Arboricultural Survey

6 Avonmouth Street London SE1

7th June 2021



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This report has been prepared by PJC Consultancy Ltd on behalf of Tribe Avonmouth House Ltd

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1 INTRODUCTION

1.1 Instruction

1.1.1 PJC Consultancy has been instructed by Tribe Avonmouth House Ltd to provide an initial arboricultural survey of 6 Avonmouth Street, London SE1. The survey is to be undertaken in accordance with BS5837: 2012 *Trees in relation to design, demolition and construction – Recommendations* and the planning policies of Southwark Council.

1.2 Survey objectives

- 1.2.1 This survey has been undertaken with the following objectives:
 - To survey all trees within and adjacent to the site with trunk diameters of 75mm or more at a height of 1.5m.
 - To assess the quality and value of the existing tree stock in terms of arboricultural, landscape, historical/conservation, or public amenity value.
 - To provide information relating to planning constraints that may restrict works to trees at the site.
 - To provide an assessment of the material constraints posed by the existing tree stock on potential future developments at the site.
 - To aid the design process, ensuring prospective developments integrate appropriately with the existing tree stock, to maximise the potential of the proposed development site.

1.3 Contents of report

- 1.3.1 This report includes the following:
 - A summary of the existing tree stock and notable arboricultural features.
 - Tree Constraints Plan in accordance with BS5837: 2012.
 - Tree Survey Schedule containing the relevant measurements and information for each tree or tree group as required in BS5837: 2012.

1.4 Documents and information provided

- 1.4.1 The following documents were used to aid the preparation of this report:
 - Topographical Survey ref: Avonmouth House Preliminary Topo
 - Existing Site Location Plan ref: 2135-STCH-XX-XX-A-0001-



2 SITE VISIT AND SURVEY METHODOLOGY

2.1 Site visit

2.1.1 A site visit was carried out on Tuesday 1st June 2021. The weather conditions at the time were clear, dry and bright. Deciduous trees were in leaf. The visibility was adequate for visual tree inspection from ground level.

2.2 Tree survey information

- 2.2.1 The following information was recorded in the Tree Survey Schedule for each individual tree (average dimensions are recorded for groups):
 - Tree reference number. (T=tree). Tree numbers suffixed with PA on the Tree Constraints Plan indicate that the tree position is approximate.
 - Species (common and scientific name).
 - Overall tree height (m).
 - Stem diameter (mm) per stem or average diameter for multi-stemmed trees with six or more stems.
 - Branch spread (m) measured to the four cardinal points.
 - Existing height (m) above ground level of lowest significant branch and direction of growth (for individual trees only).
 - Existing height (m) above ground level of canopy.
 - Age class (young, semi mature, early mature, mature, over mature or veteran).
 - Physiological condition (good, fair, poor).
 - Structural condition (good, fair, poor).
 - Comments (general description of tree(s) including any notable features).
 - Preliminary management recommendations (prescriptions for tree management processes based on the current land use and not related to the prospective development).
 - Tree categorisation (see below).
 - Root protection area (m²).
 - Root protection radius (m).

2.3 Tree categorisation

- 2.3.1 The condition and value of each tree was evaluated based on the current land use. Each tree or tree group has been awarded either category A, B, C or U and a subcategory of either 1,2 or 3 or a combination of the subcategories.
- 2.3.2 Tree categorisation summary:
 - A Trees of good condition and high arboricultural, landscape or conservation value. Must have a potential life span in excess of forty years.
 - B Trees of moderate condition, with minor defects or sub-optimal form but are still of modest arboricultural, landscape or conservation value. Must have a potential life span in excess of twenty years.



- C Unremarkable trees of poor condition or form with limited arboricultural, landscape or conservation value, or trees with a stem diameter under 150mm. Must have a potential life span in excess of ten years.
- U Trees of such impaired condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years. These trees do not need to be removed if they are not dangerous and do not conflict with the proposed development, but should not be considered a constraint to development.
- 2.3.3 Tree sub categorisation summary:
 - 1 Trees have mainly arboricultural value, e.g. trees of good condition, form and vitality or rare tree species.
 - 2 Trees have mainly landscape value, e.g. trees of landscape prominence, that serve to screen unsightly views or that are required for privacy. Also trees present in groups that attain higher collective rating that they would as individuals.
 - 3 Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical significance or veteran trees.
- 2.3.4 Each tree can only be categorised as A, B or C but may comply with more than one subcategory. A cascade chart further explaining how tree categorisation is decided is included in Appendix 3.

2.4 Root protection areas

2.4.1 A root protection area represents a calculation of the minimum volume of rooting medium required to support a tree. It is a standardised calculation based on the stem diameter(s) measured at 1.5m and is not necessarily representative of the actual root spread or total rooting area of a tree. The formulas used to calculate root protection areas are shown below:

Number of stems	Root protection area formula				
Single stemmed trees	(<u>stem diameter (mm) x 12</u>) ² x π 1000				
Trees with two to five stems	$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \cdots + (\text{stem diameter 5})^2}$				
Trees with more than five stems	$\sqrt{(\text{mean stem diameter})^2}$ x number of stems				

2.4.2 The root protection areas are plotted onto the Tree Constraints Plan in Appendix 1 and are recorded in the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan (unless significant rooting constraints are present), and are colour coded depending on the category the tree has been awarded. Where existing site conditions/features are present that are deemed likely to have affected the root morphology, the root protection areas have been represented as a polygon of equivalent area.



- 2.4.3 The proposed layout should avoid level changes or the placement of new buildings and areas of hard standing within the root protection areas of retained trees. In certain situations, engineered solutions are available to allow construction within the root protection areas however further input from an arboriculturist should be sought regarding their site-specific viability before these methods are relied upon.
- 2.4.4 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally as well as the absorption of moisture and nutrients from the soil. They also act as storage and transport for water and nutrients.
- 2.4.5 Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above the growing medium, (i.e. from porous to non-porous), can alter the resources available to the tree, which in turn can lead to its decline.
- 2.4.6 The majority of root growth is usually found within the top 600mm of soil. As such, even a shallow disturbance within a root protection area can potentially have a significant impact on the tree.
- 2.4.7 The root protection areas must be left free from excavation and disturbance, and protected from compaction or contamination during any proposed works. Any construction works within a root protection area required for the proposed development must be justifiable within an arboricultural impact assessment.

2.5 Limitations of survey

- 2.5.1 The survey methodology was restricted to a visual tree assessment from ground level. No tree climbing or invasive ground investigation was carried out for this report. Where existing site constraints are present such as ivy covered trees, a very dense under-storey, or where trees are located on third party land to which access was not granted, tree dimensions were estimated by eye as accurately as possible.
- 2.5.2 This survey represents a preliminary overview of the condition and value of trees at the site. It is not a detailed assessment of any individual tree and although preliminary management recommendations are included, this report will not be sufficient to be used as a detailed condition and safety survey.
- 2.5.3 The information and measurements in this report are representative of the date of the site visit. The tree survey data will need to be updated to reflect tree growth and changes in the condition of the trees after prolonged periods.



3 SITE DETAILS AND SURVEY FINDINGS

3.1 Site location

3.1.1 The site is situated on the west side of Avonmouth Street between Newington Causeway (A3) which is to the north west of the site and Newington Gardens to the south east. It has a central national grid reference of TQ321793. The location of the site within its environs is shown in figure 1.



Figure 1: Location of Site and Environs (Map data: © 2021 Google)

3.2 Site layout

3.2.1 Most of the site comprises the building of No. 6 Avonmouth Street itself. There is only one small tree within a raised planter within the boundaries of the site. Of the off-site trees, one small tree is growing within a raised planter adjacent to the boundary of the site to the north-west and the others are growing on the north-eastern side of Avonmouth Street.



3.3 Findings

- 3.3.1 A total of six trees were surveyed. Their locations are shown on the Tree Constraints Plan at Appendix 1 and their details and measurements are shown in the Tree Survey Schedule at Appendix 2.
- 3.3.2 A summary of their British Standard categorisation is shown at Table 2 below.

Tree category	Individual tree
Α	1
В	3
С	2
U	-
Total	6

Table 2:	Tree	categorisation	summarv

- 3.3.3 There are no key arboricultural features within the site.
- 3.3.4 The key arboricultural features of the immediate area are the hybrid black poplar T1 (category 'B') and the London plane T2 (category 'A'). Both of these are large trees which are highly visible in the street scene and make a significant contribution to the character and appearance of the locality.
- 3.3.5 Also, the large London plane trees growing within Newington Gardens to the south-east of the site, although too far to be included in this survey, are important visually due to their large size and are key arboricultural features of the locality.

3.4 Statutory tree protection

- 3.4.1 Southwark Council's online mapping tool was used on the 4th June 2021 to check whether there are any tree preservation orders (TPOs) within the site. No TPOs were shown within or immediately adjacent to the site. The site is not in a conservation area.
- 3.4.2 However, the online mapping tool can be updated at any time, therefore any persons proposing to undertake tree works should still check the status of the trees with the local authority prior to undertaking any tree works. Financial penalties and/or criminal proceedings could result if tree works are carried out on a protected tree without consent. Failure to check whether a tree or trees are the subject of TPO/s could not be used as mitigation.



4 RECOMMENDATIONS

4.1 Arboricultural input to planning application

- 4.1.1 To comply with BS5837: 2012, an arboricultural impact assessment should be provided to accompany the planning application. The arboricultural impact assessment should include a schedule of trees to be retained or removed (in draft form for outline applications) as well as access facilitation pruning required to enable the construction works. It should also evaluate the likely effects of the construction works on retained trees including post development pressures and provide recommendations on mitigation measures to be implemented.
- 4.1.2 Collaboration between the project arboriculturist and design team is strongly recommended whilst the proposed site layout is designed. This will help ensure the proposed layout integrates well with the retained tree stock and will allow potential areas of conflict that may not be identified by non-arboricultural professionals to be rectified whilst the layout is being developed.
- 4.1.3 Where trees are retained on a development site or where third-party trees have the potential to be affected by construction activities, an arboricultural method statement accompanied by a dimensioned tree protection plan should also be produced. This can be provided with a full planning application, or in some cases can be conditioned/updated at the detailed design phase of development so that details such as engineers specifications, drainage/service runs, and the construction management or logistics plan can be considered.

4.2 Arboricultural considerations for proposed layout

- 4.2.1 The proposed layout should take into account the following considerations related to trees:
 - The proposed layout should seek to retain higher quality or protected trees, particularly those that cannot easily be replaced. Where tree removal is necessary to facilitate the wider regeneration benefits associated with development, a tree replacement strategy should be implemented to mitigate tree loss. The loss of prominent or high-quality trees, or net loss in tree cover within a development site will not be looked on favourably when determining a planning application.
 - The proposed layout should take into account the root protection areas of retained trees. These should be left free of construction activities including hard landscaping unless the project arboriculturist confirms engineered solutions or sympathetic construction methodology will be a viable option to mitigate the encroachment.
 - The proposed layout should take into account the shade cast by trees. Overshading of gardens and buildings (notably habitable rooms) can result in future pressures to prune or remove additional trees post development, and will be a material consideration for the local authority when determining a planning application.
 - The proposed layout should also take into account other common potential nuisances associated with trees including leaf/fruit drop or honeydew (particularly onto footpaths, parking areas, small gardens or roof guttering) and an over-bearing presence of large trees.



- Allowance should be made for future canopy growth of both existing and newly planted trees. Trees growing in areas of limited space may require regular future pruning works. The suitability of different species for regular crown reductions, the effect on their amenity value and the cost of future tree works as well as who would be responsible for undertaking the works should all be considered.
- 4.2.2 The position of new services such as gas, electric, water, BT or foul/surface water drainage are often not specified until the detailed design phase of development, however their position has the potential to have a significant impact on retained trees and therefore should be noted in the detailed arboricultural method statement. New utilities should be located outside of the trees root protection areas where they are underground and outside of the anticipated area of mature crown spread where above ground. Sympathetic methodology to enable the installation of services within root protection areas (in certain instances) is available, however there will almost always still be an impact on tree roots and arboricultural advice must be sought regarding the suitability of these methods before they are relied upon. If it is achievable the root protection areas should always be avoided.
- 4.2.3 If further tree planting occurs within the development site, consideration should be given to species selection (in relation to form and potential size) and planting locations to ensure their successful integration into the new development. Provision for suitable volume and quality of rooting medium is essential for tree establishment and potential growth. Recommendations for mitigation tree planting may be included in the arboricultural impact assessment, or a more thorough landscaping strategy may be provided by a landscape designer/architect.



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Appendix 1: Tree Constraints Plan





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Appendix 2: Tree Survey Schedule

Site: 6 Avonmouth Street, London SE1

Tree Survey Schedule

Survey date: 1st June 2021

Surveyor: Abi St. Aubyn

	Carroyon	/ (61 01.)	rabyn										
Tree ref.	Species	Height (m)	Stem diameter (mm)	Brar spre (m	nch ead n)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments & Preliminary Management Recommendations	Category grading	Root Protection Area (m ²)	Root Protection Radius (m)
T1	hybrid black poplar Pupulus x canadensis	29	855	NW: NE: SE: SW:	11.5 10 10 10	Crown: 6 Branch: 8	mature	good	fair	Off-site; large high crown; highly visible in the street scene; growing in bricked pavers and buttresses have caused extensive distortion; relatively short lived species.	B2	330.8	10.3
Т2	London plane Platanus x acerifolia	28	1100	NW: NE: SE: SW:	12 15 15 11	Crown: 3 Branch: 3S	mature	good	good	Off-site; growing in public amenity space adjacent to the road; good example of the species; prominent tree in the street scene.	A1+2	547.5	13.2
Т3	holly Ilex aquifolium	9	175	3.1	5	Crown: 5.5 Branch: 5.5	semi mature	fair	fair	Off-site; crown extensively crown lifted leaving a small high crown; suppressed by London plane T2.	C1+2	13.9	2.1
Τ4	holly Ilex aquifolium	13	365	5	5	Crown: 5.5 Branch: 3.5	mature	fair	fair	Off-site; high crown suppressed by London plane T2.	B1	60.3	4.4
Т5	weeping hornbeam Carpinus betulus 'Pendula'	5	135	3	5	Crown: 1.5 Branch: 2	semi mature	fair	fair	Small tree; growing in a container c.0.5m above ground level.	C2	8.2	1.6
Т6	grey snake-bark maple Acer rufinerve	7	270, 260, 180	NW: NE: SE: SW:	6 3 4.5 5	Crown: 1.5 Branch: 1	mature	good	fair	Off-site; small ornamental tree; triple stemmed; growing in brick planters c.0.5m above ground level.	B1	78.2	5.0





Appendix 3: Photographs









Appendix 4: Cascade Chart for Tree Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)								
Trees unsuitable for retention									
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of their current land use for longer than 10 years.	 Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after the 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. 								
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation						
Trees to be considered for rete	ention	1							
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 woodpasture).	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 remedial 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 this 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					