Roehampton Gate Café and Car Park, Richmond Park

Arboricultural Impact Assessment and Draft Method Statement

July 2024

Client	The Royal Parks
Job name	Roehampton Gate Café and Car Park, Richmond Park
Report title	Arboricultural Impact Assessment and Draft Method Statement
File reference	20-1105-Report

	Name	**Position**	**Date**
Author	Neil Taylor	Arboricultural Consultant	July 2024

Report Contents

1 Introduction

1.1 Site Description

Roehampton Gate Café and Car Park, Richmond Park (the ''site'') is situated in the northeast corner of Richmond Park. The site currently comprises a café and cycle hire building, set within a large car park. The café and the majority of the surrounding decking was built on the existing car park, see Figure 1 below.

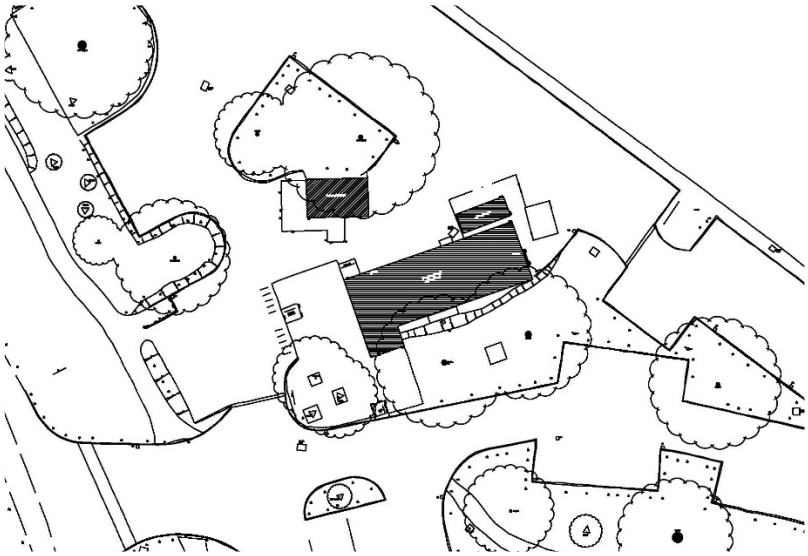


Figure 1: Extract from Topographical Survey of Café and Car Park

There are no TPOs on site. However, the site is within a conservation area.

1.2 Proposed Works

The demolition of the existing café, cycle hire building and toilet block and the construction of a replacement café and cycle hire building, along with landscape improvements to the car park are proposed.

1.3 Aims of Study

To inform a planning application, Canopy Consultancy has been commissioned by The Royal Parks to undertake a tree survey of the site, in accordance with British Standard (BS) 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".

The aim of this report is to present the results of the survey, including a Tree Survey Schedule (TSS), an Arboricultural Implications Assessment (AIA), and a draft Arboricultural Method Statement (AMS). A draft Tree Protection Plan (TPP) has also been produced and accompanies this report as a separate drawing.

This report in no way constitutes a health and safety survey report. Where concerns for tree health and safety exist, the necessary and appropriate tree inspections should be carried out.

2 Methodology

The trees were inspected from ground level by consultant arboriculturist Neil Taylor on the 16th September 2020. An addition to the survey was made on the 19th March 2024, at which time the tree survey data for the whole site was updated and an updated Tree Constraints Plan was submitted. Measurements were taken in accordance with the recommendations set out in the BS 5837:2012. Canopy spreads were measured and plotted to the four compass points. Where direct access was not possible measurements have been estimated. The surveyed trees are colour coded on the accompanying tree survey drawing according to their relevant BS category.

On the 29th April to the 2nd May 2024, exploratory trenches were carefully excavated by hand along the edge of the former car park to the north of T46 and at the location of the former footpath to the west of T46 in order to inform the RPAs of T46 and T47. The location of the trenches is shown in Figure 3 below.

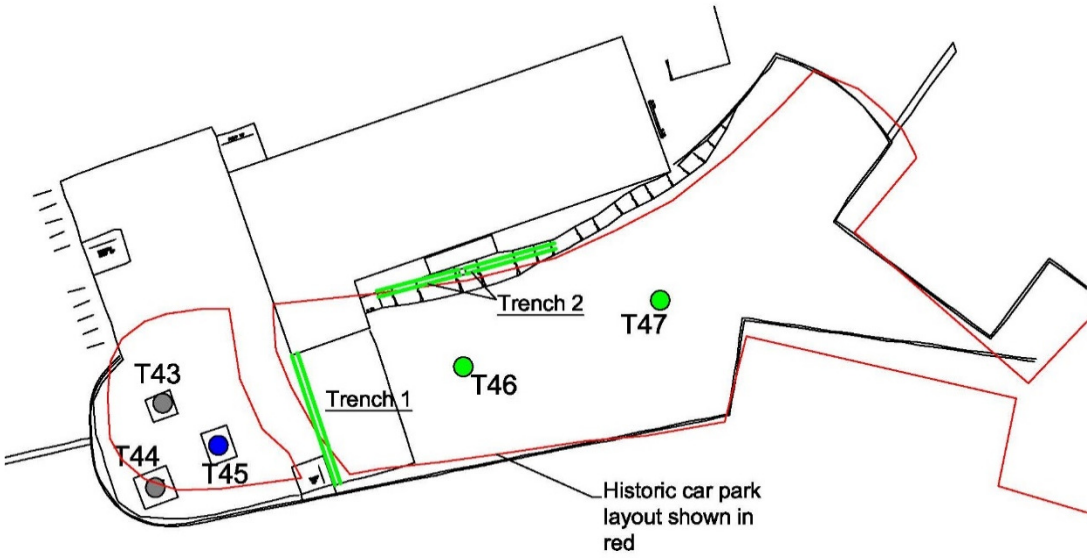


Figure 3: Trench Location Plan

3 Results

3.1 The Trees

The detailed results of the tree survey are provided in the TSS, in Appendix 1. In summary, the majority of the trees are in a good condition and provide significant amenity to the local area. The trees can be divided into three distinct character groups as follows:

1. The first character group includes the large mature trees found growing across the site. In the main, the trees in this character group are in a good condition and provide significant arboricultural amenity to the local area.

2. The second character group includes the medium sized, middle-aged trees found growing across the site. The majority of the trees in this character group are in a good condition and provide a degree of arboricultural amenity to the local area.

3. The third character group includes the smaller, young trees found growing across the site. The trees in this character group are in a good condition but due to their size are of limited amenity value to the local area.

3.2 Root Survey Results

Two exploratory trenches were excavated on the edge of the historic hard standing to the north and west of T46 and T47. Both trenches were excavated by hand to a depth of 700mm using an air spade to loosen the soil and hand tools to clear the trench.

Trench 1

Trench 1 was excavated to a depth of 700mm beneath the existing decking. The make-up of the soil removed was 'made ground' to a depth of 700mm as rubble and aggregate was found within the soil. Numerous oak roots were uncovered which originate from T45. Once identified as oak roots, they were pruned back to the edge of the trench and removed. Oak and sweet chestnut roots are similar in appearance, the difference being that oak roots have a thin, papery upper cortex and sweet chestnut roots do not. See Figure 4 below.

Figure 4: Difference between oak and sweet chestnut roots. Oak is on the right and has a thin, papery upper cortex that easily peels. Not present on sweet chestnut roots.

Figure 5: Numerous oak roots uncovered from T45 before pruning.

Figure 6: Extent of trench looking north. Fibrous roots from T45 present.

Trench 2

Attempts were made to excavate Trench 2 along the outer edge of the existing granite kerb running east to west, to the north of T46. Concrete was uncovered 200mm below the surface that appears to run the entire length of the kerb. Excavations continued closer to the café building to find the edge of the concrete, which was found approximately 1 metre to the north of the kerb. A trial hole was then excavated in order to determine the depth of concrete which was found at a depth of 700mm.

Figure 7: Uncovered concrete to the north of the kerb.

Figure 8: Depth of concrete recorded at 700mm.

3.3 Analysis

Trench 1

No significant sweet chestnut roots were uncovered. The composition of the soil removed from the trench was 'made ground', suggesting that the soil was removed to a minimum depth of 700mm at some point and replaced with a mixture of soil and rubble, likely as a subbase for the footpath or possibly before that. In removing the soil, it is likely that roots from T46 were also removed and have not grown back in the area. This could be due to historic trenching as there is an inspection chamber located in the soft landscaped area to the southwest of T46.

The RPA of T46 can therefore be adjusted to not include the area to the west of Trench 1.

Trench 2

The presence of concrete to the depth of 700mm beneath the kerb of the former car park would have resulted in the severance of any roots from T46 and T47 when the car park was built. The depth of the concrete and the conditions beneath the café building mean that the presence of roots beyond the kerb line is unlikely.

The RPA of T46 and T47 can therefore be adjusted to not include the area to the north of the kerb of the former car park.

4 Arboricultural Impact Assessment (AIA)

4.1 Methodology

The AIA uses the information obtained in the tree survey to identify areas where the proposed construction may be at odds with accepted standards, in terms of a tree's requirements for space in which to maintain existing roots and shoots, and space for future growth.

The quality and relative importance of each tree is illustrated as a coloured polygon. The colour used relates to the BS categories as follows: A - green, B - blue, C - grey and U - red (see accompanying drawing reference 20-1105-TPP.) In general, the design process will try to retain A and B category trees. Proposed construction will therefore normally be excluded from the RPA of A and B category trees. Red trees are discounted as they are recommended for removal.

Details of the trees surveyed are given in the TSS (Appendix 1). The juxtaposition of the proposed building in relation to existing tree locations and modified RPAs are shown on the accompanying TPP drawing, reference 20-1105-TPP.

4.2 Assessment

Refer to the accompanying TPP, drawing, reference 20-1105-TPP, for the relationship between the proposed development and the trees on and adjacent to the site.

- The following trees will be removed to enable the proposed development:

  T19 to enable the construction of a new access road.
  T26 to enable the construction of a new access road.
  T41 to enable the construction of a replacement cycle hire building.
  T43 to enable the construction of a replacement café.
  T44 to enable the construction of a replacement café.
  T45 to enable the construction of a replacement café.

- The CAVAT valuation of the trees to be removed is as follows:

  T19: £8,715
  T26: £734
  T41: £24,667
  T43: £1,367
  T44: £722
  T45: £8,715

Refer to the CAVAT spreadsheet in Appendix 2 for details.

- The following tree will be pruned prior to construction works taking place:

  T27 – reduce crown spread to north by 1 metre

- The following trees will be affected by the removal of the existing cycle hire building and public toilets from within the RPA:

  T42 and T151

  Both buildings are temporary and built on the existing hard surface foundation. Demolition will take place in accordance with the methodology outlined in Section 5.2 below.

- The following tree will be affected by the demolition of part of the existing café from within the RPA:

  T46

  The section of the café that is within the RPA is an extension to the café building with a suspended timber floor. Demolition will take place in accordance with the methodology outlined in Section 5.2 below.

- The following trees will be affected by the removal of the existing hard surface from within the RPA:

  T30, T34 and T42

  The hard surface will be removed in accordance with the methodology outlined in Section 5.2 below.

- The following trees will be affected by the construction of a new hard surface within the RPA:

  T30, T31, T32 and T34

As the new surfaces need to tie in with the adjacent hard surface, 'no dig' method of construction will not be feasible. However, it will be possible to keep the excavations required to allow the construction of the new hard surface to a maximum of 150mm. To minimise the impact of the excavations, they will be carried out in accordance with the methodology described in Section 5.3 below. The subbase of the new hard surface will utilise the smallest specification of Cell Web with a thickness of 75mm.

- The following trees will be affected by the construction of a replacement café and cycle hire building on the edge of the RPA:

  T34 and T42

  The building foundation line of the replacement cycle hire building is just outside of the RPA and the foundation line of the replacement café building is on the edge of the edge of the RPA. Where the new buildings are located on the existing hard surface, the presence of any roots is considered unlikely. Where the replacement cycle hire building is located on the existing soft landscape, as a precaution the foundation design will be informed by a trial trench along the line of foundation closest to T42. If roots with a diameter of greater than 25mm are uncovered, the foundation will be designed to enable their retention. Construction details and methodology can then be submitted as a condition of planning approval. Excavations along the foundation line will be carried out in accordance with the methodology outlined in Section 5.3 below.

- The following trees will be affected by installation of a swale on the edge of the RPA:

  T3 and T30

  The location of the edge of the swale will be informed by the presence of tree roots. Excavations for the swale will be carried out in accordance with the methodology outlined in Section 5.3 below.

- The following trees will be affected by the construction of new hard surface within the RPA:

  T38 and T57

The increase in level for the new hard surface means a no dig method of construction will be feasible. The new hard surface will be installed in accordance with the methodology outlined in Section 5.3 below.

- The following tree will be affected by the installation of a cycle rack with the RPA:

  T40

  The extension of the surrounding hard surface will be possible using a no dig construction method as the surrounding levels will be raised. The no dig subbase will be laid in accordance with the methodology outlined in Section 5.3 below. The posts that support the cycle rack will be installed in accordance with the methodology outlined in Section 5.3 below.

- The following trees will be affected by the installation of a new gate within the RPA:

  T57 and G9

  The gate will be located so the trees that form G9 will be avoided by the new connecting path. Excavations for the gate pillars will be carried out in accordance with the methodology outlined in Section 5.3 below.

- The following trees will be affected by the installation of new trees within the RPA:

  T30 and T34

  Excavations for the new trees will be carried out in accordance with the methodology outlined in Section 5.3 below.

- Works outside of the redline boundary that are not included in the planning application include the resurfacing of existing hard surfaces and the realignment of footpaths. All works will be carried out in accordance with BS 5837: 2012 and will be overseen by the project arboriculturist.

5 Draft Arboricultural Method Statement (AMS)

5.1 Methodology

The AMS provides the means by which retained trees and hedges can be protected throughout the development. The contractor will be issued this document at the tender stage so will be aware of the constraints it will place on the demolition and construction phases.

The movement of demolition and construction machinery in close proximity to trees may cause compaction of the soil which affects the tree's ability to absorb moisture and nutrients. The RPAs of retained trees and hedges will be protected by a tree protection barrier as described in paragraph 5.5 below and shown on the accompanying TPP, drawing, reference 20-1105-TPP.

5.2 Demolition within the RPA of Retained Trees

All tree protection measures, as illustrated on the accompanying TPP drawing, reference 20-1105-TPP, will be installed and signed off by the named arboricultural supervisor prior to the contractor arriving on site.

The removal of the existing toilet buildings will be carried out using a vehicle mounted Hiab crane. The vehicle will be parked on the existing hard surface at all times and will lift the buildings away from the tree.

The demolition of the existing cycle hire and café buildings will be carried out using a top down, pull back method with any machinery used stood on the existing hard surface at all times.

The existing hard surface within the RPA of T30, T34 and T42 will remain in situ until all other operations are complete so as to act as ground protection. When the time comes, the hard surface will be broken up and raked out of the RPA using hand operated tools only. If roots are exposed, they will be covered over with topsoil immediately.

5.3 Construction within the RPA of Retained Trees

Excavations to Reduce the Levels

Where excavations are required to reduce the level to incorporate the new hard surface, a trench will be excavated by hand along the edge of the area closest to the tree to the required depth under the supervision of an arboriculturist. Any roots with a diameter of 25mm or less will be pruned using sharp secateurs. If roots with a diameter of more than 25mm are uncovered, excavations will cease and the level of the top of the roots will be the level from which the hard surface will be installed as set out below. Once the trench has been excavated and the level

determined, the remaining soil beyond the trench can be removed by excavator with a toothless bucket to the required depth.

Excavations for Foundations of Cycle Hire Building

Where excavations are proposed for the foundations of the cycle hire building on the edge of the RPA of T42, a trial trench will be excavated by hand along the foundation line that is within a metre of the edge of the RPA under the supervision of an arboriculturist. Any roots with a diameter greater than 25mm will be recorded and a foundation designed that allows their retention. If only roots with a diameter of 25mm or less are uncovered, they will be pruned back to the edge of the trench and a traditional strip foundation utilised.

Excavations for Swales

Where excavations are proposed for swales that are within the RPA T3 and T30, they will be carried out by hand under the supervision of an arboriculturist to the required depth. If roots with a diameter of more than 25mm or more are uncovered, the edge of the swale will move away from the tree, or the depth of the swale raised so as to allow the retention of the root. Any roots with a diameter of 25mm or less will be pruned back to the edge of the hole with sharp secateurs.

Excavations for Gate and Cycle Rack Posts

Where excavations are proposed for the new gate and cycle rack posts that are within the RPA of T40, T57 and G9, they will be carried out by hand under the supervision of an arboriculturist. If roots with a diameter of more than 25mm or more are uncovered, the location of the post will be shifted to allow the retention of the root. If it is not possible to move the hole for the post, the root will be retained and protected in accordance with the specification provided in Section 5.5 and the concrete footing cast around it. Any roots with a diameter of 25mm or less will be pruned back to the edge of the hole with sharp secateurs.

Excavations for Planting New Trees and Hedging

Where excavations are required for new trees and hedging within the RPA of T49, T66, T131, T165, T168, T175 and G11, they will be carried out by hand under the supervision of a suitably qualified arboriculturist. If roots in excess of 25mm in diameter are uncovered, they will be retained within the new planting pit.

Construction of Hard Surfaces

Construction of all new hard surfaces within the RPA will incorporate the principles set out in Arboricultural Association's Guidance Note 12 and utilise a cellular confinement system, such as

cell web, as a sub-base. Construction of the self-binding gravel path within the RPA of T30, T31 and T34 will utilise a cellular confinement system such as Cell Web installed on the level lowered as detailed above. The construction of the resin bound gravel hard surface within the RPA of T38 and T40 will be constructed on top of the existing ground level and no excavations will take place to level the ground. The installation of the hard surface should proceed in the following order:

- Lay geotextile membrane over the soil and pin into place
- Lay cellular confinement system (such as Cell Web) as specified by engineer and pin into place.
- Fill the cellular confinement system with a 'no fines' aggregate to engineer's specification. Work must be carried out progressively so that any machinery used only moves on the laid surface.
- Install timber edging as specified by landscape architect.
- Lay geotextile membrane over filled cellular confinement system.
- Lay wearing course as specified by landscape architect.

Further guidance on the features of the proposed cellular confinement system is provided in the form of an extract of the Cell Web Product brochure for their cellular confinement system at Appendix 3.

No materials or spoil is to be stored within the RPA of a retained tree unless on an existing hard surface.

In order to avoid damage to the retained trees the tree surgery and felling work identified in the accompanying tree survey schedule will be carried out prior to the occupation of the site by the building contractor. The work will be carried out in accordance with BS 3998:2010.

5.4 Services

The full services plan is not available at this stage, but it is assumed that a service trench will be required alongside the new building, on the edge of the RPA of T46 and an electricity feed will be required for the new gate within the RPA of T57 and G9.

Excavations within the RPA will be carried out by hand under the supervision of a suitably qualified arboriculturist. Root with a diameter of 25mm or less will be pruned back to the edge of the trench with sharp secateurs. Any roots with a diameter of greater than 25mm will be retained and protected with damp hessian until the trench is back filled.

5.5 Tree Protection

The retained trees will be protected by the use of a tree protection barrier erected in the location shown on the accompanying TPP, reference 20-1105-TPP.

The barrier will be constructed in accordance with BS 5837:2012 and will consist of "Heras" type panels or similar on a vertical and horizontal scaffold framework, braced at a maximum interval of every three metres by vertical tubes driven securely into the ground. The tree protection barrier will be erected prior to the occupation of the site by the demolition contractor.

Root Protection

Where significant roots are uncovered that are to be retained, they will be protected immediately by wrapping damp hessian around them. In dry weather, the hessian will be kept damp until the root is covered. Additional protection in the form of plastic perforated drainpipe will then be installed around the exposed section of root by slitting the pipe lengthways to allow the pipe to be opened and placed around the root.

Ground Protection

Where specified on the accompanying TPP drawing, reference 20-1105-TPP, the ground between the tree protection barrier and the new building will be protected by geotextile fabric and side butting scaffold boards or thick plywood fit for purpose, on a compressible layer (e.g. 100mm layer of woodchip over a geotextile membrane). A single thickness of boarding will provide sufficient protection for pedestrian load. The ground protection will be left in place until the building works are complete.

5.6 Other Considerations

As well as the specialised construction techniques described above, it is a requirement of BS 5837: 2012 to consider all construction activities within the vicinity of trees. As a contractor has not been appointed yet, it is not possible to determine the solutions required. It is recommended that this information can be submitted under condition of planning approval.

5.7 Site Monitoring and Supervision

The process of reporting to the client and LPA/Tree Officer will be by emailing the draft checklist form at Appendix 4. As the contractor has not been appointed yet, the detailed schedule of works has not been produced. As such, a draft monitoring schedule has been produced at this stage to demonstrate how the project will be supervised throughout its lifespan. Once a

contractor has been appointed, the draft monitoring schedule can be finalised with more detail and timings. It can then be submitted as a condition of planning approval.

6 Conclusion

Canopy Consultancy was commissioned by The Royal Parks to carry out a tree survey at Roehampton Gate Café and Car Park. The purpose of the survey was to inform an assessment of the proposal for the replacement of the café and cycle hire buildings along with further landscape improvements

The results of the survey indicate that the majority of the trees within the survey area are in a good condition and contribute to the amenity of the wider landscape.

A total of six trees will be removed to enable the proposed development. The trees will be replaced with significant tree planting across the site and within the surrounding car parking area.

Through the specified construction methodologies and tree protection measures, it will be possible to minimise the impact of the proposed development on the retained trees.

Overall, there are no known overriding arboricultural constraints which would prevent the proposed development from going ahead, subject to the protection measures and construction methodologies specified within this report being correctly implemented.

7 Appendices

Appendix 1: Tree Survey Schedule

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

CANOPYCONSULTANCY

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T2	ash (Fraxinus excelsior)	10	860	4	4	4	4	1	2	M	Fair - Previously reduced.	Fair - Included bark present in fork.	None	Oct-20	C1
T3	oak (Quercus robur)	12	880	5	6	6	6	1	2	M	Good	Good	None	40+	A2
T4	cockspur thorn (Crataegus crus-galli)	3	100	1	2	1	2	1	2	Y	Good	Good	None	40+	C1
T5	hawthorn (Crataegus monogyna)	3	100	1	2	2	1	1	2	Y	Good	Good	None	40+	C1
T6	elm (Ulmus sp.)	8	180	1.5	2	2	2	1	2	Y	Good	Good	None	40+	C1
T7	ash (Fraxinus excelsior)	8	380	4	3	5	5	1	2	MA	Good	Good	None	40+	B2
T8	ash (Fraxinus excelsior)	8	290	1	3	4	1	1	2	MA	Fair - suppressed.	Good	None	20-40	C1
T9	oak (Quercus robur)	4	140	3	1	3	3	1	2	Y	Good	Good	None	40+	C1
T10	oak (Quercus robur)	6	190	2	3	3	4	1	2	Y	Good	Good	None	40+	C1
T11	oak (Quercus robur)	6	180	3	4	4	2	1	1	Y	Fair - Squirrel damage in crown.	Good	None	40+	C1
T12	oak (Quercus robur)	6	220	2	3	3	4	1	2	Y	Fair - Squirrel damage in crown.	Good	None	40+	C1
T13	oak (Quercus robur)	6	210	4	3	4	3	1	2	Y	Fair - Squirrel damage in crown.	Good	None	40+	C1
T14	oak (Quercus robur)	5	280	4	4	4	4	1	2	Y	Fair - Squirrel damage in crown.	Good	None	40+	C1

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T15	oak (Quercus robur)	3	50	1	1	1	1	1	1	Y	Fair - Squirrel damage in crown.	Good	None	40+	C1
T16	hawthorn (Crataegus monogyna)	3	70	1	1	1	1	1	1	Y	Good	Good	None	40+	C1
T17	elm (Ulmus sp.)	5	190	2	2	2	2	1	2	Y	Fair - Die back.	Good	None	40+	C1
T19	elm (Ulmus sp.)	7	190	2	2	2	2	1	2	Y	Good	Good	None	40+	B2
T20	elm (Ulmus sp.)	3	240	2	2	2	2	1	2	Y	Good - Topped.	Good	None	20-40	C1
T22	hawthorn (Crataegus monogyna)	3	60	1	1	1	1	1	2	Y	Good	Good	None	40+	C1
T23	hawthorn (Crataegus monogyna)	5	340	3	3	3	3	1	2	M	Good	Good	None	20-40	B2
T24	hawthorn (Crataegus monogyna)	4	100	2	2	2	2	1	2	Y	Good	Good	None	20-40	C1
T26	cockspur thorn (Crataegus crus-galli)	3	80	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T27	cockspur thorn (Crataegus crus-galli)	3	90	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T29	oak (Quercus robur)	6	190	3	3	3	3	1	2	Y	Good	Good	None	40+	B2
T30	sweet chestnut (Castania sativa)	5	910	4	4	4	4	1	2	M	Good - Previously reduced.	Good	None	20-40	B2

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

Tree No.	Species	Height (m)	Stem Dia (mm)	Canopy Spread N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T31	oak (Quercus robur)	6	210	3	3	3	3	1	2	Y	Good	Good	None	40+	B2
T32	oak (Quercus robur)	8	290	4	3	3	4	1	2	Y	Good	Good	None	40+	B2
T33	hawthorn (Crataegus monogyna)	4	60	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T34	oak (Quercus robur)	8	1400	7	7	5	6	1	2	M	Good - Previously reduced.	Fair - Cavity on stem.	None	40+	A2
T35	hawthorn (Crataegus monogyna)	3	50	1	1	1	1	1	2	Y	Good	Good	None	40+	C1
T36	hawthorn (Crataegus monogyna)	3	60	1	2	1	1	1	2	Y	Good	Good	None	40+	C1
T37	cockspur thorn (Crataegus crus-galli)	4	70	2	2	2	2	1	2	Y	Fair - Die back.	Good	None	40+	C1
T38	cockspur thorn (Crataegus crus-galli)	3	40	1	1	1	1	1	2	Y	Good	Good	None	40+	C1
T40	Norway maple (Acer platanoides)	8	470	4	4	4	4	1	2	MA	Good	Fair - minor decay present on stem	None	20-40	B2
T41	hornbeam (Carpinus betulus)	6	540	4	4	4	4	1	2	M	Fair - Low vitality.	Good	None	20-40	B3
T42	oak (Quercus robur)	8	650	5	5	6	5	1	2	M	Good	Good	None	20-40	B2
T43	cockspur thorn (Crataegus crus-galli)	4	150	2	2	2	2	1	2	MA	Good	Good	None	20-40	C1

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T44	hawthorn (Crataegus monogyna)	3	100	2	2	2	2	1	2	MA	Fair	Good	None	10-20	C1
T45	oak (Quercus robur)	7	210	4	4	4	4	1	2	MA	Good	Good	None	40+	B2
T46	sweet chestnut (Castania sativa)	4	997	5	4	4	4	2	2	V	Good	Fair	None	20-40	A3
T47	sweet chestnut (Castania sativa)	8	900	4	5	4	4	1	2	M	Good - Previously reduced.	Good	None	40+	A2
T48	hornbeam (Carpinus betulus)	8	550	5	6	5	5	1	2	M	Good	Good	None	20-40	B2
T49	oak (Quercus robur)	3	160	2	3	2	2	1	2	Y	Fair	Good	None	40+	C1
T50	hornbeam (Carpinus betulus)	7	450	5	5	5	5	1	2	M	Good	Good	None	20-40	B2
T51	hawthorn (Crataegus monogyna)	3	160	2	2	2	2	1	2	MA	Good	Good	None	20-40	C1
T52	sweet chestnut (Castania sativa)	9	1450	5	5	5	6	1	2	OM	Good - Previously reduced.	Good	None	20-40	A3
T53	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T54	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T55	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	40+	C1

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T56	ash (Fraxinus excelsior)	9	400	5	4	5	5	1	2	MA	Fair - Ivy on tree.	Stem Obscured by Ivy	None	20-40	B2
T57	oak (Quercus robur)	12	1300	5	7	5	6	1	2	M	Good	Good	None	40+	A3
T58	ash (Fraxinus excelsior)	13	620	7	6	5	6	1	2	M	Fair - Die back.	Fair - Stem divides above 1.5m.early	None	10-20	C1
T59	oak (Quercus robur)	14	640	7	6	5	6	1	2	MA	Good	Good	None	40+	A2
T60	hawthorn (Crataegus monogyna)	4	160	2	2	2	2	1	2	MA	Good	Good	None	20-40	C1
T61	hawthorn (Crataegus monogyna)	4	100	2	1	1	2	1	2	MA	Good	Good	None	20-40	C1
T62	hawthorn (Crataegus monogyna)	3	90	2	2	1	1	1	2	Y	Fair	Good	None	20-40	C1
T63	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	20-40	C1
T65	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	20-40	C1
T66	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	20-40	C1
T67	cockspur thorn (Crataegus crus-galli)	3	100	2	2	2	2	1	2	Y	Good	Good	None	20-40	C1

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

Tree No.	Species	Height (m)	Stem Dia (mm)	Canopy Spread N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T68	cockspur thorn (Crataegus crus-galli)	4	200	3	3	3	3	1	2	M	Good	Good	None	20-40	B2
T69	oak (Quercus robur)	7	200	3	4	3	3	1	2	Y	Good	Good	None	40+	B2
T70	small leaved lime (Tilia cordata)	9	410	5	5	4	5	1	2	MA	Good	Good	None	20-40	B2
T71	common lime (Tilia x europaea)	10	420	6	5	5	5	1	2	MA	Good	Good	None	20-40	B2
T74	common lime (Tilia x europaea)	16	600	6	5	5	6	1	2	M	Good - Minor deadwood in crown.	Good	None	40+	A2
T75	hawthorn (Crataegus monogyna)	4	160	2	2	2	3	1	2	M	Good	Good	None	20-40	C1
T76	small leaved lime (Tilia cordata)	8	420	4	4	4	4	1	2	MA	Good	Good	None	20-40	B2
T77	oak (Quercus robur)	8	380	5	4	4	4	1	2	MA	Good	Good	None	40+	B2
T78	beech (Fagus sylvatica)	4	600	2	2	4	4	1	3	V	Fair - Good habitat.	Poor - Decay present on stem.	None	10-20	A3
T79	oak (Quercus robur)	4	290	2	3	3	3	1	2	MA	Good - Pollard.	Good	None	40+	B2
T80	common lime (Tilia x europaea)	6	300	4	4	4	4	1	2	MA	Good	Good	None	40+	B2
T81	hawthorn (Crataegus monogyna)	4	100	2	2	2	2	1	2	Y	Poor - Low vitality.Sparse crown.	Good	None	10-20	C1
T82	common lime (Tilia x europaea)	10	520	5	4	5	5	1	2	MA	Good	Good	None	40+	B2

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

CANOPYCONSULTANCY

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T83	hawthorn (Crataegus monogyna)	4	170	2	2	2	1	2	2	MA	Fair	Good	None	10-20	C1
T84	small leaved lime (Tilia cordata)	7	310	3	3	3	3	1	2	MA	Good	Good	None	40+	B2
T85	hawthorn (Crataegus monogyna)	4	70	1	2	1	1	1	2	Y	Good	Good	None	40+	C1
T86	common lime (Tilia x europaea)	8	300	3	3	3	3	1	2	MA	Good	Good	None	40+	B2
T87	oak (Quercus robur)	7	340	5	4	4	4	1	2	MA	Good	Good	None	40+	B2
T88	oak (Quercus robur)	4	1400	1	1	1	2	1	2	V	Dead - Monolith.	Good	None	10-20	U
T89	oak (Quercus robur)	6	180	4	4	4	3	1	2	Y	Good	Good	None	40+	B2
T90	hawthorn (Crataegus monogyna)	4	90	1	1	2	1	1	2	Y	Good	Good	None	40+	C1
T91	common lime (Tilia x europaea)	6	380	4	4	4	3	1	2	MA	Good	Fair - Included bark present in fork.	None	20-40	B2
T92	common lime (Tilia x europaea)	6	320	3	3	4	4	1	2	MA	Good	Fair - Included bark present in fork.	None	20-40	B2
T93	oak (Quercus robur)	10	1240	5	5	5	5	1	2	M	Good - Previously reduced.	Fair - Decay at base.	None	40+	A3
T94	oak (Quercus robur)	7	200	3	3	3	3	1	2	MA	Good	Good	None	20-40	B2

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T95	cockspur thorn (Crataegus crus-galli)	3	200	1	1	1	2	1	2	M	Poor - Declining. Die back.	Fair - Decay present on stem.	None	10-20	C1
T96	oak (Quercus robur)	5	200	4	4	4	5	1	2	MA	Good - suppressed.	Fair - Broken branches in crown.	None	40+	B2
T97	cockspur thorn (Crataegus crus-galli)	3	90	1	1	1	1	1	2	Y	Good	Good	None	40+	C1
T100	oak (Quercus robur)	5	300	5	4	4	4	1	2	Y	Good	Good	None	40+	B2
T101	hawthorn (Crataegus monogyna)	4	160	2	2	2	2	1	2	MA	Fair - Low vitality.	Good	None	20-40	C1
T102	oak (Quercus robur)	10	530	5	7	6	7	1	2	MA	Good	Good	None	40+	A2
T103	hawthorn (Crataegus monogyna)	4	290	3	4	4	4	1	2	M	Good	Good	None	20-40	B2
T104	oak (Quercus robur)	6	310	5	5	5	5	1	2	MA	Good	Good	None	40+	B2
T105	cockspur thorn (Crataegus crus-galli)	3	90	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T106	hawthorn (Crataegus monogyna)	5	400	4	4	4	4	1	2	M	Good	Good	None	20-40	B2
T107	cockspur thorn (Crataegus crus-galli)	3	90	2	2	2	2	1	2	Y	Good	Good	None	40+	C1

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

CANOPYCONSULTANCY

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T108	cockspur thorn (Crataegus crus-galli)	3	90	2	2	2	2	1	2	Y	Good	Good	None	40+	C1
T109	hawthorn (Crataegus monogyna)	4	330	4	4	3	4	1	2	M	Good	Good	None	20-40	B2
T110	hawthorn (Crataegus monogyna)	4	170	2	2	2	2	1	2	MA	Good	Good	None	40+	C1
T111	hawthorn (Crataegus monogyna)	4	160	2	3	2	3	1	2	MA	Good	Good	None	40+	C1
T112	hawthorn (Crataegus monogyna)	2	40	1	1	1	1	1	1	Y	Good	Good	None	40+	C1
T114	beech (Fagus sylvatica)	8	220	3	3	2	2	1	2	Y	Fair - apparent drought stress	Good	None	20-40	C1
T115	oak (Quercus robur)	12	680	7	7	6	6	1	2	M	Good	Good	None	40+	B2
T116	oak (Quercus robur)	9	410	5	5	4	4	1	2	MA	Good	Good	None	40+	A2
T117	silver birch (Betula pendula)	7	200	2	3	2	2	1	3	Y	Fair - Low vitality.	Fair - Decay present on stem.	None	10-20	C1
T118	oak (Quercus robur)	9	1130	4	5	4	4	1	2	OM	Good	Good	None	40+	A3
T119	oak (Quercus robur)	11	660	6	7	7	5	1	2	M	Good	Good	None	40+	A2
T120	hawthorn (Crataegus monogyna)	4	250	2	2	3	2	1	2	M	Good	Good	None	40+	C1

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT	CANOPYCONSULTANCY
Ref:	20-1105-TSS-A		Weather	Overcast	
Date:	19.03.24		Tagged	No	
Client:	The Royal Parks				

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T121	alder (Alnus glutinosa)	5	200	2	2	2	2	1	2	Y	Good	Fair - Decay present on stem.	None	20-40	C1
T122	alder (Alnus glutinosa)	6	300	2	3	2	2	1	2	MA	Good	Good	None	40+	B2
T124	oak (Quercus robur)	15	690	6	7	5	7	1	2	M	Good	Good	None	40+	A2
T125	oak (Quercus robur)	11	1500	6	6	7	7	1	2	V	Good	Good	None	40+	A3
T126	oak (Quercus robur)	13	620	6	7	7	5	1	2	M	Good	Good	None	40+	A2
T127	oak (Quercus robur)	5	770	2	4	4	3	1	2	M	Good - Lost top.	Good	None	40+	A3
T128	oak (Quercus robur)	12	390	6	5	5	5	1	2	MA	Good	Good	None	40+	A2
T129	oak (Quercus robur)	12	640	5	7	6	7	1	2	M	Fair - Low vitality.Thinning crown.	Good	None	20-40	B2
T130	horse chestnut (Aesculus hippocastanum)	7	380	4	3	3	3	1	2	MA	Fair - Exudation on stem.Bleeding canker.	Fair - Decay present on stem	None	10-20	C1
T131	oak (Quercus robur)	12	1450	6	7	7	5	1	2	OM	Good	Good	None	40+	A3
T132	white willow (Salix alba)	5	1421	2	4	2	1	2	2	OM	Good - Pollard.	Good	None	40+	B3
T133	white willow (Salix alba)	4	650	2	1	2	2	1	2	OM	Good - Pollard.	Good	None	40+	B3
T134	white willow (Salix alba)	6	952	6	7	5	3	2	2	MA	Good	Good	None	40+	B3

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

				Canopy Spread											
Tree No.	Species	Height (m)	Stem Dia (mm)	N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T135	white willow (Salix alba)	6	891	4	8	5	4	2	2	MA	Good	Good	None	40+	B3
T136	white willow (Salix alba)	4	680	1	2	2	2	1	2	M	Good - Pollard.	Fair - failed at base, still alive	None	40+	B3
T137	white willow (Salix alba)	7	580	5	8	6	6	1	2	MA	Good	Good	None	40+	B3
T138	white willow (Salix alba)	5	1390	3	4	2	2	2	2	OM	Good - Pollard.	Good	None	40+	B3
T139	white willow (Salix alba)	7	380	4	6	5	4	1	2	MA	Good	Good	None	40+	B3
T140	white willow (Salix alba)	5	440	3	3	3	3	1	2	MA	Good - Pollard. Phoenix tree.	Good	None	40+	B3
T141	white willow (Salix alba)	6	1350	4	3	4	4	1	2	OM	Good - Pollard.	Good	None	40+	B3
T142	white willow (Salix alba)	6	940	5	10	12	0	2	0	M	Good - Pollard. Phoenix tree.	Good	None	40+	B3
T143	white willow (Salix alba)	5	1308	4	3	4	3	2	2	OM	Good - Pollard.	Good	None	40+	B3
T144	white willow (Salix alba)	7	690	4	3	3	3	1	2	OM	Good - Pollard.	Good	None	40+	B3
T146	white willow (Salix alba)	7	420	3	4	4	3	1	2	MA	Good	Good	None	40+	B3
T147	Salix alba (White Willow)	9	420	3	5	4	4	1	2	MA	Good	Good	None	40+	B2

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

Tree No.	Species	Height (m)	Stem Dia (mm)	Canopy Spread N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
T148	Fraxinus excelsior (Ash)	7	120	2	2	2	2	1	2	Y	Good	Good	None	20-40	C1
T149	Salix caprea (Goat Willow)	5	160	2	3	3	3	1	1	Y	Good	Fair - Squirrel damage in crown.	None	10-20	C1
T150	Fraxinus excelsior (Ash)	13	380	3	2	4	5	1	4	MA	Fair - early die back. Ivy on tree.	Good	None	10-20	C1
T151	Quercus robur (Common Oak)	6	1150	5	4	4	3	1	3	V	Fair - Die back.	Good	None	40+	A3
T152	Betula pendula (Silver Birch)	7	200	4	3	3	4	1	1.5	MA	Good	Good	None	20-40	B2
T153	Aesculus hippocastanum (Horse Chestnut)	10	400	6	5	4	5	1	0	MA	Good	Good	None	20-40	B2
G1	Quercus robur (Common Oak)	4	Varied							Y	Good - group of pollards	Good	None	40+	B2
G2	Crataegus monogyna (Hawthorn)	4	Varied							MA	Good - group of small trees	Good	None	40+	B2
G3	Quercus robur (Common Oak),Crataegus monogyna (Hawthorn)	5	Varied							Y	Good - group of young trees	Good	None	40+	B2
G4	Quercus robur (Common Oak)	8	Varied							MA	Good	Good	None	40+	B2

Project:	Roehampton Gate, Richmond Park	BS 5837 2012 Trees in relation to design, demolition and construction-	Surveyed by	NT
Ref:	20-1105-TSS-A		Weather	Overcast
Date:	19.03.24		Tagged	No
Client:	The Royal Parks			

Tree No.	Species	Height (m)	Stem Dia (mm)	Canopy Spread N	E	S	W	Stems	Height of crown clearance	Age class	Physiological condition problems/comments	Structural condition	Preliminary management recommendations	Estimated remaining contribution years	BS category
G5	Quercus robur (Common Oak),Crataegus monogyna (Hawthorn)	8	Varied							Y	Good - group of young trees	Good	None	40+	B2
G6	Quercus robur (Common Oak),Crataegus monogyna (Hawthorn),Fagus sylvatica (Beech),Fraxinus excelsior (Ash)	8	Varied							Y	Good - group of young trees	Good	None	40+	B2
G7	Carpinus betulus (Hornbeam),Pyrus (Pear)	10	Varied							MA	Good	Good	None	40+	B2
G8	Tilia X europaea (Common Lime)	16	Varied							MA	Good - basal growth	Good	None	40+	B2
G9	Tilia X europaea (Common Lime),Robinia pseudoacacia (Locust Tree),Fraxinus excelsior (Ash),Crataegus monogyna (Hawthorn)	18	Varied							MA	Good - line of lime and false acacia with hawthorn understorey	Good	None	40+	B2

Appendix 2: CAVAT Schedule

CAVAT Full Method Project Sheet

Spreadsheet to calculate the asset value of tree stock using the Full method

NOTES

Enter data and comments in grey boxes.

Data in white boxes are calculated automatically.

Project: Roehampton Gate Car Park

Name of Surveyor: Neil Taylor

Date: 08.07.24

CTI Factor (Please select): 125%

Unit Value Factor: £24.59

Cumulative Total: £ 43,530

Tree Information			Step 1: Base Value											BASE VALUE	Step 2: CTI *Autofills from CTI cell above*	Step 3: Visibility *Please select visibility factor*	Step 4: Attributes *Please select overall attributes factor*	LOCATION VALUE	Step 5: Primary structure completeness *Please select*	Step 6: Primary structure quality *Please select*	Step 7: Crown completeness *Please select*	Step 8: Canopy completeness *Please select*	Step 9: Crown quality *Please select*	FUNCTIONAL VALUE	Step 10: Life expectancy *Please select*	CAVAT VALUE
Tree No.	Species	Note on Location	Stem Diameter (1) (cm)	Stem Diameter (2) (cm)	Stem Diameter (3) (cm)	Stem Diameter (4) (cm)	Stem Diameter (5) (cm)	Stem Diameter (6) (cm)	Stem Diameter (7) (cm)	Stem Diameter (8) (cm)	Stem Diameter (9) (cm)	Stem Diameter (10) (cm)	Effective Stem Diameter (cm)														
41	Hornbeam		54										54.00	£56,316.54	125%	100%	0%	£70,396	51-75%	Fair	80%	61-80%	Good	£ 30,833	20 - <40 years	**£24,667**
43	Cockspur Thorn		15										15.00	£4,345.41	125%	100%	10%	£5,975	>75%	Fair	60%	41-60%	Excellent	£ 2,486	10 - <20 years	**£1,367**
44	Hawthorn		10										10.00	£1,931.29	125%	100%	0%	£2,414	>75%	Excellent	60%	61-80%	Fair	£ 1,313	10 - <20 years	**£722**
45	Oak		21										21.00	£8,517.01	125%	100%	0%	£10,646	>75%	Excellent	80%	61-80%	Good	£ 7,325	>80 years	**£7,325**
19	elm		19										19.00	£6,971.97	125%	100%	0%	£8,715	>75%	Excellent	100%	81-100%	Excellent	£ 8,715	>80 years	**£8,715**
26	cockspur thorn		8										8.00	£1,236.03	125%	100%	10%	£1,700	>75%	Good	80%	81-100%	Fair	£ 918	20 - <40 years	**£734**

Appendix 3: Extract from the Cell Web product brochure

CellWeb

Tree Root Protection System

CellWeb Tree Root Protection System provides a flexible and permeable solution for protecting tree roots while creating a strong stable surface for traffic.

With increased urbanisation and more redevelopments of existing properties, the need to be mindful of the impact on the surrounding environment is more important than ever.

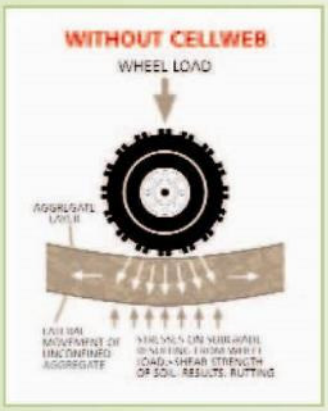
The demand for building site access, driveways and parking around existing trees can have a potentially fatal impact on the tree if carried out incorrectly. Tree preservation orders (TPO's) ensure that trees are not wilfully damaged. However the need for vehicle access over and around tree roots can still cause the following problems:

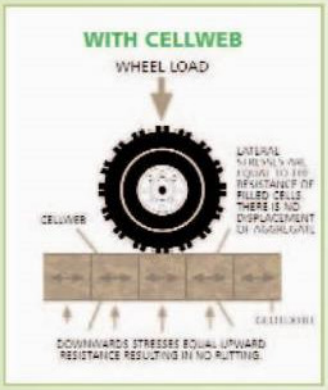
Problems:

- Compaction of subsoils (especially by construction traffic) causing oxygen and nutrient depletion
- Creating an impermeable surface that prevents water reaching the roots
- Changes in ground level and water table
- Damage caused during excavation
- Contamination of the subsoil

By using CellWeb Tree Root Protection System you can avoid these problems and ensure the tree's long-term future. BS 5837:1991 (revised 2005) and APN 1 provide information for the protection of trees during the construction process, and CellWeb is a well-established solution that conforms to these guidelines.

Product features

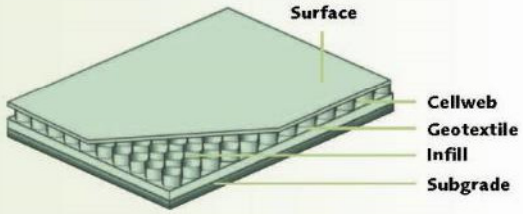




Cellweb's patented design with its unique cellular structure and perforated cell walls reduces the vertical load pressure on tree roots and prevents damage. With clean granular materials as infill, air and moisture can reach the roots to encourage healthy growth.

With no-dig solutions being the preferred option of most Arboricultural Consultants and Tree Officers, CellWeb is ideal as only the surface vegetation need be removed. As well as avoiding disruption to the roots this reduces installation time and saves money.

What's more CellWeb also cuts down the depth required for the sub base – in most cases by 50% for further cost savings. CellWeb also significantly reduces surface rutting, increasing the long-term performance of the finished surface.



Using CellWeb for tree root protection gives you these benefits:

- Reduced depth of excavation required
- Preventing the compaction of subsoils
- Preventing oxygen and nutrient depletion
- Environmentally sound
- Quick, easy and cost-effective installation
- Free technical support available

CellWeb gives you the cost-effectiveness you need at the same time as helping to preserve trees.

Geosynthetics Ltd is a leading dis

Please call
01455 617 139
or email sales@geosyn.co.uk
for further information.

Wide product range

Large stock holding

Next day delivery

Access road for the National Lake District Parks Authority.

Site before construction pictured above.

CellWeb during installation.

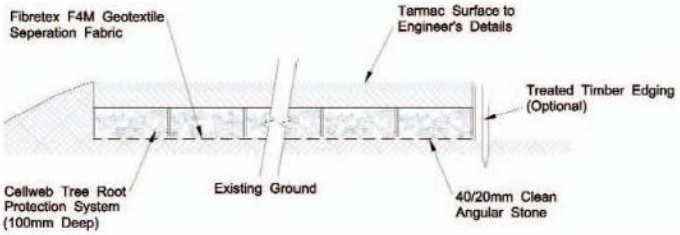
Final surfacing.

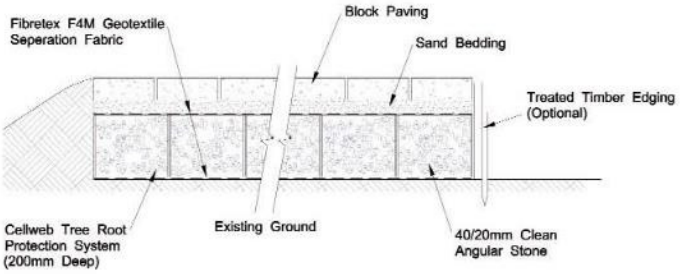
Final surfacing

The CellWeb Tree Root Protection is totally confined within the clean stone sub base, therefore you can choose whichever surface materials are most appropriate for your installation. Some materials are more suitable than others and serious consideration should be given to the porosity of the surface for continued healthy growth of the tree. An ideal surfacing are DuoBlocks: a grass reinforcement and gravel retention system. Geosynthetics can supply these systems for a visually attractive surface that also has the advantage of being fully porous.

Loose or bonded gravels can be used as an alternative hard landscaping and CellWeb can also be used with block paviors whose porous joints will permit moisture and air transfer to the roots. Where planning allows, porous asphalt is yet another possible surfacing treatment.

Call our sales office on 01455 617 139 for more information.





Appendix 4: Programme of Site Monitoring

Roehampton Gate Café and Car Park, Richmond Park
Draft Site Monitoring Form

To be completed by the named arboriculturist and emailed to the client and tree officer at the completion of each operation.

Arboriculturist……

Client……

Project Manager……

Tree Officer……

(The above to be filled in with names and contact numbers)

OPERATION	TIMING	DATE	COMMENTS
Supervision of excavation of trail trench on edge of RPA of T42	Before works commence on site		
Pre-commencement meeting or contact with project/site manager.	Before any works or pre-works on site, including storage of materials		
Spot check of tree protection measures	Before demolition begins		
Supervision of excavations for new paths within RPAs of T30, T31 and T34	During ground works		
Supervision of excavations for swale within RPA of T3 and T30	During ground works		
Supervision of excavations for posts of cycle rack within RPA of T40	During landscape works		
Supervision of excavations for posts of new gate within RPA of T57 and G9	During landscape works		

Completion of development	Once all construction activity has been completed		