



WE KNOW SERVICES

TREE HEALTH ASSESSMENT INCIDENT REPORT

Site

Former Parr Fire Station, St Helens

Client

The Abbey Group

Report Date

March 2024

Version

First Issue

We Know Services
Court Hey Park, Roby Road, Huyton L16 3NA
E: info@weknowservices.co.uk
www.weknowservices.co.uk

Ref: INV/2024/0153/INV

Author: Daniel Griffiths

Qualifications: FdSc Arboriculture, MArborA

Tree Health Assessment – Parr Fire Station



T9 London Plane, Parr Fire Station.

Quality Assurance

The information which the author has prepared and provided is true and has been prepared and provided in accordance with the Arboricultural Association's Code of Ethics and Conduct. We confirm that the opinions expressed within this report are true and represents the author's professional opinions.

Disclaimer

The report has been prepared for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and the author. No other warranty, expressed or implied, is made as to the professional advice included in this report. Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by the author for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report assume that all relevant information has been supplied by those bodies from whom it was requested. No part of this report may be copied or duplicated without the express permission of the author and the party for whom it was prepared. Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

Contents

1	Introduction	1
2	Statutory Designations	1
3	Survey Methodology	1
4	Background and Survey Conclusion	2
4.1	Additional Information	4
	Appendix 1.0 Tree Survey Schedule	6
	Appendix 2.0 Tree Location Plan	8
	Appendix 3.0 Arboricultural Glossary of Terms.....	9
	Appendix 4.0 images.....	10

1 Introduction

We Know Services were instructed by Chris Jones of The Abbey Group from now on referred to as 'the client' to undertake an arboricultural survey of 4 tree features T1, T2, T9, T23 on land at Parr Stocks Road St Helens WA9 1NU.

This report details the arboricultural implication following excavation around the RPA of No4 trees.

The survey was carried out on 15th March 2024 by means of visual inspection from ground level by an experienced and qualified arboriculturalist. The inspection can be restricted in cases where trees were Ivy clad or surrounded by vegetation.

All trees have been added to the Tree Survey Plan indicatively.

The survey was carried out noting the conditions of the trees at the time of inspection. As trees are part of the natural environment, conditions can naturally change; therefore, the contents of this report are valid for one year only. After this period, re-inspection may be required.

2 Statutory Designations

Trees T1, T2, T9, and T23 are protected by a Tree Preservation Order (St Helens Council reference 220). All trees covered by the Tree Preservation Order will be retained and protected.

3 Survey Methodology

The trees were surveyed (prefixed T, or G for group) and recorded in the tree schedule in Appendix 1.0. Where groups are recorded, average height and diameter at breast height (DBH) of the trees in the group are reported. Where access to the base of any trees was limited, stem size was estimated.

All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in Appendix 2.0.

The survey included all 4 trees T1, T2, T9, T23.

4 Background and Survey Conclusion

Background

The original tree survey identified thirty-nine tree features on site consisting of thirty-four individual trees and five groups.

Of these, ten tree features were classed as category B, one tree feature was categorised as category U and the remaining twenty-eight tree features were classed as category C.

This survey will cover trees T1, T2, T9, T23.

1. At the time of the survey, all work around the base of T1, T2, T9 and T23 had stopped. The work areas around T1, T2 and T9 had been excavated without the supervision of an experienced arboricultural consultant on site. The excavation varied between 150-200mm in depth and had been carried out using a tracked machine excavator.
2. There is evidence of several large diameter roots > 40mm around the base of T1 and T2 that have been severed, the excavation also reveals multiple small fibrous roots around the base of both trees. (as shown in **Figure 1 and 2**). From the survey these roots appear to have been severed by mechanical means.
3. At the time of the survey, the RPA of T9 had been backfilled with a heavy soil (as shown in **Figure 3**). No ground protection measures had been used when machinery had operated within the RPA of T1, T2 and T9 therefore, soil compaction has likely occurred; compacted soil restricts root growth and reduces oxygen availability. There is evidence of root severance however, the area has now been backfilled and the extent of root damage cannot be seen. I believe re excavating may possibly cause more damage.
4. No evidence suggested that the roots had been protected during or after the excavation around T1, T2 and T9. Track marks and evidence of back blading within in RPA can be seen in **Figure 4**.
5. A tank has been removed at the base of T23, this has caused some minor root damage, due to the tank, existing path, and hardstanding this may have hindered some root growth in this area. However, small fibrous roots were visible at the edge of the excavation (as shown in **Figure 5**).

Tree Health Assessment – Parr Fire Station

The impacts on a tree with roots severed near its stem may not be apparent immediately. The loss of a single large diameter root (> 40mm) close to a tree's stem will impact the tree's ability to take up essential water and nutrients. The physiological consequence of this loss may only become visible over the following growing seasons. These signs can be gradual and may display as a portion or all the crown with reduced or no leaf development.

When a part of a tree becomes damaged, such as root severance, those damaged areas become entry points for disease and fungal pathogens. If those damaged areas are closer to the tree's stem, then there is a greater risk of the pathogen having a negative effect on the tree's health. Depending on the tree's vitality, over time, the pathogen could result in the tree's decline, ultimately leading to its death, which would require its removal.

At the time of inspection, no visible fungal fruiting bodies were seen. Due to the recent root damage, it may take several years for fungal pathogens to colonize the damaged roots and produce visible fruiting bodies. To accurately determine whether a pathogen has successfully colonized the damaged roots, the root plate should be annually inspected (every 12 months) to check the rooting area for signs of fungal fruiting bodies and signs of movement.

Conclusion

This development could have been achieved without significantly affecting the trees if the approved planning permission had been adhered to.

The trees should be re inspected in full leaf (between June and September) to assess the canopy for early signs of decline, giving recommendations where appropriate.

An annual inspection should be carried out, following the survey in full leaf, allowing *We know Services* to compare the health of the canopy from the previous inspection, again making recommendations where appropriate. This annual inspection should be undertaken for a minimum of three years (2024-2027) this will allow for trees health to be monitored and any signs of decline noted. Should the health of any of the trees decline but not sufficiently enough to require removal, this inspection period may be increased to five years.

Date of Next Visit

June – September 2024

4.1 Additional Information

It is recommended that all works to the trees be carried out in accordance with the data table of *Appendix 1.0* to bring them into good condition and continue long-term tree cover in this area.

All tree work undertaken should be done in accordance with British Standard 3998:2010 and by competent contractors insured with public liability cover of at least two million pounds. A list of Arb approved contractors can be found on the Arboricultural Association's web site.

Any tree work, apart from felling, ideally should take place outside the bird nesting season (which is defined as March to September in the Wildlife and Countryside Act 1981). Should this not be possible, trees must be checked for nesting birds by an experienced ecologist immediately prior to the commencement of works. If nesting birds are found, work must be delayed until the young have fledged.

Considering the use of the site and footfall surrounding the trees, it is recommended that a repeat survey of all the trees identified in this report should be carried out every year following the client receiving this report.

Appendix 1.0 Tree Survey Schedule

Tree Health Assessment – Parr Fire Station

Tree No.	Species	Height (M)	Age	Condition Rating	Comments And Management Recommendations	Priority Rating	Cat Rating
T1	Maple	22	M	Good	Dominant specimen with balanced crown typical of species. Subject to TPO. Bud proliferation evident. Minor deadwood throughout canopy. Evidence of excavation around root plate, severance of >40mm roots on the south side of root plate.	2	B1
T2	London Plane	24	M	Good	Dominant specimen with good form. Subject to TPO. Bud proliferation evident. Minor deadwood throughout canopy. Evidence of excavation around root plate including severance of >40mm roots.	2	B1
T9	London Plane	24	M	Good	Dominant specimen with good form. Subject to TPO. Bud proliferation evident. Full crown with minor deadwood throughout. Evidence of damage to lowest two limbs to the North and South, this appears to be mechanical damage. Evidence of significant excavation around root plate exposing what appear to be structural roots. There is evidence of compaction from machinery whilst backfilling with a heavy soil and back blading the area.	2	B1
T23	London Plane	18	M	Good	Dominant specimen with good form. Subject to TPO. Bud proliferation evident. Full crown with minor deadwood throughout. Evidence of root damage to west side of root plate from removal of tank.	2	B1

Appendix 2.0 Tree Location Plan

Tree Health Assessment – Parr Fire Station



Appendix 3.0 Arboricultural Glossary of Terms

Trees for removal			
Category and definition	Criteria		
Category U Those in such a condition that any existing value would be lost within <u>10 years</u> and which should, in the current context, be removed for reasons of sound arboricultural management	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 R category trees (i.e. 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 (e.g. Dutch elm disease), or very <u>low quality</u> trees suppressing adjacent trees of better qualitySSSSSSSS Note – Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).		
Trees to be considered for retention			
Category and definition	Criteria - Subcategories		
	1 Arboriculture values	2 Landscape values	3 Conservation values
Category A Those of high quality and value : in such a condition as to be able to make a substantial contribution (a minimum 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of <u>particular visual</u> importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture)
Category B Those of moderate quality and value : those in such a condition as to make a significant contribution (a minimum of <u>20 years</u> is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboriculture features (e.g. trees of moderate quality within avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits
Category C Those of low quality and value : currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits
	Note - Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation		

Tree Health Assessment – Parr Fire Station

The following terms are concurrent with best Arboricultural practice and within the guidelines set by the International Society of Arboriculture (ISA), the Arboricultural Association (AA) and the British Standards Institute (BSI).

Age Range (Age is site specific and categorised)	Young (Y)	Out-planted trees that have not yet established.
	Semi-Mature (SM)	Established trees up to 1/3 of expected height and crown.
	Early Mature (EM)	Between 1/3 and 2/3 of expected height and crown.
	Mature (M)	Between 2/3 and full expected height and crown.
	Fully Mature (FM)	Full expected height and crown.
	Over Mature (OM)	Crown beginning to break-up and decrease in size.
	Senescent (S)	Crown in advanced stage of break-up.
Height	Height was estimated and recorded in five metre intervals.	
Condition (Assessment of current physiological condition and structural morphology incorporating vigour and vitality and categorised)	Good	Tree needing little if any attention.
	Fair	Tree with minor, but rectifiable defects, or in the early stages of physiological stress.
	Poor	Tree with significant structural and physiological flaws and/or extremely stressed.
	Dead	Tree that is dead, biologically/physically moribund, or dangerous.

Tree Health Assessment – Parr Fire Station

Priority Rating	1 - High	Action should be taken within one month.
	2 - Moderate	Work should be implemented in a programme of works and completed within 12 months.
	3 - Low	Work that would benefit the trees but is not essential.

Definition of Physiological & Morphological Terms

Adaptive Growth	The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone.
Bifurcation	Forked or divided union.
Brown Rot	Form of decay where cellulose is degraded, while lignin is only modified.
Cankers (target or tumorous)	A localised area of dead bark and cambium on a stem or branch, caused by fungal or bacterial organisms, characterised by wound wood development on the periphery. This may be annual or perennial.
Cavity	An open wound, characterised by the presence of extensive decay and resulting in a hollow.
Chlorotic Leaf	Lacking in chlorophyll, typically yellow in colour.
Compartmentalisation	The physiological process that creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.
Coppicing	Is an ancient form of woodland management that involves repetitive felling on the same stump, near to ground level, and allowing the shoots to re-grow from that main stump (also known as the coppice stool).
Crack	Longitudinal spilt in stem or branch, involving bark and/or underlying wood. These may be vertically and horizontally orientated.

Tree Health Assessment – Parr Fire Station

Decay	Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.
Deadwood	Deadwood is often present within the crown or on the stems of trees. In some instances it may be an indication of ill health, however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).
End Weight	The concentration of foliage at the distal ends of stems and deficient in secondary branches.
Girdling Root	Root which circles and constricts the stem or roots causing death of phloem and/or cambial tissue.
Hazard Beam	An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).
Included Bark Union	An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).
Ivy Growth	Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.
Live Crown Ratio	The relative proportion of photosynthetic mass (leaf area) to overall tree height.
Reaction Wood	Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.
Root Plate Lift	The physical movement of the rooting plate causing soils to shift and crack. May occur during adverse weather conditions. Trees may become unstable.
Structural Defect	Internal or external points of weakness, which reduce the stability of the tree.

Tree Health Assessment – Parr Fire Station

Suppressed	Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.
Topping	A highly disfiguring practise, likely to cause severe xylem dysfunction and decay in major structural parts of the wood.
White Rot	Form of decay where both cellulose and lignin are degraded.
Wound	Any injury, which induces a compartmentalisation response.
Wound wood	Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term “callus.”
Woodland Structure	The vertical and horizontal arrangement of trees within a group or woodland i.e. Dominant - trees with a crown above the upper layer of the canopy, Co dominant - trees that define the general upper edge of the canopy, Intermediate - trees that have been largely overgrown by others, Suppressed - trees that have been overgrown and occupy an under-storey position and grow slowly, often severely asymmetrical.
<i>Note:</i> The definitions described above may not necessarily be included within the Arboricultural Survey Data.	

Appendix 4.0 Images

Tree Health Assessment – Parr Fire Station



Figure 1 T1 Evidence of root severance and excavation within RPA.



Figure 2 T2 Evidence of root severance and excavation within RPA.

Tree Health Assessment – Parr Fire Station



Figure 3 T9 Backfilled with a heavy clay-based soil.



Figure 4 T9 evidence of compaction from tracked machinery.

Tree Health Assessment – Parr Fire Station



Figure 5 T23 with tree protection fencing installed, after tank removal.