

ARBORICULTURAL IMPACT ASSESSMENT

St Paul's CE Primary School, Elsworthy Road, NW3 3DS

Prepared For: St Paul's CE Primary School

For submission to: London Borough of Camden Council

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EXECUTIVE SUMMARY

- S1. This Arboricultural Impact Assessment (AIA) has been instructed by St Paul's CE Primary School.
- S2. This report is intended to be submitted to London Borough of Camden Council as part of the supporting technical information for a planning application and has been prepared in accordance with British Standard BS5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'.
- S3. A total of ten individual trees will be removed as part of the proposed re-development. The principal arboricultural features of the site, set out at Table 2, will be retained. The removal of the trees identified for removal will result in a partial alteration to the existing site context, but without removing trees of high amenity value or trees which make an essential contribution to the landscape, and will not result in a significant, long-term or irreversible impact on the arboricultural character of the site.
- S4. Replacement tree planting has been proposed and once established, these replacement trees will progressively reduce the magnitude of impact caused by the removal of existing trees.
- S5. As there is no requirement for facilitative pruning, there will be no adverse impact on the existing arboricultural character of Primrose Hill Park as a result of the proposals in this regard. As there will be no encroachment into the RPAs of the trees to be retained, there is little likelihood of unacceptable damage being caused to the retained trees.
- S6. Having considered the above, I conclude that the overall magnitude of impact in arboricultural terms is **medium**, as defined at **Table 1**. Trees of some visibility from the public realm will be removed, but the principal arboricultural features of the site (see **Table 2**) will be retained and protected effectively.

1 INTRODUCTION

1.1 INSTRUCTION

1.1.1 This Arboricultural Impact Assessment (AIA) has been instructed by St Paul's CE Primary School.

1.2 TERMS OF REFERENCE (TOR)

1.2.1 This report is intended to be submitted to London Borough of Camden Council as part of the supporting technical information for a planning application and has been prepared in accordance with British Standard BS5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

1.2.2 The agreed scope of work is outlined below:

1. To undertake a site visit and tree inspection of the trees within influencing distance of the proposals, in accordance with BS5837:2012;
2. To produce a package of documents to enable the design team to produce a site layout that respects the above and below ground constraints associated with the existing tree stock; and
3. To produce this arboricultural impact assessment; identifying the impact of the proposals and what working methodologies or protection measures should be adhered to, to ensure successful integration of the proposals into the existing landscape.

1.2.3 This report should be read in conjunction with the documents and plans listed below for context:

- The tree survey schedule (ref. MDJAC-22.137-TSS-01); and
- The tree protection plan (ref. MDJAC-22.137-TPP-01).

1.3 AUTHOR

1.3.1 I am Matthew Jones BSc (Hons), MArborA, the Director and Principal Arboriculturist of MDJ Arboricultural Consultancy Limited.

Formal qualifications

1.3.2 I hold a Bachelor of Science Degree with Honours in Arboriculture and Urban Forestry, awarded by The University of Central Lancashire (UCLan) in 2022. This is a top up degree following successful completion of a Foundation Degree in Arboriculture, also awarded by UCLan in 2020. I have also completed the National Diploma (RQF Level 3) in Arboriculture and Forestry at Merrist Wood College, Guildford in 2009.

Industry-related accreditations

1.3.3 During the course of my career I have attended various CPD events and courses. I hold the Professional Tree Inspection accreditation awarded by LANTRA and I am a registered user of The International Society of Arboriculture (ISA) Tree Risk Assessment Qualification (TRAQ) methodology.

Professional memberships

1.3.4 I am a Professional Member of the Arboricultural Association (The AA) and an Associate Member of The Institute of Chartered Foresters (The ICF). I am therefore bound by the code of ethics and required to uphold the professional standards expected of both professional bodies.

Overview

1.3.5 I am regularly instructed to carry out appraisals of various sizes of tree stocks in relation to development, health and safety considerations, and the potential impact of trees on the built environment; and I am required to provide considered tree management recommendations as necessary during the course of these instructions.

2 STATUTORY CONTROLS

2.1 TREE PRESERVATION ORDERS (TPOs)

2.1.1 I understand from The Client and from email discussions between the design team and local authority prior to my appointment, that none of the trees on site are protected by a Tree Preservation Order.

2.2 CONSERVATION AREAS (CAs)

2.2.1 The site is not within a designated conservation area.

3 IMPACT ASSESSMENT METHODOLOGY

3.1.1 In order to systematically assess the overall impact of the scheme, I have devised a series of categories which seek to provide a summary of the likely, post-planning site conditions on the presumption that planning consent is gained, and the proposed scheme as detailed within this report is built out.

3.1.2 Our conclusions relating to the overall arboricultural impact of the scheme are summarised at **Table 1** below.

Impact category	Description
High	Total or extensive alteration to the existing arboricultural character of the site, or the principal arboricultural features on or adjacent to it. The post-planning situation is significantly and adversely different.
Medium	Partial alteration to the existing arboricultural character of the site, or the principal arboricultural features on or adjacent to it. The post-planning situation is partially different.
Low	Minor alteration to the existing arboricultural character of the site, or the principal arboricultural features on or adjacent to it. The post-planning changes will be distinguishable, but comparable to the existing context.
Negligible	No or very minor alteration to the existing arboricultural character of the site, or the principal arboricultural features on or adjacent to it. The post-planning situation is not readily distinguishable from the existing context with no material adverse impact.

Table 1: MDJAC magnitudes of impact summary.

4 SITE ASSESSMENT

4.1 SITE VISIT AND TREE INSPECTION

4.1.1 I undertook a site inspection and tree survey on Tuesday 22 November 2022. Weather conditions at the time were clear, dry and bright and deciduous trees were in partial leaf.

4.1.2 The dimensions and assessments of the trees contained within this document reflect their condition at the time of the survey. I surveyed the trees from within the boundaries of the site only. The presence of additional physiological or structural defects that are only visible from restricted-access viewpoints cannot be discounted. All trees were surveyed from ground level only, aided by the use of binoculars where considered necessary. Other aids included an acoustic hammer and a steel probe, both of which were used where necessary to confirm the extent of any dysfunctional wood, cavities or other morphological defects. The information contained within this document does not constitute a full hazard or risk assessment, and therefore MDJ Arboricultural Consultancy Limited makes no guarantee of their stability of safety.

4.1.3 I collected the baseline data using a handheld tablet, which was then exported to Microsoft Excel to produce the tree survey schedule at **Appendix 1**. The locations of the trees have been plotted using measurements taken on site. This information was exported to produce a Tree Constraints Plan (TCP), onto which the proposed layout has been overlaid to produce the Tree Protection Plan (TPP) at **Appendix 2**.

4.2 DESCRIPTION OF SITE

4.2.1 The site is a primary school comprising a number of buildings and ancillary structures. A hard surfaced playground is located in the south-east corner of the site, abutting the southern boundary which extends along the curtilage of Primrose Hill Park further to the south.

4.2.2 A narrow strip of land along the southern boundary has, in the past, been segregated from the remainder of the school site, to provide a gated, raised 'wilderness' area for outdoor education and recreational activities during the school day.



Photographs 1 and 2: showing the rockery steps leading from the playground to the wilderness area (above left), and the retaining wall along the northern boundary of the wilderness area (above right).

4.3 EXISTING TREE STOCK

4.3.1 All trees have been categorised in accordance with the cascade chart at Table 1 of British Standard BS 5837:2012; justification for the categorisation is provided within the comments for each tree in the tree survey schedule at **Appendix 1**.

4.3.2 None of the existing trees have been assessed at category 'U'. These are trees that are unsuitable for retention irrespective of the proposed re-development, as they are in such poor condition and therefore have a remaining life expectancy of less than 10 years.

4.3.3 Four off-site London planes (T1-T4) located within Primrose Hill Park have been assessed as category 'A'. These are trees of high quality and an estimated life expectancy of more than 40 years and either particularly good examples of their species, rare or unusual specimens, essential components of groups, semi-formal or formal arboricultural features, or of particularly visual importance; or a combination of these.

4.3.4 A further seven trees have been assessed as category 'B', being of moderate quality with a remaining life expectancy of at least 20 years. These include trees that have been downgraded from category 'A' due to impaired condition, including significant but remediable defects such that they are unlikely to be suitable for retention for more than 40 years; those that are present in numbers, groups or woodlands and so attract a higher collective value; and those with material or other cultural value; or a combination of these.

4.3.5 The remaining trees have been assessed as category 'C', being of either low value with a remaining life expectancy of between 10 and 20 years; young trees with trunk diameters below 150mm; those growing in groups of trees without conferring any significance to the collective landscape; or those providing low or temporary landscape benefits.

4.4 PRINCIPAL ARBORICULTURAL FEATURES (PAFs)

4.4.1 The tree survey schedule at **Appendix 1** contains 14 individual trees and of these, I consider the trees identified below to be the principal arboricultural features (PAFs):

Tree no.	TPO no.	Species	Contribution to landscape	BS5837 category
T1-T4	n/a	London plane	Off-site parkland boundary trees. Readily visible from, and which make a significant contribution to, the landscape character of Primrose Hill Park.	A1

Table 2: Principal Arboricultural Features (PAFs).

4.5 DESCRIPTION OF PROPOSALS

4.5.1 The proposals comprise the removal of the raised bank and wilderness area and the installation of sheet piles along the southern boundary of the school, to form a continuation of the existing playground level to provide additional space for outdoor education. The proposals include the provision of vegetable gardens, picnic benches, play equipment porous tarmac, artificial grass and replacement tree planting. These works are intended to improve the quality and usability of the outdoor space for the pupils of the school, and to find a long-term solution to tree-related damage to the existing boundary wall.

5 ARBORICULTURAL IMPACT ASSESSMENT

5.1 TREES TO BE REMOVED

Details

5.1.1 The proposed re-development will require the removal of ten individual trees, because they are located within the footprint of the proposals. The proposed tree removals are shown at **Table 3** below.

Tree no.	Species	Trunk diameter	Age class	Category
T5	Common lime	300 (est.)	Semi-mature	B2
T6	Common lime	330 (est.)	Semi-mature	B2
T7	Common lime	300 (est.)	Semi-mature	B2
T8	Common lime	325 (est.)	Semi-mature	B2
T9	Elder	75 120 (est.)	Semi-mature	C1
T10	Common lime	370 (est.)	Semi-mature	B2
T11	Common lime	285 (est.)	Semi-mature	C1
T12	Common lime	310 (est.)	Semi-mature	B2
T13	Common lime	335 (est.)	Semi-mature	B2
T14	Willow	175 (est.)	Semi-mature	C1

Table 3: trees to be removed.

Discussion

5.1.2 All four of the category 'A' trees are to be retained. Seven category 'B' specimens and three category 'C' trees are to be removed as part of the proposals. None of the trees to be removed are covered by a TPO.

5.1.3 The trees to be removed collectively form a belt along the southern boundary, predominantly comprising lime specimens which were pollarded some time ago and have since been re-pollarded annually. This degree of intensive proactive management has been necessary in the interests of risk mitigation owing to the lime species' propensity to develop deadwood within their canopies, which might otherwise pose an unacceptable risk to school staff and pupils, and users of the adjacent Primrose Hill Park footway.

5.1.4 As a result of this management, the trees are of limited height and stature within the landscape on an individual basis but do provide an element of amenity value on a collective basis, as shown below. Their position upon elevated ground, which is in keeping with the ground levels within

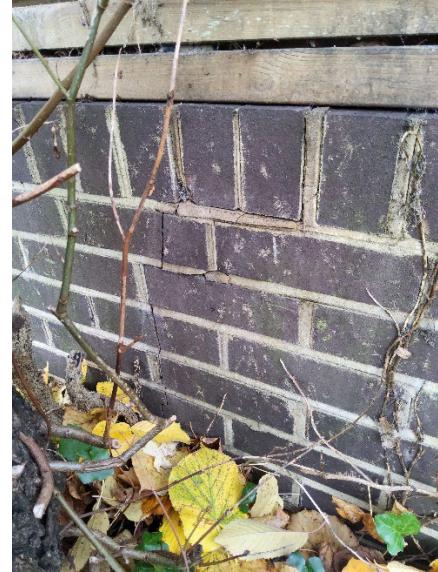
Primrose Hill Park, but some 1.5-2m higher than the playground level of the school, increases their amenity value accordingly.



Photograph 3: showing the group of mostly lime trees to be removed in views from Primrose Hill Park to the south of the school.

5.1.5 Despite the trees' relative amenity value, assessment of the condition of the existing boundary wall that extends along the southern boundary, shows evidence of tree-related damage. Whilst this damage, in the form of cracking as a result of continued root growth near the base of T5, is isolated to one location at present, the retention of these trees for the longer-term is likely to result in additional areas of damage along the length of the wall, particularly given the uniform size and distribution of trees.

5.1.6 Tree's are able to cause damage to structures in two principal ways. Direct damage occurs through the continued incremental growth of roots resulting in an increase in diameter, which can forcibly move and distort sections of the wall. The second damage type is indirect and can be caused by the extraction of water from the soil solution by tree roots at significant depths, which can lead to areas of desiccation within the soil and associated volumetric shrinkage in the summer months.



Photographs 4 and 5: showing the damage adjacent to the base of a common lime (T5) from Primrose Hill Park (above left) and from within the school grounds (above right).

5.1.7 As part of my assessment I have considered the likely soil properties underlying the site. The site is located atop an area of London Clay Formation (British Geology Society, 2022), which is highly susceptible to volumetric changes as a result of moisture extraction, particularly from tree roots. This is further corroborated by the number of insurance claims made for such damages throughout the Greater London area, and in particular, within the London Borough of Camden (Dobson, 2022).

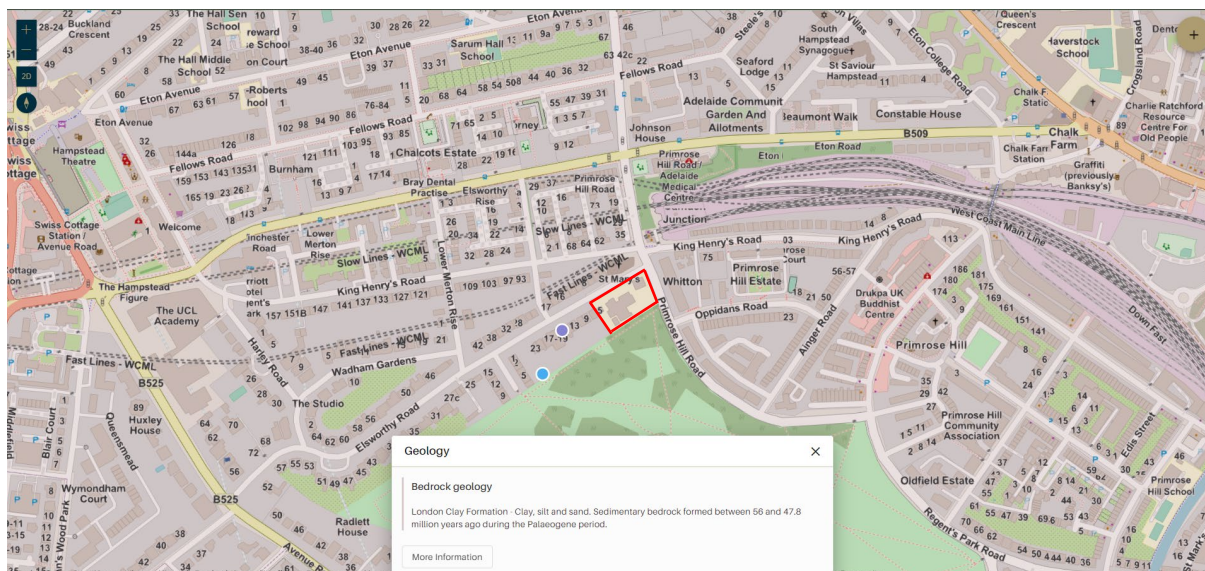


Figure 1: extract showing the location of the site (bounded in red) within an area of London Clay Formation (mauve hatching) (British Geology Society, 2022).

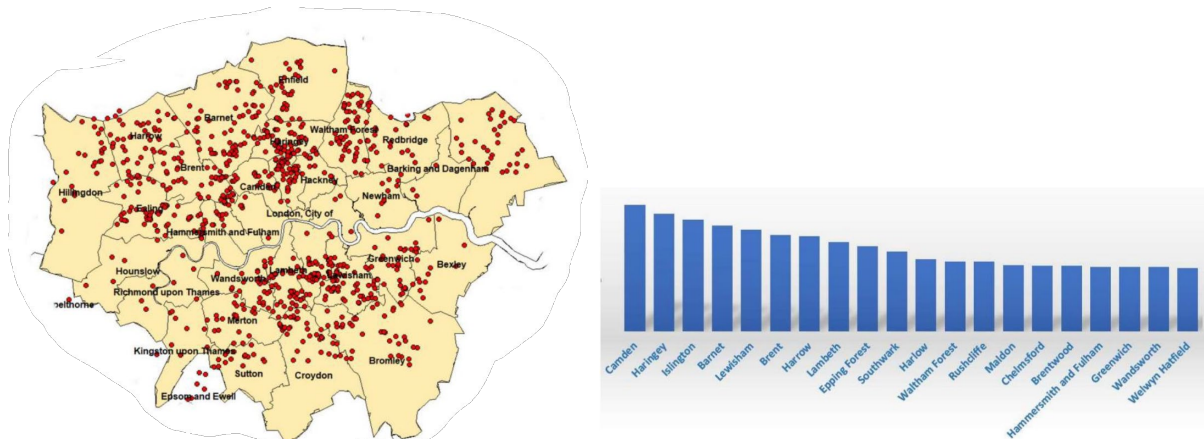


Figure 2: showing the location of tree-related subsidence and damage 'hot spots' throughout Greater London (above left) and the insurance claims frequency by area across the UK (Dobson, 2022).

5.1.8 Based on the above assessments, I conclude that the removal of the lime tree(s) is likely to become necessary in the short-to-medium-term to prevent further damage to the boundary wall, irrespective of the proposed re-development. However, their proactive removal as part of the re-development and associated planning application will likely prevent further damage to the wall and provide the local planning authority with an element of control over the works via collaboration with the applicant.

5.1.9 The two category 'C' trees to be removed are either of low value, have a limited life expectancy remaining, are young trees with trunk diameters below 150mm, grow in groups without conferring any significance to the local landscape, or provide only low or temporary landscape benefits. Consequently, their removal will not have a significant adverse impact on the quality or value of the surrounding arboricultural landscape and complies with local planning policies.

Replacement tree planting

5.1.10 To mitigate the loss of the trees identified for removal, it is intended that replacement tree planting will take place along the southern boundary of the site.

5.1.11 There are several factors to be considered when planting trees on the application site. Its likely that the ground into which they will be planted will be compacted clay and given the differences in ground levels between the existing and proposed, there may be little organic matter and nutrient availability at and below the proposed planting level. This will require the replacement species to be hardy in nature and able to tolerate such conditions.

5.1.12 Silver birch was initially suggested on the proposed plans. Silver birch is a pioneer species that often seeds freely on derelict land throughout the UK and acts as a catalyst in developing the soil characteristics for larger-growing and longer-living species such as ash, oak and beech. It would therefore be an appropriate species for this location.

5.1.13 However, I understand that the local authority have requested that the replacement tree(s) be oak (*Quercus spp.*) owing to its greater biodiversity value. In my opinion, oak would indeed be of greater biodiversity value, but would be unsuitable for this location for several reasons outlined below.

5.1.14 The ultimate size of oak is large, readily exceeding 16m in height with a broad, spreading canopy that regularly reaches 7m or more from the trunk. Whilst slow-growing, the ultimate dimensions of this species would become problematic in the short-to-medium term, and the tree may require premature removal and replacement as a result of these factors. Foreseeable issues include interference with school building by encroaching lateral branches, and ongoing, potentially complex risk mitigation surveys and remedial works as necessary.

5.1.15 Secondly, oak is a high water demand tree (The National House Building Council, 2022), meaning that it could foreseeably cause increased issues with building damage in the future when combined with the highly shrinkable London Clay soil underlying the site, particularly as we are likely to have longer and dryer summer months.

5.1.16 The Kew Tree Root Survey (Cutler & Richardson, 1989) has become a benchmark for quantifiable data in relation to tree-related damage to structures in the UK. This publication states that oak trees represent 11.5% of all trees reported to have caused damage to buildings, and that in 50% of all insurance cases involving oak causing damage, the tree was located within 9.5m of the building. The proposed width of the new play area following removal of the bank equates to approximately 6.75m between the existing retaining walls. Consequently, I consider oak to be an inappropriate species for this location, irrespective of its biodiversity merits.

5.1.17 However, there are other species available that would also tolerate the site's conditions, and would meet the aims and objectives of the school and planning application which are principally:

- To improve the quality and usability of the outdoor space available to pupils, and to find a long-term solution to the unsustainable relationship between the existing boundary wall and the tree stock along its boundary. This will be achieved by:
 - Removing the existing banking and associated trees;
 - Providing an element of shade during summer months without restricting the ability to grow fruit and vegetables within the proposed gardens;
 - Planting trees of medium size at maturity (8-15m) so as to minimise the requirement for costly, annual pruning, as has been necessary with the existing lime trees; and
 - Increasing the opportunity for outdoor and environmental education by planted trees of biodiversity benefit.

5.1.18 With due regard to the above considerations, alternative species might include field maple (*Acer campestre*), of which there are numerous ornamental varieties, varieties of apple (*Malus spp.*) or pear (*Pyrus spp.*), including Chanticleer Pear (*Pyrus calleryana* 'Chanticleer') which is commonly utilised as a street trees throughout London, or black mulberry (*Morus nigra*). In my opinion, a collection of three Chanticleer pear trees located in the south-western corner of the site would help mitigate the loss of the removed trees, and meet the objectives outlined above.

5.1.19 Revision A of this report has been drawn-up following further comment from the local authority arboricultural department, which now requires five new trees to act as mitigation for those to be removed. The collection of three Chanticleer pears in the south-western corner will be supplemented by an addition two field maples located along the southern boundary, as shown on the accompanying tree protection plan.

5.1.20 All new trees will be of a 'extra heavy standard' size with stem girths of 14-16cm, and planting heights of no less than 3.5m.

Planting and aftercare requirements

5.1.21 To ensure that the proposed trees establish successfully, the following procedures will be followed (The British Standards Institute, 2014).

Unloading and temporary storage of trees

5.1.22 The new tree stock will be inspected upon delivery from the chosen nursery to ensure that they are in satisfactory condition, with a well-developed root ball free from girdling roots and with sufficient fibrous roots to ensure successful planting, a natural stem taper and well-developed canopy. A full check list for the delivery of new trees is provided below.

Table 1 Check list for trees prior to acceptance of delivery to site and planting

The tree	Points to check
Above ground	<p>Check that the tree is true to type as specified.</p> <p>Check that there is a clearly defined straight leader. (This does not apply to multi-stem and weeping trees.)</p> <p>Check that there is a balanced branching framework typical of the species.</p> <p>Check that all lateral branches are subordinate to the central leader and evenly spaced along the central stem. Ensure that lateral branch diameter does not exceed 50% of stem diameter at the point of branch attachment.</p> <p>Check that there is a clearly defined stem taper</p> <p>Check that the ratio of height to stem diameter is balanced.</p> <p>Inspect for signs of incompatibility at graft and budding unions.</p> <p>Check that there are no crossing, co-dominant or included branches.</p> <p>Any minor damage incurred during transport should be rectified by pruning.</p>
Below ground	
Bare root	<p>Check that there is an evenly spaced lateral root system with a minimum of four major lateral roots.</p> <p>Check that there are evenly distributed fibrous roots at a density commensurate with the species being planted.</p> <p>Check that roots have been fully protected during transport and storage and do not show any signs of desiccation.</p> <p>Any minor damage incurred during transport should be rectified by pruning.</p> <p><u>Make sure the root system is fully protected until the tree is actually planted.</u></p>
Rootball	<p>Check that the rootball is intact (made-up rootballs with trees that have not been transplanted during the production process should have been rejected on delivery from the nursery).</p> <p>Check that the root flare is clearly visible at the top of the actual rootball. Any mounding of soil (which might or might not contain fine root) above the root flare should be removed. (The visibility of the root flare can be impeded by the hessian, wire or ropes used to wrap the rootball.)</p> <p>Check that the rootball has not dried out during transport and storage and take remedial action if necessary prior to planting.</p> <p>If there is wire or rope circling the main stem to secure the rootball cage, ensure that it is removed prior to planting.</p> <p>Remove the wire cage where practicable. If this cannot be done, peel back the wire cage and hessian once the tree is in the planting pit.</p>
Containerized	<p>Remove the container prior to planting.</p> <p>Fibrous roots in containers should hold the compost ball together once the container is removed. If the compost ball falls apart the tree should be rejected as there has been inadequate root development.</p> <p>Ensure that any fibrous root growth or excess compost above the root flare is removed and that the root flare is clearly visible prior to planting.</p> <p>Shave off any minor roots that are showing evidence of circling. (Trees with major circling roots should have been rejected on delivery.)</p> <p>Ensure that the container compost is moist at planting.</p>
Trees with major damage, whether above or below ground, should be rejected.	

Figure 3: check list for new trees (The British Standards Institute, 2014).

5.1.23 If bare root tree stock is chosen, new trees will immediately be unloaded carefully and have their root systems protected, either by heeling in on site within a temporary trench, or by covering the root system in breathable, water-retentive material such as hessian sacking. Trees will be planted as soon as is reasonably practicable following delivery.

5.1.24 Trees in temporary storage will be protected from potentially damaging contaminants such as fuels, cement and alike, as necessary.

Planting

5.1.25 The planting depth should be carefully considered so as to ensure that the root flare of the newly planted trees are clearly visible. Planting trees too deep is a common cause of failure to establish.

5.1.26 The planting pit should therefore be no deeper than the existing root ball of the tree to be planted. A 75mm allowance should be made between the size of the root ball and the edges of the planting pit, to allow for the development of fibrous roots within uncompacted soil post-planting. Additional space may be required for the purposes of irrigation tubes or similar.

5.1.27 Root balls will be wetted if necessary immediately prior to planting. Any damaged branches as a result of the translocation process should be formatively pruned as necessary.

5.1.28 Once in position, any hessian sacking, twine or similar will be loosened, and any wire encasing the root ball will be cut and removed.

5.1.29 Backfilling should be done in layers of approximately 200mm at a time, ensuring that the tree is held upright. After each backfilling, the soil will be firmed to remove pockets of air in and around the root ball, but with care to ensure that the soil is not excessively compacted, which might lead to reduced root development. The final layer should not be compacted but should make allowance for the application of mulch.

5.1.30 Immediately after planting, the soil and planting pit will be watered to field capacity. That being, the amount of soil moisture or water content held in the soil after excess water has drained away and the rate of downward movement has decreased.

5.1.31 A minimum depth of 100mm of well-rotted, hardwood mulch will be laid upon the soil at a minimum radius of 1m from the tree's base. This will help to regulate soil temperature, reduce evaporation, increase water retention and suppress competitive weed growth.

Management and maintenance

5.1.32 The aftercare requirements set out in this section are intended to be undertaken within the first five years following planting. After such time, and once the trees have become fully established, aftercare requirements are likely to diminish.

5.1.33 The newly planted trees will be irrigated as necessary, particularly during periods of sustained dry weather. Where ten consecutive days of 25°C or more are experienced, additional monitoring and additional irrigation as necessary, would be prudent.

5.1.34 Formative pruning should be carried out routinely for the first five years of a newly planted tree's life. This will ensure that minor broken branches and crossing or rubbing branches or stems that might lead to sub-optimal development later in life, can be avoided without inflicting larger diameter wounds.

5.1.35 A formal assessment of the trees' general health and condition should be carried out annually by an arboriculturist. This assessment will consider leaf size, colour and density, extension growth and incremental girth development. Ad hoc pruning requirements may arise from such inspections, and any recommendations made by the arboriculturist will be duly carried out to ensure successful establishment.

5.1.36 The layer of mulch surrounding the trees should be replenished as necessary, usually annually, to ensure that a minimum 50mm of mulch protects the tree at any time.

5.1.37 If any of the trees fail to establish, or become severely damaged such that their life expectancy is likely to be significantly reduced, they will be replaced with new specimens on a like-for-like basis.

Conclusions

5.1.38 A total of ten individual trees will be removed as part of the proposed re-development. The principal arboricultural features of the site, set out at **Table 2**, will be retained. The removal of the trees identified for removal will result in a partial alteration to the existing site context, but without removing trees of high amenity value or trees which make an essential contribution to the landscape, and will not result in a significant, long-term or irreversible impact on the arboricultural character of the site.

5.1.39 Replacement tree planting has been proposed and once established, these replacement trees will progressively reduce the magnitude of impact caused by the removal of existing trees.

5.2 TREES TO BE PRUNED

Details

5.2.1 No facilitation pruning will be required to the retained off-site trees.

Conclusions

5.2.2 As there is no requirement for facilitative pruning, there will be no adverse impact on the existing arboricultural character of Primrose Hill Park as a result of the proposals in this regard.

5.3 ROOT PROTECTION AREA (RPA) CONFLICTS

Details

5.3.1 There will be no encroachment into the root protection areas (RPAs) of the retained off-site trees as part of the proposed re-development.

Discussion

5.3.2 As there will be no encroachment into the RPAs of the trees to be retained, there is little likelihood of unacceptable damage being caused to the retained trees.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

6.1.1 A total of ten individual trees will be removed as part of the proposed re-development. The principal arboricultural features of the site, set out at Table 2, will be retained. The removal of the trees identified for removal will result in a partial alteration to the existing site context, but without removing trees of high amenity value or trees which make an essential contribution to the landscape, and will not result in a significant, long-term or irreversible impact on the arboricultural character of the site.

6.1.2 Replacement tree planting has been proposed and once established, these replacement trees will progressively reduce the magnitude of impact caused by the removal of existing trees.

6.1.3 As there is no requirement for facilitative pruning, there will be no adverse impact on the existing arboricultural character of Primrose Hill Park as a result of the proposals in this regard. As there will be no encroachment into the RPAs of the trees to be retained, there is little likelihood of unacceptable damage being caused to the retained trees.

6.1.4 Having considered the above, I conclude that the overall magnitude of impact in arboricultural terms is **medium**, as defined at **Table 1**. Trees of some visibility from the public realm will be removed, but the principal arboricultural features of the site (see **Table 2**) will be retained and protected effectively.

6.2 RECOMMENDATIONS

1. Remove the trees identified for as such as part of a planning application to re-develop the site in the interests of preventing and mitigating damage to the existing boundary wall; and
2. Ensure that replacement tree planting is secured to progressively mitigate the loss of the existing specimens.

Matt Jones

Matthew Jones, BSc (Hons), MArborA
Director & Arboriculturist

29 November 2022

Revision A – 16 January 2023

APPENDIX 1: TREE SURVEY SCHEDULE

15 Windsor Close
Southwater
West Sussex
RH13 9XH

TREE SURVEY SCHEDULE

Site Address: St Paul's CE Primary School, Elsworthy Road, London, NW3 3DS

Prepared For: St Paul's CE Primary School

Reference: MDJAC-22.137-TSS-01

Survey date: 22/11/2022

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BS5837:2012 Tree Survey Schedule - Explanatory Notes

This document is based on a site visit and inspection undertaken by Matt Jones of MDJ Arboricultural Consultancy Ltd on 22/11/2022; deciduous trees were in partial leaf.

The dimensions and assessments of the trees contained within this document reflect their condition at the time of the survey. I surveyed the trees from within the boundaries of the site only. The presence of additional physiological or structural defects that are only visible from restricted-access viewpoints cannot be discounted.

All trees were surveyed from ground level only, aided by the use of binoculars where considered necessary. The information contained within this document does not constitute a full hazard or risk assessment, and therefore MDJ Arboricultural Consultancy Ltd makes no guarantee of their stability of safety.

1. Tree no.

Individual number assigned to the tree for identification, commencing at 1.

2. Species

Common and botanical names are provided. Botanical names are shown in italics.

3. Height

Measured using a clinometer or laser rangefinder, given in metres.

4. Trunk diameter

Trunk diameter measured at 1.5m, unless stated otherwise, in accordance with Figure C.1 of British Standard BS 5837:2012 "*Trees in relation to design, demolition and construction - Recommendations*".

5. Radial crown spread

Extent of branches from the centre of the trunk to the tips in the principal cardinal directions, rounded up to the closest half metre. For trees with symmetrical canopies, an average measurement is provided.

6. Crown clearance

Height above ground level of the lowest live branch, in metres.

7. Height to first branch

Height above ground level of the origin of the lowest branch, in metres.

8. Age class

Young: recently planted, or yet-to-be established specimen, usually below 10m in height, subject to species characteristics;

Semi-mature: a recently established specimen, usually with excurrent morphology, and yet-to-reach its ultimate proportions, subject to species characteristics;

Mature: fully established, complex, decurrent or broad branching structure, and has achieved or is nearing its ultimate proportions, subject to environmental conditions and species characteristics;

Over-mature: has reached maturity, but is showing symptoms of minor decline within its canopy;

Veteran: has a large trunk diameter for its species, but displays evidence of veteranisation such as fungal colonisation, decay, hollowing, and has commenced retrenchment within its canopy;

Ancient: exceeds the typical size and age of the species, with a very large trunk diameter; with extensive fungal colonisation, decay, hollowing and veteran characteristics; has undergone significant retrenchment and is within the latter stages of life.

9. Physiology

General health and biological function, taking into account a healthy specimen of its size, age, species and location.

10. Structure

Structural condition of the tree, based on root (visible portions only), basal, trunk, stem and branch morphology.

Good: No morphological defects and no fungal or bacterial colonisation;

Fair: only minor morphological defects and a very low likelihood of failure; no pathological colonisation;

Poor: irremediable and significant morphological defects, leading to an increased likelihood of failure.

11. Comments

Comments have been made where appropriate.

12. BS5837:2012 Category

Category assigned to the tree, based on its arboricultural quality, arboricultural landscape value and potential, in accordance with Table 1 of British Standard BS 5837:2012 "*Trees in relation to design, demolition and construction - Recommendations*".

13. RPA radius

Radius of the root protection area, based on the trunk diameter of the tree, in accordance with Section 4.6 of British Standard BS 5837:2012 "*Trees in relation to design, demolition and construction - Recommendations*".

Table 1: Cascade chart for tree quality assessment

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

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No.	Common name	Height [m]	Trunk diameter [mm]	Radial Crown Spread [m]	Height to 1st Branch [m]	Crown Clearance [m]	Age class	Physiology	Structure	Comments	Category	RPA Radius [m]
T1	London plane	20	950 (est.)	N8.5m E8m S10m W6m	4	1.5	Mature	Good	Good	Off-site tree. Prominent specimen with insignificant defects. Of particular visual importance along boundary of Primrose Hill.	A (1)	11.4
T2	London plane	21	1080 (est.)	N12m E11m S10m W6m	5	1.5	Mature	Good	Good	Off-site tree. Prominent specimen with insignificant defects. Of particular visual importance along boundary of Primrose Hill.	A (1)	12.3
T3	London plane	21	1000 (est.)	N8m E11m S11m W11m	5	1.5	Mature	Good	Good	Off-site tree. Prominent specimen with insignificant defects. Of particular visual importance along boundary of Primrose Hill.	A (1)	12
T4	London plane	21	1050 (est.)	N10m E10m S10m W11m	5	1.5	Mature	Good	Good	Off-site tree. Prominent specimen with insignificant defects. Of particular visual importance along boundary of Primrose Hill.	A (1)	12.6
T5	Common lime	8	300 (est.)	N2.5m E2.5m S2.5m W2.5m	1.5	1.5	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Visible from Primrose Hill and contributes to the tree screen in long-range views from the south. Of moderate quality and landscape value.	B (2)	3.9
T6	Common lime	9	330 (est.)	N3.25m E3.25m S3.25m W3.25m	3	2	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Visible from Primrose Hill and contributes to the tree screen in long-range views from the south. Of moderate quality and landscape value.	B (2)	3.96
T7	Common lime	8	300 (est.)	N2.25m E2.25m S2.25m W2.25m	2	2	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Visible from Primrose Hill and contributes to the tree screen in long-range views from the south. Of moderate quality and landscape value.	B (2)	3.6
T8	Common lime	9	325 (est.)	N2.75m E2m S2m W2.75m	2	2	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Visible from Primrose Hill and contributes to the tree screen in long-range views from the south. Of moderate quality and landscape value.	B (2)	3.9

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T9	Elder	7	75 120 (est.)	N1.5m E1.5m S1.5m W1.5m	2	2	Semi-mature	Fair	Fair	Twin-stemmed. Suppressed specimen. Of moderate quality but of low landscape value.	C (1)	1.7
T10	Common lime	10	370 (est.)	N2.75m E2.25m S3.25m W2m	2	2	Semi-mature	Good	Fair	Partially occluded basal wounding. Regularly maintained high pollard with insignificant defects. Visible from Primrose Hill and contributes to the tree screen in long-range views from the south. Of moderate quality and landscape value.	B (2)	4.44
T11	Common lime	10	285 (est.)	N2m E2m S2m W2m	2	2	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Becoming screened from Primrose Hill by adjacent trees. Of moderate quality but of low landscape value.	C (1)	3.42
T12	Common lime	10	310 (est.)	N2.5m E2.5m S2.5m W1.75m	2	2	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Of moderate quality and landscape value.	B (2)	3.72
T13	Common lime	10	335 (est.)	N2.5m E2.5m S2.25m W2m	2	2	Semi-mature	Good	Fair	Regularly maintained high pollard with insignificant defects. Of moderate quality and landscape value.	B (2)	4.02
T14	Willow	3	175 (est.)	N2.5m E2.5m S2.5m W2.5m	1.5	1.5	Semi-mature	Fair	Fair	Small specimen of limited arboricultural or landscape value.	C (1)	2.1

APPENDIX 2: TREE PROTECTION PLAN

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