Part 2: BS: 5837 Arboricultural Impact Assessment Report & 'Draft' Tree Protection Plan - East

Site:

Highgate Cemetery
Swain's Lane
Highgate
London
N6 6PJ

Prepared for:

Gustafson Porter + Bowman
1 Cobham Mews
Agar Grove
London
NW1 9SB

Prepared by:

Mr James Percy-Lancaster
Senior Arboricultural Consultant

Bartlett Project Reference:

JPL/210717/R2a – East Cemetery

BARTLETT CONSULTING
A DIVISION OF THE F.A. BARTLETT TREE EXPERT COMPANY

Consultancy Office
Unit 22-25 Cross Lane Farm
Cross Lanes, Pill
Bristol,
BS20 0JJ

T: +44 (0)1275 371 000 Option 2
E: consultancy@bartlett.com

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1.0 SCOPE OF REPORT

1.1 Instruction

1.1.1 I have previously been instructed to undertake a tree survey and compose a Tree Constraints Plan (TCP) following the guidance of British Standard 5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations, gathering data on trees and vegetation within the boundary of Highgate Cemetery - East, Swain's Lane, Highgate, London, N6 6PJ, considered to be within influencing distance of the proposed Hardscape Plan - East.

1.1.2 This report takes the previously gathered tree data and constraints, and overlays that information with the proposed Hardscape Plan - East, allowing for an evaluation of how the proposed hard standing and subterranean drainage systems will co-exist with the tree population. Where there are trees which have the potential to influence, those trees must be considered as a constraint within the project planning.

1.2 Documents & supporting information

1.2.1 I was provided with the following documentation and plans, they were sent via email in both PDF and DWG file format:

- HIG-GPB-ZZ-ZZ-L-DR-1100 – Hardscape Plan - West
- HIG-GPB-ZZ-ZZ-L-DR-1101 – Hardscape Plan - East
- HIG-GPB-ZZ-ZZ-L-DR-4100
- HIG-GPB-ZZ-ZZ-L-DR-4101
- HIG-GPB-ZZ-ZZ-L-DR-4102
- HIG-GPB-ZZ-ZZ-L-DR-4103
- J7048-MXF-XX-XX-DR-P-11000
- 389_HIG_TREES AND DRAINAGE

1.3 Aspects included within report

1.3.1 The information contained within this report follows the guidance of British Standard 5837 2012: Trees in Relation to Design, Demolition and Construction – Recommendations.

1.3.2 This Arboricultural Impact Assessment (AIA) is accompanied by a 'Draft' Tree Protection Plan (DTPP). This plan illustrates trees to be retained and incorporated into the proposed development, identifies where above and below ground level constraints are caused and gives consideration to statutory controls, as well as the potential loss of trees on and adjacent to the site. Issues also considered identify any necessity to undertake facilitation pruning to retained trees, either arising from accommodation, excessive shading or due to an unacceptable amount of encroachment upon a retained trees rooting zone.

1.3.3 The DTPP also identifies recommended locations of physical tree protection barriers, non-compacting ground protection, and site specific working methodologies.

1.3.4 Mitigation measures are also provided within this report, identifying the need for physical tree protection barriers, non-compacting ground protection, as well as tree replacement planting.

1.4 Aspects excluded from report

1.4.1 The contents of this report do not include discussions regarding subsidence and/or heave as a result of retention or tree removal, nor does this report consider the water demands of trees present to determine foundation design and depth. If required, this can be provided on request

1.4.2 Due to the vast tree population on site, the tree survey was limited to only include high and moderate valued trees, e.g. Category A and B trees, as the low valued trees: Category C were not considered to for a significant constraint, as per the guidance contained within BS: 5837 (2012).

1.0 SCOPE OF REPORT (Continued…)

1.5 Capital Asset Value for Amenity Trees (CAVAT)

1.5.1 As from March 2021, all London Boroughs including: London Borough of Camden Council have now adopted The London Plan 2021, which is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth. Ultimately The Mayor wants to increase tree canopy cover in London by 10 per cent by 2050. https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

1.5.2 The London Plan 2021, includes Policy G7 – Trees & Woodland:

A - London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.

B - In their Development Plans, boroughs should:

1) protect 'veteran' trees and ancient woodland where these are not already part of a protected site139
2) identify opportunities for tree planting in strategic locations.

C - Development proposals should ensure that, wherever possible, existing trees of value are retained.140 If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

**139 Forestry Commission/Natural England (2018): Ancient woodland and veteran trees; protecting them from development, https://www.gov.uk/guidance/planning-applicationsaffecting-trees-and-woodland*
**140 Category A, B and lesser category trees where these are considered by the local planning authority to be of importance to amenity and biodiversity, as defined by BS 5837:2012*

1.5.3 The Full Method is used in situations where a detailed and precise assessment of the value of trees as individuals is required. It is commonly used in a variety of situations, including for the calculation of compensation where trees have been destroyed or damaged, or for the quantum of new tree planting in planning cases.

1.5.4 This method involves a site inspection, conducted by an Arboricultural professional. A full record of the inspection must be retained with appropriate evidence, including photographs.

1.5.5 CAVAT is widely used to establish a replacement 'financial' value to enable realistic replacement and/ or compensation to be achieved, in this instance for the purposes of: *Management of the tree stock, to allow agreement as to adequate funding of replacement tree planting*.

1.5.6 The current Unit Value Factor (UVF) is updated annually and is a financial figure (GBP £'s), is built into the CAVAT calculator on the spreadsheet and is currently set at £24.59 as of March 27th 2023.

1.5.7 Please refer to the Capital Asset Value for Amenity Trees – Full Method for further information: https://www.ltoa.org.uk/resources/cavat

1.5.8 For further information regarding the CAVAT value of trees scheduled for removal as part of this project, please refer to Table 4 and Appendix 4 for details.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION

2.1 Description of the proposed development

2.1.0 From the information provided to me and listed in Section 1.2 above, it is my understanding that the following aspects of proposed Hardscape Plan - East which influence, or are influenced by the existing trees are:

1. Removal of existing hard standing footpaths throughout the site
2. Construction of PAV01 - Primary Path (approx. depth 1200 mm)
3. Construction of PAV02 - Secondary Path (approx. depth 1200 mm)
4. Construction of PAV03 - Tertiary Path (approx. depth of 350 mm)
5. Construction of PAV04 – Entrance Granite Setts
6. Construction of PAV05 – Entrance Yorkstone Setts
7. Construction of PAV06 – Entrance Self Binding Gravel
8. Excavations associated with new drainage systems
9. Construction of soakaways & attenuation tank

2.2 Table 1: Implications of proposed development upon existing tree population

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T294	Ash (*Fraxinus excelsior*)	B1	N/A	N/A	N/A	N/A	• No issues.
T295	Bird Cherry *(Prunus padus)*	B1	N/A	N/A	N/A	N/A	• No issues.
T296	Holm Oak *(Quercus ilex)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 23% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T297	English Yew *(Taxus baccata)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 15% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T298	Bird Cherry *(Prunus padus)*	B1	N/A	N/A	N/A	N/A	• No issues.
T299	Bird Cherry *(Prunus padus)*	B1	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T300	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T301	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T302	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T303	Goat Willow *(Salix caprea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 8% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T304	Norway Spruce *(Picea abies)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T305	Ash *(Fraxinus excelsior)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 20% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T306	Pedunculate Oak *(Quercus robur)*	A1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T307	Turkey Oak *(Quercus cerris)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 8% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T308	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T309	Hornbeam *(Carpinus betulus)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 17% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T310	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T311	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 20% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T312	Turkey Oak *(Quercus cerris)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 46% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T313	Horse Chestnut *(Aesculus hippocastanum)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 34% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Construction of Gardeners Building occurring beyond calculated RPA.
T314	Hornbeam *(Carpinus betulus)*	B1	✓	N/A	N/A	N/A	• Removal of existing hard standing within approx. 5% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Construction of Gardeners Building occurring beyond calculated RPA, within crown spread.
T315	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T316	Field Maple *(Acer campestre)*	B2	N/A	N/A	N/A	N/A	• No issues.
T317	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	N/A	• No issues.
T318	Horse Chestnut *(Aesculus hippocastanum)*	B2	N/A	N/A	N/A	N/A	• No issues.
T319	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	N/A	• No issues.
T320	Holly *(Ilex aquifolium)*	B1	N/A	N/A	N/A	N/A	• No issues.
T321	Hawthorn *(Crataegus monogyna)*	B1	N/A	N/A	N/A	✓	• Removal of existing soft standing within approx. 27% of calculated RPA. • Excavations associated with pressurised piped surface water drainage. • Construction of Soakaway, approx. 1200 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T322	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Access route for construction traffic associated with the installation of soakaway.
T323	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Access route for construction traffic associated with the installation of soakaway.
T324	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 17% of calculated RPA. • Excavations associated with pressurised piped surface water drainage. • Excavations associated with pressurised piped foul water. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Access route for construction traffic associated with the installation of soakaway.
T325	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing soft landscape within approx. 16% of calculated RPA. • Excavations associated with pressurised piped surface water drainage. • Construction of Soakaway, approx. 1200 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T326	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing soft landscape within approx. 9% of calculated RPA. • Excavations associated with pressurised piped surface water drainage. • Construction of Soakaway, approx. 1200 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T327	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T328	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T329	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T330	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
TG331	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T332	Cypress species *(Chamaecyparis sp.)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 1% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T333	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 12% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T334	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T335	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 16% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T336	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	N/A	• No issues.
T337	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T338	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T339	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T340	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 9% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T341	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T342	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T343	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T344	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T345	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T346	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 16% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T347	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 10% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T348	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T349	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T350	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
TG351	2x Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 13% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth
TG352	12x Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T353	Sycamore *(Acer pseudoplatanus)*	A1	N/A	N/A	N/A	N/A	• No issues.
T354	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 11% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T355	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T356	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T357	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T358	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T359	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T360	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T361	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T362	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 10% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T363	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 19% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T364	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 8% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T365	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T366	Holm Oak *(Quercus ilex)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 13% of calculated RPA. • Construction of Soakaway, approx. 1200 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T367	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T368	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T369	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T370	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T371	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 10% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T372	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T373	Dogwood *(Cornus sanguinea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T374	Dogwood *(Cornus sanguinea)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T375	Dogwood *(Cornus sanguinea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T376	Silver Birch *(Betula pendula)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 15% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T377	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T378	Dogwood *(Cornus sanguinea)*	B2	N/A	N/A	N/A	N/A	• No issues.
T379	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 20% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T380	Dogwood *(Cornus sanguinea)*	B1	N/A	N/A	N/A	N/A	• No issues.
T381	Field Maple *(Acer campestre)*	B2	N/A	N/A	N/A	N/A	• No issues.
T382	Holly *(Ilex aquifolium)*	B1	N/A	N/A	N/A	N/A	• No issues.
T383	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 22% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T384	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T385	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T386	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 5% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T387	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T388	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 5% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T389	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 13% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T390	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T391	Mongolian Lime *(Tilia mongolica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 20% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T392	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 13% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T393	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T394	Sycamore *(Acer pseudoplatanus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T395	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T396	Mongolian Lime *(Tilia mongolica)*	B2	N/A	N/A	N/A	N/A	• No issues.
T397	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T398	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 8% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T399	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 5% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T400	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T401	Mongolian Lime *(Tilia mongolica)*	B2	N/A	N/A	N/A	N/A	• No issues.
T402	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 12% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T403	Cypress species *(Chamaecyparis sp.)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 11% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T404	Cypress species *(Chamaecyparis sp.)*	B2	N/A	N/A	N/A	N/A	• No issues.
T405	Norway Maple *(Acer platanoides)*	B2	N/A	N/A	N/A	N/A	• No issues.
T406	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. •

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T407	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T408	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 13% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T409	Turkey Oak *(Quercus cerris)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 25% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T410	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	N/A	• No issues.
T411	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 9% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T412	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T413	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 12% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T414	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T415	Hornbeam *(Carpinus betulus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T416	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T417	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 12% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T418	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 14% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T419	Holly *(Ilex aquifolium)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 15% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T420	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 13% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T421	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T422	Bay *(Laurus nobilis)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T423	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T424	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 14% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T425	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T426	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 5% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T427	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 10% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T428	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T429	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T430	Holly *(Ilex aquifolium)*	B1	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 7% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T431	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T432	English Yew *(Taxus baccata)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 14% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T433	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T434	Field Maple *(Acer campestre)*	B2	N/A	N/A	N/A	N/A	• No issues.
T435	Hawthorn *(Crataegus monogyna)*	B2	N/A	N/A	N/A	N/A	• No issues.
T436	Field Maple *(Acer campestre)*	B2	N/A	N/A	N/A	N/A	• No issues.
T437	Field Maple *(Acer campestre)*	B2	N/A	N/A	N/A	N/A	• No issues.
T438	Tibetian Cherry *(Prunus serrula)*	B2	N/A	N/A	N/A	N/A	• No issues.
T439	Lawson Cypress *(Chamaecyparis lawsoniana)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T440	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.
T441	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T442	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T443	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T444	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T445	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 8% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T446	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 22% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T447	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 18% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T448	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T449	Common Lime *(Tilia x europaea)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 22% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T450	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 33% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T451	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 39% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T452	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T453	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T454	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 2% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T455	Bird Cherry *(Prunus padus)*	B2	N/A	N/A	N/A	N/A	• No issues.
T456	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T457	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 12% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T458	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 17% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T459	Norway Maple *(Acer platanoides)*	B2	N/A	N/A	N/A	N/A	• No issues.
T460	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T461	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 3% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T462	Turkey Oak *(Quercus cerris)*	B2	N/A	N/A	N/A	N/A	• No issues.
T463	Horse Chestnut *(Aesculus hippocastanum)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 17% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T464	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
TG465	3x Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 9% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T466	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 6% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T467	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T468	London Plane *(Platanus x hispanica)*	B2	N/A	N/A	N/A	N/A	• No issues.
T469	Goat Willow *(Salix caprea)*	B2	N/A	N/A	N/A	N/A	• No issues.
TG470	3x Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 27% of calculated RPA. • Excavations associated with Piped Surface Water Drainage, approx. 500 mm depth. • Construction of PAV01 – Primary Path, approx. 1200 mm depth.
T471	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 11% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV02 – Secondary Path, approx. 1200 mm depth.
T472	Ash *(Fraxinus excelsior))*	B2	N/A	N/A	N/A	N/A	• No issues.
T473	Horse Chestnut *(Aesculus hippocastanum)*	A2	N/A	N/A	N/A	N/A	• No issues.
T474	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 15% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T475	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T476	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 5% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.
T477	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	✓	• Removal of existing hard standing within approx. 4% of calculated RPA. • Excavations associated with Gravel Subbase & French Drain, approx. 350 mm depth. • Construction of PAV03 – Tertiary Path, approx. 350 mm depth.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.2 Table 1: Implications of proposed development upon existing tree population (Continued…)

Tree Ref.	Species	Category	Removal due to		Mitigation Required		Aspect of Development affecting retained tree
			Works	Condition	Crown	RPA	
T478	Pedunculate Oak *(Quercus robur)*	B2	N/A	N/A	N/A	N/A	• No issues.
T479	Common Yew *(Taxus baccata)*	A2	N/A	N/A	N/A	N/A	• No issues.
T480	Ash *(Fraxinus excelsior)*	B2	N/A	N/A	N/A	N/A	• No issues.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts

Tree Ref	Species	Category	Mitigation Required
T296	Holm Oak *(Quercus ilex)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 23%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T297	English Yew *(Taxus baccata)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 15%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level, • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T302	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T303	Goat Willow *(Salix caprea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 8%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T304	Norway Spruce *(Picea abies)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T305	Ash *(Fraxinus excelsior)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 20%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T306	Pedunculate Oak *(Quercus robur)*	A1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts

Tree Ref	Species	Category	Mitigation Required
T307	Turkey Oak *(Quercus cerris)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 8%) to be completed using mini excavator and hand tools.to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T309	Hornbeam *(Carpinus betulus)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 17%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T310	Hornbeam *(Carpinus betulus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T311	Hornbeam *(Carpinus betulus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 20%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T312	Turkey Oak *(Quercus cerris)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 46%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T313	Horse Chestnut *(Aesculus hippocastanum)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 34%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T320	Holly *(Ilex aquifolium)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T321	Hawthorn *(Crataegus monogyna)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 27%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T322	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Installation of non-compacting Ground Protection, as per Tree Protection plan (East).
T323	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Installation of non-compacting Ground Protection, as per Tree Protection plan (East).
T324	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Installation of non-compacting Ground Protection, as per Tree Protection plan (East). • Removal of existing areas of hard standing (approx. 17%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped foul water drainage.
T325	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T328	Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T332	Cypress species *(Chamaecyparis sp.)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 1%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T333	Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 12%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T334	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T335	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 16%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T336	Holly *(Ilex aquifolium)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T337	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T338	Sycamore *(Acer pseudoplatanus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T339	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T340	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 9%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T343	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T345	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T346	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 16%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T347	Holly *(Ilex aquifolium)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 10%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T348	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
TG351	2x Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 13%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
TG352	12x Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T353	Sycamore *(Acer pseudoplatanus)*	A1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T354	Sycamore *(Acer pseudoplatanus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 11%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T355	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T358	Sycamore *(Acer pseudoplatanus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T359	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T360	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T361	Holly *(Ilex aquifolium)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T362	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 10%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T363	Hornbeam *(Carpinus betulus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 19%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T364	Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 8%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T366	Holm Oak *(Quercus ilex)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 13%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T369	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T370	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T371	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 10%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T373	Dogwood *(Cornus sanguinea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T376	Silver Birch *(Betula pendula)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 15%) to be completed using mini excavator to subbase level and hand tools. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T377	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T378	Dogwood *(Cornus sanguinea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T379	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 20%) to be completed using mini excavator to subbase level and hand tools. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T383	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 22%) to be completed using mini excavator to subbase level and hand tools. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T384	Sycamore *(Acer pseudoplatanus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T385	Sycamore *(Acer pseudoplatanus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T386	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 5%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T387	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T388	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 5%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T389	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 13%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T390	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T391	Mongolian Lime *(Tilia mongolica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 20%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T392	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 13%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T393	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 2%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T394	Sycamore *(Acer pseudoplatanus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 2%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T395	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T396	Mongolian Lime *(Tilia mongolica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T397	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T398	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 8%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T399	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 5%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T402	Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 12%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T403	Cypress species *(Chamaecyparis sp.)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 11%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T404	Cypress species *(Chamaecyparis sp.)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T406	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T407	Holly *(Ilex aquifolium)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 2%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T408	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 13%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T409	Turkey Oak *(Quercus cerris)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 25%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T410	Holly *(Ilex aquifolium)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T411	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 9%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T412	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T413	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 12%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T414	Hornbeam *(Carpinus betulus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T415	Hornbeam *(Carpinus betulus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T417	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 12%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T418	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 14%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T419	Holly *(Ilex aquifolium)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 15%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T420	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 13%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T421	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T423	Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T424	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 14%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T425	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T426	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 5%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T427	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 10%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T430	Holly *(Ilex aquifolium)*	B1	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 7%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T431	London Plane *(Platanus x hispanica)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T432	English Yew *(Taxus baccata)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 14%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T434	Field Maple *(Acer campestre)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T435	Hawthorn *(Crataegus monogyna)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T438	Tibetian Cherry *(Prunus serrula)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T439	Lawson Cypress *(Chamaecyparis lawsoniana)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 2%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T441	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T442	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T443	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T445	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 8%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T446	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 22%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T447	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 18%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T449	Common Lime *(Tilia x europaea)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 22%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T450	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 33%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T451	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 39%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
T454	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 2%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T455	Bird Cherry *(Prunus padus)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T456	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T457	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 12%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T458	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 17%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T460	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T461	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 3%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T463	Horse Chestnut *(Aesculus hippocastanum)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 17%) to be completed using mini excavator and hand tools to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T464	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.3 Table 2: Mitigation measures required for proposed development & existing tree conflicts (Continued…)

Tree Ref	Species	Category	Mitigation Required
TG465	3x Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 9%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T466	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 6%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
TG470	3x Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 27%) to be completed using mini excavator to subbase level. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of piped surface water drainage at approx. 500 mm below ground level and proposed construction of PAV01 – Primary Path at approx. 1200 mm below ground level.
T471	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 11%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV02 – Secondary Path at approx. 1200 mm below ground level.
T473	Horse Chestnut *(Aesculus hippocastanum)*	A2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T474	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 15%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T475	Pedunculate Oak *(Quercus robur)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).
T476	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 5%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T477	Ash *(Fraxinus excelsior)*	B2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East). • Removal of existing areas of hard standing (approx. 4%) to be completed using hand tools only. • Tree root investigations works to determine root morphology within footpath and determine feasibility of installation of gravel subbase & French Drain at approx. 350 mm below ground level and proposed construction of PAV03 – Tertiary Path at approx. 350 mm below ground level.
T479	Common Yew *(Taxus baccata)*	A2	• Erection of robust tree protection barriers, as per Tree Protection Plan (East).

2.0 IMPLICATIONS OF PROPOSED DEVELOPMENT UPON EXISTING TREE POPULATION (Continued…)

2.4 Table 3: Tree work

Tree Ref	Species	Category	Schedule of works prior to erection of tree protection barriers
T314	Hornbeam *(Carpinus betulus)*	B1	• Remove.

2.5 Table 4: CAVAT Assessment

2.5.1 For the CAVAT Full Method Project spreadsheet, please refer to Appendix 4 for further information.

Tree Ref	Species	DBH	CTI	Visibility	Attributes	Primary Structure Completeness	Primary Structure Quality	Crown Completeness	Canopy Completeness	Crown Quality	Life Expectancy	CAVAT VALUE
T314	Hornbeam *(Carpinus betulus)*	15 cm 10 cm	200%	100%	20%	>75%	Good	80%	81-100%	Good	20-40 years	£5965

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT

3.1 Tree loss

3.1.1 The proposed Hardscape Plan - East seeks to remove a single tree: T314 – Hornbeam, to facilitate the construction of the Gardeners Building.

3.1.2 If the removal of any further trees are deemed necessary, the anticipated tree loss associated with this project will be effectively mitigated for with appropriate tree replacement planting, throughout the site.

3.2 General Comments

3.2.1 The proposed Hardscape Plan - East seeks to improve the footpath surfacing whilst also addressing the issue of surface water drainage, water retention and distribution across the site. The proposals include several types of footpaths, namely: PAV01 – Primary Path, PAV02 – Secondary Path, and finally PAV03 - Tertiary Path.

3.2.2 Each path type will be constructed where possible, with a corresponding drainage system, these include a soakaway to a depth of 1200 millimetres, piped surface water drain at a depth of 500 millimetres and French Drains to a depth of 350 millimetres below ground level. Please refer to supporting documentation supplied by Gustafson, Porter + Bowman for further technical details.

3.2.3 Whilst evaluating the potential impact of each path type upon each of the surveyed high and moderate valued trees, I have identified that the removal of existing hard standing will impact many trees on site. With more still for the excavations associated with the path type and corresponding drainage systems, as many of the surveyed trees are found growing within influencing distance of all existing footpaths on site.

3.2.4 Please note that the calculated Root Protection Area (RPA) for each surveyed tree has been represented as the 'default' circle, as per the guidance contained within the industry document: *BS: 5837 (2012) Trees in relation to design, demolition and construction – Recommendations* (BS: 5837).

3.2.5 Whilst I appreciate that the root distribution and morphology for many trees on site will be significantly constrained by the presence of individual graves, monuments, structures and paths, it would be near impossible to guestimate the precise root distribution for each tree on site without carrying out onerous on-site investigations on a tree by tree basis.

3.2.6 By adopting the 'default circle' for each retained tree's calculated RPA, we will ensure the minimum rooting area of each tree will be carefully considered during all demolition and construction activities associated with this project.

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT (Continued…)

3.3 Guidance For Excavating with Calculated Root Protection Areas

3.3.1 The term; Root Protection Area (RPA) first came into existence within the *British Standard 5837 (2005) Trees in relation to construction – Recommendations* and then within its updated form *BS 5837 (2012) Trees in relation to, design, demolition and construction – Recommendations*. The British Standard describes the RPA as:

"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 is treated as a priority".

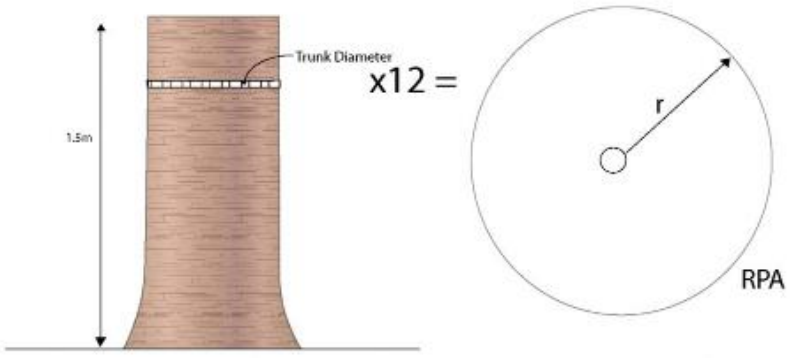


Figure 1: Illustration of method used to measuring a tree to calculate a Root Protection Area.

3.3.2 BS: 5837 (2012) classifies tree roots as two distinct categories described below:

Significant roots: are those which measure a diameter greater than 25 millimetres, and also include bundles and masses of smaller diameter roots.

Insignificant roots: are those which measure a diameter less than 25 millimetres.

3.3.3 Whilst referencing BS: 5837 (2012), *Clause 7.2: Avoiding physical damage to tree roots during demolition and construction*, recommendations include the following:

- 7.2.1 Other than for piling, existing ground levels in RPAs should not be disturbed. However, limited manual excavation might be acceptable if it is done carefully, using hand-held tools and preferably by compressed air soil displacement, subject to justification.

- 7.2.2 Exposed roots should be protected to prevent desiccation and temperature changes, and the excavation backfilled as soon as possible after the protection has been removed.

- 7.2.3 Individual roots and clumps of less than 25mm width can be pruned without further consultation, if necessary, making a clean cut. Roots and clumps greater than 25mm in width should only be cut if agreed by the supervising arboriculturist.

- 7.2.4 Backfill around retained roots should be with topsoil or uncompacted sharp sand, or other loose inert granular fill.

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT (Continued…)

3.3 Guidance For Excavating with Calculated Root Protection Areas (Continued…)

3.3.4 The guiding document for the National Joint Utilities Group (NJUG) *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2 (2007)*, provides guidance and working methods for different zones surrounding a tree;

- *Prohibited Zone (1 metre from the trunk)*
- *Precautionary Zone (4 x the tree circumference)*
- *Permitted Zone (outside of the Precautionary Zone)*

3.3.5 Whilst referencing Volume 4 (superseding NJUG 10): Section 4.1 (How to avoid damage to trees – Below ground) recommendations include the following:

"4.1.3 Realignment: Whenever possible apparatus should always be diverted or re-aligned outside the Prohibited or Precautionary Zones. Under no circumstances can machinery be used to excavate open trenches within the Prohibited Zone. Where works are required for the laying or maintenance of any apparatus within the Prohibited or Precautionary Zones there are various techniques available to minimise damage. Acceptable techniques in order of preference are;

a) Trenchless: Wherever possible trenchless techniques should be used. The launch and reception pits should be located outside the Prohibited or Precautionary Zones. In order to avoid damage to roots by percussive boring techniques it is recommended that the depth of run should be below 600mm. Techniques involving external lubrication of the equipment with materials other than water (e.g. oil, bentonite, etc.) must not be used when working within the Prohibited Zone. Lubricating materials other than water may be used within the Precautionary Zone following consultation and by agreement.

b) Broken Trench – Hand-dug: This technique combines hand dug trench sections with trenchless techniques if excavation is unavoidable. Excavation should be limited to where there is clear access around and below the roots. The trench is excavated by hand with precautions taken as for continuous trenching as in (c) below. Open sections of the trench should only be long enough to allow access for linking to the next section. The length of sections will be determined by local conditions, especially soil texture and cohesiveness, as well as the practical needs for access. In all cases the open sections should be kept as short as possible and outside of the Prohibited Zone.

c) Continuous Trench – Hand-dug: The use of this method must be considered only as a last resort if works are to be undertaken by agreement within the Prohibited Zone. The objective being to retain as many undamaged roots as possible."

3.3.6 Due to the extent of hardscaping and resurfacing of all existing footpaths throughout the site, option a) *Trenchless* would simply be viewed as prohibitively expensive, whilst option c) *Continuous Trench* would be too disruptive to the day to day operations and public access throughout the site.

3.3.7 Option *b) Brocken Trench* would therefore be the most appropriate method of working, striking a balance between practical construction methods and usability and functionality of a working cemetery.

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT (Continued…)

3.3 Guidance For Excavating with Calculated Root Protection Areas (Continued…)

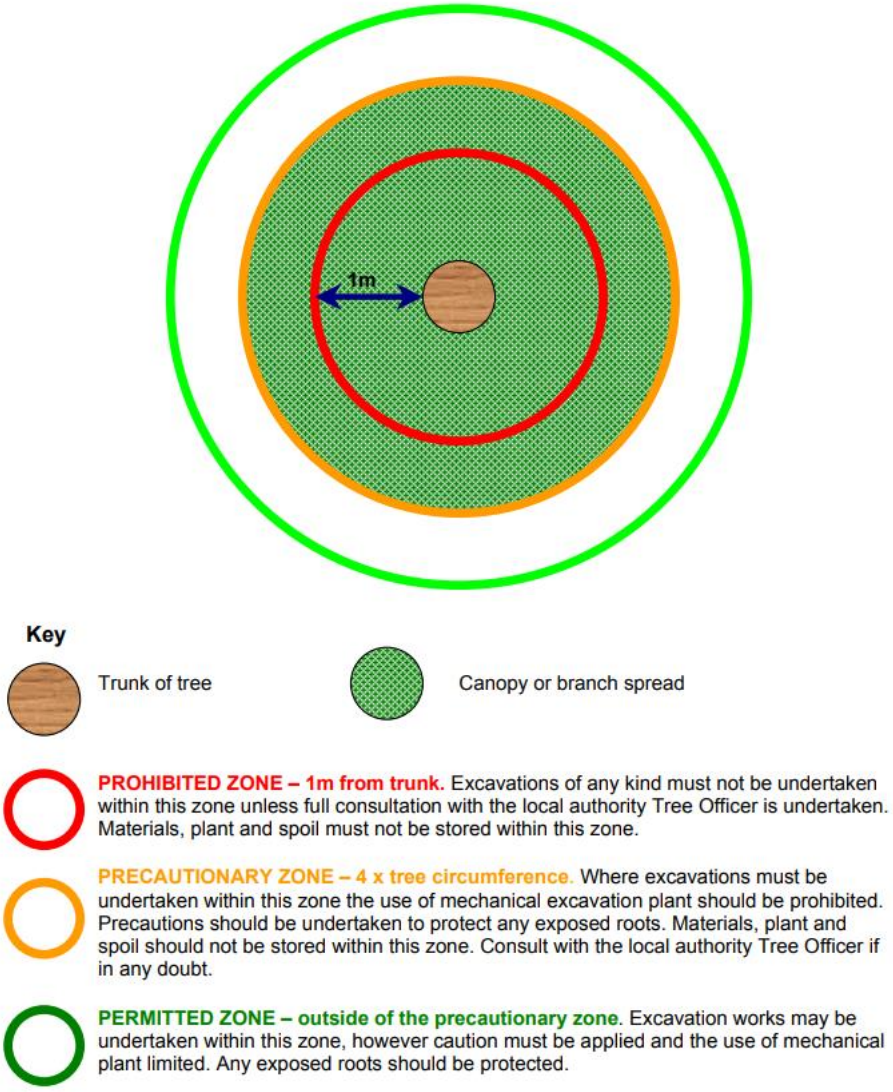


Figure 2: Tree Protection Zone as defined by the NJUG Volume 4 guiding document.

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT (Continued…)

3.4 Conclusions For Excavating within Calculated Root Protection Areas

3.4.1 Excavate using Air Spade in combination with hand tools including by not limited to spade, shovel, fork, mattock and hand trowel. Note: Do not excavate with plant machinery beyond subbase.

3.4.2 As and when employing hand tools, avoid causing accidental damage to the bark of the expose tree root by using a fork to loosen the soil and assist in locating any substantial tree roots.

3.4.3 By using smaller tool such as a hand trowel and brush it is possible to clear the soil away from tree roots without causing physical damage to the bark or exposed tree roots.

3.4.4 Carefully remove all excavated material from the working are without causing further disturbance to the local rooting environment.

3.4.5 Where masses of smaller fibrous roots are encountered, manipulate to reposition either temporarily or permanently beyond the are being excavated without causing damage.

3.4.6 Where deemed necessary cut exposed roots, severance must be conducted cleanly using sterilised hand tools, such as secateurs, loppers and/or hand saw approximately 150 millimetres beyond the cut face of the excavation.

3.4.7 All exposed tree roots to be retained must be protected from direct sunlight, desiccation, and from the extremes of temperature, by covering them with wetted hessian sheets and/or ground boards over the excavated trench.

3.4.8 As necessary, insignificant tree roots with a measured diameter less than 25 millimetres can be severed using sterilised hand tools without consulting the Project Arboriculturist.

3.4.9 Default position it to retain significant tree roots with and measured diameter of 25 millimetres and greater, including masses of smaller diameter tree roots where possible. Tree root severance will only be agreed by the Project Arboriculturist.

3.5 Discussion of Direct Impacts

3.5.1 The existing formal tarmacadam surfaced footpaths throughout the site can be removed using an appropriately sized mini-excavator, strictly employing a ‘pull-back’ technique, working backward atop of the existing hard standing. Mechanical excavations must only be employed to remove hard standing to a level to effectively expose the subbase grade. Thereafter all remaining excavations must only be implemented using: an Air Spade in the first instance, augmented by hand tools; including by not limited to spade, shovel, fork, mattock and hand trowel.

3.5.2 Similarly to above, all other existing informal loose gravel and woodchip footpaths throughout the site must also be excavated by an Air Spade in the first instance, augmented by hand tools, conducted in a manner to ensure tree root retention.

3.5.3 If however an Air Spade is deemed inappropriate to employ, due to ground conditions or access, then all excavations must then default back to hand tools; including by not limited to spade, shovel, fork, mattock and hand trowel, ensuing that the bark and wood of significant tree roots is not damaged.

3.5.4 As many sections of the existing footpaths scheduled to be resurfaced with their respective drainage solutions run either partially or fully through the calculated RPA’s of high and moderate valued trees (Category A & B trees), it will be essential particularly in the areas of anticipated encroachment to conduct tree root investigation trenching to ascertain tree root morphology and conduct a feasibility assessment to the practicality of the proposed drainage system to be employed on a tree by tree basis.

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT (Continued…)

3.5 Discussion of Direct Impacts (Continued…)

3.5.5 If significant tree roots are encountered and cause a significant constraint to the construction of the footpath and installation of the drainage system, realignment will be considered in the first instance. This will allow for the installation of the drainage system whilst allowing for tree root retention.

3.5.6 However, if realignment is not practically possible further options for footpath type and drainage solutions must give considerations to but not limited to, alternative depth and diameter of the proposed drainage pipe, alteration to its position within new path, depth and dimensions of the proposed soakaway.

3.5.7 If however, tree root severance of significant tree roots is deemed necessary, they must be protected from desiccation and the Project Arboriculturalist must be consulted in the first instance.

3.5.8 Following the tree root investigation trenching exercise, the following tree data shall be captured, specimen identification (host tree number), diameter of root, depth of root present below ground level and direction of growth (cardinal point). This data shall inform the feasibility of the proposed footpath and associated drainage solution for tree in turn

3.5.9 The Project Arboriculturalist's consultation shall consider the tree roots encountered, calculate the extent of root loss resulting from severance, consider the tree species tolerance to root severance, and ultimately determine if the tree will remain viable for retention or structurally and/or physiologically compromised as a result of root pruning.

3.5.10 If insignificant tree roots are encountered, severance can be conducted without consulting the Project Arboriculturalist. All root pruning must be conducted in full accordance with BS: 5837 (2012) with clean and sterile hand tools, including but not limited to secateurs, loppers and hand saws. It is vital that all hand tools used are cleaned and effectively sterilized after each use to limit the transmission of any possible diseases associated with the host trees.

3.5.11 As mentioned above, trees which would have otherwise been graded as low value; Category C trees have not been included within the initial tree survey for this project, as the population would be vast as many of them are Common Ash species, which are likely to succumb to a premature demise from the Ash Dieback disease which is spreading uncontrollably through Highgate Cemetery.

3.5.12 In instances where the excavations for the various footpath type conflict with a low valued, Category C trees, retention/removal of the specimen will be considered on a tree by tree basis, with retention and an engineering solution being the favoured option.

3.5.13 Please note that tree removal will always be regarded as a last resort.

3.0 SUMMARY OF IMPLICATIONS ASSESSMENT (Continued…)

3.6 Discussion of Indirect Impacts

3.6.1 All site traffic and plant machinery associated with the Hardscape Plan - East shall enter the site from Swain's Lane and Chester Road, and utilise all existing footpaths and existing areas of hard standing.

3.6.2 All excavated material arising from works with the existing formal footpaths surface with tarmacadam can be loaded on a trailer and removed from the working area as required by plant machinery as the risk of causing soil compaction is greatly reduced by the existing areas of hard standing.

3.6.3 All excavated material arising from works with the existing informal footpaths surface with gravel and woodchip must only be removed from the working area by hand, employing wheelbarrows etc. to minimise the risk of causing soil compaction and irreparable damage to the retained trees rooting medium.

3.6.4 Free space on any development site comes at a premium, and Highgate Cemetery is no different. The East Cemetery does not feature any large areas not already populated by graves or monuments, but it does benefit from several existing formal footpaths. Various sections of the formal footpaths may be employed during these works without causing an obstruction to staff or visitors.

3.6.5 Excavated material from the informal paths can be temporarily stored adjacent to the working areas, providing that non-compacting ground protection is provided in advance. Areas for storage must be carefully chosen to ensure that damage is not incurred and that they are not positioned abutting a retained high or moderate valued tree (Category A and B).

3.7 Infrastructure requirements

3.7.1 Following the completion of the tree root investigations, the Project Arboriculturalist shall provide professional advice on whether its possible/practical and what method of surface water drainage system shall be employed.

3.7.2 Proposed service runs shall be designed with full consideration to the guidance and recommendations of National Joint Utilities Guidelines No.10 – Volume 04: *Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* and avoid the calculated RPA of all retained high or moderate valued (Category A and B) trees in all circumstances, in the first instance.

3.7.3 If services are proposed through a densely populated RPA of any retained tree, thrust boring techniques should be considered to install the surface water drainage services beneath the trees rooting zone. These matters will be detailed in the Arboricultural Method Statement.

3.8 Erection of tree protection barriers and laying of non-compacting ground protection

3.8.1 In order to safeguard the retained high or moderate valued (Category A and B) trees on site, it will be necessary to erect tree protective barriers prior to the commencement of works on site and to ensure that they remain in-situ for the duration of the works in that area, unless otherwise directed.

3.8.2 Due to the anticipated constraints caused by the high and moderate valued trees, graves, listed monuments and structures, the arising material associated with the proposed excavations will also necessitate the installation of non-compacting ground protection.

3.8.3 In circumstance where arisings from the informal paths are created, temporary non-compacting ground protection shall be required and placed in areas which do not cause damage to trees, resulting in causing soil compaction and do not damage any local grave or listed monument etc…

APPENDIX 1LIMITATIONS OF REPORT

Limitations of the Arboricultural Implications Assessment

- This assessment is based upon information obtained from the BS: 5837 Tree Survey.
- All dimensions and measurement are based upon previously obtained data the BS: 5837 Tree Survey and from drawings provided to Bartlett Consulting.
- This assessment considers the possible implications to the proposed built structures. Suggestions from an arboricultural perspective may be provided outlining an alternative site layout. Such suggestions must be considered by the project Architect/Designer/or Engineer before implementing any suggestions.

Data on which the assessment is based

- Validity, accuracy and findings of the report are directed by the accuracy of information provided to Bartlett Consulting at the time of conducting the tree survey and during report writing.
- Checking of independent data/information will not be undertaken, with particular reference given to scaled maps and drawings provided to Bartlett Consulting

Validation of the assessment

- The assessment considerations/findings in this report remain valid for a period of one year, from the date of issuance.
- Such considerations/findings will become invalid if any building works are undertaken, soil levels altered, or any unsolicited tree works undertaken.
- If any alterations to the existing building structures, or soil levels, or if any unsolicited tree works have been completed, it is the recommendation of Bartlett Consulting that a new BS: 5837 Tree Survey/report is undertaken to reflect these changes.

Tree in relation to other properties

- This assessment only considers the trees in relation to the site and the proposed structures within it, as identified.
- The assessment does not comment upon trees in relation to structures beyond the boundaries of the site as identified (third party properties).
- Consideration of potential impact upon neighbouring built structures may be provided if pertinent, in the instances where boundary tree planting is proposed/required.
- Damage to, or potential damage to, any other built structures that is not referred to within this report are not considered, unless otherwise stated. This includes both neighbouring structures as well as any other structure on the site.

Trees in relation to subsidence, heave and direct damage

- This report does not deal with matters concerning subsidence or heave to any existing built structure on or neighbouring the site. It may be prudent to consider the effects of heave on any built structure if trees are to be removed.
- Similarly, the issue of direct damage (physical damage caused by tree roots) is not dealt with in this report.

Tree subject to statutory controls

- Whilst Bartlett Consulting has made attempts to ascertain if any of the trees subject to this report are 'protected', their status is always subject to change. Therefore the final responsibility for checking statutory protection for trees rests with the employed contractor and not with Bartlett Consulting
- Any prescribed tree works to a protected tree are provided due to perceived hazard and risk, and should be considered acceptable by the Local Planning Authority (LPA). However appropriate notification must still be provided to the LPA as they may take an alternative point of view.

Trees are subject to environmental factors

- The statements, findings and preliminary recommendations made within this report do not take into account any effects of extreme climate and weather incidences, vandalism, changes in the natural and built environment around the tree(s) after the date of this report, nor any damage whether physical, chemical or otherwise.

Copyright

- All rights in this report are reserved. The contents and format are for the exclusive use of the addressee in dealing with the site. It may not be sold, lent, hired or divulged to any third party not directly involved in this site without the written consent of Bartlett Consulting.

APPENDIX 2REPORT REFERENCES

As a progressive company, we keep abreast of research data relating to Arboriculture. All observations, recommendations and works are based on current industry standard reference material and a selection of pertinent items is shown below.

This survey and report has evolved from industry material including the following:

- BS 5837: (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations*
- BS 3998: (2010) *Tree Works - Recommendations*
- Town & Country Planning Act (Tree Preservation) (England) Regulations 2012
- Town & Country Planning Act (As amended) 1990
- Mattheck, C, Bethge K, Weber K. (2015) *The Body Language of Trees – Encyclopaedia of Visual Tree Assessment* Karlsruhe Institute of Technology Campus North.
- National Joint Utilities Group (2007) *Publication Volume 4: Issue 2 Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.*
- National House Building Council Standard, Part 4.2 – *Building Near Trees*
- Neilan, C, & London Tree Officers Association (2017) CAVAT – Capital Asset Value for Amenity Trees.
- Greater London Authority: *The London Plan 2021*, *The Spatial Development Strategy For Greater London*, March 2021.

Bartlett Consulting's arboricultural expertise has been used to interpret these references for practical application to the site and the trees which are the subject of this report, and to provide the most appropriate advice and guidance at this stage of project planning.

APPENDIX 3TREE PROTECTION PLANNING

The draft Tree Protection Plan (DTPP) referenced JPL/210717/DTPPa can be found as an appendix at the end of this report. The TPP has been prepared in accordance with Section 7.1 of British Standard 5837:2012.

Either tree protective fencing or ground protection will be required to safe-guard the trees against damage which may be sustained throughout redevelopment of the site, and this plan is indicative of the anticipated locations and/or zone of tree protection measures. The TPP has also been annotated to show indicative locations where, from an Arboricultural perspective, there is free space for the various demolition and construction requirements as well as site huts, outside of the zone of influence for tree protection & preservation.

The TPP has been drafted at this early stage to inform the client and landowners of these requirements, as well as illustrate how the tree protection measures and tree constraints may influence the free space around the site once development commences.

Vertical Barriers: physical protection measures for the retained trees, which will ensure that the designated RPA becomes an exclusion zone during any stage of development. Fencing will prevent machinery, men, materials, and other site activities from occurring within the RPA or damaging the tree crown.

Vertical barriers should be fit for the purpose of excluding construction activities, and appropriate to the degree and proximity of the site operations. A final specification will be provided once the layout has been finalised and agreed by all parties. An illustration has been included below for reference however.

The vertical barriers shall completely exclude access during all phases of site operations. The protected areas shall not be used for the storage of materials or spoil, nor for the mixing of substances or the disposal of any residues. Materials, equipment and arising debris will not be stacked against the vertical barrier, even temporarily. A4 sized Notice Signs must be laminated and attached to the vertical barrier at regular intervals so all visitors and operatives are aware of the tree protection requirements.

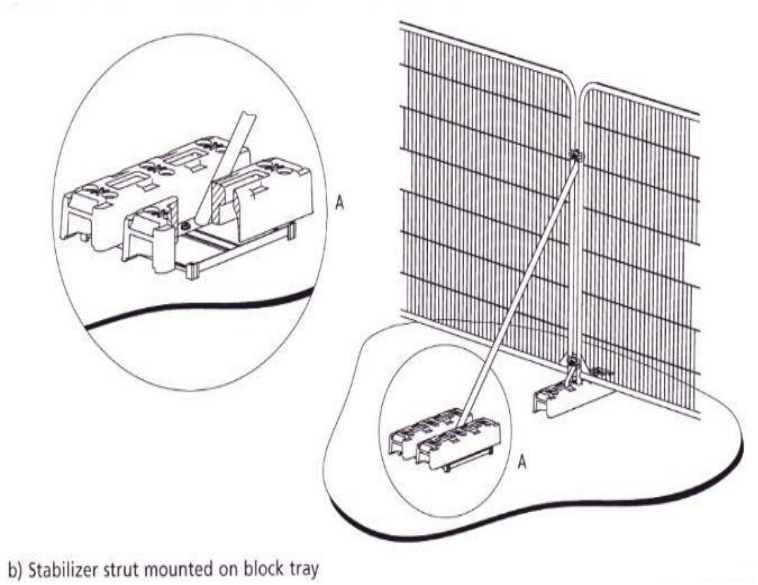


Figure 3: Illustration of Vertical Tree Protection Barrier

APPENDIX 3TREE PROTECTION PLANNING (Continued…)

Ground Protection: non-compacting ground protection will be required where excavated material arisings need to be temporarily stored within the calculated RPA's of retained trees. Ground protection must be retained on site until there is no risk of any damage from construction works.

Given the nature of the works and temporary requirement for non-compacting ground protections, heavy duty ground protection mats would be considered a suitable solution. A reference illustration can be found below.

No mixing of cement or other chemicals must take place atop the ground protection, nor should any storage of oils, fuels, chemicals or cement take place atop the ground protection.

Figure 4: Illustration of Ground Protection within Root Protection Areas

● Once erected, both barriers and types of tree protection will be sacrosanct, and must not be moved or adjusted during any stage of site operations without the prior written consent of the London Borough of Camden Council and Bartlett Consultancy.

APPENDIX 4CAVAT – PROJECT ASSESSMENT SPREADSHEET

CAVAT Full Method Project Sheet

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

NOTES

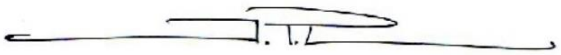
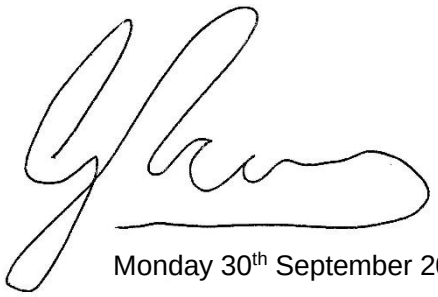
Enter data and comments in grey boxes.

Data in white boxes are calculated automatically.

Project:	HIGHGATE CEMETERY	CTI Factor (Please select):	200%
Name of Surveyor:	MR JAMES PERCY-LANCASTER	Unit Value Factor:	£24.59
Date:	26th SEPTEMBER 2024	Cumulative Total:	£ 5,965

Tree Information			Step 1: Base Value											BASE VALUE	Step 2: CTI	Step 3: Visibility	Step 4: Attributes	LOCATION VALUE	Step 5: Primary structure completeness	Step 6: Primary structure quality	Step 7: Crown completeness	Step 8: Canopy completeness	Step 9: Crown quality	FUNCTIONAL VALUE	Step 10: Life expectancy	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)		Autofills from CTI cell above	Please select visibility factor	Please select overall attributes factor		Please select	Please select	Please select	Please select	Please select		Please select	
314	Hornbeam	East Cemetery	15	10									18.03	£6,276.71	200%	75%	20%	£11,238	>75%	Good	80%	81-100%	Good	£ 7,457	20 - <40 years	**£5,965**

I trust that the contents and recommendations contained within this report were informative, easy to understand and helpful to you, with regards to managing your tree. Should you have any further questions or concerns, please do not hesitate to contact us again.

REPORT CLASSIFICATION:	BS: 5837 Arboricultural Implications Assessment & Draft Tree Protection Plan
REPORT STATUS:	Final
REPORT COMPLETED BY:	Mr James Percy-Lancaster **Senior Arboricultural Consultant**
SIGNATURE:	
DATE:	Thursday 26th September 2024
REPORT REVIEWED BY:	Mr G Davies *FdSc Arb MArborA* **Senior Arboricultural Consultant**
SIGNATURE:	
DATE:	Monday 30th September 2024

Bartlett Consulting

Bartlett Tree Experts Ltd. Unit 2D Kallos Building Coopers Place
Combe Lane, Wormley, Surrey GU8 5SY
E: consultancy@bartlettuk.com W: bartletttree.co.uk

DRAFT TREE PROTECTION PLAN EAST

SCALE : 1 : 1250 @ A3

DATE : 07/10/2024

MAP FILENAME : JPL/210717/DTPPa - HIGHGATE CEMETERY

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LEGEND

- PAV07 - Raised Timber Boardwalk
- PAV06 - Entrance Self Binding Gravel
- PAV05 - Entrance Yorkstone Setts
- PAV04 - Entrance Granite Setts
- PAV03 - Tertiary Path
- PAV02 - Secondary Path
- PAV01 - Primary Path
- Tree Root Investigation Works
- Gardeners Compound
- Tree Protection Barriers
- Retained Tree
- Removed Tree