Arboricultural Impact Assessment for:
Proposed Adventure Golf Course, Longleat Center Parcs

Inspected and prepared by

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Report date

12th April 2024

Site address

Longleat Village Center Parcs
Longleat
Warminster
BA12 7PU

Report reference

LCP-AGC-AIA-042024

Planning Reference

TBC

Executive summary

This Arboricultural Impact Assessment has been prepared in order to provide Wiltshire Council with arboricultural information in support of a planning application for the installation of an Adventure Golf Course and customer services kiosk at Longleat Center Parcs.

The information within is compliant with *BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations* and contains details of the direct and indirect impacts of the proposals on the trees on and adjacent to the site.

Three individual trees and two small groups of young self-seeded poplar regeneration are proposed for removal to facilitate the proposals which will be mitigated though additional tree planting around the site.

Trees overhanging the golf course will be crown lifted to allow 2 metres clear crown height over all footpaths and golfing areas which is consistent with current tree management practices on the site.

A section of an existing low-level wooden maze is within the Root Protection Area (**RPA**) of a retained tree and will be demolished by hand, prior to the erection of tree protection barriers, to prevent compaction damage within the RPA.

Existing block paved footpaths will be removed from within the RPA of a retained tree. To prevent damage to underlying roots the works will be carried out by hand as part of the landscape phase of operations and any exposed roots will immediately be covered with good quality topsoil.

New footpaths are proposed which include areas within the RPA of a retained tree and which will be constructed using a low impact porous rubber mulch surface to prevent compaction damage within RPAs.

The foundations for a new customer service kiosk require a minor encroachment into the RPA of a retained tree by 0.3% of the total RPA, which will be facilitated through root pruning if roots are encountered during excavations for foundations.

RPAs that are vulnerable to compaction damage will be protected from construction activity by robust physical barriers during the construction phase.

The site does not lie within the limits of a Conservation Area and there are no trees on the site that are the subject of a Tree Preservation Order.

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A	Tree survey schedule and key
B	Arboricultural Method Statement (AMS)
C	Tree Protection Plan (TPP)
D	Tree survey methodology

1.0 Instructions

1.1 Assured Trees are instructed by Clare Winsor to carry out a survey of trees that could potentially be impacted by the installation of an Adventure Golf Course at Longleat Center Parcs and to prepare an Arboricultural Impact Assessment report to support a planning application to Wiltshire Council.

1.2 This report has been prepared by a qualified arboriculturalist in accordance with *BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations* (**BS5837: 2012** hereafter) and contains the components listed in Table 1:

Component	Description
Tree survey	Including all trees, on and off site, that could potentially be impacted by the proposals with data and work recommendations presented in a Tree Survey Schedule at **Appendix A** and tree constraints illustrated on a Tree Constraints Plan (**TCP**).
Arboricultural Impact Assessment (**AIA**)	An assessment of the potential impacts of development proposals on trees on and adjacent to the site and an assessment of the impact retained trees may have on the site post development.
Arboricultural Method Statement (**AMS**)	Presented at **Appendix B** as a standalone document containing a clear specification for protective measures for retained trees throughout the development process.
Tree Protection Plan (**TPP**)	Presented at **Appendix C,** with a clear illustration of the extent and location of specified tree protection measures.

***Table 1**: Report components*

1.3 This report has been informed by the following documents:

Document	Reference	Supplied by
Topographical site survey	Drawing No. 18049-A	LDS surveys
Proposed Detailed Site & Kiosk Information	23-2517-(22)100-T02	JDA

***Table 2**: Documents provided*

2.0 Introduction

2.1 The application site is comprised of an internal section of the Longleat Center Parcs site to the north of the west end of the lake. The site currently contains a small wooden maze and a series of block paved footpaths and picnic areas for the use of guests.

2.2 The proposals are for the installation of an adventure golf course and customer service kiosk.

Site location:



***Figure 1**: Site Location indicated by orange arrow. https://www.streetmap.co.uk/*



***Figure 2**: Red line indicates approximate site limits. www.google.com*

3.0 Report limitations

3.1 The tree survey was carried out from ground level, observations were made in the context of planning and development in accordance with BS5837:2012 and specifically relate to the conditions found at the time of the survey. The survey does not constitute a detailed hazard assessment, no decay detection equipment has been used in assessing trunk condition and no samples of any kind have been taken for analysis.

4.0 Trees included in the survey

4.1 Twenty-four trees and two tree groups were identified in the survey and have been awarded category ratings in accordance with the BS5837:2012 cascade chart for tree quality assessment (table 3). Category ratings of **A**, **B**, **C** or **U** are allocated based on the condition of a tree or group of trees in its/their current surroundings, with **A** representing the higher quality trees, **B** the moderate quality, **C** the lower quality and **U** the trees that cannot realistically be retained in the context of the current land use. A full account of the tree survey methodology including the categorisation criteria for surveyed trees is presented at Appendix E.

	Category			
	A	**B**	**C**	**U**
Trees	1	10	13	0
Groups	0	0	2	0

***Table 3**: Tree categorisation quantities*

5.0 Root Protection Areas (RPAs)

5.1 Root Protection Areas (**RPAs**) for all trees on site have been calculated in accordance with BS5837:2012 and form below ground constraints to development. The RPA is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority, the RPA does not represent the entire root system of a tree. The RPAs have been plotted onto the Tree Protection Plan as a circle centred on the base of each tree stem with a radius of 12 times the trees stem diameter measured at 1.5 metres above ground level.

6.0 Statutory constraints

6.1 A review of Wiltshire Council on-line resources[1] reveals that the site does not lie within the limits of a Conservation Area and that there are no trees on the site that are the subject of a Tree Preservation Order (**TPO**). It is not currently necessary to obtain consent from Wiltshire Council to carry out tree works on the site, however planning policy requires tree works that are in the interest of development to be included within arboricultural information supporting a planning application regardless of statutory tree protection.

6.2 The Wildlife and Countryside Act 1981 (as amended), Countryside and Rights of Way Act 2000, and The Conservation of Habitats and Species Regulations 2017, afford statutory protection for listed species of flora and fauna including birds and bats which are likely to use trees for nests and roosts. It is essential that any tree works do not disturb a nesting bird, bat or bat roost. If there is potential for nesting birds or roosting bats to be using a tree scheduled for works then a qualified ecologist should be consulted and tree works timed and planned to avoid disturbance.

7.0 Soils

7.1 Tree growth can cause differential movement in structures on shrinkable clay soils as moisture is removed from the soil below foundation depth during the growing season. Soil information obtained using the British Geological Survey Data[2] indicates an underlying geology of *Cann Sand Member – Sandstone* and does not indicate there is an underlying clay soil with a high potential for volume change as a result of moisture abstraction by tree roots.

[1] https://wiltscouncil.maps.arcgis.com/
[2] https://geologyviewer.bgs.ac.uk/?_ga=2.152583345.92563876.1660213156-1216554341.1660213156

8.0 Site images



***Image 1**: View of the site of the proposed Adventure Golf Course from the south-west with tree 20 on the far left and T01 on the far right.*



***Image 2**: View of the site of the proposed Adventure Golf Course from the south-east with tree 21 on the far left and T01 on the far right.*



***Image 3**: View from the west of the existing wooden maze to the north of the site.*



***Image 4:** View from the west of the central area of the site with trees 16 and 17 in foreground.*



***Image 5**: Trees 12 and 13 on the left in the foreground with groups 14 and 15 (proposed for removal) in the centre and right of picture.*



***Image 6:** View from the north of area proposed for a kiosk with groups 14 and 15 on the left.*

9.0 Planning policy

9.1 Planning applications must give due consideration to the National Planning Policy Framework (NPPF) (20 December 2023) which states that *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused.* Wiltshire Core Strategy[3] contains the following policies that restrict development which would result in the loss of trees, hedges or other features that contribute to the character of the area:

- CP50: Biodiversity and Geodiversity
- CP51: Landscape
- CP52: Green Infrastructure
- CP57: Ensuring High Quality Design and Place-shaping

10.0 General impacts of development

10.1 Trees are commonly damaged during development through root severance to construct foundations or install services or through soil compaction within the rooting area of a tree which adversely affects drainage, gas exchange, nutrient uptake and organic content, and will seriously impede or restrict root growth potentially causing the decline or death of the tree. Further damage can be caused by direct contact damage to parts of a tree from plant and equipment.

11.0 Tree removals and arboricultural works

11.1 **Tree removals:** It is proposed to remove three trees and two tree groups as detailed in table 4.

Number	Species	Age class	Stem diameter	Retention category
T09	Lime	Young	330mm	C1
T10	Oak	Semi-mature	400mm	B2
T12	Birch	Mature	330mm	B2
G14	Poplar	Young	130mm	C1
G15	Poplar	Young	50mm	C1

***Table 4**: Trees proposed for removal.*

11.2 T09 is a young triple stem lime with narrow forks and bark inclusions, T10 is an oak on the cusp of young to semi-mature and T12 is a mature single stem birch. As the trees are surrounded by mature trees in all directions their loss will not have a significant impact on visual amenity and can be mitigated through additional tree planting in the immediate vicinity. Tree planting proposals to be submitted separately to this report for approval.

[3] https://www.wiltshire.gov.uk/media/372/Wiltshire-Core-Strategy-adopted-2015/pdf/Wcs.pdf?m=1574343137353

11.3 The poplar stems in groups 14 and 15 are of low value in terms of visual amenity and would likely have been removed as part of general site maintenance in the short-term regardless of development proposals.

11.4 The golf course has been designed to allow the retention of all other trees on the site which will be integrated into the golf course significantly enhancing the character and appeal of the course. Trees 23-26 are olive trees growing in containers which will be moved from the site with no consequence.

11.5 **Arboricultural works:** Retained trees overhanging the golf course will be crown lifted at allow 2 metres clear crown height over all footpaths and golfing areas which is consistent with current tree management practices on the site.

12.0 Potential impacts on retained trees

12.1 **Demolition:** The existing wooden maze is partially within the RPA of T01 and works to demolish the maze have the potential to cause ground compaction within the RPA. To avoid compaction damage the section of maze within the RPA of T01 must take place by hand, plant, machinery and heavy equipment must be excluded from the RPA at all times. Protective barriers must be erected immediately following the demolition to ensure the exposed RPA is protected from development activity during the construction phase of operations.

12.2 **Golf course installation works** such as plant movements, lifting and moving of golf course apparatus and materials storage have the potential to cause ground compaction within RPAs and to cause direct contact damage to the above ground parts of retained trees. To prevent damage to retained trees robust temporary barriers must be erected to create a construction exclusion zone (**CEZ**). Minor encroachments are required into the RPAs of trees 01, 05, 08 and 19 to install the golf course elements. The impact associated with the minor levels of encroachment are negligible and no mitigation is proposed.

12.3 **Kiosk installation:** The west end of the proposed kiosk requires a minor encroachment into the RPA of T19 equating to 0.3% of the total RPA. The root loss associated with the minor encroachment will be tolerable for the healthy Western Red Cedar but as a precaution any roots encountered during excavations for foundations within the RPA must be pruned and not ripped out or torn by machinery as this can damage roots closer to the tree than the point of contact and create wounds suitable for colonisation by decay pathogens.

12.4 **Footpath removal**: Existing block paved footpaths within the site will be removed which includes sections within the RPA of T01, the removal works must be carried out as part of the landscape phase of operations following the removal of temporary tree protection barriers. Any roots growing directly below or between the block pavers could be damaged by the removal works and ground exposed by the removals can become compacted if accessed by plant or machinery. To avoid root damage the paving within RPAs must be taken up by hand, any exposed roots must immediately be covered with good quality topsoil to prevent drying out and plant and equipment must not access areas of RPA exposed by the surface removal.

12.5 **Footpath installation:** New footpaths are required within the golf course linking the holes including areas within the RPA of T01. Conventional footpaths constructed onto a compacted subbase will cause ground compaction therefore the works within RPA must be carried out as part of the landscape phase of operations following the removal of temporary tree protection barriers. Low impact porous rubber mulch footpaths must be used that can be installed and used without causing compaction of the underlying soil.

12.6 The footpath to the west of the proposed kiosk within the RPA of T19 is to be constructed using permeable paving setts laid onto topsoil to prevent ground compaction within RPA.

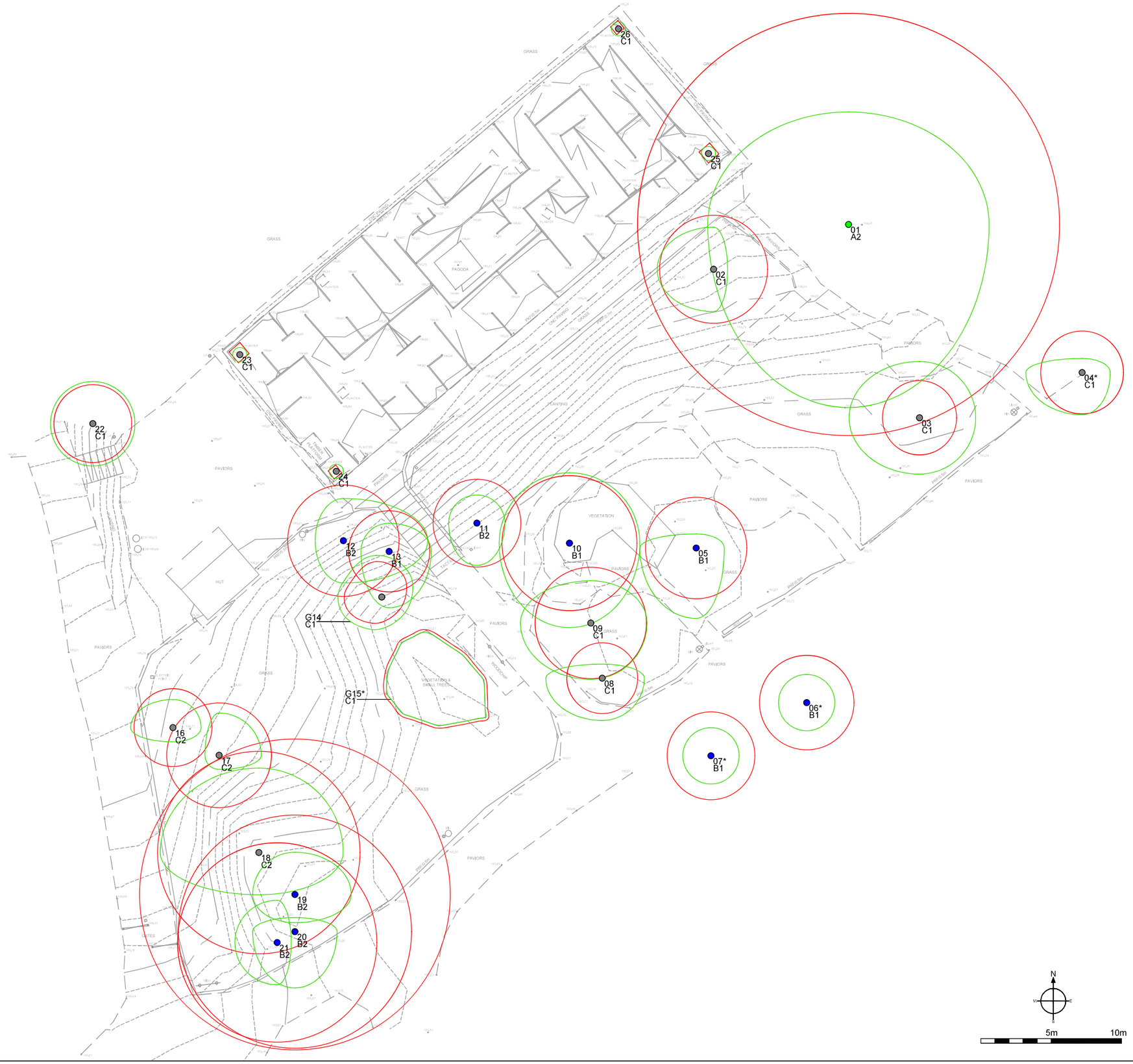
12.7 **Services**: Electrical services will be connected to existing supplies in the area outside of RPAs and no new buried services are proposed within the RPA of a retained tree.

12.8 **Shading and leaf fall**: Retained trees will cast shade and drop-leaf material and crown detritus over the golf course which is an issue that the grounds services department are well equipped to manage.

12.9 **Future pressure to prune**: The proposals have been designed to incorporate trees into the golf course where possible which will significantly enhance the appeal to guests. It is not anticipated the proposals will result in future pressure to prune or remove trees from the site.

13.0 Conclusions

13.1 The scheme has been designed taking into account the constraints of all valuable trees on the site, tree removals have been kept to a minimum and will be mitigated through additional planting. The potential impacts on retained trees have been identified and assessed and retained trees will not be harmed during development provided works are carried out in strict accordance with the Arboricultural Method Statement provided at Appendix B.



Symbol Guide

Category — Crown Spread
Root Protection Area — 3 Tree Number / B Category

BS5837:2012 - Tree Category

- Category A Trees High Quality
- Category C Trees Low Quality
- Category B Trees Moderate Quality
- Category U Trees Poor Quality/Remove

NOTE: Tree/group numbers marked with an * have approximate locations.

ASSUREDTREES

Project Name:	Longleat Center Parcs Adventure Golf
Drawing Title:	Tree Constraints Plan
Drawing Number:	LCP-AdvGolf-TCP-01
Client:	Clare Winsor
Agent:	-
Date:	December 2023
Scale:	1:200 @ A2

Appendix A: Tree Survey Schedule

Tree Survey Schedule

Client: Center Parcs

Location: Longleat Village, Warminster, Wiltshire, BA12 7PU

Date of survey: 15th December 2023

ASSUREDTREES

Tree Number	Single (S) or Group (G)	Tree Name (species)	Height (m)	Calculated Stem Diameter (mm)	Number of Stems	Crown Clearance (m)	Crown spread				Age Class	Physiological Condition	Structural Condition	Condition Notes	Recommendations	Estimated Remaining Life Contribution	BS Category	Root Protection Area (Radius, m)
							North(m)	South(m)	East (m)	West (m)								
01	S	Beech	24	1,250	1	1	8	13	10	10	M	G	G	Large mature beech, multi stem from 3 metres from good unions, minor dead wood, high level of visual amenity and biodiversity value.	Crown lift to allow 2m clearance over golf course and footpaths.	40+	A2	15.0
02	S	Birch	13	320	1	1	3	3	1	4	Sm	G	G	Single stem birch with a crown bias west due to suppression by adjacent mature beech.	None.	40+	C1	3.8
03	S	Cherry	8	220	1	1	4	4	4	5	Sm	G	G	Multi stem from 2 metres from narrow unions, slight crown bias west.	None.	40+	C1	2.6
04	S	Goat willow	5	245	6	1	1	3	2	4	Om	F	F	Crown comprised of basal epicormic regrowth from a cut stump, bias to the west.	None.	20+	C1	2.9
05	S	Birch	17	300	1	2	1	5	2	4	M	G	G	Single stem birch with a non-progressive stem lean and crown bias to the south.	Crown lift to allow 2m clearance over golf course and footpaths.	40+	B1	3.6
06	S	Birch	16	280	1	3	2	2	2	2	Sm	G	G	Single stem birch on north shore of lake, slight non-progressive stem lean to the south, ivy established on trunk.	None.	40+	B1	3.4
07	S	Birch	15	260	1	4	2	2	2	2	Sm	G	G	Single stem birch on north shore of lake, good condition.	None.	40+	B1	3.1
08	S	Oak	9	210	1	3	1	3	3	4	Y	G	G	Young oak with a crown bias south-west.	Crown lift to allow 2m clearance over golf course and footpaths.	40+	C1	2.5
09	S	Lime	13	330	1	2	3	4	4	5	Y	G	F	Triple stem from 2 metres from narrow unions with bark inclusion, crown bias south-west.	Remove to facilitate proposals.	40+	C1	4.0
10	S	Oak	15	400	1	5	5	6	5	5	Sm	G	G	Single stem oak, slight non-progressive stem lean to the south, minor dead wood.	Remove to facilitate proposals.	40+	B1	4.8
11	S	Birch	18	260	1	4	2	3	2	2	M	G	G	Single stem birch, minor dead wood in lower crown.	None.	40+	B2	3.1

Tree Number	Single (S) or Group (G)	Tree Name (species)	Height (m)	Calculated Stem Diameter (mm)	Number of Stems	Crown Clearance (m)	Crown spread				Age Class	Physiological Condition	Structural Condition	Condition Notes	Recommendations	Estimated Remaining Life Contribution	BS Category	Root Protection Area (Radius, m)
							North(m)	South(m)	East (m)	West (m)								
12	S	Birch	19	330	1	2	3	3	6	2	M	G	F	Stem lean and crown bias to the east, extended low lateral to east.	Remove to facilitate proposals.	40+	B2	4.0
13	S	Oak	13	240	1	2	2	4	3	2	Y	G	G	Young oak, crown surpassed to north-west.	Crown lift to allow 2m clearance over golf course and footpaths.	40+	B1	2.9
14	G	Aspen x 3	10	130	1	1	2	2	2	2	Y	G	F	Group of 3 young self-seeded aspen with a drawn up slender crown form.	Remove group.	40+	C1	1.6
15	G	Aspen x 15	6	50	1	1	See tree constraints plan				Y	F	F	Group of young self-seeded aspen all with drawn up slender crown form.	Remove group.	20+	C1	0.6
16	S	Birch	18	230	1	2	2	1	2	3	Sm	G	G	Single stem birch with a drawn up slender crown form and a slight crown bias west.	None.	40+	C2	2.8
17	S	Birch	22	310	1	6	3	1	3	1	Sm	P	F	Major dead wood (over 50mm diameter) and branch dieback in lower crown, crown bias north-east.	Remove major dead wood.	20+	C2	3.7
18	S	Ash	21	599	2	3	6	3	6	7	M	F	F	Twin stem from 1 metre from good union, prolific ivy on main stems, major dead wood (over 50mm diameter) in lower crown, symptomatic of Ash Dieback Disease with 0-25% crown dieback.	None.	<10	C2	7.2
19	S	Western red cedar	26	920	1	2	3	2	4	3	M	G	G	Single stem western red cedar comprising the north-eastern component of a group of 3 trees.	None.	40+	B2	11.0
20	S	Western red cedar	25	690	1	2	1	4	3	3	M	G	G	Single stem western red cedar comprising the south-eastern component of a group of 3 trees.	None.	40+	B2	8.3
21	S	Western red cedar	25	590	1	2	3	3	1	3	M	G	G	Single stem western red cedar comprising the south-western component of a group of 3 trees.	None.	40+	B2	7.1
22	S	Birch	13	230	1	2	3	3	3	3	Sm	G	G	Single stem birch in sloping planting bed.	None.	40+	C1	2.8
23	S	Olive tree	2	200	1	1	0	1	0	0	Sm	G	G	Containerised olive tree with roots contained within pot.	Relocate.	10+	C1	2.4
24	S	Olive tree	1.5	87.7	3	1	0	1	0	0	Sm	G	G	Containerised olive tree with roots contained within pot.	Relocate.	10+	C1	1.0

Tree Number	Single (S) or Group (G)	Tree Name (species)	Height (m)	Calculated Stem Diameter (mm)	Number of Stems	Crown Clearance (m)	Crown spread				Age Class	Physiological Condition	Structural Condition	Condition Notes	Recommendations	Estimated Remaining Life Contribution	BS Category	Root Protection Area (Radius, m)
							North(m)	South(m)	East (m)	West (m)								
25	S	Olive tree	2	280	1	1	0	1	0	0	Sm	G	G	Containerised olive tree with roots contained within pot.	Relocate.	10+	C1	3.4
26	S	Olive tree	2	64	3	1	0	1	0	0	Sm	G	G	Containerised olive tree with roots contained within pot.	Relocate.	10+	C1	0.8

Table Heading	Definition
Tree Number	Tree numbers as they appear in the Tree Schedule and are marked on the Tree Protection Plan drawings.
Single or group	S for a single tree, G for a group of trees and H for a hedge
Species	The common name of the tree
Height (m)	In meters measured with a laser clinometer
Calculated stem diameter (mm)	Calculated diameter of the stem(s) measured in millimetres at 1.5 meters from ground level
Number of stems	Indicates the number of stems measured to inform the Root Protection Area
Crown clearance (m)	Height in metres of crown clearance above adjacent ground level
Crown spread (m)	The spread of the crown measured in metres, taken at the four cardinal points from the trunk
Age class	(Np) Newly planted, (Y) Young, (SM) Semi-Mature, (EM) Early mature, (M) Mature, (A) Ancient or (V) Veteran
Physiological condition	Good – tree has good health and vitality. Fair- tree has minor health and vitality problems. Poor- tree has low vitality and significant health problems. Dead- dead tree.
Structural condition	G-good P- poor F- Fair D-dead
Condition notes	Specific notes relating to the condition of the tree
Recommendations	Recommendations for tree surgery based on any physical defects found or for further investigation of defects that require a more detailed assessment
Estimated remaining contribution	In years <10, 10+, 20+ or 40+
RPA (Root Protection Area) Radius (m):	The radius of the area in square metres that will need to be protected during construction with a protective fence and/or load bearing surface
Category grading Category	Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years Category C: Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter <150mm Category U: Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years
TREE SURVEY SCHEDULE KEY	

Appendix B: Arboricultural Method Statement

Arboricultural Method Statement for:
Proposed Adventure Golf Course, Longleat Center Parcs

Inspected and prepared by	Prepared for	Report date
Stuart Roberts *DipArb(RFS), MICFor, RCArbor A*	Clare Winsor Project Manager Center Parcs Head Office One Edison Rise New Ollerton Newark NG22 9DP	12th April 2024

Site address	Report reference	Planning Reference
Longleat Village Center Parcs Longleat Warminster BA12 7PU	LCP-AGC-AMS-042024	TBC

Paragraph number	Content	Page number
1.0	Introduction	01
2.0	Arboricultural works	01
3.0	Tree protection	01-02
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6.0	Access for construction works	03
7.0	Supervision and monitoring	04
8.0	Contingency plans	04
9.0	Sequence of works	04

1.0 Introduction

1.1 As full details of activities that could impact retained trees may not be known at planning application stage, BS5837:2012 (Annexe B, table B.1) recommends that a heads of terms arboricultural method statement delivers a sufficient level of tree related information into the planning system and that a Detailed Arboricultural Method Statement (**DAMS**) might need to be provided as a planning condition for full applications.

1.2 This preliminary arboricultural method statement is intended to provide initial details and specifications for all tree protection measures and arboricultural related operations that can be identified at this stage in the planning process and will form the basis of a DAMS if required through planning condition should the scheme achieve consent.

1.3 Copies of the Arboricultural Method Statement will be kept on site and the site manager will communicate the content to all staff and contractors with duties that involve working near trees or have the potential to impact retained trees.

2.0 Arboricultural works

2.1 Trees 09, 10 and 12 and groups 14 and 15 will be removed to facilitate the proposals. Retained trees overhanging the golf course will be crown lifted at allow 2 metres clear crown height over all footpaths and golfing areas. Shrubs and ground cover will be removed as necessary to facilitate installation works. Four containerised olive trees (T23 – T26) within the existing wooden maze will be removed from the site. Tree works will be carried out in accordance with *BS3998:2010 - Recommendations for Tree Work.*

3.0 Tree protection

3.1 **Barriers:** Following tree removals and ***before the commencement of any demolition or construction works on site***, temporary protective barriers will be installed in the positions indicated on the Tree Protection Plan, with the exception of the section to the north-west of T01 occupied by the wooden maze which will be erected immediately following maze demolition. The barriers will consist of 2 metre tall, welded mesh panels on rubber feet, and be well braced to resist impact, as illustrated in figures 1-2 and Appendix D.

3.2 The protective barriers will create a Construction Exclusion Zone (CEZ) in order to prevent construction activity of any kind, including the storage of materials, within the unprotected RPA of retained trees. The barriers will remain in place until the completion of all development unless otherwise specified within this AMS. ***The barriers must not be moved or altered in any way without the written consent of Wiltshire Council***. If site constraints require the alteration of the barriers then the project arboriculturalist will first be consulted who will take the necessary steps to obtain appropriate consent.

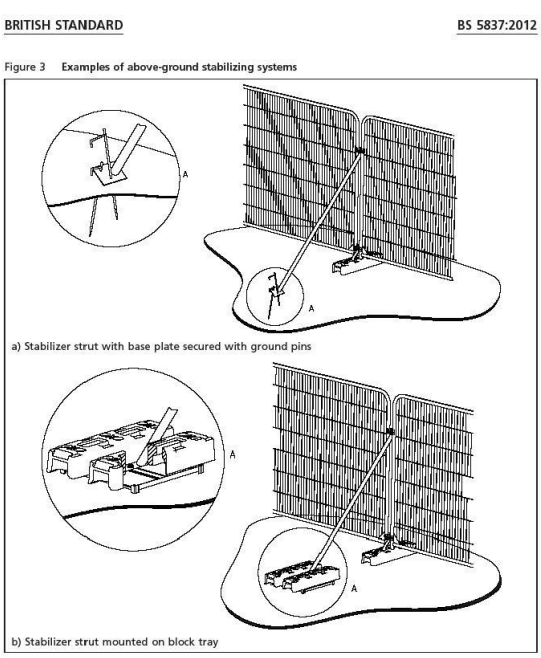


Figure 1 *Protective barriers as detailed in BS5837: 2012 6.2.2.3.*



Figure 2: *Example of temporary weldmesh panel protective barriers in use.*

4.0 Works within Root Protection Areas (RPAs)

4.1 **Demolition:** The existing wooden maze will be demolished and removed from site. The section of the north-east corner of the maze within the RPA of T01 will be removed by hand for disposal outside of the RPA, no plant or equipment will access the unprotected RPA of T01 at any time. Protective barriers as detailed in 3.1 will be erected immediately following demolition in the position indicated on the Tree Protection Plan at the extent of the RPA of T01.

4.2 **Golf course installation**: The golf course apparatus will be lifted into place using an excavator operating from areas outside of RPAs under the supervision of a banksman ensuring that the equipment does not come into contact with retained trees. Where necessary strops and/or webbing slings will be used to ensure equipment does not swing into retained trees during installation movements.

4.3 **Kiosk foundations**: The foundations for the west end of the kiosk require a minor encroachment into the RPA of T19. Excavations for foundations within RPA will take place under the supervision of a banksman who will look for roots, if roots are encountered mechanical excavations will stop immediately and the roots will be exposed using hand tools and pruned back to the tree side of the excavation using a sharp tool such a handsaw or secateurs.

4.4 **Footpath removal:** Existing blocked paved footpaths within the RPA of T01 will be removed as part of the landscape phase of the project following the installation of the golf course, when heavy plant and equipment is no longer required on site and protective barriers have been removed. Sections within RPAs will be removed by hand taking care not to damage any roots that may be growing below or between the paving. The paving will be removed from RPAs in wheelbarrows, no plant, machinery of heavy equipment will access RPAs exposed by the surface removal at any time. If any roots are exposed by the surface removal they will immediately be covered with a minimum of a 50mmm layer of good quality topsoil compliant with *BS3882:2015 - Specification for topsoil.*

4.5 **Footpath construction**: Sections of proposed footpath within the RPAs of retained trees will be constructed as part of the landscape phase of the project when heavy plant and equipment is no longer required on site and protective barriers have been removed. The footpath sections within RPAs are to be a low impact construction using a porous rubber mulch that prevents ground compaction or the need for a traditional compacted subbase. The footpath at the west end of the kiosk will be constructed using permeable paving setts laid onto good quality topsoil.

4.6 **Services** will be routed to avoid the RPAs of retained trees. If services are required to run within the RPA of a retained tree for unforeseen reasons, they will be installed in accordance with the National Joint Utilities Group (**NJUG**) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees - Issue 2: 16th November 2007[1].

5.0 Additional precautions outside of the construction exclusion zone

5.1 Fires will not be lit on site, any materials whose accidental spillage would cause damage to a tree will be stored and handled well away from the outer edge of its RPA, no equipment, machinery, structure, notice boards, telephone cables or other services will be attached to or supported by a retained tree.

5.2 Planning of site operations will take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweights (including drilling rigs), in order that they can operate without coming into contact with retained trees. Any transit or traverse of plant in proximity to trees will be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.

6.0 Access for construction works

6.1 Construction traffic will enter the site via the established vehicle access route to the north of the lake and will not access the unprotected RPA of a retained tree at any time. Construction compounds, material storage areas, welfare facilities and contractor car parking will be located outside of the unprotected RPA of retained trees. Materials used in the golf course installation will be stored in laydown areas on existing hard standing outside of RPAs.

[1] http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf

7.0 Supervision and monitoring

7.1 Assured Trees Ltd will be responsible for the monitoring of all tree protection measures and compliance with this Arboricultural Method Statement, a pre-commencement site meeting will be held between a minimum of the Center Parcs Ground Services Manager, site foreman and the project arboriculturalist to fully communicate the measures detailed within the AMS.

8.0 Contingency plans

8.1 The occurrence of any unforeseen incidents that may adversely impact retained trees will be reported to the Center Parcs Ground Services Department as soon as practicable following the incident. The Center Parcs Ground Services Department will then advise on the appropriate course of action, with consultation from Assured Trees if necessary, and will produce and maintain a record of any such incidents including any subsequent measures taken.

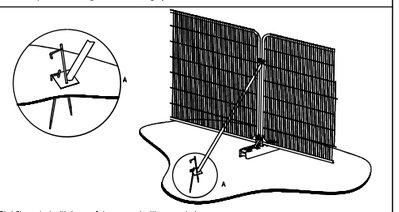
9.0 Sequence of works

Development stage	No.	Operation	Details
Pre-construction	01	Tree works	• Removal of trees 09, 10, 12 and groups 14 and 15. • Crown lifting of all trees to allow 2 metres clear crown height over all footpaths and golfing areas. • Moving of trees 23-26 from site.
	02	Tree protection	• Installation of temporary tree protection barriers in the position indicated on the tree protection plan (TPP) with the exception of the section to the north-west of T01 occupied by the wooden maze.
Demolition phase	03	Demolition maze and footpaths	• Demolition of wooden maze with sections within RPA of T01 removed by hand with no access to the RPA for plant and equipment. • Installation of temporary tree protection barriers to the north-west of T01 in the position indicated on the TPP.
Construction phase	04	Main construction phase	• Installation of golf course apparatus. Installation of kiosk foundations within RPA of T19 with root pruning if necessary.
Landscape phase	05	Hard landscape works	• Removal of sections of block paved footpath from within RPAs by hand with any exposed roots immediately covered with soil. • Installation of low impact porous rubber mulch footpaths within RPAs. • Installation of permeable paving setts to the west of the kiosk within RPA of T19.
	06	Soft landscape works	• Including mitigation tree planting.

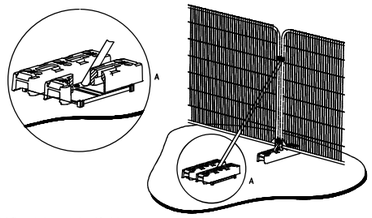
Table 1: *Sequence of works*

Appendix C: Tree Protection Plan

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

Section of barriers to be erected following demolition of wooden maze

Existing block paved footpaths to be removed in accordance with AMS and replaced with low impact rubber mulch to prevent ground compaction.

Protected area due to ecological sensitivity

Sections of footpath within RPAs to be a low impact rubber mulch to prevent ground compaction

Area where roots are to be pruned in accordance with AMS

26 C1
25 C1
01 A2
02 C1
04* C1
03 C1
23 C1
22 C1
24 C1
12 B2
13 B1
11 B2
10 B1
05 B1
09 C1
08 C1
06* B1
07* B1
G14 C1
G15* C1
16 C2
17 C2
18 C2
19 B2
20 B2
21 B2

15m
2.6m
2.9m
3.1m
3.6m
11m

Symbol Guide

Category
Root Protection Area
Crown Spread
Tree Number
Category

BS5837:2012 - Tree Category

- Category A Trees High Quality
- Category B Trees Moderate Quality
- Category C Trees Low Quality
- Category U Trees Poor Quality/Remove
- Proposed Tree for Removal
- Area where roots are to be pruned in accordance with AMS
- New footpaths within RPAS using low impact rubber mulch
- Removed in accordance with ASM and reinstated with low impact rubber mulch footpaths
- Ecological protection area with no access to construction activity
- Line of Protective Fencing

NOTE: Tree/group numbers marked with an * have approximate locations.

N

5m 10m

ASSUREDTREES

Project Name:	Longleat Center Parcs Adventure Golf
Drawing Title:	Tree Protection Plan
Drawing Number:	LCP-AdvGolf-TPP-01
Client:	Clare Winsor
Agent:	-
Date:	April 2024
Scale:	1:200 @ A2

Appendix D: Tree survey methodology

The tree survey

A baseline tree survey is carried out by a qualified arboriculturalist, from ground level, in accordance with the methodology set out in *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations*.

The results of the tree survey are used to establish material constraints arising from existing trees and is intended to be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to the design team independently of any specific proposals for the development of a site.

The tree survey will include all individual trees, tree groups, woodlands and hedges within influencing distance of the proposed development site. Trees will ordinarily be recorded as individuals but may be recorded as groups if there is no need to differentiate between the trees in the group.

The quality of each tree or group of trees is recorded by allocating it to one of four categories along with a sub-category in accordance with the *BS5837:2012* Cascade chart for tree quality assessment. A category rating of either A, **B**, **C** or **U** is allocated based on the condition of a tree or group of trees in its/their current surroundings. No consideration is given to any specific development proposal when allocating category ratings, category definitions are detailed below:

Category	Criteria
A	*Trees or groups which have high quality and value, are in good structural and physiological condition and are expected to have a useful life expectancy of at least another 40 years- indicated in green on the associated plans*
B	*Trees or groups which would be considered as category A trees but which are of lower value, poorer structural condition, or which are expected to have a useful life expectancy of a minimum of 20 years- indicated in blue on the associated plans*
C	*Trees or groups which are of low quality and value, trees currently in adequate condition to remain until new planting is established or are young trees with a stem diameter less than 150mm. Category C trees are expected to have a life expectancy of a minimum of 10 years- indicated in grey on the associated plans*
U	*Trees or groups in such a condition that any existing value would be lost within ten years and which should, in the current context, be removed for reasons of sound arboricultural management- indicated in red on associated plans*

BS5837:2012 Tree categorisation criteria

Sub categories are awarded in accordance with the following criteria:

Sub category	Inclusion criteria
1	*Trees with arboricultural value*
2	*Trees with landscape value*
3	*Trees with cultural or conservation (ecological) value*

BS5837:2012 Tree sub-category criteria

Data for all trees, groups and hedges within influencing distance of the proposed development site is recorded in a tree survey schedule in accordance with *BS5837: 2012*. Trees are not physically tagged (unless we are instructed to do so) but are assigned individual numbers that are used to identify the tree, tree group, woodland or hedgerow throughout the report, within the Tree Survey Schedule and on the associated plans. The following information is collected for each tree in the survey:

Tree or group number; Single or group category; Common name of species; Height in metres; Number of stems; Stem diameter; Clearance of crown from ground level in metres; Crown spread in cardinal directions; Age class; Physiological condition; Structural condition; Estimated remaining contribution in years; Preliminary management recommendations; Tree categorisation; Radius in metres of the **R**oot **P**rotection **A**rea (**RPA**).

All measurements are taken using a stem diameter measuring tape, laser clinometer and laser distance measuring device. Where site constraints prevent the use of a measuring device the measurement is estimated and is suffixed with a '#' symbol in the tree survey schedule.

Root protection areas

Below ground constraints or Root Protection Areas (**RPAs**) for all trees included in the site survey are calculated in accordance with *BS5837:2012 4.6.1*. The RPA is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority, the RPA does not represent the entire root system of a tree.

The RPAs are plotted onto the associated plans as a circle centred on the base of each tree stem with a radius of 12 times the trees stem diameter measured at 1.5 metres above ground level. For tree groups the largest stem diameter in the group is used to set the RPA.

If deemed appropriate by the arboricultural surveyor the individual stem diameters of trees within a group may be taken in order to set an accurate group RPA boundary whilst still recording all trees within the group as a single group record.

BS5837:2012 4.6.2 requires that where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically the RPA should be modified to produce a polygon of an equivalent area. Any trees on site identified as requiring a modification to their RPA are indicated within the AIA.