

Arboricultural assessment & method statement

The Hall School, 23 Crossfield Road, London





Site location and report purpose

Site location



Image 1: This aerial image is provided courtesy of Google. The yellow line indicates the approximate site boundary and is illustrative only.

Report purpose

This arboricultural assessment report provides sufficient information for the Local Planning Authority (LPA) to consider the effect of the proposed development on local character from a tree perspective. <u>It</u> is fully compliant with the BS 5837 advice relating to the planning application stage of the process and it meets national standard planning application validation requirements.

Site address; The Hall School, 23 Crossfield Road, London.

This report includes:

- A **Tree protection plan** illustrating tree locations, categories, the location of the proposed development, and the proposed tree protection measures.
- An **Arboricultural assessment** (section 1 of the report) providing an analysis of the tree issues to assist the LPA in assessing the impact on local character.
- An **Arboricultural method statement** (section 2 of the report) describing how retained trees will be protected and managed during the development activity.



Site location and report purpose

- Appendices (Appendix 1 –Background administrative information, and data collection; Appendix 2 –
 Tree schedule and explanatory notes; and, Appendix 3 QR Codes for SGNs).
- A companion document to supplement the main report titled *Manual for managing trees on development sites* (Version 2.1), which provides explanations of how retained trees will be managed on site in the form of Site Guidance Notes (SGNs) covering the relevant issues.



1.1 Table 1: Summary of trees affected and protected by the proposal

From my review of the constraints and the proposed layout, my assessment of the impact on trees, both during and after development, and those that need protection using special precautions, is summarised in Table 1:

	British Standard 5837 Category						
	A (High quality)	B (Moderate quality)	C (Low quality)				
Remove	None	None	None				
Prune	T1	None	None				
Protect using special precautions See Notes below	T1	None	ТЗ				
Post development considerations	None	None	None				

T = Tree

Note on types of protection: All retained trees will be protected during development by using fencing and ground protection, and only those requiring special precautions to limit the impact of encroachment are listed in Table 1.

1.2 Discussion of specific tree issues

Impact from the basement proposals close to T1

Rooting requirements of T1: From the provided layout, one London Plane tree (T1 in Image 2) is close enough to be affected by the proposed basement development. Based on its measured stem diameter of 105cm it requires an RPA radius of 12.6m or an area of soil 499m². Whilst it is very difficult to establish exactly where tree roots grow, in many cases in London, we have found them growing vigorously at depth below hard surfaces or structures. Plane trees especially, have capacity to root deeply and often it is possible to find tree roots exploiting suitable areas of soil 2-3m below ground level. In that context, I would expect this tree to be rooting deeply in the surrounding area underneath the playground surface and up to the existing building walls.



Image 2: The London plane (T1) viewed from the northern end of the playground



Root investigations close to the existing foundations: Whilst it is likely that most of the roots from this tree are growing beneath the playground surface, it is feasible for roots to be growing beneath the existing foundations. In this respect, further investigations have been undertaken to establish the extent of rooting with a tree radar. This report concludes the following:

The TreeRadar unit picks up roots with a diameter greater than 20cm in diameter. The roots are fairly evenly distributed in the vertical and horizontal profile. There are no remarkable features in the rooting morphology within the astroturf area. There are no roots in the footpaths to the east and south of the building. The tree does not root under the building, but does root up to the basement wall. It is probable that major roots were severed in 1989 when the building was constructed, and that the compensatory crown pruning at that time prevented tree failure.

N.B If the full report details are required, this can be provided on request.

Site meeting with Tree Officer: A meeting was held with the tree officer and the design team on the 11th August 2016. During that meeting the tree radar investigations were reviewed the design drawings at that time. The relevant points which were agreed during the meeting are listed below:

- No roots were found on the southern side of the tree from the tree radar investigations where the existing underground sports hall is located; so provided the building on this side is demolished in a way that minimises harm to the tree, this would be acceptable to the LPA.
- Part of the existing building to be demolished on the western side of the tree is close to the edge of its RPA. This was considered acceptable provided care is taken to remove the foundations, and the piles do not encroach into the RPA.
- Overall it was agreed that it should be practically possible to protect the tree through the construction process and we agreed to look at the timings of the necessary operations to ensure the tree will be well cared for at all times.
- The tree has been regularly managed in the past and it was agreed that some form of containment pruning is feasible to the overall crown to maintain acceptable levels of risk for the future and also to aid working space during the construction period.
- As part of the pruning works, it was also agreed that the large low limb on the eastern side of the crown can be pruned back beyond its existing pollard points to provide space for the new proposal. Image 3 below shows the approximate agreed location (yellow dotted line halfway along the limb) for the branch to be pruned back. It was agreed that the loss of the larger secondary and tertiary regrowth at the end of this branch is not likely to be detrimental to the appearance or crown shape, and the overall balance of the crown is unlikely to be significantly affected. Also, because the tree is showing good signs of vigour, it is likely to be able to respond well to this type of wounding by creating good wound wood and replacement stems at the point of pruning. On this basis, the work was considered acceptable.





Image 3: The yellow dotted line indicates the approximate line agreed for pruning to accommodate the new building.

Impact from pruning to accommodate the proposal: The proposed building is close to the canopy of the tree so the crown will need to be contained on this side in the future. However, this tree has been regularly reduced in the past to leave multi-stemmed regrowth that currently extends 2-3m beyond the old pruning points (Image 4). If this regrowth is left unmanaged there is the potential for parts to fail as they increase in size, causing harm or damage to the property or children and teaching staff below. It is for this reason that approval was given in the past for the regrowth to be reduced back to contain the crown. Further pruning work was considered acceptable in principle by Mr Bell during the site meeting in 2016. On this basis, I believe that the crown can be regularly managed in the future and I do not believe the location of the tree or its canopy will adversely affect the normal use of the property.





Image 4: The old reduction points are indicated by the yellow fill and this part of the crown will be retained. The red fill indicates the regrowth that will be reduced back to the old pruning points.

Impact from the proposed basement works: Based on my experience and the evidence in the tree radar report, I believe it is unlikely that roots from this tree have found their way beneath the existing gymnasium foundations and are probably being contained within the area of soil occupying the playground courtyard. On this basis, the tree is unlikely to be significantly affected by the proposed replacement basement works, but as a precaution, the engineers have produced a contiguous piled wall construction to minimise impact from the works close to the tree. For further clarification, these section drawings along with the construction sequence can be found on the tree protection plan BT2.

Installation of the new cycle store: These works will be close to one low category tree (T3) and there is potential for harm to tree roots if special care is not taken. However, these works only encroach into a small part of its RPA so if the guidance in the site guidance notes is followed, there is unlikely to be a significant impact on its health or stability.

1.3 The impact of tree removals on local character

No trees will be removed because of this development and so there will be no impact on local character for that reason.



1.4 Post development considerations

My assessment is that there will be no adverse impacts on retained trees once the development is completed and occupied.

1.5 Summary of impact on local character

No trees will be lost because of this proposal. The construction activity may affect 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 development proposal will have no significant impact on the contribution of trees to local character.

For these reasons, I conclude that the proposed development would not cause an unacceptable or adverse impact on the long-term vitality of the retained trees, and therefore the character and appearance of the area. Furthermore, it fully aligns with the broad guidance set out in the National Planning Policy Framework.



2: Arboricultural method statement

2.1 Site Guidance Notes (SGNs)

This section of the report identifies which trees on this site will be protected and managed, and by what means. This site-specific summary is supplemented by more detailed explanations and descriptions of specific operations set out in the accompanying *Manual for managing trees on development sites*. That document is a compilation of 12 individual SGNs addressing the following tree protection and management issues that regularly arise in the construction phase of development:

- SGN 1 *Monitoring tree protection* (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn01?stage=Stage)
- SGN 2 Fencing protected trees (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn02?stage=Stage)
- SGN 3 Ground protection (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn03?stage=Stage)
- SGN 4 *Pollution control* (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn04?stage=Stage)
- SGN 5 Site cranes & piling rigs (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn05?stage=Stage)
- SGN 6 *Height restrictions* (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn06?stage=Stage)
- SGN 7 Excavating in RPAs (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn07?stage=Stage)
- SGN 8 Removing surfacing and structures in RPAs
 (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn08?stage=Stage)
- SGN 9 Installing/upgrading surfacing in RPAs
 (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn09?stage=Stage)
- SGN 10 *Installing structures in RPAs* (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn10?stage=Stage)
- SGN 11 *Installing services in RPAs* (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn11?stage=Stage)
- SGN 12 Landscaping in RPAs (https://www.barrelltreecare.co.uk/resources/technical-guidance/sgn12?stage=Stage)

NOTE: Each individual SGN can be downloaded by using the links above and the QR Code links in Appendix 3.

2.2 Identification of areas to be protected

The tree protection plan shows the areas where protective measures are necessary. The fencing location is shown by the heavy black dashed lines, with the construction exclusion zone behind as the lighter black diagonal hatch. Precautionary areas are shown by a yellow fill and ground protection is shown by a blue fill.

2.3 Arboricultural supervision

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

• a pre-commencement meeting before any work starts;



2: Arboricultural method statement

- regular supervision visits to oversee the agreed tree protection, as agreed at the precommencement meeting; and
- further supervision visits, as necessary, to oversee any unexpected works that could affect trees.

The detail of how the arboricultural supervision will be carried out is explained in SGN 1 *Monitoring tree protection* in the accompanying Manual.

2.4 Table 2: Summary of the site operations requiring arboricultural input

For this site, arboricultural input will be needed for the following operations:

Brief operation summary	Trees affected	Location of detailed explanations	
Pre-commencement meeting: Meeting on site with all parties to agree protective measures, as described in SGN 1. Will be carried out before any significant site works begin.	All trees	SGN 1 Monitoring tree protection	
Tree felling and pruning: Contractor will carry out agreed works as described in Appendix 2. Will be completed before any significant site works begin.	Prune tree T1	Appendix 2	
Installing fencing: Agreed tree protection measures will be installed and checked, as described in SGN 2 and SGN 3. Will be completed before any significant site works begin.	Fencing all trees Ground protection for trees T1, G4	Tree protection plan, SGN 2 Fencing protected trees, and SGN 3 Ground protection	
Pollution control near retained trees: Any pollution control measures identified during risk assessment will be installed as described in SGN 4. Will be completed before any potential pollutants arrive on site.	All trees	SGN 4 Pollution control	
Operation of site cranes and piling rigs: Provision will be made to prevent site cranes and piling rigs damaging trees, as described in SGN 5.	All trees	SGN 5 Site cranes & piling rigs	
Regular arboricultural supervision: Provision will be made to carry out and record agreed arboricultural supervision, as described in SGN 1.	All trees	SGN 1 Monitoring tree protection	
Excavating in RPAs: These operations will be carried out as described in SGN 7.	Trees, T1, T3	SGN 7 Excavating in RPAs	
Installing structures in RPAs: These operations will be carried out with care, as described in SGN 10.	Trees T1, T3	SGN 10 Installing structures in RPAs	
Installing services in RPAs: These operations will be carried out with care, as described in SGN 11.	All trees	SGN 11 Installing services in RPAs	
Removing tree protection: Protection can only be removed when there is no risk of damage to retained trees, as described in SGN 1.	All trees	SGN 1 Monitoring tree protection	

The operations summarised in this table, and supplemented by the more detailed explanations set out in the SGNs and the rest of this document, form the arboricultural method statement for this site. The Site Manager will ensure that its details and any agreed amendments are known and



2: Arboricultural method statement

understood by all site personnel. Copies of the agreed documents will be available on site. All personnel who could have an impact on trees will be briefed on the specific tree protection requirements as part of the site induction procedures. This requirement will be written into the site management documentation.

If unanticipated issues arise on site not referenced in the above explanations, further guidance on how to manage them can be found in the accompanying Manual.

2.5 Construction method statement (heads of terms summary)

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, as explained in clause 5.5.6 of BS 5837, it is normally sufficient to list a heads of terms summary of the issues requiring more detailed consideration once consent is issued. On this site, those issues are likely to include:

- 1. Preparation of a written site management protocol for dealing with tree issues, to be incorporated into formal site management procedures, and to specifically include induction training for all operatives related to tree protection.
- The order of work on site, including demolition, site clearance, the installation of protective measures, the phasing of successive work locations, the removal of existing structures/surfacing, the installation of new structures/surfacing, the removal of tree protection, and any necessary reinstatement.
- 3. Erection and maintenance of tree protection measures.
- 4. Who will be responsible for protecting the trees on site.
- 5. Detailed proposals for inspecting and supervising the tree protection.
- 6. How accidents and emergencies involving trees will be managed, including accidental damage to roots and their treatment.
- 7. A schedule of emergency contact numbers relating to trees.
- 8. Areas for loading and unloading of materials and storage of materials and plant.
- 9. Where site facilities will be located and when will they be installed.
- 10. 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.
- 11. Pollution control to specifically consider chemical storage and wheel washing facilities in relation to trees.
- 12. Recycling and storage of waste in relation to trees.
- 13. Details of earthworks, grading and mounding and removal of spoil, including any planned lowering or raising of ground levels.
- 14. Precise services locations, including the method of excavation when near trees.
- 15. Finished excavation lines for basement works and the method of installing retention, e.g. sheet piling.
- 16. How post-construction impacts through compaction to soil near trees will be ameliorated.



Appendix 1: Background administrative information and data collection

A1.1 Table 3: Background administrative information

	Background administrative information				
Report date & reference	26 th February 2019; 15204-AA2-AS				
Tree protection plan reference	BT2				
Instructing client	The Hall School				
Instructions	Visit the site, assess the relevant trees, prepare a schedule of their detail describe the impact of the proposal on those trees and identify the tree protection issues in an arboricultural method statement with a tree protection plan, if appropriate.				
Provided documents	Topographical survey, drawing number 16077B/TOPO/OS, received by email on 6 October 2016 and layout base 1 drawing number IALN_140046_Hall School-P20-B1-02-Proposed Basement.dwg, layout Lgf drawing number IALN_140046_Hall School-P20-B1-02-Proposed Lower Ground Floor P, layout GF/Upper IALN14_Hall School-Sheet-P20-00-02-Proposed Ground Floor & Upper Ground Floor Plan.dwg, received by email on 14 th February 2019.				
Report author and credentials	Andrew Sherlock has taken and passed the LANTRA Professional Tree Inspection course (https://www.lantra.co.uk/awards/product/professional-tree-inspection), is a Chartered Forester (www.charteredforesters.org), and a Fellow of the Arboricultural Association (www.trees.org.uk), and is fully qualified to undertake the assessments in this report (https://www.barrelltreecare.co.uk/who-we-are/).				
Report limitations	 We have not checked if there is any statutory protection on the trees because this can delay the production of the report. If any tree works are proposed before a planning consent is given, then the possible 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	-				



Appendix 1: Background administrative information and data collection

A1.2 Table 4: Data collection

	Data collection			
Date of site visit	7 th February 2019			
People present during site visit	Andrew Sherlock			
Weather & visibility	Clear and dry, with good visibility.			
Limitations to observations	 The inspection of the trees for the purposes of assessing their condition and work requirements was 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. 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. Observations of trees outside the site boundaries are confined to what was visible from within the site. All dimensions were estimated unless otherwise indicated. 			
Tree Preservation Orders (TPOs), Conservation Areas, and tree categorisation	TPOs cannot always be reliably interpreted from the documentation to identify which trees are protected, especially as time passes and site conditions change from when they were originally made. It is common for TPO plans to be inaccurate and schedules often become out of date as trees die or are removed. Frequently, trees deteriorate and, although they may be technically protected by the TPO, are in such poor condition or causing such unreasonable inconvenience that their suitability for retention becomes questionable. In a planning context, if poor trees are assessed as unsuitable for retention, then it would be inappropriate to show them as a material constraint in development planning. For these reasons, although TPOs do need to be considered, they do not form the primary basis for tree categorisation. Poor quality trees assessed as not worthy of retention will be shown as such, irrespective of whether they are protected or not. Similarly, good quality trees that are not protected will still be shown as material constraints. The same rationale will be applied to Conservation Areas.			
Tree location and	Each tree and group was inspected, and the numbering scheme is indicated			
numbering	on the tree protection plan.			
Recording of tree data	For each identified tree and group, 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.

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	London plane	22	105*	Mature	-	A	Pollarded in past	Cut back to old pollard points. Reduce one primary limb growing over the existing building.	12.6	499
T2	Norway maple	10	30	Maturing	-	В	-	-	3.6	41
T3	Beech	5	25	Maturing	-	C	-	-	3.0	28
G4	Sycamore, poplar, London plane, cypress	18	70	Mature	-	В	-	-	8.4	222



Appendix 2: Tree schedule and explanatory notes

Explanatory Notes

• Abbreviations:

G: Group T: Tree

• Botanical tree names:

Beech : Fagus sylvatica
Cypress : Cupressus sp

London plane : Platanus x hispanica

Maple : Acer sp Poplar : Populus sp

Sycamore : Acer pseudoplatanus

- 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 otherwise indicated with an asterix (*) after the figure.
- 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 (with a diameter tape), at the discretion of the consultant, and recorded in 2.5cm increments as advised in BS 5837 Table D1. Estimates may be made where access is restricted, direct measurement is prevented because of ivy on the trunk, or the tree is assessed as low 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. The following points should also be considered before carrying out any works:
 - 1. **Reporting during work operations:** In the context of the preliminary nature of the tree inspection, any defects that may affect tree safety discovered by the contractor when carrying out the work recommendations should

Page **14/16**



Appendix 2: Tree schedule and explanatory notes

- be reported to the supervising officer. Modification to the schedule of works may be required because of these reports. The contractor should be specifically instructed on this point.
- Implementation of works: All tree works should be carried out to BS 3998 Recommendations for Tree Work
 as modified by more recent research. It is advisable to select a contractor from the local authority list and
 preferably one approved by the Arboricultural Association. Their Register of Contractors is available free
 from The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire GL10 3DL; phone 01242 522152;
 website www.trees.org.uk.
- 3. **Statutory wildlife obligations:** The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence.
- 4. **Stumps:** Stumps to be removed within the RPAs of retained trees should be ground out with a stump grinder to minimise any disturbance unless otherwise authorised by the supervising officer.
- 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 <u>must</u> be reviewed annually from the date of that visit.



Appendix 3: QR Codes for SGNs (Scan with reader to download)

SGN 1 Monitoring tree protection	SGN 2 Fencing protected trees	SGN 3 Ground protection
SGN 4 Pollution control	SGN 5 Site cranes & piling rigs	SGN 6 Height restrictions
SGN 7 Excavating in RPAs	SGN 8 Removing surfacing and structures in RPAs	SGN 9 Installing/upgrading surfacing in RPAs
SGN 10 Installing structures in RPAs	SGN 11 Installing services in RPAs	SGN 12 Landscaping in RPAs

