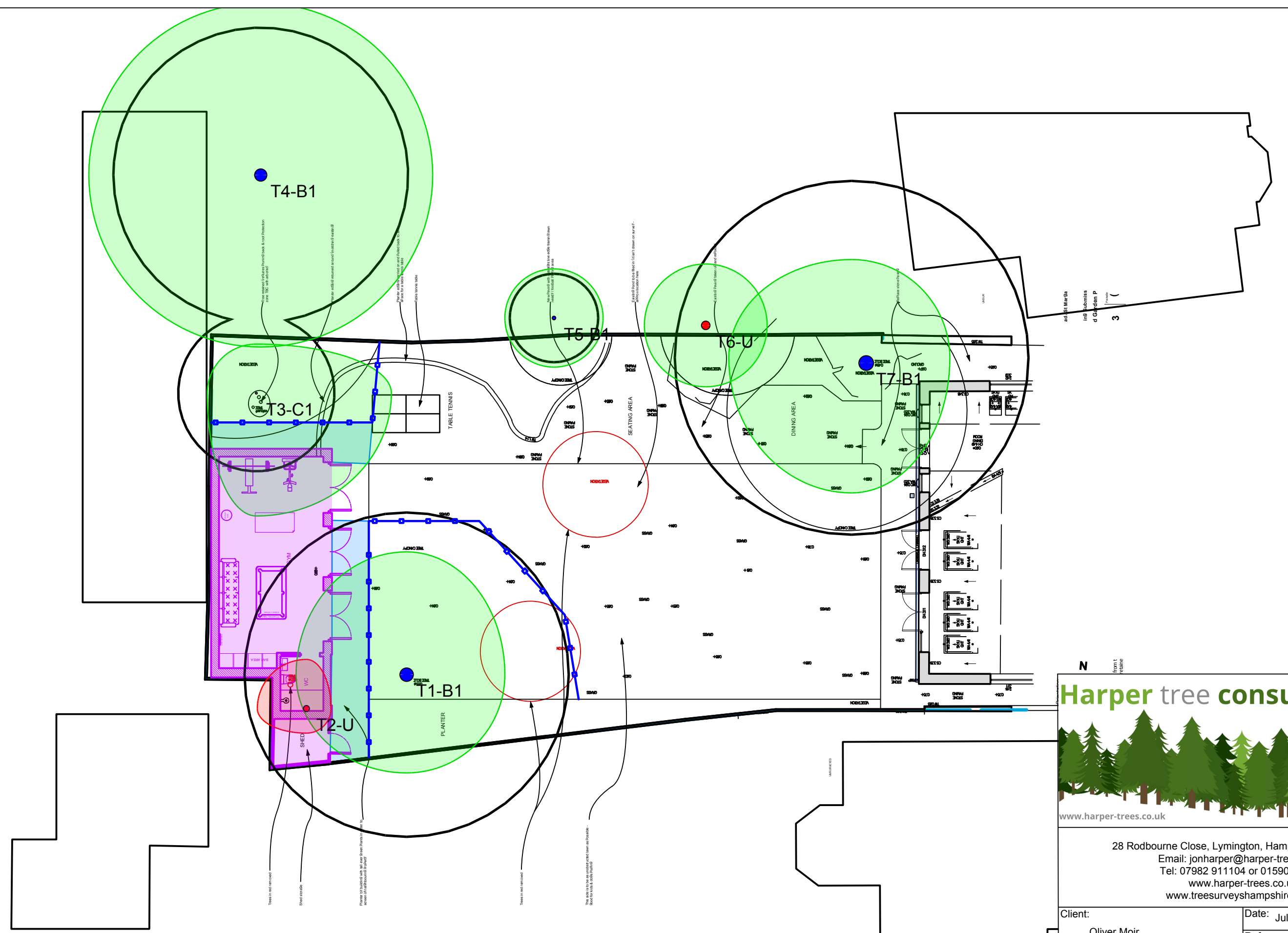
Notes & Legend:

BS5837 Specification
Ground Protection 

No Dig Permeable Hard
Surface Treatment 

Tree Protective Fencing 

Proposed development 



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reference

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Client: Oliver Moir	Date: July 17th 2024
Site: 9 Ailsa Road Twickenham	Ref: 2024048/TPP001
	Scale @ A3: 1:150
	Title: Tree Protection Plan