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Arboricultural Impact Assessment with Tree Protection Measures

June 2022

Greenhill,
4 'The Orchard',
Huyton,
Liverpool
L36 9UZ

National Grid Ref: SJ44179049



Document Title	Arboricultural Impact Assessment with Tree Protection Measures
Prepared for	pHpc (peter Hamilton planning consultancy)

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The arboricultural work has been undertaken by a competent arborist in line with British Standard BS3998:2010

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SUMMARY

Six individual trees and one group of trees were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* one individual tree and one group of trees were recorded as retention category 'B'; and two individual trees were recorded as retention category 'C'.

The trees were generally found to be in a good to fair condition, however three individual trees (**T3**, **T4** and **T5**) were classified as retention category 'U' (unsuitable for retention).

It is understood that the site does not contain any Tree Preservation Orders, but that the site is located within a Conservation Area.

The proposed development directly impacts upon one tree. This tree shall require removal due to its close proximity to construction activity. The tree proposed for removal is considered to be a low quality ('C' category) specimen.

It is recommended that the proposed tree removal be mitigated by the applicant by planting a well-structured new tree that will add to the quality of the area and help integrate the proposed development into the surrounding landscape.

The retained trees will be protected to British Standard *BS5837:2012 Trees in relation to design, demolition and construction* to ensure that they remain in a healthy condition during and post development. The *Tree Protection Plan* to the rear of this report highlights the recommended tree protection measures.

Any arboricultural work undertaken should be done so by a competent arborist in line with British Standard *BS3998:2010 Tree Work*, and after permission has been granted to do so by the local planning authority.

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1. Introduction

1.1. Project outline

- 1.1.1. This report has been produced in accordance with *British Standard BS5837: 2012 Trees in relation to design, demolition and construction* to achieve a harmonious and sustainable relationship where tree retention or planting is proposed in conjunction with nearby construction (site-based operations with the potential to affect existing trees).

1.2. Scope of this report

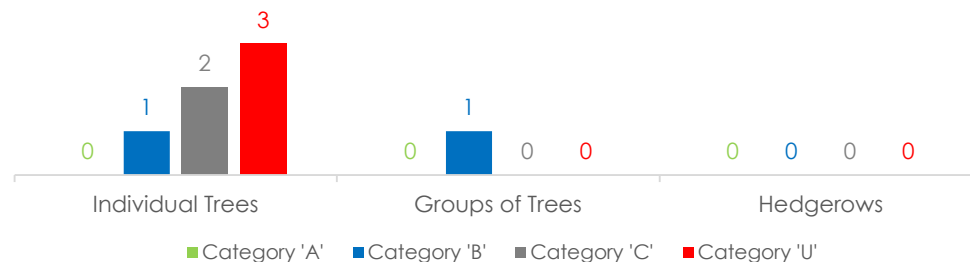
- 1.2.1. This report has been produced to comply with planning requirements where trees are to be considered as part of a proposed development. To achieve this, arboricultural constraints have been identified and a detailed plan (*Tree Constraints Plan*) has been produced showing the location, root protection areas and retention category of trees within the site.
- 1.2.2. In addition, this report provides an *Arboricultural Impact Assessment* that evaluates the direct and indirect effects of the proposed development, and where necessary makes recommendations for mitigation measures. This report also includes *Tree Protection Measures* and a *Tree Protection Plan* as part of an outline *Arboricultural Method Statement*, which demonstrate how the retained trees will be protected during construction, and where tree protection measures are to be implemented.
- 1.2.3. Recommendations for tree works within this report are specific to the construction of the proposed development. This report does not form part of a tree safety inspection or tree management strategy, and general arboricultural management works may be required post development. To manage the safety and risk from trees it is advised that trees are inspected in detail for this purpose by an arboriculturist using a suitable risk management strategy.

1.3. Data collection

- 1.3.1. A ground level inspection was undertaken by Robert Godwin on 31st May 2022. As recommended by *BS5837*, the position of all trees within the site with a stem diameter of 75 mm or more, measured at 1.5 m above highest adjacent ground level are recorded. The position of trees with an estimated stem diameter of 75 mm or more that overhang the site or are located beyond the site boundaries within a distance of up to 12 times their estimated stem diameter were also recorded. For individual trees the crown spread taken at four cardinal points; for tree groups the overall extent of the canopy was recorded.
- 1.3.2. Tree positions were plotted using a topographical plan supplied by the client, which is the basis for which the *Tree Constraints Plan* has been prepared.

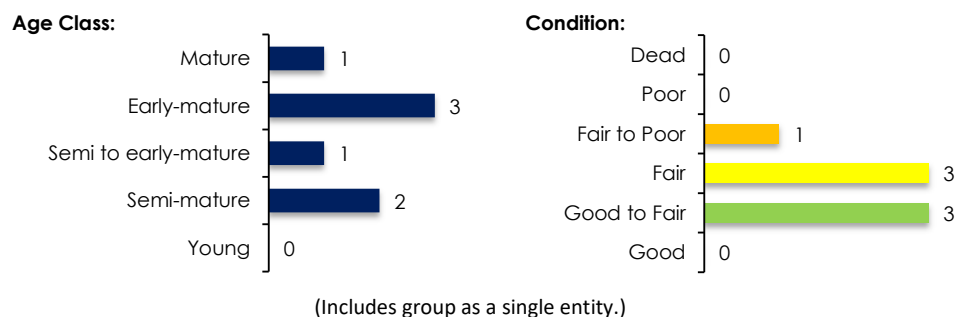
2. Arboricultural Constraints

2.1. Tree retention categories



- 2.1.1. Six individual trees and one group of trees were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* one individual tree and one group of trees were recorded as retention category 'B'; and two individual trees were recorded as retention category 'C'.
- 2.1.2. The trees were generally found to be in a good to fair condition, however three individual trees (**T3**, **T4** and **T5**) were classified as retention category 'U' (unsuitable for retention).
- 2.1.3. Trees **T3**, **T4** and **T5** are clearly causing direct damage to brick walls within the site (and probably to a lesser extent so is **T2**) via incremental root and stem growth, leaving the walls in a hazardous condition. It is there recommended that trees **T3**, **T4** and **T5** are removed to enable the walls to be re-built safely.

2.2. Tree age class and condition



- 2.2.1. Please see *Appendix 1* for the detailed list on existing species, age class, dimensions and condition of trees within the site, and *Appendix 2* for an explanation of retention category criteria. Tree locations can be seen on the *Tree Constraints Plan* at the rear of this report (*Drawing 1*).

- 2.2.2. The inspection of several trees was restricted as detailed at *Appendix 1*. The inspection of these trees was limited to a cursory observation of the parts of the trees that could be clearly observed, without obstruction, from the available vantage point. However, sufficient tree related data was collected to fulfil the requirements detailed within the scope of this report.

2.3. Root Protection Areas

- 2.3.1. The tree Root Protection Area (RPA) is a layout design tool indicating the area around a tree that, along with the tree stem and branches, must be considered during development. The protection of the roots and soil structure within the RPA should be treated as a priority. The RPA of each tree or group is marked on the *Tree Constraints Plan* at the rear of this report.

2.4. Tree protection status

- 2.4.1. A statutory tree protection enquiry was made with Knowsley Council on 6th June 2022. It is understood that the site does not contain any Tree Preservation Orders, but that the site is located within a Conservation Area. Please see *Appendix 4* for details.
- 2.4.2. **It is essential that no tree works, and no construction works that may affect retained trees, are undertaken within the site prior to consideration and consent of the proposed works under FULL planning approval only by the local planning authority, regardless of whether the trees are currently protected or not.**

3. Arboricultural Impact Assessment

3.1. The proposed development

- 3.1.1. The renovation of the existing structure with a single story extension to the south is proposed. The proposed layout drawing can be seen within the *Tree Protection Plan* to the rear of this report. This drawing has been used to assess the potential direct and indirect arboricultural impacts.

3.2. Proposed tree works

- 3.2.1. The proposed development directly impacts upon one tree. This tree shall require removal due to its close proximity to construction activity. The tree proposed for removal is considered to be a low quality ('C' category) specimen. Please see the table below for the proposed tree removal details.

	Category 'A'	Category 'B'	Category 'C'
Trees to be removed to enable the construction of the proposed development	None	None	T2

- 3.2.2. The client has confirmed that tree **T2** has previously been implicated in damage to on-site drains. In addition, roots from the tree have lifted sections of the adjacent tarmac parking area. It is also suspected that roots from this tree are contributing toward the damage to the adjacent garden wall (in addition to **T3**).
- 3.2.3. Several trees may benefit from general arboricultural works as part of a practical post-development arboricultural management strategy; however, these works are not covered within the scope of this report. Within *Appendix 1* the term 'No action required' relates specifically to those tree works required to enable the proposed development and does not mean that general post development arboricultural management works are not required.

3.3. Proposed mitigation measures

- 3.3.1. It is recommended that the proposed tree removal be mitigated by the applicant by planting a well-structured new tree that will add to the quality of the area and help integrate the proposed development into the surrounding landscape.

3.4. Site construction traffic

- 3.4.1. Generally, to protect the trees from construction site traffic the remaining trees should be protected by a temporary protective barrier. However, in this instance all the retained trees are either located beyond topographical site features/existing boundary walls or away from the proposed development area. As such, these trees shall not require protection via temporary protective barriers as they are already provided protection due to their inaccessible location that is remote from the proposed construction activity.

3.5. Post development impacts

- 3.5.1. No soil samples were taken during the site visit. It is recommended that soil assessment is undertaken by a competent person to determine whether the soil is shrinkable, and that foundation design is undertaken in line with detailed guidance given in the National House Building Council (NHBC) publication *Building near trees, Chapter 4.2*.
- 3.5.2. It is essential that consideration is also given by a suitably qualified professional to how the proposed tree removal may affect soil conditions and the stability of any future foundations.

4. Arboricultural Method Statement

4.1. Tree works prior to development

- 4.1.1. Care should be taken to ensure during tree removal or remedial work that damage to the retained trees and disturbance to the RPA is avoided. All tree works, as described in *Appendix 1*, should be carried out in accordance with *BS 3998: 2010 Recommendations for tree work*, and after permission has been granted to do so by the local planning authority. It is essential that those appointed to undertake any tree works carry out adequate checks to ensure that no statutory laws are contravened during tree work operations.

4.2. Services within the RPA

- 4.2.1. Wherever possible, under-ground services should be routed outside of the RPA of retained trees, and plans showing the proposed routeing should be drawn up. Where excavations may be required hand-held tools might be acceptable for shallow service runs.

4.3. Post development tree planting

- 4.3.1. It is recommended that a replacement tree is planted to mitigate the loss of **T2**. Replacement tree species should be agreed with the client and the local planning authority. However, suitable species would include Rowan, Birch and Whitebeam.
- 4.3.2. New trees should be planted into pits of an appropriate size to accommodate the root system without restriction, backfilled with a 3:1 topsoil:compost mix and should be secured to a machine rounded stake using 1 no. tree tie with rubber spacer. Finished stake height should not exceed 1/3 height of staked tree above ground. Trees should be either root-balled or container grown 'standard' sized 8-10cm girth. Note that root-balled stock can only be transplanted between Nov and Feb.
- 4.3.3. Care should also be taken to avoid the risk of damage to the stems of young trees from future strimming or mowing operations. An area with a radius of at least 500mm from the stem of newly planted trees would be desirable to be kept free from competing vegetation by chemical weed control or by the more environmentally friendly option of mulching. The new tree should be thoroughly watered in immediately after planting. Regular maintenance, including weed control and watering, of newly planted trees is of particular importance for at least three years during the critical post-planting period.
- 4.3.4. For further detailed planting guidance please refer to British Standard *BS 8545:2014 Trees: from nursery to independence in the landscape. Recommendations*.

Drawing 1. Tree Constraints Plan



T	G	H	W	S
INDIVIDUAL TREE	GROUP OF TREES	HEDGEROW	WOODLAND GROUP	SHRUB

	EXISTING LAYOUT
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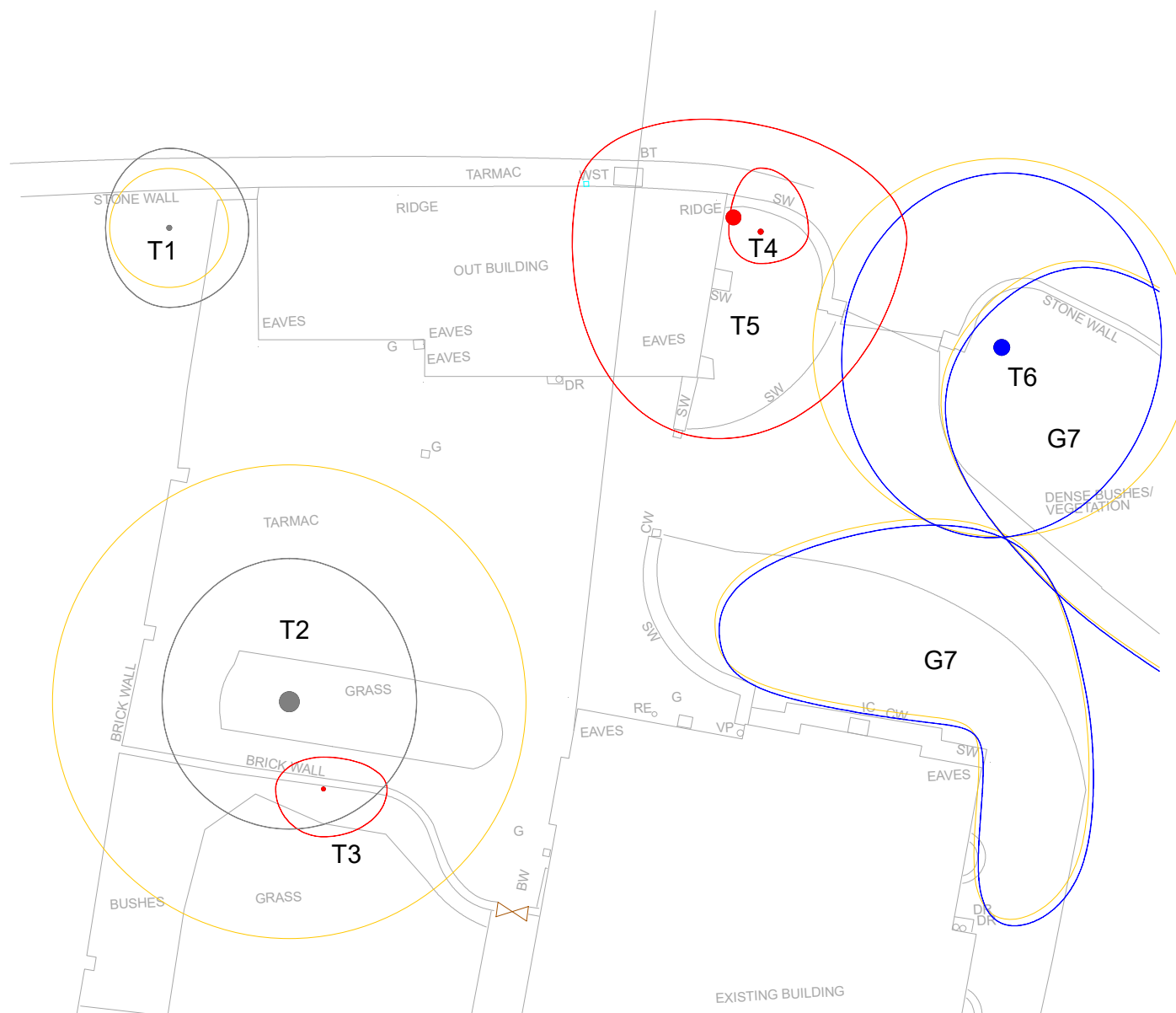
TREE QUALITY ASSESSMENT CATEGORY

	CATEGORY 'A' HIGH QUALITY
	CATEGORY 'B' MODERATE QUALITY
	CATEGORY 'C' LOW QUALITY
	CATEGORY 'U' UNSUITABLE FOR RETENTION

Based on British Standard BS37:2012 Table 1.
Please refer to Appendix 2 of the arboricultural report for more detailed category definitions.

	ROOT PROTECTION AREA (RPA)
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The Root Protection Area (RPA) is a layout design tool highlighting the underground tree constraints.
Along with the tree stem and branches the RPA must be considered prior to and during development.



PROJECT TITLE: Greenhill, The Orchard, Huyton, L36 5UZ		
DRAWING TITLE: TREE CONSTRAINTS PLAN	SCALE: 1:200 @ A4	ISSUE DATE: 20.06.22
DRAWING NUMBER: TCP.13479	REVISION: .01	DRAWN BY: RG

Drawing 2. Tree Protection Plan



T	G	H	W	S
INDIVIDUAL TREE	GROUP OF TREES	HEDGEROW	WOODLAND GROUP	SHRUB

	EXISTING LAYOUT
	PROPOSED LAYOUT

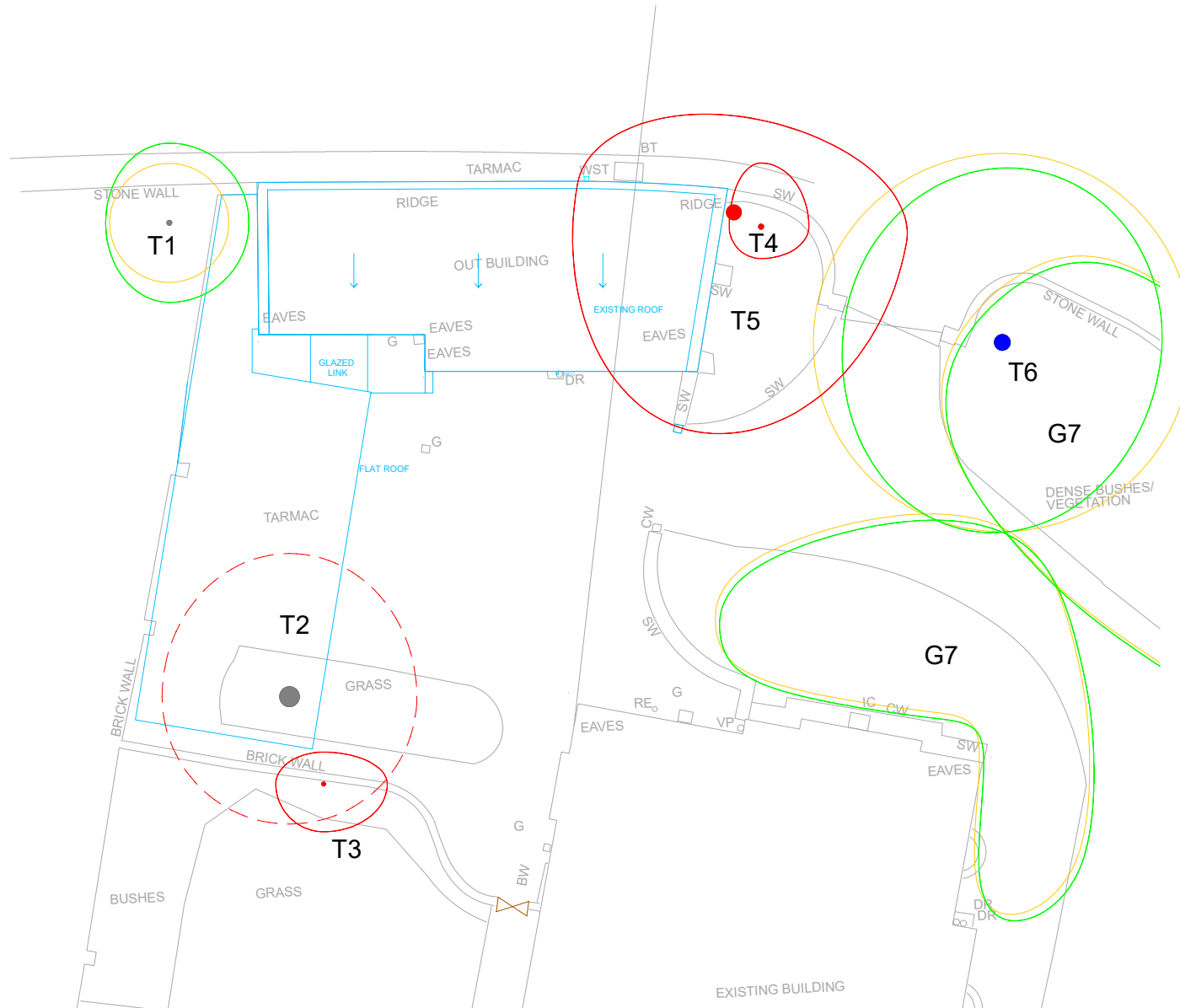
PROPOSED TREE WORKS

	TREE PROPOSED FOR RETENTION
	TREE PROPOSED FOR PRUNING
	None
	TREE PROPOSED FOR REMOVAL (ARBORICULTURAL REASONS)
	T3, T4 & T5
	TREE PROPOSED FOR REMOVAL (TO ENABLE DEVELOPMENT)
	T2

Please refer to Appendix 1 of the Arboricultural Impact Assessment for details on tree condition and proposed works.

	ROOT PROTECTION AREA (RPA)
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The Root Protection Area (RPA) is a layout design tool highlighting the underground tree constraints. Along with the tree stem and branches the RPA must be considered prior to and during development.



PROJECT TITLE: Greenhill, The Orchard, Huyton, L36 5UZ		
DRAWING TITLE: TREE PROTECTION PLAN	SCALE: 1:200 @ A4	ISSUE DATE: 20.06.22
DRAWING NUMBER: TPP.13479	REVISION: .01	DRAWN BY: RG

Appendix 1. Tree Schedule

Tree No.	Species	Age	Stems at 1.5m	Stem Dia (mm)	Height (Crown Hgt) (m)	FSB (D) (m)	Branch Spread (m)				Observations	Cond	Life Exp	Tree Works Required to Enable Development	Root Protection Area (RPA)		Retention Category
							N	E	S	W					Radius (m)	Area (m²)	
T 1	Prunus padus (Bird Cherry)	Semi-mature	3	90	6.5(3)	3(E)	2.5	2.5	2.5	2	Asymmetrical crown. Multi-stemmed from ground level. Limited inspection - situated on adjacent land. Tree RPA located within significant ground level change & hard surface area.	Good to Fair	40+	No action required.	1.9	11.0	C
T 2	Acer pseudoplatanus (Sycamore)	Early-mature	1	620	14(3)	3(N)	4.5	4	4	4	Previously pollarded at 6m (due to drain damage). Tree RPA located within existing tarmac hard surface area (roots causing damage to tarmac). Potentially damaging adjacent garden wall.	Fair	40+	Remove to enable the construction of the proposed development.	7.4	173.9	C
T 3	Pyrus (Pear)	Semi-mature	3	70	5(2)	2(N)	1	2	1.5	1.5	Multiple pruning wounds. Multi-stemmed from ground level. Limited inspection - dense ivy on stem/base. Damaging adjacent garden wall.	Fair	10+	Remove for arboricultural reasons.	1.5	6.6	U
T 4	Salix caprea (Goat Willow)	Mature	1	470	10(1.5)	3(W)	3	5.5	7	5	Asymmetrical crown. Self-seeded specimen growing from brickwork, clearly damaging adjacent boundary wall.	Fair	40+	Remove for arboricultural reasons.	5.6	100.0	U
T 5	Sambucus nigra (Elder)	Early-mature	1	160	5.5(1.5)	1.5(N)	2	1.5	1	1	Asymmetrical crown. Self-seeded specimen. Root/stem causing minor damage to adjacent wall.	Fair to Poor	10+	Remove for arboricultural reasons.	1.9	11.6	U
T 6	Tilia X europaea (Common Lime)	Early-mature	2	350	15(1.5)	1.5(W)	5.5	5	6	5	Asymmetrical crown. Tree RPA located within existing hard surface area. Limited inspection due to dense understorey vegetation.	Good to Fair	40+	No action required.	5.9	110.9	B
G 7	Taxus baccata (Yew), Cupressus sp. (Cypress), Aesculus carnea (Red Horse Chestnut)	Semi-mature to early-mature	1	350	14(0.5)	0.5(W)	4	4	4	4	Mixed species of trees and shrubs. Not inspected - located away from the proposed development area.	Good to Fair	40+	No action required.	4.2	55.4	B

Appendix 2. Explanatory Notes

A2.1. Tree statistics and measurements

Survey record	Description
<i>Tree No.</i>	Unique tree reference number. (T) = Individual tree, (G) = Group of trees or woodland that form cohesive arboricultural features, (H) = Hedgerows and substantial internal or boundary hedges.
<i>Species</i>	Species listed by scientific name, with (common name).
<i>Age</i>	Life stage – Young, Semi-mature, Early-mature, Mature, Over-mature and Veteran.
<i>Stem Count</i>	Number of stems recorded at 1.5m above ground level.
<i>Stem Diameter</i>	Stem diameter recorded in millimetres at 1.5 meters above ground. Where the tree is multiple stemmed, each stem has been recorded.
<i>Height (Crown Height)</i>	Height of the tree in metres – to the closest 0.5m. Average canopy height in brackets, e.g. 10(3).
<i>First Significant Branch</i>	Existing height above ground level of first significant branch and direction of growth, e.g. 3(N)
<i>Branch Spread</i>	Branch spread, taken as a minimum at the four cardinal points – North, East, South and West.
<i>Observations</i>	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay, physical defect or historic pruning).
<i>Cond</i>	Condition of the tree recorded as Good, Good to Fair, Fair, Fair to Poor, Poor or Dead.
<i>Life Exp</i>	Life Expectancy - classed as less than 10 years, 10 plus years, 20 plus years, or more than 40 years.
<i>Tree Works Required to Enable Development</i>	Tree works specifically required to enable the proposed development, or to reduce significant risk of harm. The term 'No action required' does not mean that general post development arboricultural management works are not required.
<i>RPA Radius</i>	Radius of the root protection area, when plotted as a circle centred on the base of the stem.
<i>RPA Area</i>	Total area of RPA in metres squared, e.g. 100m ² .
<i>Retention Category</i>	See below – A2.2.

A2.2. Tree retention categories

Retention category and definition	Criteria
<i>U (marked in red on the Tree Constraints Plan) = trees for removal.</i>	Trees 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.
<i>A (marked green on the Tree Constraints Plan) = Trees of high quality</i>	Trees of high quality with an estimated remaining life expectancy of at least 40 years.
<i>B (marked in blue on the Tree Constraints Plan) = Trees of moderate quality</i>	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
<i>C (marked in grey on the Tree Constraints Plan) = Trees of low quality</i>	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Appendix 3. Report Limitations & General Guidelines

- A3.1 Where the inspection of trees was limited (*see Appendix 1*), the 'Tree statistics and measurements' (*Appendix 2.1*) are estimated, and observations, condition and life expectancy are based on an inspection from the available vantage point.
- A3.2 It is recommended that qualified and experienced companies are sought when appointing tree work contractors and they should be approved under the Arboricultural Association Approved Contractors scheme. It is essential that all appointed tree work contractors have adequate Public Liability, Products Liability and Employers Liability Insurance. All tree works must conform to the current BS 3998 "*Recommendations for Tree Work*".
- A3.3 We Ltd will not accept liability for works undertaken by third party companies. All necessary checks must be made by the appointed tree work contractor prior to undertaking any works to ensure that no statutory tree protection measures or relevant laws are contravened.
- A3.4 The validity, accuracy and findings of this report are directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third party data will be undertaken. We not be responsible for the recommendations within this report where essential data are not made available, or are inaccurate.
- A3.5 The assessment and works recommendations relate to conditions found at the time of our inspection. Any significant alteration to the site post our site inspection but pre submission for planning that may affect the trees present, or have a bearing on the planning implications (including level changes, hydrological changes, storms, extreme climatic events or site works) will necessitate a re-assessment of the trees and the site.
- A3.6 This report has been carried out in order to inform the planning process, and not to assess the potential hazards and risks posed by trees. Where clear and obvious hazards have been observed to accessible trees, these have been addressed in the works recommendations. Where inspections were limited by restrictions such as stem ivy, understory vegetation, limited access, epicormic growth or being located on adjacent land, any form of tree condition assessment was restricted. A full assessment of the levels of risk posed by trees can only be informed by considering site use together with assessing any hazards present within a tree.
- A3.7 Trees are dynamic structures that continue to develop and decline; in addition, changes in site use are likely to occur during and as a result from the proposed development. On this basis, regular tree risk assessments are advised.
- A3.8 Our plans are to scale whenever possible but care should be taken when measuring from a plan without first checking the original data.

Appendix 4. Statutory Tree Protection Enquiry Results



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Planning Information

Property is a Listed Building [Show on Map](#)

Property is in a Conservation Area [Remove from Map](#)

Planning Applications

Planning Application No	Date	Distance
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Tree Preservation Orders [Remove from Map](#)

TPO No	Location
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