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**Arboricultural  
Impact Assessment**

**Cotswold  
Woolton Park  
Liverpool  
L25 6DR**

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ISF/0287  
212/15.

## SUMMARY

Seventeen individual trees, five groups of trees and one hedge were recorded. In accordance with *BS5837:2012* three trees were recorded as retention category 'B' and the remaining trees were recorded as retention category 'C'.

The trees were generally found to be in a good to fair condition and no trees were classed as retention category 'U' (unsuitable for retention).

Several low quality trees would require removal as they are situated so close to the proposed development area that protecting them during construction is not practical.

Should development take place, any trees that are retained should be protected to *British Standard BS5837:2012* 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*.

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# **1. Introduction**

## **1.1. Terms of reference**

- 1.1.1. This report has been commissioned to provide independent, detailed advice from a qualified arboriculturist, to conform to *British Standard 5837: 2012 Trees in relation to design, demolition and construction* in the context of potential development.
- 1.1.2. For this purpose I have been supplied with a location drawing, which is the basis for which the arboricultural constraints plan has been prepared. Tree positions have been plotted using this drawing and on-site measurements.

## **1.2. Scope of this report**

- 1.2.1. The scope of this report is to identify arboricultural constraints by producing a detailed plan showing tree location, root protection areas and retention category of each tree.
- 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.

## **1.3. Survey details**

- 1.3.1. A ground level inspection was undertaken by Robert Godwin on 13<sup>th</sup> October 2014, recording trees both within and immediately adjacent to the site with a stem diameter above 75mm.
- 1.3.2. Measurements were made using a compass, diameter tape, clinometer and laser distometer. Dimensions are estimated where trees are inaccessible or located off-site.

## **1.4. Site description**

- 1.4.1. The site is comprised of a detached residential property with gardens to the front and rear. The gardens contain a mixture of tree species, which are predominantly semi-mature with occasional mature specimens situated on the site boundaries. Surrounding the site are the gardens of similar detached residential properties, which also contain a mix of mature trees.

## **2. Arboricultural Constraints**

### **2.1. Tree condition**

- 2.1.1 Seventeen individual trees, five groups of trees and one hedge were recorded. In accordance with *BS5837:2012* three trees were recorded as retention category 'B' and the remaining trees were recorded as retention category 'C'.
- 2.1.2 The trees were generally found to be in a good to fair condition and no trees were classed as retention category 'U' (unsuitable for retention).
- 2.1.3 Please see *Appendix 1* for details on each individual tree, 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.

### **2.2 Root Protection Areas**

- 2.2.1 During any development phase, in order to ensure that retained trees are properly protected, the tree rooting zones must be considered. For the purpose of development the rooting zone of the tree is known as the Root Protection Area or RPA. The RPA of each tree or group is marked on the *Tree Constraints Plan* and represents the theoretical tree rooting zone.

### **2.3 Tree protection status**

- 2.3.1 Due to the large potential penalties for illegally carrying out work to protected trees, it is recommend that a check is carried out with the local planning authority prior to any works being undertaken. The check should establish whether the trees are covered by any statutory protection such as a Tree Preservation Order or Conservation Area.
- 2.3.2 No work should be done to any trees until their protective status has been confirmed and work granted.

3. Arboricultural Impact Assessment

3.1. Proposed development

- 3.1.1 The proposed development will consist of demolishing the existing house and constructing a new residential dwelling positioned on the existing house footprint.
- 3.1.2 A proposed layout drawing has been supplied by the client, and is the basis for which this impact assessment has been prepared. Please see the *Tree Protection Plan* to the rear of this report for the proposed layout details.

3.2. Impact on existing trees

- 3.2.1 Several low quality trees would require removal as they are situated so close to the proposed development area that protecting them during construction is not practical; please see the table below for tree removal details.

	Category 'A'	Category 'B'	Category 'C'
Tree to be removed to facilitate the development	None	None	G4, T14, T15, T16 & G17

- 3.2.2 Due to on-site features and topography, many of the retained trees would not require temporary tree protection measures to prevent damage via construction activity. Several of the retained trees are also located in the rear garden and away from the proposed construction activity.
- 3.2.3 The remaining trees shall be protected from construction activity by a protective fencing barrier (see *Section 4.1.1*), put in place prior to any construction activity. The barrier will ensure that the trees remain in a healthy condition during and after development.
- 3.2.4 A section of RPA from tree T3 lies within an area where ground works are proposed. The percentage of potentially disturbed RPA from T13 equates to approximately 12% of its total RPA. In addition, this area is currently occupied by the existing wall of a planting bed and a paved footpath. As such, the RPA from T3 would not be put under any increased pressure by the proposed ground works and would not cause the tree any long term adverse effect.
- 3.2.5 Whether trees are to be retained or removed within proximity of proposed foundations, it is important that foundation depth is considered prior to any construction activity. No soil samples were taken during the site visit. It is recommended that soil assessment it undertaken by a competent person to determine soil shrinkability, and ensure 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*.

## 4. Tree Protection Scheme

### 4.1. Protection of retained trees

- 4.1.1. The first operation will be the necessary arboricultural works as described in *Appendix 1* of this report. All tree works 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.
- 4.1.2. The erection of a protective barrier, in accordance with *BS 5837: 2012*, will be required prior to the start of construction activity. The barrier should be positioned as detailed on the *Tree Protection Plan* to create a Construction Exclusion Zone. Please see *Appendix 3* for barrier construction detail.
- 4.1.3. Once the fencing is erected, waterproof signs with the sentence '**Protected tree zone, no storage or operations within this area**' should be placed at 3m intervals to ensure that all construction personnel are aware of the restrictions that apply to the fenced-off area. Routes for pedestrian and site traffic will be located outside, and diverted away from the RPA of any retained tree.
- 4.1.4. Where utilities need to be brought onto the site, these should ideally be routed away from the RPA of retained trees. Where this is not possible, methodologies on the installation of underground services without damage to tree roots should be considered. All service providers should be consulted prior to commencement of works with the aim of minimising the number of service runs on the site.
- 4.1.5. Any site compound, which typically includes the storage of materials, should be located away from trees and outside any RPA. This area is remote from the retained trees. Care should also be taken to prevent soil contamination with chemical spillages, including oils.

### 4.2. Post construction phase

- 4.2.1. When the development phase is complete and the site machinery has been removed, the local planning authority should be invited to inspect the site to give approval for the removal of the tree protection measures.
- 4.2.2. When this approval has been given the protective barriers may be removed from site. No heavy machinery should be brought into the vicinity of retained trees. During soft landscaping, herbicides should be appropriate for the purpose and should not be used in such a way as to damage any retained trees or vegetation.

Client: Richards Design  
Project No: AIA.12261  
Revision: 01

Date Issued: 20<sup>th</sup> October 2014  
Status: FINAL

Signed on behalf of Godwin's Arboricultural Limited:

*R Godwin*

Robert Godwin BA (Hons), MSc, MArborA.  
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**Appendix 1. Tree Schedule**

Tree No.	Species	Age	Stems of 1.5m	Stem		Height		Branch Spread			Observations	Cond	Life Exp	Primary Recommendations	Root Protection		Retention Category
				Diag	Thgt	FbH (D)	N	E	S	W					Area (sq ft)	Area (sq m)	
T 1	Prunus sp. (Cherry)	Early-mature	1	350	7(2)	3(E)	3	5	3	2	Asymmetrical crown. Situated on adjacent land. Limited inspection - restricted access.	Good to Fair	20+	No action required.	4.2	55.42	C
T 2	Taxus boccata (Yew)	Semi-mature	1	200	5(1)	1(N)	2	2	2	2	Balanced crown. Situated on adjacent land. Limited inspection - restricted access.	Good	40+	No action required.	2.4	18.1	C
T 3	Prunus sp. (Cherry)	Early-mature	1	300	10(4)	3(E)	3.5	5.5	3	3	Asymmetrical crown. Slight lean (east). Occasional pruning wounds. Limited inspection - dense undergrowth. Limited inspection - dense ivy on stem/base.	Good to Fair	20+	No action required.	3.6	40.72	C
G 4	Acer pseudoplatanus (Sycamore). Cupressus sp. (Cypress)	Young	1	75	4(0)	0(N)	2	2	2	2	Individuals crowns restricted by group. No major visible defects observed.	Good to Fair	40+	Remove to facilitate the proposed development.	0.9	2.55	C
T 5	Pinus sylvestris (Scots Pine)	Semi-mature	1	300	10(6)	6(S)	2	1.5	1.5	3	Asymmetrical crown. Situated on adjacent land. Limited inspection - restricted access. Stem covered in ivy.	Fair	20+	No action required.	3.6	40.72	C
H 6	Mixed (Mixed Species)	Semi-mature	1	60	2(0)	0(N)	0.5	0.5	0.5	0.5	Linear boundary hedge. Maintained. Ribes, snowberry	Fair	20+	No action required.	0.72	1.63	C
T 7	Acer platanoides (Norway Maple)	Early-mature	1	540	12(5)	4(E)	6	6	6	6	Balanced crown. Occasional pruning wounds.	Good to Fair	40+	No action required.	6.48	131.93	B
T 8	Acer pseudoplatanus (Sycamore)	Young	1	100	6(3)	3(N)	2	2	2	2	Balanced crown. Situated on adjacent land. Self-seeded specimen.	Fair	20+	No action required.	1.2	4.52	C
T 9	Acer pseudoplatanus (Sycamore)	Mature	3	400	15(4)	5(E)	7.5	7.5	7.5	6	Asymmetrical crown. Occasional pruning wounds. Multi-stemmed from ground level.	Good to Fair	40+	No action required.	8.32	217.5	B
T 10	Salix X chrysocoma (Weeping Willow)	Young	5	50	2(0)	0(N)	1	2	2	2	Asymmetrical crown. Previously pollarded.	Fair	20+	No action required.	1.34	5.64	C

Tree No.	Species	Age	Stem		Height		Branch Spread				Crown/Canopy	Cond	Life Exp	Primary Recommendations	Root Protection		Retention Category
			Dia	DBH	Height	FSA (D)	N	E	S	W					Area [m²]	Radius [m]	Area [m²]
T 11	Acer pseudoplatanus (Sycamore)	Semi-mature	1	180	9(2)	2(S)	2.5	2.5	2.5	2.5	Balanced crown, Self-seeded specimen.	Fair	20+	No action required.	2.16	14.66	C
T 12	Cupressus macrocarpa (Monterey Cypress)	Semi-mature	1	200	7(0)	0(N)	2.5	2.5	2.5	2.5	Balanced crown, Unlited inspection - dense undergrowth.	Good to Fair	40+	No action required.	2.4	18.1	C
G 13	Mixed (Mixed Species)	Young to semi-mature	1	80	4(0)	0(N)	2	2	2	2	Linear boundary group, Self-seeded specimens, syc, cologneaster, lilac	Fair	20+	No action required.	0.96	2.9	C
T 14	Coloneaster frigidus (Cologneaster)	Semi-mature	2	100	7(3)	3(S)	2	2	2	2	Balanced crown, Crown overhangs adjacent building.	Good to Fair	20+	Remove to facilitate the proposed development.	1.69	8.97	C
T 15	Cupressus sp. (Cypress)	Semi-mature	2	160	9(2)	1(N)	2	2	2	2	Balanced crown, Twin-stemmed below 1.5m.	Fair	20+	Remove to facilitate the proposed development.	2.71	23.08	C
T 16	Sambucus nigra (Elder)	Semi-mature	3	50	5(2)	2(S)	0.5	1	2	1.5	Unbalanced crown, Multi-stemmed from ground level.	Fair	10+	Remove to facilitate the proposed development.	1.04	3.4	C
G 17	Picea abies (Norway Spruce)	Semi-mature	1	350	10(2)	2(N)	2.5	2.5	2.5	2.5	Asymmetrical crowns. Unlited inspection - dense undergrowth. Stem covered in ivy, 2 trees	Fair	20+	Remove to facilitate the proposed development.	4.2	55.42	C
T 18	Araucaria araucana (Monkey Puzzle)	Young	1	100	5(2.5)	2(N)	1.5	1.5	1.5	1.5	Balanced crown.	Good	40+	No action required.	1.2	4.52	C
G 19	Cupressus sp. (Cypress)	Semi-mature	1	100	5(0)	0(N)	1.5	1.5	1.5	1.5	Individuals crowns restricted by group.	Good to Fair	20+	No action required.	1.2	4.52	C
T 20	Prunus sp. (Cherry)	Mature	1	500	8(2)	2(S)	3	4	6	4	Unbalanced crown, Crown suppressed by adjacent tree. Unlited inspection - dense undergrowth.	Fair	20+	No action required.	6	113.11	C



Tree No.	Species	Age	Stems at 1.5m	Height			Branch Spread				Observations	Cond	Life Exp	Primary Recommendations	Root Protection		Retention Category
				Stem Dia (mm)	(Crown High) (m)	PSB (D) (m)	N	E	S	W					Radius (m)	Area (m <sup>2</sup> )	
T 21	<i>Fagus sylvatica</i> 'Purpurea' (Copper Beech)	Early-mature	1	500	14(4)	5(S)	6	6	5	6	Balanced crown. Limited inspection - dense undergrowth.	Good to Fair	40+	No action required.	6	113.11	B
T 22	<i>Prunus</i> sp. (Cherry)	Mature	1	400	6(2)	2(S)	5	4	3	4	Unbalanced crown. Crown suppressed by adjacent tree. Crown - minor deadwood (less than 50mm). Acceptable condition at present. Limited inspection -	Fair to Poor	10+	No action required.	4.8	72.39	C
G 23	<i>Ilex aquifolium</i> (Holly)	Semi-mature	1	150	4(0)	0(N)	2	2	2	2	Linear boundary hedge. Multi-stemmed from ground level.	Good to Fair	40+	No action required.	1.8	10.18	C

## **Appendix 2. Explanatory Notes**

### A2.1. Tree statistics and measurements

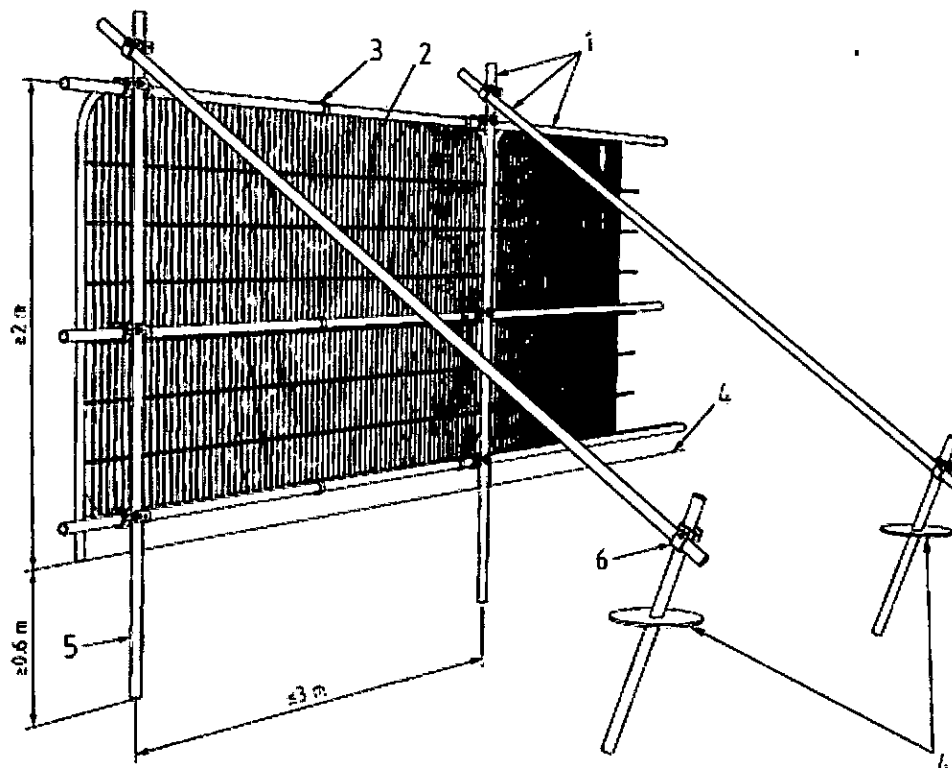
Survey record	Description
<i>Height</i>	Height of the tree in meters.
<i>Canopy Height</i>	Height of average canopy clearance in meters.
<i>Stem Dia</i>	Stem diameter recorded in centimetres at 1.5 meters above ground. Where the tree is multiple stemmed, each stem has been recorded.
<i>Branch Spread</i>	Measurement of canopy spread in meters – North, East, South and West.
<i>Observations</i>	Where limited inspection noted, dimensions are estimated.
<i>Vitality</i>	Condition of the tree, recorded as Good, Fair, 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>RPA Radius</i>	Radius of the Root Protection Area, when plotted as a circle centred on the base of the stem.

### A2.2. Tree retention categories

Retention category and definition	Criteria
<i>U (marked in red on the 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 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 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 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. Protective Barrier Construction**

- A3.1 *British Standard BS 5837: 2012* recommends a vertical and horizontal, scaffold framework, well braced to resist impacts, with vertical tubes at no more than 3m intervals. These should be driven into the ground. Weld mesh panels should be affixed to this framework with scaffold clamps (see below).

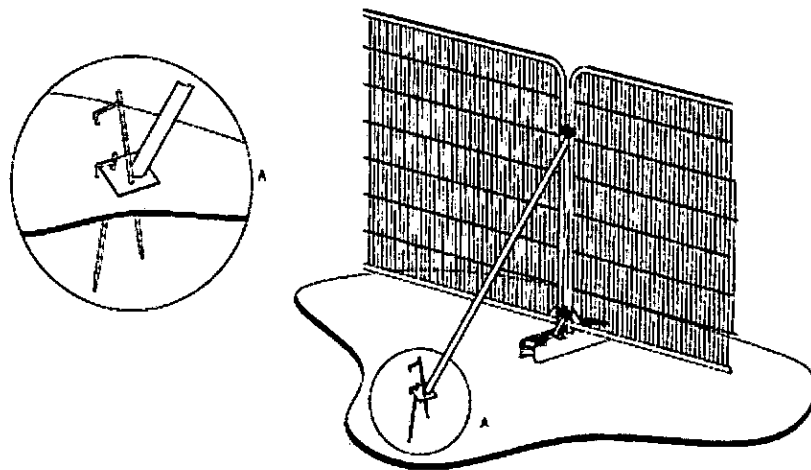


**Key**

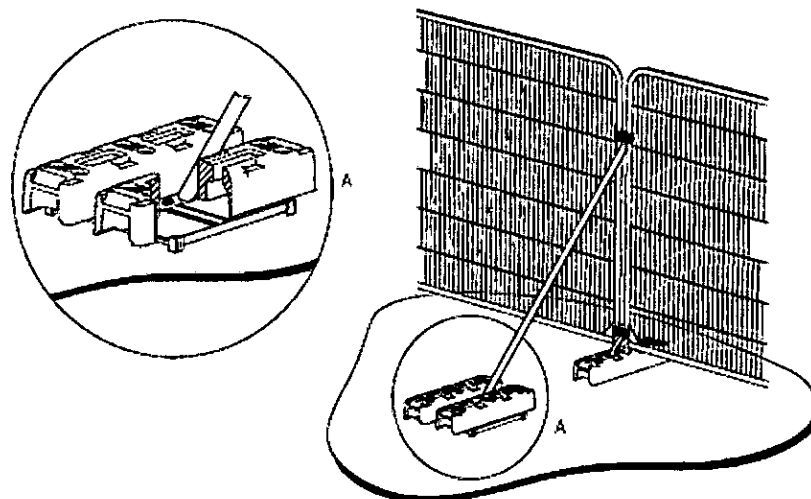
- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Default protective fencing barrier to BS 5837: 2012.





a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

### Examples of above-ground stabilizing systems

# Drawing 1. Tree Constraints Plan

## KEY

T = Individual tree  
G = Group of trees  
H = Hedge



**RETENTION CATEGORIES:**  
British Standard BS5837:2012  
Please refer to Appendix 2 of the  
report for category definitions.

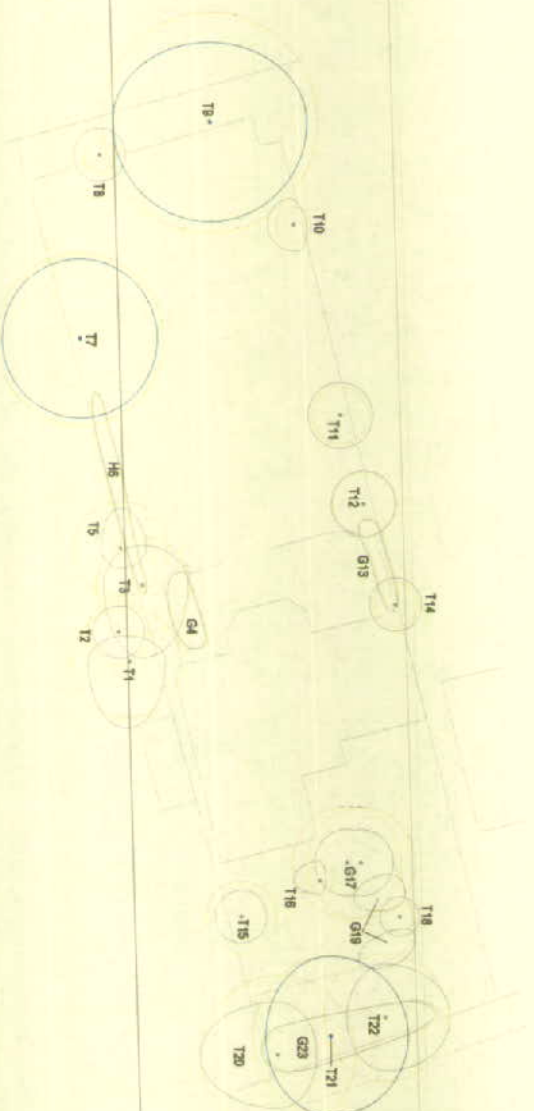
-  CATEGORY A:  
Trees of HIGH quality
-  CATEGORY B:  
Trees of MODERATE quality
-  CATEGORY C:  
Trees of LOW quality
-  CATEGORY U:  
Trees UNSUITABLE for retention
-  Root Protection Area (RPA)

**Project:**  
Cotswold  
Woodton Park  
Liverpool  
L25 6DR

**Title:**  
Tree Constraints Plan

**Drawing No:**  
TCP.12261.01

**Scale:** 1:200 @ A1  
**Drawn by:** RG  
**Approved by:** KG




## **Drawing 2. Tree Protection Plan**


# KEY

T = Individual tree  
G = Group of trees  
H = Hedge




 Proposed development layout

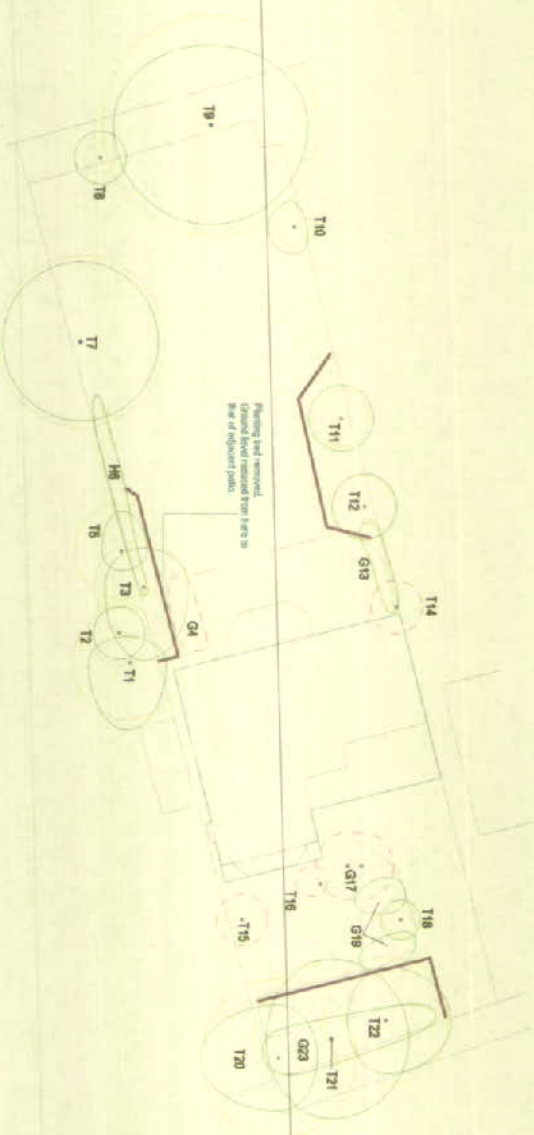
 Tree to be **RETAINED**  
Stem colour is retention category

 Tree to be **REMOVED**  
for arboricultural reasons

 Tree proposed for **REMOVAL**  
Stem colour is retention category

 Root Protection Area (RPA)

 Protective barrier position



## Project:

Cotswold  
Woolton Park  
Liverpool  
L25 6DR

## Title:

Tree Protection Plan

## Drawing No:

TPP.12261.01

Scale: 1:200 @ A1

Drawn by: RG

Approved by: KG

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