



ArbTS - Arboricultural Technician Services Ltd

(Tree Consultancy Services)

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Arboricultural Report

Including:

Tree Survey Data &

Tree Constraints Plan,

Arboricultural Impact Assessment,

Tree Protection Plan and Arboricultural Method Statement

To the British Standard 5837:2012
*(Trees in relation to design, demolition
and construction. Recommendations)*

Date – 31st July 2023

Site – St Nicholas in the Vale of Glamorgan, CF5 6TB

Project Reference – ArbTS_1699.1_St Nicholas

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1.0 Introduction

- 1.1 The purpose of this report is to assess the quality of the trees at St Nicholas in the Vale of Glamorgan, CF5 6TB, assess the arboricultural impact of the proposed development design and provide details regarding the protection of retained trees during construction work.
- 1.2 This report identifies the quality of the trees on this site as categorised by the *British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations*. The survey and findings, as reported here, represent an unbiased third-party opinion offering professional advice on the value of the trees on or adjacent to this site. To illustrate the constraints identified trees pose to the design of future development, a Tree Constraints Plan (TCP) has been drawn, as found in Appendix 2.
- 1.3 Arboricultural constraints within the surveyed site relate primarily to the preservation of trees recommended for retention. Identified trees must be protected during the construction phase by employing a combination of tree protection methods as illustrated in Appendix 4, Tree Protection Plan and detailed within Section 6 - Arboricultural Method Statement.
- 1.4 The trees' root system and the associated soil structure is often overlooked during the construction process and can be damaged or altered by compaction, causing significant damage to the health of the tree. Generally, the tree's entire root system is within the top 600mm of soil, where it can be easily damaged. A calculated ground area around the tree should be protected during the onsite construction phase. In this report, it is referred to as the Root Protection Area (RPA).

2.0 The Tree Survey

- 2.1 The tree survey was conducted by *Stephen Lucocq BSc (Hons), Tech Cert (ArborA), M.Arbor.A* on 24th July 2023.
- 2.2 Trees over 75mm were tagged where appropriate with numbered metal identification tags at around 2.0 metres above ground level.
- 2.3 All observations were made from the ground with an acoustic-sounding hammer. No invasive decay detective instruments were used.
- 2.4 The survey was carried out per *British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations*. This standard gives a systematic, consistent, transparent evaluation method for tree surveying.
- 2.5 The tree survey was conducted with the aid of a topographical survey and OS master map for the wider site.
- 2.6 **Preliminary management recommendations:** The survey has identified preliminary management recommendations for the trees on or adjacent to this site. Details regarding these specified operations are given in this report (See Appendix 1 - Tree Survey Data). Where work priority is stated to be H – High due to safety reasons,

these operations should be carried out as soon as possible. Where work priority is said to be M/H – medium/high or higher, these operations should be undertaken before the commencement of any works on site.

- 2.7 **Limitations of the tree survey:** Whilst every effort is made to ensure an accurate assessment of the tree's condition during the survey, no responsibility can be taken for resultant damage or injury that occurred by a failing tree. The survey only gives a snapshot of what is visible and is not obscured on the day of the survey. The survey identifies trees of varying quality and their above-ground/below-ground constraints. This survey does not constitute a full tree condition survey/tree risk assessment of the site, and this report is only valid for 24 months from the date of the tree survey.

3.0 The Trees

- 3.1 The complete tree survey data can be found in Appendix 1A Tree Survey Data
- 3.2 Tree Survey Summary Table (See Appendix 3 for BS5837 category definitions).
(A more detailed Tree Survey Data Summary can be found in Appendix 1B)

BS5837:2012 Quality Category	Total Number of Individual Trees Surveyed	Total Number of Tree Groups Surveyed	Total Number of Tree Areas Surveyed	Total Number of Woodland Areas Surveyed	Total Number of Hedgerows Surveyed	Total
A (High - Most desirable for retention)	4	1	0	1	0	6
B (Moderate - Desirable for retention)	3	2	0	0	0	5
C (Low - Optional for retention)	12	9	0	0	6	27
U (Poor - Unsuitable for retention)	5	0	0	0	0	5
Total A,B,C,U	24	12	0	1	6	43

4.0 Tree Constraints Plan (TCP) Information

- 4.1 A Tree Constraints Plan (TCP) can be found in Appendix 2 of this report. An introduction to TCP can also be found at the start of this Appendix Section. For further information and details regarding TCP, please see the *British Standard 5837:2012, Trees in relation to design, demolition and construction – Recommendations*.

5.0 Arboricultural Impact Assessment (AIA)

5.1 The following Arboricultural Impact Assessment has been made for the proposed development design.

5.2.1 Tree / Hedgerow Loss - AIA - LOW - The following trees and hedgerows are required to be removed to facilitate the construction of the proposed development design.

5.2.2 Grouped Tree Loss –

- Tree Group – 832 m2 part of G1 - Part of overgrown boundary hedgerow of mainly hazel and field maple – Low quality (C category)
- Tree Group – 54 m2 part of G9 - Part of overgrown boundary hedgerow of mainly hazel and field maple – Low quality (C category)

5.2.3 Hedgerow Loss –

- Hedgerow H1 – Length 3 metres section - Low quality (C category)
- Hedgerow H4 – Length 3 metres section - Low quality (C category)

5.2.4 Overall Tree Loss –

Some small trees are identified to be removed to facilitate the construction of the proposed development design. All these trees identified for removal are low-quality trees (C Category).

5.3 Root Protection Area (RPA) – AIA - LOW - RPA potential damage can all be managed through the installation of tree protective fencing, as designed by an Arboriculturist, will ensure no significant long-term adverse impact will occur to any of the retained trees.

5.4.1 Conclusion - AIA - LOW - The site has several Arboricultural constraints that must be considered in the development design phase. Some small trees are identified to be removed to facilitate the construction of the proposed development design. All of these trees identified for removal are low-quality trees (C Category).

5.4.2 The construction of the proposed development, whilst complying with the tree protection scheme as detailed in section 6, will ensure that no significant long-term adverse Arboricultural impact occurs on the health of any retained trees on or adjacent to this site or the long-term amenity of the area.

6.0 Arboricultural Method Statement

6.1 The Tree Protection Plan to facilitate the construction of the development design can be found in Appendix 4 of this report. The Tree Protection Plan must comply with all of the following:

- Be regarded as sacrosanct and follow the sequence of events as detailed in the table below
- Be installed before commencement of any demolishing or construction works on site
- Must not be removed or altered without prior approval of the local planning authority

6.2 The following table below provides a detailed sequence of events that must occur to protect the retained trees during all stages of the construction process. These methods must be communicated to the entire construction team before any work on site.

Stage	Arboricultural Method Statement (In the sequence of events)
1.) Preconstruction (Prior to any on-site construction work, including demolition work, site material storage etc.)	1.1 – Design areas for construction site storage by the site supervisor and the appointed Arboriculturist.
	1.2 – Design position, form and construction methods of all utility services with Arboricultural consideration. All underground service designs MUST conform to the NJUG Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. The full document is available at http://www.njug.org.uk/ . Local Planning Authority to be consulted on utility service design details and, if satisfied, to be approved in writing before installation during the construction phase.
	1.3– Tree surgery work to be carried out is detailed in the Tree Protection Plan (Appendix 4) of this report and to the <i>British Standard:3998:2010: Recommendation for tree works</i> .
	1.4 – Tree protective fencing installed in the position and form as detailed in the Tree Protection Plan (Appendix - 4). Installation is to be supervised by the appointed Arboriculturist. All weather tree construction exclusion zone posters are to be secured to fencing at regular intervals.
	1.5 – Site storage area containers installed as designed and supervised by the site supervisor and the appointed Arboriculturist.
	1.6 – Appointed Arboriculturist to document all tree protection methods in situ and photographs taken for reference purposes. Copy of document report sent to all parties.
2.) Construction	2.1 – The site supervisor is to be briefed by the appointed Arboriculturist regarding the Tree Protection Plan/Methods, and a laminated copy of the plan/methods is to be secured onto the wall in the site supervisor's office. Contact details of the appointed Arboriculturist, Council's Tree Officer, to be included. Emphasis is to be made to the site supervisor on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice), problems with discharging tree protection conditions and/or legal action for noncompliance with these tree protection methods.

	2.2 – All contractors are to be briefed by the site supervisor and/or the appointed Arboriculturist regarding the tree protection plan and methods before starting work on site. Emphasis made to contractors on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice), problems with discharging tree protection conditions and/or legal action for noncompliance with these tree protection methods.
	2.3 – The construction phase begins.
	2.4- Tree Safe Construction (Throughout site) – areas outside of the construction exclusion zones, as shown on the tree protection plan, must adhere to the following: <ul style="list-style-type: none"> • Building materials and fuels such as oil, bitumen or cement should not be stacked or discharged within 20 metres of the tree's stem. • Fires will not be lit beneath any tree or in a place where flames could extend to within 10 metres of the tree. • Trees to be retained and protected should not be used as anchorage for services or equipment. • The use of cranes and large machinery on site should be planned and care taken not to damage the trees during the process.
	2.5 – Unforeseen issues which require the alteration of the Tree Protection Plan/Methods, required tree surgery work or immediate remedial work will be submitted to the Local Planning Authority for approval in writing.
3.) Post Construction (<i>Once all construction work has been completed, this includes all utility services</i>)	3.1 – Tree Protection fencing Removed.
	3.2 – Hard and soft landscaping commence - All landscape team members are to be briefed regarding tree protections by an Arboriculturist.
	3.3 – Any required remedial tree action is taken , such as Leaf Mulch Application, soil de-compaction methods, contamination clean up etc., to be carried out.

7.0 Conclusion

- 7.1 Adhering to the tree protection details in this report, the proposed development can be constructed without any significant long-term adverse impact on the retained trees or the area's amenity.

8.0 Further Information & Qualifications

Stephen Lucocq has been involved in Arboriculture within South Wales for over twenty years. He has worked as an Arborist for many of these years and has an excellent working knowledge of the practical side of the profession. He has always taken an active interest in all areas of Arboriculture and kept up to date with current research and developments.

Qualifications

- First Class BSc (Hons) Degree – Combined Studies - Biology and IT
- Arboricultural Association Technicians Certificate – Level 4 - (Merit)
- PTI - Professional Tree Inspection (Lantra Awards)
- 2D Computer-Aided Design (City and Guilds - Level 3)
- Quantified Tree Risk Assessment (QTRA) – Mike Ellison
- Visual Tree Assessment (VTA) – Mike Ellison
- Arboriculture and Bats (Lantra)
- Industrial Rope Access Trade Association (IRATA)
- Practical Arboriculture Qualifications (NPTC)

Membership

- Arboricultural Association Professional Member (M.Arbor.A)

9.0 Web Information & Bibliography

Web Information

- Arboricultural Association
<http://www.trees.org.uk/>
- Cellular Confinement System
GeoWeb - [GreenFix](#)
CellWeb - [Geosynthetics](#) [Cellweb](#)
- Underground Utilises Installation
<http://www.njug.org.uk/>

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- British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations UK; British Standards Intuition
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10.0 Appendix 1A -Tree Survey Data

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments	Preliminary Management Recommendations	Work Priority	RPR (m)	RPA (m2)
G1	Corylus avellana (Hazel), Crataegus monogyna (Hawthorn), Acer monogyna (Field Maple)	M	1	200	C3	5(0)	5	5	5	5	G/F	F	20+	boundary group of unmanaged hedgerow			2.4	18.1
G2	Quercus robur (Common Oak), Fraxinus excelsior (Ash)	M	1	500	B2	12(2)	7	7	7	7	G/F	N/A	20+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.	group of trees outside of site, mostly on the far side of drainage ditch, ash leaf cover slightly sparse		6	113.1
G3	Populus tremula (Aspen), Fraxinus excelsior (Ash)	M	1	450	C2	12(2)	6	6	6	6	G/F	N/A	20+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.	group of trees outside of side around drainage ditch, ash trees slightly sparse in leaf cover		5.4	91.62
G4	Cypress spp (Cypress spp)	EM	1	200	C2	8(2)	2	2	2	2	F	F	10+		group of two small cypress		2.4	18.1
G5	Prunus laurocerasus (Cherry Laurel)	EM	1	150	C2	6(2)	3	3	3	3	F	F	10+		two overgrown laurel		1.8	10.18
G6	Cypress spp (Cypress spp)	EM	1	150	C1	7(2)	2	2	2	2	F	F	10+		group of upright conifers		1.8	10.18
G7	Cypress spp (Cypress spp)	EM	1	150	C1	7(2)	2	2	2	2	F	F	10+		group of upright conifers		1.8	10.18
G8	Cotoneaster frigidus (Cotoneaster), Fraxinus excelsior (Ash)	M	1	200	C2	4(2)	4	4	4	4	G/F	F	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.			2.4	18.1
G9	Corylus avellana (Hazel), Crataegus monogyna (Hawthorn), Acer campestre (Field Maple), Sambucus nigra (Elder)	M	1	200	C3	6(0)	3	3	3	3	G/F	F	20+		boundary group of unmanaged hedgerow		2.4	18.1
G10	Quercus robur (Common Oak)	M	1	1000	A2	14(2)	10	10	10	10	G/F	N/A	40+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	mature old field boundary tree, adjacent suppressed old oak tree noted on southern side of tree with some internal decay of trunk and buttress		12	452.5
G11	Salix fragilis (Crack Willow), Cypress spp (Cypress spp)	M	1	200	C2	7(0)	4	4	4	4	F	F	10+		willow conifer mix boundary screen planting		2.4	18.1

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments	Preliminary Management Recommendations	Work Priority	RPR (m)	RPA (m2)
G12	Fraxinus excelsior (Ash)	M	1	650	B2	13(4)	8	8	8	8	F	N/A	20+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	ash group with overgrown hedgerow		7.8	191.2
H1	Corylus avellana (Hazel),Acer campestre (Field Maple),Sambucus nigra (Elder),Prunus spinosa (Blackthorn)	M	1	100	C3	1.5(0)	1.5	1.5	1.5	1.5	G/F	G/F	20+	high C category.	field boundary hedgerow		1.2	4.52
H2	mixed hedgerow species	M	1	100	C3	1.5(0)	1.5	1.5	1.5	1.5	G/F	G/F	20+	high C category.	field boundary hedgerow		1.2	4.52
H3	mixed hedgerow species	M	1	100	C3	1.5(0)	1.5	1.5	1.5	1.5	G/F	G/F	20+	high C category.	field boundary hedgerow		1.2	4.52
H4	mixed hedgerow species	M	1	100	C3	1(0)	1.5	1.5	1.5	1.5	G/F	G/F	20+	high C category.	field boundary hedgerow, some gate access in hedgerow noted		1.2	4.52
H5	mixed hedgerow species	M	1	100	C3	1(0)	1.5	1.5	1.5	1.5	G/F	G/F	20+	high C category.	field boundary hedgerow		1.2	4.52
H6	mixed hedgerow species	M	1	100	C3	1(0)	1.5	1.5	1.5	1.5	G/F	G/F	20+	high C category.	field boundary hedgerow		1.2	4.52
T1	Aesculus hippocastanum (Horse Chestnut)	EM	1	200	C2	4(0)	2	2	2	2	F/P	F/P	10+	low C category.	crown dieback within small tree		2.4	18.1
T2	Quercus robur (Common Oak)	M	1	800	B3	6(2)	2	9	4	2	F	N/A	20+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.	old oak, appear to have large are of dysfunction noted on western side of trunk		9.6	289.6
T3	Fraxinus excelsior (Ash)	EM	1	300	C2	8(2)	4	4	4	3	G/F	N/A	10+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.	cut back from electrical lines		3.6	40.72
T4	Crataegus monogyna (Hawthorn)	EM	1	200	C2	4(2)	3	3	3	2	G/F	N/A	10+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.			2.4	18.1
T5	Fraxinus excelsior (Ash)	SM	1	100	U	5(2)	2	2	2	2	F/P	F/P	<10	Slightly sparse foliage cover.	fence wire encapsulating in the trunk		1.2	4.52
T6	Corylus avellana (Hazel)	OM	1	200	U	3(1)	4	4	4	4	P	P	<10	Dieback in crown.	cut back under electrical lines		2.4	18.1
T7	Acer campestre (Field Maple)	EM	1	200	C2	4(2)	3	3	2	2	G/F	N/A	10+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.			2.4	18.1

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments	Preliminary Management Recommendations	Work Priority	RPR (m)	RPA (m2)
T8	Salix caprea (Goat Willow)	EM	1	100	C2	5(0)	2	2	2	2	F	F	10+				1.2	4.52
T9	Prunus avium (Wild Cherry)	M	1	150	C2	3(0)	2	2	2	2	F	F	10+	suckers growing around dead main trunk			1.8	10.18
T10	Unknown (Unknown)	M	1	150	U	3(2)	1	1	1	1	D	D	<10				1.8	10.18
T11	Populus tremula (Aspen)	M	1	450	U	12(4)	5	3	3	4	F/P	F/P	<10	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.	aspen with cavity in main trunk and sparse leaf cover		5.4	91.62
T12	Populus tremula (Aspen)	M	1	350	C2	13(4)	5	5	5	5	F	F	10+		multistemmed aspen tree		4.2	55.42
T13	Quercus robur (Common Oak)	M	1	750	B2	12(4)	8	8	8	8	G/F	N/A	20+	Located on private land preventing a close inspection of the tree therefore all observations and measurements are estimated.	offsite oak tree		9	254.5
T14	Cypress spp (Cypress spp)	EM	1	200	C2	7(0)	2	2	2	2	G/F	F	10+		one small cypress of fair form, some small failed branches noted		2.4	18.1
T15	Salix caprea (Goat Willow)	EM	1	200	C2	5(2)	3	3	3	3	F	F	10+		small fast growing goat willow multistemmed		2.4	18.1
T16	Acer campestre (Field Maple)	M	1	600	A2	7(2)	6	6	6	6	G/F	N/A	40+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	mature old field boundary tree		7.2	162.9
T17	Quercus robur (Common Oak)	M	1	900	A2	12(2)	7	8	7	7	G/F	N/A	40+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	mature old field boundary tree		10.8	366.5
T18	Quercus robur (Common Oak)	M	1	1100	A2	12(2)	7	7	7	7	G/F	N/A	40+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	mature old field boundary tree some surface root damage noted		13.2	547.5
T19	Crataegus monogyna (Hawthorn)	M	1	200	C2	5(2)	3	3	3	3	F	F	10+		small group of mature interwind hawthorn		2.4	18.1
T20	Crataegus monogyna (Hawthorn)	M	1	150	C2	4(0)	3	3	3	3	F	F	10+				1.8	10.18
T21	Salix caprea (Goat Willow)	EM	1	150	C2	5(0)	3	3	3	3	F	F	10+				1.8	10.18
T22	Acer pseudoplatanus (Sycamore)	M	1	1000	B2	12(2)	5	5	5	5	G/F	F	20+		multistemmed sycamore of fair to good form		12	452.5
T23	Acer pseudoplatanus (Sycamore)	M	1	1000	U	12(2)	5	5	5	5	P	P	<10		multistemmed dead sycamore of main tree, lower branch growth noted		12	452.5
T24	Quercus robur (Common Oak)	M	1	750	A1	9(0)	5	5	5	5	G/F	F	40+		small oak tree of some age, buttress damage noted		9	254.5

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments	Preliminary Management Recommendations	Work Priority	RPR (m)	RPA (m2)
W1	mix species	M	1	1000	A3	15(0)	8	8	8	8	N/A	N/A	40+	woodland not inspected in any detail, designated as Restored Ancient Woodland Site			12	452.5

10.0 Appendix 1B – Detailed Tree Survey Data Summary

(Please see Appendix 3 - Tree Survey Key)

Field Usage Results.		
Total Records: 43		
Type	Count	% of Total
T	24	55.8
G	12	27.9
W	1	2.3
H	6	14
Tree Species	Count	% of Total
Aesculus hippocastanum (Horse Chestnut)	1	2.3
Quercus robur (Common Oak)	6	14
Fraxinus excelsior (Ash)	3	7
Crataegus monogyna (Hawthorn)	3	7
Corylus avellana (Hazel)	1	2.3
Acer campestre (Field Maple)	2	4.7
Salix caprea (Goat Willow)	3	7
Prunus avium (Wild Cherry)	1	2.3
Unknown (Unknown)	1	2.3
Populus tremula (Aspen)	2	4.7
Cypress spp (Cypress spp)	4	9.3
Prunus laurocerasus (Cherry Laurel)	1	2.3
mixed hedgerow species	5	11.6
mix species	1	2.3
Acer pseudoplatanus (Sycamore)	2	4.7
Average Stem Diameter	Count	% of Total
<150	8	18.6
<250	19	44.2
<500	4	9.3
<750	3	7
<1000	4	9.3
<2000	5	11.6
Cat	Count	% of Total
A1	1	2.3
A2	4	9.3
A3	1	2.3

B2	4	9.3
B3	1	2.3
C1	2	4.7
C2	17	39.5
C3	8	18.6
U	5	11.6
Age	Count	% of Total
SM	1	2.3
EM	12	27.9
M	29	67.4
OM	1	2.3
Height	Count	% of Total
<5	14	32.6
<10	17	39.5
<15	11	25.6
<20	1	2.3
Phy Cond	Count	% of Total

10.0 Appendix 2 - Tree Constraints Plan

An introduction to the Tree Constraints Plan (TCP)

Trees identified to be retained should be treated as constraints to the design of future development. A Tree Constraints Plan has been drawn and can be found over leaf.

- **Tree Quality** - The TCP highlights the above and below-ground constraints each tree poses to design future development schemes. Further, the BS5837 tree quality category (A - High, B - Moderate, C - Low and U- Unsuitable for retention) are coloured coded as solid circles at the centre of the tree's position.
- **Root Protection Area** – The magenta circle on the TCP sets out the root protection area (RPA). No construction work in this area, ground-level alteration or site traffic (machinery or persons) should occur. This prevents damage to tree roots and soil compaction. (Where possible, an Arboriculturist can design suitable tree protection methods to facilitate construction work/site traffic within these areas).
- **Tree Canopy** - The green circle/oval on the TCP sets out the above-ground constraints of tree canopy spread. Within this area, no construction work or site traffic (machinery or persons) should occur if the tree is to be retained. This prevents damage to the tree branches and trunk. (Where possible, an Arboriculturist can design suitable tree protection methods to facilitate construction work/site traffic within these areas).
- **Tree Shading** – Shade from the retained trees should be considered in the development design. Depending on the tree's height and width, the shade cast will be from a North West to East pattern through the central part of the day.
- **Tree Future growth** - Within future development design, consideration should also be given to the ultimate height and extent of the canopy spread of all trees within site identified to be retained.



10.0 Appendix 3 - Tree Survey Data Key

- **Tree ID #** - Identifies the location of individual trees (T-ID Number), Groups of trees (G-ID Number), Area of trees (A-ID Number), Hedgerow (H-ID Number), Woodland (W-ID Number), Row of trees (R-ID Number) and tree Stumps (S-ID Number) on the accompanying plan. *(Please note: A group of trees here refers to two or more standing trees that form a visual whole, whereas an area of trees refers to dispersed individual trees standing within the site)*

- **Tree Species** - Scientific names and common tree name in brackets are generally shown.

- **Age**

- o (Y) Young – Less than 1/3 of life completed
- o (SM) Middle Aged - 1/3 - 2/3 of life completed
- o (EM) Early Mature – Just entering Maturity
- o (M) Mature – more than 2/3 of life completed
- o (OM) Over Mature - more than 3/3 of life completed and declining
- o (V) Veteran - (v) Veteran – Veteran trees have no precise definition but are trees considered to be of biological aesthetic or ecological value because of their age

- **Stems** – Number of tree stems used to calculate the RPR/RPA

- **Stem Diam** (mm) - Diameter of tree stem measured in millimetres for single stem trees or average stem diameter calculated for multi-stemmed trees as detailed in section 4.6 & Annex C of the British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations. The height above ground level where the stem measurement was taken will be shown if not measured at 1.5 metres above ground level. *(Please note: that the stem diameter of certain trees will have to be estimated due to difficulties in taking measurements or for trees with a large number of stems)*

- **Cat** – Tree Quality Category - British Standard 5837:2012 A, B, C, U + 1, 2, 3

Based on BS5837:2012, categories A, B, C, and U provide the basis for prioritising trees for retention:

- o A – Those of high quality with an estimated remaining life expectancy of at least 40 years. (*Most desirable for retention*)
- o B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (*Desirable for retention*)
- o 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. (*Optional for retention*)
- o 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. (*Unsuitable for retention unless provides high conservation value*)

Retention Criteria Subcategories: Used for identifying subcategories

E.g. A2 = A high-quality tree with high landscape qualities (further details can be found in British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations UK; British Standards Intuition)

- o 1 – Mainly Arboricultural qualities
 - o 2 – Mainly landscape qualities
 - o 3 – Mainly cultural values, including conservation
- **Height + (Lower Branch Height)** - Tree height in metres and in brackets height in metres of the crown (tree branches) clearance at its lowest point above adjacent ground levels.
- **Nrth, Est, Sth, Wst** - Crown Spread (Metres) -Tree branch spread in metres measured in four directions (North, East, South, West) from the trunk.
- **Phys Cond** - Physiological Condition Indicating the health of the tree -
 - o (G) Good
 - o (F) Fair
 - o (P) Poor
 - o (D) Dead
- **Struc Cond** – Structural Condition indicating the structural integrity of the tree -
 - o (G) Good – No, or remediable physical defects or decay
 - o (F) Fair - Physical non-remediable defects or decay present, not presenting imminent danger but should be monitored
 - o (P) Poor - physical non-remediable defects or decay present, tree liable to imminent collapse or loss of major limbs.
 - o (D) Dead
- **Est. Remain Contrib - (<10, 10+, 20+, 40+)**

The trees estimated remaining contribution in years, recorded as:

 - o <10 – less than 10 years
 - o 10+ – at least 10 years
 - o 20+ – at least 20 years
 - o 40+ – at least 40 years
- **Comments** – Additional Comments, if required
- **Preliminary Management Recommendations** – Work Recommendations, including further investigation of suspected defects that require more detailed assessment and pose potential for wildlife habitat.

- **Work Priority** - Work Priority -This gives a work priority rating of preliminary management for each tree.
 - o H - High – Urgent work to be carried out as soon as practicable due to safety reasons (Within 14 days).
 - o H/M – High - Medium – Work to be carried out within 6 months/or before the construction phase begins
 - o M - Medium – Work to be carried out in 12 months
 - o L - Low – After consideration/Re-inspect in 18-24 months
 - o Blank – No work required.
- **RPR** – Root protection radius / **RPA** - Root Protection Area - Is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority. RPR is a circular area measured as a radius in metres from the tree's centre, or RPA is an area in metres squared. This area may be changed in shape but not reduced in size, providing adequate protection for the tree's rooting system.

10.0 Appendix 4 – Tree Protection Plan

10.0 Appendix 5 – Tree Photographs

Tree ID#G1



Tree ID#G1



Tree ID#T1



Tree ID#T2



Tree ID#T11



Tree ID#T12



Tree ID#G4 + T14



Tree ID#G2 + T10, T11, T12 + G3



Tree ID#G8 + G6



Tree ID#G9



Tree ID#T16, T17, G10



Tree ID#T18



Tree ID#H3 + H5



Tree ID#T19 + H6



Tree ID#T22



Tree ID#T23



Tree ID#G11



Tree ID#W1



Tree ID#T24



Tree ID#G12



