

Arboricultural Method Statement

141 Upper Woodcote Road Caversham Reading RG4 7LB

25th April 2022

Prepared by: Michael Paginton TechArborA

BS5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION – RECOMMENDATIONS'

Contents

1	Introduction.....	1
2	Arboricultural Method Statement.....	2
	APPENDIX 1: Tree Survey and Constraint Plan	10
	APPENDIX 2: Approved Site Plan	11
	APPENDIX 3: Tree Protection Plan.....	12
	APPENDIX 4: Site Photo.....	13
	APPENDIX 5: Ground Guards Example	14
	APPENDIX 6: Drainage Plan.....	15

REVISIONS:

Date	Rev	Description	Initials
09.02.22	-	First Issue	MGP
10.02.22	A	Amend following review	MGP
25.04.22	B	Amend text following LPA comment	MGP

1 INTRODUCTION

1.1 LandArb Solutions Ltd have been instructed to prepare an arboricultural method statement required by Condition 5 attached to consented application 210335.

1.2 This report comprises an Arboricultural Method Statement (AMS) for the protection of retained trees which could potentially be affected by development.

1.3 Condition 5 states:

No development shall commence on site (including demolition or preparatory works) until an Arboricultural Method Statement and a Tree Protection Plan in accordance with the relevant recommendations of appropriate British Standards or other recognised Codes of Good Practice for all existing trees that are not shown as being removed on the approved drawings, both within and adjacent to the site, has been submitted to and been approved in writing by the Local Planning Authority. The development shall not be carried out other than in accordance with the approved Arboricultural Method Statement and Tree Protection Plan.

Background tree survey

1.4 LandArb Solutions limited undertook a tree survey at the property on 01.12.20 in order to prepare a tree survey and constraints plan.

1.5 The tree survey information (Tree Constraints Plan) was submitted alongside application 210335.

1.6 It is understood that following the tree survey carried out by LandArb Solutions, the neighbouring lime trees have been re-pollarded and neighbouring tree T1, has been removed.

1.7 A revised tree survey is therefore set out in Appendix 1, with T1 removed.

1.8 The approved site plan is shown in Appendix 2.

2 ARBORICULTURAL METHOD STATEMENT

- 2.1 The aim of this AMS is to prevent and/or minimise the potential impacts of construction works on trees that are to be retained. It gives step-by-step guidance and specifications for works which have the potential to result in damage to retained trees.

Key Contacts and responsibilities

- 2.2 Applicant (Mr Anand) or appointed representative - shall hold responsibility to ensure that all key contractors and all other persons working on site have a responsibility to be aware of trees and to abide by tree protection procedures set out within this Arboricultural Method Statement.
- 2.3 Appointed Project Arboriculturist - shall be on hand to provide advice and support to the applicant/appointed representative in relation to tree protection.

General rules for tree protection

- 2.4 Do not independently carry out any activity that is at odds with the site Scheme of Tree Protection.
- 2.5 The areas excluded from development activities by the protection fencing will form a Construction Exclusion Zone (CEZ). In simple terms: **do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison with the Project Arboriculturist and written authorisation from the Local Planning Authority.**
- 2.6 Within the CEZ outlined above (or RPAs of retained trees) the following activities, unless detailed within this AMS, will not be permitted:
- No mixing of cement.
 - No soil/turf stripping, raising/lowering of ground levels, deposit or excavation of soil or rubble.
 - No excavations for services or installation of services.

- No storage of materials, machinery fuel, chemicals or other materials of any other description
- No parking/use of tracked or wheeled machinery.
- No lighting of fires or disposal of liquids.

2.7 Fires on site should be avoided. Where they are unavoidable, they must not be lit in a position where heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree. No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained tree.

2.8 All materials are to be dropped off at the site frontage and stored on the existing hard surfaced parking area. Where transferred to the rear of the property, materials must be stored outside of any RPA and CEZ.

Work stages

2.9 The table below lists and describes the key works to be undertaken in relation to consented proposals.

Work stage	Job description
1	Installation of tree protection fencing and ground protection in primary positions
2	Removal of hard surfacing
3	Construction of extension and house alterations
4	Drainage
5	Removal of Tree Protection

1) Installation of Tree Protection Fencing and Ground Protection

- 2.10 A Tree Protection Plan is shown in Appendix 3. This shows location of where protection fencing and ground protection is to be located in relation to the construction of the extension (sheet 1) and installation of drainage (sheet 2).
- 2.11 No trees require removal to enable development and no tree work is required. If during works it becomes apparent that any removal or works would be required, the project arboriculturist is to be notified. Consent of the LPA (if required) must be obtained in writing before any removals or works take place.

Tree protection fencing

- 2.12 Temporary tree protection fencing (Figure 3 default specification as per BS.5837:2012) is to be installed in relation to retained trees and to contain the working area in locations shown on the Tree Protection Plan sheet 1 in Appendix 3.
- 2.13 Protection fencing is required to protect RPAs and prevent accidental damage to retained trees.
- 2.14 Fencing must be installed before works begin and remain in place for the duration.
- 2.15 If during works it becomes apparent that fencing needs to be adjusted, the project arboriculturist is to be consulted and prepare alternative protection methods which need to be agreed with the LPA.
- 2.16 The alignment of protection fencing needs to be adjusted in relation to drainage installation as shown on the TPP sheet 2. If drainage is to be installed prior to construction works on the extension fencing would need to be installed as per the TPP sheet 2 first and then adjusted back to the positions as per TPP sheet 1 after drainage works are installed.

Temporary Ground Protection

- 2.17 To enable passage around the approved rear extensions and to allow new drainage pipes to be installed, fencing would have to be set back in the default RPA of off-site T2. Where areas of the default RPA would not be protected by fencing, temporary ground protection must be installed.
- 2.18 Temporary ground protection comprising either scaffold boards or ground guards set on a 100-150mm layer of bark chippings would be appropriate..
- 2.19 Ground protection must be in place before works begin on site and must remain in place for the duration. The configuration of ground protection and temporary fencing should accord with either TPP sheet 1 or TPP sheet 2 depending on which works are being carried out.
- 2.20 An example of ground guard protection is set out in Appendix 5.

2) Removal of Hard surfacing

- 2.21 There is existing concrete surfacing (remains of a former concrete driveway) on north side of the default RPA of T2 (see Photo 1 in appendix 4). This will need to be removed.
- 2.22 In relation to removal of concrete surfacing to north side of RPA of T2, the following methods should be employed:
- Ensure tree protection fencing is erected in primary position.
 - Hard surfacing to be removed is to be broken up and lifted out using hand tools or lightweight mechanical plant. Once hard surfacing is broken up it must be lifted out carefully to avoid excavating into soil below.
 - Works should start closest to T2 (RPA) and work backwards to ensure plant operates from hard surfacing and not exposed ground.
 - No materials are to be stored nor any mechanical plant operate in any exposed ground within an RPA.
 - If any surface roots are exposed during hard surface removal these must be covered with clean topsoil.
 - Once hard surfacing has been removed, temporary ground protection must be installed and fencing positioned as per the TPP sheet 1 or TPP sheet 2 depending on which works occur first.

- 2.23 No other hard surfacing is to be removed within or close to any retained tree RPA.

3) Construction of the rear extension

Extension

- 2.24 Prior to the construction of the rear extension, protection measures (fencing and ground protection) must be installed as per TPP sheet 1.
- 2.25 Projection measures must remain in place for the duration of construction works.
- 2.26 The location of the approved rear extension clips the edge of the default RPA of T2. T2 is a pollarded lime tree which is off site. The level of encroachment is very minor.
- 2.27 Under common law rights, the applicant has a legal right to prune back encroaching roots.
- 2.28 In this case, excavation for the foundation of the extension, should any roots be found, these must be clean cut back to the edge of the excavation. An impermeable membrane is to be installed in any foundation excavation prior to concrete pouring to ensure it does not leach into surrounding soil.

4) Drainage

- 2.29 The approved site plan includes drainage connections to the north and west side of the building. The drainage requirements for the development are set out on the drainage plan in appendix 6.
- 2.30 Drainage proposals are overlaid on the TPP sheet 2.
- 2.31 Surface and foul drainage largely avoid the default RPAs of retained trees. However, surface water is to drain into a soakaway in the rear garden via rainwater pipe.
- 2.32 The indicative location of the soakaway largely avoids any RPA but as drawn clips the edge of the RPA of T2. As the location is indicative only, it will be possible to adjust further east to avoid the RPA entirely. In terms of installation, the soakaway must be located outside of the RPA.

2.33 100mm diameter rainwater drainage pipes to connect to the soakaway will need to be installed across the north east part of the outer default RPA of T2.

2.34 In this area, the following method will be needed:

- Mark out the drainage pipe alignments on the ground.
- Ensure Tree Protection Fencing and ground protection are installed as per the TPP sheet 2. Fencing will prevent access to wider RPAs. Ground protection will need to be installed either side of the drainage trench alignment.
- Excavate the drainage trench using lightweight mechanical plant with a toothless bucket. Plant must operate from on ground protection only. Excavations are to occur in increments of 100mm.
- If any roots under 25mm in diameter are encountered, these are to be pruned back to the edge of the excavation using a sharp cutting tool. Roots are to be clean cut to prevent being caught on digger buckets and ripped/stretched by excavation.
- Roots over 25mm in diameter are to be retained. Where any large root is retained, this must be wrapped in hessian sacking to prevent desiccation and soils below then excavated using hand tools. Drainage pipes are to be installed under any retained roots. Hessian sacking is to be removed prior to back filling.
- Once drainage pipes have been installed and trenches backfilled, protection fencing and ground protection must be re-positioned to the TPP sheet 1 in relation to construction of the extension, if undertaken first.

5) Removal of protection measures

2.35 All construction works are to be completed before any protection measures are removed.

2.36 The site manager is to ensure all works have finished and conditions are appropriate prior to removal of protection fencing in that parcel.

2.37 All works associated with protection barrier removal must take place from outside of CEZs. Barriers must be removed by hand. Any mechanical plant used must not enter into CEZs.

Arboricultural Monitoring

- 2.38 Given proposals are for a small domestic rear extension, protection measures are straightforward and it is considered that on site supervision by an arboriculturist is not required. Instead, the site manager will be responsible day to day to ensuring works are carried out in accordance with this AMS. Moreover, the applicant/homeowner will equally wish to ensure existing trees are protected and not accidentally damaged (as it is their property) therefore they will be on hand to ensure works do not damage their garden. Key monitoring tasks to be undertaken by the Applicant/Site Manager will include:

Work stage	Job description	Appointed build contractor	Monitoring method
1	Erection of tree protection barriers and ground protection BS.5837: 2012 in primary positions as shown on the TPP and affix CEZ warning notices	Check positions and record that tree protection is in place according to Tree Protection Plan.	Take photos to keep photographic record that fencing and ground protection is installed.
2	Removal of hard surfacing	Ensure hard surfacing is broken up and lifted out working backwards from the edge of the RPA of T2.	Site manager to take photos to demonstrate protection measures are in place.
3	Extension construction	Monitor position of protection measures and record that tree protection is in place according to Tree Protection Plan sheet 1/2. Ensure protection measures remain in place.	Site manager to take photographs before works commence to show fencing and ground protection is in place and subsequently on a weekly basis thereafter to show it remains in place.
4	Drainage	Ensure protection measures (fencing and ground protection) are installed as per TPP sheet 2.	Site manager to take photographs before works commence to show fencing and ground protection is in place and subsequently on a weekly basis thereafter to show it remains in place.

5	Removal of Tree Protection	Ensure fencing and ground protection is only removed once work has been completed. Build contractor to advise when work is finished before fencing is removed by hand.	Site manager to provide site photos confirming external construction works are finished prior to protection measure removal.
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2.39 Tree protection must be installed and recorded with photographic evidence taken as necessary. This will ensure there is an accurate record to demonstrate compliance.

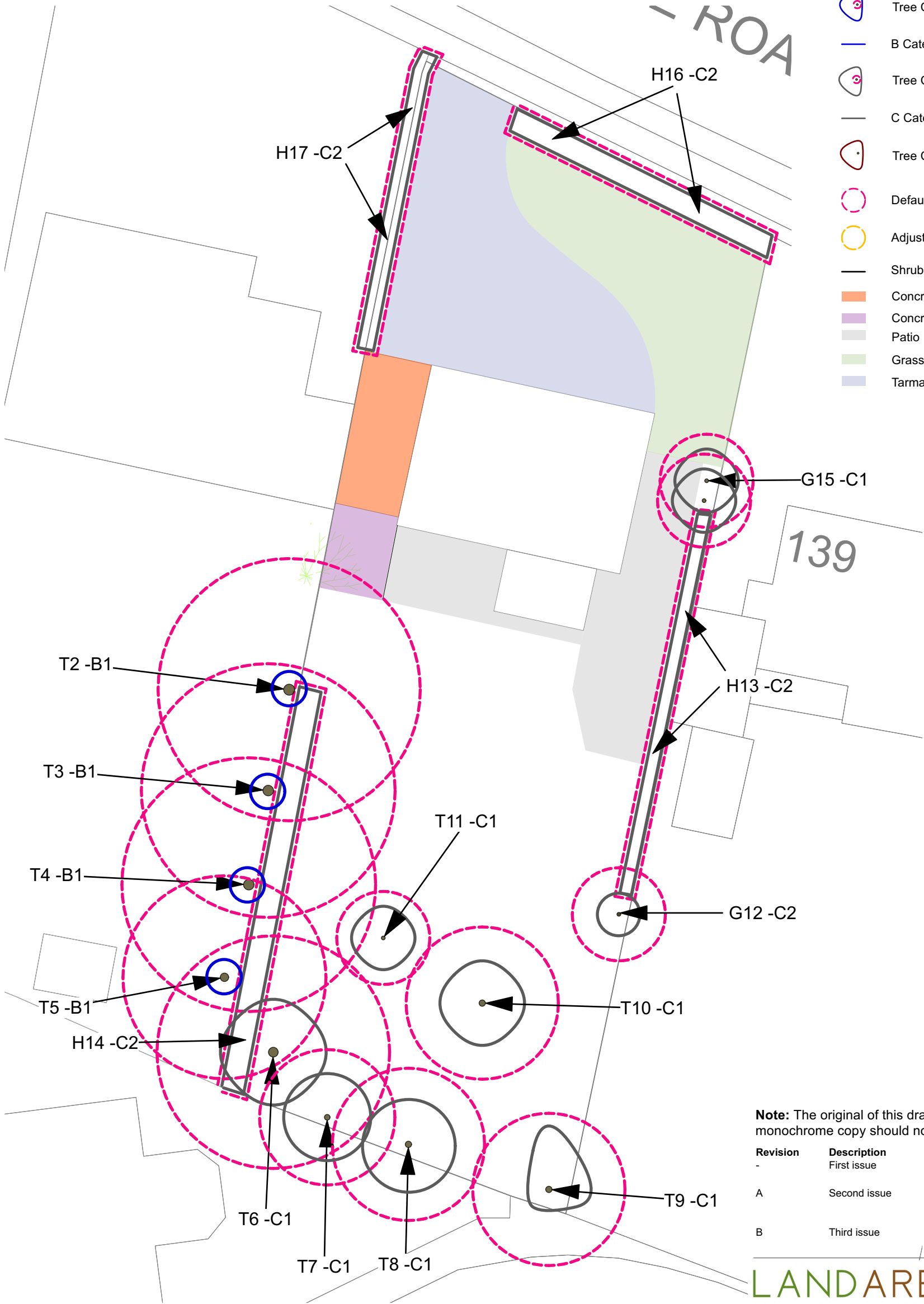
2.40 With regard to the above works detailed within the AMS, it is clear there are no complicated engineering operations that will require on site supervision of all individual operations / operations to be watched continuously. The main requirement will be ensuring fencing and ground protection measures remain in place.

2.41 The site manager is to keep a record of site photographs to demonstrate fencing and ground protection is in place before work begin and keep weekly photos to show it remains in place. This evidence should be retained by the site manager/applicant and provided to the LPA if requested as evidence of compliance with this AMS.

APPENDIX 1: TREE SURVEY AND CONSTRAINT PLAN

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
-  Concrete/Slab Drive
-  Concrete Surface
-  Patio
-  Grass verge
-  Tarmac Drive



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

Revision	Description	Date
-	First issue	3/12/20
A	Second issue	7/5/21
B	Third issue	7/2/22

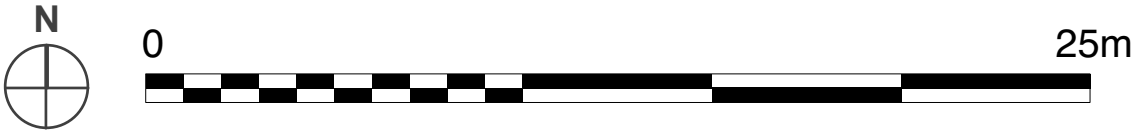
LANDARB SOLUTIONS

Project:
141 Upper Woodcote Road

Description:
Tree Survey and Constraints Plan

Status:
For Planning

Scale: 1:200 @A3	Drawn I Checked DP MP	Date: 07/2/2022
Job Number: LAS 190	Drawing Number: 01	Revision: B



Survey Date: 01.12.20. Update Schedule following tree works 07.05.21

Ref no.	Species	Ht. (m)				Category Grading	Crown Spread (m)								Life stage	ULE	Physiological Condition	Structural Condition	General Observations and Notes
			Stem dia. (mm)	RPA radius	RPA area		N	E	S	W	Ht. 1st Br. (m)	Est.	1st Br. Direction	Ht. Can. (m)					
T1	Lime	10.0	620	7.4	174	B1	As on plan - pollarded back to stem				N/A	-	N/A	4.0	M	20+	Good	Fair	Off site lime tree. Re-pollarded back to stem post survey
T2	Lime	10.0	520	6.2	122	B1	As on plan - pollarded back to stem				N/A	-	N/A	4.0	M	20+	Good	Fair	Off site lime tree. Re-pollarded back to stem post survey
T3	Lime	10.0	500	6.0	113	B1	As on plan - pollarded back to stem				N/A	-	N/A	4.0	M	20+	Good	Fair	Off site lime tree. Re-pollarded back to stem post survey
T4	Lime	10.0	500	6.0	113	B1	As on plan - pollarded back to stem				N/A	-	N/A	4.0	M	20+	Good	Fair	Off site lime tree. Re-pollarded back to stem post survey
T5	Lime	10.0	400	4.8	72	B1	As on plan - pollarded back to stem				N/A	-	N/A	4.0	M	20+	Good	Fair	Off site lime tree. Re-pollarded back to stem post survey
T6	Cypress	9.0	461	5.5	96	C1	2.5	2.5	2.5	2.5	N/A	-	N/A	0.0	M	10+	Fair	Fair	Twin stem, set in corner of garden. Pruned lower canopy, topped in past
T7	Sycamore	9.0	270	3.2	33	C1	As on plan				N/A	-	N/A	2.5	EM	10+	Fair	Poor	Drawn up, suppressed by neighbour, reduced and reshaped post survey
	Sycamore	10.0	300	3.6	41	C1					N/A	-	N/A	2.5	M	10+	Fair	Poor	Twin stem from 0.5m with further bifurcation from 1.5m. Drawn up stems, included unions, south stems have had failures in past. Crown reduced post survey.
T8	Cypress	6.0	300	3.6	41	C1	3.0	2.0	1.0	1.0	N/A	-	N/A	0.0	EM	10+	Fair	Poor	Kinked stem, suppressed by neighbour to south,
T9	Apple	5.0	300	3.6	41	C1	2.0	2.0	2.0	2.0	N/A	-	N/A	1.5	M	10+	Fair	Fair	Reduced in past and managed. Some deadwood.
T10	Cherry	4.0	180	2.2	15	C1	1.5	1.5	1.5	1.5	N/A	-	N/A	1.5	EM	10+	Fair	Fair	Small garden tree
G1 2	Laurel, goat willow, privet	4.5	180	2.2	15	C2	0.0	0.0	0.0	0.0	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Mixed garden shrubs
H13	Privet, laurel, ivy	2.5	100	1.2	5	C2	0.0	1.0	0.0	1.0	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Managed garden hedge
H14	Privet	2.0	100	1.2	5	C2	0.0	0.0	0.0	0.0	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Managed garden hedge
T15	Cypress	4.0	180	2.2	15	C1	1.5	1.5	1.5	1.5	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Two cypress stem, browning needles west side, pruned lower canopy
H16	Beech	3.0	100	1.2	5	C2	1.0	0.0	0.5	0.0	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Managed beech hedge.
H17	Ivy, privet holly	2.5	100	1.2	5	C2	0.0	0.5	0.0	0.5	N/A	-	N/A	0.0	EM	10+	Fair	Fair	Managed boundary hedge.

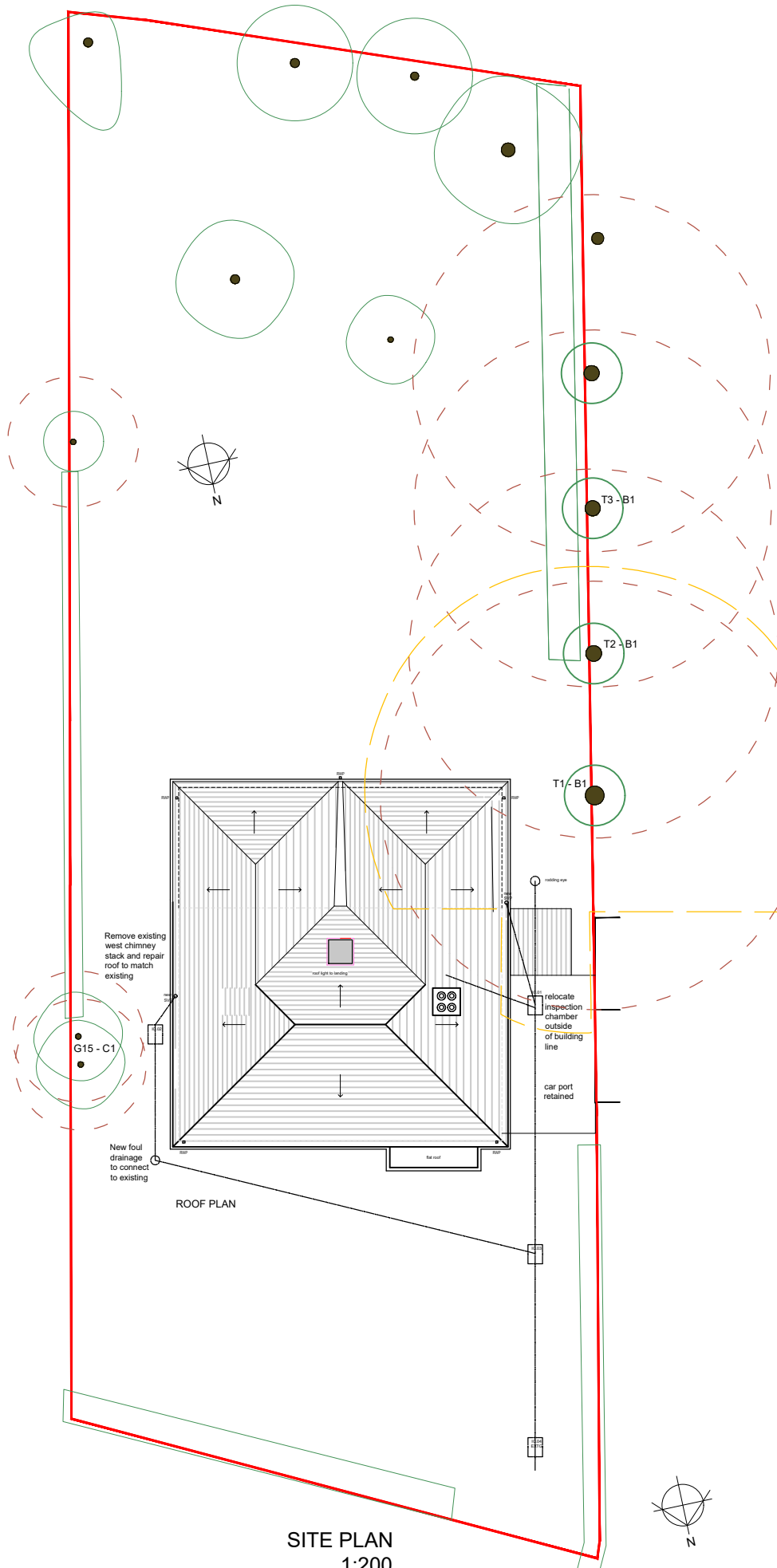
APPENDIX 2: APPROVED SITE PLAN

NOTES:

Sketch schemes are subject to planning consent and building control approval.

This drawing is prepared for the purpose noted below.

Where discrepancies are noted please contact the architect for clarification.



Rev.	Notes	Date
A	Trees updated further to re-pollarding	10.05.21

PROJECT 141 Upper Woodcote Road
CLIENT Mr and Mrs Anand
REF 2020.18.PL.114.A
TITLE Proposed Site Plan
DATE 09.11.2020
STATUS PLANNING
SCALE 1:200@A4



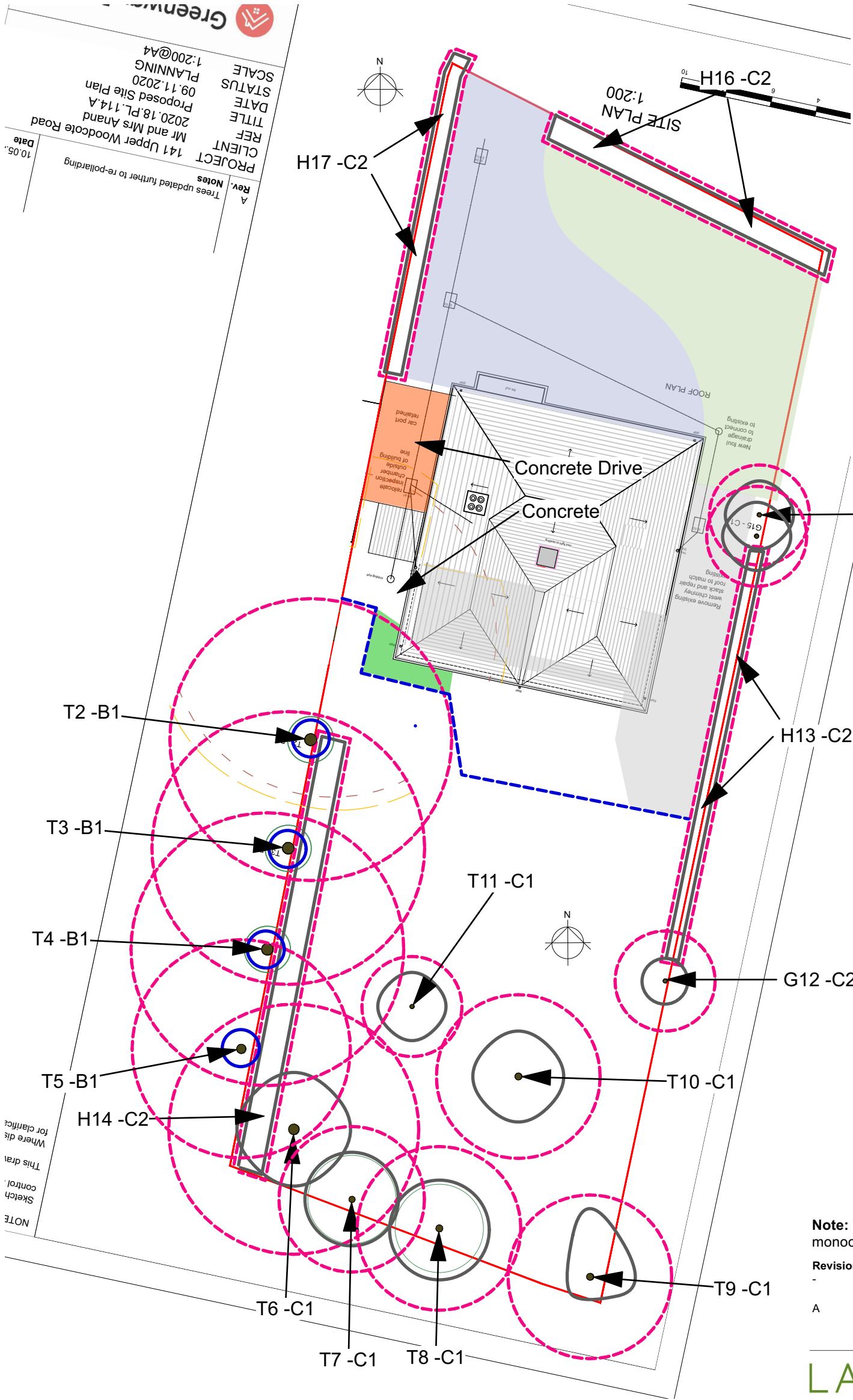
Greenway Barrow
ARCHITECTS

www.greenwaybarrow.co.uk
 07917 693451, 7 Carlton Road, RG4 7NT
 Registered in England, Company Number 10471173

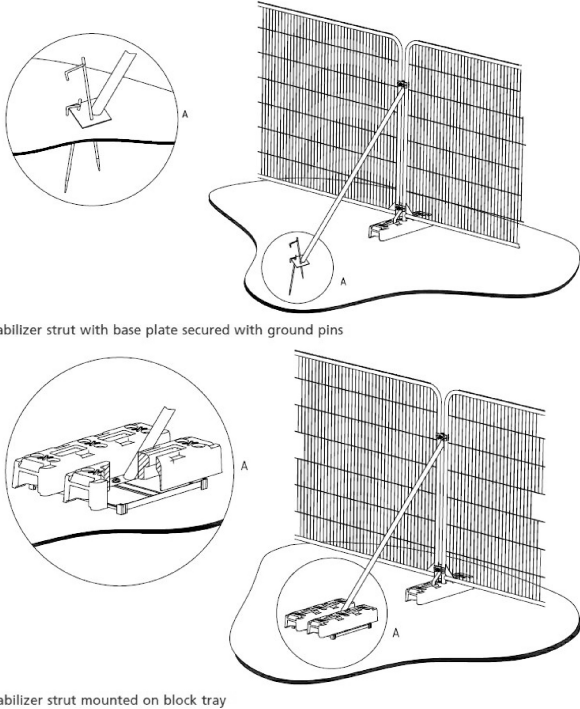
APPENDIX 3: TREE PROTECTION PLAN

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
- Concrete Drive
- Patio
- Grass verge
- Tarmac Drive
- Temporary Ground Protection to BS:5837:2012
- Tree Protection Barrier 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	3/12/20
A	Second issue	7/2/22

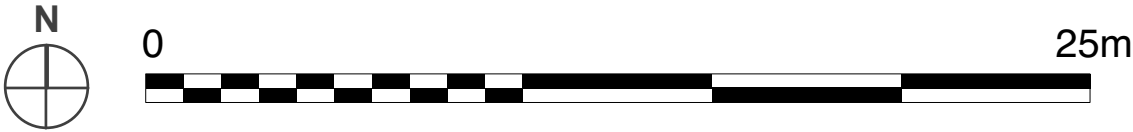
LANDARB SOLUTIONS

Project:
141 Upper Woodcote Road

Description:
Tree Protection Plan Sheet 1 of 2

Status:
For Planning

Scale: 1:200 @A3	Drawn I Checked DP MP	Date: 07/02/2022
Job Number: LAS 190	Drawing Number: 02	Revision: A



KEY - BS 5837 : 2012 Categories

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

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-  Tree Category C - Low Quality

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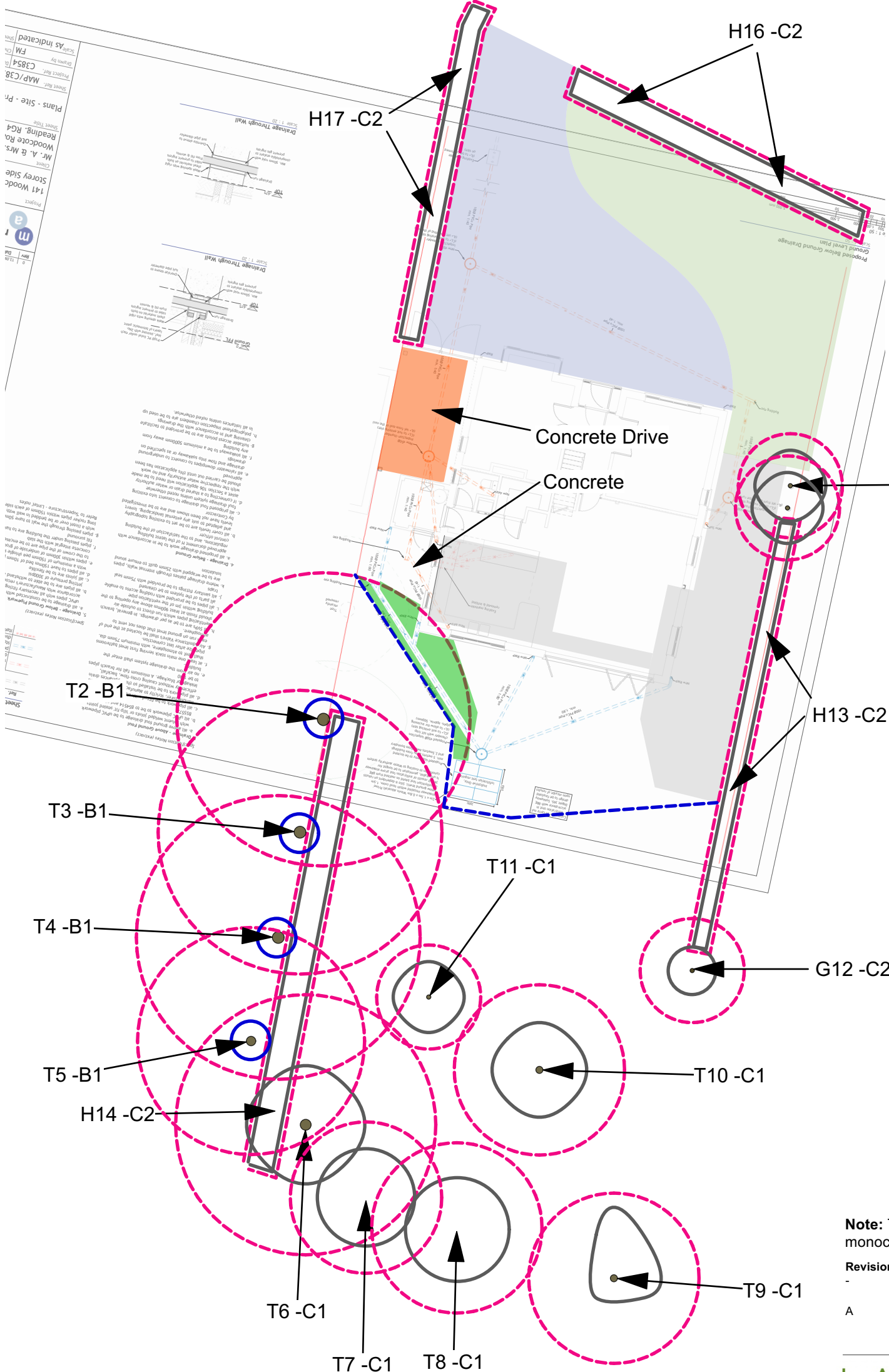
 Default Root Protection Area to BS:5837:2012
-  Adjusted Root Protection Area to BS:5837:2012

 Shrub Mass / Offsite Tree
-  Concrete Drive

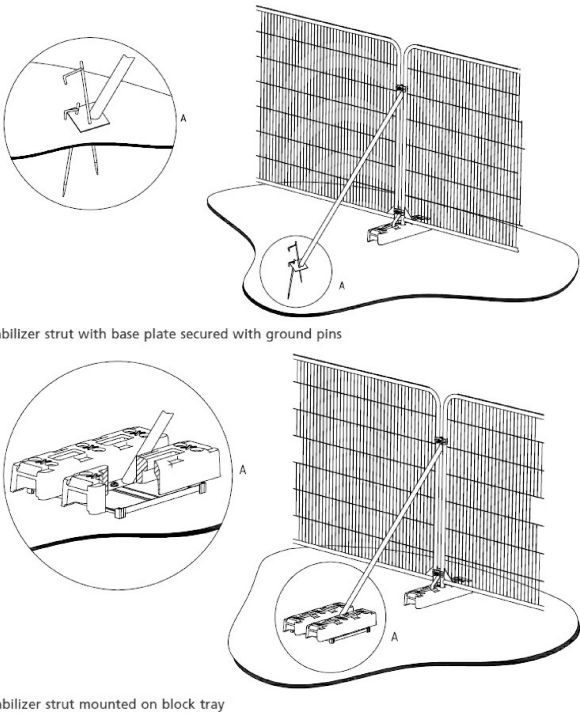
 Patio
-  Grass verge

 Tarmac Drive
-  Temporary Ground Protection to BS:5837:2012

 Tree Protection Barrier to BS:5837:2012



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



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Revision	Description	Date
-	First issue	3/12/20
A	Second issue	7/2/22

LANDARB SOLUTIONS

Project:
141 Upper Woodcote Road

Description:
Tree Protection Plan - Sheet 2

Status:
For Planning

Scale: 1:200 @A3	Drawn I Checked DP MP	Date: 07/02/2022
Job Number: LAS 190	Drawing Number: 02	Revision: A

APPENDIX 4: SITE PHOTO



Photo 1: Concrete to be removed from adjacent the new extension location.

APPENDIX 5: GROUND GUARDS 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.

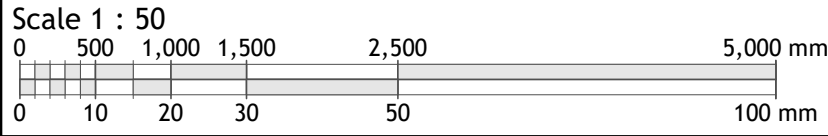
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www.ground-guards.co.uk

APPENDIX 6: DRAINAGE PLAN

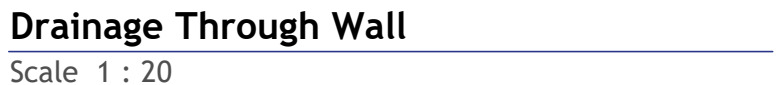


3. Drainage - Above Ground Foul

- a. all above ground foul drainage to be uPVC pipework with solvent welded joints or 'slip fit' sealed joints
- b. all uPVC pipework to be to BS4514 and pipe sizes to BS5572
- c. all pipework to be fitted with all accessories by same Manufacturer, strictly to Manufacturer's instructions
- d. all pipework to be installed so that appliances drain efficiently without causing cross-flow, backfall, leakage or blockage. A minimum fall for branch pipes to be 1:40
- e. no air from the drainage system shall enter the building.
- f. at least one main stack serving first level bathrooms shall vent to atmosphere, with minimum 75mm dia. pipe size after last connection.
- g. Air Admittance Valve's shall be located at the end of each run on ground level that does not vent to atmosphere.
- h. all SVPs are to be as per drawings. In general, branch ventilating pipes which run direct to outside air should finish at least 900mm above any opening to the building within 3m of the ventilation pipe
- i. all pipes to be provided with rodding access to enable all parts of the system to be cleaned
- j. all sanitary fittings to be provided with 75mm seal traps
- k. where drainage passes through internal walls, pipes are to be wrapped with 25mm quilt to ensure sound insulation

4. Drainage - Below Ground

- a. all proposed drainage work to be in accordance with approved document H of the latest building regulations, and to the satisfaction of the building control officer
- b. all cover levels are to be set to existing topography and adapted to suit any external landscaping. Invert levels have not been shown and are to be investigated by Contractor
- c. all proposed foul drainage to connect into existing foul drainage system unless noted otherwise
- d. if connecting to a shared drain or water authority asset a Section 106 application will need to be made with the respective water authority and no work should be carried out until this application has been approved
- e. all rainwater downpipes to connect to underground drainage and flow into soakaway or as specified on drawings
- f. all soakaways to be a minimum 5000mm away from any building
- g. suitable access points are to be provided to facilitate cleaning and in accordance with the drawings
- h. polypropylene inspection chambers are to be used up in all instances unless noted otherwise.



5. Drainage - Below Ground Pipework

- a. all drainage to be constructed with 110mm diameter uPVC pipes with all necessary fittings in strict accordance with Manufacturer's recommendations
- b. all pipes are to be able to withstand a minimum jetting pressure of 3000psi
- c. all joints are to be flexible
- d. all pipes to have 150mm bed of 10mm pea shingle with a minimum of 150mm pea shingle surround
- e. pipes within 300mm of underside of ground floor slab to the crown of the pipe are to be encased in 150mm concrete integral with the slab
- f. pipes passing under the building are to have granular fill surround
- g. pipes passing through the wall to have 50mm space with a lintel over or be bedded in wall with 600mm long rocker pipes within 150mm of each side of wall.

Refer to 'Superstructure - Lintel' notes

- a. the exact positions of all existing drainage & service runs have not been located & are shown as indicative only. All existing drainage to be located and identified by Contractor on site
- b. the Contractor is responsible for the investigation of all existing drainage, drainage runs and levels on site and is to test all drains prior to works
- c. The Contractor is to ensure that all affected existing drainage is clear of blockages prior to completion
- d. the design may be subject to variations following site specific conditions. The Contractor is to inform MAPL of any issues conflicting the design prior to work commencement

2. Drainage - Above Ground Storm

- a. all rainwater goods to BS EN 12200-1 and supplied with all accessories compatible with selected Manufacturer
- b. all new rainwater gutters to be uPVC 112mm diameter half round or to best match existing type, unless noted otherwise
- c. all gutting to be fixed strictly in accordance with Manufacturer's instructions and to a fall of 1:200 to outlets
- d. downpipes will be 75mm diameter round unless stated otherwise and positioned as shown on the drawings, unless noted otherwise
- e. colour of all rainwater goods to be as stated on drawings or best match existing type

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Sheet Ref.	MAP/C3854/060		Rev.	0
Project Ref.	C3854	Date	13.09.2021	
Drawn by	FM	Checked by	OG	
Scale	As indicated	Sheet Size	A1	