# Arboricultural Assessment Report

## Gunnersbury Park, Ealing

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**15323-AA2-CA**

## Report purpose

This is a BS 5837 compliant arboricultural assessment report providing sufficient information for the Local Planning Authority ("LPA") to consider the effect of the proposed development on local character from a tree perspective. It includes an analysis of how trees will be affected and a heads of terms arboricultural method statement briefly describing how retained trees will be protected and managed during the development activity.

## Validation statement

For LPA validation purposes, this report includes:

- a **BS 5837 compliant tree survey**, including a tree protection plan showing the location of the existing trees, their categorisation, the location of the new structures and hard surfacing, the trees to be removed and the tree protection measures;
- an **arboricultural assessment** in Section 1, which describes how the development proposal will affect local character from a tree perspective;
- an **arboricultural method statement** (heads of terms only as recommended in BS 5837) in Section 2, which summarises the tree protection measures; and
- several **appendices** in Section 3 setting out the background administrative information and a schedule of tree information.

## The tree protection plan

More specifically, the tree protection plan is based on the provided information and it should only be used for dealing with the tree issues. It shows:

- the existing trees numbered, with high/moderate categories (A & B) highlighted in green triangles and low/unsuitable categories (C & U) highlighted in blue rectangles;
- the circular interpretation of root protection areas ("RPA") of category A, B and C trees (grey circles);
- the trees to be removed indicated by a red number and crown outline;
- the location of the construction exclusion zone ("CEZ"), which is the area of restricted access, to be protected by temporary barriers (fencing and/or ground protection); and
- the location of precautionary areas outside the CEZ where limited, but careful access is permitted.

# Summary

## 1. The development proposal

The development proposal is to construct new sports facilities and associated infrastructure at Gunnersbury Park, Ealing.

## 2. Background administrative information

Our instructions, how we prepared this report and other relevant background information is explained in Appendix 1. All the trees that could be affected were inspected and that information is listed in Appendix 2.

## 3. Table 1: Summary of category A, B and C trees to be removed, pruned or protected using special precautions

| | British Standard 5837 Category | | |
|---|---|---|---|
| | A (High quality) | B (Moderate quality) | C (Low quality) |
| **Remove** | | | 33, H47(part), 49, 50, H55(part), G56, G57, G58, G124, G125, G126 |
| **Protect using special precautions** | 24, 42, 44, 45, 46, 103, 115 | 31, 34, 35, 43, 53, 102, 104, 107, 109, 110 | 32, 36 |

H = Hedge; G = Group

**Note:** Category U trees are in such poor condition they would be removed irrespective of development and they are not included in this summary.

## 4. Table 2: Summary of the impact on local character of tree removal and pruning, and proposed mitigation

| | Tree number(s) | Impact on local character | Mitigation |
|---|---|---|---|
| **Remove** | 33, H47(part), 49, 50, H55(part), G56, G57, G58, G124, G125, G126 | **No impact:** Whilst not prominent as individual features, their removal will be noticeable in the immediate vicinity in the short term, but there will be no significant visual impact in the wider setting beyond the short term. | New landscape planting to encompass all mitigation |

## 5. Protection of retained trees

As recommended in BS 5837 (Table B1), a heads of terms arboricultural method statement is included in Section 2 of this report. The approximate location of the protective measures are shown on the tree protection plan.

## 6. Enhancement through new tree planting

In order to increase the contribution of trees to local character, a new landscape strategy is feasible to provide sustainable planting across the site. The new trees would have the potential to reach a significant height without excessive inconvenience, representing an overall enhancement of tree cover in the area.

# Summary

## 7. Overall assessment of how the development proposal will affect local character from a tree perspective

The trees to be lost because of this proposal are low category because of their poor condition or small size. All the significant boundary tree cover will remain intact and no moderate or high category trees will need to be removed. There is plenty of space for tree planting and a comprehensive new tree planting scheme is feasible. The construction activity and proposed changes may affect further trees if appropriate protective measures are not taken. However, if adequate precautions to protect the retained trees are specified and implemented through the arboricultural method statement included in this report, the overall impact of the proposal on local character will be limited to the short term only.

# Section 1

# Arboricultural assessment

This arboricultural assessment has taken account of all the recommendations set out in 5.4 of BS 5837 (reproduced courtesy of BSI below).

## 5.4 Arboricultural impact assessment

**5.4.1** The project arboriculturist should use the information detailed in **5.2** and **5.3** to prepare an arboricultural impact assessment that evaluates the direct and indirect effects of the proposed design and where necessary recommends mitigation.

**5.4.2** The assessment should take account of the effects of any tree loss required to implement the design, and any potentially damaging activities proposed in the vicinity of retained trees. Such activities might include the removal of existing structures and hard surfacing, the installation of new hard surfacing, the installation of services, and the location and dimensions of all proposed excavations or changes in ground level, including any that might arise from the implementation of the recommended mitigation measures. In addition to the impact of the permanent works, account should be taken of the buildability of the scheme in terms of access, adequate working space and provision for the storage of materials, including topsoil.

*NOTE Scaled cross-sections and other drawings might be required to demonstrate the feasibility of the proposals (see Annex B).*

**5.4.3** As well as an evaluation of the extent of the impact on existing trees, the arboricultural impact assessment should include:

a) the tree survey (see **4.4**);

b) trees selected for retention, clearly identified (e.g. by number) and marked on a plan with a continuous outline;

c) trees to be removed, also clearly identified (e.g. by number) and marked on a plan with a dashed outline or similar;

d) trees to be pruned, including any access facilitation pruning, also clearly identified and labelled or listed as appropriate;

e) areas designated for structural landscaping that need to be protected from construction operations in order to prevent the soil structure being damaged;

f) evaluation of impact of proposed tree losses;

g) evaluation of tree constraints (see **5.2**) and draft tree protection plan (see **5.5**);

h) issues to be addressed by an arboricultural method statement (see **6.1**), where necessary in conjunction with input from other specialists.

# Section 1: Arboricultural assessment

## 8. Relevant strategic and policy considerations

The Climate Change Act (2008) sets out a statutory strategic need to adapt to climate change at a national and local level, which is reiterated through the emphasis on sustainability in the National Planning Policy Framework. It is now widely accepted that trees offer significant climate adaptation benefits to the built environment where people live and work. These benefits include, amongst others, the buffering of temperature extremes and the buffering of rainwater runoff, which can significantly reduce the adverse impacts of climate change.

Additionally, there is an increasing body of research providing reliable evidence that trees impart other significant health-related benefits to the people that live and work near them. These benefits include, amongst others, the potential to improve psychological wellbeing by reducing stress and anxiety through the relaxing nature of their presence. It seems that access to greenspace and trees makes people happier and encourages them to take more exercise, which has a direct and positive impact on physical health and wellbeing. On a subtler level, the ecological enhancement that can be achieved through appropriate tree management makes a positive contribution to environmental sustainability.

These concepts are explored and set into a built-environment context in the recent Trees and Design Action Group's publications *Trees in the Townscape: A Guide for Decision Makers* and *Trees in Hard Landscapes: A Guide for Delivery*. Furthermore, specific advice on planting new trees is provided in British Standard 8545 (2014) *Trees: from nursery to independence in the landscape – Recommendations*. We have given significant weight to the guidance set out in these documents, which is reflected in the analyses in this report.

In line with these references, we agree with and support the general principle that more and bigger trees will deliver more benefits from their presence. Although this must be applied with balance and intelligence, it nonetheless remains an important guiding principle in the planning process and it has been an influential consideration in our analysis on this site.

## 9. Table 3: The impact of tree removal on local character

| | Impact of tree removal |
|---|---|
| **Category A** | • No category A trees will be removed |
| **Category B** | • No category B trees will be removed |
| **Category C** (33, H47(part), 49, 50, H55(part), G56, G57, G58, G124, G125, G126) | • **No impact:** Whilst not prominent as individual features, their removal will be noticeable in the immediate vicinity in the short term, but there will be no significant visual impact in the wider setting beyond the short term. The trees are mainly small and insignificant in wider landscape terms and make very little contribution to the overall character of the area. |
| **Category U** (38, 39, 41, 51, 52, 73, 75, 129, 133) | Trees categorised as U are in such poor condition that they have been assessed as needing removal for management reasons irrespective of any development proposals. Removal of any category U trees will be a management decision and their loss will not be caused by this proposal and it should not be considered as a direct impact. |

# Section 1: Arboricultural assessment

## 10. Table 5: Trees that need special precautions to be successfully retained

| | Special precautions |
|---|---|
| Category A (24, 42, 44, 45, 46, 103, 115) | • Existing surfacing within RPAs may be replaced with new surfacing and landscaping. No excavation will be undertaken into existing soil beneath the sub-base. New surfacing will be permeable where possible.<br>• Ground protection will be installed over any exposed soil within RPAs outside the barriers for the duration of activity. |
| Category B (31, 34, 35, 43, 53, 102, 104, 107, 109, 110) | • Existing surfacing within RPAs may be replaced with new surfacing and landscaping. No excavation will be undertaken into existing soil beneath the sub-base. New surfacing will be permeable where possible.<br>• Ground protection will be installed over any exposed soil within RPAs outside the barriers for the duration of activity. |
| Category C (32, 36) | • Category C trees are not sufficiently important to warrant any special precautions to ensure their retention. However, where appropriate, they can be retained within the wider tree protection provisions for the site and are shown for retention. |

RPA = Root Protection Area

These development activities may cause harm if not carried out with care. We have reviewed the situation carefully and our experience is that these trees could be successfully retained without any significant adverse impact if appropriate protective measures are properly specified and controlled through an arboricultural method statement.

## 11. New tree planting to mitigate tree removals

To mitigate the loss of trees, a tree planting scheme is feasible as part of the wider landscape strategy for the site, which could include new trees to be planted around the site in sustainable locations. The final selection of species, size and location are flexible and open to amendment if necessary. The new trees would have the potential to reach a significant height without excessive inconvenience and be sustainable into the long term, significantly improving the potential of the site to contribute to local character.

## 12. Summary of the impact on local character

The trees to be lost because of this proposal are low category because of their poor condition or small size. All the significant boundary tree cover will remain intact and no moderate or high category trees will need to be removed. There is plenty of space for tree planting and a comprehensive new tree planting scheme is feasible. The construction activity and proposed changes may affect further trees if appropriate protective measures are not taken. However, if adequate precautions to protect the retained trees are specified and implemented through the arboricultural method statement included in this report, the overall impact of the proposal on local character will be limited to the short term only.

# Section 2

# Arboricultural method statement (heads of terms)

As recommended in Table B1 of BS 5837 (reproduced courtesy of BSI below), this arboricultural method statement is confined to a summary of the heads of terms, with the detail to be provided at the reserved matters stage in response to a planning condition.

Table B.1 **Delivery of tree-related information into the planning system**

| Stage of process | Minimum detail | Additional information |
|---|---|---|
| Pre-application | Tree survey | Tree retention/removal plan (draft) |
| Planning application | Tree survey (in the absence of pre-application discussions) | Existing and proposed finished levels |
| | Tree retention/removal plan (finalized) | Tree protection plan |
| | Retained trees and RPAs shown on proposed layout | Arboricultural method statement – heads of terms |
| | Strategic hard and soft landscape design, including species and location of new tree planting | Details for all special engineering within the RPA and other relevant construction details |
| | Arboricultural impact assessment | |
| Reserved matters/ planning conditions | Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method | Arboricultural site monitoring schedule |
| | Dimensioned tree protection plan | Tree and landscape management plan |
| | Arboricultural method statement – detailed | Post-construction remedial works |
| | Schedule of works to retained trees, e.g. access facilitation pruning | Landscape maintenance schedule |
| | Detailed hard and soft landscape design | |

# Section 2: Arboricultural method statement (heads of terms)

## 13. Table 6: Heads of terms arboricultural method statement

| Heads of terms | Overview of appropriate protective measures (to be detailed in response to a planning condition once consent has been given) |
|---|---|
| Identification of areas to be protected | The tree protection plan shows all the areas where protective measures are necessary. The construction exclusion zone ("CEZ") boundary is shown on the plan as the heavy dashed black line, with the lighter diagonal hatching behind. If necessary, further precautionary areas outside the CEZ are shown on the plan as a yellow coloured fill, where a high level of care is required. This work will be subject to arboricultural supervision. |
| Tree works | Tree works, based on our assessment of the proposal and the original site inspection, are set out in the work recommendations column of the tree schedule in Appendix 2. The location of each tree by number is shown on the tree protection plan and any to be removed are indicated with a red crown outline. All tree works must be reassessed before any site activity starts as part of the standard risk management process. |
| Fencing | Protective fencing must be installed at the locations shown on the tree protection plan by the heavy black dashed line. If agreed with the LPA, fencing can be set back to improve access, provided the exposed ground is protected with ground protection. This work will be subject to arboricultural supervision. |
| Ground protection | Ground protection must be installed wherever RPAs are exposed and not enclosed by fencing. This will be where fencing has been agreed to be set back, and in all precautionary areas. This work will be subject to arboricultural supervision. |
| Existing surfacing to be retained | The existing hard surfacing will be retained and utilised where possible. Any surfacing disrupted during the course of the construction activity will be reconditioned or upgraded as necessary. This work will be subject to arboricultural supervision. |
| Installation of new surfacing | New surfacing within RPAs is proposed as shown on the tree protection plan. These will be installed in accordance with the appropriate guidance. This work will be subject to arboricultural supervision. |
| New and existing services | All excavation for the installation of new services or the upgrading of existing services must be carried out in accordance with the appropriate guidance. This work will be subject to arboricultural supervision. |
| Removal of protection | All protective barriers must remain in place until the construction activity is finished and there is no realistic risk of damage to the protected soil surfaces. This work will be subject to arboricultural supervision. |
| Tree planting | Space has been allowed for a comprehensive new tree planting scheme. It would be appropriate for the precise detail to be agreed with the LPA through a planning condition. |
| Landscaping | All landscaping activity must be carefully controlled once the protective measures have been removed. This work will be subject to arboricultural supervision. |
| Other risks to trees | Any significant risk to trees from activities outside RPAs, but close enough to have a knock-on impact, must be assessed and appropriate precautions put in place to reduce that risk. Such risks include, *inter alia*, chemical pollution, cranes and high loads. |

## 14. Heads of terms construction method statement

A construction method statement is a description of how operations that may affect trees will be carried out to minimise any adverse impact on them. The details of how the site will be managed are construction and contractual matters that can only be finalised once the post-consent detailed planning begins. For that reason, at this stage in the planning process, it is only possible to list a heads of terms summary of the issues that will require more detailed consideration once consent is issued. The issues that are likely to require further explanation on this site include:

1. The order of work on site, including demolition, site clearance and building work.
2. Erection and maintenance of security hoarding near trees.

3. Who will be responsible for protecting the trees on site.
4. Detailed proposals for inspecting and supervising the tree protection, and how problems will be reported and solved.
5. How accidents and emergencies involving trees will be managed, including accidental damage to roots and their treatment.
6. Details of facilitation pruning and access into site. What size vehicles will be used under canopies and will large machinery be lifted over trees.
7. The parking arrangements for workers and visitors.
8. A schedule of emergency contact numbers.
9. Areas for loading and unloading of materials and storage of materials and plant.
10. Where site facilities will be sited and when will they be installed.
11. Crane location and zones of movement.
12. How machinery and equipment (such as excavators, cranes and their loads, concrete pumps and piling rigs) will enter, move on, work on and leave the site.
13. Wheel washing facilities near trees.
14. Measures to control the emission of dust and dirt during construction near trees.
15. Recycling and storage of waste near trees.
16. Details of earthworks, grading and mounding and removal of spoil, including any planned lowering or raising of ground levels.
17. Details of upgrading/removing/replacing existing surfacing and areas where this will happen, including detailed and precise cross-sections where no-dig surfacing is to be installed.
18. How and when any temporary surfacing will be laid and removed.
19. Details of piling operations.
20. Precise services locations, including the method of excavation when near trees.
21. Proposed locations of site facilities/crane location/material storage/loading bays etc.
22. Finished excavation lines for basement works.
23. How post-construction damage through compaction to soil near existing trees and new trees will be ameliorated.

**Note:** It is not our role as arboricultural consultants to detail the timing and implementation of these measures, although we can input into the process and will need to confirm that the final proposals will not adversely affect retained trees.

## 15. Arboricultural supervision

An arboricultural consultant must be appointed by the developer to advise on the tree management for the site and to attend:

1. a pre-commencement meeting before any work starts;
2. regular supervision visits to oversee the agreed tree protection; and
3. further supervision visits as necessary to oversee any unexpected works that could affect trees.

# Section 3

# Appendices

# Appendix 1: Background administrative information, data collection and any additional relevant information

## 16. Table 7: Background administrative information

| | Background administrative information |
|---|---|
| **Report date & reference** | 09/10/2015 – 15323-AA2-CA |
| **Tree protection plan reference** | BT2 |
| **Our instructing client** | London Borough of Ealing Council |
| **Our instructions** | Visit the site, assess the relevant trees, prepare a schedule of their details, describe the impact of the proposal on those trees and identify the tree protection issues in an arboricultural method statement confined to the heads of terms |
| **Provided documents** | Land survey, drawing number Gunnersbury WD Survey Master Nov14 V2004.dwg received by email on 1 September 2015 and layout, drawing number 3399-ASP-ST4-XX-M3-A-MODEL_15_viota-giannini@s-architects – Floor Plan -…dwg received by email on 7 October 2015 |
| **Report author and credentials** | Chris Allder is a Chartered Forester (www.charteredforesters.org) and fully qualified to undertake the assessments in this report. Further details of his credentials can be found at www.barrelltreecare.co.uk/career-summaries/Chris |
| **Report limitations** | We have not checked if the trees are protected. If any tree works are proposed before a planning consent is given, then the existence of any statutory protection must be checked with the LPA. This report does not consider ecological or archaeological issues, or any other matter beyond the assessment of the trees. |
| **Technical references** | In preparing the analysis in this report, detailed consideration was given to the guidance and advice in the following technical references:<br>• Climate Change Act (2008) www.legislation.gov.uk/ukpga/2008/27/contents<br>• Town and Country Planning Act 1990 http://www.legislation.gov.uk/ukpga/1990/8/contents<br>• National Planning Policy Framework ("NPPF"), published by the DCLG www.gov.uk/government/publications/national-planning-policy-framework--2<br>• BS 5837 (2012) *Trees in relation to design, demolition and construction – Recommendations*, BSI www.shop.bsigroup.com/en/ProductDetail/?pid=000000000030213642<br>• BS 8545 (2014) *Trees: from nursery to independence in the landscape – Recommendations*, BSI www.shop.bsigroup.com/ProductDetail/?pid=000000000030219672<br>• BS 3998 (2010) *Tree work – Recommendations*, BSI http://shop.bsigroup.com/ProductDetail/?pid=000000000030089960<br>• *Trees in the Townscape: A Guide for Decision Makers*, published by the Trees & Design Action Group www.tdag.org.uk/downloads.html<br>• *Trees in Hard Landscapes: A Guide for Delivery*, published by the Trees & Design Action Group www.tdag.org.uk/downloads.html<br>• National Joint Utilities Group (2007) Volume 4, Issue 2: *Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees* www.njug.org.uk/publications/ |

# Appendix 1: Background administrative information, data collection and any additional relevant information

## 17. Table 8: Data collection

| | Data collection |
|---|---|
| **Date of site visit** | 08/09/2015 & 11/09/2015 |
| **People present during site visit** | Chris Allder |
| **Weather & visibility** | Clear, still and dry, with good visibility |
| **Limitations to observations** | • Our inspection of the trees for the purposes of assessing their condition and work requirements is made on the basis that they will be annually inspected in the future to identify any changes in condition and review the original recommendations. For these reasons, the tree assessment advice only remains valid for one year from the date that the trees were last inspected.<br>• All observations were of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level.<br>• Observations of trees outside the site boundaries are confined to what was visible from within the site.<br>• All dimensions were estimated unless otherwise indicated. |
| **Tree location and numbering** | Each tree was inspected and the numbering scheme is indicated on the tree protection plan. If appropriate, obvious hedges and groups were identified and numbered. If important trees were found on site that were not included on the provided plan, their approximate positions and canopy extents are indicated on the plan. |
| **Recording of tree data** | For each tree and any group or hedge found on site, the information collected was recorded on the tree schedule in Appendix 2 and the tree protection plan. |
| **Compliance of data collection with BS 5837** | The data collection is fully compliant with the advice in subsection 4.4.2 of BS 5837. When collecting this information, specific consideration was given to any low branches that may influence future use, age class, physiological condition, structural condition and remaining contribution. Where appropriate, crown spreads were also noted where they differed from those shown on the provided land survey. |
| **Calculation of RPAs** | Following the recommendations in Table D1 of BS 5837, the diameter of each tree was rounded up to the next 2.5cm increment, with the radius of a nominal circle and the resultant RPA taken directly from that table. This information is listed for each tree in the tree schedule in Appendix 2. |

## Appendix 2: Tree schedule and explanatory notes

**NOTE:** Colour annotation is A & B trees with green background; C & U trees with blue background; trees to be removed in red text.

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| All retained trees & hedges | | | | | | | | Carry out safety check and lift over site to 3-4m as necessary. | | |
| T1 | Lime | 16 | 60* | Mature | - | A | TAG 1532 dense canopy, minor deadwood | - | 7.2 | 163 |
| T2 | Lime | 4 | 15 | Young | - | C | New planting, on stake | - | 1.8 | 10 |
| T3 | Ash | 5 | 15 | Young | - | C | New planting, on stake | - | 1.8 | 10 |
| T4 | Lime | 15 | 55 | Mature | - | A | Dense crown, history of minor Pruning | - | 6.6 | 137 |
| T5 | False acacia | 13 | 70 | Mature | - | C | TAG 1536 dieback, stem defects and decay, buttress defects, poor | - | 8.4 | 222 |
| T6 | Norway maple | 18 | 67.5* | Mature | - | A | TAG 1537 high crown, crown lift | - | 8.1 | 206 |
| T7 | Norway maple | 16 | 45* | Mature | - | B | TAG 1538 minor stem defect and wound | - | 5.4 | 92 |
| T8 | Norway maple, ash | 20 | 85* | Mature | - | B | TAG 1539 previously reduced, deadwood and dense | - | 10.2 | 327 |
| T9 | Sycamore | 15 | 52.5* | Mature | - | B | TAG 1540 sparse crown, slight lean | - | 6.3 | 125 |
| T10 | Horse chestnut | 18 | 80* | Mature | - | B | TAG 1541 stem defects, bark loss, dense crown | - | 9.6 | 290 |
| T11 | Norway maple | 15 | 37.5* | Mature | - | C | TAG 1542 suppressed | - | 4.5 | 64 |
| T12 | Sycamore | 18 | 55* | Mature | - | B | Thin crown | - | 6.6 | 137 |
| T13 | Lime | 4 | 15 | Young | - | C | New planting | - | 1.8 | 10 |
| T14 | Horse chestnut | 18 | 87.5* | Mature | - | B | Leaning bark exudation, early browning | - | 10.5 | 346 |
| T15 | Ash | 5 | 15 | Young | - | C | New planting | - | 1.8 | 10 |

## Appendix 2: Tree schedule and explanatory notes

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| T16 | Horse chestnut | 18 | 82.5* | Mature | - | B | TAG 1546, early browning | - | 9.9 | 308 |
| T17 | False acacia | 5 | 45* | Young | - | C | Multi stemmed regrowth out of old stump | - | 5.4 | 92 |
| T18 | Lime | 4 | 15 | Young | - | C | New planting | - | 1.8 | 10 |
| T19 | Ash | 20 | 80 | Mature | - | A | TAG 1548 minor deadwood | - | 9.6 | 290 |
| T20 | Elm | 14 | 60* | Mature | - | C | Twin stemmed at 1m, leaning, dieback | - | 7.2 | 163 |
| T21 | Oak | 15 | 37.5* | Mature | - | B | Minor deadwood, one-sided | - | 4.5 | 64 |
| T22 | Oak | 18 | 55* | Mature | - | A | - | - | 6.6 | 137 |
| T23 | Horse chestnut | 12 | 45* | Mature | - | C | Stem defects, poor | - | 5.4 | 92 |
| T24 | London plane | 20 | 75* | Mature | - | A | Previously reduced | - | 9.0 | 254 |
| T25 | Ash | 20 | 80 | Mature | - | C | Reduced, significant cavity in main stem | - | 9.6 | 290 |
| T26 | London plane | 10 | 30* | Maturing | - | B | - | - | 3.6 | 41 |
| T27 | London plane | 10 | 35* | Maturing | - | B | - | - | 4.2 | 55 |
| T28 | London plane | 10 | 37.5* | Maturing | - | B | - | - | 4.5 | 64 |
| T29 | Red oak | 10 | 30 | Maturing | - | B | - | - | 3.6 | 41 |
| T30 | London plane | 5 | 20 | Maturing | - | C | Previously topped | - | 2.4 | 18 |
| T31 | Poplar | 25 | 127.5* | Mature | - | B | Previously reduced | - | 15.0 | 707 |
| T32 | Oak | 6 | 20 | Maturing | - | C | Poor | - | 2.4 | 18 |
| T33 | Poplar | 14 | 90 | Maturing | - | C | Multi stemmed, deformed by concrete slab | Fell | 10.8 | 366 |
| T34 | Beech | 15 | 55* | Mature | - | B | One-sided due to poplar | - | 6.6 | 137 |
| T35 | Poplar | 25 | 110* | Mature | - | B | Previously reduced | - | 13.2 | 547 |
| T36 | Poplar | 15 | 75* | Mature | - | C | Previously reduced | - | 9.0 | 254 |
| T37 | Poplar | 20 | 75* | Mature | - | C | Bark failure, sparse canopy, compacted roots | - | 9.0 | 254 |
| T38 | Poplar | 20 | 70* | Mature | - | U | Honey fungus at base, sparse crown, root compaction | Fell for management | 8.4 | 222 |
| T39 | Poplar | 18 | 70* | Mature | - | U | Leaning, deadwood, dieback | Fell for management | 8.4 | 222 |

## Appendix 2: Tree schedule and explanatory notes

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| T40 | London plane | 8 | 32* | Maturing | - | B | Suppressed by T39, potential | - | 3.8 | 46 |
| T41 | Ash | 20 | 65* | Mature | - | U | Significant dieback, overhanging parking area | Fell for management | 7.8 | 191 |
| T42 | London plane | 20 | 90* | Mature | - | A | Compacted ground causing girdling surface roots | - | 10.8 | 366 |
| T43 | Horse chestnut | 20 | 110* | Mature | - | B | Minor stem wounds from previous pruning, dense canopy | - | 13.2 | 547 |
| T44 | London plane | 25 | 132.5* | Mature | - | A | Multi stemmed at 6m | - | 15.0 | 707 |
| T45 | London plane | 25 | 107.5* | Mature | - | A | Slight lean | - | 12.9 | 523 |
| T46 | London plane | 20 | 97.5* | Mature | - | A | Slight lean | - | 11.7 | 430 |
| H47 | Privet | 1.5 | 15 | Maturing | - | C | Clipped hedge | Fell part | 1.8 | 10 |
| G48 | Yew, fir | 4 | 20 | Maturing | - | C | Small trees | - | 2.4 | 18 |
| T49 | Blue spruce | 4 | 20 | Maturing | - | C | Small, one-sided | Fell | 2.4 | 18 |
| T50 | Horse chestnut | 3 | 15 | Young | - | C | Small tree | Fell | 1.8 | 10 |
| T51 | Copper beech | 16 | 65* | Mature | - | U | TAG 1632 significant basal cavity and decay, stem exudation | Fell for management | 7.8 | 191 |
| T52 | Beech | 14 | 95* | Mature | - | U | Meripilus infection at base, previously reduced, overhanging children's play area | Fell for management | 11.4 | 408 |
| T53 | Lime | 16 | 77.5* | Mature | - | B | Very dense crown | - | 9.3 | 272 |
| T54 | Copper beech | 10 | 42.5* | Mature | - | B | One-sided | - | 5.1 | 82 |
| H55 | Leyland cypress | 12 | 30 | Mature | - | C | Clipped hedge | Fell part | 3.6 | 41 |
| G56 | Oak, ash, laurel | 8 | 30 | Maturing | - | C | Dense, linear group | Fell | 3.6 | 41 |
| G57 | Cherry, elder | 6 | 30 | Maturing | - | C | Dense, small trees | Fell | 3.6 | 41 |
| G58 | Birch, field maple | 4 | 15 | Young | - | C | Nursery remnants | Fell | 1.8 | 10 |
| G59 | Birch | 3 | 15 | Young | - | C | New planting | - | 1.8 | 10 |
| T60 | Turkey oak | 20 | 75 | Mature | - | A | Within play area boundary | - | 9.0 | 254 |

## Appendix 2: Tree schedule and explanatory notes

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| T61 | Turkey oak | 20 | 70 | Mature | - | A | Within play area boundary | - | 8.4 | 222 |
| T62 | Beech | 10 | 52.5* | Mature | - | B | - | - | 6.3 | 125 |
| T63 | Lime | 20 | 87.5* | Mature | - | B | Twin stemmed at 3m, dense | - | 10.5 | 346 |
| T64 | Beech | 12 | 40* | Mature | - | B | Suppressed by T65 | - | 4.8 | 72 |
| T65 | Oak | 20 | 82.5* | Mature | - | A | Minor deadwood | - | 9.9 | 308 |
| T66 | Lime | 20 | 87.5 | Mature | - | A | - | - | 10.5 | 346 |
| T67 | Copper beech | 18 | 57.5* | Mature | - | B | Minor dieback at tip | - | 6.9 | 150 |
| T68 | Beech | 5 | 20 | Young | - | C | Small, new planting | - | 2.4 | 18 |
| T69 | Copper beech | 18 | 65 | Mature | - | A | - | - | 7.8 | 191 |
| T70 | Copper beech | 18 | 70* | Mature | - | B | Twin stemmed, tight fork at 3m | - | 8.4 | 222 |
| T71 | Copper beech | 18 | 70* | Mature | - | A | - | - | 8.4 | 222 |
| T72 | Copper beech | 18 | 60* | Mature | - | A | - | - | 7.2 | 163 |
| T73 | Horse chestnut | 20 | 107.5* | Mature | - | U | Significant cavity at base and decay on stem, | Fell for management | 12.9 | 523 |
| T74 | Oak | 25 | 100* | Mature | - | A | - | - | 12.0 | 452 |
| T75 | Beech | 20 | 70 | Mature | - | U | Meripilus infection and decay | Fell for management | 8.4 | 222 |
| T76 | Oak | 25 | 95* | Mature | - | A | - | - | 11.4 | 408 |
| T77 | Lime | 20 | 60 | Mature | - | B | Suppressed by T76 | - | 7.2 | 163 |
| T78 | Lime | 20 | 82.5* | Mature | - | A | - | - | 9.9 | 308 |
| T79 | Oak | 18 | 65* | Mature | - | A | - | - | 7.8 | 191 |
| T80 | Sweet chestnut | 5 | 15 | Young | - | C | Small new tree | - | 1.8 | 10 |
| T81 | Sweet chestnut | 4 | 10 | Young | - | C | Small new tree | - | 1.2 | 5 |
| T82 | Oak | 18 | 40 | Maturing | - | B | Slender, small crown | - | 4.8 | 72 |
| T83 | Oak | 18 | 50 | Mature | - | B | - | - | 6.0 | 113 |
| T84 | Oak | 16 | 45 | Maturing | - | B | - | - | 5.4 | 92 |
| T85 | Oak | 18 | 60* | Mature | - | A | Edge of group | - | 7.2 | 163 |
| T86 | Oak | 16 | 52.5* | Mature | - | B | Minor dieback, one-sided | - | 6.3 | 125 |
| T87 | Sycamore | 20 | 70 | Mature | - | B | Minor cavity at base | - | 8.4 | 222 |

## Appendix 2: Tree schedule and explanatory notes

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| T88 | Lime | 20 | 85* | Mature | - | B | Multi stemmed at 4m, dieback and deadwood | - | 10.2 | 327 |
| T89 | Lime | 25 | 87.5* | Mature | - | A | - | - | 10.5 | 346 |
| T90 | Lime | 25 | 95* | Mature | - | A | - | - | 11.4 | 408 |
| T91 | Lime | 25 | 97.5 | Mature | - | A | Twin stemmed at 2m | - | 11.7 | 430 |
| T92 | Lime | 25 | 100* | Mature | - | B | Twin stemmed at 2m, cavity and included bark in stem | - | 12.0 | 452 |
| T93 | Lime | 25 | 92.5* | Mature | - | A | - | - | 11.1 | 387 |
| T94 | Lime | 25 | 95* | Mature | - | A | - | - | 11.4 | 408 |
| T95 | Lime | 25 | 92.5* | Mature | - | A | Multi stemmed at 4m | - | 11.1 | 387 |
| T96 | Lime | 25 | 85* | Mature | - | B | Ganorderma bracket at base, leaning | - | 10.2 | 327 |
| T97 | Lime | 25 | 110* | Mature | - | A | Large, open crown | - | 13.2 | 547 |
| T98 | Sycamore | 15 | 70* | Mature | - | B | Minor deadwood | - | 8.4 | 222 |
| T99 | Oak | 3 | 15 | Young | - | C | New planting | - | 1.8 | 10 |
| T100 | False acacia | 20 | 70* | Mature | - | C | Stump at base, leaning over car park, fibre buckling | - | 8.4 | 222 |
| T101 | Norway maple | 15 | 47.5* | Mature | - | B | Multi stemmed at 3m | - | 5.7 | 102 |
| T102 | Tree of heaven | 22 | 82.5* | Mature | - | B | Scar on stem at 3m | - | 9.9 | 308 |
| T103 | Maple | 18 | 117.5* | Mature | - | A | Leaning, on mound, minor deadwood | - | 14.1 | 625 |
| T104 | Norway maple | 14 | 50* | Maturing | - | B | One sided | - | 6.0 | 113 |
| T105 | Tree of heaven | 10 | 35* | Maturing | - | C | Twin stemmed from base, poor | - | 4.2 | 55 |
| T106 | Horse chestnut | 10 | 50 | Mature | - | C | Twin stemmed at 4m, minor deadwood | - | 6.0 | 113 |
| T107 | Ash | 18 | 60 | Mature | - | B | Minor deadwood and failed branches | - | 7.2 | 163 |
| T108 | Tree of heaven | 8 | 30 | Maturing | - | C | Small | - | 3.6 | 41 |
| T109 | London plane | 20 | 130 | Mature | - | B | Previously reduced, minor deadwood | - | 15.0 | 707 |

## Appendix 2: Tree schedule and explanatory notes

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| T110 | Norway maple | 20 | 70* | Mature | - | B | Multi stemmed at 4m | - | 8.4 | 222 |
| T111 | Ash | 20 | 70 | Mature | - | B | Minor deadwood | - | 8.4 | 222 |
| T112 | Ash | 20 | 45 | Mature | - | C | One sided, deadwood | - | 5.4 | 92 |
| T113 | Ash | 22 | 85 | Mature | - | B | Multi stemmed at 5m, decay in wound, deadwood | - | 10.2 | 327 |
| G114 | Ash, Norway maple, oak | 14 | 40 | Maturing | - | B | Small, potential | - | 4.8 | 72 |
| T115 | Lime | 25 | 80 | Mature | - | A | - | - | 9.6 | 290 |
| T116 | Turkey oak | 20 | 75 | Mature | - | B | One sided, leaning and suppressed | - | 9.0 | 254 |
| T117 | Lime | 20 | 70 | Mature | - | B | Previously topped | - | 8.4 | 222 |
| T118 | Horse chestnut | 18 | 65 | Mature | - | B | Exudate on stem | - | 7.8 | 191 |
| T119 | Norway maple | 16 | 60 | Mature | - | B | One sided | - | 7.2 | 163 |
| T120 | Norway maple | 18 | 65 | Mature | - | B | Previously topped | - | 7.8 | 191 |
| T121 | Horse chestnut | 12 | 60 | Mature | - | C | Poor, full of defects, in decline | - | 7.2 | 163 |
| T122 | Lime | 18 | 60 | Mature | - | B | Twin stemmed at 4m | - | 7.2 | 163 |
| T123 | Horse chestnut | 16 | 75 | Mature | - | B | Early browning | - | 9.0 | 254 |
| G124 | Tree of heaven | 4 | 20 | Young | - | C | Multi stemmed dense group of small trees | Fell | 2.4 | 18 |
| G125 | Tree of heaven | 6 | 20 | Maturing | - | C | Multi stemmed, dense self seeded | Fell | 2.4 | 18 |
| G126 | Leyland cypress | 6 | 40 | Maturing | - | C | Overgrown hedge | Fell | 4.8 | 72 |
| G127 | Holly, yew | 10 | 45 | Maturing | - | C | Dense group, leaning, multi stemmed | - | 5.4 | 92 |
| T128 | Cedar of Lebanon | 22 | 127.5 | Mature | - | A | Minor defect at base, twin stemmed at 8m | - | 15.0 | 707 |
| T129 | Golden false acacia | 12 | 60 | Mature | - | U | Decay scar up stem to 3m | Fell for management | 7.2 | 163 |
| T130 | Atlantic cedar | 14 | 60 | Maturing | - | A | - | - | 7.2 | 163 |
| T131 | Sweetgum | 8 | 25 | Maturing | - | A | - | - | 3.0 | 28 |
| T132 | False acacia | 6 | 20 | Maturing | - | B | - | - | 2.4 | 18 |

## Appendix 2: Tree schedule and explanatory notes

| Tree No | Species | Height (m) | Diameter (cm) @ 1.5m | Maturity | Low Branches | Category | Notes | Tree Works | RPA radius (m) | RPA area (m2) |
|---|---|---|---|---|---|---|---|---|---|---|
| T133 | Golden false acacia | 10 | 45 | Mature | - | U | In decline, decay and dieback | Fell for management | 5.4 | 92 |
| G134 | Yew | 8 | 45 | Mature | - | B | Dense, multi stemmed screen | - | 5.4 | 92 |
| T135 | Blue spruce | 10 | 40 | Maturing | - | B | - | - | 4.8 | 72 |

# Appendix 2: Tree schedule and explanatory notes

## Explanatory Notes

- **Abbreviations:**

G : Group
H : Hedge
RPA : Root protection area

- **Botanical tree names:**

| | |
|---|---|
| Ash | : *Fraxinus excelsior* |
| Beech | : *Fagus sylvatica* |
| Birch | : *Betula pendula* |
| Blue Atlantic cedar | : *Cedrus libani atlantica* Glauca Group |
| Blue spruce | : *Picea pungens 'Glauca'* |
| Cherry | : *Prunus* sp |
| Copper beech | : *Fagus sylvatica purpurea* |
| Elder | : *Sambucus nigra* |
| Elm | : *Ulmus* sp |
| False acacia | : Robinia pseudoacacia |
| Fir | : *Abies* sp |
| Golden false acacia | : *Robinia pseudoacacia frisia* |
| Holly | : *Ilex aquifolium* |
| Horse chestnut | : *Aesculus hippocastanum* |
| Leyland cypress | : *X Cuprocyparis leylandii* |
| Lime | : *Tilia* sp |
| London plane | : *Platanus* x *hispanica* |
| Maple | : *Acer* sp |
| Norway maple | : *Acer platanoides* |
| Oak | : *Quercus robur* |
| Poplar | : *Populus* sp |
| Privet | : *Ligustrum vulgare* |
| Red oak | : *Quercus rubra* |
| Sweetgum | : *Liquidambar styraciflua* |
| Sycamore | : *Acer pseudoplatanus* |
| Tree of Heaven | : *Ailanthus altissima* |
| Turkey oak | : *Quercus cerris* |
| Yew | : *Taxus baccata* |

- **BS 5837 (2012) compliance:** All data has been collected based on the recommendations set out in subsection 4.4 of BS 5837.
- **Tree inspections and site limitations:** Each tree was subjected to a quick visual check level of inspection. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during this level of inspection and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground. A separate note is recorded if further investigation may be required to clarify its status.
- **Crown spreads:** Crown spread dimensions are not listed in the tree schedule because they are illustrated on the land survey base to all the plans in this document. Where crown spreads of significant trees on site are found to deviate from those shown on the provided land survey, we have noted it in the text of the report and annotated it on our plans.
- **Dimensions:** All dimensions are estimated unless annotated with a '*'.

## Appendix 2: Tree schedule and explanatory notes

- **Species:** Species identification is based on visual observations. Where there is some doubt over tree identity, sp is noted after the genus name to indicate that the species cannot be reliably identified at the time of the survey. Where there is more than one species in a group, only the most frequent are noted and not all the species present may be listed.
- **Height:** Height is estimated to provide a broad indication of the size of the tree.
- **Trunk diameter:** Trunk diameter is estimated or measured and recorded in 2.5cm increments as advised in BS 5837 Table D1. It is measured with a diameter tape unless access is restricted, direct measurement is not possible because of ivy on the trunk or the tree is assessed as poor quality. The point of measurement and the adjustments for stem variations are as advised in Figure C1 of BS 5837.
- **Maturity:** In planning context, maturity provides a simplistic indication of a tree's ability to cope with change and its potential for further growth. For the purposes of this report, young indicates a potential to significantly increase in size and a high ability to cope with change, maturing indicates some potential to increase in size and a medium ability to cope with change, and mature indicates little potential to increase in size and limited ability to cope with change.
- **Low branches:** Any low branches that would not be feasible for removal during normal management and should be considered as a design constraint are noted here and explained in the notes.
- **Category:** Our assessment automatically considered tree physiological/structural condition (BS 5837, 4.4.2.5h), and so these are not listed separately in the schedule. Additionally, the category accounts for the remaining contribution (BS 5837, 4.4.2.5i) as greater than 40 years for A trees, greater than 20 years for B trees, at least 10 years for C trees and less than 10 years for U trees, so this is also not listed separately in the schedule. Category A, B and C trees are automatically listed as sub-category 1 unless otherwise stated.
- **Notes:** Only relevant features relating to physiological or structural condition and low branches that may help clarify the categorisation are recorded. If there are no notes, then the presumption should be that no relevant features were observed.
- **Tree works:** The recommended tree works are based on the quick visual check level of inspection and only intended to address significant hazards identified during that inspection.
- **Future tree safety inspections:** Due to the time that may elapse between the original survey and the start of development, all trees should be re-inspected as part of the standard risk management process before any works start on site. Our assessment of the trees was carried out on the basis that a re-inspection would be carried out within a year of the assessment visit and our advice on tree condition must be reviewed annually from the date of that visit.

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