EUSTON TOWER

Tree Survey & Arboricultural

Assessment

December 2024





SJ Stephens Associates

ARBORICULTURAL, LANDSCAPE & MANAGEMENT CONSULTANTS

Savernake Barn Stokke Common Great Bedwyn Marlborough Wiltshire SN8 3LL Tel: 01672 871 862 www.sjstephens.co.uk e: info@sjstephens.co.uk

<u>Arboricultural Impact</u> Assessment

- Tree Survey
- Tree Protection Plan
- Arboricultural Method Statement

For:-

Euston Tower Planning Application

<u>At:-</u>

Euston Tower 286 Euston Road London NW1 3DP

On behalf of:-

British Land Property Management Limited c/o Gardiner & Theobald LLP 10 South Crescent London WC1E 7BD

Prepared by:

Simon Stephens MA Oxon, Dip Arb(RFS), MArborA, C Env. MICFor Email: <u>simon@sjstephens.co.uk</u>

Survey Date: Report Date: Project no: 6th September 2024 18th November 2024 1993

CONTENTS

- 1 BACKGROUND
- 2 SURVEY DETAILS AND SCOPE
- **3 SURVEY LIMITATIONS**
- 4 LEGAL PROTECTION OF TREES
- 5 PRELIMINARY ARBORICULTURAL METHOD STATEMENT
- 6 ARBORICULTURAL IMPACT ASSESSMENT
- 7 REFERENCES

Appendices

- A Preliminary Tree Protection Plan: drawing no: 1993-02revE
- B Tree Schedule
- C BS 5837:2012 Trees in relation to design, demolition and construction, Table 1
- D Tree Protection Fencing Detail
- E Site photos
- F Proposed Tree Plan
- G Greengrid Trunk Protecta
- H Existing Basement

1 BACKGROUND

- **1.1** This Arboricultural Impact Assessment has been prepared in support of an application at Euston Tower, 286 Euston Road, London, NW1 3DP. Details of the proposal are included in section 5.1.1 below.
- **1.2** This Arboricultural Impact Assessment summarises the revisions made to the pending strategic application for Full Planning Permission (ref. 23/5240/P), submitted in December 2023 for the Proposed Development at Euston Tower (286 Euston Road) London.
- **1.3** The Applicant has undertaken extensive consultation during both the pre-application and determination stages of the Proposed Development and has sought to respond positively to the responses received. The scheme has been revised in response to feedback from Officers, local stakeholders and residents, the Regents Park Conservation Area Advisory Committee and statutory consultees, including Historic England and The Greater London Authority.
- **1.4** This document has been prepared detailing the revisions to the pending scheme (the "Proposed Development"). For the avoidance of doubt, the Arboricultural Impact Assessment, dated 29-11-2023, which accompanied the December 2023 Submission is now replaced by this Arboricultural Impact Assessment, which also clarifies and provides further details

responding to consultation responses received since the original submission in December 2023.

- **1.5** Trees were surveyed originally surveyed in October 2022 and then re-surveyed in September 2024, with findings of both surveys shown in the Tree Schedule in Appendix B and plotted on the Tree Protection Plan in Appendix A. This also shows tree protection measures, which are specified in the Arboricultural Method Statement in section 5 below. The arboricultural impact is assessed in section 6, which assumes that these measures are followed.
- **1.6** The tree survey was undertaken, and this report has been prepared, by Simon Stephens MA Oxon, Dip Arb (RFS), MArborA, C Env, MICFor a Registered Consultant with the Arboricultural Association, with over 20 years relevant experience.
- **1.7** This survey and report have been prepared in accordance with the recommendations of BS 5837:2012, Trees in relation to design, demolition and construction Recommendations.
- **1.8** Documentation supplied:
 - Topographical Survey
 - SJ Stephens Associates, Tree Constraints Plan, drawing no:1993-01
 - SJ Stephens Associates, Arboricultural Impact Assessment, dated 29-11-2023
 - DSDHA, Proposed General Arrangement Plan: drawing no 364-20.001
 - DSDHA, Proposed Public Realm Tree Plan: drawing no 364-20.005
 - 3XN, Existing Basement plan, drawing no ET-DR-A-00099
 - 3XN, Proposed Basement plan, drawing no ET-DR-A-20099revP2

2 SURVEY DETAILS AND SCOPE

- **2.1** The site survey included trees and shrubs, within and immediately adjacent to the red line boundary, with a stem diameter over 75mm at 1.5m height, as shown located on the Tree Protection Plan, included as Appendix A.
- **2.2** Tree inspection took place from ground level with the use of binoculars, sounding hammer and metal probe using the Visual Tree Assessment method (Mattheck & Breloer 1994). The

presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could increase the risk of structural failure were noted.

- **2.3** Tree diameters were measured using a girthing tape and tree heights were measured using a hypsometer.
- **2.4** At the time of the survey on 06-09-2024, the weather was wet but with no restrictions to visibility. Broadleaf trees were in leaf. There were no limitations to access around the trees.
- **2.5** The suitability of trees for inclusion in the future development was considered, in particular considering the safe useful life expectancy, and sustainability, of trees on the site after development is completed.
- **2.6** Tree details are shown on the Tree Protection Plan included at Appendix A. Tree locations have been taken from the topographical survey provided. Where not included on the topographical survey, they have been determined by measuring distances from features shown on the plan, using a laser measuring device. The following information was recorded for each tree, and is shown in the Tree Schedule included as Appendix B:
 - Number: an identity number for each tree, prefixed with a "T", which cross references locations shown on the plan with the schedule in Appendix B. Where a number of trees are located close together and are similar in character and management requirements, they have been treated as a Group under a single number, prefixed with a "G".
 - **Species**: common name.
 - **Tree height**: approximate height in metres.
 - **Stem diameter**: diameter in millimetres, taken at 1.5m above ground. Where there are a number of stems, stem diameters are recorded in the condition column.
 - **Branch spread**: approximate spread in metres to N,S,E and W of the trunk. The approximate branch spread is drawn on the plan.
 - **Canopy clearance**: approximate height of the canopy above ground. Where a significant, low lateral branch is present, its height and direction of growth is included in the Condition column.
 - **Age class**: Young, Semi-mature, Early mature, Mature, Over-mature, Veteran.
 - **Condition**: features that affect the safe useful life expectancy and amenity of the tree, including the presence of decay or any physical defect.
 - **Management Recommendations**: recommendations to ensure the health and safety of the tree, within the future development.
 - Estimated Remaining Contribution: <10 years, 5-15 years, 10-20 years, 15-30 years, 20-40 years, >40 years.
 - **Category grading**: tree classification taken from BS 5837:2012, Trees in relation to design, demolition and construction (see Appendix C for details), as follows:
 - Category U: Unsuitable for retention, trees with less than 10 years life expectancy, normally recommended for removal (Red)
 - Category A: high quality trees, able to make a substantial contribution for at least 40 years, normally retained unless there is

an over-riding reason for removal and appropriate mitigation. (Green)

- Category B: moderate quality trees, able to make a significant contribution for at least 20 years, normally retained. (Blue)
- Category B/C: an intermediate category between categories B and C (not specifically described in BS5837:2012). Trees, which should be retained wherever possible, providing retention does not unreasonably constrain the layout. (Cyan)
- Category C: low quality, in adequate condition to remain for at least 10 years, or young trees <150mm stem diameter. Trees which can be removed to allow the desired layout or new planting. (Grey)

For category A, B and C trees, a subcategory has been allocated, providing information on the reasons for selection of a specific category, as follows:

- Subcategory 1: mainly arboricultural values.
- Subcategory 2: mainly landscape values.
- Subcategory 3: mainly cultural values, including conservation.
- Trees have been classified irrespective of the possible proximity to future construction. The BS 5837 category is colour coded, as indicated above, on the plan included as Appendix A.
- **Protection Distance:** the protection distance in metres required to provide the Root Protection Area recommended in BS 5837, assuming a circular area centred on the tree.
- Root Protection Area (RPA): the area in m², as recommended in BS 5837, to provide sufficient rooting area to ensure tree survival and which, in most situations, should be fenced off to prevent root damage from construction activities.

3 SURVEY LIMITATIONS

- **3.1** No internal decay devices, or other invasive tools to assess tree condition, were used.
- **3.2** No soil excavation or root inspection was carried out.
- **3.3** This survey, undertaken during September 2024, has not considered the effect that trees or vegetation may have on the structural integrity of future building through subsidence or heave.
- **3.4** The tree survey, undertaken during September 2024, has been undertaken for planning purposes. Although any obvious structural defects have been noted, a Tree Hazard Assessment has not been carried out. Mature trees close to highly populated areas or public highways should normally be checked for safety annually, by a suitably qualified person.

4 LEGAL PROTECTION OF TREES

4.1 The site is not within a Conservation Area and there are no Tree Preservation Orders.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Site Overview

- 5.1.1 The proposal is for the redevelopment of Euston Tower comprising retention of parts of the existing building (including central core, basement and foundations) and erection of a new building incorporating these retained elements, to provide a 32-storey mixed-use building providing offices and research and development floorspace (Class E(g)) and office, retail, café and restaurant space (Class E) and learning and community space (Class F) at ground and first and second floors, and associated external terraces; public realm enhancements, including new landscaping and provision of new publicly accessible steps and ramp; short and long stay cycle storage; servicing; refuse storage; plant and other ancillary and associated work.
- 5.1.2 The proposed site plan is included as Appendix F and key details, including the extent of the basement, have been added to the survey drawing, along with tree details, to create the Tree Protection Plan attached as Appendix A. The proposed basement follows the line of the existing basement adjacent to T11 and T19, where the existing basement retaining walls will be retained. The Root Protection Areas of T11 and T19 are shown as polygons avoiding the existing basements.
- 5.1.3 The existing landscaping within the square is a temporary scheme by Townshend Landscape Architects. The square features large, planted seating platforms with low perennial planting. 14 existing trees sit below grade in suspended tree pits. As can be seen in the photos in Appendix Ei), when surveyed in early September 2024 these trees had all shed a high proportion of their leaves, in contrast to adjacent plane trees growing in the ground. This suggests these trees are beginning to lose vigour due to having exhausted available soil volume and nutrients. Although these trees are still providing good amenity value in a prominent location, so given a "B" BS5837 classification grade, their live expectancy is given as only 10-20 years.
- 5.1.4 North of the tower, Brock Street features a linear arrangement of plane trees planted in suspended pits, between which are a series of basement vents, wood benches, and cycle stands. These trees (T20-T26) are growing in the narrow passage between the buildings. As can be seen in the photos in Appendix Eiv), they are growing well but are in a constrained location and have a limited life expectancy. They provide character and shade, however must be removed to construct the new basement, but will be replaced with new landscaping.

- 5.1.5 Alongside Euston Road there are three London plane, which are all being retained: T9 is a mature tree which is leaning over the road but showing good vigour, T8 is a younger tree showing more symmetric form and T11 is a wide spreading tree without a leading shoot but showing good vigour.
- 5.1.6 There are three raised beds (G10, G17 and G18), each containing semi-mature trees planted at close spacing on a rectangular grid and regularly pruned to create a rectangular block shaped feature. Although these are an attractive feature at present, the rooting area is limited. These raised beds will be removed and replaced with new landscaping.
- 5.1.7 There is good quality semi-mature London plane (T16) developing well in a prominent position at the corner of Euston Road and Hampstead Road. Other trees at this location are of mixed quality. These trees (T12, T13, T14, T15 and T16), which are all outside the site, will all need to be removed for construction access, but will be replaced by new planting. A CAVAT tree valuation has been prepared for these 5 trees, which needs to be agreed with TfL, and a contribution secured by S.106 Agreement
- 5.1.8 Photos of trees are included in Appendix E.

5.2 Tree Work

- 5.2.1 Details of proposed tree works are included in the Tree Schedule included as Appendix B.
- 5.2.2 19 trees and 3 tree groups are proposed for removal, as detailed in section 6.1 below.
- 5.2.3 All tree work must be undertaken to the standards set out in BS 3998:2010 Tree work Recommendations.

5.3 Root Protection Areas

- 5.3.1 Root Protection Areas are shown for all trees in the tree schedule included as Appendix B. They are also shown for all retained trees, as circular areas centred on the trunk, on the Tree Protection Plan included as Appendix A. Where there are physical obstructions to root growth the Root Protection Area should be shown as an equivalent area that is more likely to reflect actual root growth. However, in this site the majority of trees are surrounded by hard surfacing on all sides making it impossible to accurately predict the root spread.
- 5.3.2 The Root Protection Area shows the area around a tree in which all construction activity must normally be excluded, unless appropriate protection measures are implemented.

5.3.3 For tree numbers T11 and T19, where the existing basements within the Root Protection Areas will have prevented root growth, the Root Protection Areas have been shown as polygons of equivalent area, to more closely reflect the likely actual root spread.

5.4 Tree Protection Fencing

- 5.4.1 Tree Protection Fencing must be erected where shown on the Tree Protection Plan, included as Appendix A. This will provide full protection of the Root Protection Areas of all retained trees.
- 5.4.2 Tree works can be completed before Tree Protection Fencing is erected, however no contractors plant or vehicles must be allowed to track within the Root Protection Areas unless hard surfacing is present or ground protection panels are laid.
- 5.4.3 Tree Protection Fencing must be from weldmesh panels, at least 2m high, securely fixed, with wire or scaffold clamps, to a rigid framework. This framework must be constructed from scaffold tubes with vertical tubes, at a maximum interval of 3m and driven into the ground at least 0.6m. The structure must be well braced to resist impacts, constructed as per Figure 2 of BS5837:2012, which is reproduced in Appendix D.
- 5.4.4 Tree Protection Fencing can be substituted with timber hoarding, provided of solid timber construction and at least 2m in height. Where within Root Protection Areas, hoarding should be supported by ballast boxes.
- 5.4.5 Tree Protection Fencing must be maintained and retained for the duration of the works, or until such time as agreed in writing with the Local Planning Authority.
- 5.4.6 Weatherproof notices must be fixed to the Tree Protection Fencing, and maintained, stating:-

TREE PROTECTION AREA KEEP OUT

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS CONTRAVENTION MAY LEAD TO CRIMINAL PROSECUTION THE FOLLOWING MUST BE OBSERVED BY ALL PERSONS:

- The Protection Fence must not be moved
- No person or machine must enter the area
- No materials or spoil must be deposited
 - No excavation must be permitted

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

5.5 Ground Protection Areas

- 5.5.1 Although the Ground Protection Areas, shown shaded cyan on the Tree Protection Plan, are outside the site, it is likely that existing services within the Root Protection Area will be replaced, requiring excavation within the Root Protection Areas.
- 5.5.2 Within the Ground Protection Areas, removal of existing hard surfacing can be carried out mechanically providing a banksman is in attendance at all times to ensure this ceases as soon as soil is reached or if any tree roots are seen. All further excavation must be undertaken by hand, retaining all roots over 25mm in diameter and as many fibrous roots as possible. Either hand tools or an air spade can be used. The services must then be threaded between any roots, before backfilling the trench with the excavated soil. If the location of roots makes this impossible, the retained arboricultural consultant must inspect and advise. The trench must be left open for as short a time as possible, with any exposed roots covered with hessian to prevent desiccation or frosting.
- 5.5.3 While any construction work is undertaken within the Ground Protection Areas, the stems of T11 and T19 must be protected by a Trunk Protecta, as supplied by Green Grid Systems (see <u>www.greengridsystems.com</u> and Appendix G.
- 5.5.4 If any of the existing paving within the Ground Protection Area is to be replaced, the existing sub-base must remain in place and the new surfacing must be permeable.

5.6 General measures

- 5.6.1 No construction activity whatsoever, including routing of underground services, storage of materials or on-site parking, must be allowed within the site within Root Protection Areas, other than that specifically described above.
- 5.6.2 No mixing or storage of cement, concrete, oil, fuel, bitumen or other chemicals must be permitted within 10m of the trunk of any retained trees, nor in any position where the slope of the ground could lead to contamination of the Root Protection Area.
- 5.6.3 Fires must not be lit in a position where their flames could extend to within 10m of foliage, branches or trunk.
- 5.6.4 Landscape works carried out within Root Protection Areas must be undertaken with great care so as not to damage shallow roots. Tractor mounted rotovators or other heavy mechanical cultivation must not be used within the Root Protection Areas.
- 5.6.5 If any tree shown for retention is removed, uprooted or destroyed, another tree must be planted in the same location, at a size and species to be agreed in writing with the Local Planning Authority.

5.6.6 A copy of this report and the Tree Protection Plan must be kept on site and must be fully understood by the Site Agent.

5.7 Bat roosts

5.7.1 The current legislation makes it a criminal offence to disturb, damage or destroy any bat roost or hibernation area. Contractors must be reminded of their responsibilities and should contact the relevant authorities if any signs of bats are found.

5.8 Birds

5.8.1 The current legislation makes it a criminal offence to disturb nesting birds. The nesting season is generally assumed to be from 1st March to 31st July, however this can vary depending on species and location. During these months a careful inspection must be made before work commences and works must be postponed if active nests are found.

5.9 Arboricultural Supervision

- 5.9.1 A qualified Arboricultural Consultant must be retained during the period of construction to carry out the following:
 - to inspect Tree Protection Fencing/Site Hoarding, prior to construction or demolition starting on site.
 - to visit site regularly throughout the main construction period, particularly if any excavation is required to replace services within the Root Protection Area of T19.
 - as necessary, to advise on any issues at the request of the local planning authority, the developer, architect or contractor.

The details of each site visit must be recorded using a site visit proforma, with copies circulated to the contractor, developer and the local authority Tree Officer within 3 working days of the visit.

6 ARBORICULTURAL IMPACT ASSESSMENT

- **6.1** The following trees / tree groups, categorized as per BS 5837 (see Appendix C for details), are proposed for removal:
 - Category C low quality
 - T13 a low quality, semi-mature leaning London plane
 - Category B-C between categories B and C
 - T14 a 5.5m leaning, semi-mature London plane
 - Category B moderate quality:
 - T1, T2, T3, T4, T5, T6, T7 7no semi mature London plane, between 11.5 and 12m in height, growing in suspended tree pits so reducing life expectancy.
 - G10, G17 and G18 26 semi-mature lime trees, between 5 and 7m in height, growing at close spacing in raised beds.
 - T12 a 4m leaning, semi-mature London plane
 - T15 a 4m early mature cherry
 - T20, T21, T22, T23, T24, T25 and T26 -7no semi mature London plane, between 11.5 and 12m in height, growing in suspended tree pits so reducing life expectancy..
 - Category A good quality:
 - T16 an 11m semi-mature London plane
- **6.2** Although 17 good or moderate quality, well established trees will be removed, the majority are growing in suspended tree pits and hence their life expectancy is uncertain. Their removal will be mitigated by the planting of 115 new trees of seven different species.
- **6.3** Protection measures have been specified to protect the Root Protection Areas of all retained trees, with arboricultural supervision included to assist with tree protection measures.
- **6.4** Although outside the site, the greatest risk of arboricultural impact is through excavation to replace services within the Root Protection Areas of T11 and T19, where any work required must be undertaken as detailed in section 5.5 above.
- **6.5** Provided the recommendations in this report are followed and adequate rooting volume is allowed for new tree planting, the arboricultural impact of this development on existing tree cover is considered acceptable.

7 REFERENCES

- BS5837:2012 Trees in relation to design, demolition and construction Recommendations.
- BS3998:2010 Tree Work. Recommendations.
- BS8545:2014 Trees: from nursery to independence in the landscape. Recommendations.
- The use of Cellular Confinement systems near Trees: a guide to good practice Arboricultural Association Guidance Note 12.



Appendix B BS 5837: 2012 Tree Schedule

Tree/ Group No.	Species	Height (m)	Stem Diam. at 1.5m (mm)	Branch Spread (m)		Canopy Cleara -nce (m)	Age Class	Observations	Management Recommendations	Estimated Remaining Contribution (years)	BS 5837 Category Grading	Protect -ion Distance (m)	Root Protect. Area (m2)		
				Ν	S	Е	W								
T1	London plane	12	320	3	3	3	3	2	Semi- mature	Access not possible to inspect base. Good vigour. Crown reduction undertaken. T1-T7 planted in a grid in suspended tree pits, reducing life expectancy. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B1	3.4	35
T2	London plane	12	330	3	3	3	3	2	Semi- mature	Steel decking approximately 0.6m above root plate. Extensive lighting cables within canopy, which threaten to become embedded and damage the tree. Previously reduced. Life expectancy reduced as in a suspended tree pit. Sep 24: Early leaf fall. Electric cabling in canopy.	Remove to implement new landscape scheme	10-20	B1	4.0	49
Т3	London plane	12	320	3	4.5	3.5	3.5	1.9	Semi- mature	Good vigour. As above. Life expectancy reduced as in a suspended tree pit.	Remove to implement new landscape scheme	10-20	B1	3.8	46
T4	London plane	12	300	4	4	4	4	2	Semi- mature	Good form and vigour. Life expectancy reduced as in a suspended tree pit. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B1	3.6	41
T5	London plane	12	330	3.5	3.5	3.5	3.5	1.8	Semi- mature	Access to inspect base not possible. Good vigour. Life expectancy reduced as in a suspended tree pit. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B1	3.6	41
Т6	London plane	12	340	3	4	3.5	4	2	Semi- mature	Good vigour. Life expectancy reduced as in a suspended tree pit. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B1	4.1	52
T7	London plane	11.5	290	2	4	3	3	2	Semi- mature	Reasonable vigour, but not as dense a canopy as T1- T6. Life expectancy reduced as in a suspended tree pit. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B1	3.5	38
Т8	London plane	13	360	6	8	7	7.5	1.9	Semi- mature	Slight lean to south. Canopy beginning to obstruct traffic. Good vigour. Sep 24: Paving slab to west lifting. Showing good vigour - noticeably better than trees T1/T7 on podium.		>40	A2	4.3	59
Т9	London plane	17.5	810	2	10	10	10	2	Mature	Asymmetric canopy. Weighted to south. Sep 24: Good vigour. Litter in canopy. Paving slabs to east beginning to lift.		>40	A2	9.7	297
G10	10no. Lime	6.5-7	160 - 200					1.9	Semi- mature	A block of 10 trees regularly pruned to create a rectangular block. Growing in 2 raised beds, with level of eastern bed 0.8m above western bed. Some trees have had bark wounds in the past which have callused. Western group have cables around stems, supported by nails. Sep 24: Reasonable vigour.	Remove to implement new landscape scheme	15-30	B1	2.3	16

Appendix B BS 5837: 2012 Tree Schedule

Tree/ Group No.	Species	Height (m)	Stem Diam. at 1.5m (mm)	Branch Spread (m)		Canopy Cleara -nce (m)	Age Class	Observations	Management Recommendations	Estimated Remaining Contribution (years)	BS 5837 Category Grading	Protect -ion Distance (m)	Root Protect. Area (m2)		
				Ν	S	Е	W								
T11	London plane	9	350	6.5	6.5	8	6.5	1.9	Early mature	Growing in 1.3m by 1.3m tree pit within paved area. No leading shoot. Split in branch at 3m. Wide spreading, but poor structure. Canopy extending 0.8m under shade structure. Sep 24: Good vigour.		>40	B2	4.2	55
T12	Liquidambar	4	110	2	1	2	1	1.7	Semi- mature	Good vigour. Leaning to east. Sep 24: Good vigour. Basal bark wound callused.	Remove to facilitate construction. Replace on completion.	>40	B2	1.3	5
T13	Liquidambar	3.5	100	1.5	1	1.5	0.5	1.6	Semi- mature	Leaning to east. Reduced vigour. Sep 24: Good vigour.	Remove to facilitate construction. Replace on completion.	10-20	C2	1.2	5
T14	Liquidambar	5.5	100	1	1	2	0.5	1.7	Semi- mature	Good vigour but leaning to east. Sep 24: Good vigour.	Remove to facilitate construction. Replace on completion.	15-30	B-C2	1.2	5
T15	Cherry	4	150	3	4	2.5	3.5	1.8	Early mature	Good form and vigour. Sep 24: Good vigour.	Remove to facilitate construction. Replace on completion.	20-40	B2	1.8	10
T16	London plane	11	280	4	3	4	3	1.7	Semi- mature	Sep 24: Good vigour.	Remove to facilitate construction. Replace on completion.	>40	A2	3.4	35
G17	8no. Lime	5	110-140					1.6	Semi- mature	8 trees growing in a 0.7m raised bed. Regularly pruned to create a rectangular block. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	20-40	B1	1.7	9
G18	8no. Lime	5	160-220					1.6	Semi- mature	8no trees growing in a 0.6m raised bed. Regularly pruned to create a rectangular block. Showing good vigour. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	20-40	B1	2.6	22
T19	London plane	18.5	580	9.5	9.5	10	9	1.8/4.5	Early mature	Growing in a 2m by 2m pit within paving. Stem leans to east, but with a well balanced canopy against adjacent building and obscuring street lamp. Important tree. Sep 24: Low branches brushing high veichles. Good vigour.		>40	A2	7.0	152
T20	London plane	11.5	310	4	4	4	3.5	1.7	Semi- mature	Raised paving, 0.6m above planting level. Good vigour. Growing against adjacent buildings, support for flood lights now embedded in stem. T20-T26 planted in suspended tree pits, reducing life expectancy. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B2	3.7	43

Appendix B BS 5837: 2012 Tree Schedule

Tree/ Group No.	Species	Height (m)	Stem Diam. at 1.5m (mm)	Branch Spread (m)		Canopy Cleara -nce (m)	Age Class	Observations	Management Recommendations	Estimated Remaining Contribution (years)	BS 5837 Category Grading	Protect -ion Distance (m)	Root Protect. Area (m2)		
				Ν	S	E	W								
T21	London plane	12	260	4	3	4	2.5	3.2	Semi- mature	Not as vigorous as other trees due to shading, but still showing reasonable vigour. Raised paving. 0.6m above planting level. Support for flood lights now embedded in stem. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B2	3.1	31
T22	London plane	12	260	4	3	4	2	3	Semi- mature	Slight lean to north . Reasonble vigour. Raised paving. 0.6m above planting level. Support for flood lights now embedded in stem. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B2	3.1	31
T23	London plane	11.5	250	3	3	3	2	2	Semi- mature	Slight lean to north . Reasonable vigour. Raised paving. 0.6m above planting level. Support for flood lights now embedded in stem. Sep 24: Low dead branch grill touching stem.	Remove to implement new landscape scheme	10-20	B2	3.0	28
T24	London plane	11.5	290	4	2.5	3.5	4	2.1	Semi- mature	Reasonable vigour. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B2	3.5	38
T25	London plane	11.5	260	4	3	3	3		Semi- mature	Reasonable vigour. Sep 24: Early leaf fall.	Remove to implement new landscape scheme	10-20	B2	3.1	31
T26	London plane	11.5	290	4.5	2	3	4	1.8	Semi- mature	Slight lean to north, but good vigour. Sep 24: Early leaf fall. Grill becoming embedded in stem.	Remove to implement new landscape scheme	10-20	B2	3.5	38
T27	Liquidambar	9	110	2	2	2	2	1.8	Semi- mature	Showing good vigour. Growing in 2.5m by 2.5m raised bed. Sep 24: Good vigour.		20-40	B2	1.3	5

BS 5837:2012, Table 1 Cascade chart for tree quality assessment

SJ Stephens Associates Ltd

Category and definition	d definition Criteria (including subcategories where appropriate)										
Trees unsuitable for retention	(see Note)										
Category U Those in such a condition	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)										
be retained as living trees in	• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline										
the context of the current land use for longer than	 Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality 										
To years	NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.										
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation								
Trees to be considered for rete	ention										
Category A	Trees that are particularly good	Trees, groups or woodlands of particular	Trees, groups or woodlands	See Table 2							
Trees of high quality with an estimated remaining life expectancy of at least 40 years	examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	visual importance as arboricultural and/or landscape features	of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)								
Category B	Trees that might be included in	Trees present in numbers, usually growing	Trees with material	See Table 2							
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	conservation or other cultural value								
Category C	Unremarkable trees of very limited	Trees present in groups or woodlands, but	Trees with no material	See Table 2							
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	merit or such impaired condition that they do not qualify in higher categories	without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	conservation or other cultural value	64.5							

British Standard BS 5837:2012 Default specification for protective barrier

Figure 2

Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m galvanised tube and welded mesh infill panels
- Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps



Examples of above-ground stabilising systems

Figure 3a

Stabiliser strut with base plate secured with ground pins





Figure 3b Stabiliser strut mounted on block tray



SJ Stephens Associates Ltd

Appendix Ei)

T5



T4



T11

Appendix Eii)



Appendix Eiii)



Appendix Eiv)





Appendix F



Appendix G

GREENGRIDSYSTEMS.COM

The Protecta[®] is made from waterproof canvas to prevent the unit from holding water and starting rot. The canvas is hi-vis orange and banded with two stripes of reflective tape to ensure it is highly visible, even in low light situations. The Protecta[®] can be used on trees with a diameter (DBH) between 100-160cm. Quick release straps enable the Protecta[®] to be tightened for the smaller trees, and multiple Protectas[®] can be used for trees larger than 160cm.

Appendix H

