Part 3: BS: 5837 Arboricultural Method Statement Report & 'Final' Tree Protection Plan

Site:

St Christopher's School
32 Belsize Lane
Hampstead
London
NW3 5AE

Date of Site Visit:

Tuesday 4th August 2020

Prepared for:

Paul Neagle
St Christopher's School Bursar

Prepared by:

James Percy-Lancaster
Senior Arboricultural Consultant

Bartlett Project Reference:

JPL/230135/R3

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

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Submitted on 19th March 2024

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1.0 SCOPE OF REPORT

1.1 Instruction

1.1.1 I was previously instructed to undertake the following reports & plans: JPL/200255/R1 - Part 1 - Tree Survey and compose a Tree Constraints Plan (TCP), and JPL/200255/R2 - Part 2 - Arboricultural Implications Assessment and 'Draft' Tree Protection Plan, following the guidance contained within British Standard 5837: 2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*, gathering data on trees and vegetation within the boundary of St Christopher's School, 32 Belsize Lane, Hampstead, London, NW3 5AE, as well as those on neighbouring properties considered to be within influencing distance. Data pertaining to four trees within the curtilage of Belsize Court, Wedderburn Road were also obtained.

1.1.2 The Arboricultural Method Statement (AMS) is a methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree identified as suitable for retention.

1.1.3 The AMS takes into consideration construction operations undertaken in the vicinity of the trees. It will deal with such issues as site access, intensity of construction activity, space required for works, location of designated material storage areas and positioning of service runs.

1.1.4 This AMS is accompanied with a Tree Protection Plan (TPP). The TPP outlines trees to be retained and removed, types of barrier to be installed and the preliminary location of the protective barriers. This method statement also contains a timetable indicating when and how the specific work methods adjacent to trees should be conducted.

1.1.5 This report takes the previously gathered tree data and constraints, and overlays that information with the proposed site plan and proposed site layout, allowing for an evaluation of how the proposed single storey front extension and side link extensions will co-exist with the tree population.

1.2 Documents & Supporting Information

1.2.1 I was provided with the following documentation and plans prior to the composition of this report. They were sent via email in PDF file format:

- 5057_KW_T1_DR_03-01_Proposed Site Plan.pdf
- 5057_KW_T1_DR_12-03_Site Demolition Plan.pdf
- 5057_KW_T1DR_13-01_Proposed Ground Floor Plan.pdf
- 1-821_C-002 Proposed Drainage General Arrangement Plan.pdf

1.2.2 I have previously composed the following reports and plans:

- JPL/200255/R1 - BS: 5837 (2012) - Tree Survey & Tree Constraints Plan
- JPL/200255/R2 - BS: 5837 (2012) - Arboricultural Implications Assessment & 'Draft' Tree Protection Plan

1.3 Aspects Excluded from Report

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

1.3.2 Current or proposed structures in relation to the indirect influence of trees are not considered within the report unless directly instructed. It is considered that such considerations are best dealt with in a different report having liaised with the structural engineer.

2.0 BACKGROUND INFORMATION

2.1 Table 1: Names and Contacts numbers of parties concerned

2.1.1 Table to be completed prior to commencement of construction activities.

Contact Name	Company / Organisation	Role	Telephone Numbers
James Percy-Lancaster	Bartlett Tree Experts Ltd.	Arboricultural Consultant/ Supervisor	077 1952 1510
Delia Scarpellino	Kennedy Woods	Architect	020 7993 8205
Paul Neagle	St Christopher's School	Owner	020 7435 1521
TBC	-	Site Manager	-
Patrick Marfleet	London Borough of Camden	Planning Officer	020 7974 4444
Tom Little	London Borough of Camden	Tree Officer	020 7974 4444

2.2 Availability of this Arboricultural Method Statement

2.2.1 Copies of this document shall be made available for all site visits. The appointed Site Manager and Main Contractor shall each hold a copy of this document, including the supporting Tree Protection Plan.

3.0 SUPERVISION AND MONITORING

3.1 Monitoring and Supervision

3.1.1 All required arboricultural supervisory works and monitoring visits must be confirmed by formal correspondence circulated to all relevant parties, including the local planning authority. These detailed records of site visits will provide proof or compliance.

3.2 Phasing of Arboricultural Involvement throughout the Development

3.2.1 Contained within Section 5.0 below lists and details the events in relation to trees that require arboricultural involvement.

3.3 Recommendations for Site Monitoring and Supervision

3.3.1 A pre-commencement meeting should be held on site before any of the tree work, demolition and construction work begins. This should be attended by the appointed Site Manager and the Arboricultural Consultant.

3.3.2 The Arboricultural Consultant will inform the local planning authority (London Borough of Camden Council) in writing of the details of meetings held. All tree protection measures detailed in this document must be discussed so that they are fully understood by all the parties.

3.3.3 Clarification or modifications to the consented details must be recorded and circulated to all parties in writing. These documents should then form the basis of any supervision arrangements between the Arboricultural Consultant and the proposer, as agreed with the local planning authority where applicable.

3.3.4 The Arboricultural Consultant will visit during the phases as set out in section 5.0 below. The Consultant's role is to advise on the development in relation to the trees, as well as liaise as necessary between the Site Manager and the local planning authority to ensure that appropriate protection measures are in place.

3.3.5 The role will involve monitoring compliance with any/all arboricultural conditions (where applied) and advising on any tree problems as they arise. A development site monitoring form (please see Appendix 6 for example), will be completed by the Supervising Arboriculturist during each site visit, to include the following;

1. Date of visit.
2. List of those in attendance on site.
3. Findings in relation to trees.
4. Details of any non-compliance.
5. Recommendations to be actioned so that the non-compliance is addressed and remedied.
6. List of the parties concerned to whom the monitoring sheet has been sent.
7. Date that Monitoring sheet emailed/ posted to the recipients.

3.0 SUPERVISION AND MONITORING

3.4 Site Management

3.4.1 It is the Site Manager's responsibility to ensure that the requirements set out within the Arboricultural Method Statement are known and understood by all site personnel. Copies of pertinent documents should be kept on site at all times.

3.4.2 The site manager will brief all personnel who may have an impact on any trees and relay specific tree protection requirements. This methodology should be a part of all site induction procedures and written into appropriate site management documents.

3.4.3 The following pertinent points should be explained to all personnel who could have an impact on trees;

1. The specification of the Protective Barriers around retained trees.
2. The requirement for Protective Barriers to be sufficiently robust to prevent incursion by construction activity.
3. Why it is essential that the Protective Barriers remain throughout the works.
4. The importance of the 'exclusion zones' around retained trees.
5. The potential damage caused to trees by compaction of soils.

3.5 Variations

3.5.1 Any variations to the tree protection measures will need to be agreed in writing by the local planning authority before implementation. The variation will be set out in writing, detailing the reasons leading to the change and the modifications required.

4.0 SCHEDULE OF TREE WORK

4.1 Table 2: Tree works to be carried out prior to and post-construction

Tree Ref	Species	Category	Schedule of works prior to erection of tree protection barriers
T06	London Plane *(Platanus x hispanica)*	A2	Tree root severance (<25 millimetres in diameter only) within proposed below ground level surface water drainage run. 2x channels to be excavated by hand, using hand tools only in combination with Air Spade.

5.0 SEQUENCE OF EVENTS

5.1 Table 3: Sequence of events

Sequence	Description	Arboricultural Input
1	Pre-commencement site meeting	Site visit – please refer to Section 3.3
2	Installation of Tree Protective Barriers, establish designated Storage Material Areas, as shown on the Tree Protection Plan (TPP).	Site visit – to check adequacy and location of Tree Protection Barriers.
3	Demolition of existing classroom roof & walls	None required.
4	Installation of new below ground services within RPA of tree: T06.	Site visit – to conduct tree root severance as required.
4	Demolition of existing playground	None required
5	Construction of replacement classroom roof & walls	None required.
6	On completion of single storey extension to two existing classrooms	None required.
7	Re-inspection of all retained trees	Site visit – to carry out the inspection of all retained trees within one month following completion of construction works.

APPENDIX 1: LIMITATIONS OF REPORT

Limitations of the Arboricultural Method Statement

- Please also refer to sections 1.2 and 1.3 at the beginning of this report.
- The report is based on information provided by third parties and the specifications and recommendations is dependent upon information provided therein.
- This report does not consider the possible implications to any present or future built structures other than those considered within the report.

Findings of the Survey and the Report

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

Timing of the Survey and the Report

- The considerations/ findings in this method statement are valid for one year.
- Such considerations/ findings will become invalid if any building works are undertaken, soil levels are altered or tree work undertaken outside of the scope of works as detailed and presented at the time of compiling this report.
- If there are any alterations to either the property or soil levels, or if tree works are carried out, it is recommended that a new tree report is undertaken.

Trees in relation to other Properties:

- This report/survey only considers the trees in relation to the site as identified.
- It does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, or with regard to possible hazards presented by trees surveyed.
- Neighbouring owners of trees that are identified as posing a possible risk to the property/site in question should seek their own advice as to possible effects of the recommendations given within this report.
- Damage to, or possibility of damage to, any other structure that is not referred to within the report is not considered unless otherwise specified. This includes both neighbouring structures and any other structure on the property.

Trees in Relation to Subsidence, Heave and Direct damage

- This report does not deal with issues relating to subsidence or heave in relation to any built structures and surrounding vegetation whether the structure or vegetation falls within the boundaries as considered or lies beyond the boundaries.
- The report does not consider issues relating to subsidence or heave in relation to any proposed built structures or future vegetation whether within the boundaries as considered or beyond the boundaries
- It is prudent to consider the effects of heave on any property if trees are removed.
- Similarly, the issue of direct damage (when the roots of a tree have physical contact with a structure) is not considered within this report.

Trees subject to statutory controls:

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

Trees are subject to environmental factors:

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

APPENDIX 2: REPORT REFERENCES

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

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

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

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

APPENDIX 3: TREE PROTECTION PLANNING

The 'Final' Tree Protection Plan (FTPP) referenced JPL/230135/FTPP can be found as an appendix at the end of this report. The FTPP has been prepared in accordance with Section 7.1 of British Standard 5837:2012.

Before the commencement of any works on site (other than those set out in the schedule of tree works, contained in this document), protective vertical barriers must be erected. The location of the barriers is illustrated on the 'Final' Tree Protection Plan. However, it must be noted that these locations are now final, construction methodologies have been considered and the barrier locations should not require amendment or supplementing.

The barriers will remain in place until completion of the main construction phase and then only removed with the agreement of the consulting Project Arboriculturist.

Other than works detailed within this method statement or approved in writing by the local planning authority, no works shall take place within the exclusion zones defined by the protective fencing.

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

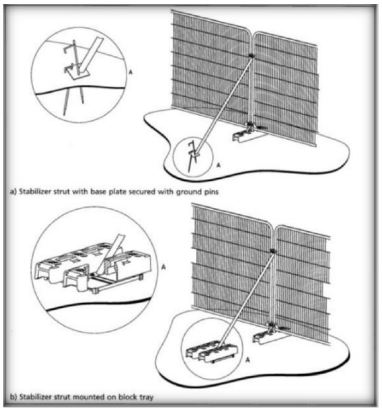


Figure 1: Illustration of Vertical Tree Protection Barrier

Figure 2: Showing appropriate on site Notices to apply to Tree Protection Barriers.

APPENDIX 4: WORKING WITHIN TREE ROOT PROTECTION AREAS

Demolition

1 – Demolition of the existing classroom walls and roof shall be undertaken using the "top-down, pull-back" method.

2 – A banksman shall be employed to ensure that the overhanging branching structure and crown of trees T01, T02, T03 and T04 are not damaged by the swinging boom or moving parts of machinery used to complete the demolition.

3 – Machinery will be of a size and type appropriate for the constrained site, for working in close proximity to trees and tree protection barriers, and will remain outside the RPA at all times.

4 – No arising material or debris is to be stacked against the vertical tree barrier; no spoil or arising material is to be dumped on the opposite side of the vertical barrier into the tree RPA.

Breaking-up of Existing Hard-surfacing

1 – Pre-existing tarmac within the root protection area (RPA) of T06 must be broken-up using hand held tools only, such as a pneumatic drill, a pneumatic hammer, and/or a sledgehammer under Arboricultural supervision.

2 – Broken pieces of concrete, tarmac and stonework within the tree RPA must be carefully lifted using hand tools such as a crowbar, pick-axe, or maul. No machinery is to be employed during this phase of operations.

3 – Removal of the sub-base to achieve the sub-grade within the RPA of T06 must be undertaken and completed using hand tools only, under Arboricultural supervision. Acceptable tools include: spades; shovels; trowel; narrow trenching shovel; pick-axe and cutting maul should the material be heavily compacted.

4 – Excavations within the sub-grade within the RPA of T06 must be completed using air spade technology in combination with hand tools only, as detailed in the next section below.

APPENDIX 4: WORKING WITHIN TREE ROOT PROTECTION AREAS (Continued…)

Tree Root Investigation Excavations within Tree Root Protection Areas

1 – Stripping of subsoils, and sub-grades within the notional RPA of tree; T06 for new below ground level drainage service runs associated with the proposed development must be completed using air spade technology, under arboricultural supervision, to achieve the necessary depths, or to a depth lower than that of the tree's root system. This working method will carefully and delicately expose and identify the tree root pattern allowing for careful and informed development.

Figure 3: Image of Bartlett Tree Experts Using Air Spade within Root Protection Area

2 – With reference to the 'Final' Tree Protection Plan, the footprint of the new below ground level drainage service runs within the RPA of trees; T06 will be measured and accurately marked out on site. This shall be achieved by using landscape pegs or another similar form of identification and marking out.

3 – Mark the identified root pattern within the footprint of approved development using wooden landscape pegs, cane markers, or spray-paint, and partially back fill to cover main root zones which are outside the footprint of development.

APPENDIX 4: WORKING WITHIN TREE ROOT PROTECTION AREAS (Continued…)

Soil Stripping & Root Identification within Tree RPA

1 – With reference to either the Tree Constraints or Final Tree Protection Plan, the root protection area of tree: T06 shall be measured and marked out on site, for reference, using landscape pegs installed around the outside edge of the RPA boundary (or another similar form of identification and marking out).

2 – Undertake stripping of existing subsoils using air spade technology within this identified area, under Arboricultural supervision, to achieve the necessary depth of 1.2 metres or to a depth lower than that of the tree's root system. This working method will carefully and delicately expose and identify the tree root pattern.

2a – It may be reasonable to use hand-digging when working within the root protection area of tree T06. These excavations will be made under arboricultural supervision and using the following tools: spades; shovels; pick-axe; cutting maul; trowel and narrow trenching shovel.

3 – Mark the identified root pattern using wooden landscape pegs and or cane markers, partially back fill exposed surface to cover main root zones which are outside the footprint of development, and lay load bearing boarding overtop for working.

Root Pruning

1 – Roots with a diameter of 25 millimetres or smaller may be pruned and excavations and construction can continue. Roots must be pruned with a sharp and sterile pair of secateurs and/or hand-loppers by a qualified Arboricultural Consultant or Local Authority Tree Officer.

NOTE: If there is a prolific amount of smaller roots (≤25mm) pruning these roots can have just as negative an effect on tree health and vigour as pruning one or two large roots. A decision will be made by the Project Arboriculturalist whilst on-site as to the appropriateness of severing a large quantity of smaller tree roots.

2 – Roots with a diameter greater than 25mm, or massed bundles of fibrous roots cannot be pruned and must be retained. These roots must be covered with hessian and kept wet during periods of no rain or during the winter when frost damage can occur, while exposed. Alternatively they should be covered over with backfill while completing work in the area.

3 – Massed bundles of fibrous roots can then be unwrapped and gently manipulated when completing the works, so that they can be retained and allowed to continue to grow within the root protection area.

4 – Individual primary roots with a diameter of 25mm or larger must be retained and wrapped in burlap and/or hessian while professional advice is sought from a qualified Arboricultural Consultant or Local Authority Tree Officer.

APPENDIX 5: GENERAL SITE CONDITIONS AND TREE PROTECTION MEASURES

Storage of Materials
Designated areas for storage of materials and site office will be decided by the Site Manager before any works can commence. Suggested suitable areas are marked out on the Tree Protection Plan (TPP). It is advisable to consult with the Arboriculturist if the storage areas or site office deviates from that area as outlined by the TPP.

Discharge of Contaminants
No materials that are likely to have an adverse effect on tree health, such as oil, bitumen or cement will be discharged within the RPA of any of the trees to be retained. It is advised that the disposal of all waste materials is carried out in an appropriately sustainable fashion.

Contingency Plans
Should there be any contamination of soils either within or adjacent to the RPA these should be dealt with as quickly as possible with a proprietary emergency clean up kit. The situation should then be assessed as to whether it is appropriate to remove soils. An Arboriculturist should be consulted before a decision is made. The protection barriers erected should be able to be removed relatively easily to access the area in event of an emergency.

Changes in Ground Levels and Soft Surface Ground changes within the RPA's of trees
It is considered certain operations may require ground level changes but these changes should be limited to a minimum. Landscaping operations within the RPA of trees to be retained should be carried out with minimum disruption to the existing landscape avoiding removal of topsoil and re-introduction of foreign soils.

Where there are areas to be re-turfed within the RPA of trees to be retained, existing turf should be removed with minimum disruption to the soils, removing no more than 25 to 50mm of topsoil. Similarly, in new amenity grass areas that encroach RPAs, the ground levels should not be raised in excess of 50mm above existing. Soils used should be from the site or clean imported topsoil.

Access to the area of proposed works
Main access to the site for renovation of the Barn is understood to be from the adjacent farm area. Access to the swimming pool, car port and driveway construction will be from the site of Park Hall. It is considered that these would be the only access points into the site for the purposes of carrying out the development as proposed. If there are any other proposed access points into the site, this should be agreed prior to use with the Arboriculturist.

Cranes and Lifting Equipment
All lifting equipment, including cranes if utilised, should be positioned so that they operate without contacting the retained trees. Care must be taken so that the arc of the boom fitted to the lifting equipment is sufficiently clear of the retained trees. The employment of a banksman is critical to ensure safe working practices are adhered to.

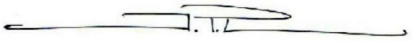
Boundaries/ Scope of the Site
The appointed Arboricultural Supervisor must be consulted if the site boundaries of the site are extended or if excavations/ storage/ construction related to this development is to be carried out on other parts of the site, outside of the development site as indicated on the Tree Protection Plan.

APPENDIX 6: BARTLETT TREE EXPERTS LTD SITE MONITORING FORM

Arboricultural Consultant's Details	
Consultant's Name: **Tel:** **Mobile:**	
Development Site Details	
Address: **Planning Application Ref:**	
Local Authority Details (LPA):	
LPA: **LPA Tree Officer:** **LPA Planning Case Officer/ Contact:**	
Developer's Details	
Developer name: **Address:**	
Contractor Details:	
Contractor name: **Contact name:**	
Date	
Stage of Development	
Purpose of visit	
Protective Barriers	
Ground Protection	
Compaction	
Damage to retained trees	
Other notes	
Photos attached	
Further action required:	
Date of next site visit:	

Date issued to LPA: …… Signed: ……

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

REPORT CLASSIFICATION:	BS: 5837 Arboricultural Method Statement & Final Tree Protection Plan
REPORT STATUS:	Final
REPORT COMPLETED BY:	Mr James Percy-Lancaster *CertArb TechArborA* **Senior Arboricultural Consultant**
SIGNATURE:	
DATE:	19th March 2024
REPORT REVIEWED BY:	Mr Chris Watson *Dip Arb L4 (ABC), MArborA* **Assistant Arboricultural Consultant**
SIGNATURE:	
DATE:	20th March 2024

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FINAL TREE PROTECTION PLAN

SCALE : 1 : 200 @ A3
DATE : 19/03/2024
N
MAP FILENAME : JPL/230135/FTPP - ST CHRISTOPHER'S SCHOOL