

Ref: LAS_943
Date: 20.08.25.

Site: The Moorings, Upper Warren Avenue, Reading, RG4 7EJ

Arboricultural Statement

1 INTRODUCTION

- 1.1 LandArb Solutions Ltd were instructed to prepare an arboricultural statement to accompany a planning application for the demolition of an existing dwelling and construction of a replacement dwelling at The Moorings, Upper Warren Avenue.

2 TREE SURVEY

- 2.1 LandArb Solutions visited the property/site on 14.09.22 to carry out a BS5837:2012 tree survey. A further site walkover was carried out on 03.07.25 to record any changes to the tree survey in terms of tree condition or quality.
- 2.2 A copy of the tree survey and constraints plan and schedule are shown in Appendix 1. Site photos are shown in Appendix 2.
- 2.3 The tree survey schedule records information relating to existing trees on site in accordance with BS5837:2012. The tree survey and constraints plan show tree positions, canopy spread, quality category and root protection area (RPA constraints), plotted onto the site topographical survey (Topographical Survey, Mobile CAD Surveying Solutions, drawing 3420-01, Rev A dated 08.09.22).

3 STATUTORY PROTECTIONS

Conservation Area / Tree Preservation Orders

- 3.1 A review of Reading Borough Councils TPO register for Upper Warren Avenue, does not list the dwelling Moorings as having any TPO trees at the property (accessed 02.08.25). However, before any tree work (if needed) is carried out, it is advisable to contact the Council to just confirm if any TPOs exist as it is uncertain as to how often the TPO register is updated.
- 3.2 Reading Borough Council online 'my maps', shows that the property is not in a Conservation Area.
- 3.3 Notwithstanding specific exemptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees without the prior consent of the local planning authority. Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £20,000 if convicted in a Magistrates' Court, or an unlimited fine if the matter is determined by the Crown Court.

Statutory Wildlife Protection

- 3.4 Although preliminary visual checks from ground level of wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside the remit of the survey.
- 3.5 Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for bats in addition to birds and small mammals. It is recommended that in line with any accompanying specialist advice, any tree works should only be carried out following a detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the project manager, site owner

or consulting arboriculturist should be informed and appropriate action taken as recommended by a Statutory Nature Conservation organisation such as Natural England.

- 3.6 It is advised that tree works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. Ideally, operations should be avoided during this period. Any necessary work should only be carried out following a preliminary check of the vegetation. For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in Britain.

4 DEVELOPMENT PROPOSALS

- 4.1 Development proposals comprise the demolition of the existing dwelling and construction of a replacement.
- 4.2 A copy of the proposed site plan is shown in Appendix 3.
- 4.3 It is noted that a previous scheme for the removal of the existing dwelling and construction of a replacement dwelling was approved under application PL/22/1625. That application was supported by an Arboricultural Statement (LandArb LAS 492, dated 01.1.22).

5 ARBORICULTURAL IMPACT ASSESSMENT

5.1 The proposed site plan has been overlaid with the tree survey to prepare a Tree Protection Plan (Appendix 4). This has been used to inform this assessment in terms of the proposed site plan and relationship with trees.

Tree Retention/Loss

5.2 Proposals will require the removal of the following:

- Shrubs around the existing site access will need to be removed to allow for installation of a new gate and wall.
- Existing cypress shrubs at the property frontage to be removed to allow for new landscaping.
- Garden shrubs and a small fruit tree from G19 to be removed to allow construction of a new outbuilding.
- T23 to be removed to create additional space between the dwelling and boundary fence.

5.3 Overall proposals will not require the removal of any high quality trees nor any that are notable, ancient, veteran or historic. Removals will focus on garden shrubs and small garden trees.

Impacts to retained trees

Tree works

5.4 No major tree work to retained trees is required to enable proposed development. Some minor pruning is likely to be required as follows:

- Existing boundary vegetation (G8) is already managed/clipped along the driveway edge and west side of the existing dwelling. It is likely this management will continue.
- Off-site beech hedging in G22 on the eastern boundary overhangs the fence with a low canopy. This will likely need to be lifted/pruned back in accordance with common law rights as part of general maintenance rather than a requirement for new development.
- Boundary shrubs in G3 will need to be pruned on their south side to allow clearance for installation of a new post and rail fence.

Removal of existing structures

- 5.5 The existing dwelling and side buildings are to be demolished. However, all are located outside of any RPA.
- 5.6 A small timber shed is to be removed from within G13. The shed is of lightweight timber construction and its removal is unlikely to cause detrimental impacts to G13.

Construction of the new replacement dwelling

- 5.7 The location of the proposed replacement dwelling largely sits within the footprint of the dwelling to be demolished. It is shown to be located outside of all RPAs, although clips edge of RPA of an off-site cypress tree in G8.

Construction of rear garden outbuilding

- 5.8 The location of the proposed rear garden outbuilding avoids is located between some fruit trees and a cypress hedge (G13). It avoids mature tree RPAs although clips the edge of two small fruit trees.

Levels and services

- 5.9 All level in retained tree RPAs will be preserved.
- 5.10 There are existing services at the property and it is proposed to re-use existing services.

Driveway surfacing and gates

- 5.11 The existing driveway comprises compacted gravel and areas currently used for parking comprise bare earth. It is proposed to resurface the driveway with new gravel. Although this will be partly in the RPAs of existing trees, it must be noted that these areas are already used for parking and the existing driveway. In this context, proposals will not introduce a land use not already occurring.
- 5.12 However, to avoid root severance it would be important to re-gravel on top of the existing ground rather than excavating down to build up. Where the driveway comprises turf, it would be acceptable to remove the turf layer prior to laying gravel.
- 5.13 At the site frontage it is proposed to construct a new boundary wall with electronic gates as well as install tarmac to the driveway entrance.
- 5.14 The existing site entrance comprises compacted gravel which will be upgraded to permeable tarmac. As this is an existing site access, it would be reasonable to re-surface. However, as this would be within the RPAs of two large lime trees, the works would need to be carried out carefully with a shallow excavation to tie in with Upper Warren Avenue.
- 5.15 The new boundary wall and gate piers will be in default RPAs. The works will need to be carried out sensitively to avoid/reduce potential root damage. The gate piers can be positioned to avoid any major roots by excavating trial holes to determine optimal location. The brick walls could potentially cause root severance if a strip foundation is used. An alternative would be to carefully excavate using hand digging or air spade and should any major roots be discovered, lintel over any roots encountered.

Summary

- 5.16 Overall with regard to proposals the following is noted:

- Proposals will not require the removal of any high quality trees nor any that are ancient, veteran, notable or of significant visual amenity value.
- No major or inappropriate tree works are required to enable development.
- No major engineering works are required in RPAs that would result in the deteriorate or loss of existing trees.
- Retained trees can be adequately protected by fencing, ground protection and considerate working methods.

6 TREE PROTECTION AND METHOD STATEMENT

6.1 Tree protection measures are shown on the TPP Demolition in Appendix 5 and TPP Construction in Appendix 6. Protection measures will rely on temporary fencing, ground protection and considerate working methods.

Protection fencing and ground protection

6.2 With regard to construction and demolition, tree protection fencing would be required to contain the working area.

6.3 The alignment of fencing on the demolition and construction TPPs protects the majority of RPAs and tree stems from potential direct contact or RPA encroachment.

6.4 However, it would not be possible to fully fence off all RPAs, especially at the site access. The following areas will require fencing to be set back into RPAs:

- 1) It will be necessary to set fencing back into the RPA of a garden fruit tree in G19 to allow a patio to be constructed by the proposed outbuilding.
- 2) Fencing will need to be adjusted back to the edge of the existing gravel side access to the west of the existing building to allow space for construction of the new dwelling.
- 3) Fencing will need to be set to the edge of the existing site access but allow space for vehicular access for demolition and construction purposes.

6.5 Where RPAs would not benefit from temporary tree protection fencing, temporary ground protection would be needed, in areas as shown in green on the TPP Demolition and TPP Construction.

6.6 For pedestrian and vehicular passage ground protection in the form of Ground Guards or track mats set upon a 100-200mm layer of bark chippings would be suitable. Example shown in Appendix 7.

6.7 For heavier loading, ground protection would need to be in the form of a load bearing geocell such as (Cellweb or similar).

6.8 Areas where temporary ground protection would be needed is shown in green on the TPPs.

6.9 The existing driveway would likely require ground protection during demolition and construction, when ground guards would be recommended as its likely HGVs / dumper trucks would need to access the area for the removal of demolition waste and bring construction materials.

General rules for tree protection

6.10 The following activities are not permitted within a RPAs unless detailed in this statement:

- No mixing of cement.
- No soil/turf stripping, raising/lowering of ground levels, deposit or excavation of soil or rubble.
- No storage of materials, waste materials, spoil, machinery fuel, chemicals or other materials of any other description (unless on ground protection).
- No parking/use of tracked or wheeled machinery unless on ground protection/existing driveway).
- No lighting of fires or disposal of liquids.
- No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained trees.

6.11 All materials, equipment and contractor parking/compound must be located outside any retained tree RPA.

Considerate Working Methods

6.12 The final method of tree protection will be carrying out works considerately and being tree aware. All contractors must be made aware of tree protection requirements at the site and ensure works are carried out in accordance with this statement.

Sensitive working – driveway surfacing

6.13 With regard to the driveway re-surfacing, excavations should be avoided in RPAs, therefore the following methods should be employed:

- Turf layer and existing compacted gravel removed using hand tools where needed.
- A geotextile membrane should be installed on the existing ground and gravel installed on top.
- If a more stable base is required, a load bearing cellular confinement system, Cellweb TRP or similar (100mm as required by loading) is to be installed on the geotextile and filled using clean angular stone type 4/20. Installation works in this area should be carried out by hand.
- The above ground no dig cellular confinement (cellweb or similar) is then overtopped with gravel to form surface layer.
- Timber edging or brick/cobble sets can be used for edge support pinned in place and topsoil graded up to the edge.
- All works to the driveway are to be carried out using hand tools only.

6.14 An example of cellweb and installation guide is included in Appendix 8.

6.15 With regard to the installation of new tarmac at the site entrance, the following method should be followed:

- The existing ground closest to Upper Warren Avenue will need to be excavated to ensure the driveway ties in to the level of the road. This should be excavated using hand tools to the minimum depth required up to 200mm to form a sub base.
- However, it will be important to minimise the level of excavation into the site (towards the new electronic gates) because this areas in in the RPAs of two large lime. It will therefore be necessary to install the tarmac grading up from Upper Warren Avenue towards the electronic gates.
- Once the excavation at the entrance has been prepared, an impermeable membrane should be laid on the prepared ground prior to laying a subbase (clean angular stone) and surface using permeable tarmac.
- Works should be carried out using hand tools.
- Tarmac should leave at least 1m from either stem of the limes at the site frontage to allow future growth.

Electric gate post excavation

6.16 Where within default RPAs the following working method is to be followed with regard to installing the new gate posts:

- Post holes to be excavated using hand tools.
- If any roots under 25mm are discovered these are to be pruned back using a sharp cutting tool. If any roots over 25mm are discovered these must be retained and alternative post hole location chosen.
- Excavated post holes are to be lined with an impermeable membrane prior to any concrete pouring.

Electric gate cable installation

6.17 The following method should be used to excavate a shallow cable run from the new garage to the new electric gates following the edge of the driveway (where in RPA of the lime trees in G1).

- Mark out the alignment of the cable run on the ground. Cable run to start from the new external garage and follow edge of the driveway.
- Excavate using handheld tools (hand digging or use of air-spade). The priority is to remove soil without damaging or severing any significant roots or damaging roots in the immediate area of excavation. Preference should be paid to using an air-spade to minimise damage to roots. However, if the ground is sufficiently compacted that air-spade excavation is not possible or not possible for another reason, excavation should be carried out using hand tools.
- Where digging by hand as opposed to air-spade, a fork should be used to loosen soil and help locate any significant roots. Loosened soil can then be lifted out using a spade.
- The electric cable for the access gate is to be inserted into a shallow excavation i.e. 200mm.
- During excavation, roots under 25mm are to be pruned back to the edge/face of the excavation using a sharp cutting tool such as saw or secateurs. If smaller roots under 25mm are sufficiently flexible and can be temporarily or permanently displaced, then the default should be to retain.
- Roots over 25mm or large fibrous mass are to be retained. Retained roots must not be served. Once roots have been located, a smaller tool such as a trowel should be used to clear soil away from the retained roots to avoid damaging its bark.
- Retained roots must not be exposed for long periods of time (over a few hours) without protection. Therefore any exposed retained roots are to be covered with damp hessian sacking or boards to prevent drying out and protect from direct sunlight until they can be recovered with soil/backfill.
- Excavated soil should be temporarily stored on heavy duty plywood boards or similar to prevent compaction to the ground beneath.
- Once excavation is complete and the electric cable installed, the excavation is to be backfilled and any roots protected with hessian sacking this will need to be removed prior to back filling.

New boundary wall at the site access

6.18 Where within default RPAs of G1 the following working method is to be followed with regard to installing the new boundary wall:

- Mark out the alignment of the new wall on the ground.
- Excavate using handheld tools (hand digging or use of air-spade). The priority is to remove soil without damaging or severing any significant roots or damaging roots in the immediate area of excavation. Preference should be paid to using an air-spade to minimise damage to roots. However, if the ground is sufficiently compacted that air-spade excavation is not possible or not possible for another reason, excavation should be carried out using hand tools.
- Where digging by hand as opposed to air-spade, a fork should be used to loosen soil and help locate any significant roots. Loosened soil can then be lifted out using a spade..
- If any roots under 25mm are discovered these are to be pruned back using a sharp cutting tool.
- If any roots over 25mm are discovered these must be retained and a lintel should be used to bridge over them.
- Where large roots are found and need to be retained, the foundation of the wall will need to avoid a strip foundation and will comprise a series of concrete piers with a lintels over retained roots.
- Posts holes for the wall piers/footings are to be lined with an impermeable membrane prior to any concrete pouring.

Timber post and rail fence to the property frontage

6.19 Where within default RPAs the following working method is to be followed with regard to installing the new fence posts:

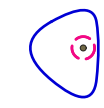
- Post holes to be excavated using hand tools.
- If any roots under 25mm are discovered these are to be pruned back using a sharp cutting tool. If any roots over 25mm are discovered these must be retained and alternative post hole location chosen.
- Excavated post holes are to be lined with an impermeable membrane prior to any concrete pouring.

Appendix 1: Tree Survey and Constraints Plan and Schedule

KEY - BS 5837 : 2012 Categories

- 

Tree Category A - High Quality
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A Category - Hedgerow, Group, Woodland
- 

Tree Category B - Moderate Quality
- 

B Category - Hedgerow, Group, Woodland
- 

Tree Category C - Low Quality
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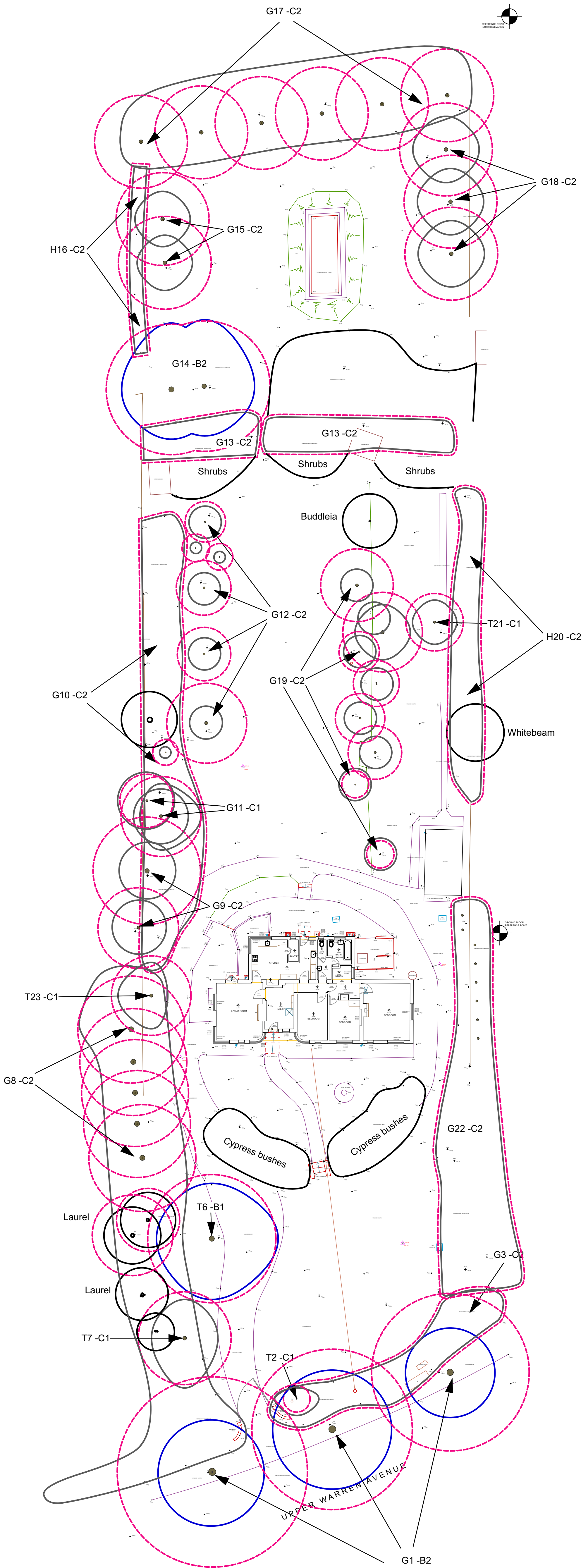
C Category - Hedgerow, Group, Woodland
- 

Tree Category U - Unsuitable for Retention
- 

Default Root Protection Area to BS:5837:2012
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Adjusted Root Protection Area to BS:5837:2012
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Shrub Mass / Offsite Tree



Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Revision	Description	Date
-	First Issue	9/7/25
A	Second Issue	2/8/25

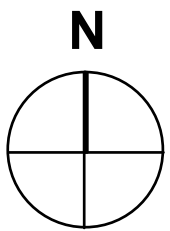
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Project:
The Moorings, Caversham, Reading

Description:
Tree Survey and Constraints Plan

Status:
For Planning

Scale: 1:200 @A1	Drawn I Checked DP MP	Date: 02/08/2025
Job Number: LAS 943	Drawing Number: 01	Revision: A



Ref no.	Species	Ht. (m)					Crown Spread (m)								Life stage	ULE	Physiological Condition	Structural Condition	General Observations and Notes
			Stem dia. (mm)	RPA radius	RPA area	Category Grading	N	E	S	W	Ht. 1st Br. (m)	Est.	1st Br. Direction	Ht. Can. (m)					
G1	Lime	18.0	720	8.6	235	B2	As on plan				N/A	-	N/A	3.0	M	20+	Good	Fair	Three mature limes, part of avenue of limes along road frontage. Western lime multi-stem from 3m appears reduced in past, central lime has bark damage and exposed heartwood at main union north and south side, black staining on stem, union needs inspecting for decay. Eastern lime has dense crown, good shape.
T2	Yew	3.0	100	1.2	5	C1	1.5	2.0	1.5	1.5	N/A	-	N/A	0.0	SM	10+	Fair	Poor	Poor canopy shape, small yew, water pipe by stem, no northern side branch development.
G3	Laurel, ivy, hawthorn	2.5	70	0.8	2	C2	As on plan				N/A	-	N/A	0.0	SM	10+	Fair	Poor	Ivy encroachment, hawthorn managed in past.
T4	Removed post survey																		
T5	Removed post survey																		
T6	Walnut	12.0	480	5.8	104	B1	5.0	6.0	5.5	5.0	N/A	-	N/A	3.5	M	20+	Fair	Fair	Crown lifted in past, thinning crown areas of dieback.
T7	Walnut	11.5	350	4.2	55	C1	3.5	3.0	4.5	3.0	N/A	-	N/A	3.5	EM	20+	Fair	Poor	Ivy on stem has been cut, canopy suppression north side
G8	Holly, laurel, cypress	10.0	300	3.6	41	C2	As on plan				N/A	-	N/A	0.0	EM	10+	Fair	Fair	Mixed boundary vegetation, cypress stems have been topped, side has been pruned in past. Cypress appear off site and others behind boundary fence with laurel shrubs in front.
G9	Ash	12.5	400	4.8	72	C2	As on plan				N/A	-	N/A	4.0	EM	10+	Fair	Poor	northern ash has no canopy east side, southern ash has thin crown and dieback and is in neighbouring property.
G10	Holly, cotoneaster yew, privet, ivy, hawthorn	4.0	100	1.2	5	C2	As on plan				N/A	-	N/A	0.0	EM	10+	Fair	Poor	Mixed garden shrubs, unmanaged, some dead with ivy smothering within. Northern section comprises several small Apple trees, limited crown cover, dense ivy smothering some trees and a pittosporum bush.
G11	Holly	9.0	300	3.6	41	C1	3.0	3.5	3.0	2.0	N/A	-	N/A	0.0	M	10+	Fair	Fair	Two holly stems, unable to access base, ivy stems and into crown, mixed garden shrubs around base.
G12	Apple	4.0	200	2.4	18	C2	2.0	2.0	2.0	2.0	N/A	-	N/A	1.0	M	10+	Fair	Poor	Line of garden fruit trees, small trees, pruned in the past, some deadwood,
G13	Cypress	9.0	300	3.6	41	C2	As on plan				N/A	-	N/A	0.0	M	10+	Fair	Fair	Line of topped cypress, managed on flanks
G14	Cedar	12.0	490	5.9	109	B2	6.0	4.5	4.5	4.5	N/A	-	N/A	1.0	M	20+	Fair	Fair	Two cedar, suppress each other, deadwood in lower crowns
G15	Apple	4.0	350	4.2	55	C2	2.5	2.5	2.5	2.5	N/A	-	N/A	0.5	M	10+	Fair	Fair	Two garden fruit trees, pruned in past. Mature to over mature
H16	Privet	2.0	80	1.0	3	C2	As on plan				N/A	-	N/A	0.0	EM	10+	Fair	Fair	Garden hedge, managed.
G17	Apple, cypress, holly, laurel, cotoneaster	9.0	350	4.2	55	C2	As on plan				N/A	-	N/A	0.0	M	10+	Fair	Fair	Two over mature apple trees with line of cypress and holly stems behind and understorey laurel and cotoneaster. Fruit trees pruned in the past, suppressed to north.
G18	Apple, pear	4.0	350	4.2	55	C2	3.0	3.0	3.0	3.0	N/A	-	N/A	0.0	M	10+	Good	Fair	Apple and two pear trees, small, garden fruit trees, mature to over mature, pruned in past.
G19	Pear, Apple, plum	4.0	300	3.6	41	C2	2.5	2.5	2.5	2.5	N/A	-	N/A	0.5	M	10+	Good	Fair	Garden fruit trees, small, mature to over mature, pruned in past.
H20	Beech	2.0	80	1.0	3	C2	0.0	0.5	0.0	0.5	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Managed boundary hedge.
T21	Ash	7.5	220	2.6	22	C1	2.0	2.0	2.0	2.0	N/A	-	N/A	1.5	SM	10+	Fair	Fair	Small self set ash, dense ivy on stem, stump with ivy by its stem.
G22	Fig, cypress, beech, laurel, cotoneaster, yew, lilac	5.0	100	1.2	5	C2	As on plan				N/A	-	N/A	0.0	EM	10+	Fair	Poor	Mixed boundary vegetation, some inside fence whilst others in neighbouring property. Unkept appearance, failed cypress stem in site, low quality garden shrubs.
T23	Norway spruce	10.0	300	3.6	41	C1	3.0	1.5	3.0	3.0	N/A	-	N/A	1.0	EM	10+	Good	Fair	Stem inside fence, pruned lower canopy, dense needle coverage. Small garden boundary tree.

Appendix 2: Site Photos



Photoview 1: View north towards existing dwelling.



Photoview 2: View looking north west at T6 and G8.



Photoview 3: View south at the property access.



Photoview 4: View looking north-west towards drive entrance.



Photoview 5: View looking south along east boundary of site adjacent to the existing dwelling.



Photoview 6: View east towards the garden fruit trees on east side of garden.



Photoview 7: View west towards fruit trees G9 and boundary vegetation G10 and G11.



Photoview 8: View north towards G13.



Photoview 9: View east towards G19.



Photoview 10: View south-west at T23.

Appendix 3: Proposed Site Plan

DRAFT

GENERAL NOTES - PLANS & ELEVATIONS

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL GENERAL ARRANGEMENT, PROJECT DETAILS, SPECIFICATIONS AND CONSULTANTS DRAWINGS.
- UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE TO STRUCTURAL FACES AND/OR PARTITION STUDS.
- ABBREVIATIONS:

SVP	SOIL AND VENT PIPE
DP	DRAINAGE POINT
RWP	RAIN WATER PIPE
BIG	BACK INLET GULLY
- ALL ELEMENTS OF WORK TO BE INSTALLED ACCORDING TO THE APPROPRIATE MANUFACTURER'S INSTRUCTIONS.

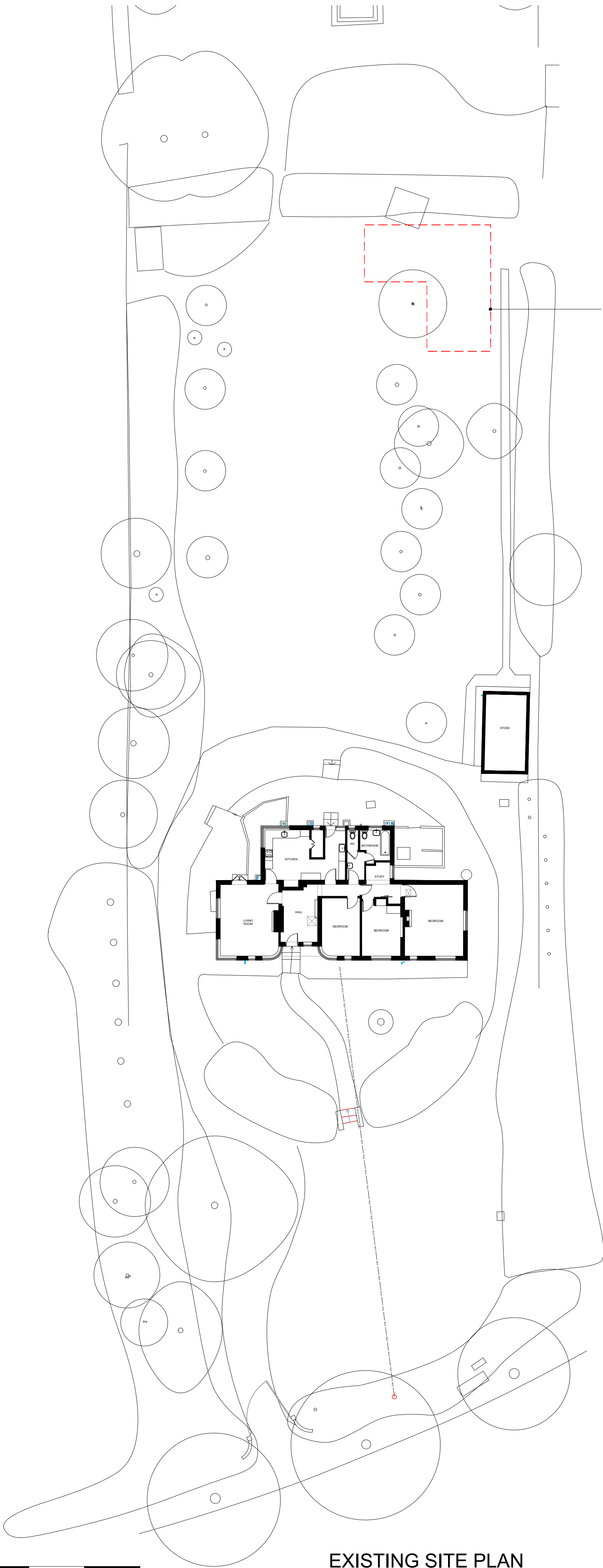
Status
PLANNING

Project
MOORINGS, UPPER WARREN AVE
READING, RG4 7EJ
Drawing Title
EXISTING AND PROPOSED
SITE PLANS

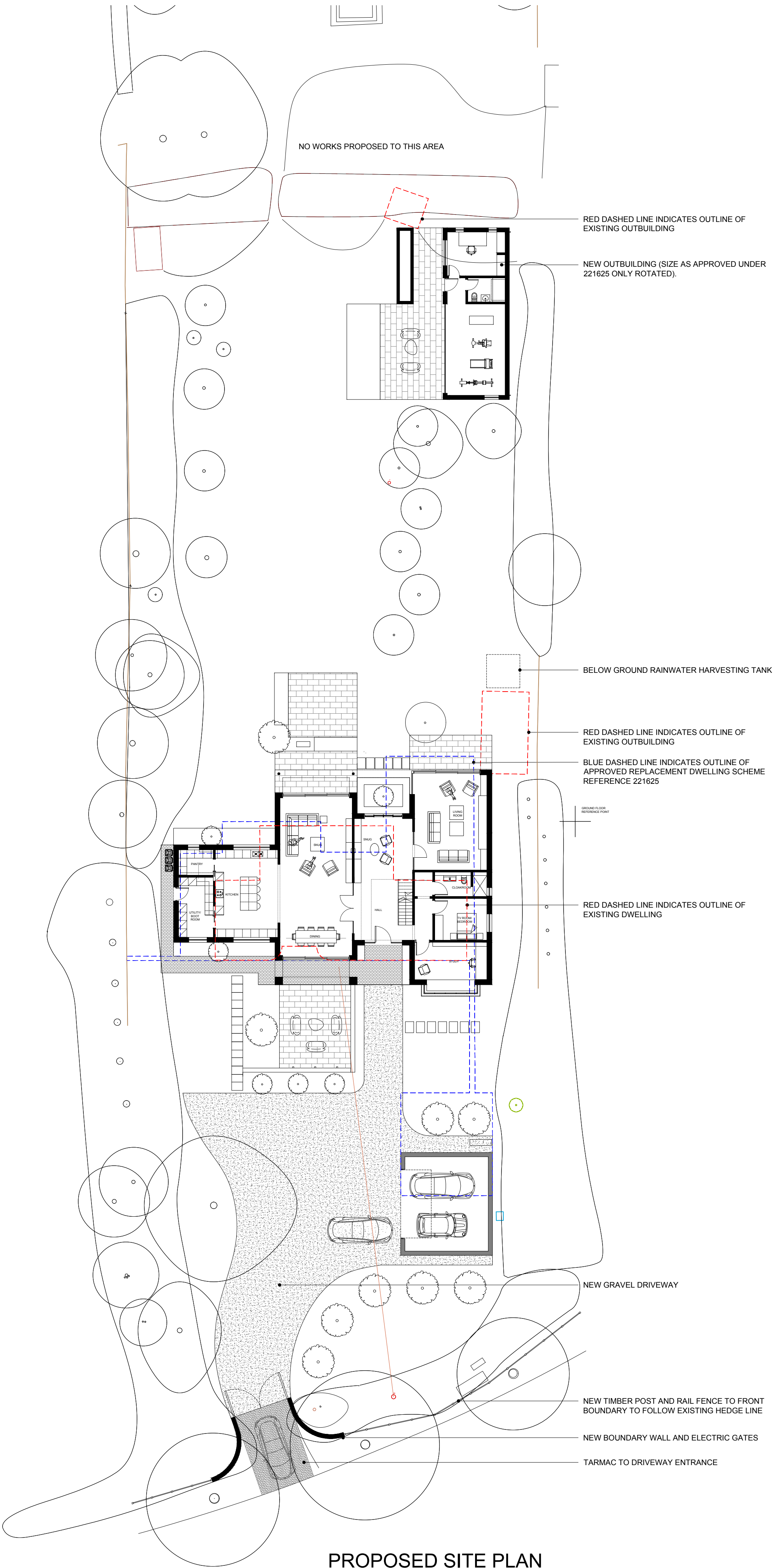
Date	Scale	Drawn by	Check by
JUNE 2025	1:200 @ A1	KA	KA
Project No.	Drawing No.	Revision	
25.109	PL.1212	-	

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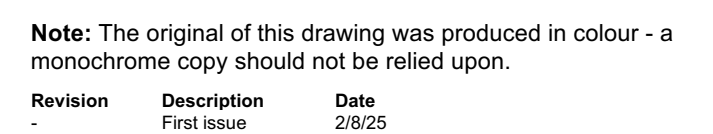
EXISTING SITE PLAN



PROPOSED SITE PLAN

Appendix 4: Tree Retention / Loss Plan

	Tree Category A - High Quality
	A Category - Hedgerow, Group, Woodland
	Tree Category B - Moderate Quality
	B Category - Hedgerow, Group, Woodland
	Tree Category C - Low Quality
	C Category - Hedgerow, Group, Woodland
	Tree Category U - Unsuitable for Retention
	Default Root Protection Area to BS:5837:2012
	Adjusted Root Protection Area to BS:5837:2012
	Shrub Mass / Offsite Tree



Revision	Description	Date
	First Issue	2/8/25

LAND ARB SOLUTIONS

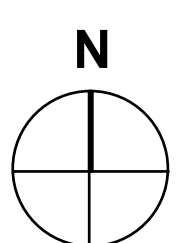
Project:
The Moorings, Caversham, Reading

Description:
Tree Retention and Loss Plan

Status:
For Planning

Scale:	Drawn I Checked	Date:
1:200 @A1	DP MP	02/08/2025
Job Number:	Drawing Number:	Revision:
LAS 943	02	-

Job Number: **LAS 943** Drawing Number: **02** Revision: **-**



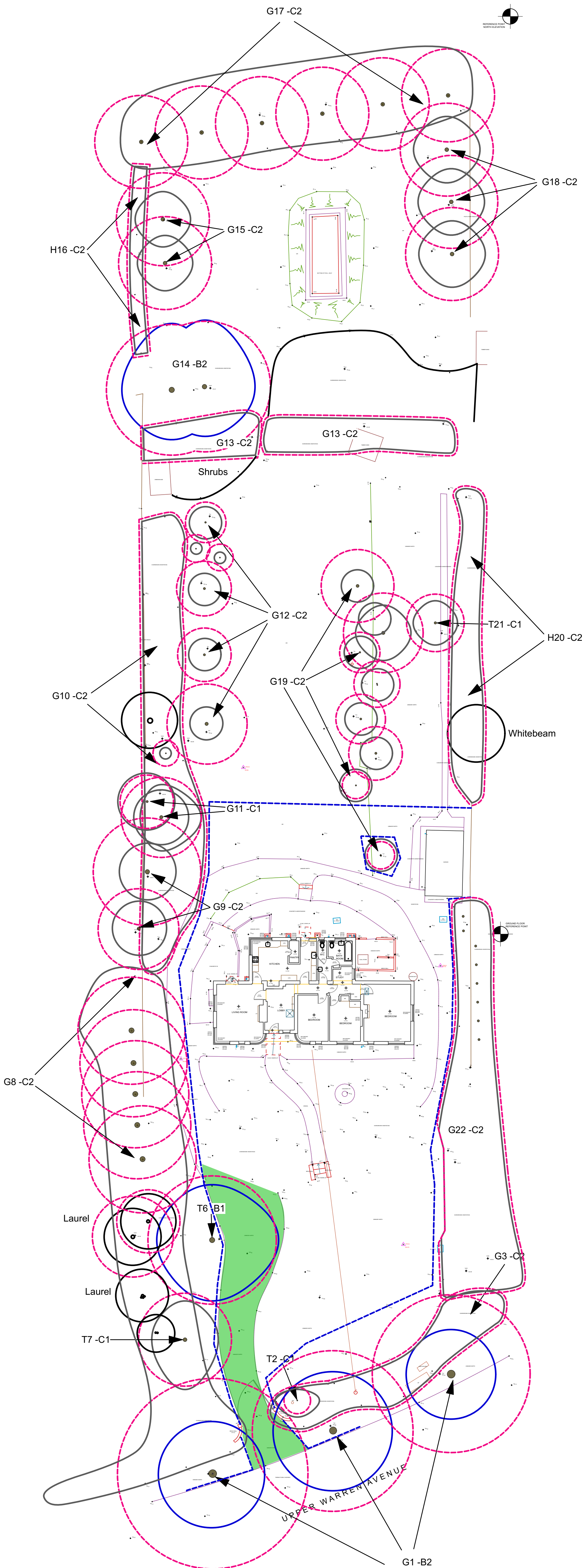
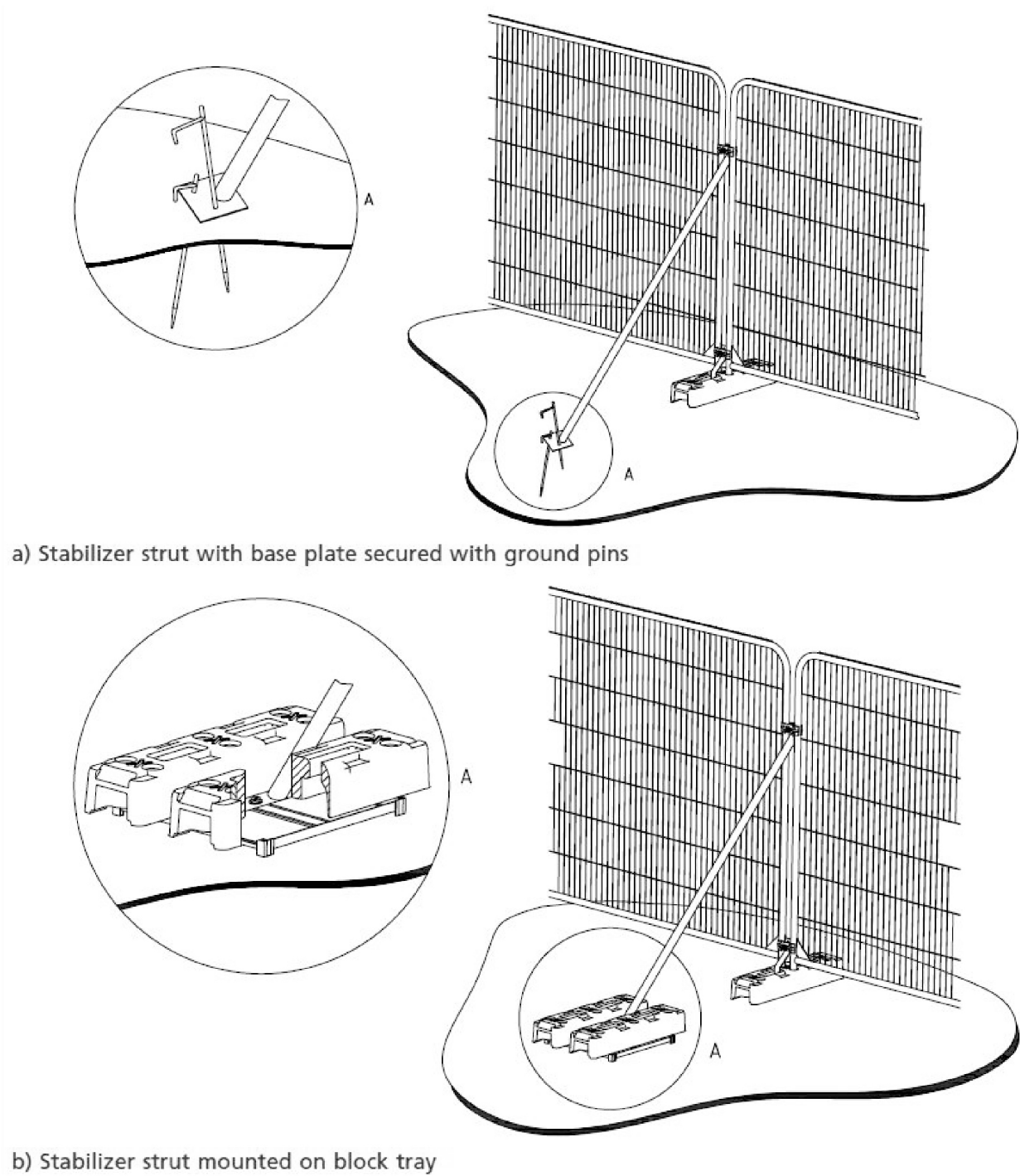
A horizontal scale bar with alternating black and white segments. The number '0' is at the left end and '25m' is at the right end.

Appendix 5: Tree Protection Demolition

KEY - BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Default Root Protection Area to BS:5837:2012
- Adjusted Root Protection Area to BS:5837:2012
- Shrub Mass / Offsite Tree
- Tree Protection Barrier to BS:5837:2012 Primary Position
- Temporary Ground Protection to BS:5837:2012

BS:5837:2012 Figure 3 Examples of above-ground stabilizing systems



Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Revision	Description	Date
-	First issue	2/8/25

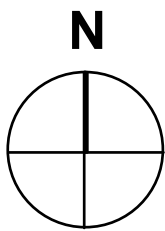
LANDARB SOLUTIONS

Project:
The Moorings, Caversham, Reading

Description:
Tree Protection - Demolition

Status:
For Planning

Scale: 1:200 @A1	Drawn I Checked DP MP	Date: 02/08/2025
Job Number: LAS 943	Drawing Number: 03	Revision: -



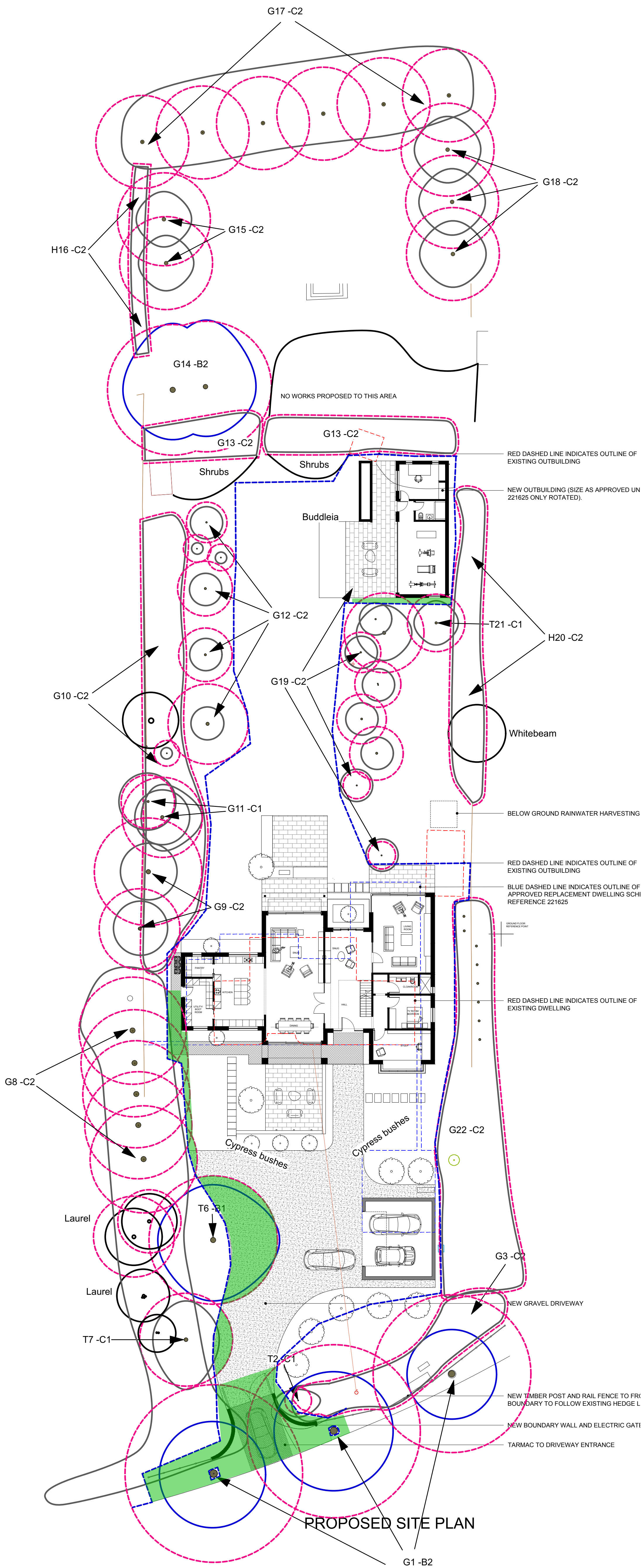
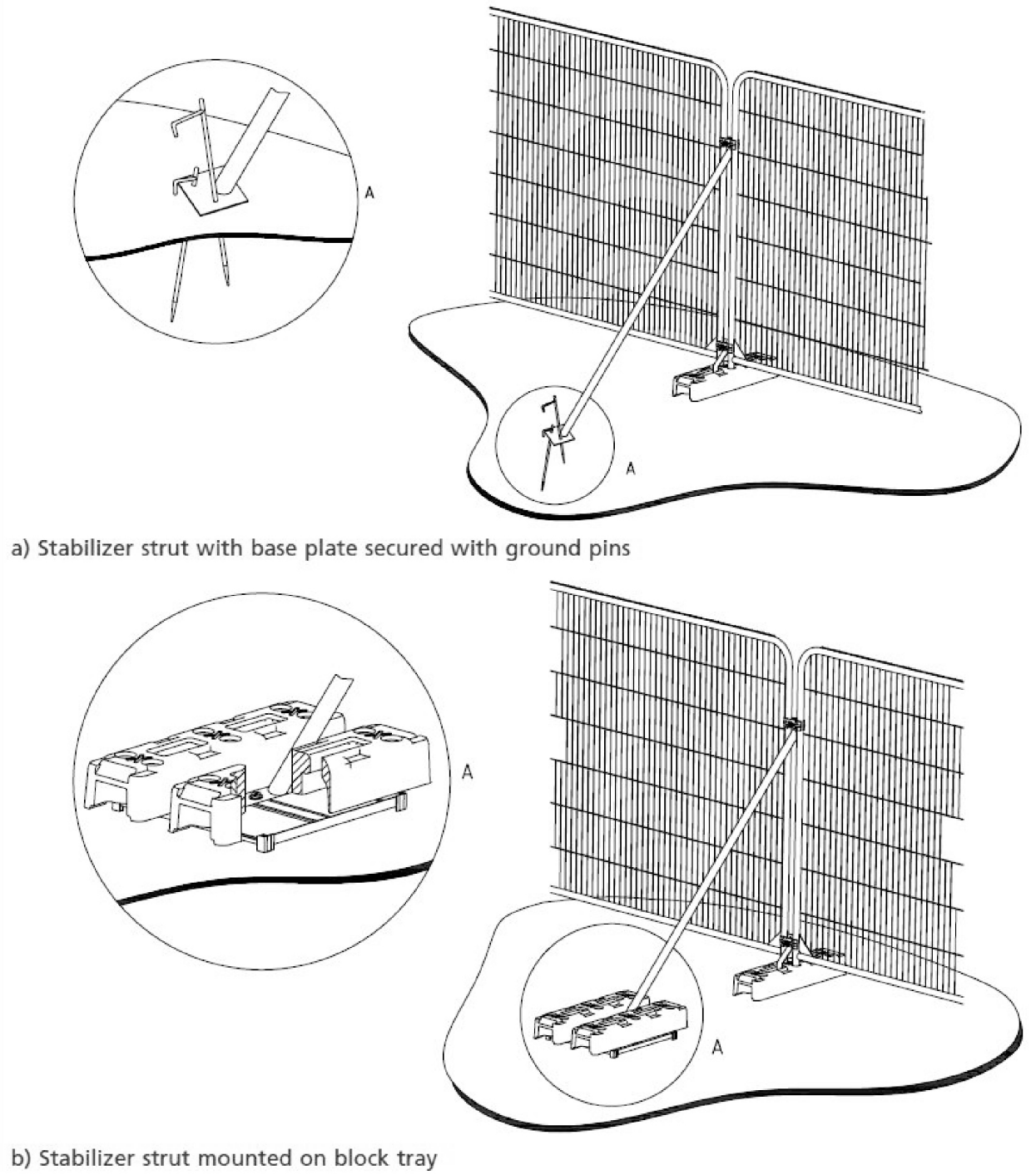
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Appendix 6: Tree Protection Plan Construction

KEY - BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- Default Root Protection Area to BS:5837:2012
- Adjusted Root Protection Area to BS:5837:2012
- Shrub Mass / Offsite Tree
- Tree Protection Barrier to BS:5837:2012 Primary Position
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BS:5837:2012 Figure 3 Examples of above-ground stabilizing systems



Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Revision	Description	Date
-	First issue	2/8/25

LANDARB SOLUTIONS

Project:
The Moorings, Caversham, Reading

Description:
Tree Protection Plan Co nstruction

Status:
For Planning

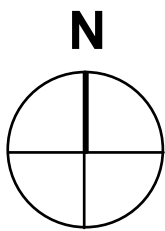
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1:200 @A1

Job Number:
LAS 943

Drawn I Checked
DP MP

Date:
02/08/2025

Revision:
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Appendix 7: Ground Guard Example

TREE ROOT PROTECTION DURING CONSTRUCTION PROJECTS

The Department for Communities and Local Government's guide **"Tree Roots in the Built Environment"** states that **"ground protection should be installed before any materials or machinery is brought onto the site"** (Section 9.3.3.2) [Crown Copyright acknowledged]

It has been shown that **"the major contribution to soil compaction from vehicle movements comes from the first passes of vehicles over the ground"** (Section 4.2.3) Thus it is essential that ground protection is specified and installed from day one of construction projects.

Failure to protect the ground from compaction will lead to reduced water and oxygen infiltration to the tree roots and can ultimately lead to the decline of the tree.

TREE ROOT PROTECTION METHOD

GroundGuards trackway mat systems are frequently used on construction sites to protect the ground from erosion and damage by construction vehicles. Where a temporary roadway must pass near to trees, the following extra precautions must be taken in order to provide cushioning for the ground under the tree canopy:

1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50 x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under the tree canopy and preferably under the whole of the trackway.
3. A pad of trackway mats should be laid on top of the geotextile membrane, between the timber rails.
4. A 150mm deep layer of wood chipping should be laid over the mats
5. The trackway can then be laid so that it rises over the wood chippings as it passes under the tree canopy.

50x50x500 timber stakes
200x50 timber rails
Geotextile Membrane
Base layer of trackway mats
Wood chippings
Upper layer of trackway mats



Three trackway systems suitable for tree root protection are available for hire or sale:

MultiTrack



MultiTrack
These mats quickly clip together and are suitable for medium weight construction traffic. Where they pass over tree roots, install a double layer of mats with 150mm of wood chippings between to cushion the ground.

MaxiTrack



MaxiTrack
This is a unique heavy duty matting system with overlapping flanges and bolt-together connection, for heavier traffic. Again, use a sandwiched layer of wood chippings where there are tree roots.

XtremeMats



XtremeMats
For very heavy traffic, over extended periods, these rigid 4x2m mats spread the load to protect the ground. Double layering is not necessary, but 150mm of wood chippings should be used in areas with tree roots.

GroundGuards®

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Appendix 8: Cellweb Guide

Cellweb® TRP

Tree Root Protection

Cellweb® TRP is a 3D cellular confinement tree root protection system. The system provides a 'no dig' solution for the construction of new hard surfaces within root protection areas (RPAs). Cellweb® TRP has been designed and independently tested to comply with recommendations made in Arboricultural Practice Note 12 and BS 5837 2012 – Trees in relation to design, demolition and construction.



Cellweb® TRP Key Functions

Cellweb® is a 'no dig' solution which is constructed directly on the existing ground surface. This eliminates the requirement for excavation, preventing root severance.

Cellweb® is a completely porous system allowing continued water permeation and gas exchange between the rooting environment and atmosphere.

Cellweb® spreads point loads, minimising increases in soil compaction within the rooting environment. This maintains an open graded soil structure allowing continued root growth, water, gas and nutrient migration.

The Cellweb® TRP system comprises the following three components

Treetex™ Geotextile. Following minimal ground preparation the Treetex™ is laid onto the existing ground and top soil. This acts as a separation layer, separating the system above from the soil and rooting environment below. Treetex™ performs as a hydrocarbon pollution control measure in accordance with BS5837, holding 1.7lt of oil per square meter.

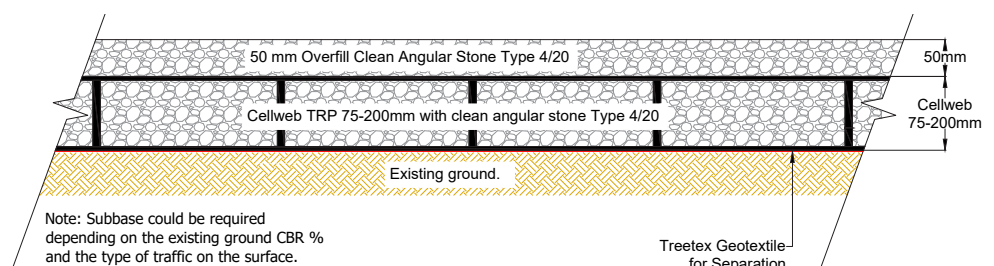
Cellweb® 3D Cellular Confinement. The Cellweb® is installed on top of the Treetex™ layer. This is fixed to the ground using ten steel J pins per panel. The panels can be cut to the required shape and adjoining panels can be connected using heavy duty staples or cell ties.

4-20mm Clean Angular Stone. The expanded Cellweb® is infilled with a 4-20mm clean angular stone. The confined angular stone locks together to produce a rigid stone mattress, while maintaining air pockets for continued water permeation and gas exchange. The low fines content of the stone prevents the Treetex™ layer from becoming blocked over time.

Which depth of Cellweb® TRP?

The Cellweb® System is provided in four different depths; 200mm, 150mm, 100mm and 75mm. The depth required is determined by the proposed traffic loadings and the site ground conditions. Geosynthetics in house engineering department can provide a free site specific technical recommendation. For free technical and engineering support please contact Geosynthetics Ltd 01455 617139 or the full installation guide can be found on our website www.geosyn.co.uk.

Indicative Cellweb with overfill



Cellweb® TRP Installation Guide



Step 1: Prepare Surface



Step 2: Lay out Treetex™



Step 3: Lay out Cellweb® TRP

- Cellweb® TRP is a NO DIG tree root protection measure and it is recommended that no excavation be performed without prior approval and guidance from the Local Authority Arboricultural Officer.
- Soil compaction from vehicles, machinery and materials is to be strictly prohibited during construction within Root Protection Areas (RPAs).
- Approval must be obtained from the Local Authority that the design and the method of construction is acceptable.
- Further information is available from the following two documents;
 - British Standard BS5837: 'Trees in Relation to Design, Demolition and Construction' (2012).
 - Arboricultural Advisory and Information Service: Practice note 12 – 'Through the Trees to Development' (APN12).

Installation Method

1. Prepare the Surface

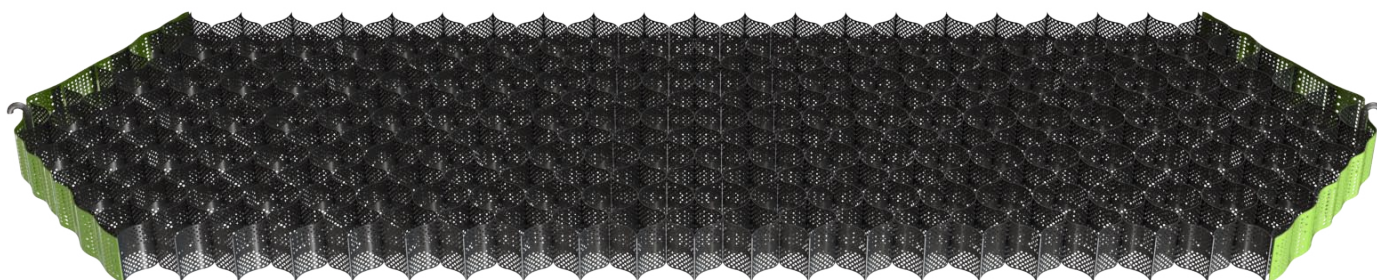
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Create a level surface by filling any hollows with clean angular stone or sharp sand.
- Do not level off high spots or compact the soil through rolling.

2. Lay out the Treetex™ Non-Woven Geotextile

- Lay out the Treetex™ over the prepared area, overlaying the edges of the required area by 300mm.
- Overlap any joins by 300mm minimum or more, depending on soil structure (see Note 2).

3. Lay out the Cellweb® TRP Cellular Confinement System

- Lay out the collapsed Cellweb® TRP on-top of the Treetex™.
- Place one of the supplied J pins into the centre cell at the end of the panel and secure into the ground.



Cellweb® TRP - Installation Guide

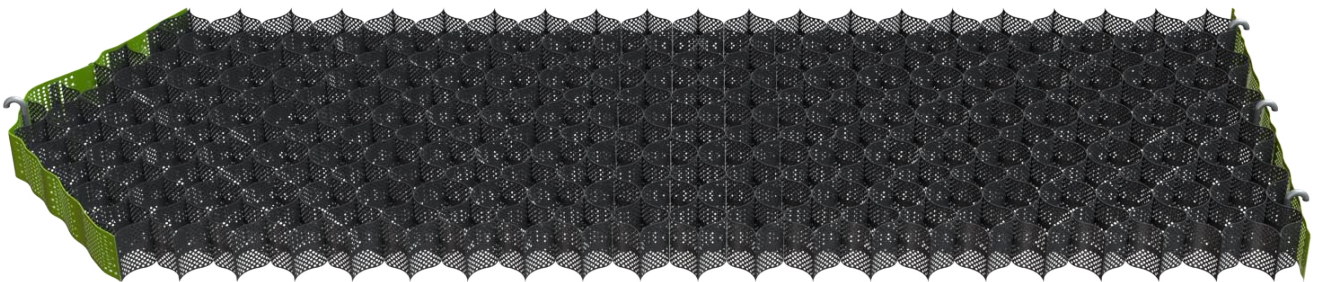


Step 3: Pinning Cellweb® TRP

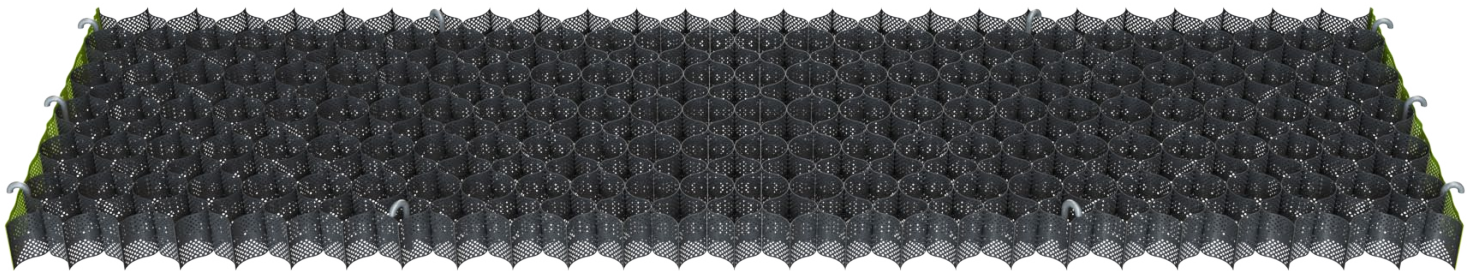


Step 3: Stapling Cellweb® TRP

- Pull out the Cellweb® TRP to its full 8.1m length and secure its length with another J pin.



- Now measure its width to 2.56m and secure in each of the corners with the J pins.
- Use 10 pins per panel to create a panel measuring 8.1m x 2.56m.



- This will produce a cell size of 259mm x 224mm which is the required cell diameter. Each cell must be fully extended and under tension.
- Staple adjacent panels together at each cell (see Note 3).
- If a curved path or shape is required, this should be cut when the Cellweb® TRP panel is pinned out to 8.1 x 2.56m, ensuring complete cells remain. Do not try to curve or bend the Cellweb® TRP panels into place.
- All cells must be fully opened to the required diameter.

Cellweb® TRP - Installation Guide



Step 4: Clean Angular Stone



Step 5: Edge Restraints



Step 6: Surface Options

4. Infill the Clean Angular Stone

- The infill material must be a clean angular stone, Type 4/20mm or Type 20/40mm (see Note 4).
- Do not use M.O.T type 1 or crushed stone with fines for tree root protection.
- Infill the Cellweb® TRP cells with the clean angular stone, working towards the tree and using the infilled panels as a platform.
- Minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface.
- No compaction is required of the infill. Do not use a whacker plate or other means of compaction.
- Encourage settlement of the stone with the use of a light roller or with 2-3 passes of the construction plant used for installation.
- If the clean angular stone is being used as the final surface; regular maintenance will be required to ensure a minimum overfill of 50mm.

5. Edge restraints

- Excavations for kerbs and edgings should be avoided within the RPAs.
- Where edging is required for footpath and light structures, a peg and treated timber board edging is acceptable
- Other options include wooden sleepers, kerb edging constructed on-top of the Cellweb® TRP system, plastic and metal edging etc.

6. Surface options

- All surfaces in Root Protection Areas must be porous. Surfaces can include block paving, asphalt, loose gravel, grass and gravel retention systems (e.g Golpla), resin bound gravel, concrete etc.

NOTES

1. **Herbicide:** According to BS5837:2012 "The use of herbicides in the vicinity of existing trees should be appropriate for the type of vegetation to be killed, and all instructions, warnings and other relevant information from the manufacturers should be strictly observed and followed. Care should be taken to avoid any damaging effects upon existing plants and trees to be retained, species to be introduced, and existing sensitive habitats, particularly those associated with aquatic or drainage features."
2. **Geotextile:** We recommend the installation of a Treetex™ under the Cellweb® TRP, or under the sub-base, if installed. The overlapping between adjacent rolls of Geotextile should be: CBR > 3%: 300mm minimum, CBR between 1% and 3%: 500mm minimum. CBR ≤ 1%: 750mm minimum.
3. **Staples:** Number of staples per join: 200mm: 5 staples. 150mm: 4 staples. 100mm: 3 staples. 75mm: 3 staples.
4. **Granular Fill:** Open graded sub-base, clean angular stone Type 4/20 or Type 20/40. Please refer to BS7533-13:2009 and to the Design Manual for Roads and Bridges (DMRB), Volume 4 Geotechnics and Drainage, Section 1 Earthworks, HA44/91, Volume 7 – IAN 73/06 Design Guidance for road pavement foundations and Manual of Contract Documents for Highway Works (MCHW), Volume 1 Specification for Highway Works for the construction and maintenance of the fill material.



Appendix 9: Survey method

The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Trees were not tagged.

Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (e.g. avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals

Tree survey findings are recorded in the tree survey schedule.

APPENDIX 1 – TREE SURVEY SCHEDULE

Within the tree survey schedule, each surveyed tree (T), hedgerow (H), group (G), woodland (W) on or adjacent to the site is given a reference number which refers to its position on the tree survey plan.

APPENDIX 1 – TREE SURVEY AND CONSTRAINT'S PLAN

Also shown on the tree survey plan are quality grading and preliminary tree constraints: root protection areas.

Tree species: listed by common name.

Heights: measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.

Trunk diameters: measured in millimetres and are rounded to the nearest 10mm. Single stemmed tree diameters are measured at 1.5m above ground level or, where a fork or swelling makes this impractical, at the narrowest point beneath. Diameters of multi-stemmed trees are calculated as 'combined stem diameters' according to specific guidance set out within BS5837:2012 (p.10, para 4.6.1 a and b).

Crown spreads: taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to

up the nearest whole metre for dimensions over 10m. For trees assessed as groups or woodland, an estimated mean radial crown spread in metres is taken for trees at the 80 percentile size.

Crown clearance: expressed both as existing height above ground level of first significant branch along with its direction of growth (e.g. 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.

Estimates: where any other measurement has had to be estimated, due to inaccessibility for example, this is indicated by a “#” suffix to the measurement as shown in the tree survey schedule.

Life stage:

- Y – young (stake dependent);
- SM - Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature);
- EM – Early Mature (not yet having reached 75% of expected mature size);
- M – Mature (anything else up to normal life expectancy for the species);
- OM – Over Mature (anything beyond mature and in natural decline); and
- V – Veteran (any tree displaying characteristics described by Natural England).

Management Recommendations: recorded in relation to a tree’s structural and/or physiological condition (e.g. the presence of any decay and physical defect) and /or any preliminary management recommendations that may be appropriate. This is NOT intended to comprise a specification for tree work; further advice should be sought prior to implementation. Trees

assessed as being in apparently immediately hazardous condition will be notified to the client separately as soon as practical.

Physiological condition:

- Good (Generally in healthy condition. No indications of impaired physiological function and in optimum condition for age and species);
- Fair (Condition satisfactory though below mean species performance, with indicators of reduced vitality. Some intervention may be required);
- Poor (Tree in decline/retrenching, with significantly impaired physiological function for age and species); and
- Dead (self-explanatory).

The above are informed by the following;

- Leaf size and colouration – unless otherwise state, leaf size and colouration is typical of the age and species; and
- Canopy density – unless otherwise stated, the canopy density of trees is typical of the age and species.

Structural Condition & Notes:

- Good (without any observable significant biomechanical structural weaknesses);
- Fair (with minor biomechanical structural flaws. Some remedial action may be required); and
- Poor (with significant biomechanical weaknesses requiring intervention particularly where risk management is required).

Notes on the apparent structural integrity of the tree are based upon visual tree assessment, including notes on form, taper, forking habit, storm damage, wood decaying fungi, pests and disease etc. plus other pertinent observations.

Anticipated useful life expectancy (ULE): the length of time a tree is estimated to be able to make a safe useful contribution to local amenity is expressed in years as: <10, 10+, 20+, 40+.

Category Grading: individual trees, hedgerows, groups of trees, and woodlands are assessed in terms of quality and benefit within the context of proposed development and graded into one of four categories (U, A, B, and C) which are differentiated on the tree survey plan by the colours indicated below:

Category U (Red)

Unsuitable for retention. Trees in such a poor condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Retention Implications to a site

Not a material consideration in the planning process but may have other benefits i.e. ecological benefits/importance.

Category A (Green)

Trees of high quality with an estimated remaining life expectancy of 40 years.

Retention Implications to a site

Tree should be retained and amendments to a proposed scheme should be identified in preference to tree removal.

Category B (Blue)

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

Retention Implications to a site

Where possible amendments to a proposed scheme should be considered in preference to tree removal.

Category C (Grey)

Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Retention Implications to a site

The retention of trees may be advantageous in the short term, but they should not be seen as a constraint to development.

A, B and C trees have also been given a sub-category of 1, 2 or 3 which reflects their arboricultural, landscape or cultural and conservation values respectively. Each subcategory has an equal weight, for example an A1 tree has the same retention priority as an A3 tree.

Trees have been assigned 'U' or category grading A-C in accordance with the cascade chart given in BS: 5837:2012.

In addition to the category, the tree survey schedule also describes each tree's root protection area (RPA) in terms of radius (metres) and overall area (sq metres).

Limitations

This report has been undertaken in compliance with BS: 5837:2012 and is not intended to be a tree safety survey. This report is prepared for planning application purposes only and does not evaluate the degree of risk posed by trees. Any notes offered regarding structural integrity of trees are to be considered incidental. Our recommendations given for immediate intervention should be put in the hand of the owner/site manager as soon as reasonably practicable.

Trees are dynamic living organisms as well as self-supporting dynamic structures, capable of achieving considerable size and structural complexity. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. They are exposed to and can become damaged by the elements and by human activity, and have co-evolved with decay causing organisms that can degrade and sometimes destroy their structural integrity. The laws and forces of nature dictate a natural failure rate even among trees that appear healthy and structurally sound. They therefore have the potential to fail structurally, without prior manifestation of any reasonably observable symptoms. By their very nature, therefore, it is not possible to categorically state that any tree is 'safe' or hazard free.

Tree surveys and/ or tree inspections are inherently a snap shot in time of the structural and physiological conditions of the trees concerned.

It is beyond the scope of this report to comment in relation to structural damage – direct or indirect, existing or potential – that might be associated with vegetation growth, or vegetation-related soil subsidence or heave.

Unless otherwise stated, all such surveys/inspections are undertaken from ground level and no internal inspections or tests have been undertaken.

Any management recommendations set out within this report are of an advisory and preliminary nature only and relate to trees within the context of current site use.

The findings and recommendations of this report should be considered time-limited for planning purposes to a maximum of 24 months from the date of the tree survey (absent revisions of BS5837, which render pre - existing data obsolete).