

Arboricultural Impact Assessment

Lych Gate, The Warren, Radlett, WD7 7DU

Report Production: 04/04/2023

Report Reference: AIA_AMS_LYN001-996



Report produced by Paul Zepler / FdSc Arb, NC Arb, LANTRA PTI

Date of inspection: 29th of March 2023

Contact: evertreearbsolutions@gmail.com

Statutory Controls		Mitigation	
TPO	Y	Owner	Yes
TPO potential	Y	Domestic 3 rd Party	No
Cons. Area	N	Local Authority	Y - Oversight
SSSI	N	Other	N
Local Authority: Hertsmere			

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1.0 Executive summary and report limitations

1.1 This arboricultural report has been compiled to analyse the potential impact to trees as the result of a proposed demolition and construction project at Lych Gate, The Warren, Radlett, WD7 7DU. Its purpose is to document tree loss, mitigation of negative impacts upon retained trees through demolition and to supply a methodology for cohabitation between trees and structure.

For the purposes of clarity all tree reference numbers will be mapped and can be referenced against a tree data chart. Mapping will display the root protection areas (RPA's) of trees within the scope of this proposal. Methodology to minimise the impact of the project will be supplied within this document. The impact will be designated as **Low**, **Medium** or **High** which will feed into the level of mitigation required.

1.2 This investigation will include:

- Analysis of onsite tree related data obtained during a survey undertaken 29/03/2023
- The site context and analysis of constraints
- Discussion
- Recommendations
- Methodology of works
- Loss / Gain report

1.3 Conclusions will be based upon analysis of data detailed within this report.

2.0 Introduction

2.1 This report has been produced by Paul Zepler, a professional within the arboricultural industry in relation to multiple disciplines within the sector. I currently hold the qualifications of FdSc arb, NC/arb and LANTRA PTI. I have also worked as an Arboriculture Officer for fifteen years, consulted for seven years with an additional four years working in the industry in a practical capacity.

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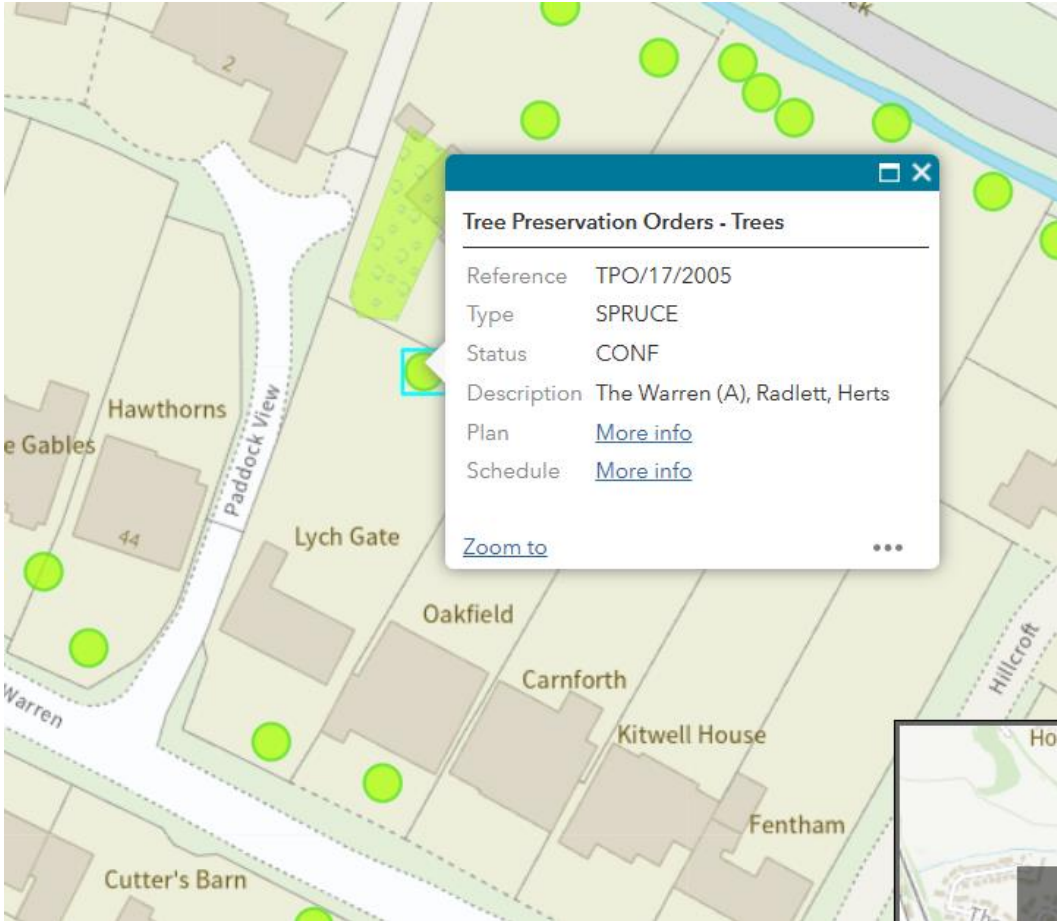
3.0 Professional Standard References

3.1 I have referred to the following standards and act as a framework to ensure good practice and tree evaluation in relation to trees throughout this project:

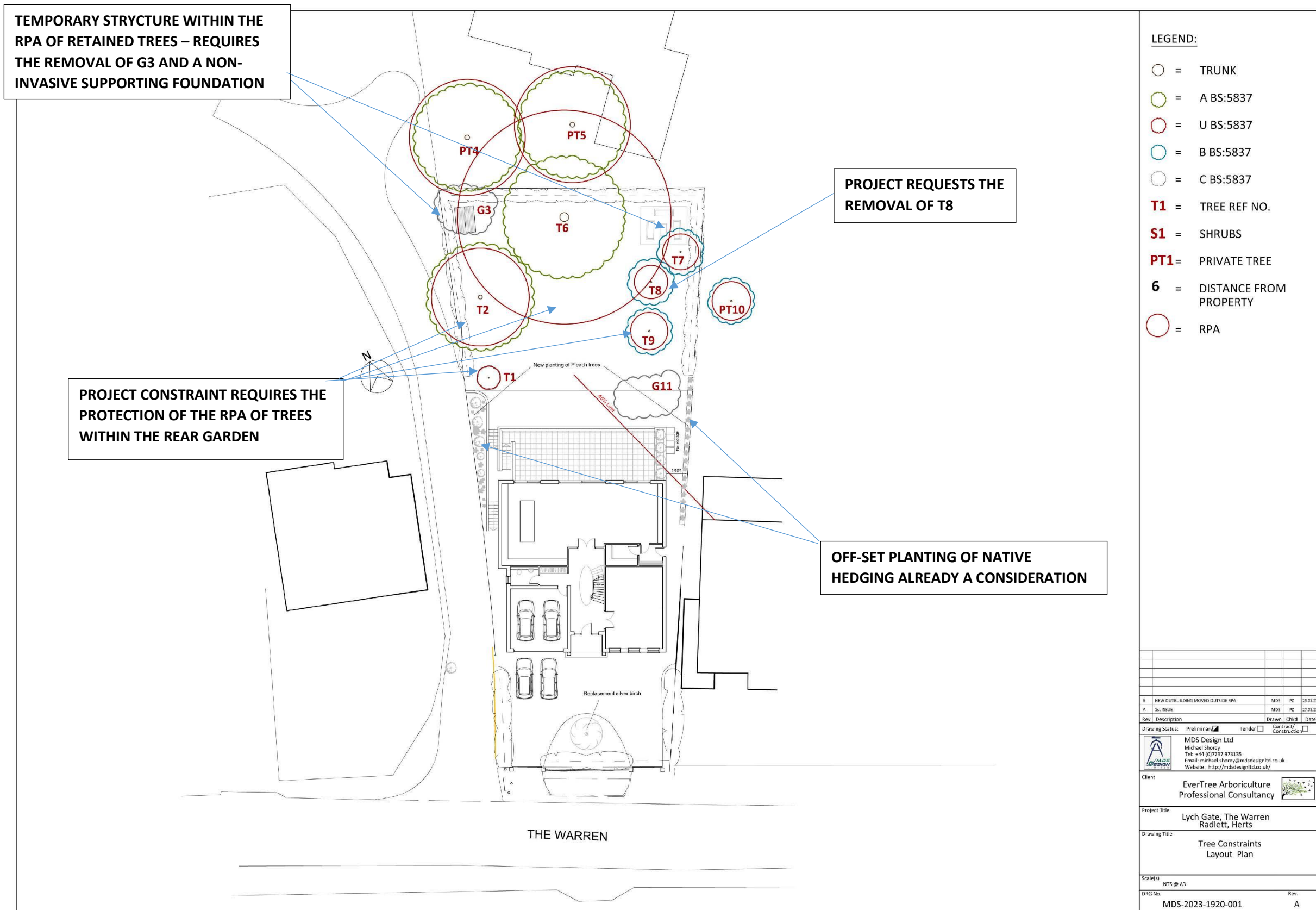
- 3.2 British Standard 5837:2012 (Trees in relation to design, demolition and construction: recommendations) as a good practice guide for trees in relation to structure
- 3.3 British Standard 3998:2010 (Tree works recommendations) for pruning recommendations.
- 3.4 British Standard 8545:2014 (Trees from nursery to independence in the landscape) as a methodology reference for the relocation of young trees.
- 3.5 National Joint Utility Group (NJUG) Volume 4 for the implementation of utilities within the RPA of existing trees.
- 3.6 The Wildlife and Countryside Act 1981 for wildlife protection law and good practice.
- 3.7 The Management of Health and Safety at Work Regulation 1999 to ensure that a site-specific risk assessment is undertaken before tree works begins (MHSWR 1999).
- 3.8 The Environmental Protection Act 1990 as a point of reference for noise pollution constraints.
- 3.9 Countryside and Rights of Way Act 2000 as point of reference for the protection of bats due to the documented presence of cavities within the tree survey.
- 3.9.1 Natural Environment and Rural Community's act 2006 as point of reference for the protection of bats due to the documented presence of cavities within the tree survey.
- 3.9.2 Reporting of Injury, Diseases and Dangerous Occurrences (RIDDOR) through the Health and Safety Executive (HSE).

4.0 Site Description

- 4.1 Lych Gate is within a private community situated within Radlett. The area has a very well-maintained green feel with plenty of arboricultural features. The property is detached at the top of an incline.
- 4.2 To the rear of the property there is a very large Spruce that is subject to planning preservation (as described within the images below). To the front was a Birch that has been removed by a previous owner, but with a replacement order currently being enforced.

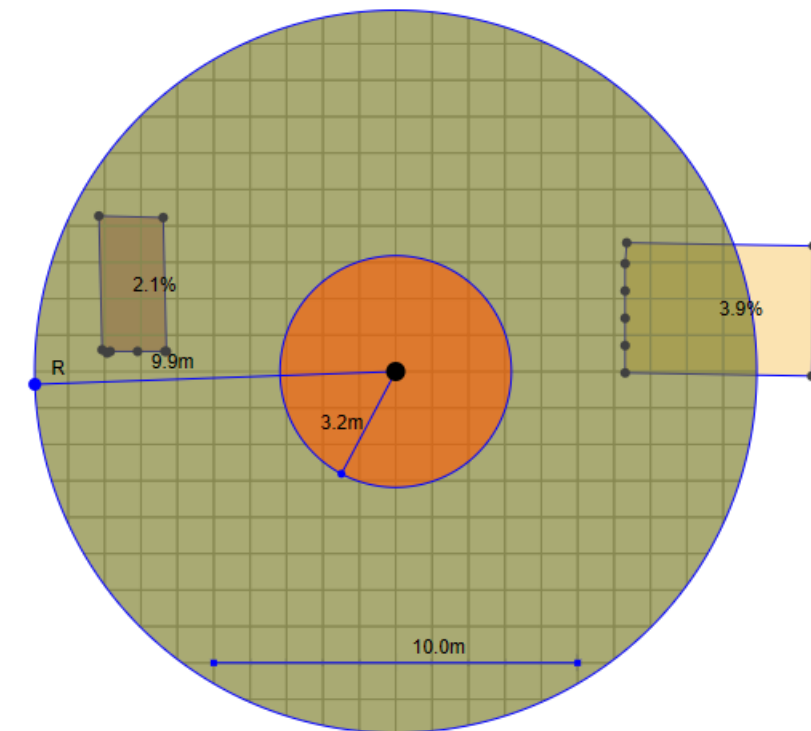
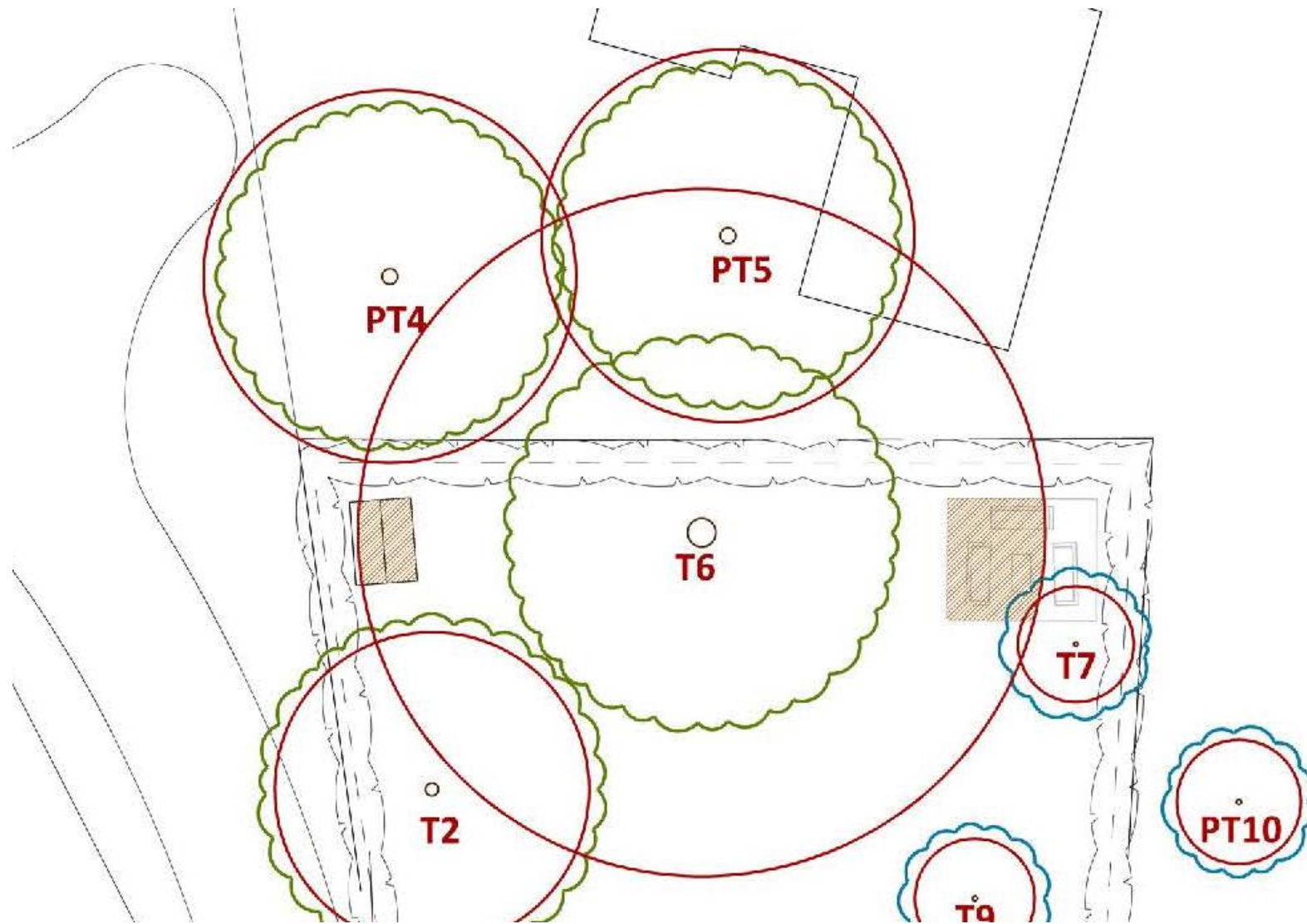


- 4.3 The site is not within a conservation area, but must have been reviewed for tree preservation status quite strictly as there are multiple within the area. This was likely placed during the development of the area.
- 4.4 The general tree quality is good, and only categorised as B in all cases due to the age of the inspected specimen BS:5837 CAT A1 application (SEE APPENDIX A).



TEMPORARY STRUCTURES

TPZ radius = 9.9m
 TPZ area = 309.3m²
 SRZ radius = 3.2m (R)
 3.9%
 Encroachment: 3.9
 Encroachment area: 12 m²
 2.1%
 Encroachment: 2.1
 Encroachment area: 6.5 m²



7.0 Tree data

04/04/2023

Map REF	Species	DBH (mm)	RPA(m/r)	Crown-Spread N/E/S/W				Age	SULE Years	Ownership	Condition	BS5837 Cat	Wildlife	Comments	Proposal
T1	Cherry	90	1.08	1	1	1	1	EM	40-80	Lych Gate	Good	C1	No	N/A	Retain and protect – methodology required
T2	Eucalyptus	380	4.56	5	5	5	5	M	80+	Lych Gate	Good	A1	No	N/A	Retain and protect – methodology required
G3	Mixed ornamental species	As displayed	As displayed	As displayed.				EM	40-80	Lych Gate	Good	C1	No	N/A	Remove to facilitate temporary structure
PT4	Pine	450 (est)	5.4	5	5	5	5	M	80+	Private rear property	Good	A1	No	N/A	Retain and protect – methodology required
PT5	Pine	450 (est)	5.4	5	5	5	5	M	80+	Private rear property	Good	A1	No	N/A	Retain and protect – methodology required
T6	Spruce	830	9.96	5	5	5	5	M	80+	Lych Gate	Good	A1	No	Low growth requires lifting to allow access to install temporary structure	Retain and protect – methodology required
T7	Birch	140	1.68	2	2	2	2	SM	40-80	Lych Gate	Good	B1	No	N/A	Retain and protect – methodology required
T8	Oak	130	1.56	2	2	2	2	EM	80+	Lych Gate	Good	B1	No	N/A	Remove
T9	Ornamental sp	145	1.74	2	2	2	2	EM	40-80	Lych Gate	Good	B1	No	N/A	Retain and protect – methodology required
PT10	Foxglove	150	1.8	2	2	2	3	EM	40-80	Oakfield	Good	B1	No	N/A	Retain and protect – methodology required
G11	Mixed cherry sp	As displayed	As displayed	As displayed					40-80	Lych Gate	Good	C1	No	N/A	Retain and protect – methodology required



T6



PT4 and PT5



T2



8.0 Summary of impact(s):

Total CAT A trees to be removed	0
Total CAT B trees to be removed	1
Total CAT C trees to be removed	1 x group
Total CAT U trees to be removed	0
RPA incursion into T6	6%
Foundation / Excavation RPA incursion into T6	0%

- 8.1 One tree and a small group requires removal to facilitate this project.
- 8.2 Utility excavations will not be necessary within the RPA of retained trees and shall route from existing terminals or cohabit the same space as the construction.
- 8.3 No nesting wildlife was identified during the site survey.
- 8.4 Surface alteration is required within the RPA of T6, but will be ramped, not excavated.
- 8.5 Protective measures will need to be implemented to ensure no incidental damages occur to retained trees as a result of demolition or construction.

9.0 Site considerations

- 9.1 No tree works is required for access facilitation.
- 9.2 Site usage will require material storage and convenience facilities outside of the RPA of retained trees.
- 9.3 A landscaping plan will be required to offset the minor trees loss. This has been discussed and agreed that a native mixed standard hedge will be planted to mitigate the loss of habitat.

10.0 Conclusion(s)

- 10.1 The impact of this proposal is **Moderate** in terms of the capacity to have a negative physiological impact upon the trees on site. But this can be mitigated by the implementation of a rhizome protection strategy to manage access and competition. When looking at the surface alteration for the temporary structures, a geo-synthetic solution can be used; as a foundation base that is retained using sleepers above ground level, permeability is key here. It has also been agreed that to off-set the loss of T8 and G3 a native mixed standard hedge will be planted. This will replace any loss of habitat

and increase the overall habitat potential of the site. If the methodology within this document is discharged as a local planning authority condition, then the impact will be mitigated from **Moderate** to **Low**.

11.0 Recommendations

- 11.1 Implement a tree protection plan to mitigate the potential for incidental damages to arise as a result of this construction project (SEE **AMS** SECTION 13).
- 11.2 Implement a demolition protocol to ensure that no incidental damages arise as a result of this construction project (SEE **AMS** SECTION 14).
- 11.3 Implement a soft dig method using airspade for any levelling required for the temporary structures (SEE **AMS** SECTION 13).
- 11.4 Ramp the founding surface for the temporary structure (SEE **AMS** SECTION 22).
- 11.4 Follow all other directives as stated within this document (SEE **AMS** 14-28)
- * PLEASE NOTE THAT THE DESIGN RECOMMENDATIONS NEED TO FIT THE SOIL VOLUME RETENTION AND FUTURE LOADING CAPACITY OF THE AREA USAGE. THESE CALCULATION WILL NEED TO BE DONE BY A QUALIFIED INDIVIDUAL AND ARE NOT WITHIN THIS REPORTS RMIT.

Arboricultural Method Statement

Lych Gate, The Warren, Radlett, WD7 7DU

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12.0 Methodology calendar

All recommendations are to be undertaken with reference to the method statement part of this document and in correlation with BS 3998, BS 8545 and BS 5837.

PHASE 1 – Actions to be carried out before construction commencement at time agreed upon during pre-commencement meeting (PCM) – Specific pruning recommendations have been advised to be in line with (BS 3998/6.4)	PHASE 2 Actions to be carried out at designated stage of construction agreed upon during the pre-commencement meeting	PHASE 3 – Actions to be carried out after construction closure at time agreed upon during pre-commencement meeting
<ul style="list-style-type: none"> - Install protective fencing in accordance with section 13 of this document. - Install relative ground protection in accordance with section 13 of this document. - Install stem protection for T9, T7 and G11 in accordance with section 13 of this document 	<ul style="list-style-type: none"> - Pre-commencement meeting on designated date. - Site inspections by project arborist during key impacts and protection installation. - All associated foundation works within the RPA of retained trees 	<ul style="list-style-type: none"> - Dismantle tree protection and initiate landscaping.

13.0 Tree protection plan

This construction proposal contains many trees that require protection, for that reason the following should be committed to and put into place in accordance with the specification at a timeframe agreed upon during a pre-commencement meeting.

- 13.1 The RPA measurements should be accurately distanced and fenced off in accordance with the provided specification (fig1).
- 13.2 All storage of works arising's, plant material should be outside of the protections zone.
- 13.3 Access should not be granted into the protection zone without arboricultural supervision.
- 13.4 Clear signage should denote exclusion from the protection zone (fig2).
- 13.5 All tree protection should be installed before commencement of any demolition.

DRG No. MDS-2023-1920-003 A



LEGEND:

- = TRUNK
- (green) = A BS:5837
- (red) = U BS:5837
- (blue) = B BS:5837
- (grey) = C BS:5837
- T1** = TREE REF NO.
- S1** = SHRUBS
- PT1** = PRIVATE TREE
- 6** = DISTANCE FROM PROPERTY
- (red) = RPA
- (dashed) = HERES TREE PROTECTION FENCING
- (orange) = GROUND PROTECTIVE BOARDING REQUIRED
- (hatched) = INCURSION INTO RPA, HAND DIG METHODOLOGY REQUIRED
- (purple) = STEM PROTECTION REQUIRED

Rev	Description	Drawn	Chkd	Date
A	Issued			29.01.23

Drawing Status: Preliminary Tender Contract/Construction

MDS Design Ltd
 Michael Shorey
 Tel: +44 (0)7753 973135
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 Website: http://mdsdesignltd.co.uk/

Client: EverTree Arboriculture Professional Consultancy

Project Title: Lych Gate, The Warren Radlett, Herts

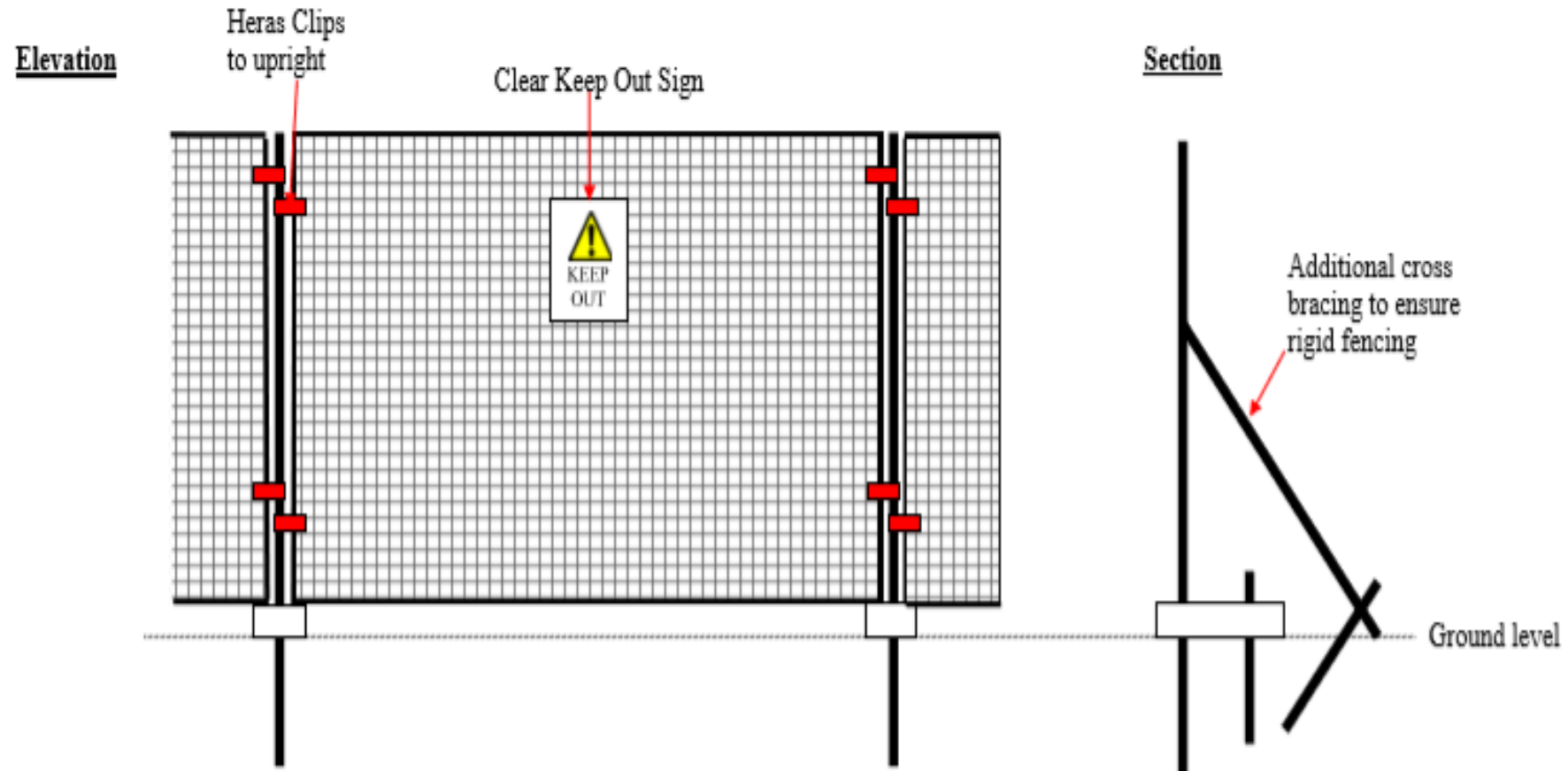
Drawing Title: Tree Protection Layout Plan

Scale(s): NTS @ A3

DRG No. MDS-2023-1920-003 Rev. A

Fig1

Tree Protection Fencing Specification



Tree Protection Fencing should be erected as per the Tree Protection Plan
With the fencing erected prior to any demolition or enabling works
commencing or materials being delivered to site.

If concrete or rubber feet are used these must
be pinned to the ground to prevent movement.

Fig2

TREE PROTECTION AREA



PLEASE KEEP OUT

The trees in this area are protected by Statutory Protection and / or Planning Conditions. Any works in this fenced off area may result in damage to the above ground parts or root system of these trees.

Damage to these trees is a criminal offence and breach of the planning consent and may lead to a criminal prosecution, and / or enforcement action.

Any works in this area must be undertaken as per the Arboricultural Report.

- 13.5 Any ground protection to be installed must be strong enough to support any predicted load and resist compaction and soil damage. And any scaffolding that is to be erected within the exclusion zones should be in line with the following recommendations:

A single thickness of boarding laid on the soil surface will provide sufficient protection for pedestrian loads. However, for wheeled or tracked construction traffic movements within the RPA, ground, protection should be designed by the project engineer to accommodate the likely loading and may involve the use of proprietary systems such as three-dimensional cellular confinement systems and approved for use by the developers arboricultural consultant and local authority before any works start.

- A) The primary method of protecting the ground when erecting scaffolding or for pedestrian movement within RPA's is by side butting scaffolding boards on a compressible layer such as bark chippings that is approximately 150mm in depth.

(<http://www.terram.com/applications/ground-stabilisation.html>)

The scaffolding may be erected first with the uprights placed on spreader boards and the ground protection installed around the uprights.

All protection measures must stay place until the building works are finished.

- B) For plant machinery with no greater weight than 2t a geotextile membrane should be laid on the ground, with a top load of 150mm depth worth of woodchip on top of which ground protection mats should be set:



- C) For wheeled or tracked construction traffic exceeding 2t a proprietary brand of geotextile solution for weight distribution such as: ([TERRAM GEOCELL 25/10 | 7m x 5m Panel | Slope Erosion Control \(ultimate-one.co.uk\)](https://www.ultimate-one.co.uk/TERRAM_GEOCELL_25/10_7m_x_5m_Panel_Slope_Erosion_Control)) should be designed to carry the load. The specification will be based upon the load that requires distribution.



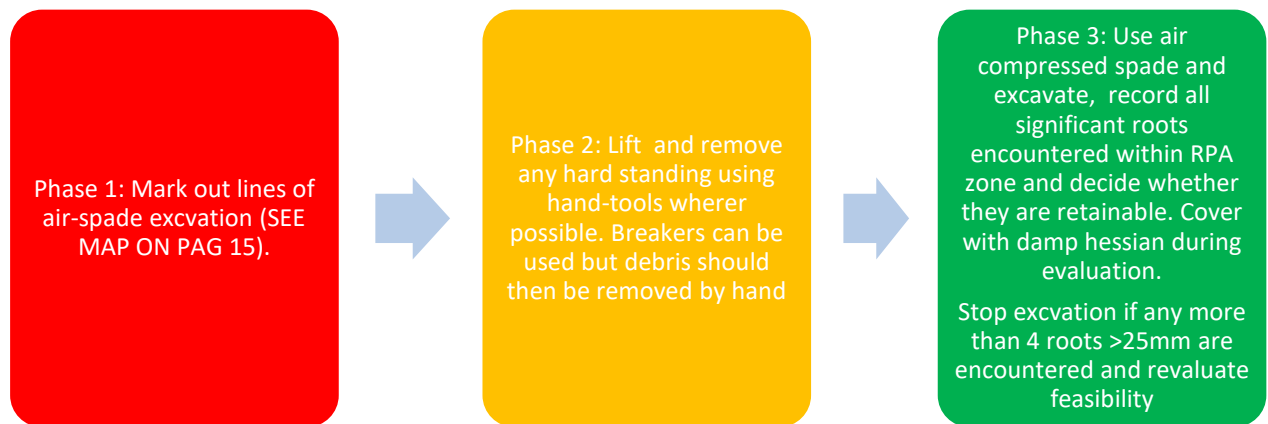
13.6 Stem protection for T7, T9 and G11:

Temporary fixed ply hoarding, protecting the stem from construction works damage. To be installed to protect any potential incidental damage. No excavation should be implemented to achieve this form of protection. Boarding and protection should sit on the available ground at least 20cm from the stem in all directions. Ply should be cut so fit for purpose and may be positioned as close to the stem as within 250mm. Height should be no less than 2m



13.7 Airspade for surface scarification (see section 23 / foundation)

The airspade uses an air compressor to blast soil away from tree roots. This reveals both the structural and fibrous tree roots without damaging them. The excavation is backfilled following completion of the excavation to prevent desiccation of the tree roots. The tree roots can be left exposed for a number of days; however, they would need to be wrapped in hessian cloth to protect them from negative impacts such as dehydration, UV and frost.



<http://www.thinktrees.co.uk/airspade-services.html>

<https://www.pjcconsultancy.com/casestudies/airspade-root-investigation-and-construction-supervision/>

<https://www.ruskins.co.uk/airspade>

If it is decided that any of the rooting structure is not retainable then in accordance with British Standard 3998: damaged roots or those that must be pruned should be cut so that the final wound will be as small as possible and free from ragged torn end

14.0 Demolition protocol

For this project, before the commencement of the construction, demolition will be required. The protocol below should be read and understood by all parties involved in this process.

- 14.1 All contact with site is to be undertaken with the greatest care to ensure that soil compaction does not arise because of tree works. No equipment or vehicles such as timber Lorries, tractors, excavators, or cranes are to be driven or parked beneath the crowns of retained trees. After access related tree works has been undertaken protective barriers are to be erected to ensure no plant machinery or vehicle can gain access to the Construction Exclusion Zone (CEZ)
- 14.2 Any demolition works within or immediately adjacent to the RPA of retained trees should be done so under the supervision of the consulting arborist.
- 14.3 Existing services on the site should be retained wherever possible, the upmost care should be undertaken to minimize disturbance and statutory utility plans should be acquired by the construction company.

SITE PROHIBITIONS:

- Mechanical digging or scrapping is not permitted within the defined Root Protection Area (RPA) or Construction Exclusion Zone (CEZ)
- No access will be permitted within the RPA of trees under preservation or the CEZ
- No temporary structure is allowed within the RPA of trees under preservation or the CEZ
- No materials equipment or debris will be stored within the RPA of trees under preservation or the CEZ
- Fires are not permitted within 10.5m of any vegetation
- Leaning objects or attaching objects to retained trees is not permitted
- Machinery, plant and vehicles are not permitted within 10m of tree noted within the TPP
- Chemicals and materials are not to be transported, stored, used or mixed within the RPA of retained trees
- Cement soil mixing is to be done in a designated area no less that 10m from retained trees
- Refuelling of plant machinery is prohibited within 10m of the RPA of trees under preservation or the CEZ

- Allowances should be made for the slope of the ground when washing materials to prevent leaching into the RPA of retained trees
- 14.4 The site manager will be responsible for briefing / inducting all personnel who will be working on any stage of this development with special reference being given to those working within the RPA of retained trees. This method statement and the TPP should be explained to all who enter or work on site.
- 14.5 Any incidents of damage to retained trees should be documented by the site manager and forwarded to the consulting arborist for inspection as soon as reasonably practicable.
- 14.6 The site manager will be responsible for liaising with the consulting arborist to go over any issues that arise, unforeseen tree related conflicts or to discuss any part of this method statement that is not fully understood.
- 14.7 All vehicles, plant machinery, chemicals and tools will be stored at a designated site that is outside of the Construction Exclusion Zone (CEZ) documented within the TPP (See section 10).
- 14.8 It is the responsibility of the site manager to ensure that all LPA requirements are met during the demolition process.
- 14.9 In the absence of a site manager a designated site supervisor will take over these responsibilities.

15.0 Method Constraints

- 15.1 Details of key site personnel, including site / project manager will be submitted to the Local Planning Authority (LPA) representative prior to the commencement of site works.
- 15.2 This method statement is to be approved and agreed to in writing by all key personnel prior to the commencement of site works. Signatories can be found at the end of this document.
- 15.3 No site personnel are to be present and no demolition, site clearance, building work or delivery of materials is to occur until the protective measures are in accordance with this method statement and the Tree Protection Plan (TPP). Protection fence distances can be found within the TPP and RPA plan submitted as part of this proposal.
- 15.4 Protective measures should be in accordance with this method statement and the TPP and remain unaltered unless otherwise specified and agreed by an LPA representative. This should remain in situ until the end of the construction process.

- 15.5 Site access is Monday to Friday from 08:00 until 16:00 unless otherwise agreed with by the LPA.
- 15.6 In accordance with LPA policy to keep within the boundaries of The Environmental Protection Act 1990 on noise pollution no heavy machinery is to be operated before 08:30 or after 16:00 during this project.

16.0 Accidents and emergencies

- 16.1 Any accidents or emergencies involving trees should be reported to the consulting arboricultural specialist who can then contact the LPA representative with a proposed solution.
- 16.2 Any accidents or emergencies involving tree works contractors should follow on site regulations as identified within the site-specific risk assessment document (MHWR 1999) and reported through to the HSE as necessary to keep in line with RIDDOR requirements. All site workers are to familiarise themselves with the accident and serious injury information pack within the appendices of this document.

17.0 Access

- 17.1 All contact with site is to be undertaken with the greatest care to ensure that soil compaction does not arise as a result of tree works. No equipment or vehicles such as timber Lorries, tractors, excavators, or cranes are interfere with the crowns of retained trees, access pruning may be required to mitigate this. After site-access related tree works has been undertaken, protective barriers are to be erected to ensure no plant machinery or vehicle can gain access to the Construction Exclusion Zone (CEZ)

18.0 Wildlife

- 18.1 All common wild birds are protected under the Wildlife and Countryside act 1981 which makes it an offence to:
- Kill, injure or take wild birds.
 - Take, damage or destroy the nest of wild birds whilst it is in use or being built.
 - Take or destroy the eggs of wild birds.
- 18.2 Bat species are afforded further protection by the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Community's act 2006. This legislation makes it an offence to:
- Intentionally or deliberately kill, injure or capture bats.
 - Deliberately disturb bats whether at roost or not
 - Damage, destroy or obstruct access to bat roosts.

- Process or transport bats, unless acquired legally.
- Sell, barter or exchange bats.

18.3 A definition of a bat roost can be found in a publication by the Bat Conservation Trust 'Bat Surveys' – Good Practice Guideline'.

19.0 Phasing of protective measures

19.1 Tree protection measures should be phased as follows:

- a) Undertake phase 1 related tree works.
- b) Install protective measures in accordance with approved protection plan and this method statement.
- c) Undertake and complete construction works.
- d) Undertake external landscape works to area outside of construction exclusion zones.
- e) Remove protective measures.
- f) Undertake phase 2 works and landscaping within the construction exclusion zones.
- g) Close of project

20.0 Site management

- 20.1 The site manager will be responsible for briefing / inducting all personnel who will be working on any stage of this development with special reference being given to those working within the RPA of retained trees. This method statement and the TPP should be explained to all who enter or work on site.
- 20.2 Any incidents of damage to retained trees should be documented by the site manager and forwarded to the consulting arborist for inspection as soon as reasonably practicable.
- 20.3 The site manager will be responsible for liaising with the consulting arborist to go over any issues that arise, unforeseen tree related conflicts or to discuss any part of this method statement that is not fully understood.
- 20.4 All vehicles, plant machinery, chemicals and tools will be stored at a designated site that is outside of the Construction Exclusion Zone (CEZ) documented within section 10 of this report.
- 20.5 It is the responsibility of the site manager to ensure that all LPA requirements are met during the construction process.

20.6 In the absence of a site manager a designated site supervisor will take over these responsibilities.

21.0 Prohibitions

- Mechanical digging or scrapping is not permitted within the defined Root Protection Area (RPA) or Construction Exclusion Zone (CEZ)
- No access will be permitted within the CEZ.
- No temporary cabin is to be installed within the RPA of retained trees.
- No materials equipment or debris will be stored within the CEZ.
- Fires are not permitted within 0.5m of any vegetation.
- Leaning objects or attaching objects to retained trees is not permitted.
- Machinery, plant and vehicles to be stored at a designated location, with ground protection outside of the construction exclusion zone fencing displayed on the Tree Protection Plan.
- Chemicals and materials are not to be transported, stored, used or mixed within the RPA of retained trees.
- Cement soil mixing is to be done in a designated area no less than 10m from retained trees.
- Refuelling of plant machinery is prohibited within 10m of the CEZ.
- Allowances should be made for the slope of the ground when washing materials to prevent leaching into the RPA of retained trees.
- When it is necessary to use machinery within 5m of retained trees a banksman will be required to ensure no damage arises because of mechanical interference

22.0 Foundations

22.1 Temporary surface foundations:

The foundation for the temporary will require retention. This will have a potentially negative impact upon T6 by limiting aeration and water percolation especially if a concrete raft were used. Rather than situated on a concrete platform these structures should be ramped upon a geosynthetic foundation, retained by sleepers. The ramping will allow for the movement of water rather than create a compacted soil substrate.

Aeration of the exiting soil should be done using an airspade to scarify in a non-impactive manner to level out (SEE SECTION 13), this will expose fibrous roots. A free draining soil should then be added at around a 50-Clay/30-Sand/20 biochar aggregate, to introduce a fertile, draining yet familiar substrate. Irrigation tubes should be introduced to the soil equally spaced throughout with no less than 8 within the total introduced soil volume. They should be perforated a lead from the historic contour ground level to the top of the soil which should be approximately 300mm from the surface. This will allow water percolation and aeration to historic rooting structure. A weed membrane should then be laid at the top of this soil, so these do not clog up.

CellWeb or another geotextile membrane that is capable of dispersing weight, allows water percolation and can act as a foundation should then be introduced on top of the weed membrane. This will act as a foundation for the final parking surface, which should allow water drainage throughout and be designed by the landscaping or construction team:

The following links detail the installation and relevance of this weight dispersion and water drainage friendly product:

<http://www.geosyn.co.uk/product/cellweb-tree-root-protection>
https://www.corelp.co.uk/core-tree-root-protection/?gclid=Cj0KCQiAqNPyBRCjARIsAKA-WFwVmdhOFCBK7ZizkjlhNECb44RT1hVwry2xS5bNtcNbgF63U43k3PEaAl5uEALw_wcB

Product specification for the temporary structures

- 1) Level out the foundation area using airspade
- 2) Install the retaining sleepers using pinions to stabilise
- 3) Lay membrane of Geotextile Treetex directly over the weed membrane surface.
- 4) Lay a 30mm layer of clean angular stone Type 4/20 to BS7533-13:2009.
- 5) Lay Cellweb TRP 200mm & fill with angular stone as item 2.
- 5) Lay a 50mm layer of angular stone to form a finished layer.

This specification has been supplied by "Geosynthetics" as being suitable for parking foundation.

<http://www.geosyn.co.uk/product/rootblock-root-barrier>
 Cellweb®TRP - Cellular Confinement System (geosyn.co.uk)
<https://www.ecomerchant.co.uk/azweb-tree-root-protection-system.html>
https://greenfix.co.uk/geoweb/geoweb-tree-root-protection.html?gclid=CjwKCAiAmrOBBhA0EiwArn3mfPmVEonnkrFt4UVuVrZ_pnm1JU3L7Hi6zNKoPzuI4f60QBsXlgsLhBoCUoAQAvD_BwE

- 23.1 Any tree and hedges planting should consider the available space for future tree growth and the potential growth of any species chosen as part of the planting project (BS 8545/10).
- 23.2 The relocation of retained trees should only take place using hand dig methods and back filled with soil or mulch with a valid provenance or spoil from the site.
- 23.3 Recommended tree replacement species and locations should be in keeping with the '12 Principles for Urban Tree' advised by the Tree Design and Action Group (TDAG) quoted from: *Trees in the Townscape: A Guide for Decision Makers*:
<http://www.tdag.org.uk/trees-in-the-townscape.html>
- 23.4 Landscaping within the CEZ is only permitted after all protection measures have been removed.
- 23.5 Any roots that are discovered for adjacent trees are to be left in situ, not cut or otherwise damaged. At no time is the use of a rotavator permitted within the RPA of retained trees.

24.0 Monitoring and supervision

- 25.1 The development of tree protection is to be monitored by the project arborist who should be retained to record and detail the programme progress in relation to arboricultural factors (BS 5837 6.3). Records should be retained and presented to the LPA as part of a documented intervention process. All site inspections should be recorded and forwarded to the LPA representative either via email or by mail. The template in which this shall be recorded can be found within the additional documents section of this document.
- 24.2 Prior to the commencement of any works, an onsite pre-commencement meeting should be arranged to discuss the methodology of this document and swap contact details.
- 24.3 It is strongly recommended that at least one visit is undertaken by the project arborist to ensure that tree protection measures are in correlation with the recommendations of this report. Further site inspections may be required to ensure the continuation of recommendations and during phases such as any exaction within the RPA of retained trees. For this the project arborist requires 72 hours' notice prior to the commencement of any phase in order to attend site.

25.0 Training

- 25.1 All tree works is to be undertaken in accordance with British Standards BS 3998:2010 and BS 8545:2014. All tree related works is to be undertaken by suitably qualified professionals with all relevant insurances. Documentation should be provided

qualifying professional indemnity and professional qualification to the site supervisor before any tree works begins.

26.0 Waste

- 26.1 All tree works arisings are to be removed from site and deposited in at the nearest green waste collection point or facility. Any contaminated tree waste (pathogen identified) during initial tree works should be burnt on site or disposed of in accordance with DEFRA waste policy.

APPENDIX A: BS:5837 Categorisation

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

Table 1 Cascade chart for tree quality assessment		Identification on plan		
Category and definition	Criteria (including subcategories when appropriate)			
Trees unsuitable for retention (see Note)				
Category U Those 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	<ul style="list-style-type: none"> • Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.</i></p>		Dark red	
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominate and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	Light green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention of beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	Mid blue
Category C Trees of low quality with an estimated remaining expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape value	Trees with no material conservation or other cultural value	Grey

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APPENDIX B: Site inspection template

Report Address:

I confirm that this report is related to a site visit undertaken ---/---/---

Following my site visit to monitor the constraints advised within this arboricultural report, please find my comments listed below:

Default action:

Signed - consulting arborist-----

Signed - site supervisor-----