BS 5837:2012
Tree Survey and Preliminary Assessment

Report No: LTM0055.PAA.01

Date: 22.06.20

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Project: 120a Withington Rd, Manchester. M16 8FA

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Executive Summary

The site is located on the corner of Withington Road and May Road in Whalley Range and is approximately 23 metres in length from east to west. The site is an L shape and is approximately 12.8 metres at its widest point from North to south and 4.4 metres at its shortest distance north to south.

The surface is generally tarmacadam and is expected to be highly compacted with limited water infiltration.

There are 3 category B trees and 1 category C tree located on the site boundaries. There is a category U tree located adjacent to the main gates. This category U tree has died and should be removed to prevent and damage of injury.

The majority of the site is within the Root Protection zones of at least one of the trees on this site. The trees on this site are protected under the Whalley Range Conservation Area 1992 and therefore consent from Manchester City Council must be sought before any works are undertaken.

For any build to be considered on this site the following points should be addressed:

- Any building will need to have piled foundations for its construction design, as it not deemed acceptable to excavate with the RPA of a tree that is to be retained. Please see appendix 6 Abbey Pynford Method.
- Any new structure should be at least 2 metres from any tree stems or major buttress roots to allow for maintenance of the trees and the proposed structure.
- Due to limited space, increased shading and likely leaf fall, it is not deemed acceptable to build a residential dwelling on this site as the conflict between the resident and the trees will likely apply negative pressure to the trees long term retention potential.
- Serious consideration must be given to installation of utilities to the property. The use of NJUG Vol 4 must be adhered to when installing utilities.
- Consideration must also be given to the overall height of the building compared with the growth habits of the species on this site.
- Tree Maintenance may also be an issue. There are two lime trees on this site that will require annual pruning of the epicormic growths and low branches to prevent them blocking the path and touching / damaging the proposed building. Leaf fall will be an issue and therefore suitable designs must incorporate a plan to prevent blocking of gutters and drains
- Consideration must be given to the construction phase of this project Oil, bitumen, cement or other material likely to cause damage to the tree will not be stacked or discharged within 10m of the trees stem or within the Root Protective Area. Also, materials in general will not be stacked or discharged within the exclusion zone. Concrete mixing and washing will not be carried out within 10m of any retained trees. Fires will not be lit beneath the foliage or in a position where the flames could extend to within 5m of the foliage, branches or trunk. If the fire is large, then this may necessitate a distance of at least 20m. Care should be taken when using cranes or other equipment near the canopy of the retained trees. Also, any trees to be felled in proximity to the retained trees should be done so with particular care.

1.0 Introduction

1.1 Lally Tree Management were instructed by Dr Ugo Umeadi of 6 Somerdale Avenue, Whalley Range, Manchester to carry out an arboricultural survey of 5 trees that could be potentially impacted by the development at 120a Withington Rd, Manchester. M16 8FA

1.2 This report details the arboricultural implications of developing the site, including:

- a survey of the trees on and near any potential development which may impact the trees from ground level, noting their location, species, and all relevant parameters, i.e. stem diameter, height, crown spread, condition etc.
- preparation of a tree schedule.

1.3 The survey was carried out on Thursday 18th June by means of 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.

1.4 Under *BS5837: 2012 Trees in Relation to Construction - Recommendations*, the assessment of trees is made as objectively as possible, however the findings are the opinions of the surveyor. The tree categorisation method identifies the quality and value of the existing tree stock, allowing informed decisions to be made concerning development design layout.

1.5 The following documents have been made available by the client:

- Drawing- Withington Road - Protected root area

1.6 Weather conditions during the survey were heavy rain

1.7 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 necessary.

2.0 Survey Methodology

2.1 The trees were surveyed (prefixed T for individual tree, G for group of trees and H for Hedge) and recorded in the tree schedule in appendix one. 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.

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

2.3 Where appropriate, canopy spread for each tree was recorded at four cardinal points in order to reproduce an accurate representation of the crown shape of the tree on the tree plan in appendix three.

2.4 The survey included all trees within the proposal area and trees near to the proposal.

Appendix One. Tree Survey Data

	Arboricultural Data Sheet: 120a Withington Rd									Date of Survey: 18/06/20		Surveyor: Matthew Lally		
Tree No.	Species	DBH (mm)	Root Protection Area	Height (m)	Age	Crown Spread (m)				Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
						N	**E**	**S**	**W**					
T1	Ash	720	235m2	18	M	8	6	8	8	8N	B	A tree of average forma and good vigour located on site boundary adjacent to alley way. Trees is Highly Visible from public viewpoints. Limited inspection due to Ivy on stem. Overextended limbs present. Minor deadwood present - **Reduce crown by 20%. Remove major deadwood. Sever Ivy**	20+	**B1**
T2	Thorn	300	41m2	9	M	4	4	4	4	3.5W	D	A dead standing tree located on site boundary adjacent to May Rd. Branches leaning over footpath. - **Fell to ground**	-	**U**
T3	Ash	580	152m2	14	M	4	4	8	7	2.5W	C	A tree with reduced vigour located on site boundary adjacent to May Rd. Large pruning wounds on main stem with only minor occlusion and significant levels of decay. Possible column of decay in main stem. Early stages of die back in upper and mid crown possibly caused by Ash Die Back. Tree is Highly Visible from public viewpoints. Low branches over footpath. - **Crown lift to 4m. remove major deadwood. Monitor annually**	10+	**C1**

	Arboricultural Data Sheet: 120a Withington Rd										Date of Survey: 18/06/20		Surveyor: Matthew Lally		
Tree No.	Species	DBH (mm)	Root Protection Area	Height (m)	Age	Crown Spread (m)				Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
						N	**E**	**S**	**W**					
T4	Lime	490	109m2	16	M	5	3	4	4	0N	B	A tree of good form and vigour located on site boundary adjacent to May Rd. Dense epicormic growths at base prevented a detailed inspection. Low branches present. - **Crown lift to 5m. Remove major deadwood**	40+	**B1**
T5	Lime	650	191m2	16	M	5	5	4	3	0N	B	A tree of good form and vigour located on site boundary adjacent to May Rd. Low branches present. - **Crown lift to 5m. Remove major deadwood**	40+	**B1**

Appendix Two. Glossary of Terms

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 is estimated and recorded in metres.

DBH: Diameter at Breast Height is measured at 1.5m and recorded in metres. Where a tree becomes multi-stemmed below 1.5m the highest possible diameter is measured and indicated. Alternatively, above 1.5m the diameter of each stem or an average diameter is measured and indicated.

Condition: Assessment of current physiological condition and structural morphology incorporating vigour and vitality and categorised:

A - Tree needing little, if any attention

B - Tree with minor, but rectifiable defects, or in the early stages of physiological stress

C - Tree with significant structural and physiological flaws and/or extremely stressed

D - Tree that is dead, biologically/physically moribund or dangerous

Desirability to Retain – As Outlined in Table 1 of BS 5837:2005 (Trees in Relation to Construction - Recommendations)

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- 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.

Crack - Longitudinal spilt in stem or branch, involving bark and/or underlying wood. These may be vertically and horizontally orientated.

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, is 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 - Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.

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.

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.

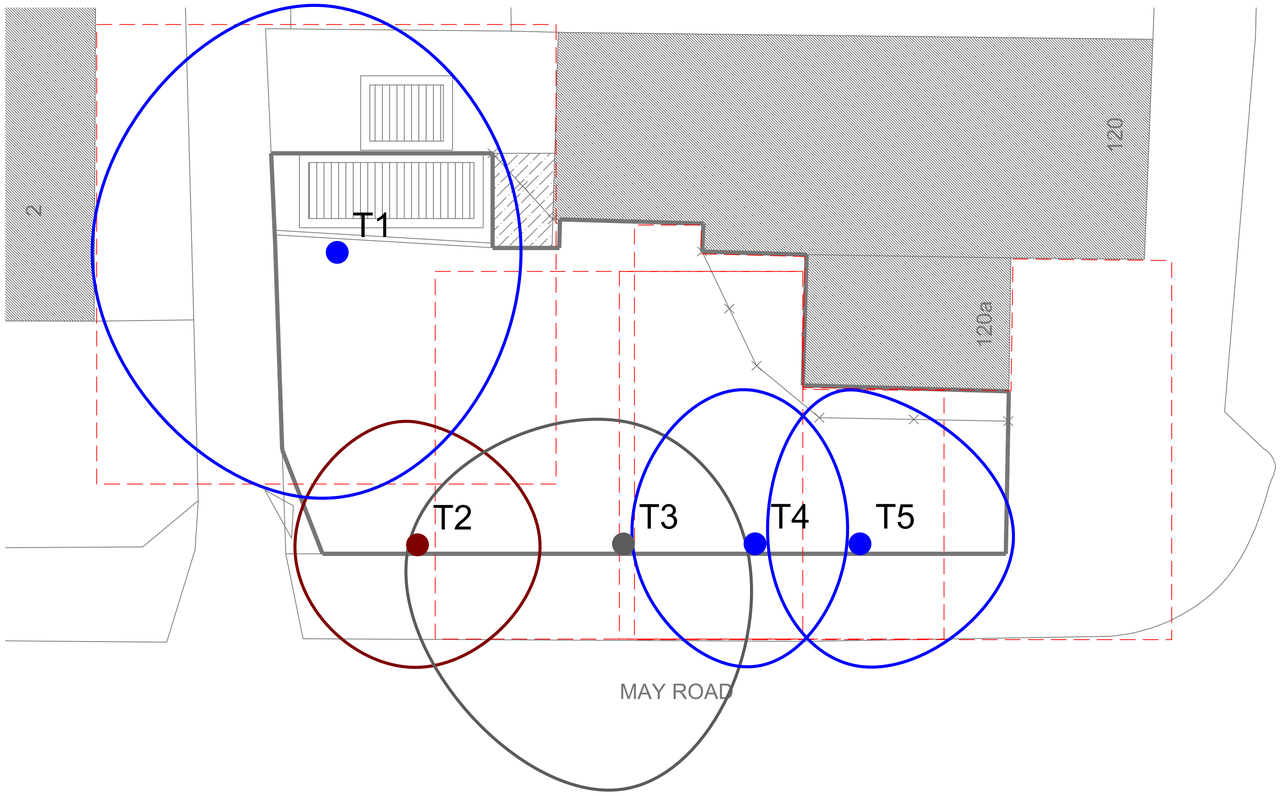
***Note**: The definitions described above, may not necessarily be included within the Arboricultural Survey Data.*

Appendix Three. Cascade Chart

Trees for removal	
Category and definition	**Criteria**
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	o 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 U Category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) o Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. o Trees infected with pathogens of significance to the health and/or safety of other trees nearby) e.g. Dutch elm disease), or very low-quality trees suppressing adjacent trees of better quality. NOTE: *Category U trees can have existing or potential conservation value which might be desirable to preserve; see section 4.7.5*

Trees to be considered for retention			
Category and definition	**Criteria and sub-categories**		
	1) Mainly arboricultural values	**2) Mainly landscape values**	**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 essential components of groups, or of 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-pastures)
Category B **Those 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 area	Trees with clearly identifiable conservation or other cultural benefits
Category C **Those 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 the 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 no material conservation or other cultural value

Appendix Four. Site Plans



Do not scale this drawing (printed or electronic version).

Contractors must check all dimensions from site

This drawing is for use on this site only and should be used in conjunction with all relevant consultants drawings..

LEGEND

N

- Category A
- Category B
- Category C
- Category U
- Root Protection Area (RPA)

Lally TREE MANAGEMENT

Scale: 1:100 @ A1	Date: 18.06.20

Job: **LTM0055. 120a Withington Rd**

Address: **120a Withington Rd, Manchester. M16 8FA**

Client: **Dr Ugo Umeadi**
6 Somerdale Ave.Whalley Range

Drawing Number: **LTM. 00055. TCP. 01**

Drawn by: **Matthew Lally**

TREE CONSTRAINTS PLAN

Appendix Five. Pictorial Evidence

T1. A large specimen located on the boundary of the site.

T2. A dead standing tree that should be removed regardless of the planning outcome.

T3. Old Pruning wounds with decay can clearly be seen on the main stem.

T3. This tree has reduced vigour and an asymmetrical crown

Biased towards the May Rd

T3. Old pruning wounds with cavities can be seen on the main stem. Vigour is weak with early signs of Ash Die Back.

T3. Die back in mid and upper crown.

T4 and T5. Located in close proximity to each other. Low branches and epicormic growth prevented a detailed inspection

Appendix Six. Piled Foundations

ABBEY PYNFORD
FOUNDATION SYSTEMS LIMITED

TREE ROOT PROTECTION SERVICE
METHOD STATEMENT

Introduction

Abbey Pynford Piling & Foundations Limited have been asked to quote for the installation of the Housedeck piled foundation system

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Due to the proximity of trees to the location of the proposed development, it is proposed to use the Tree Root Protection Service (TRPS) during the installation of the foundations.

This document outlines the possible extent of works involved with the TRPS.

It is intended that this document is used in conjunction with the site specific Arboriculturist's Method Statement. On receipt of that document, its site specific requirements will be adopted by Abbey Pynford and incorporated into this method statement.

Hand augering is undertaken at all pile positions within the Root Protection Area, if roots greater than 20mm diameter are found the pile is moved and the new position re-augered. Our in-house design department then re-analyse the slab design to ensure the new position is adequate.

The ground surface is protected with a breathable geotextile membrane. Over this cellweb is pegged out and the pockets filled with pea shingle to provide a permeable low bearing pressure working surface.

A typical piling rig used on a Tree Root Protection Service project. The rig is custom designed to have a very low bearing pressure, equivalent to a 12 stone man wearing size 10 shoes. The power pack (in back of photo) is left outside the root zone, leaving just the lightweight piling rig operating on the site.

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Each pile position is sleeved using a polythene coated cardboard tube to prevent concrete from the pile leaching into the root zone

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The clear void is created using our proprietary collapsible void formers known as Deck Support Units. These are laid under the footprint of the building.

Perimeter jacks are laid around the edge of the footprint to allow fine level adjustments to be made.

The Deck Support Units are covered with marine ply to provide the formwork for the concrete slab.

The completed deck. Pile overlays made of a flexible material prevent concrete from the slab pour leaching onto the ground surface. Similarly the aluminium strips between the sheets of ply prevent concrete reaching the ground surface.

The slab prior to the concrete pour. The reinforcement steel, service ducts rising up through the slabs and the stainless steel edge detail can all be seen. The edge is levelled to a high tolerance by means of perimeter jacks.

Concrete is poured to a fine finish producing a slab with a very high tolerance. After 7 days of curing the Deck Support Units are removed.

This picture shows the finished voided system. The piles supporting the slab can be seen as well as the clear void the Housedeck system leaves. The pea shingle and cellweb under the slab are also visible and the geotextile membrane which prevents materials entering the void can be seen attached to the underside of the slab.