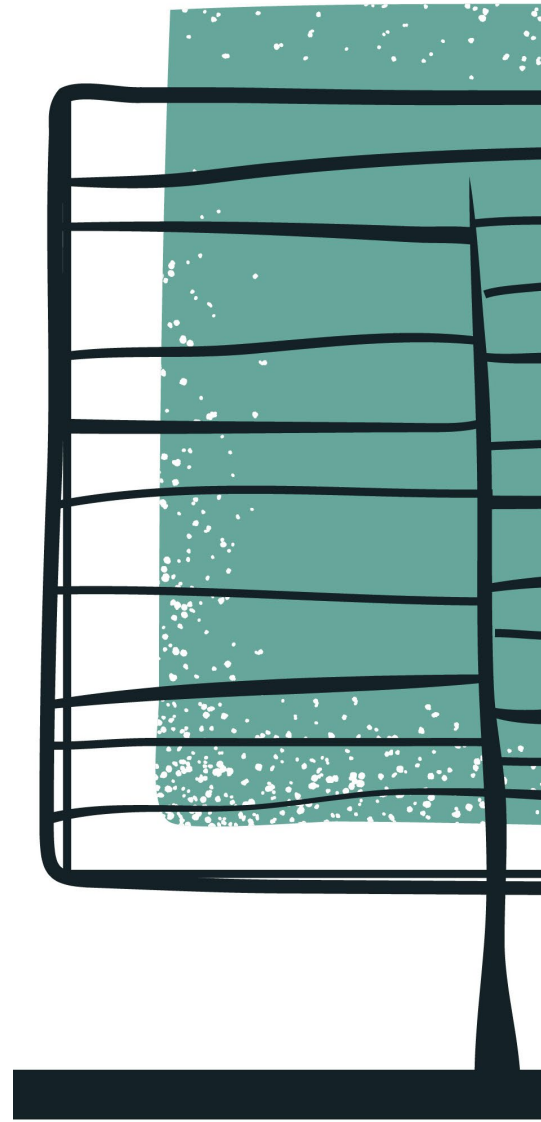




Report No: LTM0045.AIA.03

Date: 14/10/2022

Project Address: 2 Park Ave, Levenshulme, M19 2EE

BS 5837:2012 Arboricultural Impact Assessment

Inspection Record.

Date of Inspection	Surveyor
10/04/2020	Matthew Lally. FdSc MArborA

Lally Tree Management.

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Revision	Date	Prepared by	Status
Final	08/11/2020	M. Lally	Complete
Amendment 1	20/11/2020	M. Lally	Complete
Amendment 2	20/04/2021	M. Lally	Complete
Amendment 2	14/10/2022	M. Lally	Complete

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Executive Summary

The property is an end terraced with a garden visible from both Park Avenue and Central Avenue. The majority of the trees are located on the garden boundary meaning that they are highly visible from public viewpoints.

A large proportion of the front, side and rear gardens are covered by root protection areas due to the likely root spread that has been offset by the adjacent road.

Trees present that could be potentially affected by the development are as follows:

Category A	Category B	Category C	Category U
0	8 Trees	5 Trees 2 Groups 1 Hedge	0

It is proposed to construct a double extension to the side of the existing dwelling, with the bottom part of the extension being a single garage. A new driveway and gated entrance will also be created to allow access to the new garage.

	Tree Category. Trees Requiring Works			
Tree Work Type	Category A	Category B	Category C	Category U
Tree Removal	0	0	0	0
Pruning Works	0	2 Trees	1 Tree	0

To facilitate this development a cellular confinement system will need to be incorporated into the design of the new driveway. The extension itself will be constructed using a pile and beam foundation to prevent excessive root severance.

It is the opinion of this report that the proposed development will not adversely affect the Safe Useful Life Expectancy of the retained trees, if the mitigation measures outlined in this report are strictly adhered to.

1.0 Introduction

- 1.1 Lally Tree Management were instructed by Mr and Mrs Douglas-Thorne of 2 Park Avenue to carry out an arboricultural survey of the trees that could be potentially impacted by the development at 2 Park Avenue, Levenshulme, M19 2EE.
- 1.2 An outline of the area assessed can be found in figure 1. (It should be noted that this is not necessarily the site boundary)



Figure 1. Assessment Boundary Plan

- 1.3 The tree survey & assessment of existing trees has been guided by the recommendations within British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'. The recommendations set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.4 British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' includes guidance for considering the relationship between existing trees and how to integrate their needs into a successful development. A harmonious and sustainable relationship between any retained trees and new structure and/or hard surfaces is at the heart of the guidance.

- 1.5 The survey was carried out 10/04/2020 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 dense vegetation.
- 1.6 Due to the size and nature of the site, it was decided that the survey methodology would include broadly grouping trees that share very similar characteristics. This method is in line with point 4.2.4 of BS 5837:2012 that states 'Trees forming groups should be identified and considered as groups where the arboriculturist determines that this is appropriate. It may be appropriate to assess the quality and value of trees as a whole, rather than individuals.'
- 1.7 British Standard 5837:2012 recommends the assessment of trees is made as objectively as possible, but the findings will always remain 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.
- 1.8 The following documents have been made available by the client:
 - Drawing- LEV12009.dwg
 - Drawing - 2.010_Rev H.pdf
- 1.9 The supplied drawing did include tree positions; however, some trees were not located on the plan. Additions have been made by eye and any dimensions regarding tree positions and protective fencing must be checked on site.
- 1.10 Weather conditions during the survey were dry and still.
- 1.11 Assessing the potential influence of trees upon load bearing soils, beneath existing and proposed structures resulting from water abstraction by trees or rehydration of shrinkable soils was not included in the contract brief and is therefore not considered in the report. The consultant cannot be held responsible for damage arising from such action.
- 1.12 Potentially hazardous trees are highlighted, and appropriate recommendations are made. However, this report is not a substitute for a full tree risk assessment or management plan which are specifically designed to minimise risk and liability associated with responsibility for trees.

2.0 Legislation

Statutory Considerations

2.1 A Tree Preservation Order (TPO) is an order made by a local planning authority to protect specific trees, groups of trees or woodlands in the interests of amenity. A TPO prohibits the:

- cutting down
- topping
- lopping
- uprooting
- willful damage
- willful destruction

of trees without the local planning authority's written consent. If consent is given, it can be subject to conditions which have to be followed. In the Secretary of State's view, cutting roots is also a prohibited activity and requires the authority's consent. Anyone found guilty of such an offence is liable and in serious cases, may result in prosecution and incur an unlimited fine.

2.2 Manchester City Council have been contacted to request information regarding the tree status of the trees with regards to Tree Preservation Orders & Conservation Area designations. Lally Tree Management has not yet received a response. Lally

Tree management will endeavour to pass this information on to the client as soon as it is received.

3.0 Survey Methodology

3.1 The trees were surveyed in accordance with Chapter 4 of BS5837:2012. The tree metrics have been recorded in the tree schedule in appendix one. Where groups of trees and woodland groups have been recorded, average height, average crown spread and average diameter at breast height (DBH) are reported. Where access to the base of any trees was limited then measurements were estimated.

3.2 Trees have been assessed as individual trees (T), groups of trees (G), hedgerows (H) or woodland Groups (W) where it has been determined appropriate.

- The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally.
- For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed or have been managed under a regular pruning regime.
- For the purposes of this assessment, woodland is described as a habitat where 'trees are the dominant plant form. The individual tree canopies generally overlap and interlink, often forming a more or less continuous canopy'.

- 3.3 All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in appendix two.
- 3.4 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 four.
- 3.5 The survey included all trees within the proposal area and trees near to the proposal.

Veteran and Ancient Trees

- 3.6 Veteran trees and Ancient Woodland are important components of the landscape, their importance can be for a number of reasons including that of their ecological, social, cultural and historic value.
- 3.7 Veteran Trees and Ancient Woodlands are material considerations within the planning process and their importance is specifically recognised within the National Planning Policy Framework (NPPF) 2019
- 3.8 Ancient Tree Guide No4 Published by the Woodland Trust and the Ancient Tree Forum states that:

'An ancient tree is one that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species. Its canopy may be small. It will probably have a very wide trunk relative to other trees of the same species and it is very likely that it will be hollow'

AND

'Veteran is a term describing a tree with habitat features such as wounds or decay. The terms ancient and veteran have been used interchangeably in the past, however, it is important to know what the differences between them [are]. A veteran tree is a survivor that has developed some of the features found on an ancient tree, not necessarily as a consequence of time, but of its life or environment. Ancient veterans are ancient trees, not all veterans are old enough to be ancient. A veteran may be a young tree with a relatively small girth in contrast to an ancient tree but bearing the 'scars' of age such as decay in the trunk, branches or roots, fungal fruiting bodies, or dead wood. These veteran features will still provide wildlife habitat'

- 3.9 Different methodologies are available for the defining of Veteran & Ancient trees in the field. Lally Tree Management use RAVEN (Recognition of Ancient, Veteran and Notable Trees) allowing quick and easy assessments to be made, whilst trying to ensure these valuable assets to our environment do not go un-noticed.
- 3.10 **No Veteran Trees or Ancient Trees were identified on this site.**

4.0 Development Proposals

- 4.1 Overlaying the development plans & their associated infrastructure over the existing site plans has highlighted a number of areas where trees are in conflict with the proposal. This plan has been made available in appendix four and given the title 'Arboricultural Implications Plan'
- 4.2 In order to fully assess the impact of the proposals an Impact Table has been created detailing each tree, which shows the proximity of the associated works to the tree.
- 4.3 The aforementioned data and plans are analysed to determine whether the development will have a detrimental impact on the health of each tree. Once this has been determined, remedial measures can be detailed to reduce the impact the proposals will have on the treescape.
- 4.4 Impact Table: -

Tree No.	Root Protection Area identified (m ²) in Table 2 of BS 5837:2012	Distance to Proposed Hard Standing (m)	Distance to Proposed Development (m)	Can the Tree/s be Successfully Retained	Retention Category
T1	142	1.70	19.60	Yes, as outlined in section 6.2 & 6.4	B
T2	152	3.60	18.30	Yes, as outlined in section 6.2 & 6.4	B
G3	5 per tree	0.50	14.20	Yes, as outlined in section 6.2 & 6.4	C
T4	142	7.40	9.50	Yes, as outlined in section 6.2	B
G5	5 per tree	7.20	7.50	Yes	C
T6	80	6.10	5.80	Yes, as outlined in section 6.2 & 6.5	C
T7	255	6.10	4.50	Yes, as outlined in section 6.2, 6.3 & 6.5	B
T8	100	7.6	3.80	Yes, as online in section 6.3 & 6.5	B
T9	65	10.80	3.70	Yes, as outlined in section 6.3	C
T10	122	17.20	9.00	Yes	B
T11	62	22.40	11.20	Yes	C
T12	147	28.00	16.80	Yes	B
T13	76	31.0	19.40	Yes	C
T14	55	36.20	22.40	Yes	C
T15	366	39.00	27.20	Yes	B

Tree No.	Root Protection Area identified (m ²) in Table 2 of BS 5837:2012	Distance to Proposed Hard Standing (m)	Distance to Proposed Development (m)	Can the Tree/s be Successfully Retained	Retention Category
H16	4 per tree	12.40	4.80	Yes	C

5.0 Impact Assessment

5.1 To assess the implications of the Impact Table each tree can be categorised in the following way: -

	Trees to be retained		Trees to be removed	
	With No Impact	With detailed construction	Due to Condition	Due to Development
Tree No.	G5, T10, T11, T12, T13, T14, T15, H16	T1, T2, G3, T4, T6, T7, T8, T9	-	-

6.0 Mitigation Proposals

6.1 Compensatory Planting

6.1.1 Due to the loss of the trees identified in section 5.1 it is proposed that along with the general soft landscaping for the development, more substantial supplementary tree planting will support the application.

6.1.2 This will have a number of benefits for the development and the character of the area. These being: -

- Give a greater diversity of age class on the site, increasing sustainability.
- Give a greater diversity of species and therefore wildlife habitat.

6.1.3 The trees proposed are listed in the schedule below: -

Tree Species	Tree Size
<i>Taxus baccata</i>	12-14 cm girth
<i>Crataegus monogyna</i>	12-14 cm girth

6.1.4 The extent of mitigation planting required will need to be confirmed in agreement with the Local Planning Authority once the development proposal is finalised. Requirements usually involve replacement of trees on a two for one basis. This is based on tree sizes of 12-14cm girth.

6.2 Construction of new drive within the RPA of retained trees

6.2.1 As shown above, the Impact Table raises concern of the proximity of the drive to T1, T2, G3, T4, T6 & T7 and the effect the proposals would have on the Safe Useful Life Expectancy of the trees.

6.2.2 Section 7.5.3 of BS 5837:2012 advises that where new hardstanding is to be formed within the RPA it should not exceed 20% of any existing unsurfaced ground. The table below details the amount of encroachment within the RPA.

Tree No	Total Area m2 of RPA	Total m2 of Structure within the RPA	Percentage of Structure within the RPA
T1	142.00	38.50	27.11
T2	152.00	38.30	25.19
G3	5.00	1.20	24.00
T4	142.00	37.70	26.54
T6	80.00	2.09	2.61
T7	255.00	39.87	15.60

6.2.3 As you can see from the table above the proposed drive exceeds 20% of the RPA for T1, T2 & T4. Section 4.1 76 of the Arboricultural Associations Publication *'The Use of Cellular Confinement Systems Near Trees, A Guide To Good Practice'* states that:

'BS5837:2021 recommends that new permanent hard surfacing should not exceed 20% of any existing unsurfaced RPA of a tree. This is a cautious recommendation, and it should not necessarily be considered the absolute limit because in some circumstances covering a higher proportion of the root zone with a permeable surface may be acceptable'.

It is felt that in this circumstance the additional RPA coverage is limited to no more than an additional 7.1% and it is my opinion that this will not adversely affect the useful life expectancy of these trees.

6.2.4 If ground levels remain the same, the detrimental effects the driveway would have on these trees would be: -

- Compaction, resulting in oxygen depletion, caused from creating the access way.
- The loss of a permeable surface.

6.2.5 It is now possible with the use of a cellular confinement system to be able to create road surfaces very close to trees without having a detrimental effect.

6.2.6 A cellular confinement system provides a load transfer mattress which prevents direct loads on tree roots and reduces the bearing pressure on subsoil's by stabilising aggregate surfaces against rutting under wheel loads.

6.2.7 Should a cellular confinement system be used for the construction of the driveway, in the area effecting T1, T2, G3, T4, T6 & T7 then the proposals should not have a detrimental effect on Safe Useful Life Expectancy of these trees.

6.3 Piled Foundations

- 6.3.1 As shown above, the Impact Table raises concern of the proximity of the development to T6, T7, T8 & T9 and the effect the proposals would have on the Safe Useful Life Expectancy of the tree.
- 6.3.2 This impact can be reduced should the following design principal be implemented: -
- 6.3.3 The side extension should have a designed foundation to reduce the amount of excavation required for its construction. This can be achieved by constructing the extension with a pile and beam foundation, where the beams are laid above or at ground level.
- 6.3.4 If the above foundation is implemented, the ground is protected during the construction phase and in general the ground levels remain the same, the only detrimental effect the proposals would have on this tree would be slight root severance in localised areas.
- 6.3.5 Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots and reduces the size of the rig required to sink the piles.
- 6.3.6 Use of the smallest practical piling rig for the proposed piling will be used to reduce pressure on the soil and also to prevent the need for access facilitation pruning.
- 6.3.7 The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored pile or screw pile.
- 6.3.8 Should a pile and beam system be used in the construction of the extension adjacent to T6, T7, T8 & T9 then the safe useful life expectancy of these trees will not be adversely affected.

6.4 Installation of gate posts

- 6.4.1 As shown above, the Impact Table raises concern of the proximity of the developments proposed new gateposts to T1, T2 & G3 and the effect the proposals would have on the Safe Useful Life Expectancy of the trees.
- 6.4.2 It is therefore proposed that trial holes for the gate post be hand dug. If roots greater than 2.5cm are encountered, then the hole will be backfilled, and this location will not be used for the gate post. A new trial hole will be dug 30cm from the original until a suitable hole can be dug that is free from roots over 2.5cm.
- 6.4.3 Any root severance of roots less than 2.5cm that is required during the dig will be conducted by an Arboricultural Consultant.

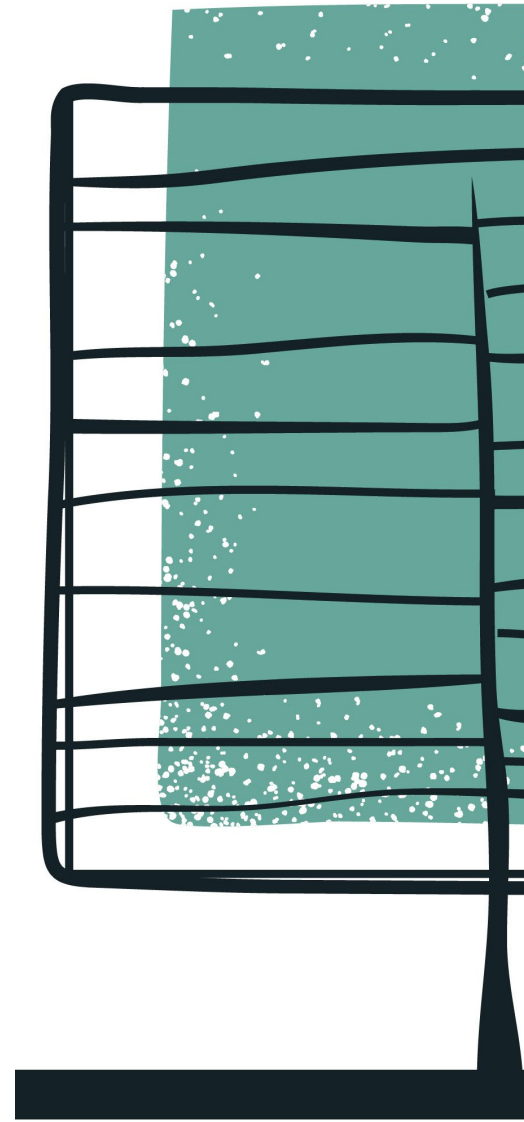
6.5 Access Facilitation Pruning

- 6.5.1 To aid construction of the proposed extensions, T6, T7 & T8 will require crown lifting to 6 metres on the development side.
- 6.5.2 If all pruning works are undertaken in line with British Standard 3998:2010 Tree Work – Recommendations then the Safe Useful Life Expectancy of the trees will not be adversely affected.

7.0 Conclusions and Arboricultural Recommendations

- 7.1 The tree categorisation method identifies the quality and value of the existing tree stock, but it is not meant to be interpreted rigidly and is presented in order to form a balanced judgement on tree retention and removal.
- 7.2 A precautionary method of working near trees is detailed in the accompanying Arboricultural Method Statement.
- 7.3 Following site development, regular (annual or biannual) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.
- 7.4 It is considered that in following the advice in this document, any negative factors affecting trees on the site will be minimised.

Appendix One. Tree Survey Data



Tree Schedule.

Arboricultural Data Sheet: 2 Park Avenue						Date of Survey: 10/04/2020				Surveyor: Matthew Lally				
Tree No.	Species	DBH (mm)	RPA (m ²)	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	Oak	560	142	17	EM	3	5.5	6.5	5	7N	A	A tree of good form and vitality located in the front garden. Deadwood present in the crown. No significant defects observed. High visibility from public viewpoints. - Consider removal of deadwood	40+	B1
T2	Oak	580	152	17	EM	6	8	4	5	9E	A	A tree of good form and vitality located in the front garden. Deadwood present in the crown. No significant defects observed. High visibility from public viewpoints. - Consider removal of deadwood	40+	B1
G3	Hawthorn & Hazel	Avg. 110	5 per tree	7	Y	2	2	2	2	1N	A	A group of two trees located in the front garden. No significant defects observed. High visibility from public viewpoints. - No action	20+	C1
T4	Oak	560	142	15	EM	3.5	5	3	5.5	8W	B	A tree of good form and vitality with some minor deadwood observed. Evidence of a previous pruning wound at 4.5m on the stem. High visibility from public viewpoints. Acceptable condition. - No action	40+	B1
G5	Hawthorn x 3	Avg. 110	5 per tree	3	SM	2	2	2	2	1N	B	A group of three hawthorns that have been previously topped. No significant defects observed. Acceptable condition. High visibility from public viewpoints. - No action	20+	C1

Arboricultural Data Sheet: 2 Park Avenue						Date of Survey: 10/04/2020				Surveyor: Matthew Lally				
Tree No.	Species	DBH (mm)	RPA (m ²)	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					
T6	Oak	420	80	14	EM	3	1	4.5	10	10W	C	An asymmetrical tree with a cavity in the main stem at 5m. An over-extended limb was observed to the west. Observed minor basal bulging. High visibility from public viewpoints. - Reduce crown by 30% and monitor the cavity annually	20+	C1
T7	Lime	750	255	16	EM	7.5	5	6	8.5	12W	A-B	A tree of good vitality located at the side of the property by the gate. A co-dominant outward branch union at 10m. High visibility from public viewpoints. - No action	40+	B1
T8	Oak	470	100	13	EM	6.5	5	2	10	6E	B	A suppressed tree with an asymmetrical crown and some minor deadwood. No significant defects observed. Acceptable condition. High visibility from public viewpoints. - No action	40+	B1
T9	Lime	380	65	5.5	SM	1.5	1.5	1.5	1.5	2.5N	B	A previously topped tree located by shared access. Acceptable condition. - No action	20+	C1
T10	Lime	520	122	14	EM	3	4.5	3	5	4W	B	A tree of good form and vitality with some minor deadwood. Located in the rear garden with high visibility from public viewpoints. Low branches overhanging the road. - Crown lift to 5m over the road & deadwood	40+	B1

Arboricultural Data Sheet: 2 Park Avenue						Date of Survey: 10/04/2020				Surveyor: Matthew Lally				
Tree No.	Species	DBH (mm)	RPA (m ²)	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					
T11	Sycamore	370	62	13	SM	1.5	4.5	2.5	4	6W	B	A tree with an asymmetrical crown due to suppression from surrounding trees. No significant defects observed. High visibility from public viewpoints. - No action	40+	C1
T12	Sycamore	570	147	13	EM	2.5	5	3.5	8	8E	B	A tree of average form and reduced vitality located in the rear garden. Some minor deadwood. No significant defects observed. - No action	20+	B1
T13	Lime	410	76	6	SM	1.5	1.5	1.5	1.5	2.5N	B	A previously topped tree of good vitality located at the rear of the property. Acceptable condition. High visibility from public viewpoints. - No action	40+	C1
T14	Sycamore	Est. 350	55	12	SM	2	3	3.5	5	7W	B	A third-party tree of good form and vitality with an asymmetrical crown. Not inspected. - No action	40+	C1
T15	Ash	900	366	15	M	11	8.5	5	5	4.5W	B-C	A mature third-party tree with decay pockets evident in an old pollard point. Reduced vitality and major deadwood observed. - Reduce by 30% & remove deadwood	20+	B1

Tree Schedule.

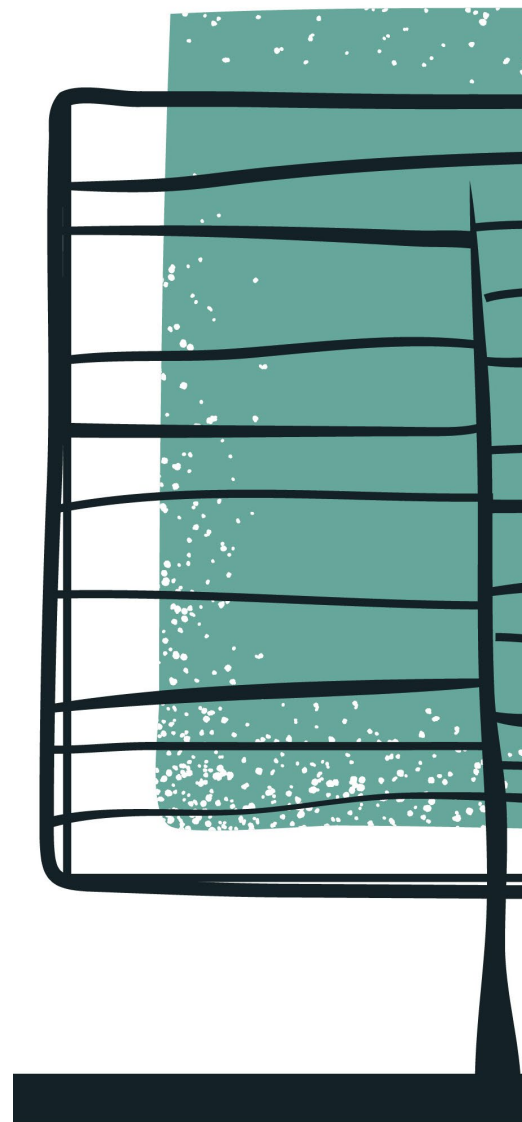
Arboricultural Data Sheet: 2 Park Avenue						Date of Survey: 10/04/2020				Surveyor: Matthew Lally				
Tree No.	Species	DBH (mm)	RPA (m ²)	Height (m)	Age	Crown Spread (m)				Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
						N	E	S	W					
H16	Privet & Hawthorn	90	4 per tree	3	EM	-	-	-	-	0N	B	A group of privet and hawthorn forming a boundary hedge of acceptable condition. - No action	20+	C1

Est. = Estimated measurements.

Avg. = Averaged measurements

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, 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.).

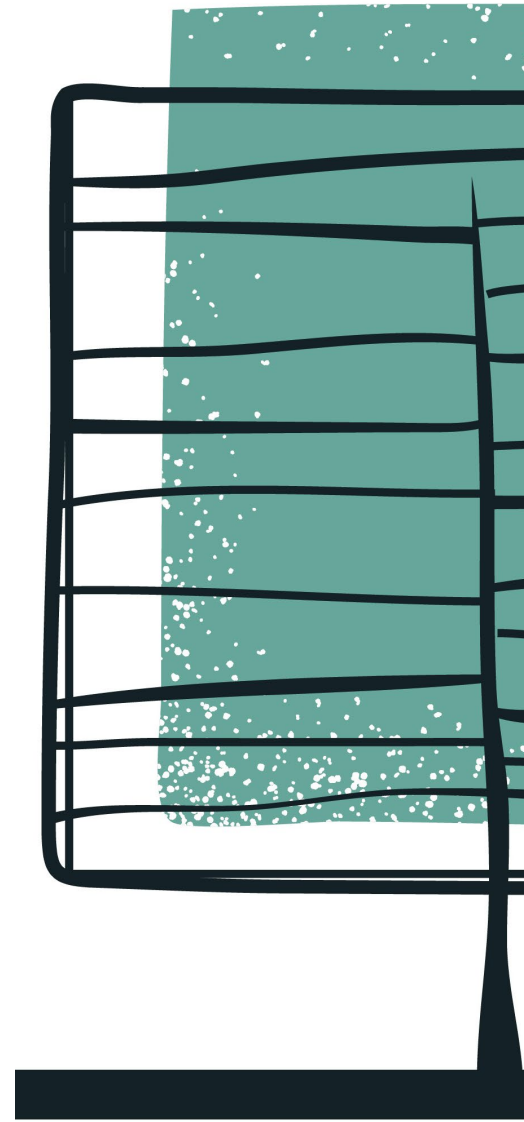
End Weight -	The concentration of foliage at the distal ends of stems and deficient in secondary branches.
Girdling Root -	Root which circles and constricts the stem or roots causing death of phloem and/or cambial tissue.
Hazard Beam -	An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).
Included Bark Union -	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.*

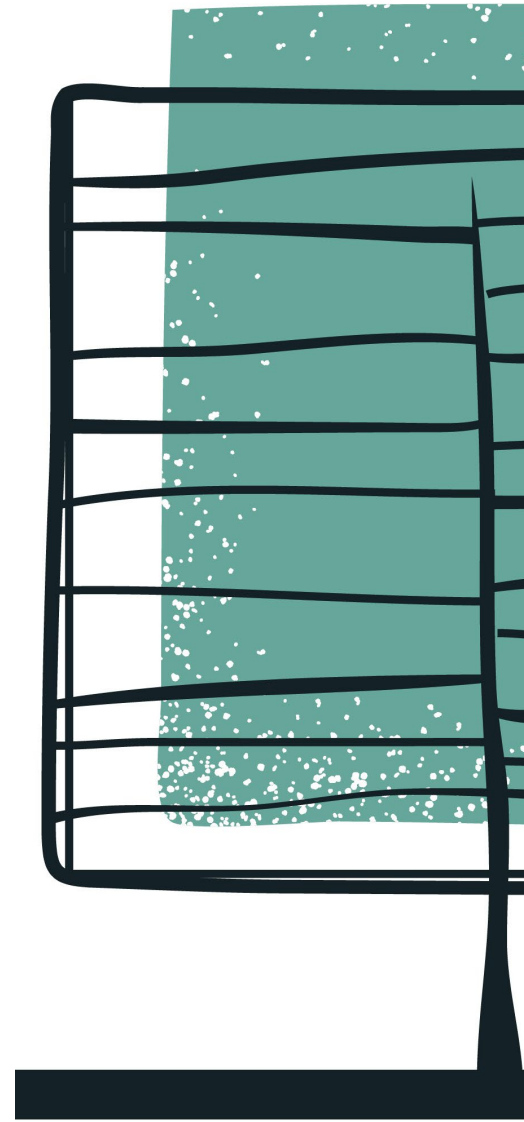
Appendix Three.

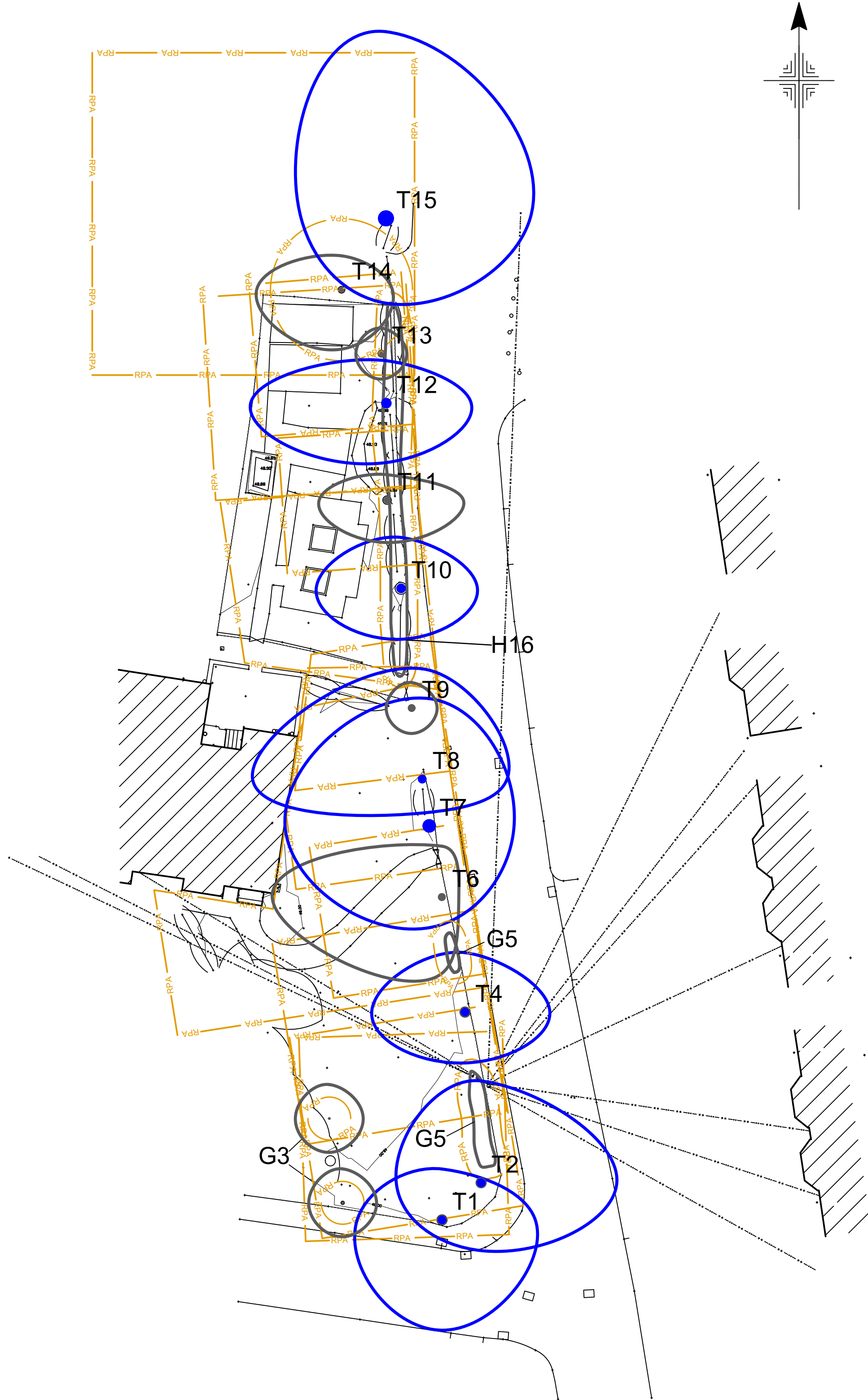
Cascade Chart



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	○ 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) ○ 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 low-quality trees suppressing adjacent trees of better quality. NOTE: <i>Category U trees can have existing or potential conservation value which might be desirable to preserve; see section 4.7.5</i>		
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. Plans





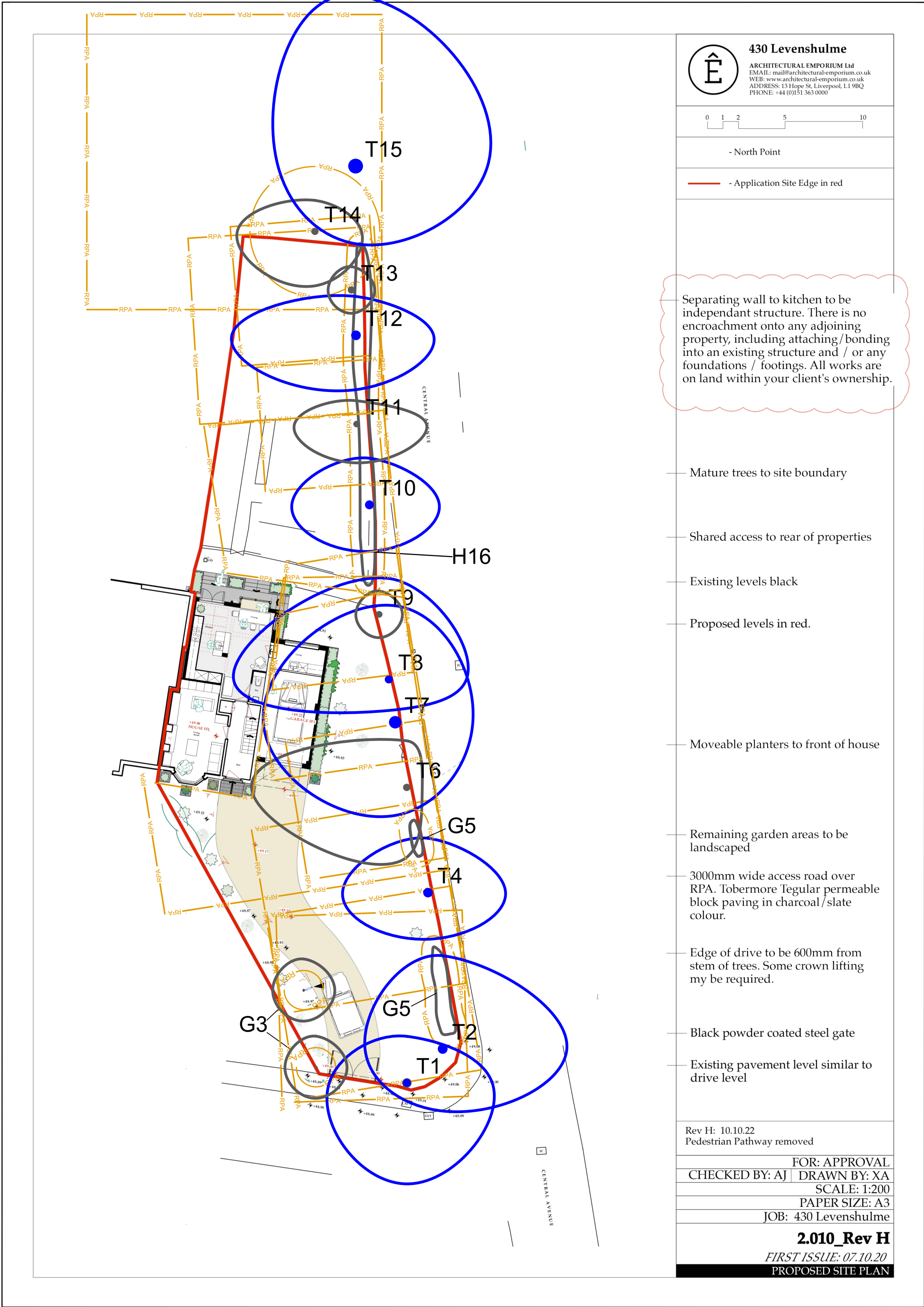
Do not scale this drawing (printed or electronic version).
Contractors must check all dimensions from site.
This drawing is for use on this site only and should be used in conjunction with all relevant consultants drawings.

LEGEND

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



Scale:	1:200 @ A1	Date:	13/10/2022
Job:	LTM0045. Park Rd		
Address	2 Park Ave. Levenshulme		
Client:	Mr and Mrs Douglas-Thorne		
Drawing Number:	LTM.0045.TCP.02		
Drawn by:	Matthew Lally		
TREE CONSTRAINTS PLAN			



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



Scale:	1:200 @ A1	Date:	14/10/2022
Job:	LTM0045. Park Rd		
Address	2 Park Ave. Levenshulme		
Client:	Mr and Mrs Douglas-Thorne		
Drawing Number:	LTM.0045.AIP.03		
Drawn by:	Matthew Lally		
Arboricultural Implications Plan			