



**Cosmeston
Lakes Wake
Park, Penarth**

**Arboricultural
Condition
Inspection and
Impact
Assessment**

Prepared by:
**The
Environmental
Dimension
Partnership Ltd
(EDP)**

On behalf of:
**Cosmeston Lakes
Wake Park**

March 2017
Report Reference
EDP3861_02

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Report no.	T_EDP3861_02
Author	Tom Cleeton
Peer Review	Dai Lewis
Formatted	Emma Slater
Proofed	Rebecca Coope
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Section 1 Introduction and Methodology

- 1.1 The Environmental Dimension Partnership Ltd (EDP) was commissioned by Cosmeston Lakes Wake Park to undertake an arboricultural inspection and brief impact assessment of trees adjacent to the proposed development hereafter referred to as the 'site'.
- 1.2 The proposed development is a Wakeboarding Cable Park, which will consist of 'an out and back' elevated cable system to be located along the western edge of the eastern lake. Associated facilities, to include a reception area and changing rooms will be located within the grounds of an existing car park, whilst foot and vehicular access will utilise existing infrastructure.
- 1.3 EDP is an independent environmental planning consultancy with offices in Cirencester, Shrewsbury and Cardiff. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website www.edp-uk.co.uk.
- 1.4 The walkover survey was undertaken by Tom Cleeton, EDP's Consultant Arboriculturist, on 10 March 2017. The focus of this survey was to assess the condition of the subject trees and provide management recommendations.

Tree Survey Methodology

- 1.5 The methodology adopted for this survey is based on guidelines set out in *BS 5837:2012 Trees in relation to Design, Demolition and Construction*, especially Section 4.4, 'Tree Survey'. All surveyed items are detailed in **Schedule EDP 1** (contained at the rear of this report). No other trees are covered by this survey.
- 1.6 The subject trees have not been tagged for identification purposes.
- 1.7 All trees have been visually inspected from ground level unless otherwise stated, with no climbing or further detailed investigative tests being undertaken. The comments made on their condition are based on observable factors present at the time of inspection. All measurements are metric and have been recorded in accordance with the measurement conventions set out in Section 4.4.2.6 of BS 5837:2012.
- 1.8 Any recommendations given regarding longer-term management are made on the basis of optimising the life expectancy of surveyed tree.

Limitations

- 1.9 Due to the changing nature of trees and other site circumstances, this report and any recommendations made are limited to a 24 month period from the survey date. Any alterations to the site or the development proposals could change the current circumstances and may invalidate this report and any recommendations made.

- 1.10 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer damage under average conditions. Regular inspections can help to identify potential problems before they become acute.

Section 2 Arboricultural Condition Assessment

Tree Survey Summary

- 2.1 The survey identified six items, one tree and five groups of trees. Further detail can be found in **Schedule EDP 1** to the rear of this report.
- 2.2 Consultation with the online resource of Vale of Glamorgan Council has found that the trees are not the subject of a Tree Preservation Order, nor are they within a designated Conservation Area.
- 2.3 All surveyed trees are in fair condition, showing vigorous growth, a full crown and good form. The items are showing no extraneous signs of stress or vascular dysfunction.
- 2.4 All items identified are native or naturalised species in keeping with the localised habitat.
- 2.5 **Image EDP 1** – **Image EDP 4** are situated at the southern extent of the proposed development looking north.
- 2.6 **Image EDP 1** shows T1, an early mature sycamore of 8m tall in fair condition situated on the water's edge. It bifurcates from the base and shows some minor signs of historic damage.
- 2.7 **Image EDP 2** shows G2, a collection of small hawthorn trees, situated at the southern end of the site surrounding the proposed location for the anchor points.
- 2.8 **Image EDP 3** shows item G3, comprising a small group of Hawthorn overhanging the water's edge, encompassing one larger item surrounded by several younger items, likely to have self-set into the area.
- 2.9 **Image EDP 4** shows a view northwards up the lake and shows the collection of Hawthorn overhanging the water.
- 2.10 **Image EDP 5** and **Image EDP 6** are situated at the northern extent of the development looking south.
- 2.11 **Image EDP 5** depicts G5, a young collection of Alder trees.
- 2.12 **Image EDP 6** shows G6 a more mature group of Alder trees with young trees at the fringes. This image also shows the view south, down the proposed development to the southern point.

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Section 3

Arboricultural Impact Assessment

- 3.1 This Arboricultural Impact Assessment (AIA) has been prepared following site based observations, a desktop study of the survey data and consideration of the site plan.
- 3.2 Any scheme in proximity to trees has the potential to cause harm to those trees unless control measures are identified and acted upon; as such it is essential to consider the relationship between the proposed scheme and the retained trees to identify what precautions are necessary and proportionate. The scheme has the potential to impact upon the above ground (canopy, stems and branches) and below ground (rooting environment) parts of the trees.
- 3.3 Whilst some clear and obvious physical damage can occur to trees during the construction phase, such as to stems and branches, other impacts are not always so immediately evident, such as damage to the soil structure by compaction and or changes in ground levels causing root damage, altering the water table and affecting moisture availability.
- 3.4 This AIA recognises that construction activities pose a real and significant threat to the subject trees and assesses the likely impacts of the proposals on the tree stock and where appropriate, provides mitigation with the view of achieving a harmonious relationship between the trees and the built form.
- 3.5 Consideration has been given to retaining all trees where possible; however, ultimately the removal of any tree is dependent on its proximity to the footprint of any proposal and associated landscaping.

Damage to Rooting Environment during Construction Activity

- 3.6 To ensure appropriate protection is afforded to the roots, the extent of the RPA shall be defined by means of the installation of protective barriers in accordance with the recommendations given in Section 6.2 of BS 5837:2012.

Tree and Group Removal to Facilitate Development

- 3.7 To facilitate the development, two items will require removal, these are detailed in **Table EDP 3.1**.

Table EDP 3.1: Tree and Group Removal to Facilitate Development

Ref. Number	Species	Reasoning for Removal
T1	Sycamore	Proximity to overhead cable, retention possible but would require annual crown reductions.
G3	Hawthorn	To facilitate the viewing area.

Groups Requiring Access Facilitation Pruning

- 3.8 To minimise the potential for branch damage to retained trees during the construction and operational phases, it is recommended that facilitation pruning works are undertaken to four items as detailed in **Table EDP 3.2**.

Table EDP 3.2: Groups Requiring Access Facilitation Pruning

Ref. Number	Species	Reasoning
G2	Hawthorn	To allow clearance for anchor line.
G5	Alder	Clearance for pylon and anchor line.
G6	Alder	Clearance for pylon and anchor line.

Encroachment into Rooting Area to Facilitate Construction

- 3.9 Assessment of the development proposals determines that the southern anchor point is cited in close proximity to retained items, G2. The construction of this anchor point will be mitigated by the use of hand dig construction methodologies to reduce the potential impact on the rooting environment. During excavation, any roots over 25mm diameter will be retained, protected and reburied post construction. Roots of smaller diameter will be cleanly trimmed only so far as is necessary to facilitate construction.
- 3.10 It is recommended that construction of the development is undertaken using small machinery with low ground pressures or the use of larger machinery with suitable ground protection systems to prevent compaction of the area.

Post Completion Tree Surgery Works

- 3.11 It is recommended that the overhang of G4 is reduced back from over the water to allow for safe usage of the proposed development.

Birds

- 3.12 It is an offence under Wildlife and Countryside Act (WCA) of 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000, to:

- Kill, injure or take any wild birds;

- Damage or destroy nests that are in use or are being built;
 - Take or destroy eggs; and
 - Intentionally or recklessly disturb any wild bird while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of any bird.
- 3.13 Care must therefore be taken that none of these offences are committed whilst undertaking the above works. If trees or hedges are to be felled or pruned between March and August, they should first be inspected carefully for nests; if found, and the proposed works are not necessary to preserve public health or safety, felling or pruning should be delayed until young birds have flown.

Bats

- 3.14 All bats are legally protected by the WCA and CRoW Act. Further protection is conferred by the Conservation of Habitats and Species Regulations 2010, following the European Habitats Directive (1992). These Acts and Regulations include provisions making it illegal to:
- Recklessly or deliberately kill, injure or capture bats;
 - Recklessly or deliberately disturb bats (whether in a roost or not); and
 - Damage, destroy or obstruct access to bat roosts (whether in use or not).
- 3.15 Prior to undertaking any tree works, a scoping survey comprising a detailed visual inspection from ground level for any evidence of bat occupancy should be made by an appropriately qualified person, or if necessary by a suitably qualified ecologist. Where features that have the potential to be a bat roost have been observed, a secondary bat assessment comprising a close-up aerial examination should be undertaken immediately prior to the commencement of tree works. If following the secondary assessment, it is reasonably suspected that a roost exists, a licensed bat worker should be contacted to undertake a more detailed assessment with specialist equipment. Should a tree be found to be supporting a bat roost, a licence will be required from the relevant Statutory Nature Conservation Organisation (SNCO), before any works can be carried out.
- 3.16 Where arboricultural works are carried out, cuts will be made as far above any likely hole or crack in the bark which has potential to support a roosting bat, and crown thinning or reduction will be minimised. If, following secondary assessment no roosts are identified or reasonably suspected, but the potential for them still exists, work should proceed with caution. For example, stems and/or branches should be lowered carefully by rope and where possible large sections will be left on-site for a minimum of 48 hours to allow bats to vacate. Note that if a bat roost is damaged as a result of tree works it may be necessary to demonstrate to the SNCO that good practice was implemented.

- 3.17 If bats are discovered when limbs are removed or trees are felled, work must stop immediately and the relevant SNCO, the local police liaison officer and if possible a licensed bat worker must be informed.

Summary and Recommendations

- 3.18 The survey identified six items within the footprint of the proposed development. The details of these items are contained within **Schedule EDP 1** at the rear of this report.
- 3.19 The inspection recorded no actionable defects and on that basis no pre commencement works are proposed. However, should the development progress it is recommended that the work recommended in this note is undertaken as specified.
- 3.20 The development proposals will require the removal of two items and the pruning of a further three items. Mitigation planting for the removed items could easily be facilitated within the wider site area.
- 3.21 It is recommended that should the development go ahead, that all machinery used is of a small nature or if large machinery is used that suitable ground protection is utilised.

Image EDP 1
Item T1



Image EDP 2
Item G2



**Image EDP 3
Item G3**



**Image EDP 4
Item G4**



**Image EDP 5
Item G5**



**Image EDP 6
Item G6**



Schedule EDP 1
Tree Survey Schedule

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Client: Cosmeston Lakes Wake Park

Site: Cosmeston Lakes Wake Park, Penarth

Date of Survey: 10/03/2017

Consultant: Tom Cleeton

Tagged: N/A

Weather: Overcast

Tree Reference No.	Species	Height (m)	Stem Diameter (mm)	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Work Recommendations	Estimated Remaining Contribution (Years)
T1	Sycamore (<i>Acer pseudoplatanus</i>)	8	200#	Fair	Fair	Bifurcated from base, leaning over water, historic pruning wounds	Requires removal for development	10+
G2	Hawthorn (<i>Crataegus monogyna</i>)	5	180#	Fair	Fair	Single stem straight hawthorn trees, 2m canopy clearance, evidence of compaction from walkers.	Requires supervision of anchor point construction to prevent root damage	10+
G3	Hawthorn (<i>Crataegus monogyna</i>)	5	180#	Fair	Fair	Leaning over water, collection of one larger tree and several self set items, dense	Requires removal for development	10+
G4	Hawthorn (<i>Crataegus monogyna</i>)	5	180#	Fair	Fair	Group flanking edge of lake, wide/dense growth into lake	Requires lateral reduction in size to allow for development	10+
G5	Alder (<i>Alnus glutinosa</i>)	4	150#	Fair	Fair	Young Tree, separate from neighbouring group	No Work Recommended	10+
G6	Alder (<i>Alnus glutinosa</i>)	9	200#	Fair	Fair	Early mature group of Alder, younger items around edges	Lateral reduction to allow clearance for development	20+

CIRENCESTER

Tithe Barn,
Barnsley Park Estate,
Barnsley, Cirencester,
Gloucestershire GL7 5EG
01285 740427

CARDIFF

First Floor,
The Bonded Warehouse,
Atlantic Wharf,
Cardiff CF10 4HF
02921 671900

SHREWSBURY

The Stables,
Sansaw Business Park,
Hadnall, Shrewsbury,
Shropshire SY4 4AS
01939 211190

info@edp-uk.co.uk
www.edp-uk.co.uk

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Wales. Company No. 09102431.

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