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Arboricultural Impact Assessment with Tree Protection Measures

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Victoria Avenue
Whitefield
Manchester
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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

Twenty-four individual trees, fourteen groups of trees/shrubs and one hedge were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* five individual trees were recorded as retention category 'B'; and a mixture of fourteen individual trees, twelve groups of trees/shrubs and one hedge were recorded as retention category 'C'.

The trees were generally found to be in a good to fair condition, however, five individual trees and two groups of trees (**G1, T8, T15, T17, T20, T34** and **G39**) were classified as retention category 'U' (unsuitable for retention).

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

The proposed development directly impacts upon several trees. These trees shall require removal due to their close proximity to construction activity. The majority of the trees proposed for removal are considered to be low quality ('C' category) specimens, many of which are self-seeded.

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

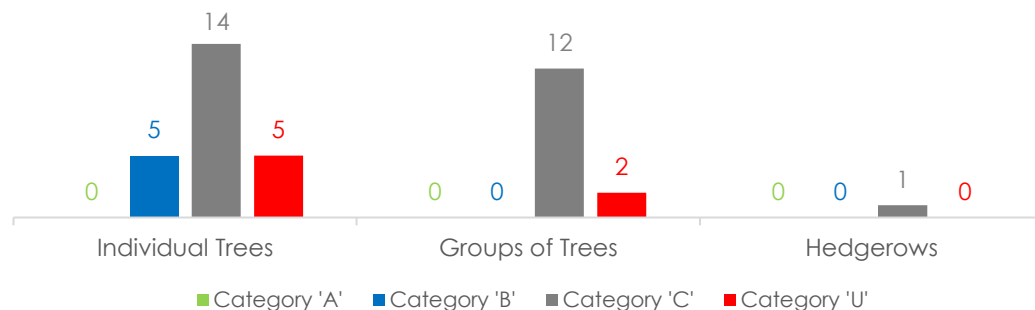
- 1.2.1. This report has been produced to comply with planning requirements where trees are to be considered as part of a proposed development. To achieve this, arboricultural constraints have been identified and a detailed plan (*Tree Constraints Plan*) has been produced showing the location, root protection 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*, 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 12th 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 both a topographical plan supplied by the client and aerial photography, which is the basis for which the *Tree Constraints Plan* has been prepared.

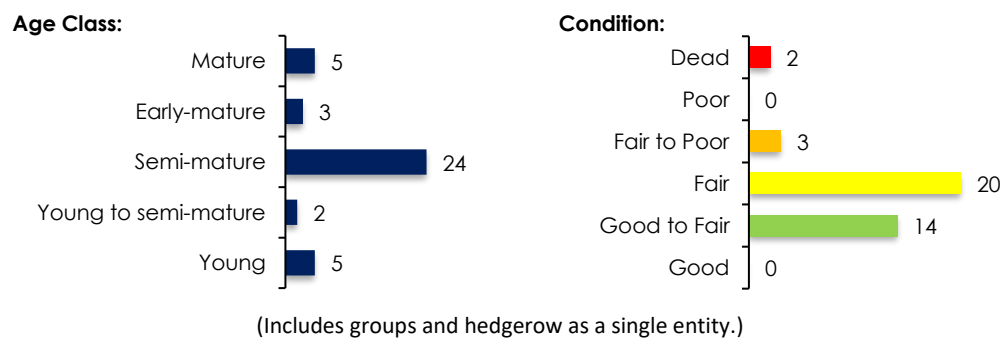
2. Arboricultural Constraints

2.1. Tree retention categories



- 2.1.1. Twenty-four individual trees, fourteen groups of trees/shrubs and one hedge were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* five individual trees were recorded as retention category 'B'; and a mixture of fourteen individual trees, twelve groups of trees/shrubs and one hedge were recorded as retention category 'C'.
- 2.1.2. The trees were generally found to be in a good to fair condition, however, five individual trees and two groups of trees (**G1, T8, T15, T17, T20, T34** and **G39**) were classified as retention category 'U' (unsuitable for retention). Ownership of **G39** must be confirmed prior to removal.

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 and groups was restricted as detailed at *Appendix 1* (primarily due to waist high brambles and sloping ground). 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 Bury Council on 19th May 2022. It is understood that the site does not contain any Tree Preservation Orders and that the site is not located within a Conservation Area. Please see *Appendix 5* for details.
- 2.4.2. **It is essential that no tree works (including works to category 'U' trees), 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. A new residential development with associated car parking and access road 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 several trees. These trees shall require removal due to their close proximity to construction activity. The majority of the trees proposed for removal are considered to be low quality ('C' category) specimens, many of which are self-seeded. 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	T4, T5, T6 & T27	G2, G3, T9, T10, T11, T12, T13, T16, T18, T21, T22, T23, G24, G28, T29, G30, G35, T37 & G38

- 3.2.2. In addition, four trees are considered to be of a moderate quality. These trees have developed into established specimens, but still offer limited amenity value to the wider area and could be replaced as part of a post development tree planting scheme.
- 3.2.3. The formative pruning of trees **G19** and **T31** will be required to ensure clear access for construction traffic. The proposed pruning works relate to the crown lifting/pruning of small tertiary branches. In addition, the proposed pruning works will have no adverse impacts on tree health and longevity.
- 3.2.4. 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.
- 3.2.5. 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 as part of a post development planting scheme of well-structured new trees that will add to the quality of the area and help integrate the proposed development into the surrounding landscape.

3.4. Site construction traffic and demolition works

- 3.4.1. To protect the trees from construction site traffic (including demolition works) the remaining trees should be protected by a temporary protective barrier (see *Section 4.2*), put in place prior to any construction activity. The barrier will ensure that the trees remain in a healthy condition during and after development.
- 3.4.2. Several of the retained trees are located beyond topographical site features, existing boundary fencing 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. Hard surfaces within the RPA

- 3.5.1. A minor section of RPA from **T25** extends beyond the temporary barrier and into the area proposed for a narrow hard surface footpath. In addition, a section of RPA from tree **T31** theoretically extends into a proposed hard surface area. But it should be noted that **T31** is growing on land of a higher ground level, which is retained by the boundary fence. As such the RPA of **T31** is likely to be restricted within the proposed development area.
- 3.5.2. Due to the small percentage of potential RPA disturbance to both trees, the proposed hard surfaces are not expected to cause the adjacent trees any long-term harm. However, given the potential for RPA disturbance, it is recommended that the hard surfaces within these RPAs are constructed using techniques sympathetic to tree roots.

3.6. Post development impacts

- 3.6.1. 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*.
- 3.6.2. 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. Tree Protection Measures

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. Tree protection barriers

- 4.2.1. Once the tree works have been completed, all trees that may be affected by construction activity and are being retained on site should be protected by barriers before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. No hardcore, rubble or soil from groundworks should be located within the protective barriers. It should be confirmed by an arboriculturist or the local authority that the barriers have been correctly set out on site, prior to the commencement of any other operations.
- 4.2.2. The protected area should be regarded as off limits, and once installed barriers should not be removed or altered without prior recommendation by an arboriculturist and, where necessary, approval from the local planning authority.
- 4.2.3. Please see *Appendix 4* for suggested barrier construction detail. It is recommended that in this instance the protective barrier shown in *Figure 1* would be appropriate. The suggested location for protective fencing is shown on the *Tree Protection Plan (Drawing 2)*.
- 4.2.4. Only 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.

4.3. Services within the RPA

- 4.3.1. 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.

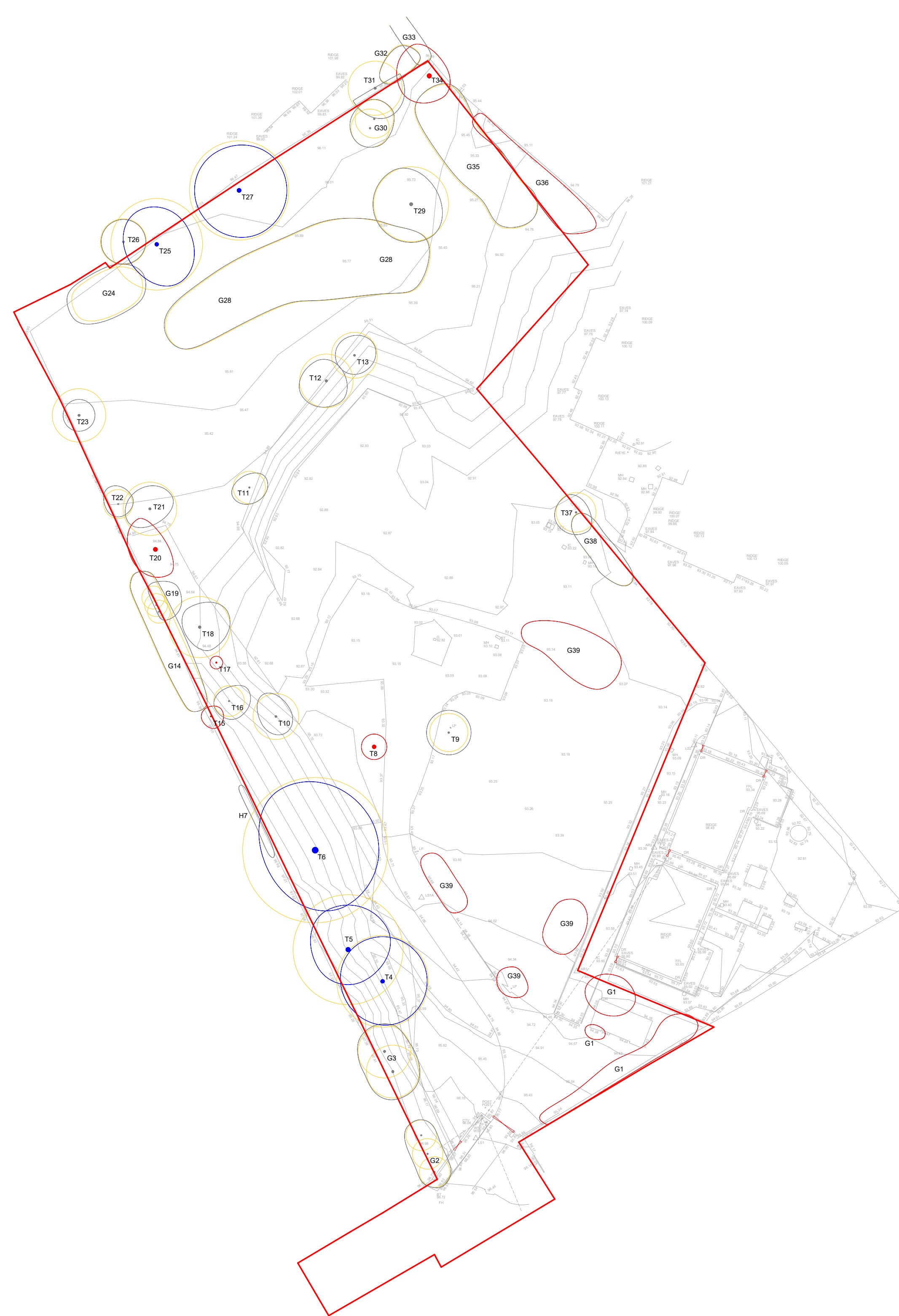
4.4. Excavations within the RPA

- 4.4.1. Excavations within the RPA of **T25** and **T31** *must only* be undertaken by hand to establish the presence of roots. Any tree roots exposed within the RPA must be left as intact as careful digging with hand tools will allow, avoiding the use of heavy machinery within the RPA.
- 4.4.2. During excavations roots smaller than 25mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25mm diameter and over should be severed only following consultation with an arboriculturist; as such roots might be essential to the tree's health and stability.
- 4.4.3. Any roots exposed during excavations should immediately be wrapped or covered in damp hessian to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible. Prior to backfilling, retained roots should be surrounded with topsoil or un-compacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced.

4.5. Fencing within the RPA

- 4.5.1. Where any proposed boundary fencing lies within the RPAs of retained trees, it is essential that the post holes are excavated by hand. It is recommended that initial trial holes are dug using a hand-held auger to establish the presence and size of any adjacent tree roots.
- 4.5.2. On this basis, for fixed length fencing it is recommended that all footing locations are identified before committing to their final locations. All post locations must be as narrow as possible, with a suggested maximum diameter of 300mm. Excavations must only be undertaken as detailed in *Section 4.4* above.

Drawing 1. Tree Constraints Plan



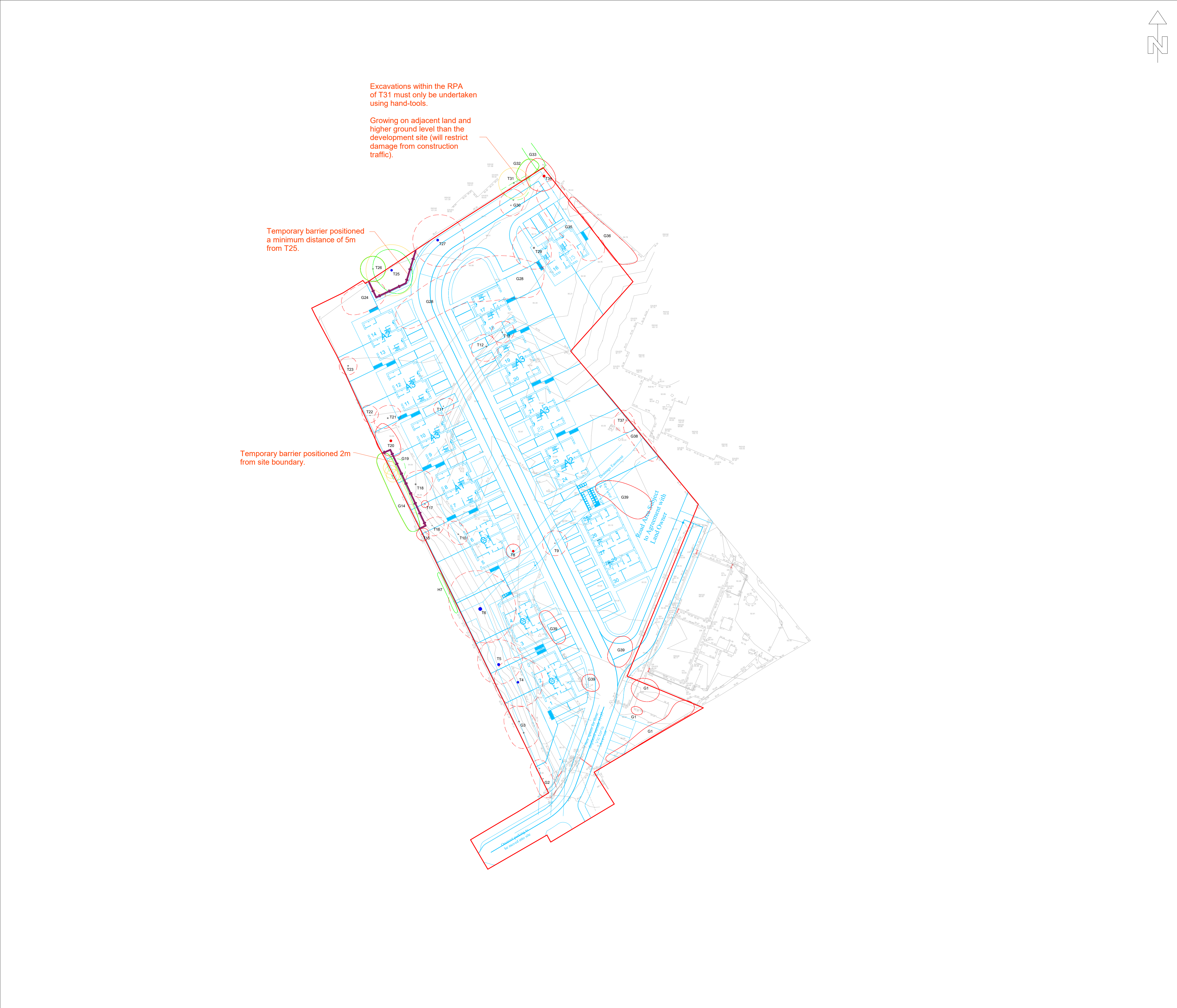
	EXISTING LAYOUT
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	CATEGORY 'A' HIGH QUALITY
	CATEGORY 'B' MODERATE QUALITY
	CATEGORY 'C' LOW QUALITY
	CATEGORY 'U' UNSUITABLE FOR RETENTION

	ROOT PROTECTION AREA (RPA)
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PROJECT TITLE: Former Wheatfields Day Care Centre, Victoria Avenue, Whitefield		
DRAWING TITLE: TREE CONSTRAINTS PLAN	SCALE: 1:500 @ A1	ISSUE DATE: 19.05.22
DRAWING NUMBER: TCP.13470	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
	G19 & T31
	TREE PROPOSED FOR REMOVAL (ARBORICULTURAL REASONS)
	G1, T8, T15, T17, T20, T34 & G39 (confirm ownership of G39 prior to removal)
	TREE PROPOSED FOR REMOVAL (TO ENABLE DEVELOPMENT)
	G2, G3, T4, T5, T6, T9, T10, T11, T12, T13, T16, T18, T21 T22, T23, G24, T27, G28, T29, G30, G35, T37 & G38

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.

TREE PROTECTION MEASURES

	TEMPORARY PROTECTIVE BARRIER Refer to Appendix 4 of the Arboricultural Impact Assessment for specification details.
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Please refer to Section 3 of the Arboricultural Impact Assessment for details on potential impacts.

PROJECT TITLE: Former Wheatfields Day Care Centre, Victoria Avenue, Whitefield		
DRAWING TITLE: TREE PROTECTION PLAN	SCALE: 1:500 @ A1	ISSUE DATE: 19.05.22
DRAWING NUMBER: TPP.13470	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 (m ²)	
G 1	Salix caprea (Goat Willow), Prunus spinosa (Blackthorn), Populus sp. (Hybrid Poplar)	Young	3	80	7(0)	0(N)	2	2	2	2	Individuals crowns restricted by group. Self-seeded specimens.	Fair to Poor	10+	Remove for arboricultural reasons.	1.7	8.8	U
G 2	Fraxinus excelsior (Ash)	Semi-mature	1	200	8(2.5)	2.5(E)	3	3	3	3	Limited inspection - restricted access. Limited inspection - dense undergrowth. Individuals crowns restricted by group. Self-seeded specimens.	Fair	40+	Remove to enable the construction of the proposed development.	2.4	18.1	C
G 3	Acer pseudoplatanus (Sycamore)	Semi-mature	3	200	11(3)	3(E)	4.5	4.5	4.5	4.5	Multi-stemmed from ground level. Limited inspection - restricted access & dense undergrowth. Individuals crowns restricted by group. Self-seeded specimens.	Fair	40+	Remove to enable the construction of the proposed development.	4.2	54.1	C
T 4	Tilia X europaea (Common Lime)	Mature	1	600	15(1)	1(E)	7	7	7	6.5	Asymmetrical crown. Occasional pruning wounds. Limited inspection - dense undergrowth.	Good to Fair	40+	Remove to enable the construction of the proposed development.	7.2	162.9	B
T 5	Aesculus hippocastanum (Horse Chestnut)	Mature	1	720	15(1)	1(E)	7	7	5.5	5.5	Asymmetrical crown. Occasional pruning wounds. Limited inspection - dense undergrowth.	Good to Fair	40+	Remove to enable the construction of the proposed development.	8.6	234.6	B
T 6	Fraxinus excelsior (Ash)	Mature	1	950	17(2)	4(E)	11	10	10	8	Asymmetrical crown. Multiple pruning wounds. Limited inspection - dense undergrowth.	Good to Fair	40+	Remove to enable the construction of the proposed development.	11.4	408.3	B
H 7	Ligustrum ovalifolium (Privet)	Semi-mature	3	25	2.5(0)	0(E)	0.5	0.5	0.5	0.5	Limited inspection - restricted access. Limited inspection - dense undergrowth. Limited inspection - situated on adjacent land. Linear boundary hedge.	Good to Fair	40+	No action required.	0.5	0.9	C
T 8	Populus sp. (Hybrid Poplar)	Mature	1	600	5(3)	3(E)	2	2	2	2	Dead. Previously pollarded at 4m.	Dead	<10	No action required.	7.2	162.9	U
T 9	Alnus glutinosa (Common Alder)	Semi-mature	1	250	9(1)	1(N)	3.5	3.5	3.5	3.5	Balanced crown. Self-seeded specimen. Limited inspection - dense undergrowth. Tree RPA located within existing hard surface area.	Good to Fair	40+	Remove to enable the construction of the proposed development.	3.0	28.3	C
T 10	Alnus glutinosa (Common Alder)	Semi-mature	1	300	10(2)	2(N)	4	2.5	3	2.5	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	3.6	40.7	C

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 (m ²)	
T 11	Alnus glutinosa (Common Alder)	Semi-mature	2	150	8(1)	1(N)	2	3	2.5	3	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	2.5	20.3	C
T 12	Alnus glutinosa (Common Alder)	Semi-mature	1	350	9(1.5)	2(W)	3.5	3	4	4.5	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	4.2	55.4	C
T 13	Alnus glutinosa (Common Alder)	Semi-mature	1	300	9(1)	1(S)	3	3.5	3	3	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	3.6	40.7	C
G 14	Cupressus macrocarpa (Monterey Cypress)	Semi-mature	1	180	12(1)	1(E)	2	2	2	2	Limited inspection - restricted access, dense undergrowth & situated on adjacent land. Individuals crowns restricted by group. Linear boundary group.	Good to Fair	40+	No action required.	2.2	14.7	C
T 15	Fraxinus excelsior (Ash)	Young	2	90	8(2)	2(E)	1.5	2	2	1.5	Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove for arboricultural reasons.	1.5	7.3	U
T 16	Alnus glutinosa (Common Alder)	Semi-mature	1	200	9(3)	3(E)	2	3.5	3	2.5	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	2.4	18.1	C
T 17	Laburnum anagyroides (Laburnum)	Semi-mature	1	220	5(3)	3(E)	1	1	1	1	Dead.	Dead	<10	Remove for arboricultural reasons.	2.6	21.9	U
T 18	Alnus glutinosa (Common Alder)	Semi-mature	1	400	12(1.5)	1.5(E)	3.5	5	4	2.5	Asymmetrical crown. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Good to Fair	40+	Remove to enable the construction of the proposed development.	4.8	72.4	C
G 19	Fraxinus excelsior (Ash)	Semi-mature	1	150	12(1)	1(E)	2	4	2	1.5	Limited inspection - restricted access, dense undergrowth & situated on adjacent land. Unbalanced crowns. Self-seeded specimens.	Fair	20+	Crown lift those branches that overhang the development site to ensure 3m clearance from ground level.	1.8	10.2	C
T 20	Aesculus hippocastanum (Horse Chestnut)	Mature	1	650	10(3)	3(E)	5.5	2	4.5	4	Crown - major deadwood (greater than 100mm). Limited inspection - restricted access, dense undergrowth & situated on adjacent land. Cavity in stem <30%. Tear-out wound on stem.	Fair to Poor	<10	Remove for arboricultural reasons.	7.8	191.2	U

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 (m ²)	
T 21	Alnus glutinosa (Common Alder)	Semi-mature	1	350	9(2)	2(E)	3.5	4	2.5	4	Asymmetrical crown. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Good to Fair	40+	Remove to enable the construction of the proposed development.	4.2	55.4	C
T 22	Acer pseudoplatanus (Sycamore)	Semi-mature	1	190	8.5(2)	2(E)	3	2.5	2	2	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	2.3	16.3	C
T 23	Acer pseudoplatanus (Sycamore)	Semi-mature	1	350	5(2)	2(E)	2.5	2.5	2.5	2.5	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access. Limited inspection - dense undergrowth. Previously pollarded at 2m.	Fair	40+	Remove to enable the construction of the proposed development.	4.2	55.4	C
G 24	Fraxinus excelsior (Ash)	Semi-mature	1	220	12(2)	2.5(S)	3.5	3.5	3.5	3.5	Limited inspection - restricted access. Limited inspection - dense undergrowth. Individuals crowns restricted by group. Self-seeded specimens.	Fair	40+	Remove to enable the construction of the proposed development.	2.6	21.9	C
T 25	Populus alba (White Poplar)	Early-mature	1	600	17(4)	5(S)	6	5.5	7	5	Asymmetrical crown. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Good to Fair	40+	No action required.	7.2	162.9	B
T 26	Cupressus macrocarpa (Monterey Cypress)	Semi-mature	1	300	11(1.5)	1.5(S)	3.5	3.5	3.5	3.5	Limited inspection - restricted access. Limited inspection - dense undergrowth. Limited inspection - situated on adjacent land.	Good to Fair	40+	No action required.	3.6	40.7	C
T 27	Populus alba (White Poplar)	Early-mature	1	650	17(2)	3(S)	7	7.5	7.5	7	Asymmetrical crown. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Good to Fair	40+	Remove to enable the construction of the proposed development.	7.8	191.2	B
G 28	Populus alba (White Poplar), Quercus robur (Common Oak)	Young	1	100	6(0)	0(S)	2	2	2	2	Limited inspection - dense undergrowth. Individuals crowns restricted by group. Occasional self-seeded saplings.	Good to Fair	40+	Remove to enable the construction of the proposed development.	1.2	4.5	C
T 29	Salix caprea (Goat Willow)	Semi-mature	6	200	9(0)	0(S)	6	4.5	6	6	Self-seeded specimen. Multi-stemmed from ground level. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	40+	Remove to enable the construction of the proposed development.	5.9	108.6	C
G 30	Populus alba (White Poplar)	Semi-mature	1	250	14(3)	3(S)	3	3	3	3	Limited inspection - restricted access. Limited inspection - dense undergrowth. Individuals crowns restricted by group.	Good to Fair	40+	Remove to enable the construction of the proposed development.	3.0	28.3	C

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 (m ²)	
T 31	Salix caprea (Goat Willow)	Semi-mature	2	250	7(0.5)	0.5(S)	0	4.5	5	4	Unbalanced crown. Self-seeded specimen. Limited inspection - dense undergrowth & situated on adjacent land. Tree RPA located within ground level change.	Fair	40+	Crown lift those branches that overhang the development site to ensure 3m clearance from ground level.	4.3	56.8	C
G 32	Betula pendula (Silver Birch)	Semi-mature	1	200	7(2)	3(S)	2.5	2	1	2	Occasional pruning wounds. Limited inspection - dense undergrowth & situated on adjacent land. Asymmetrical crowns. Tree RPA located within ground level change.	Fair	40+	No action required.	2.4	18.1	C
G 33	X Cupressocyparis leylandii (Leyland Cypress)	Semi-mature	1	180	5(2)	2(S)	1.5	1.5	1.5	1.5	Limited inspection - situated on adjacent land. Linear boundary group. Tree RPA located within ground level change.	Fair	40+	No action required.	2.2	14.7	C
T 34	Populus alba (White Poplar)	Early-mature	1	700	15(5)	5(S)	5.5	3	4	5	Asymmetrical crown. Multiple pruning wounds. Large cavity in stem >30%.	Fair to Poor	<10	Remove for arboricultural reasons.	8.4	221.7	U
G 35	Populus alba (White Poplar)	Young to semi-mature	1	300	14(1.5)	1.5(S)	3.5	3.5	3.5	3.5	Limited inspection - restricted access. Limited inspection - dense undergrowth. Individuals crowns restricted by group.	Good to Fair	40+	Remove to enable the construction of the proposed development.	3.6	40.7	C
G 36	Salix caprea (Goat Willow)	Young	5	25	5(0.5)	0.5(S)	1.5	1.5	1.5	1.5	Limited inspection - restricted access. Limited inspection - dense undergrowth. Individuals crowns restricted by group. Self-seeded specimens.	Fair	20+	Remove for arboricultural reasons.	0.7	1.4	C
T 37	Salix caprea (Goat Willow)	Semi-mature	3	150	7(1)	1(W)	3	2	3.5	3.5	Asymmetrical crown. Self-seeded specimen. Multi-stemmed from ground level. Limited inspection - restricted access. Limited inspection - dense undergrowth.	Fair	20+	Remove to enable the construction of the proposed development.	3.1	30.6	C
G 38	Acer pseudoplatanus (Sycamore)	Young to semi-mature	1	120	6(0)	0(W)	2	2	2	2	Limited inspection - restricted access. Limited inspection - dense undergrowth. Individuals crowns restricted by group. Self-seeded specimens.	Fair	20+	Remove to enable the construction of the proposed development.	1.4	6.5	C
G 39	Alnus glutinosa (Common Alder), Fraxinus excelsior (Ash), Salix caprea (Goat Willow)	Young	3	35	3(0)	0(N)	1	1	1	1	Self-seeded specimens.	Fair	20+	Remove for arboricultural reasons. Confirm onwership prior to removal.	0.7	1.7	U

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

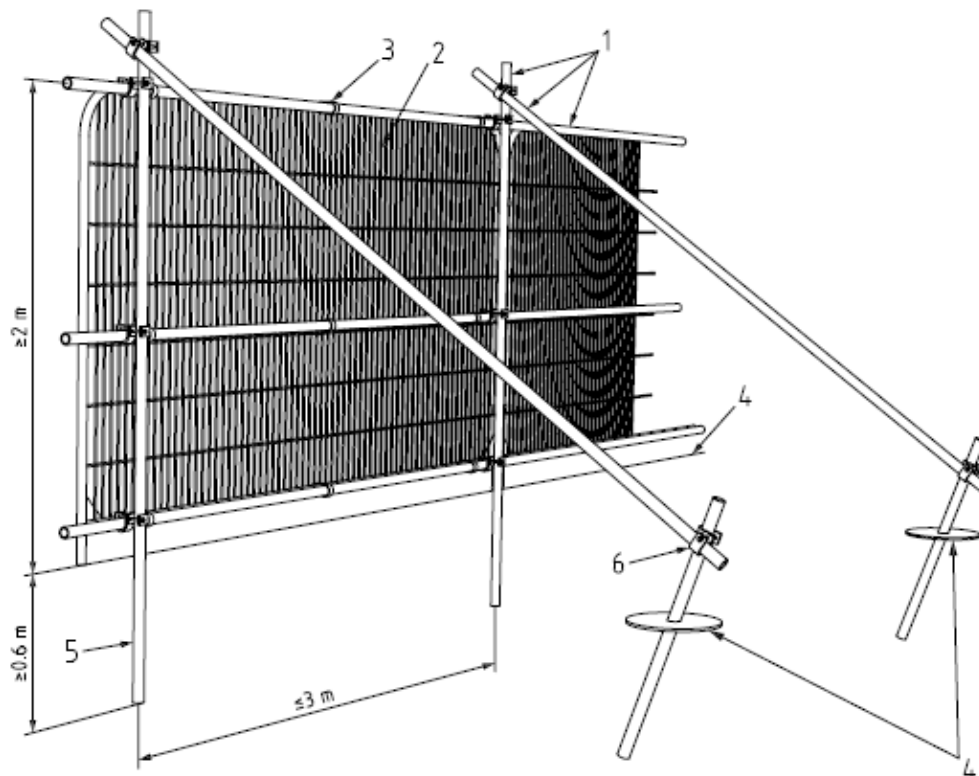
Retention category and definition	Criteria
<i>U (marked in red on the Tree Constraints Plan) = trees for removal.</i>	Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
<i>A (marked green on the Tree Constraints 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. Protective Barrier Construction

- A4.1 The default specification for protective barriers should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated below. The vertical tubes should be spaced at a *maximum* interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots.

**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

Figure 1. Default protective fencing barrier as detailed in BS 5837: 2012.

- A4.2 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification may be adopted. This system includes 2 m tall welded mesh panels on rubber or concrete feet, secure enough to provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 2a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 2b).

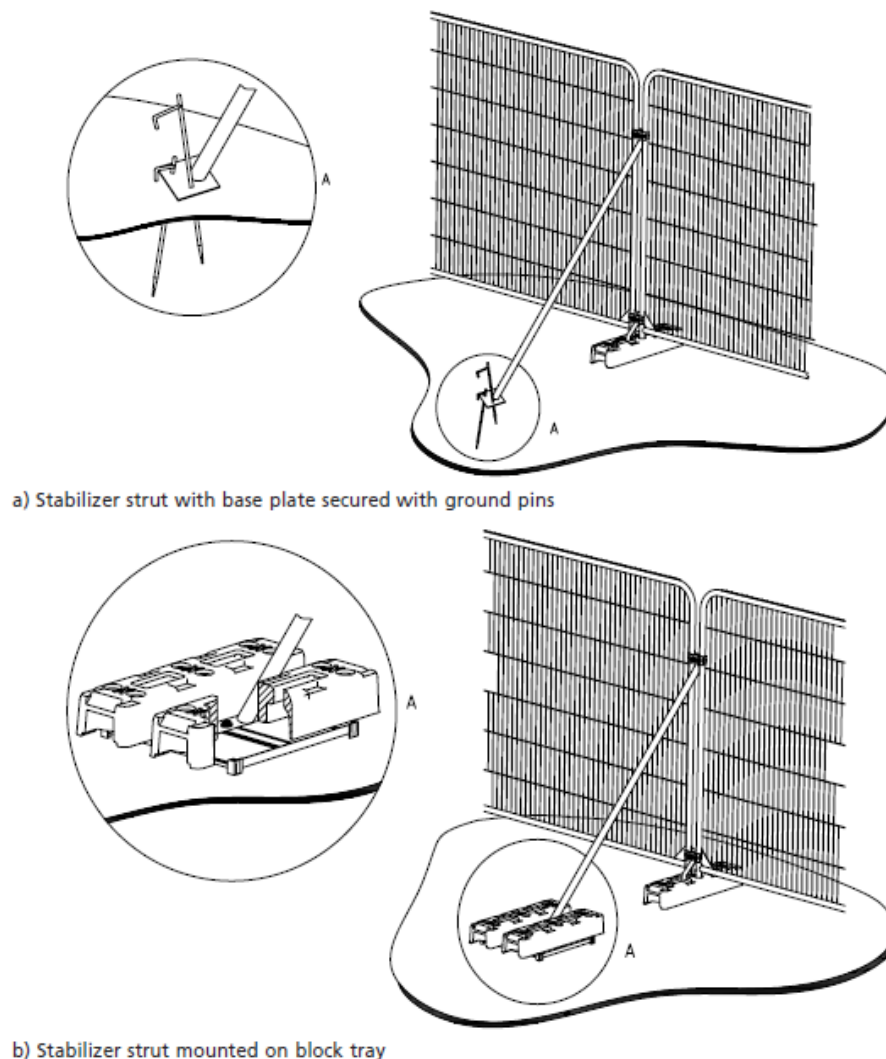


Figure 2. Examples of above-ground stabilizing systems

Appendix 5. Statutory Tree Protection Enquiry Results

