LANDARB SOLUTIONS

Ref: LAS_691
Date: 04.12.2023

Site: Sandleford Parade, Newtown Road, Newbury

Arboricultural Statement

1 INTRODUCTION

1.1 LandArb Solutions Ltd were instructed to carry out a tree survey at Sandleford Parade, Newtown Road, Newbury; herein referred to as the site, to accompany a planning application for the demolition of the existing building and construction of two new residential apartment blocks.

2 TREE SURVEY

2.1 LandArb Solutions visited the site on 08.11.23 to carry out the tree survey.

2.2 A copy of the tree survey schedule and tree survey and constraints plan is shown in Appendix 1. A selection of site photographs is shown in Appendix 2.

2.3 The following provides a short description of tree cover at the site and should be read in conjunction with the tree survey schedule and tree constraints plan.

2.4 There are few trees within the site itself. In the rear garden of the property is a small apple tree (T20) and small cherry tree (T21). Set behind the boundary fence to the east of the site is a mix of semi mature to early mature tree species including hawthorn cherry, field maple, oak and sycamore trees (T1-T12). On an individual basis most are poor to low quality. All are drawn up and several set behind the closest stems are dead, dying or are smothered in ivy.

2.5 To the south of the site is a row of three sycamore trees (T14, T16 and T17) and an area of mixed semi to early mature trees (G18) set further away. On the south-west corner of the site, set in neighbouring land, is a mature cherry tree (T19).

3 STATUTORY PROTECTIONS

Conservation Area / Tree Preservation Orders

3.1 A review of West Berkshire Council's Online TPO maps (accessed 09.11.23) shows that the site is not within a Conservation Area and none of the trees are subject to a preservation order.

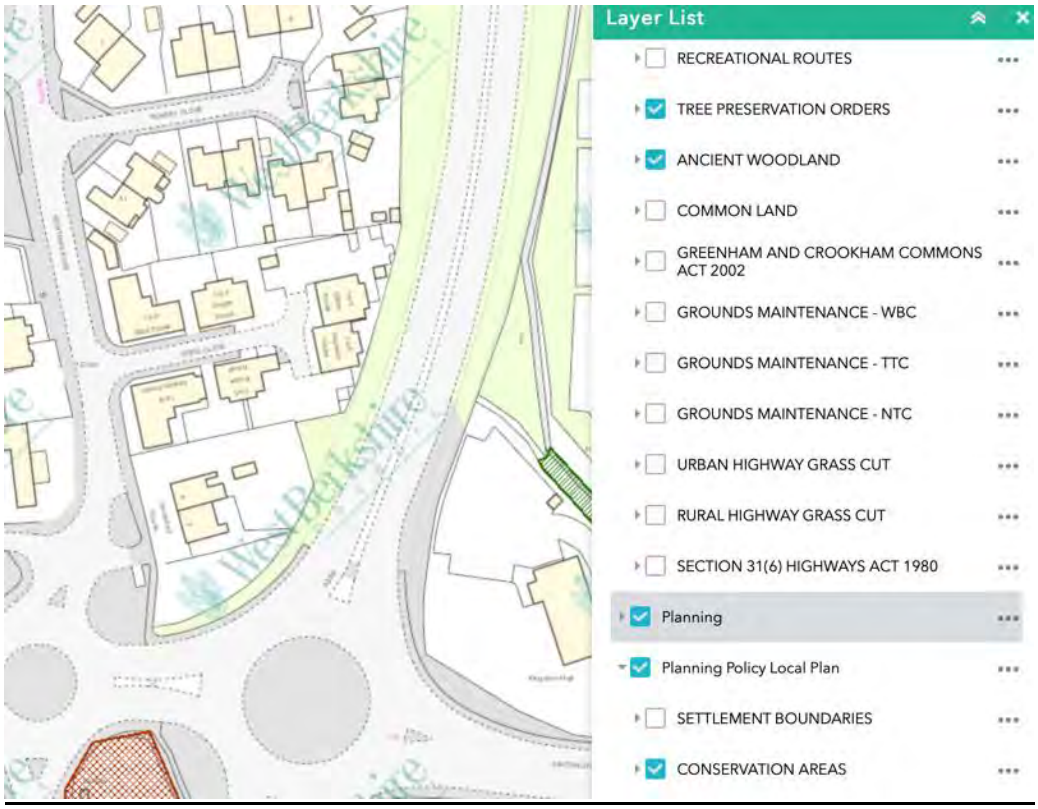


Fig 1: Extract of West Berkshire Councils TPO Map.

Statutory Wildlife Protection

3.2 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.

3.3 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.

3.4 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 building and erection of two new residential apartment blocks.

4.2 A copy of the proposed site plan is shown in Appendix 3.

5 ARBORICULTURAL IMPACT ASSESSMENT

5.1 The proposed site plan has been overlaid with the tree survey to prepare a Tree Retention/Loss Plan (Appendix 4) and Tree Protection Plan (Appendix 5). 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 T20 and T21 along with a dead tree. T20 and T21 are small garden fruit trees with no wider public visual amenity value. Both are assessed as Category C, therefore should not be viewed as a constraint to development. Both could be replaced.

5.3 A proposed Landscape Plan is shown in Appendix 6. Proposals provide for seven new trees and new boundary hedgerows. Landscape proposals will lead to a net increase in tree numbers at the site compared to the existing resource and would more than compensate for the loss of T20 and T21.

5.4 It is also noted that there is space within the land to the south of the site where additional tree planting could occur, subject to the landowners permission. It is understood that the land is owned by the Council. The applicant has advised they would be willing to plant additional trees in this area (if agreed with the council). There is space for new tree planting, with the potential for at least 2 larger growing species to be planted set back from the boundary but between T17 and T19 along with understorey shrub and smaller tree planting. Any new planting in this area, would also contribute to increasing tree numbers and species diversity.

Impact to retained trees

Tree works

5.5 No major tree work is required to allow the proposed development.

5.6 The north canopy of T19 and west canopy of T6, (both off-site trees), would need to be tip reduced to ensure clearance of the two new buildings. This would be minor pruning.

5.7 Regarding T10, the western branch of into the site is over extended (see Photo 11 in Appendix 2). It would not need to be removed to allow construction works but it is recommended it is pruned back along with some minor growth from T9. However, more importantly, during the survey it was noted that the union of the stems of T10 has extensive decay and its eastern limb is splitting away from the stem. Due to condition this tree could be removed but would need the tree owner's permission. As it's an off-site tree, it is shown as retained.

5.8 No other trees require tree works as part of the development and can continue to be managed in accordance with good arboricultural practice as required.

Proposed Block A

5.9 The location of Block A avoids all retained tree RPAs. As such its location is considered acceptable from a tree perspective.

Proposed Block B

5.10 The location of Block B largely avoids RPAs but clips the edge of the RPA of T6. There is additional soil volume outside the default RPA the tree could exploit and given the level of encroachment is very minor to the edge of the RPA, no long term impacts are envisaged to T6. In any case, T6 is assessed as Category C, therefore should not be viewed as a constraint to development.

Proposed hard surfacing

5.11 Hard surfacing is proposed in the northern RPA of T19. However, it is noted that currently this area comprises tarmac hard surfacing associated with the existing parking. In this context, the proposed hard surfaced pedestrian side access to Block A would not introduce hard surfacing where it does not currently exist.

5.12 Further hard surfacing is proposed in the form of parking bays that encroach the RPAs of T17, T16, T13, T10 and T9. With regard to T13, T16 and T17, in these areas new hard surfacing would need to be permeable and constructed using a reduced or no dig methodology, such as cellweb TRP. This would ensure potential root damage is avoided / minimised.

5.13 With regard to T10 and T9, the trees are assessed as low quality, with T10 assessed as Category U. In this context, their quality is not sufficient to justify the use of a load bearing geocell.

Levels

5.14 All existing levels in RPAs will be retained.

Overbearing

5.15 As seen by the site photos in Appendix 2, existing vegetation on the eastern boundary is generally set back and canopies managed to the boundary with some minor overhang in places. It is expected that this management will continue to ensure clearance to the side of the new building.

5.16 Block A has principle rooms and windows facing east and west avoiding existing trees. No overbearing issues are envisaged that would reasonably justify tree removal or further pruning of T19.

5.17 Block B is set 2m from the existing boundary. Provided vegetation continues to be managed back to the boundary, no significant shading or overbearing is envisaged.

Drainage and services

5.18 No specific details of proposed drainage runs or services have been provided. However, given that all retained trees are located off-site to the south and east, there is clearly enough space within the site to locate services without encroaching RPAs.

6 TREE PROTECTION AND METHOD STATEMENT

6.1 Tree protection measures are shown on the TPP in Appendix 5. Protection measures will rely on fencing, ground protection and sensitive working.

Protection fencing

6.2 Fencing is to be installed in locations as shown on the TPP to prevent encroachment into soft landscaping and unsurfaced areas of RPAs.

6.3 Fencing is to be installed in primary positions as shown on the TPP prior to demolition works and remain in place for the duration of main construction for the two new apartment blocks.

6.4 Fencing would need to be adjusted back to the secondary position to allow for installation of the new parking bays. Once adjusted to the secondary position, fencing would need to remain in place until construction works and parking have been completed.

Ground Protection

6.5 When protection fencing is installed in the primary position, this will be set back in the RPAs of T19, T6 and T5 to allow passage around the proposed new buildings. In these areas it is recommended that temporary ground protection (such as ground guards) are installed. With regard to T19, if the existing hard surfacing is retained this would act as ground protection.

6.6 When fencing is adjusted to the secondary position to allow for parking bay construction, ground protection would need to be installed in relation to T12, T11, T10 and T9.

6.7 Where an RPA would not be protected by fencing or covered by existing hard surfacing, ground protection, such as ground guards, will need to be installed prior to works and remain in place for the duration.

6.8 An example of ground protection is shown in Appendix 7.

General rules for tree protection

6.9 Areas excluded by fencing or covered by ground protection form a construction exclusion zone (CEZ). The following activities, are not permitted within a CEZ (or RPAs) unless detail 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.

6.10 All materials are to be dropped off at the property and stored within the site away from the boundaries and RPAs.

Considerate Working Methods

6.11 The final method of tree protection will be carrying out works sensitively and being tree aware. All contractors must be made aware of the trees at the site that are to be retained and protected. All contractors must be made aware of tree protection requirements at the site and ensure works are carried out in accordance with this statement.

6.12 With regard to the works in RPAs, the following sets out methods to be followed in relation to the small area of hard surface replacement in the RPA of T19 as well as hard surfacing installation in RPAs of T17, T16, T13, T9 and T10.

Removal of hard surfacing and installing new replacement paving

6.13 Where removing existing hard surfacing from RPA of T19 and installing new/replacement paving, the following methods should be used:

- Ensure tree protection fencing is installed as per the TPP in primary positions.
- Existing tarmac is to be broken up and lifted out using hand tools or light weight plant operating from existing hard surfacing. Care must be taken not to excavate into the sub-base below.
- The existing sub-base is to be retained and made good and new surfacing laid on top. The new surfacing should be permeable, in this case permeable block paving.
- No equipment or tracked vehicles are to enter the exposed RPA of T19 unless supported on load bearing ground protection.

New parking bays

6.14 With regard to new parking bays in the RPAs of T17, T16 and T13, the following method should be used:

- Adjust tree protection fencing to secondary position and ensure ground protection is in place.
- Remove the turf layer using hand tools or lightweight plant (starting from closest the trees working backwards from atop ground protection mats).
- A geotextile membrane should be installed on the existing ground following turf layer removal. Any large stones are to be removed and any hollows or depressions filled with sharp sand or clean angular stone.
- With regard to T17, T16 and T13, a load bearing cellular confinement system, Cellweb TRP or similar (100-150mm 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) is then to be surfaced with a permeable finish, in this case block paving.
- Timber edging can be used for edge support pinned in place and topsoil graded up to the edge.

6.15 An example of Cellweb Installation guide is shown in Appendix 8.

Summary

6.16 Overall with regard to proposals the following is noted:

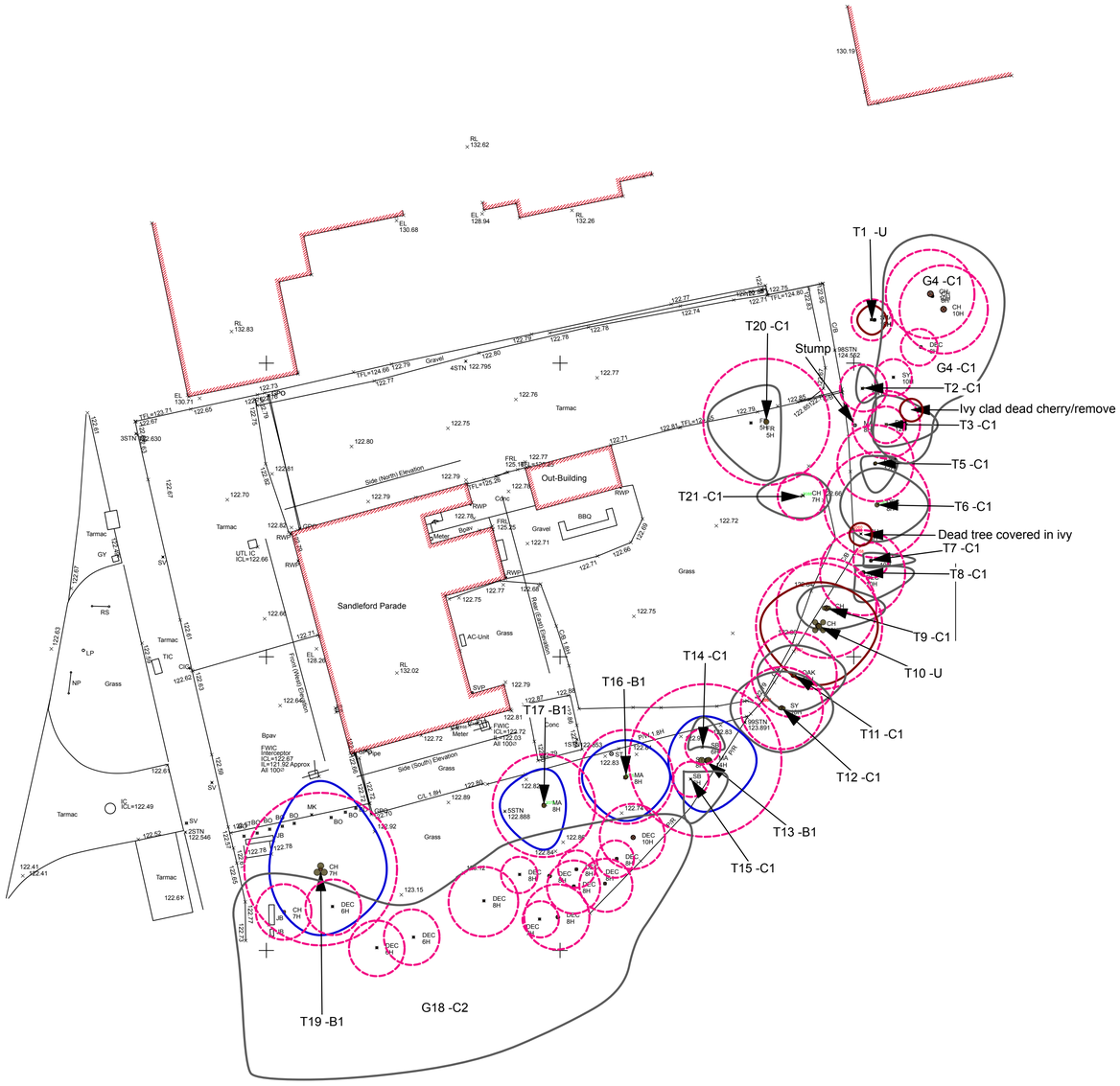
- Proposals would not require any high quality, veteran or ancient tree loss nor any unacceptable tree works to enable development.
- Proposals include for replacement tree and hedge planting that would increase tree numbers at the site and positively contribute to the finished development.
- No major engineering works are required in RPAs that would realistically lead to the early loss of existing trees.
- Retained trees can be adequately protected using a combination of protection fencing, ground protection and sensitive working methodologies.

Appendix 1:

Tree Survey and Constraints Plan and Schedule

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



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

Revision	Description	Date
-	First issue	9/11/23

LANDARB SOLUTIONS

Project:
Sandford Parade Newtown Road Newbury

Description:
Tree Survey and Constraints Plan

Status:
For Planning

Scale:	Drawn I Checked	Date:
1:200 @A1	**DP MP**	**9/11/2023**
Job Number:	Drawing Number:	Revision:
LAS 691	**01**	**-**

Ref no.	Species	Ht. (m)	Stem				Category Grading	Crown Spread (m)								Life stage	ULE	Physiological Condition	Structural Condition	General Observations and Notes
			Stem Count	Stem dia. (mm)	RPA radius	RPA area		N	E	S	W	Ht. 1st Br. (m)	Est.	1st Br. Direction	Ht. Can. (m)					
T1	Field maple	10.5	1	120	1.4	7	U	1.0	1.0	1.0	1.0	N/A	-	N/A	7.0	SM	<10	Poor	Poor	Drawn up, clad in ivy, limited canopy, poor form
T2	Field maple	10.0	1	130	1.6	8	C1	1.5	1.0	1.0	0.5	N/A	-	N/A	2.0	SM	10+	Fair	Poor	Drawn up, poor form,
T3	Ash	10.0	1	190	2.3	16	C1	2.0	3.5	1.5	1.0	N/A	-	N/A	6.0	SM	10+	Fair	Poor	Drawn up, high canopy, leans east low quality.
G4	Cherry, sycamore, field maple	9.5	5+	200	2.4	18	C1	As on plan				N/A	-	N/A	0.0	SM	10+	Fair	Poor	Mixed off site group. Closest trees picked up individually. Several ivy clad cherry leaning towards road with poor form. Group needs inspecting and poor quality trees removing,
T5	Pine	10.0	1	220	2.6	22	C1	0.5	1.5	2.0	1.0	N/A	-	N/A	4.0	SM	<10	Fair	Poor	Drawn up, smothered in ivy, high crown, poor form.
T6	Cherry	10.0	1	300	3.6	41	C1	2.5	3.5	2.5	2.5	N/A	-	N/A	4.5	EM	10+	Fair	Fair	Significant ivy smothering the tree, limited canopy.
T7	Sycamore	7.5	1	100	1.2	5	C1	0.5	3.0	0.5	0.5	N/A	-	N/A	0.0	SM	10+	Fair	Poor	Poor form, leans east, dense ivy on stem smothering the tree, limited canopy.
T8	Cherry	8.0	1	240	2.9	26	C1	0.5	3.5	2.0	0.5	N/A	-	N/A	1.5	SM	10+	Fair	Poor	Poor form, canopy leans east, dense ivy smothering the tree.
T9	Sycamore	10.0	2	283	3.4	36	C1	1.5	4.0	1.5	2.0	N/A	-	N/A	3.0	EM	10+	Fair	Poor	Multi stem from 1m, dense ivy on stems, pruned west side,
T10	Cherry	10.0	5	360	4.3	59	U	3.0	4.0	4.0	4.0	N/A	-	N/A	3.0	EM	<10	Fair	Poor	Multi stem from 0.5m, eastern limb decay at stem union looks like branch splitting away from the stem, needs removing as it leans towards road. Ivy on stem needs clearing to see union better and decay.
T11	Oak	11.0	1	240	2.9	26	C1	2.0	3.5	2.5	2.5	N/A	-	N/A	4.0	SM	20+	Fair	Fair	Stem kinks, ivy on stem, high canopy.
T12	Sycamore	9.0	2	233	2.8	24	C1	2.5	3.5	3.0	3.5	N/A	-	N/A	2.5	SM	10+	Fair	Poor	Poor form, twin stem from base, ivy on stem.
T13	Sycamore	12.0	2	430	5.2	84	B1	3.0	3.5	3.5	2.5	N/A	-	N/A	3.0	EM	10+	Fair	Fair	Twin stem from base, reasonably dense crown
T14	Birch	5.0	1	100	1.2	5	C1	2.0	1.5	0.0	1.0	N/A	-	N/A	1.5	SM	<10	Fair	Poor	Poor form , supressed by neighbour, canopy leans north, stem kinked
T15	Birch	4.5	1	100	1.2	5	C1	0.5	2.5	3.0	0.5	N/A	-	N/A	1.5	SM	10+	Fair	Poor	Supressed by neighbour canopy leans south poor form.
T16	Sycamore	12.0	1	270	3.2	33	B1	2.5	3.0	3.0	3.0	N/A	-	N/A	1.5	EM	20+	Fair	Fair	Reasonably dense crown,
T17	Sycamore	11.0	1	290	3.5	38	B1	2.5	1.5	3.0	3.0	N/A	-	N/A	2.5	EM	20+	Fair	Fair	Drawn up, reasonably dense crown, some deadwood,
G18	Cherry, pine birch, hawthorn	10.0	1	180	2.2	15	C2	As on plan				N/A	-	N/A	0.0	SM	10+	Fair	Poor	Off site mixed group, Drawn up, ivy on stems, individual low quality, value is in group,
T19	Cherry	8.0	3	436	5.2	86	B1	6.0	4.5	4.5	3.5	N/A	-	N/A	2.0	M	10+	Fair	Fair	Ivy on stem, spreading canopy, three limbs from 1.5m, pruned in past.
T20	Apple	6.0	1	360	4.3	59	C1	2.5	1.0	4.0	4.0	N/A	-	N/A	1.5	M	10+	Fair	Poor	Previous twin stem with east stem removed in past, pruned in the past, remaining stem leans west,
T21	Cherry	6.0	1	130	1.6	8	C1	1.5	2.0	1.5	3.0	N/A	-	N/A	0.0	SM	10+	Fair	Poor	Poor form, canopy favours west main leader kinks over,

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T21	Cherry	6.0	1	130	1.6	8	C1	1.5	2.0	1.5	3.0	N/A	-	N/A	0.0	SM	10+	Fair	Poor	Poor form, canopy favours west main leader kinks over,

Appendix 2:
Site Photos

Photoview 1: View south towards T2.

Photoview 2: View north at T1.

Photoview 3: View east at T13-G18.
Photoview 4: View west towards T19.

Photoview 5: View looking east at T1, T2 and G4.

Photoview 6: View north at T20 and T21.

Photoview 7: View east at T8-T10.

Photoview 8: View south at T16-T17.

Photoview 9: View north at T1 and T2.

Photoview 10: View north at T21.

Photoview 11: View south at T9 and T10.

Photoview 12: View east at T19.

Appendix 3: Proposed Site Plan

N

BLOCK "B"

BLOCK "A"

Steel Close

Newtown Road

Pavement

Pavement

Gravel

Grass

Tarmac

Tarmac

Bedroom 1
Living / Dining
Living / Dining
Bedroom 1
W
Ensuite
Landing
Bedroom 2
Kitchen
Kitchen
Bedroom 2
Entrance Lobby
2 Under Croft Parking Spaces
ENCLOSED CYCLE STORE
2 Undercroft Parking Spaces
Cycle Store
BIN STORE
5 NO. 1100 LITRE BINS

RL 132.26
RL 132.62
EL 128.94
EL 130.68
RL 132.83
122.77
122.73
122.71
122.79
122.83
122.82
122.86
122.89
122.92
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Appendix 4: Tree Retention/Loss 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
- Survey Item to be Removed

N

0 50m

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

Revision	Description	Date
-	First issue	30/11/23

LANDARB SOLUTIONS

Project:
Sandford Parade Newtown Road Newbury

Description:
Tree Retention and Loss Plan

Status:
For Planning

Scale:	Drawn I Checked	Date:
1:200 @A1	**DP MP**	**30/11/2023**
Job Number:	Drawing Number:	Revision:
LAS 691	**02**	**-**

Appendix 5: Tree Protection Plan

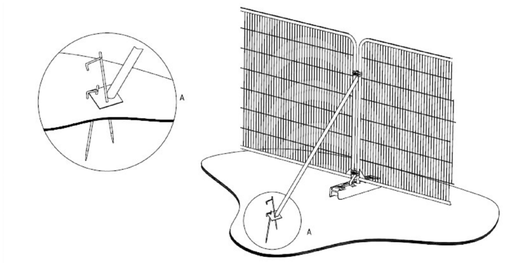
N

0 50m

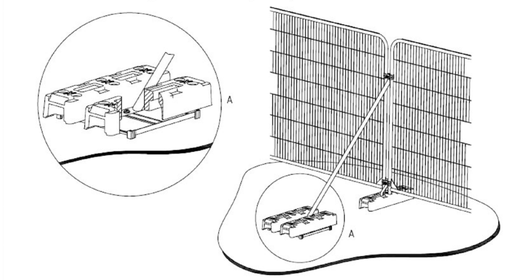
KEY - BS 5837 : 2012 Categories

- 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
- Tree Protection Secondary Barrier to BS:5837:2012 Secondary Position
- Temporary Ground Protection to BS:5837:2012
- Area of sensitive working/reduced dig

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



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

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

Revision	Description	Date
-	First issue	30/11/23

LANDARB SOLUTIONS

Project:
Sandford Parade Newtown Road Newbury

Description:
Tree Protection Plan

Status:
For Planning

Scale:	Drawn I Checked		Date:
1:200 @A1	**DP**	**MP**	**30/11/2023**

Job Number:	Drawing Number:	Revision:
LAS 691	**03**	**-**

Appendix 6: Landscape Plan

KEY

Soft Landscaping

- Existing Retained
- Proposed Tree Planting
- Proposed Shrub Planting
- Proposed Single Species Native Hedge Planting
- Proposed Grass - Flowering Lawn Mixture

Hard Landscaping

- Proposed Access - Tarmac
- Proposed Parking - Block Paving
- Proposed 1.2m High Post and Rail fence

TREE PLANTING

Code	Species	Form	Girth cm	Height cm	Root condition	Quantity
AL	Amelanchier lamarckii	EHS	14-16	425-600	65/85 L	1
CBFF	Carpinus betulus 'Frans Fontaine'	EHS	14-16	425-600	65/85 L	4
PAP	Prunus avium 'Plena'	EHS	14-16	425-600	65/85 L	2

SHRUB PLANTING

Code	Species	Height/ spread cm	Pot size (Litres)	Habit	Min no. of breaks	No. / m2	Quantity
AJ	Aucuba japonica Variegata	30-40	3L	Bushy	7	1.5	15
HH	Hypericum Hidcote	30-40	3L	Bushy	5	2	8
POL	Prunus Otto Luyken	30-40	3L	Bushy	3	2	27
SS	Senecio Sunshine	30-40	3L	Bushy	4	2	16

SINGLE SPECIES HEDGE PLANTING

Code	Species	Height/ spread cm	Pot size (Litres)	Habit	Min no. of breaks	No. / m2	Quantity
FSH	Fagus sylvatica (hedge)	60-80	2L	Feathered	4	5/lin m	400

Naturescape N14 Flowering Lawn Mix sown at 5gms/m2

Latin Name	English Name	
Achillea millefolium	Yarrow	4%
Anthyllis vulneraria	Kidney Vetch	4%
Galium verum	Lady's Bedstraw	12%
Hypochaeris radicata	Common Catsear	3%
Leontodon hispidus	Rough Hawkbit	4%
Leucanthemum vulgare	Oxeye Daisy	8%
Lotus corniculatus	Birdsfoot Trefoil	10%
Plantago lanceolata	Ribwort Plantain	8%
Primula veris	Cowslip	7%
Prunella vulgaris	Self Heal	16%
Ranunculus acris	Meadow Buttercup	12%
Rumex acetosa	Common Sorrel	12%
		100%

Grass Species

Latin Name	English Name	
Agrostis capillaris	Common Bent	5%
Cynosurus cristatus	Crested Dogstail	15%
Festuca Trachyphylla	Hard Fescue	20%
Festuca rubra ssp. litoralis	Slender Creeping Red Fescue	20%
Festuca rubra ssp. rubra	Strong Creeping Red Fescue	20%
Poa pratensis	Smooth Stalked Meadow Grass	20%
		100%

N

0 50m

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

Revision	Description	Date
-	First issue	30/11/23

LANDARB SOLUTIONS

Project:
Sandford Parade Newtown Road Newbury

Description:
Landscape Proposals Plan

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Scale:	Drawn I Checked		Date:
1:200 @A1	**DP**	**MP**	**30/11/2023**

Job Number:	Drawing Number:	Revision:
LAS 691	**03**	**-**

Appendix 7: Example Ground Protection

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]

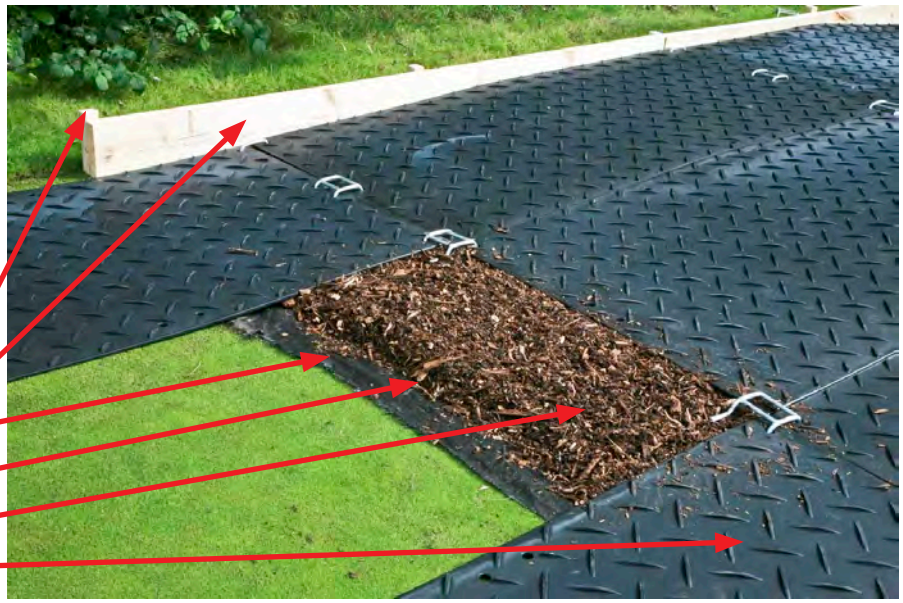
It has been shown that **"the major contribution to soil compaction from vehicle movements comes from the first passes of vehicles over the ground"** (Section 4.2.3) Thus it is essential that ground protection is specified and installed from day one of construction projects.

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.

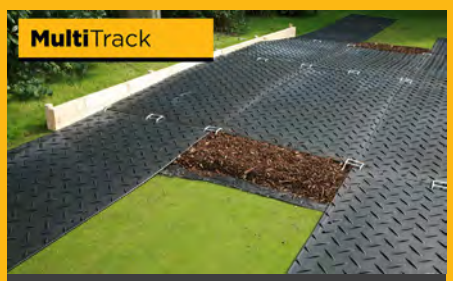
TREE ROOT PROTECTION METHOD

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:

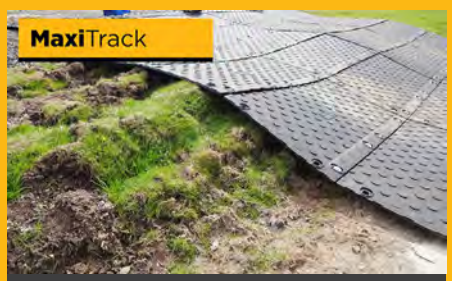
1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50 x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under 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.



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



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
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
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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United Kingdom

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info@ground-guards.co.uk
www.ground-guards.co.uk

Appendix 8: Cellweb Installation Methods

Geosynthetics Limited Tel: 01455 617 139 Fax: 01455 617 140 Email: sales@geosyn.co.uk

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

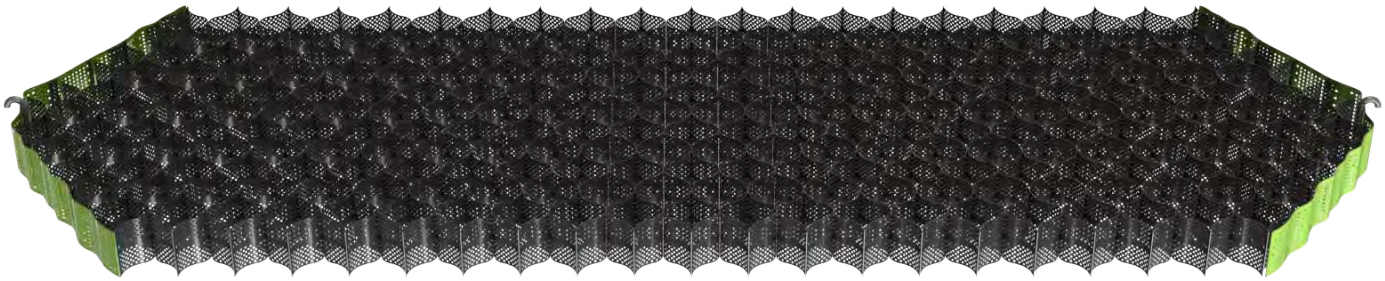
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Create a level surface by filling any hollows with clean angular stone or sharp sand.
- Do not level off high spots or compact the soil through rolling.

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.

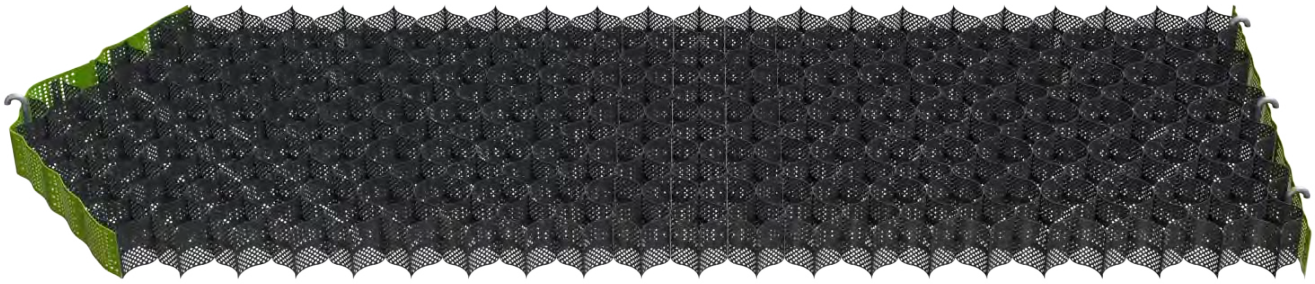


Cellweb® TRP - Installation Guide

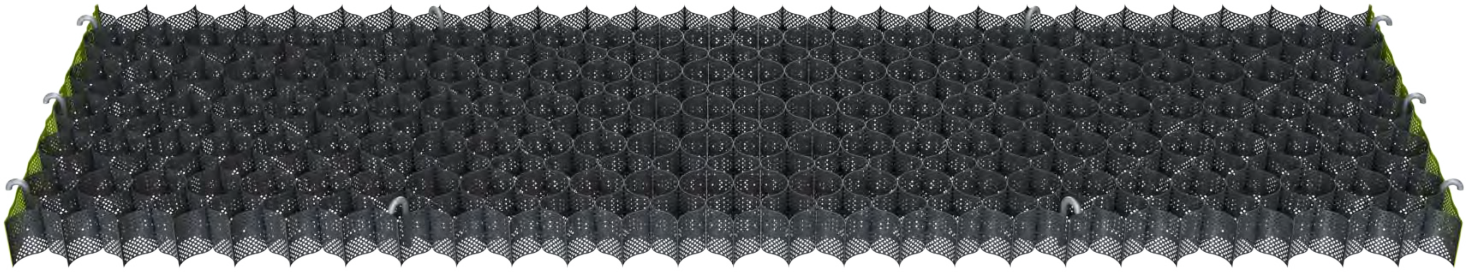
Step 3: Pinning Cellweb ® TRP

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.