LANDARB SOLUTIONS

Ref: LAS_648
Date: 09.06.23

Site: Land adjacent. Littlemoor Farm, Llysworney

Arboricultural Impact Assessment

1 INTRODUCTION

1.1 LandArb Solutions Ltd were instructed to carry out a tree survey and arboricultural impact assessment at Littlemoor Farm; herein referred to as the site, to accompany a planning application for the erection of a new detached dwelling.

2 TREE SURVEY

2.1 LandArb Solutions visited the site on 31.05.23 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 The site area comprises a managed lawn with vegetation around the perimeter and appears very much a residential garden.

2.5 On the western boundary is a dense managed boundary hedgerow (H18) with a farm tack on its western side. To the south end of H18 are two small hawthorn bushes within the site, one a common hawthorn the other a midland hawthorn.

2.6 The northern boundary also comprises a dense managed boundary hedgerow (H16) with a semi to early mature sycamore (T19) set within and a farm track on the northern side.

2.7 Within the garden towards the western side is a small silver birch tree (T17).

2.8 To the eastern part of the site is a line of trees including beech, oak, apple, plum, cherry, birch and willow species (T2-T15). All except T12 and T15 are considered to be semi to early mature. All except T5 are considered to be low to poor quality.

3 STATUTORY PROTECTIONS

Conservation Area / Tree Preservation Orders

3.1 A review of Vale of Glamorgan Council online maps (accessed 31.05.23) shows none of the trees within or adjacent to the site are subject to a Tree Preservation Order. TPOs were not identified as being a constraint for the previous application 2021/01242/FUL.

3.2 It does show the site is in a Conservation Area.

3.3 Notwithstanding specific exemptions and in general terms, a Conservation Area prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees without the prior notification to the local planning authority.

3.4 Penalties for contravention of a Conservation Area 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

3.5 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.

3.6 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.

3.7 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 erection of a new detached dwelling.

4.2 A copy of the proposed site plan is shown in Appendix 3 along with elevations/sections in Appendix 4.

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 5) and Tree Protection Plan (Appendix 6). This has been used to inform this assessment in terms of the proposed site plan and relationship with trees.

Assessment of Tree Retention and Loss

Tree Loss by quality

5.2 As shown in Appendix 5, proposals would require the loss of T2, T4, T5, T6, T7 and T8

5.3 All except T5 are assessed as Category C or U, therefore should not be considered a constraint to development based on quality. None of these trees are good examples of their species. All are semi / early mature in age, which is the younger side of the age spectrum, and none have reached maturity. Based on age, these trees could be replaced in the short to medium term.

5.4 T5 is assessed as Category B (Moderate Quality). Ordinarily, designs should seek to retain moderate quality trees where possible. However, although T5 is assessed as being of moderate quality (Category B), this is because of the absence of any obvious defects that would reduce its life expectancy. However the tree itself is a relatively small garden oak tree and is not considered to be a high quality example of its species nor have any quality (i.e. not are ancient, veteran, aged or notable, historic or have any other attributes) that would elevate its importance or desire to be retained beyond the virtue of seeking to retain existing trees where possible. It is considered that T5 along with all other trees to be removed can be replaced.

5.5 A further tree, T13, is shown for removal due to condition. It is not required to be removed to enable new built development and is purely shown for removal due to its poor structural condition.

5.6 All other trees and hedgerows can be retained.

5.7 From a tree quality perspective, proposals will not result in the loss of any high quality trees nor any of an advanced age or maturity where they could not realistically be replaced the short to medium term.

Tree Loss impacts on the Conservation Area

5.8 Trees growing within a Conservation Area are afforded protection from removal without first notifying the Local Planning Authority of intent, subject to some exemptions. This does not mean all trees within a Conservation Area are important to the Conservation Area however, many trees can and do contribute positively to Conservation Areas.

5.9 The Llysworney Conservation Area Appraisal Management Plan (CAAMP, 2009) includes an Appraisal Map in Appendix 2 of that document. A copy of this is shown in Figure 1 in Appendix 8 of this report.

5.10 The Appraisal Map show the location of listed buildings, positive buildings and significant walls and areas of open space that contribute to the conservation area or are important features within the conservation area. It also includes the location of significant trees or tree groups that are within the conservation area. However, as can be seen, none of the significant trees or groups of trees considered to be important to the conservation area are located within the application site.

5.11 Moreover, a photograph in the CAAMP (see Figure 2 in Appendix 8), shows a view across the application site. As can be seen, the trees that are to be removed are either

very small in the view or not yet existing. A large conifer which is no longer on site is in the view where several of the young oaks are now.

5.12 It is noted the Conservation Area was designated in 1970, 53 years ago. The trees in the CAAMP photograph from 2009 shows very young trees at that time which would suggest, along with their assessed young age now, that the trees to be removed did not exist when the Conservation Area was designated. In this context, the trees proposed to be removed cannot have been important trees in the Conservation Area at that time it was designated.

5.13 It some situations, new trees that had not existed at the time the designation was made can become important to a Conservation Area. For example, a village green that is a focal point of a Conservation Area could contain mature trees that form an important contribution. Over time these mature trees could decline, die and get replaced. These replacement trees would be new but still provide and important contribution because of their location in which they are growing. In this case, new trees that replace significant trees or groups of trees identified in the CAAMP would continue that function. However, as shown in the CAAMP Appraisal Map, the application site is not identified as being an important location for significant trees.

5.14 The proposed trees to be removed are relatively small and are of a young age and represent garden tree planting. They do not appear to have an historic association or importance within the Conservation Area, nor contribute to an important location in the Conservation Area. Nor have the trees existed for a great length of time to develop an important association or historical importance within the Conservation Area over time. In this context, their removal is not considered to be detrimental to the Conservation Area nor its reasons for being designated in the first place.

5.15 It should be noted that proposals will retain the boundary hedgerows on the north and western parts of the site. These contribute to the Conservation Area and are characteristic of the hedge lined lanes referred to in the CAAMP. In addition, in Figure 4 in Appendix 8 is an extract of the previous Conservation Area Appraisal Townscape Plan from 1998 (or before). This previous appraisal townscape map also shows areas of significant trees but also shows hedgerows. As can be seen, no significant trees are identified at the site, but the western and norther boundary hedgerows are shown. These hedgerows are being retained and will continue to contribute to the character of the Conservation Area and street scene.

5.16 The CAAMP (2009) Townscape Map shows the location of two significant views across the application site. It is unlikely that the significant views are intended to be of the site itself or the tree within it, but rather the views across and out of the site towards the open countryside beyond. As seen in Figure 2 in Appendix 8, the view from Squires Street across the site had views out to open country side beyond, although obscured in part by trees to the right of the frame. In Figure 3 in Appendix 8 is a photograph taken 31.05.23 showing the same view. As can be seen, dense vegetation/existing trees obscure views out of the site almost in entirety. Although a summer view, even in winter when leaves have dropped, branches from the vegetation would obstruct views compared to Figure 2. In this context, the proposed trees to be removed already screen/obscure views out to countryside beyond. If they are replaced with a building, the view will remain obscured, especially by the trees being retained. In this context, new built form will not block or obscure a clear significant view as the view is already obscured/restricted.

5.17 It is also worth noting that in the CAAMP (Page 23) it includes a section on the Conservation Area boundary review. It sets out that the fields to the north and north

west of Moor Farm, which are north and north west of the application site, make no positive contribution to the Conservation Area and therefore the Conservation Area boundary should be redrawn to omit them from it. In this context, if the field to which the identified significant views look towards make no positive contribution to the Conservation Area, it is not clear what the significant views across the site are of or what makes them significant.

Tree Loss impacts on Public Visual Amenity

5.18 A review of Glamorgan Council online "My Maps' to view the location of Public Right of Ways shows none in the vicinity of the application site. The only public accessible area to the application site in which to see the trees is therefore the end of Squire Street. The tracks to the north and west of the site are farm tracks leading to a field access. In this context, the trees to be removed have negligible public visual amenity value as they can only be seen when either standing within the site itself which is private land or from the field gate at the south side of the site, when directly looking in.

5.19 It is therefore considered the removal of trees as proposed would not have a significant detrimental impact on public visual amenity.

Replacement planting

5.20 A replacement tree plan is included in Appendix 7. It shows that 14 new trees are proposed to replace the 7 being removed. This includes new fruit tree planting to create an orchard area to the north west of the application site.

5.21 New planting will lead to a net increase in tree numbers at the site as well as species diversity, which is considered to be a betterment. Moreover, proposed replacement trees are more spread out compared to the trees to be removed which are growing tightly against each other. Having replacement trees planted more spread out will

support better crown formation and shape compared to the supressed trees to be removed.

Assessment of Impacts to retained trees

Tree works

5.22 No tree work is required to enable construction of the new dwelling or detached garage.

5.23 Canopy overhang close to the proposed southern access by T15 will need to be pruned back / lifted on its western side to ensure at least 2.5m height clearance and 1.5m from the track edge. This would be very minor pruning work and would be reasonable as part of proposals.

5.24 No other tree works would be required in relation to enabling development.

5.25 However, during the survey it was noted that T12 and T15 (both willow tree) have some decay in their stems and areas of deadwood. Both have large spreading canopies, with T15 in particularly being over extended on its eastern side with one main branch having a split in it. Both T12 and T15 would benefit from crown reduction works or pollarding, to reduce the canopy loading and create a more uniform crown shape. As this work would not be required for development but would be recommended regardless of development as part of good arboricultural management of existing trees, this work should be undertaken as part of a s211 notice process for tree works in a Conservation Area. To that end it is recommended that both trees are subject to further detailed inspection by a qualified arborist to determine the full extent of decay and specification for tree works that could then accompany a s211 notice of intent.

5.26 It was also noted that the canopy of T3 hangs low over the access drive to Littlemoor Farm from Squire Street. Again it would be reasonable to prune and lift the canopy to

at least 2.5m for clearance of the drive. Again this can be actioned through the s211 notice process if desired.

Removal of existing structures/hard surfacing.

5.27 No buildings or hard surfacing is to be removed from any retained tree RPA.

Construction of new buildings

5.28 The proposed new dwelling and detached garage is located outside of retained tree RPAs; therefore their locations are considered acceptable.

5.29 A small new retaining wall clips the outer RPAs of T9 and T10. The level of encroachment is minor an both trees are assessed as Category C, therefore should not be viewed as a constraint to development.

New hard surfacing

5.30 New hard surfacing is located outside of RPAs.

5.31 The existing access to the south of the site is to be upgraded to create a permeable grass track. The use of a grass reinforcement cellular system, such as bodpave, cellweb or other similar products, which is no dig, would ensure no impacts to retained tree roots.

Levels

5.32 All existing levels in retained tree RPAs must be retained. It's noted that proposals include for lowering the ground level of the new dwelling and garage.

5.33 It is proposed where in RPAs, the new grass track will retain existing levels and grade down once outside of RPAs to the lower level for the house.

5.34 Proposed elevations/sections are in Appendix 4.

6 TREE PROTECTION AND METHOD STATEMENT

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

Protection fencing

6.2 Fencing is to be installed in locations as shown on the TPP to prevent encroachment into RPAs or direct contact with retained trees and hedgerows.

6.3 Fencing is to be installed prior to works on site and remain in place for the duration.

Ground Protection

6.4 The TPP shows areas of the RPAs of T9, T10 and T15 where protection fencing is set back within RPAs to allow wall construction and new southern drive installation. In these areas temporary ground protection would be needed (in green).

6.5 Ground protection such as ground guards or scaffold boards set on 100-150mm layer of compressible bark chippings must be installed prior to works and remain in place for the duration. Example of ground protection is shown in Appendix 9.

General rules for tree protection

6.6 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.

6.7 All materials are to be dropped off and stored within the site away from retained trees.

6.8 Contractor parking can be confined to the hard surfaced parking areas to the east of the site.

6.9 If materials and site huts need to be stored win the site itself, it is recommended that these are stored in the northern part of the site where it is open with less tree constraints and outside of any RPA. Access to this can be from the north-east corner of the site rather than via Squire Street.

Considerate Working Methods

6.10 The final method of tree protection will be carrying out works sensitively and in a considerate manner by being tree aware. All contractors must be made aware that trees at the site 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.

6.11 With regard to the works in RPAs of T15 for grass reinforcement installation, the following sets out methods to be followed:

- Ensure Protection fencing is in place as per the TPP. Ground protection would need to be removed if in place.
- Mark out the location of the grass reinforcement driveway on the ground
- Remove the turf layer using hand tools.
- Install a geotextile membrane and then lay permeable bedding course (MOT type 3) no fines.
- Install grass reinforcement geocells and fill with a proprietary rootzone.
- Seed with new grass or roll new turf as appropriate.

6.12 An example Bodpave 85 installation guide is show in Appendix 10.

6.13 There are other geocell products and grass reinforcement systems that offer a reduced or no dig construction methods/products on the market that may also be

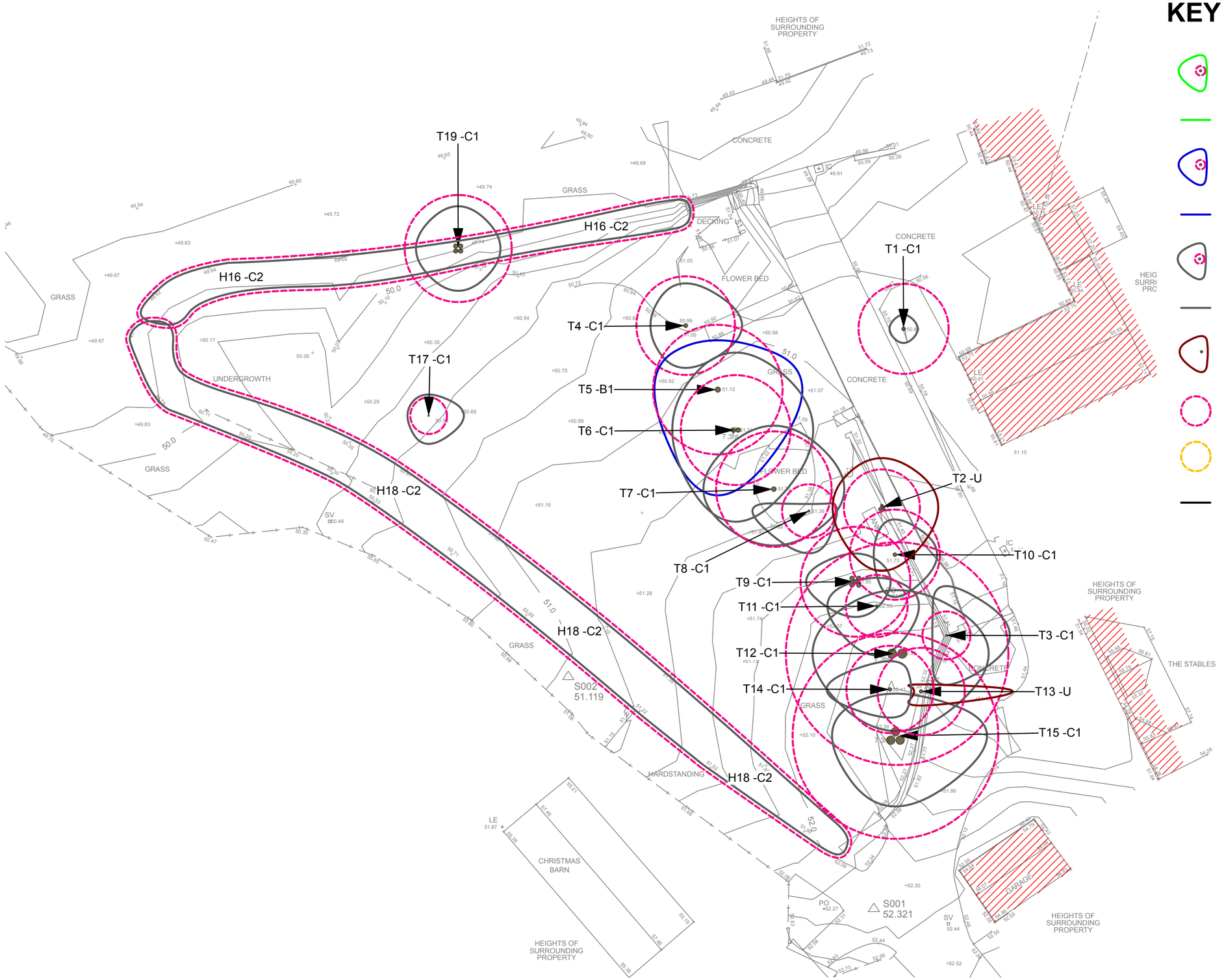
suitable. Whatever produce/system is used it will be important where in an RPA that the construction is reduced or not dig, is permeable and is load bearing.

Summary

6.14 Overall with regard to development proposals the following is noted:

- Proposals would not require the loss of any high quality trees nor any ancient, veteran, notable or other trees that have special qualitied that would clearly warrant preservation.
- Proposals can deliver a net increase in tree numbers at the site to compensate for the loss of low quality trees.
- New built form is located away from retained trees and avoids any detrimental RPA encroachments that would lead to the early loss of retained trees.
- No significant engineering works are required in any RPAs.
- No inappropriate tree works is requiring dot enable development.
- Existing 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

N

0 25m

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

Revision	Description	Date
-	First issue	2/6/23

LANDARB SOLUTIONS

Project:
Land adj. Littlemoor Farm, Llysworney, Cowbridge

Description:
Tree Survey and Constraints Plan

Status:
For Planning

Scale:	Drawn I Checked		Date:
1:200 @A2	**DP**	**MP**	**02/06/2023**

Job Number:	Drawing Number:	Revision:
LAS 648	**01**	**-**

Ref no.	Species	Ht. (m)	Stem		RPA radius	RPA area	Category Grading	Crown Spread (m)								Life stage	ULE	Physiological Condition	Structural Condition	General observations and Notes
			Stem Count	Stem dia. (mm)				N	E	S	W	Ht. 1st Br. (m)	Est.	1st Br. Direction	Ht. Can. (m)					
T1	Rowen	3.5	1	270	3.2	33	C1	1.0	1.0	1.0	1.0	N/A	-	N/A	1.5	EM	10+	Fair	Fair	Pollarded/ reduced. Small garden tree.
T2	Fig	5.5	3	227	2.7	23	U	3.5	4.0	4.5	3.5	N/A	-	N/A	1.0	EM	<10	Poor	Poor	Set in raised planting bed, thin crown, multi stem, small garden tree.
T3	Cherry	3.0	1	140	1.7	9	C1	3.5	4.5	3.5	1.0	N/A	-	N/A	0.0	EM	10+	Fair	Poor	Poor form, leans east, squat form, small tree by gate,
T4	Beech	9.0	1	290	3.5	38	C1	3.0	4.0	3.0	2.5	N/A	-	N/A	1.5	SM	20+	Good	Fair	Crowded union, canopy supressed south side, small garden tree, some dieback in upper crown
T5	Oak	10.0	1	380	4.6	65	B1	3.5	6.0	7.5	4.5	N/A	-	N/A	2.0	EM	20+	Good	Fair	Reasonably dense crown, lower canopy depressed, small tree.
T6	Oak	8.0	2	328	3.9	49	C1	4.5	5.5	6.5	4.5	N/A	-	N/A	0.0	EM	10+	Fair	Poor	Multi stem from 0.5m, stunted form, supressed to north, kinked leaders, included union with crack east side, poor form, adventitious growth on stem.
T7	Oak	5.0	1	340	4.1	52	C1	4.5	5.0	4.0	5.0	N/A	-	N/A	1.5	EM	10+	Fair	Poor	Thinning canopy, die back, adventitious shoots, some abscised branches, lower canopy lifted, small tree.
T8	Apple	3.5	1	160	1.9	12	C1	0.5	2.0	3.0	4.0	N/A	-	N/A	1.5	EM	10+	Fair	Poor	Significant lean to south, poor form, lower limbs pruned in past, small garden fruit tree,
T9	Prunus	9.0	5	323	3.9	47	C1	2.0	2.5	2.5	3.5	N/A	-	N/A	1.5	EM	10+	Fair	Poor	Multi stem from base, multiple cavities, exposed heartwood in stem, supressed, crossing branch removed, small garden shrub/tree.
T10	Apple	5.0	1	270	3.2	33	C1	2.5	3.0	3.0	1.5	N/A	-	N/A	0.5	EM	10+	Fair	Poor	Supressed to south west, leader bends over to north, supressed form, ivy on stem, small garden tree, dead branch south side,
T11	Beech	5.0	1	180	2.2	15	C1	2.0	3.0	3.5	3.5	N/A	-	N/A	0.0	SM	10+	Fair	Poor	Small tree, supressed to north and vertically, poor form,
T12	Goat willow	11.0	2	658	7.9	196	C1	4.5	6.5	5.5	6.0	N/A	-	N/A	0.5	M	10+	Fair	Poor	Multi stem from 0.5m, stems hit with sounding mallet shows solid wood but also some areas of hollow sounding wood indicating some decay. Multiple small cavities on stem with decay, each was probed with steel probe to around 50mm before meeting strong resistance. Some deadwood in crown, dense ivy on north stem, rope embedded in west branch, south limb dead, reasonably dense crown. Consider reducing crown in the future to reduce loading.
T13	Birch	10.0	1	260	3.1	31	U	0.5	6.5	0.0	0.5	N/A	-	N/A	4.5	EM	<10	Poor	Poor	Significant lean to east, thin crown, poor form.
T14	Oak	11.0	1	255	3.1	29	C1	2.0	1.5	2.0	4.5	N/A	-	N/A	1.5	SM	10+	Fair	Fair	Canopy favours west, supressed by neighbours, drawn up, poor form, some deadwood. Small tree.
T15	Crack willow	11.0	3	604	7.3	165	C1	3.0	6.5	5.0	4.5	N/A	-	N/A	1.0	M	10+	Fair	Poor	Multi stem from 0.5m, ivy on stem. Leans to south east. Overextended limb to south east has bark splitting up on top side and along horizontal branch over driveway which needs inspecting with view to removing. Western limb split with decay but dense ivy obscured clearer view. Tight basal union. Tree would benefit form a crown reduction to create a more uniform shape and reduce the loading. Defective eastern limb needs removing/reducing.
H16	Hawthorn, elder, , prunus,	1.5	5+	80	1.0	3	C2	As on plan				N/A	-	N/A	0.0	M	10+	Fair	Fair	Managed hedge
T17	Birch	5.5	1	110	1.3	5	C1	1.5	2.5	2.0	1.5	N/A	-	N/A	0.5	SM	10+	Fair	Poor	Kinked stem, small garden tree.
H18	Blackthorn, hawthorn, sycamore,	1.5	5+	80	1.0	3	C2	As on plan				N/A	-	N/A	0.0	EM	10+	Fair	Fair	Managed garden hedge.
T19	Sycamore	6.0	4	317	3.8	45	C1	3.0	3.0	3.0	3.0	N/A	-	N/A	2.0	EM	10+	Fair	Poor	Multiple stem from base, poor form, kinked stem, small, tree.

Appendix 2:
Site Photos

Photoview 1: View south towards T1.

Photoview 2: View looking west towards T4-T7.

Photoview 3: View east at T4-T7.

Photoview 4: View looking south at T2.

Photoview 5: View looking south at T2, T3 and T10 and T15.

Photoview 6: View looking west at T12-T15.

Photoview 7: View north at T15.

Photoview 8: View north west along H18.

Photoview 9: View west along H16.

Photoview 10: View north from Squires Lane.

Photoview 11: View west at H18 and two hawthorn bushes.

Appendix 3: Proposed Site Plan

KEY

Application boundary

Other land belonging to applicant

Tree for removal

RPZ For Existing Hedge

Pedestrian Access Retained

New 1.8m timber vertical board-on-board fence

T4

T5

T6

T7

T8

Potential for new planting & biodiversity enhancement (biodiversity corridor)

New Tree Planting

New Tree Planting

Permeable grass track

Existing Planting Retained & Enhanced to provide visual screening & protection of key Conservation Area View

Existing Entrance Retained (new timber five-bar gates)

N

SITE PLAN
Proposed
Scale 1:200

0 4 8 12 16 20m
1:200
1:1
0 0.1m

OAKWRIGHTS®

C	Layout Amendments	07.06.23	JTF
B	Layout Amendments	17.03.23	JTF
A	Layout Amendments	17.01.23	JTF
-	Layout Amendments	22.12.22	JTF

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CLIENT
Mr & Mrs Paul Booth

SITE ADDRESS
Land adj. Littlemoor Farm,
Llysworney, Cowbridge,
Vale of Glamorgan, CF71 7NQ

PROJECT
Proposed New Dwelling

DEPARTMENT
ARCHITECTURE

DRAWING
SITE PLAN

SCALE
1:200 @ A3

DATE DRAWN	DATE ISSUED
24.10.22	07.06.23

DRAWN	CHECKED
JTF	MH

ISSUE STATUS
PLANNING

DRG. NO.	REV.
19-201.BOO-03	C

Appendix 4: Elevation Plans

SOUTH ELEVATION
Proposed
Scale 1:100

WEST ELEVATION
Proposed
Scale 1:100

0 2 4 6 8 10m
1:100
1:1
0 0.1m

OAKWRIGHTS®

C	Layout Amendments	07.06.23	JTF
B	Layout Amendments	17.03.23	JTF
A	Layout Amendments	17.01.23	JTF
-	Layout Amendments	22.12.22	JTF

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PROJECT
Proposed New Dwelling

DEPARTMENT
ARCHITECTURE

DRAWING
ELEVATIONS

SCALE
1:100@ A3

DATE DRAWN	DATE ISSUED
24.10.22	07.06.23

DRAWN	CHECKED
JTF	MH

ISSUE STATUS

DRG. NO.	REV.
19-201.BOO-05	C

EAST ELEVATION
Proposed
Scale 1:100

NORTH ELEVATION
Proposed
Scale 1:100

1:100 / 1:1

0 2 4 6 8 10m

0 0.1m

OAKWRIGHTS®

C	Layout Amendments	07.06.23	JTF
B	Layout Amendments	17.03.23	JTF
A	Layout Amendments	17.01.23	JTF
-	Layout Amendments	22.12.22	JTF

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PROJECT
Proposed New Dwelling

DEPARTMENT
ARCHITECTURE

DRAWING
ELEVATIONS

SCALE
1:100@ A3

DATE DRAWN	DATE ISSUED
24.10.22	07.06.23

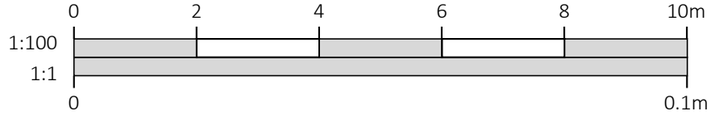
DRAWN	CHECKED
JTF	MH

ISSUE STATUS

DRG. NO.
19-201.BOO-06

REV.
C

ROOF PLAN
Proposed
Scale 1:100



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C	Layout Amendments	07.06.23	JTF
B	Layout Amendments	17.03.23	JTF
A	Layout Amendments	17.01.23	JTF
-	Layout Amendments	22.12.22	JTF

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CLIENT
Mr & Mrs Paul Booth

SITE ADDRESS
Land adj. Littlemoor Farm,
Llysworney, Cowbridge,
Vale of Glamorgan, CF71 7NQ

PROJECT
Proposed New Dwelling

DEPARTMENT
ARCHITECTURE

DRAWING
ROOF PLAN

SCALE
1:100@ A3

DATE DRAWN	DATE ISSUED
24.10.22	07.06.23

DRAWN	CHECKED
JTF	MH

ISSUE STATUS

DRG. NO.	REV.
19-201.BOO-07	C

CONTEXTUAL PERSPECTIVE
Proposed
N.T.S

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C	Layout Amendments	07.06.23	JTF
B	Layout Amendments	17.03.23	JTF
A	Layout Amendments	17.01.23	JTF
A	Layout Amendments	29.08.22	JTF

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PROJECT
Proposed New Dwelling

DEPARTMENT
ARCHITECTURE

DRAWING
CONTEXT PERSPECTIVE

SCALE
N.T.S @ A3

DATE DRAWN	DATE ISSUED
24.10.22	07.06.23

DRAWN	CHECKED
JTF	MH

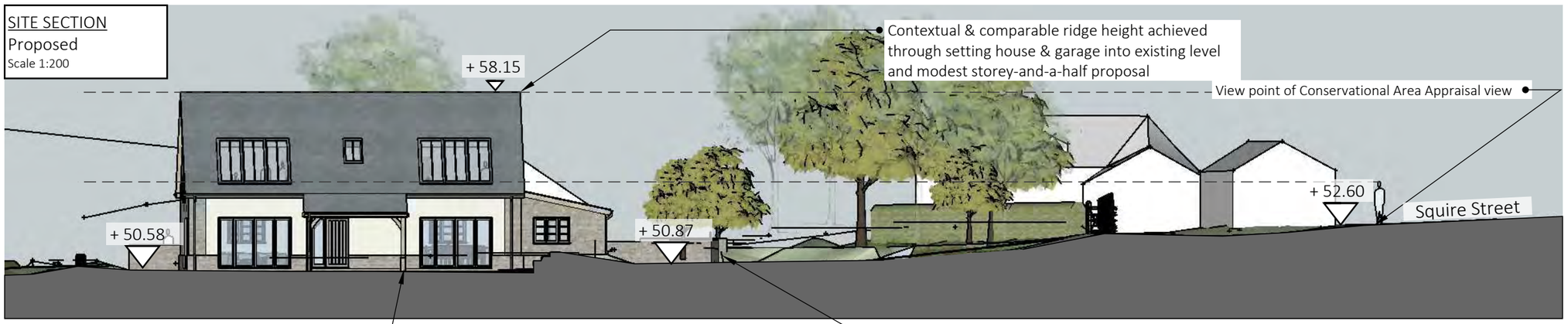
ISSUE STATUS

DRG. NO.
19-201.BOO-08

REV.
A

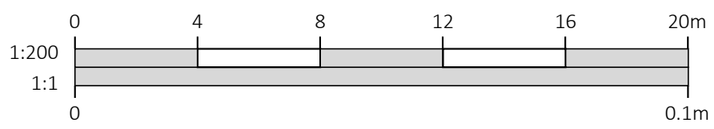
SITE SECTION
Existing
Scale 1:200

SITE SECTION
Proposed
Scale 1:200



SITE SECTION
Proposed and Existing
Scale 1:200

SITE SECTION
Proposed and Existing
Scale 1:200



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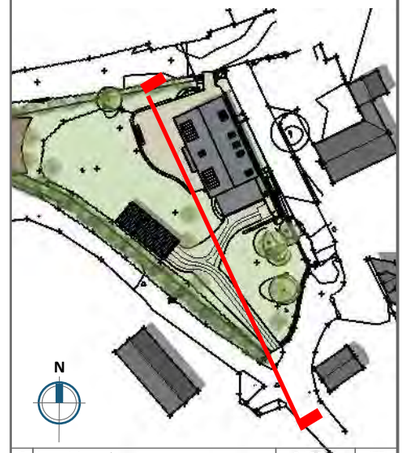

C	Layout Amendments	07.06.23	JTF
B	Layout Amendments	17.03.23	JTF
A	Layout Amendments	17.01.23	JTF
-	Layout Amendments	22.12.22	JTF

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SITE SECTION

SCALE
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ISSUE STATUS

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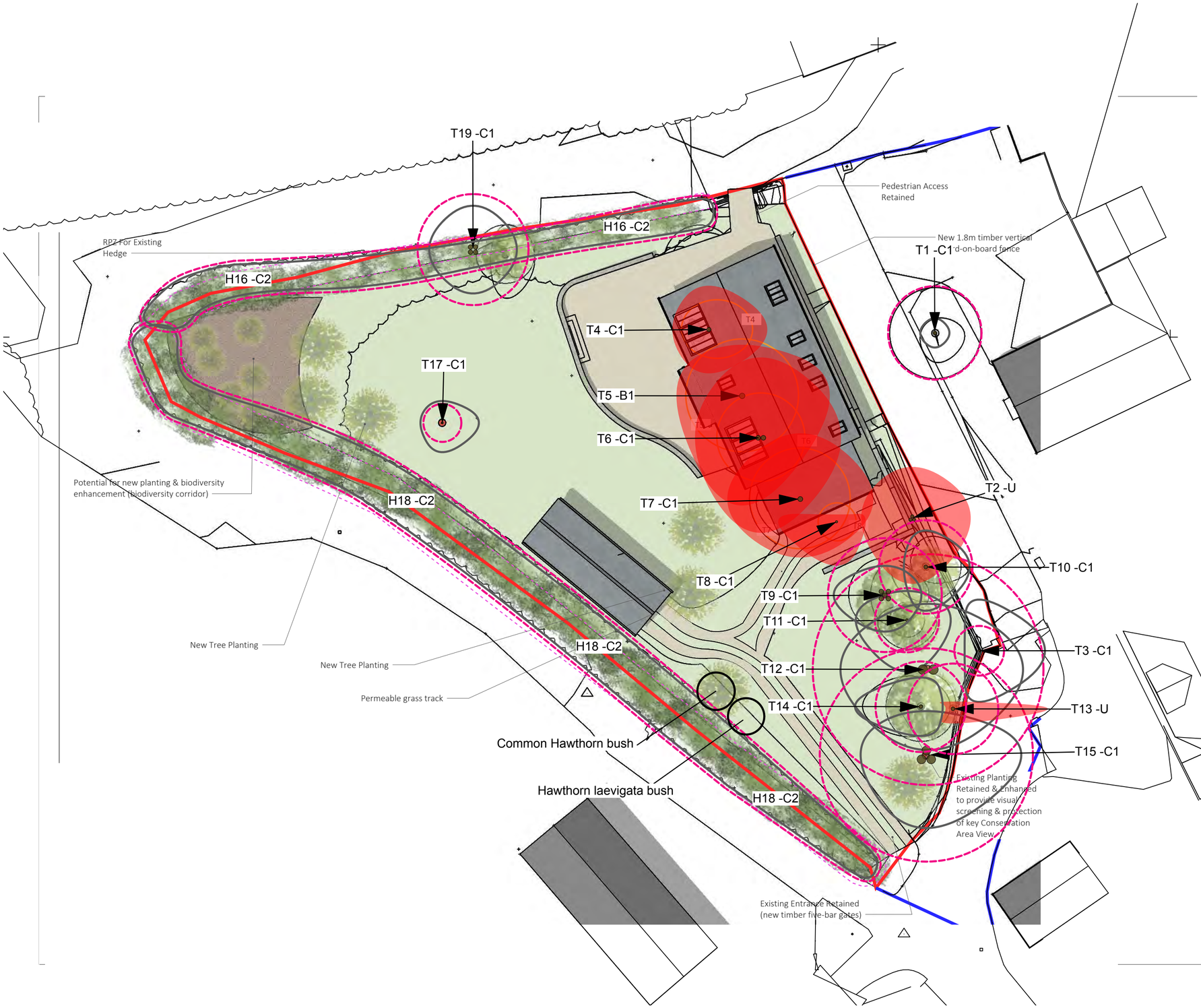
REV.
C

Appendix 5: Tree Retention and 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 25m

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

Revision	Description	Date
-	First issue	2/6/23

LANDARB SOLUTIONS

Project:
Land adj. Littlemoor Farm, Llysworney, Cowbridge

Description:
Tree Retention and Loss Plan

Status:
For Planning

Scale:	Drawn I Checked		Date:
1:200 @A2	**DP**	**MP**	**02/06/2023**

Job Number:	Drawing Number:	Revision:
LAS 648	**02**	**-**

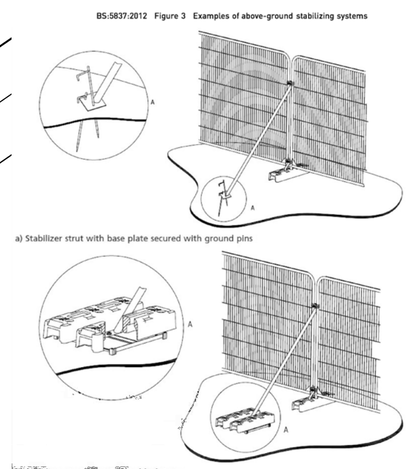
Appendix 6: Tree Protection Plan

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
- Tree Protection Barrier to BS:5837:2012 Primary Position
- Temporary Ground Protection/No Dig Construction

T19 -C1
H16 -C2
RPZ For Existing Hedge
H16 -C2
Pedestrian Access Retained
New 1.8m timber vertical board-on-board fence
T1 -C1
T4
T17 -C1
T5
T6
Potential for new planting & biodiversity enhancement (biodiversity corridor)
H18 -C2
T7
T8
T10 -C1
T9 -C1
T11 -C1
H18 -C2
T3 -C1
New Tree Planting
T12 -C1
New Tree Planting
T14 -C1
Permeable grass track
T15 -C1
Common Hawthorn bush
Existing Planting Retained & Enhanced to provide visual screening & protection of key Conservation Area View
Hawthorn laevigata bush
H18 -C2
Existing Entrance Retained (new timber five-bar gates)

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

N

0 25m

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

Revision	Description	Date
-	First issue	2/6/23

LANDARB SOLUTIONS

Project:
Land adj. Littlemoor Farm, Llysworney, Cowbridge

Description:
Tree Protection Plan

Status:
For Planning

Scale:	Drawn I Checked		Date:
1:200 @A2	**DP**	**MP**	**02/06/2023**

Job Number:	Drawing Number:	Revision:
LAS 648	**03**	**-**

Appendix 7: Replacement Tree Plan

KEY

Existing Trees/Vegetation Retained

Proposed Tree Planting

Proposed Grass - Hardy Flowering Lawn Mix EL1

TREE PLANTING

Code	Species	Form	Girth cm	Height cm	Root condition	Quantity
BP	Betula pendula	EHS	14-16	425-600	65/85 L	2
CPS	Crataegus 'Pauls Scarlet'	SS	10-12	300-350	45L	4
MPD	Magnolia 'Porcelain Dove'	-	-	120-150	7.5L	2
PC	Pear 'Conference'	SS	10-12	300-400	45L	2
PV	Plum 'Victoria	SS	10-12	300-400	45L	2
SC	Stella 'Cherry'	SS	10-12	300-400	45L	2

Emorsgate EL1 Flowering Lawn Mix sown at 4gms/m2

Wild Flowers

%	Latin name	Common name
4	Galium verum	Lady's Bedstraw
0.5	Leontodon hispidus	Rough Hawkbit
1	Leucanthemum vulgare	Oxeye Daisy
3.7	Lotus corniculatus	Birdsfoot Trefoil
3	Primula veris	Cowslip
4	Prunella vulgaris	Selfheal
3.5	Ranunculus acris	Meadow Buttercup
0.3	Trifolium pratense	Wild Red Clover
20		

Grasses

%	Latin name	Common name
8	Agrostis capillaris	Common Bent
40	Cynosurus cristatus	Crested Dogstail
28	Festuca rubra	Slender-creeping Red-fescue
4	Phleum bertolonii	Smaller Cat's-tail
80		

N

0 25m

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

Revision	Description	Date
-	First issue	7/6/23

LANDARB SOLUTIONS

Project:
Land adj. Littlemoor Farm, Llysworney, Cowbridge

Description:
Planting Plan

Status:
For Planning

Scale:	Drawn I Checked		Date:
1:200 @A2	**DP**	**MP**	**07/06/2023**

Job Number:	Drawing Number:	Revision:
LAS 648	**04**	**-**

Appendix 8: Llysworney Conservation Area Appraisal Extracts

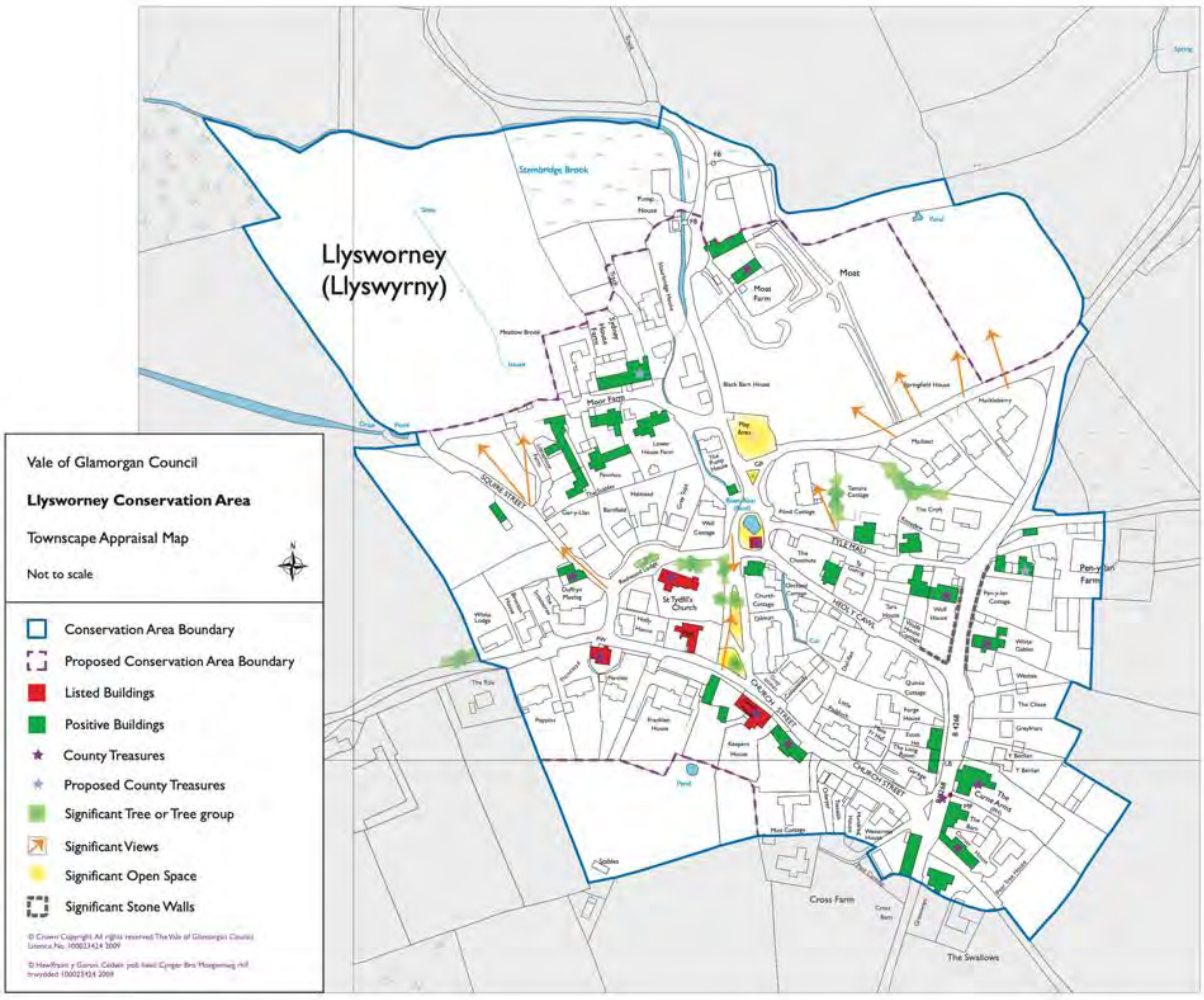


Fig1: Extract of CAAMP 2009 Townscape Appraisal Map

Fig 2: Extract of the Llysworney CAAMP photo of view from Squire Street on Page 10.

Fig 3: Site photo from Squire Street taken 31.05.23

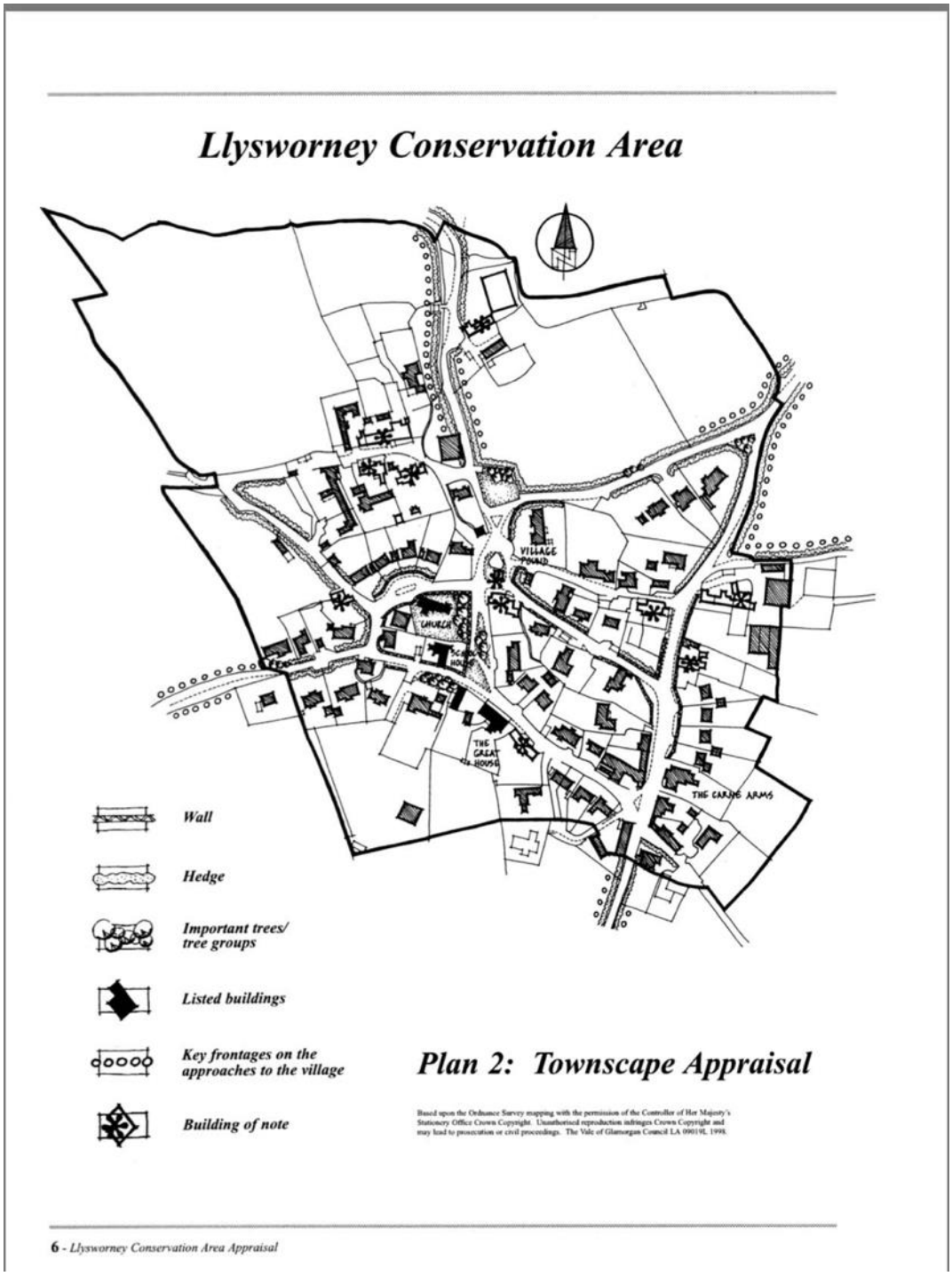


Figure 4: Extract of previous Conservation Area Appraisal by John Maitland Evans. Believed from 1998.
https://www.valeofglamorgan.gov.uk/files/Living/Planning/Policy/Conservation/Llysworney_ConsArea.pdf

Appendix 9: 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]

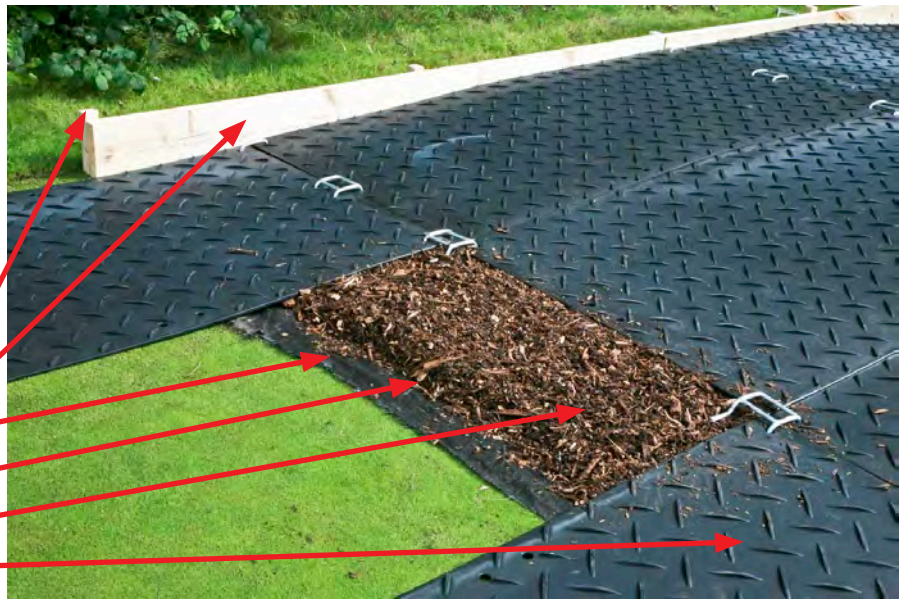
It has been shown that **"the major contribution to soil compaction from vehicle movements comes from the first passes of vehicles over the ground"** (Section 4.2.3) Thus it is essential that ground protection is specified and installed from day one of construction projects.

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.

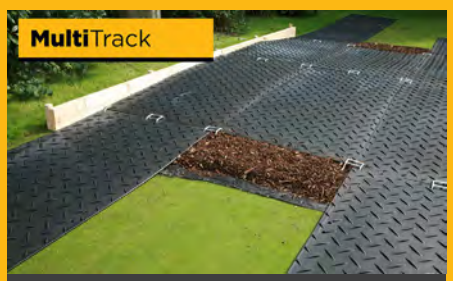
TREE ROOT PROTECTION METHOD

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:

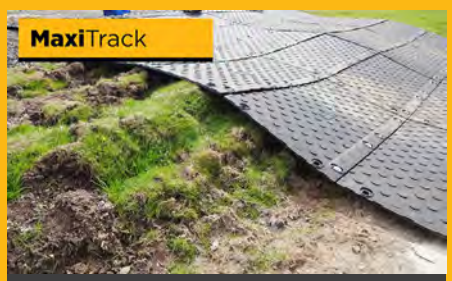
1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50 x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under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

Ground-Guards Ltd
Rudgate • Walton
Leeds • LS23 7AU
United Kingdom

+44 (0)113 267 6000
info@ground-guards.co.uk
www.ground-guards.co.uk

Appendix 10: Example Bodpave 85 Installation Guide

Bodpave 85 - Grass Surfaces

Installation Guide

1. Install edge retention as specified: Either tanalised timber boards, concrete, steel or plastic kerbs as appropriate.

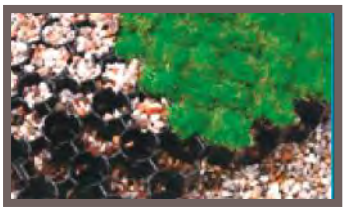
2. Ensure that the sand:soil rootzone bedding layer is the correct & uniform thickness, is level & well consolidated.

3. Place the paver units: With the 2 sets of edge loop connectors facing in directions of laying, place BodPave®85 firmly onto the surface so that its ground spikes are pressed fully into the bedding and the base of the paver cells sit flat on the bedding layer surface. Connect adjacent pavers together by slotting the edge cell connectors down into the edge loops (LOOPS ALWAYS LEAD) & progress over the area in rows. Pavers are locked in place by snap-fit clips. If paver separation is required, clips can be located using careful, firm hand or screwdriver pressure or by gently twisting the paver joints. Use protective gloves to avoid abrasions.

4. Pavers can be offset by 1 cell increments or cut to fit around obstructions & curves using a hand or power saw. The use of cut-pieces which do not have integral snap-fit connectors should be avoided wherever possible.

5. Fill pavers with specified propriety rootzone to finished levels: 5-7mm below top of the cells after settlement. A light whacker plate may be used to consolidate the pavers and settle rootzone fill. Do not overfill or over consolidate.

6. Carry out a normal seeding, fertilising & watering programme. A light top dressing may be applied to just cover the seed and to provide adequate germination conditions. Do not overfill the paver cells. Thin-cut or Washed Turf may be lightly rolled into the surface as an alternative if required.



7. The surface may be trafficked immediately for critical access purposes, but it is preferable to allow grass to fully establish prior to use.

Notes

Note 1: If Tensar TriAx™ TX160 geogrid is omitted, the total Granular Sub-Base (GSB) layer thickness (Tx) must be increased by minimum 50%.

Note 2: A'DoT Type 1' sub-base may be used provided that an adequate drainage system is installed. Alternatively, a permeable/open-graded (reduced fines) sub-base layer (i.e Type 3) may be specified, e.g. as part of a Sustainable Urban Drainage System (SUDS).

Note 3: If construction traffic axle loads will be greater than 60kN (approx' 6 Tonnes), minimum sub-base thickness over Tensar TriAx™ TX160 geogrid shall be 150mm. Maximum sub-base particle size should match minimum sub-base thickness but not exceed 75mm diameter.

Flexible Lining Products is a trading style of Greentech Ltd.
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Email: sales@green-tech.co.uk **Web:** www.green-tech.co.uk

Bodpave 40 - Grass Surfaces

For sub-base thicknesses of around 100mm, a minimum 37.5mm particle size should be adopted to allow effective installation of Tensar TriAx™ TX160 geogrid.

Note 4: Where drains are omitted and a 'reduced fines' sub-base is specified for SUDS this must be covered with either a geotextile fabric (i.e. BGT100) and/or a clean, suitably graded gravel blinding to avoid the bedding layer leaching into the sub-base.

Note 5: Specific advice on CBR% strengths, ground conditions and construction over weak ground with a CBR less than 1% is available from Boddingtons Limited. CBR% = California Bearing Ratio, a measurement of subgrade soil strength.

Note 6: Typical standard drainage detail: 100mm diameter perforated pipe drains laid at minimum gradient 1:100, bedded on gravel in trench backfilled with 'DoT Type A' drainage aggregate, trench covered &/or wrapped with a geotextile fabric (i.e BGT100), pipes leading to a suitable outfall or soakaway. Drains installed down centre or one edge of areas up to 5m wide. Wider areas may require additional lateral drains at 5m - 10m centres. Drainage design to be determined by the specifier based on specific site conditions.

Note 7: Drainage for a Sustainable Urban Drainage System (SUDS) application will vary according to the site but generally omits the requirement for extensive pipe & trench drainage systems within the sub-base layer and may require an additional layer of BGT100 geotextile fabric at base of construction.

Note 8: Rootzone bedding and paver fill must be a free-draining, structurally sound propriety blend of sand:soil or sand:compost such as used in sports/golf construction & normally identified as a 60:40 or 70:30 ratio blend. The use of site-won materials or in-situ self-blending is NOT recommended without taking further advice.

Note 9: Maximum advised gradient for traffic applications: 12% (1:8) 7º. Bodpave®85 has specific pegging points if required for steep slope applications. Pegging is not necessary for standard access route applications.

Note 10: BodPave®85 complies with BS8300:2009 - "Design of buildings and their approaches to meet the needs of disabled people" - Code of Practice. (ISBN 978 0 580 57419) & Building Regulations Document 'M' section 6.

Specific advice on the use of BodPave®85 on steep slopes, drainage suitability and Sustainable Urban Drainage Systems (SUDS) applications, can be obtained from Fiberweb Geosynthethics Ltd.

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FLP
Flexible Lining Products

Typical Sub-base Thickness Requirements

Application/Load	CBR (%) Strength of Subgrade Soil	(T) DoT Sub-base Thickness (mm)	Geogrid
Fire truck and occasional HGV access	≥ 6 = 4 < 6 = 2 < 4 = 1 < 2	100 120 190 380	TX160 TX160 TX160 TX160
Light vehicle access and overspill car parking	≥ 6 = 4 < 6 = 2 < 4 = 1 < 2	100 100 135 260	TX160 TX160 TX160 TX160

Field Guidance for Estimating Sub-Grade Strengths

Consistency	Indicator			Strength	
	Tactile (feel)	Visual (observation)	Mechanical (test)	CBR	CU
			SPT	%	kN/sqm
Very Soft	Hand sample squeezes through fingers	Man standing will sink >75mm	<2	<1	<25
Soft	Easily moulded by finger pressure	Man walking sinks 50-75mm	2-4	Around 1	Around 25
Medium	Moulded by moderate finger pressure	Man walking sinks 25mm	4-8	1-2	25-40
Firm	Moulded by strong finger pressure	Utility truck ruts 10-25mm	8-15	2-4	40-75
Stiff	Cannot be moulded but can be indented by thumb	Loaded construction vehicle ruts by 25mm	15-30	4-6	75-150

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FLP
Flexible Lining Products

Paving Grid Specification

Description	Data
Product	BodPave®85
Material	100% recycled polyethylene
Colour options	Black, Green & Natural
Paver dimensions	500mm x 500mm x 50mm + 35mm ground spike
Installed Paver size	500mm x 500mm (4 grids per m2)
Nominal internal cell size	Castellated 67mm Plaque & 46mm Round Shaped
Structure Type	Rigid-walled, flexible semi-closed cell combination
Cell wall thickness	2.5mm – 4.4mm
Weight (Nominal)	1.56 kg/paver - (6.24kg/m2)
Load bearing capacity (filled)	< 400 tonnes/m2 *
Crush Resistance (unfilled)	< 250 tonnes/m2 *
Basal support & Anti-Shear	Integral 35mm long Cross & T section ground spikes (18 per paver)
Open cell %	Top 92% / Base 75%
Connection type	Overlapping Edge Loop & Cell connection
Interlock Mechanism	Integral self locking Snap-Fit Clips
Chemical resistance	Excellent
UV resistance	High
Toxicity	Non Toxic
Bedding Layer	60:40 rootzone : 50-70mm thick
Paver Fill (seed bed)	60:40 rootzone : 43-45mm thick
Grass seed or turf	35g/m2 amenity blend low maintenance seed or turf as required.
Fertiliser	Pre-seed fertiliser followed up with appropriate seasonal fertiliser.
Sub-base type	DoT Type 1 or a modified permeable. DoT Type 3 sub-base
Sub-base reinforcement	TX160 Triaxial Geogrid

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