Arboricultural Impact Assessment & Tree Condition Survey for Proposed Works at 10 Fitzroy Park, N6 6HU

OAKHOUSE
ARBORICULTURAL SERVICES LTD

CLIENT - Mr & Mrs Benham

SITE - 10 Fitzroy Park, Highgate, N6 6HU

SURVEY DATE - 07/04/2025

OUR REF - AIA-0007042025

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1.0 Introduction

1.1
Oakhouse Tree Services LTD have been appointed by the property owner to provide the arboricultural information to inform the proposed works at 10 Fitzroy Park, Highgate, N6 6HU. We visited the property on the 7th of April 2025 and undertook a tree condition survey (See Appendix 1).

1.2
The proposed works are described in detail in the Design and Access Statement. In summary the works include the construction of a flat roof Garden room/Spa and raised non invasive walkway and raised deck.

1.3
We have been provided with a full set of the proposed drawings which have been prepared by Studio Aida.

1.4
Within this report we will comment on the arboricultural impact of the proposed works on the existing tree resource and any measures necessary to ensure the long-term health of the retained trees.

2.0 Site Description and Description of Development

2.1
The site at 10 Fitzroy Park consist of a residential property with areas of both landscaped and un landscaped land. The property has a significant tree resource which will remain unaffected by the proposed works.

2.2
The tree resource relevant to this application consist of a mix of broadleaf, evergreen and conifer trees (See Appendix 1).

2.3
The proposed development is for the construction of a new garden room in the Northeastern corner of the property and the relocation of a garden shed.

2.4
The proposed structure is to be founded on screw pile foundations (See Structural Design Drawing in Appendix 1 for further details) this will serve to restrict the impact of the proposed foundations on the root systems and rooting environment of the surrounding trees.

3.0 Statutory Protection

3.1
The property is located in the Highgate Conservation area within the London Borough of Camden.

3.2
All the trees growing within the curtilage of the Conservation Area (unless exempt) with a stem diameter in excess of 75mm are subject to protection under the Conservation Area. The Conservation Area status does not preclude the presence of Tree Preservation Orders which may also serve to protect the trees.

3.3
There are no tree or vegetation management works associated with this application.

4.0 Arboricultural Background Information

4.1
Trees provide numerous benefits including visual amenity, bio-diversity value and providing shade and shelter. In urban areas trees are often growing in sub-optimum conditions and under pressure from a number of factors which may impact on their health, longevity and or result in management works.

4.2
The two main possibilities for damage to trees in urban areas and also during and following the construction process are from direct and indirect damage.

- Direct Damage: can be defined as injury resulting from physical contact including contact with machinery or fire, and excavation of the root area.

- Indirect Damage: can be defined as injury resulting from activities that take place near the tree such as level changes, compaction of the soil, or contamination by chemical spillage in proximity to the root plate.

4.3
The risk of damage to the above ground parts of the tree can be addressed through use of physical barriers, restricting working areas and control of the activities near trees. The risk of damage and protection of the largely unseen rooting environment and root system of trees is more difficult to address. For all trees but particularly those growing in urban areas, root growth is not predictable.

4.4
Tree roots are opportunistic they grow most prolifically in areas where conditions are favourable and will be deflected by natural features and man-made structures, when hostile conditions are encountered root growth will be limited. If growing conditions are uniform this would result in relatively even circular root system.

4.5
Roots grow within the spaces in the soil and when they encounter stones or rocks, or foundations they are deflected, where conditions are hostile roots may stop growing or continue growing more slowly than in better conditions only dividing and proliferating if conditions encountered improve. It is generally agreed that the majority of tree roots, even for a mature tree are found in the top 90 cm of the soil and these roots are vulnerable to sudden changes in the rooting environment. These roots absorb the moisture and nutrients needed for growth and contrary to popular belief mature trees in the UK do not have a deep taproot that obtains moisture from great depth.

4.6
An ideal soil for tree root growth is about 50% pore space (in urban areas this is often significantly reduced), these pores, the spaces between soil particles, are filled with water and air. Construction activity can compact the soil and can dramatically reduce the amount of pore space.

4.7
This not only inhibits root growth and penetration but also decreases oxygen levels within the soil and reduces the available soil moisture that is essential to the growth and function of the existing roots.

4.8
For retained trees it is essential that the structurally important roots remain undisturbed, these important larger roots radiate outwards from the trunk, they are characterised by being relatively few in number and tapering rapidly from the base of the tree. Even for mature trees they are only 2-3m in length, at this length they are likely to be 2-5cm in diameter and they have lost their rigidity and physical strength. (See Tree Root Systems AAIS
1995).

4.9
To assist with the retention and protection of trees during the planning and construction process the British Standards Institute publish BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. This document gives clear and current best practice recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees with structures. Where development is proposed, the standard provides guidance on how to assess the value and quality of trees and to decide which trees are appropriate for retention.

4.10
The BS Categories referred to in this report are described in detail in Appendix 1. In summary the quality of the trees resource is assessed, and the trees are divided into 4 categories based a number of factors including their condition, remaining life-expectancy, landscape, arboricultural and cultural/conservation value,

Category U: Those in such a poor condition that they cannot realistically be retained

Category A: Trees of high quality

Category B: Trees of moderate quality

Category C Trees of low quality

4.11
The BS5837 (2012) also provides information on the protection of trees during the development process. It includes a calculator for Root Protection Areas (RPA) which aims to ensure a sufficient volume of soil and proportion of the root system is protected to maintain the health and vigour and ensure the longevity of the trees.

4.12
The Root Protection Area is not related to the canopy spread of the tree; in simple terms it is an area calculated as a multiple of the trunk diameter. For trees with a trunk diameter in excess of 1250 mm the Root Protection Area is capped at a total area of 707 m 2 . See Attached Tree Survey Plan in Appendix 1 for further details.

4.13
The RPA can be adjusted to reflect growing condition of trees. The British Standard 5837 Chapter 4.6.2 states "Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon or equivalent area should be produced, modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of the likely root distribution").

4.14
When adjusting the Root Protection Area of trees, the Arboricultural Consultant needs to consider a number of factors, Paragraph 4.6.3 of BS5837 (2012) states that: Any deviation in the RPA from the simple circle should take full account of the following factors whilst still providing adequate protection for the root system:

- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);

- b) topography and drainage;

- c) the soil type and structure;

- d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

4.15
The RPA is in effect a theoretical area that if all the soil and roots around the periphery of the RPA were removed, there would be sufficient area around the tree to maintain the tree in a healthy condition. The RPA does not show the expected extent of root growth but indicates an area of ground considered necessary to support the tree both at the time of surveying but into the future.

4.16
The relative sensitivity of different species of trees to development works is well known and acknowledged within BS5837 (2012) but the RPA formula in BS5837 does not give any weight to different tree species. The RPA is based on the trunk diameter and would be the same for all trees of the same trunk size regardless of species.

4.17
Damage to trees (including their root systems) may impact on their health, stability and or vitality. Damage may result in the partial or complete structural failure of the tree and increases the risk of personal injury. It is therefore essential that if development is permitted this report is read by all parties and the guidelines are followed by the site agent and all contractors, particularly those undertaking groundworks on site.

4.18
Appropriate tree protection measures and appropriately specified, supervised and implemented works can significantly reduce the risk of damage to the retained trees.

5.0 <u>Arboricultural Impact Assessment</u>

5.1
BS5837 (2012) allow the Root Protection Area of trees to be adjusted reflect the growing condition of the trees. Paragraph 4.6.3 of BS5837 (2012) states that. Any deviation in the RPA from the simple circle should take full account of the following factors whilst still providing adequate protection for the root system:

- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
- b) topography and drainage;

- c) the soil type and structure;

- d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

5.2
The proposed development aims to utilise the surrounding tree stock in ordered to add a secluded feel and look to the structure. No works to the trees are required.

5.3
The proposed structure is to be founded on screw pile foundations (See Structural Design Drawing in Appendix 1 for further details) this will serve to restrict the impact of the proposed foundations on the root systems and rooting environment of the surrounding trees.

5.4
None of the surrounding trees are of a particularly high value as individual specimens but together create a an attractive woodland feel to the North side of the property in keeping with the surrounding areas of Fitzroy Park. They also act as a somewhat of a screen from properties to the north of the site. Retention of the trees is also paramount to the feel of the new outbuilding/spa and therefore the client is doing their upmost to mitigate against any potential damage to the surrounding tree stock.

5.5
Or though it has been deemed unsuitable to go ahead with plans to create a living rooftop on the new structure due to the fact that it will be shaded out by the surrounding trees and offer poor growing conditions for any plant species. There is an area to the north of the proposed building between the new spa and the party wall which is suitable for planting and offers a good opportunity to bolster the site's flora.

5.4
As the decking will extend under the tree canopy it is essential to keep an eye on the soil moisture levels surrounding the trees. The decking will intercept rainfall which will evaporate rather than reach the soil.

6.0 <u>Tree protection measures</u>

6.1
Any machinery involved in the installation of the mini piles when located within the theoretical Root Protection Area of the surrounding trees will be located on the temporary ground protection or on temporary ground protection within the footprint of the proposed development.

6.2
The location of the screw piles will be marked out on site and excavated by hand to a depth of 300 mm, with regard to the tree species any roots encountered in these excavation are likely to be small diameter roots which can be cleanly cut. If any roots over 25 mm are encountered these will be covered with soil and left and Arboricultural Advice will be obtained from the author of this report.

6.3
It is my opinion that provided the tree protection measures outlined in this report are followed, the approved works within the site will not significantly impact on the root system or rooting environment, nor the health, stability and longevity of the trees.

7.0 Conclusion

7.1
No trees are to be removed or pruned to facilitate the proposed works.

7.2
The on and off-site trees will be unaffected by the proposed works.

7.3
The landscaping works associated with the proposed development include an increase in opportunities for new planting within the garden and a bolster the surrounding ecology and tree stock. Planting of new trees is proposed as part of these landscaping works.

7.4
It is my opinion that provided the tree protection measures outlined in this report are followed, the approved works within the site will not significantly impact on the root system or rooting environment, nor the health, stability and longevity of the trees.

Appendix 1

1.0 Tree Survey Methodology

Methodology of data collection

1.1 Survey Methodology

We have surveyed all the individual trees and groups of trees located within and close to the boundary of the site. The objective of the survey is to collect tree data relevant to the proposed redevelopment of the site and to categorise individual trees or tree groups in accordance with BS 5837 (2012) 'Trees in relation to design, demolition and construction – Recommendations' based on their condition, quality and future potential.

The purpose of the categories within BS5837 2012, is not to determine whether retention of trees is desirable, '*The purpose of the tree categorisation method, which should be applied by an arboriculturist, is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.*' (BS5837 2012 Section 4.5.2).

This survey should therefore be regarded as an initial appraisal and observations, assessments or recommendations relating to tree protection zones, remedial tree works, protective fencing, foundation design, material specification are beyond the scope of this report.

The location of the trees is shown on the attached drawing. A detailed inspection of individual trees with respect to decay, defects and hazard is not included. However, trees found to be in a structurally dangerous condition are identified.

1.2 Work recommendations

Any work recommendations given in the following section should be carried out within the given time frame. It is recommended that the works are carried out by fully qualified arborists and that all pruning cuts are made in accordance with the British Standards of Arboriculture (BS3998).

Tree Condition Survey

Tree No.	Species	Height (m)	Branch spread (Diameter) (m)	DBH (CM)	Age Class	Condition	Description	Proposed Works	Bs Cat
T1	Western Red Cedar (Thuja plicata)	10	6	40/30	M	Fair	Mature previously topped tree	None	C1
T2	Holm Oak (Quercus ilex)	8	4	30	EM	Fair	Well managed Early mature tree. Lower canopy has been pruned over time to act as screening from the garden shed	None	C1
T3	Scots Pine (Pinus sylvestris)	11	3.5	30	EM	Fair	Drawn up early mature tree in good condition	None	C1
T4	Scots Pine (Pinus sylvestris)	12	4	30	EM	Fair	Drawn up early mature tree in good condition	None	C1
T5	Western Red Cedar (Thuja plicata)	14	3	30/10/10	EM	Fair	Drawn up early mature tree in good condition	None	C1
T6	Western Red Cedar (Thuja plicata)	14	3	30/15	EM	Fair	Drawn up early mature tree in good condition	None	C1
T7	Silver Birch (Betula pendula)	12	4	20/20/10	SM	Fair	Multi stemmed Semi mature tree in good condition	None	C1
T8	English oak (Quercus Robur)	7	1	10	Y	Fair	Young tree	None	C1

SURVEY KEY AND GLOSSARY OF TERMS

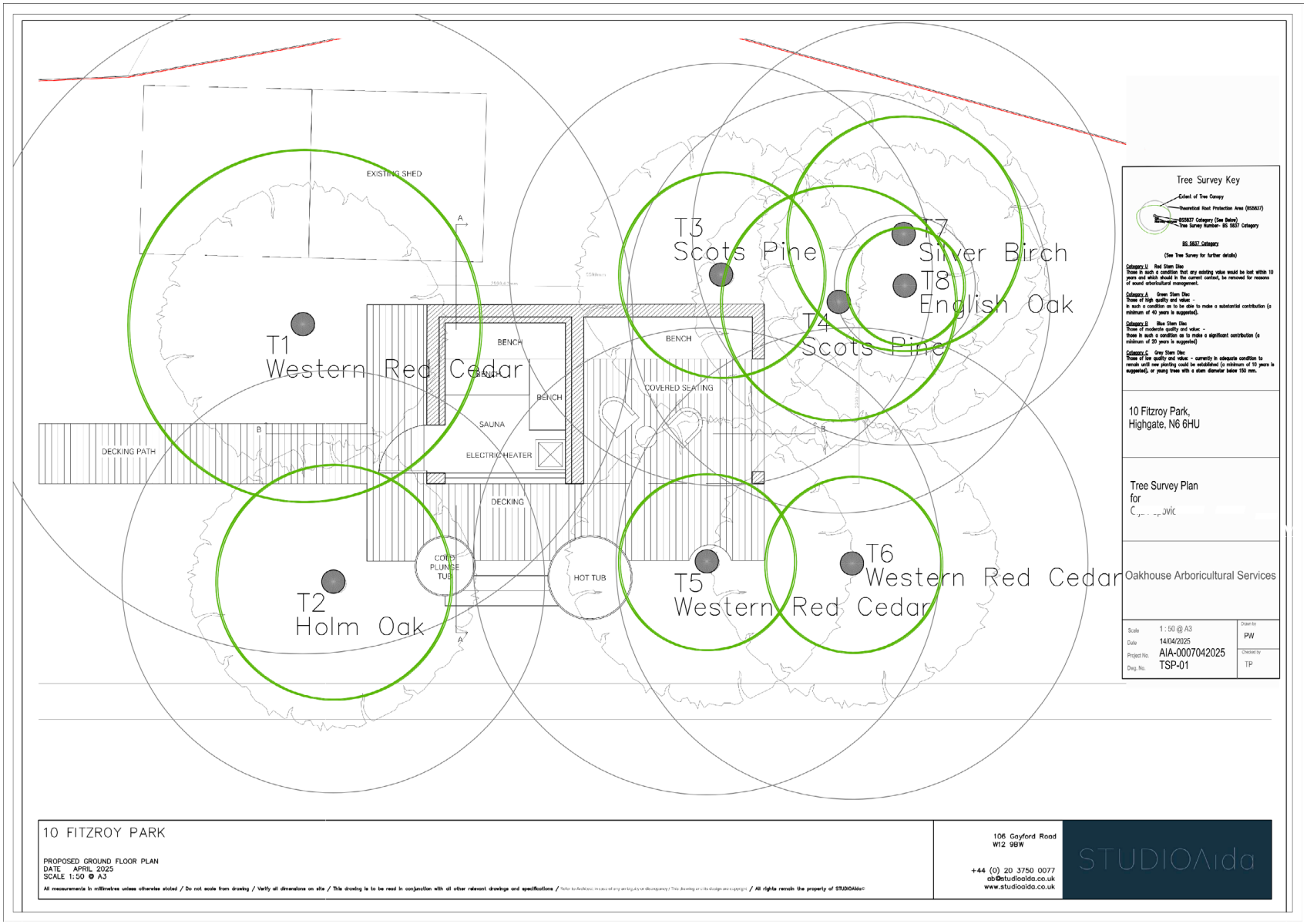
Cascade chart for tree quality assessment

Trees unsuitable for retention (See Note)				
Category and definition	**Criteria (including subcategories where appropriate**			**Identification on plan**
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 a 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 NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.			**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 See Table 2 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 150 mm	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**

TERM	DEFINITION
Height	The estimated or measured height of the tree in metres.
Branch spread	The estimated average length of a trees branches from the centre of its stem to the branch ends. Usually given as a radius unless otherwise stated.
M	Metres
T	Individual tree
G	Grouped trees
Age class	Y = young. SM = semi mature M = mature OM = over mature V = veteran
Condition	A summery of tree condition: • Good - no visible defects/very low risk • Fair - minor defects/low risk • Poor - major defects/high risk • Very poor - unacceptable defects and risk present
Reccomendations/ notes	Works to the tree that it would benefit its long term condition and/or prevent significant defects from occurring. Or for aesthetic purposes.

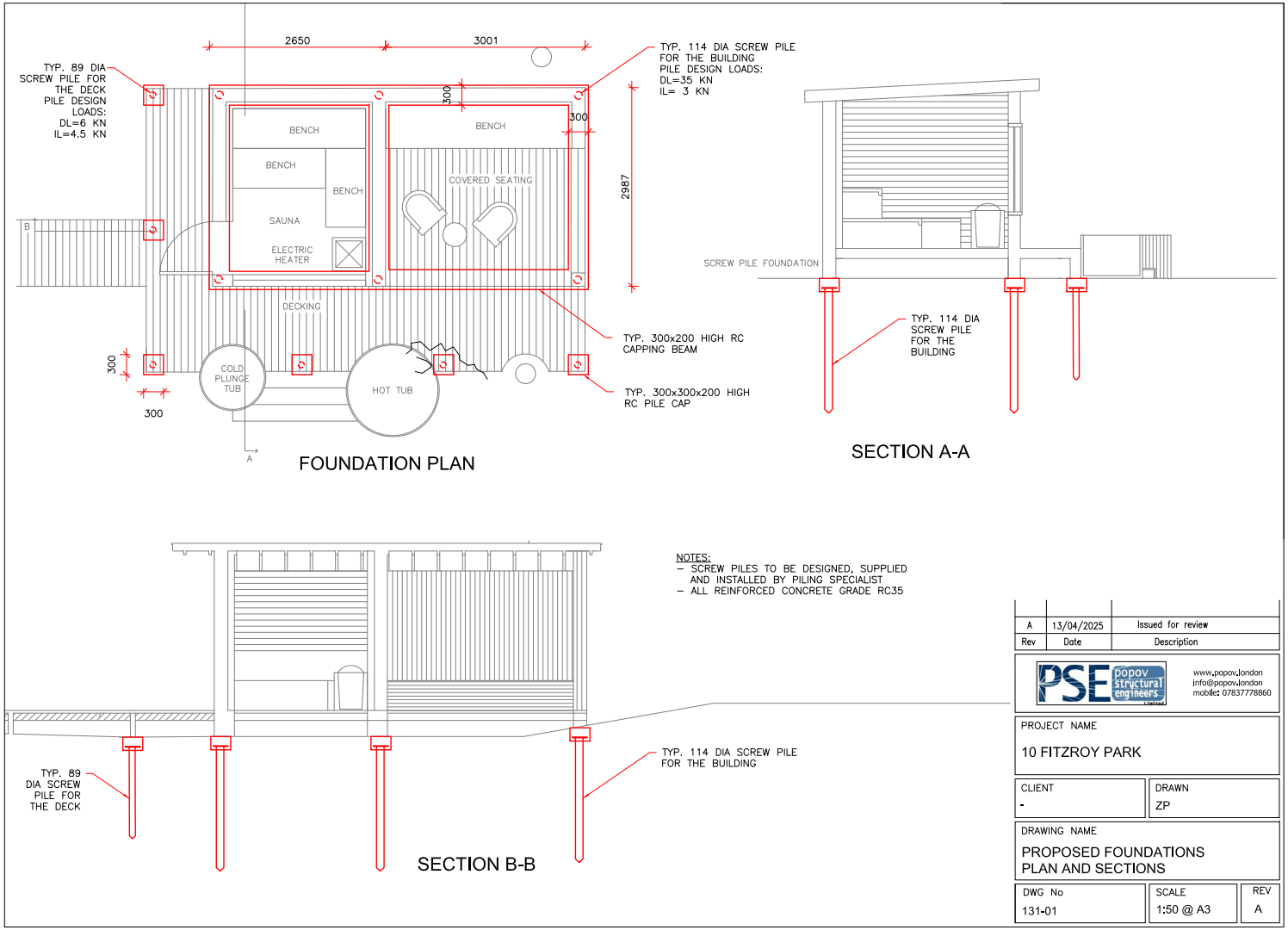
TERM	DEFINITION
Priority	• Urgent - work required immediately (that day) to make a tree safe or safe guard a site • Very high - work required within 7-14 days • High - work required within 30 days • Moderate - work required within 90 days • Low - work(s) required are of the lowest priority and can be done in line with next scheduled works or if the budget allows
Inspection frequency	A recommended time line for the next inspection: • Very high - 6 months • High - 12 months • Moderate - 18 months • Low - 3 years • Very low - 5 years • None - no target exists or it has been excluded
Hazard	Something with the potential to cause harm or damage for example a tree with a recognised defect
Target	People or property
Risk	The probability that harm will actually be caused to people or property

Tree Location Plan



NOTE : Drawing re-scaled to fit this document.
See full scale drawing submitted along side this document

Structural Drawings for Screw Pile Foundations



Proposed structure in relation to existing Shed

AUTHOR

This survey was carried out by Henry Parker on behalf of Oakhouse Arboricultural Services. Henry Parker is a tree surveyor. He has worked in arboriculture for over 12 years. Primarily working as a sub-contract climbing arborist across the south of England and eastern Australasia, carrying out domestic and commercial tree work for a variety of companies. He is a fully qualified arborist and a LANTRA award professional tree inspector.

LIMITATIONS

Trees are dynamic, living structures and can never be guaranteed as 100% safe. Even trees in good health can be subject to damage under average conditions. This report considers the risk posed by the trees in their current state, only.

Any effect caused by the removal or retention of trees on soil heave/subsidence should be considered by an expert in soil shrinkage and its impact on buildings.

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W. oakhousetrees.co.uk

E. info@oakhousetrees.co.uk

T. 07878 251 073