ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
Washpit Mills
Choppards Lane
Holmfirth
West Yorkshire
HD9 2RD

Client:
Prospect Estates

Client Address:
Prospect Court
2 Courthouse Street
Otley
West Yorkshire
LS21 1AQ

Client Telephone:
01943 850111

JCA Ref:
13024-A/AJB

JCA Limited
Arboricultural & Ecological Consultants

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1. Introduction

1.1 Purpose of the Report

1.1.1 This report is required at **Washpit Mills**, **Choppards Lane**, **Holmfirth**, in relation to the proposed development.

1.1.2 The purpose of this report is to assess the impact of the proposals on the existing tree stock and outline mitigation actions, where appropriate, to minimize potential damage to retained trees.

1.2 Terms of Reference

1.2.1 JCA Ltd has been instructed by **Prospect Estates** to prepare an Arboricultural Impact Assessment, based on our Arboricultural Report dated 20th September 2016 (JCA Ref: **13024/AJB**). The arboricultural survey and report conforms to the most recent specifications outlined in BS 5837: 2012 Trees in relation to design, demolition and construction - Recommendations.

1.2.2 I have been supplied with **Drawing No. 3068 0-200 Rev A Prop Site Plan**, which details the proposed development. The tree data has been overlaid onto the proposed designs to create the Development Proposals Plan, which can be found at **Appendix 7.** This provides the basis for which this Arboricultural Impact Assessment has been prepared.

1.3 Scope of the Report

1.3.1 This report is compiled in accordance with *BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'* and is based on an objective assessment of the existing vegetation.

1.3.2 The specific design of the proposed development has been considered within the Arboricultural Implication Assessment in **Section 3** and is detailed on the plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The original survey took place during the month of September 2016 and was conducted by Andrew Bussey.

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2. Tree Descriptions and Recommendations

2.1 Full details of all individual trees surveyed are recorded in the tables at **Appendix 1**. A full explanation of the tables can be found at **Appendix 2**. Please refer also to the Tree Constraints Plan at **Appendix 6** for tree locations.

3. Arboricultural Implications Assessment (AIA)

3.1 Proposed Development

3.1.1 The proposals are for a mixed use redevelopment of the existing Washpit Mills.

3.1.2 All tree works required to accommodate the proposals are included at **Appendix 1**, which lists all works recommended during the initial survey and those required for the development.

3.2 Tree Removals for Development

3.2.1 **T1, G2, G3, G4, G8, G9, T32, T33, G45, T46, T47, G48, G60, G62, T63, G65** and **H66** are proposed to be removed, either to directly facilitate the proposed development, open up useable garden space or as they are not considered to be worthy of post-development retention.

3.2.2 Of these, all items of vegetation proposed to be removed fall into retention category 'C' and can be removed without significantly affecting the visual amenity of the surrounding area.

3.2.3 Whilst the development will require the removal of some trees within the site, it should be noted that a planting scheme is included within the proposals. This will act to mitigate tree losses, improve the visual benefits of the site and the surrounding area, and will improve the localised tree stock.

3.3 Pruning for Development

3.3.1 In this case, no pruning works are required to accommodate the proposed layout.

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3.4 Implications for Retained Trees

3.4.1 The Protective Barrier

3.4.1.1 In order to ensure the effective protection of retained trees during development, a protective barrier will be installed, in accordance with BS5837: 2012 and may comprise of protective fencing and/or ground protection. This will be the first job on site following the tree removal and pruning works. The fencing should ideally be positioned to protect the entire **Root Protection Area** (**RPA**) of the retained trees, in order to create a **Construction Exclusion Zone** (**CEZ**).

3.4.1.2 Routes for pedestrian and site traffic should ideally be located outside, and diverted away from, the RPAs of the retained trees. Where this is not possible, temporary protective surfaces (ground protection) must be laid over the exposed RPAs which will distribute the weight of site vehicles, machinery or pedestrians whilst allowing moisture to reach the tree rooting area beneath. Such surfaces should be constructed in accordance with BS5837: 2012.

3.4.1.3 Where ground protection or work is required within the RPA of a retained tree, specialist measures must be adopted during the construction phase to avoid ground compaction and minimise root damage.

3.4.2 Access/Construction of Hard Surfacing

3.4.2.1 In this case, the proposed scheme does not require the construction of access roads, driveways or other hard surfaces within the RPA of retained trees. As such no specialised construction techniques/surface treatments will be required for this purpose.

3.4.3 Demolition

3.4.3.1 In order to meet the needs of this proposal, demolition of existing structures is required. Whilst the structures in question are located outside the RPA of retained trees, no demolition will commence until full protective measures (e.g. barriers and/or ground protection) are installed. This is to prevent foreseeable damage to trees, either by the demolition itself, or relating to vehicular movement over RPAs.

3.4.4 Construction/ Foundation Design.

3.4.4.1 Prior to construction, all protective measures required and listed in **Section 3.4.1** (protective measures) should be correctly installed to prevent unnecessary damage during development.

3.4.4.2 The footprint of the proposed structures does not incur the RPA of retained trees. As such no specialist construction or foundation methods are considered necessary for the sole purpose of preventing damage to trees.

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3.4.4.3 Despite this, specialist foundation designs may still be required for other reasons, and advice should always be sought from a suitably qualified structural expert. The water demand of trees can be an important consideration when determining the appropriate foundation design. Because of this, water demands for the trees identified on this site are included at **Appendix 1**, in accordance with **NHBC Chapter 4.2**, for use by the appointed structural expert.

3.4.4.4 Any problems of shading in relation to new buildings caused by retained trees are likely to be minimal as the trees are deciduous, and light penetration will increase in the winter when the sun is lowest.

3.4.5 Utilities

3.4.5.1 Details on service routes are not available at this time. Where utilities need to be brought onto the site, these should be routed away from the RPAs of retained trees. Where this is not possible, methodologies on the installation of underground services without damage to tree roots should be considered.

3.4.5.2 All service providers should be consulted prior to commencement of works with the aim of minimising the number of service runs on the site. Any foreseeable incursions to RPAs should be communicated to the appointed arboricultural consultant and the LPA at the earliest possible time to prevent breach of planning conditions and damage to retained trees.

3.4.6 Landscaping

3.4.6.1 Any proposed fence lines may be constructed within the RPA if necessary, providing that appropriate considerations are made to the protection of the tree. This is providing that no continual trenching is undertaken (e.g. for small walls onto which panel fencing is installed). Excavation must be kept to a minimum and therefore only fence designs requiring intermittent posts will be acceptable within the RPA of retained trees.

3.4.6.2 Any unadoptable hard surfaces within RPAs which may not be shown on the projected layout (**Appendix 7),** may be constructed using no-dig techniques, providing that they do not cover more than 20% of the RPA and are implemented in accordance with BS5837: 2012. If there is any concern of damaging retained trees, further advice should be sought from a qualified Arboriculturalist.

3.4.6.3 No ground level changes are to be undertaken within the RPA of retained trees, unless otherwise stated or agreed with the appointed Arboricultural consultant or the LPA. The requirement to raise/lower ground levels within RPAs should be communicated to these parties at the earliest practical convenience.

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4. Conclusions

4.1 The trees surveyed were generally found to be in good or fair condition.

4.2 Some tree works were recommended during the original survey, irrespective of the development proposals. This is to manage potential risks, prevent the development of defects or for general maintenance purposes. These are detailed at **Appendix 1**.

4.3 The arboricultural implications of the development have been considered and are discussed in **Section 3**.

4.4 Some trees require removal in order to facilitate the proposed development. All tree works are included at **Appendix 1.** These are discussed in **Section 3.2** and their locations are shown on the plan at **Appendix 7**.

4.5 All development work carried out in close proximity to trees should be done so in a manner sympathetic to their needs. Otherwise the condition of the trees may deteriorate in the months and years following the development, leading to a loss of amenity and potentially hazardous trees.

4.6 The protection of retained trees can be achieved by the creation of a Construction Exclusion Zone based on the Root Protection Area of a tree. The Root Protection Area of each tree or group is marked on the Tree Constraints Plan at **Appendix 6**.

4.7 The proposed development should be accompanied by an Arboricultural Method Statement (AMS) detailing the specific protection measures necessary for each tree. This should specify the required fencing standard and positions (the creation of the Construction Exclusion Zone), acceptable construction techniques and necessary tree works.

4.8 Upon instruction JCA are able to provide a comprehensive Arboricultural Method Statement in order to ensure the continued health of trees throughout the proposed development. We are also able to provide tree planting schemes and organise tree works.

4.9 The data gained during the original survey provides an indication of the health of the trees. However, it does not enable a comprehensive assessment of their condition over time. Trees are living organisms which are affected by many factors including weather conditions, diseases/disorders, light levels and human activities. Due to this, the report is only valid for a period of 1 year from the date of issuing. Should an update or revision of this report be required outside of this time period, JCA may require a further site visit to ensure that the condition of the trees has not significantly changed. It is advised that the trees are inspected regularly, in the interests of risk management.

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Appendices

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 1	Young Sycamore *Acer pseudoplatanus*	6	0	0 n/a	12 x 6	2.8 2.5 2 2.3	Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. Insignificant tree.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	MOD	10+	C 2
G 2	Semi-mature Mixed	To 7	0+	0+ n/a	To 26#	See plan	Self-seeded Sycamore and Common Ash of reasonable form. Insignificant trees.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	MOD	10+	C 2
G 3	Semi-mature Sycamore *Acer pseudoplatanus*	To 9	0+	0+ n/a	To 20#	See plan	Multi-stemmed self-seeded trees of little significance. Not fully inspected due to dense vegetation and limited access.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	MOD	10+	C 2
G 4	Young Mixed	To 5	0+	0+ n/a	To 15#	See plan	Dense clusters of self-seeded Sycamore, Hawthorn, Rowan and Apple sp. Not fully inspected due to dense vegetation and limited access.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	HIGH	10+	C 2
T 5	Early-mature Common Ash *Fraxinus excelsior*	13	3	3 n/a	50#	6# 5# 5# 6.5#	Overhanging the road. Single-stemmed and slightly leaning with a balanced crown. No evidence of significant pruning. Not fully inspected due to vegetation and Ivy.	No action required. n/a	GOOD	GOOD	MOD	MOD	40+	B 2
T 6	Early-mature Sycamore *Acer pseudoplatanus*	10	2	2 n/a	35#	3# 3# 3# 3#	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Not fully inspected due to vegetation and Ivy.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2
T 7	Early-mature Goat Willow *Salix caprea*	9	0	0 n/a	38#	4# 3# 5# 5#	Single-stemmed and vertical with an unbalanced crown. No evidence of significant pruning. Not fully inspected due to vegetation and Ivy	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
G 8	Young to semi-mature Cherry sp. *Prunus sp.*	To 6.5	0+	0+ n/a	To 25	See plan	Eight planted trees of reasonable form in a linear formation. Minor bark wounds noted.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	MOD	20+	C 2
G 9	Semi-mature Mixed	To 9	0+	0+ n/a	To 20#	See plan	A dense cluster of Cherry Laurel and Leylandii of little significant. No major visible defects.	No action required. *Remove as not worthy of post-development retention.* n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 10	Semi-mature Sycamore *Acer pseudoplatanus*	12	1.5	3.5 n/a	29	3 4.8 4.8 4.6	Single-stemmed and vertical with an unbalanced crown. Occasional pruning wounds due to past pruning for overhead lines. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 11	Early-mature Silver Birch *Betula pendula*	13	3	3 n/a	49	3.5 4 3 5	Overhanging the road. Single-stemmed and leaning with an unbalanced crown due to past pruning for overhead lines. Large decay stubs at the base due to the removal of co-dominant stems.	No action required. n/a	GOOD	FAIR	LOW	LOW	20+	C 2
T 12	Semi-mature English Oak *Quercus robur*	13	2.5	2 n/a	36	3 4.6 0 4.5	Overhanging the road. Multi-stemmed at ground level with a balanced crown. Occasional pruning wounds due to clearance from overhead lines.	No action required. n/a	GOOD	FAIR	LOW	HIGH	20+	C 2
T 13	Mature Sycamore *Acer pseudoplatanus*	16	2	2.5 n/a	85 & 50#	8.5# 8.5# 7.2# 9	Multi-stemmed at ground level with a balanced crown. Occasional pruning wounds due to clearance from overhead lines. A long heavy limb is present to the southwest.	Monitor biennially. Low	GOOD	FAIR	LOW	MOD	20+	C 2
T 14	Early-mature Sycamore *Acer pseudoplatanus*	16	9	9 n/a	38#	4# 4# 3# 3#	Overhanging the road. Single-stemmed and vertical with a balanced crown. Multiple pruning wounds due to clearance from overhead lines. Not fully inspected due to vegetation and poor terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 15	Mature Sycamore *Acer pseudoplatanus*	17	5	6 n/a	65#	7 7.2 5.5# 1	Overhanging the road. Multi-stemmed at 3.5m with an unbalanced crown due to past pruning from overhead lines. Minor deadwood noted. Not fully inspected due to vegetation and poor terrain.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	B 2
T 16	Early-mature Sycamore *Acer pseudoplatanus*	15	7	7 n/a	37#	1# 1# 4# 4.5#	Overhanging the road. Twin-stemmed at 3m with an unbalanced crown and a poor form. Not fully inspected due to vegetation and Ivy.	No action required. n/a	GOOD	FAIR	LOW	MOD	<10	C 2
T 17	Early-mature Sycamore *Acer pseudoplatanus*	15	7	8 n/a	40#	5.5 4.5 3.5 0.5	Overhanging the footpath. Twin-stemmed at 4m with an unbalanced crown due to past pruning for overhead lines. Poor form. Minor deadwood noted.	Crown clean to remove the deadwood. Low	GOOD	FAIR	LOW	MOD	10+	C 2
G 18	Young to early-mature Mixed	To 16	2+	2+ n/a	To 29	See plan	Six Sycamore and Common Ash of upright form growing out of a waterside retaining wall and causing structural damage to this feature.	Remove and poison the stumps to prevent re-growth. Low	GOOD	FAIR	LOW	MOD	<10	U
T 19	Mature Sycamore *Acer pseudoplatanus*	17	1	4 SE	60#	4# 2# 6.5 6.5#	Twin-stemmed at 4m with an unbalanced crown. No evidence of significant pruning. No major visible defects. Overhanging an overhead line. Not fully inspected due to vegetation and Ivy.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	B 2
T 20	Early-mature Sycamore *Acer pseudoplatanus*	17	6	6 n/a	50, 45, 45 & 45#	8# 3# 5# 6#	Multi-stemmed at ground level with a slightly unbalanced crown and a poor form. Not fully inspected due to vegetation, poor terrain and Ivy.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 21	Early-mature Sycamore *Acer pseudoplatanus*	17	3	3 n/a	42 & 39#	7# 4# 4# 3#	Twin-stemmed at ground level with a slightly unbalanced crown and a poor form. Not fully inspected due to vegetation, poor terrain and Ivy.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 22	Early-mature Sycamore *Acer pseudoplatanus*	17	9	9 n/a	45 & 45#	1 4# 2# 6#	Twin-stemmed at ground level with an unbalanced crown and a poor form. Not fully inspected due to vegetation, poor terrain and Ivy.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 23	Mature Sycamore *Acer pseudoplatanus*	17	5	4 N	80#	8.5# 6.3 3# 5#	Twin-stemmed at 1m with a balanced crown. No evidence of significant pruning. Minor dirt pocket present at the stem junction. Not fully inspected due to vegetation and Ivy.	Monitor biennially. Low	GOOD	GOOD	LOW	MOD	20+	C 2
T 24	Mature Sycamore *Acer pseudoplatanus*	18	8	8 n/a	65#	5# 5# 5# 5#	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation, poor terrain and Ivy.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	B 2
T 25	Early-mature Sycamore *Acer pseudoplatanus*	16	4	4 n/a	42#	3# 5.8# 1 1	Single-stemmed and vertical with an unbalanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation and poor terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 26	Early-mature Sycamore *Acer pseudoplatanus*	16	1	3 n/a	50, 40, 40 & 20#	7.5 7# 5# 6.5#	Multi-stemmed at ground level with a balanced crown and a poor form. Not fully inspected due to vegetation and poor terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 27	Mature Common Ash *Fraxinus excelsior*	16	9	9 n/a	65#	6# 6# 5# 6.5#	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Minor deadwood and decay cavities noted. No major visible defects. Not fully inspected due to vegetation and poor terrain.	Crown clean to remove the deadwood. Low	GOOD	GOOD	LOW	MOD	20+	B 2
T 28	Semi-mature Sycamore *Acer pseudoplatanus*	13	3	3 n/a	24	2 2 3 4.5#	Single-stemmed and vertical with an unbalanced crown. No evidence of significant pruning. Insignificant tree. Not fully inspected due to poor terrain.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2
T 29	Early-mature Sycamore *Acer pseudoplatanus*	14	3	3.5 N	36	6 3.5 5.5 0	Single-stemmed and leaning with an unbalanced crown and a poor form.	No action required. n/a	GOOD	FAIR	LOW	MOD	10+	C 2
T 30	Semi-mature Sycamore *Acer pseudoplatanus*	11	2	2 n/a	18 & 18#	2# 2# 2# 2#	Twin-stemmed at ground level with an unbalanced crown and a poor form. Not fully inspected due to poor terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	10+	C 2

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T 31	Early-mature Sycamore *Acer pseudoplatanus*	15	1	3.5 NW	38	8# 4 3 2#	Single-stemmed and leaning with an unbalanced crown and a poor form. Not fully inspected due to poor terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	10+	C 2
T 32	Mature Sycamore *Acer pseudoplatanus*	15	1	2 n/a	60 & 55#	7# 7# 6# 5#	The crown overhangs the building. Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning. A weak union is present at the stem junction. Not fully inspected due to vegetation and poor terrain.	Monitor biennially. *Remove to facilitate the proposed development.* Low	GOOD	FAIR	LOW	MOD	20+	C 2
T 33	Mature Sycamore *Acer pseudoplatanus*	17	3	3 S	85#	2# 8# 6# 10#	Twin-stemmed at 0.5m with an unbalanced crown and a poor form. Not fully inspected due to vegetation and poor terrain.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 34	Early-mature Sycamore *Acer pseudoplatanus*	16	1	3 n/a	60 & 55#	8# 8.5 6 7#	Twin-stemmed at ground level with an unbalanced crown. Significant decay to stems as well as major crown die-back. Not fully inspected due to vegetation and poor terrain.	Remove and poison the stumps to prevent re-growth. Low	FAIR	POOR	LOW	MOD	<10	U
T 35	Early-mature Sycamore *Acer pseudoplatanus*	17	6	6 n/a	50 & 30#	3# 4# 7# 4#	Twin-stemmed at ground level with a slightly unbalanced crown and a poor form. Not fully inspected due to vegetation and poor terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 36	Early-mature Sycamore *Acer pseudoplatanus*	16	3	3 W	49#	4# 6# 4# 4#	Single-stemmed and vertical with a slightly unbalanced crown. Moderate deadwood noted. Not fully inspected due to Ivy, vegetation and poor terrain.	Crown clean to remove the deadwood. Low	GOOD	FAIR	LOW	MOD	20+	C 2
T 37	Mature English Oak *Quercus robur*	18	9	9 n/a	68 & 49#	6# 6.5# 3# 5#	Twin-stemmed at ground level with an unbalanced crown and a lean to the north. One sided following the collapse of an adjacent tree.	Monitor biennially. Low	GOOD	FAIR	LOW	HIGH	20+	C 2
T 38	Mature Sycamore *Acer pseudoplatanus*	14	0	0 n/a	60 & 48#	See plan for stem location.	A large collapsed tree which is partially hung up in T33. Not fully inspected due to poor terrain.	Remove. Low	POOR	POOR	LOW	MOD	<10	U
T 39	Early-mature English Oak *Quercus robur*	13	2	2 n/a	50#	1.5# 6# 5# 5#	Single-stemmed and vertical with an unbalanced crown and many broken branches following the collapse of T38. Not fully inspected due to poor terrain.	Crown clean to remove the broken branches following the removal of T38. Low	GOOD	FAIR	LOW	HIGH	20+	C 2
T 40	Semi-mature Sycamore *Acer pseudoplatanus*	13	7	7 n/a	26	3 1.5 2.5 3	Single-stemmed and vertical with a balanced crown. A tall and slender tree with a poor form.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 41	Early-mature English Oak *Quercus robur*	13	6	6 n/a	48	4# 6# 3# 6#	Single-stemmed and vertical with an unbalanced crown and many broken branches following the collapse of T38. Not fully inspected due to poor terrain.	Crown clean to remove the broken branches following the removal of T38. Low	GOOD	FAIR	LOW	HIGH	20+	B 2
T 42	Mature Silver Birch *Betula pendula*	15	6	6 n/a	46#	5# 4# 4# 3#	Single-stemmed and slightly leaning with a balanced crown. No evidence of significant pruning. Moderate deadwood noted. No major visible defects. Not fully inspected due to poor terrain.	Crown clean to remove the deadwood. Low	GOOD	GOOD	LOW	LOW	40+	B 2
T 43	Mature English Oak *Quercus robur*	15	6	6 n/a	69#	7# 7# 6# 6#	Twin-stemmed at 4.5m with a balanced crown. No evidence of significant pruning. Moderate deadwood noted. Not fully inspected due to poor terrain.	Crown clean to remove the deadwood. Low	GOOD	GOOD	LOW	HIGH	40+	B 2
G 44	Semi to early-mature Mixed	To 15	0+	0+ n/a	To 40#	See plan	Sycamore, English Oak and Silver Birch of good form located on steep bank. Not fully inspected due to poor terrain.	No action required. n/a	GOOD	GOOD	LOW	HIGH	40+	B 2
G 45	Semi-mature Mixed	To 14	0+	0+ n/a	To 29#	See plan	Self-seeded Silver Birch, Sycamore and Goat Willow of poor individual form located on an area of made-ground. Decay present on the Goat Willow in group.	No action required. *Remove as not worthy of post-development retention.* n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 46	Early-mature Common Ash *Fraxinus excelsior*	13	4	4 n/a	43 & 29#	4# 5# 7# 4#	Twin-stemmed at ground level with an unbalanced crown and a poor form. Not fully inspected due to vegetation and poor terrain.	No action required. *Remove as not worthy of post-development retention.* n/a	GOOD	FAIR	LOW	MOD	10+	C 2
T 47	Semi-mature Sycamore *Acer pseudoplatanus*	12	1	1 n/a	30	0# 0 6# 6#	Single-stemmed and leaning with an unbalanced crown and a poor form. Not fully inspected due to poor terrain.	No action required. *Remove as not worthy of post-development retention.* n/a	GOOD	FAIR	LOW	MOD	10+	C 2
G 48	Semi-mature Mixed	To 13	0+	0+ n/a	To 30	See plan	Self-seeded Sycamore and Goat Willow of little significance located on a steep bank which prevented a detailed inspection.	No action required. *Remove as not worthy of post-development retention and to open up usable garden space.* n/a	GOOD	FAIR	LOW	HIGH	<10	C 2
T 49	Semi-mature Sycamore *Acer pseudoplatanus*	10	0	2 E	34	4.3 0 4# 4.5	Single-stemmed and vertical with an unbalanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2
T 50	Semi-mature Common Ash *Fraxinus excelsior*	11	2	2 n/a	29 & 26	5.2 0 2.5 4	Twin-stemmed at ground level with an unbalanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 51	Early-mature Sycamore *Acer pseudoplatanus*	13	1	1 n/a	51, 26, 26 & 20	6.2 4.5 4.8 6#	Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. Weak union present at the stem junction.	Monitor biennially. Low	GOOD	FAIR	LOW	MOD	20+	C 2
T 52	Semi-mature Sycamore *Acer pseudoplatanus*	12	1	1 n/a	27	3 2 1.5 3.5	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2
T 53	Early-mature English Oak *Quercus robur*	11	1	1 n/a	46	6.2 3.2 2.5 5	Single-stemmed and vertical with a slightly unbalanced crown. No evidence of significant pruning. No major visible defects. Minor deadwood stubs noted.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	B 2
T 54	Semi-mature Swedish Whitebeam *Sorbus intermedia*	8	0	0 n/a	18 x 5	4.3 4 2 1.2	Multi-stemmed at ground level with an unbalanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	20+	C 2
T 55	Semi-mature English Oak *Quercus robur*	7	0	0 n/a	27	3.2 3.2 3.2 3.2	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	LOW	HIGH	40+	C 2
T 56	Semi-mature Silver Birch *Betula pendula*	12	0	0 n/a	24	2.8 2.8 2.8 2.8	Twin-stemmed at 1m with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	LOW	LOW	20+	C 2
T 57	Early-mature Goat Willow *Salix caprea*	4.5	0	1.5 n/a	38	3.8 1.2 4.5 3	Twin-stemmed at 1m with an unbalanced crown. Significant decay to the stem.	Remove. Low	FAIR	POOR	LOW	HIGH	<10	U
T 58	Early-mature Common Ash *Fraxinus excelsior*	13	3	4 n/a	100# at the base	5.5# 5.5# 5.5# 5.5#	Multi-stemmed at ground level with a balanced crown. significant decay to the stem junctions and bark wounds to stems.	Remove. Low	GOOD	POOR	LOW	MOD	<10	U
G 59	Semi-mature Mixed	To 15	0+	0+ n/a	To 40#	See plan	Hawthorn, Sycamore, Goat Willow and Common Ash of reasonable form. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
G 60	Early-mature Mixed	To 17	0+	0+ n/a	To 65#	See plan	Sycamore, Goat Willow and Common Ash of poor overall form located on steep bank which prevented a full and detailed inspection. Included bark noted on multiple-stemmed trees and deadwood present throughout.	Crown clean to remove the deadwood. Monitor biennially. *Remove to facilitate the proposed development.* Low	GOOD	FAIR	LOW	HIGH	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 61	Early-mature Sycamore *Acer pseudoplatanus*	16	4	5 N	55#	9# 5# 5# 0	A severely leaning tree with a poor form and a very unbalanced crown. The stem is kinked at the base. This tree is considered to have a limited safe long term future.	Remove. Moderate	GOOD	POOR	LOW	MOD	<10	U
G 62	Early-mature Mixed	To 15	0+	0+ n/a	To 60#	See plan	Four Sycamore, English Oak and Goat Willow of reasonable form. Included bark noted on the Sycamore and bark wounds are present on the Goat Willow.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	LOW	HIGH	20+	C 2
T 63	Semi-mature Silver Birch *Betula pendula*	9	0	0 n/a	15	2 2 2 2	Single-stemmed and vertical with a balanced crown. Growing in confined area between concrete hard standing. Limited long term future.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	LOW	LOW	10+	C 2
G 64	Young to semi-mature Mixed	To 15	1.5+	1.5+ n/a	To 45#	See plan	Common Ash and Sycamore located on top of steep bank. Heavily crown lifted in the past to clear the building. Not fully inspected due to terrain.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
G 65	Young Mixed	To 6.5	0+	0+ n/a	To 12	See plan	Self-seeded clusters of Goat Willow, Silver Birch and Common Ash of little significance.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	HIGH	10+	C 2
H 66	Young Leylandii *X Cupressocyparis leylandii*	To 3.5	0+	0+ n/a	To 7	See plan	An unmaintained hedge of little significance.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 67	Young Sycamore *Acer pseudoplatanus*	6.5	0	0 n/a	15, 12, 10 & 10#	3# 1.5# 2.5 2.5	Multi-stemmed at ground level with an unbalanced crown. Growing out of a waterside retaining wall and likely to be causing structural damage to this feature.	Remove and poison the stump to prevent re-growth. Low	GOOD	FAIR	LOW	MOD	<10	U
T 68	Early-mature Sycamore *Acer pseudoplatanus*	13	1	2 n/a	48#	5.2# 5.2# 5.2# 5.2#	Overhanging the road. Twin-stemmed at 1.5m with a balanced crown. No evidence of significant pruning. No major visible defects. Ivy prevented a detailed inspection.	Crown lift to 5.5m over the road for vehicular clearance heights. Low	GOOD	GOOD	MOD	MOD	20+	B 2
G 69	Semi-mature Sycamore *Acer pseudoplatanus*	To 12	0+	0+ n/a	To 28#	See plan	Multiple-stemmed trees growing out of a waterside retaining wall and likely to be causing structural damage to this feature.	Remove and poison the stumps to prevent re-growth. Low	GOOD	FAIR	LOW	MOD	<10	U
G 70	Semi-mature Sycamore *Acer pseudoplatanus*	To 13	0+	0+ n/a	To 25#	See plan	Trees of a poor individual form located on an inaccessible steep bank which prevented a detailed inspection.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 71	Semi-mature Sycamore *Acer pseudoplatanus*	10	4	4 n/a	28 & 18	1.5 3.2 2 3	Overhanging the road. Twin-stemmed at ground level with an unbalanced crown. No evidence of significant pruning. Insignificant tree.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
T 72	Semi-mature Sycamore *Acer pseudoplatanus*	11	0	1 E	29	1.5 1.2 3.5 2.8	Overhanging the road. Twin-stemmed at 0.5m with an unbalanced crown. due to past pruning for overhead cables.	No action required. n/a	GOOD	FAIR	LOW	MOD	20+	C 2
G 73	Early-mature Holly *Ilex aquifolium*	To 9	0+	0+ n/a	To 18#	See plan	A dense and impenetrable mass of trees which were not fully inspected.	No action required. n/a	GOOD	GOOD	LOW	LOW	40+	C 2
T 74	Semi-mature Hawthorn *Crataegus monogyna*	2.8	1	1 n/a	21	0.5 1 2 2	Single-stemmed and leaning with an unbalanced crown. No evidence of significant pruning. Of little significance.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 75	Early-mature Sycamore *Acer pseudoplatanus*	13	0	0 n/a	56	5.5# 5.5# 5.5# 5.5#	Multi-stemmed at 3m with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 2
T 76	Semi-mature Goat Willow *Salix caprea*	7	0	0 n/a	30	4# 3.5 4 4	Multi-stemmed at 1m with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 77	Semi-mature Goat Willow *Salix caprea*	5	0	0 n/a	20 x 3	4.5# 3.8 4.3 3	Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. No major visible defects. Not fully inspected due to vegetation.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 78	Early-mature Goat Willow *Salix caprea*	5	0	0 n/a	30#	7 4 10 0	A multiple-stemmed tree which is in a state of collapse.	Remove. Low	FAIR	POOR	LOW	HIGH	<10	U
T 79	Early-mature Sycamore *Acer pseudoplatanus*	14	0	0 n/a	40, 35, 20 & 20#	5.8 5# 5.5# 6#	Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. Tight unions present at the stem junction. Not fully inspected due to vegetation and epicormic growth.	Monitor biennially. Low	GOOD	FAIR	LOW	MOD	20+	C 2
G 80	Young Sycamore *Acer pseudoplatanus*	To 9	0+	0+ n/a	To 18#	See plan	4 trees of little significance growing out of the side of a dam wall and likely to be causing structural damage to this feature.	Remove and poison the stumps to prevent re-growth. Low	GOOD	FAIR	LOW	MOD	<10	U

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 81	Mature Goat Willow *Salix caprea*	9	1.2	1.5 n/a	75#	6.2# 6.3# 6# 6#	Multi-stemmed at 1.5m with a balanced crown. Occasional pruning wounds. Minor deadwood noted as well as minor decay at the stem junction.	Crown clean to remove the deadwood. Monitor biennially. Low	GOOD	GOOD	LOW	HIGH	40+	B 2
T 82	Semi-mature Silver Birch *Betula pendula*	13	0	0 n/a	26 & 26	4.6 2.8 3.5 3.5#	Twin-stemmed at ground level with a balanced crown and a slight lean to the east. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	LOW	20+	C 2
G 83	Semi-mature Silver Birch *Betula pendula*	To 14	0+	0+ n/a	To 20	See plan	A dense group of trees of reasonable form.	No action required. n/a	GOOD	GOOD	LOW	LOW	20+	C 2
T 84	Semi-mature English Oak *Quercus robur*	13	0	1 N	30	5 4# 4# 3.5#	Single-stemmed and slightly leaning with a balanced crown. No evidence of significant pruning. No major visible defects. Good future potential.	No action required. n/a	GOOD	GOOD	LOW	HIGH	40+	C 2
T 85	Young Goat Willow *Salix caprea*	4	0	0 n/a	14	0 0 3.6 3.5	Multi-stemmed at ground level with an unbalanced crown. No evidence of significant pruning. No major visible defects. Insignificant tree.	No action required. n/a	GOOD	FAIR	LOW	HIGH	10+	C 2
T 86	Early-mature Silver Birch *Betula pendula*	12	2	2 SE	36	0 3# 4# 6#	Single-stemmed and leaning with an unbalanced crown. No evidence of significant pruning. Not fully inspected due to vegetation.	No action required. n/a	GOOD	FAIR	LOW	LOW	20+	C 2
T 87	Mature Goat Willow *Salix caprea*	12	1	1 n/a	80#	6# 6# 6# 6#	Multi-stemmed at 1m with a balanced crown. Occasional pruning wounds. A weak union is present at the stem junction. Minor deadwood noted. Not fully inspected due to vegetation.	Crown clean to remove the deadwood. Monitor biennially. Low	GOOD	FAIR	LOW	HIGH	20+	B 2
T 88	Semi-mature English Oak *Quercus robur*	13	0	1.5 n/a	27	5 0 5# 3	Single-stemmed and leaning with an unbalanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	HIGH	20+	C 2
T 89	Semi-mature Silver Birch *Betula pendula*	9	1	1 n/a	16 & 15	2.8 2 3 1.6	Twin-stemmed at ground level with an unbalanced crown. No evidence of significant pruning.	No action required. n/a	GOOD	GOOD	LOW	LOW	20+	C 2
T 90	Semi-mature Silver Birch *Betula pendula*	10	0.5	0.5 n/a	20 & 18	3.5 3.2 4.2 4.3	Twin-stemmed at ground level with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	LOW	20+	C 2

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 91	Early-mature Goat Willow *Salix caprea*	10	0	0 n/a	45 & 40#	6# 5# 6# 3	A multiple-stemmed tree growing out of the dam side. Crossing branches and minor deadwood noted. Not fully inspected due to location.	Monitor biennially. Low	GOOD	FAIR	LOW	HIGH	20+	C 2
G 92	Semi-mature Hawthorn *Crataegus monogyna*	To 3.5	0+	0+ n/a	To 15#	See plan	Trees growing out of the dam side. Not fully inspected due to location.	No action required. n/a	GOOD	FAIR	LOW	HIGH	20+	C 2
T 93	Young English Oak *Quercus robur*	4.5	0	0 n/a	9	1 1 1 1	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Good future potential.	No action required. n/a	GOOD	GOOD	LOW	HIGH	40+	C 2
G 94	Young to semi-mature Sycamore *Acer pseudoplatanus*	To 6	0+	0+ n/a	To 18#	See plan	Self-seeded tree mass growing against a building. Not fully inspected due to location.	Remove and poison the stumps to prevent re-growth. Low	GOOD	FAIR	LOW	MOD	<10	U
T 95	Early-mature Rowan *Sorbus aucuparia*	11	0	1.5 n/a	28 & 25	4 4 4 4	Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. Many crossing branches noted as well as co-dominant stems.	Monitor biennially. Low	GOOD	FAIR	LOW	MOD	20+	C 2
T 96	Early-mature Japanese Maple *Acer palmatum*	4	1.2	0.8 SE	23	2.8 2.8 2.8 2.8	Multi-stemmed at ground level with a balanced crown. Occasional pruning wounds. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	MOD	40+	C 2
T 97	Early-mature Sycamore *Acer pseudoplatanus*	16	1	2 n/a	40 x 5	6.8 6.8 6.8 6.8	Multi-stemmed at ground level with a balanced crown. Occasional pruning wounds. No major visible defects. Minor tight unions noted at the stem junction.	Monitor biennially. Low	GOOD	FAIR	LOW	MOD	20+	B 2
T 98	Mature Common Ash *Fraxinus excelsior*	17	3	3 n/a	98	10.5# 9# 10# 9#	Situated on adjacent land yet within falling distance of the development area. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. Moderate deadwood throughout. *Inonotus hispidus* (a decay causing fungi) fungal bracket present on an eastern limb. Not fully inspected due to off site location.	Monitor biennially. Low	GOOD	FAIR	LOW	MOD	40+	1 A 2

Appendix 2: Explanation of Tree Descriptions

A2.1 Measurements/ Reference Information

A2.1.1 *REF NUMBER.* All items surveyed are allocated a reference number preceded with a letter, identifying the type of vegetation surveyed: T = an individual tree, G = a group of trees or an area of vegetation, W = woodland, H = a hedgerow.

A2.1.2 *SPECIES: COMMON AND BOTANICAL NAME*. The common and botanical names of the species present are noted. If the species is not clear or identifiable, then a general common name and genus will be noted.

A2.1.3 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, over-mature, veteran or dead.

A2.1.4 *HEIGHT* of the tree is measured in metres from the stem base to the top of the crown.

A2.1.5 *CROWN HEIGHT* is an indication of the height above ground level at which the crown begins.

A2.1.6 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; diameter measurements are taken for each stem. If more than five stems are present, an average stem diameter is taken. If for whatever reason it is not practical to measure multiple-stemmed trees in this way, the diameter is measured close to ground level, just above the root buttress.

A2.1.7 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches to all four cardinal points.

A2.1.8 *HEIGHT AND DIRECTION OF LOWEST BRANCH.* The height and direction of the lowest significant branch is noted because of potential issues relating to clearances and the need for tree pruning.

A2.1.9 *NHBC WATER DEMAND.* The water demand of each tree, as listed in NHBC Standards 2010 Chapter 4.2 ‘Building near trees’. This is included to aid structural engineers, architects and other members of the design team as it determines foundation depth and other considerations with regard to trees.

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A2.2 Evaluations

A2.2.1 *PHYSIOLOGICAL CONDITION* is classed as good, fair, poor, or dead. This is an indication of the health and vitality of the tree and takes into account vigour, presence of disease and dieback.

A2.2.2 *STRUCTURAL CONDITION* is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

A2.2.3 *LIFE EXPECTANCY* is classed as; 0, less than 10 years, 10+ years, 20+ years, or 40 + years. This is an indication of the minimum number of years before removal of the tree is likely to be required.

A2.2.4 *AMENITY VALUE.* A general indication is given in respect to the amenity/landscape value of the tree/group within the surrounding area.

A2.2.5 *PRIORITIES.* A priority rating is given concerning the time periods in which the recommended works should be undertaken. LOW priority works should be undertaken within 12 months of the survey, MOD (moderate) priority works should be undertaken within 6 months and HIGH priority works should be completed as soon as practically possible. If no works are recommended, N/A (not applicable) will be used.

A2.3 Retention Categories

A2.3.1 ***A (marked green on the plan) = Trees of high quality.***

These trees are of high quality and value with a good life expectancy (usually with an estimated remaining life expectancy of 40 years).

A2.3.2 ***B (marked in blue on the plan) = Trees of moderate quality.***

These trees are of moderate quality and value with a reasonable life expectancy (usually with an estimated life expectancy of at least 20 years).

A2.3.3 ***C (marked in grey on the plan) = Trees of low quality.***

These trees are of low quality and value but which are in adequate condition to remain or are young trees with a stem diameter below 15cm (usually with an estimated life expectancy of at least 10 years).

A2.3.4 Trees categorised as retention category ‘A’, ‘B’ or ‘C’ are then justified by being further divided into 3 subcategories:

1 = Mainly arboricultural qualities.

2 = Mainly landscape qualities.

3 = Mainly cultural values, including conservation value.

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A2.3.5 ***U (marked in red on the plan) = Trees usually unsuitable for retention due to poor condition.***

These trees are in such a condition that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. This may be due to any of the following:

1) Failure is likely due to serious, irredeemable, structural defects.
2) Removal of other category U trees will render them exposed and unstable.
3) They are in serious, overall decline or are dead.
4) They are of low quality and suppressing adjacent trees of better quality.
5) Diseases are present which may affect the health of adjacent trees.

These trees should be removed or treated in such a way as to make them safe where they have high ecological value, such as in a woodland setting.

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Appendix 3: General Guidelines

A3.1 All tree work should be undertaken to BS 3998: 2010 '*Recommendations for tree work'* or other recognised industry practice.

A3.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors. They should be covered by adequate public liability insurance.

A3.3 This report is based upon a visual inspection. The consultant shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with the guidelines and the terms listed therein.

A3.4 Any defects seen by a contractor or the employer that were not apparent to the consultant must be brought to the consultant's attention immediately.

A3.5 No liability can be accepted by JCA in respect of the trees unless the recommendations of this report are carried out under the supervision of JCA and within JCA's timescale.

A3.6 It is advisable to have trees inspected by an arboricultural consultant on a regular basis.

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Appendix 4: Glossary of Terms & Abbreviations

Arboriculture The cultivation of trees in order to produce individual specimens of the greatest ornament, for shelter or any primary purpose other than the production of timber or fruit.

Canker Disease damaged area of a tree, usually caused by fungus or bacteria affecting the bark.

Co-dominant stem A stem which has grown in direct competition to the main stem and which has formed a substantial size influencing the appearance of the tree.

Crown lift The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles etc.

Crown reduction The reduction of a tree's height and spread while preserving its natural shape.

Crown thin The removal of some of the density of a tree's crown**,** usually 5-25% allowing more light through its canopy and reducing wind resistance.

Deadwood Either dead branches, or a procedure involving the removal of dead, dying and diseased branches.

Dieback Where branches are beginning to show signs of death usually at the tips in the crown.

Epicormic shoots Small branches that grow in clusters around the base of the stem of a tree or within the crown. This is usually as a result of bad pruning or some other stress factor, although can be a natural growth pattern for some species of tree (eg Lime species).

Formative pruning The pruning of a tree to remove weaknesses and irregularities which may lead to future problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown and to encourage an optimal canopy shape.

Included bark Where the bark on two adjoining branches or stems is growing tight together, forming a joint with limited physical strength.

Pollarding A method of tree management in which the main trunk and principle branches of the tree are cut to the same height, and the resulting branches are then cropped on a regular basis.

RPA Root Protection Area – Theoretical rooting area of a tree as defined in BS5837:2012 *Trees in relation to construction.*

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Appendix 5: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking *F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.* Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical Coordinator

Toby Thwaites *BSc (Hons), HND (Arboriculture).* Toby joined JCA in 1998 after graduating in Ecology at the University of Huddersfield and has since graduated in Arboriculture at the University of Central Lancashire. A former JCA team leader and Consulting Arboriculturist, Toby is now Technical Coordinator and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Arboriculture

Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A).* Toby joined JCA after spending 6 years working as a senior climber for various Arboricultural contractors in the East Midlands and the South-West. He has gained the Level 2 Certificate in Arboriculture (RFS) and an Arboricultural Technicians Certificate. Toby is LANTRA certified in Professional Tree Inspection.

Scott Reid ***ND*** *(Arboriculture and Forestry).* Scott joined JCA after working with other consultancy companies in the south of England. He specialises in trees in relation to development and holds a National Diploma, various NPTC qualifications and is currently studying for his Level 4 Diploma in Arboriculture.

Andrew Bussey. Andrew joined JCA having spent 12 years working as a tree surgeon for various private companies and a Local Authority. He has various NPTC qualifications, is QTRA qualified and is currently studying for his Arboricultural Technicians Certificate.

Phil Humeniuk *FdSc (Arboriculture).* Phil joined JCA having spent 3 years working for various tree surgery companies and as a Tree Officer for a Local Authority. He also has several years experience working as a consultant both for JCA and for another consultancy. Phil obtained his foundation degree in Arboriculture at the University of Central Lancashire and has various NPTC's and is LANTRA certified in Professional Tree Inspection.

Emily Wilde *FdSc (Arboriculture).* Emily joined JCA having previously worked for various private tree surgery and consultancy companies over the past 8 years. She initially obtained a ND in Forestry & Arboriculture, followed by a FdSc in Arboriculture at Askham Bryan College, York. Emily has various NPTC certificates and is QTRA qualified.

Mick Eltringham *ND (Forestry).* Mick joined JCA after spending 12 years working in the industry for various private companies in the north and south of England. He has also spent the last five years working as a consultant for two canopy research projects in the Amazon Rainforest, working with Oxford University and the University of Arizona. He has various NPTC Qualifications.

Charles Cocking. Charles joined JCA in January 2014 as an Apprentice having previously worked for the company on a part time basis during 2013. In between his roles at JCA, Charles will be studying at Askham Bryan College, York, undertaking a two year course in order to obtain a Foundation Degree in Arboriculture (FdSc Arboriculture).

Consulting Staff: Ecology

David Ryder David joined JCA as our in-house ecologist. He brings with him over 8 years experience in the field of ecological consultancy. David holds a Natural England Licence to disturb and handle bats and is currently undergoing assessment for Chartered Institute of Ecology & Environmental Management (CIEEM) membership.

Josie Collier *BSc (Hons) Ecology.* Josie joined JCA's ecology department and brings with her a degree in Ecology and Environmental Biology from the University of Leeds. Josie has gained experience from working with a local authority and is seeking to become a member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

David Bodenham *BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.* David joined JCA as an addition to the expanding ecology department. An advocate of evidence based conservation, he studied Zoology (Ind) at University and moved onto an MSc in Biodiversity and Conservation where he gained the myriad of skills needed as an ecologist. With over 7 years of experience, David specialises in bat and amphibian ecology.

Freya Olsson *BSc (Hons) Biology and Geography (within Natural Sciences).* Freya joined the Ecology department in July 2016 following a 6 week placement in the summer of 2015. Freya studied at Durham University gaining a degree in Biology and Geography (Joint Honours within Natural Sciences). She has extensive field and analytical experience, giving her the core skills required as an ecologist.

Administrative Staff

Sue Guest Administrative Team Leader.
Simeon Haigh *BSc (Hons).* IT Officer.
Lorraine Spink Administrative Assistant.
Yasmin Shahzad Administrative Assistant.
Catherine Cocking Accounts Manager.

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T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38 T39 T40 T41 T42 T43 T46 T47 T48 T49 T50 T51 T52 T53 T54 T55 T56 T57 T58 T59 T60 T61 T62 T63 T67 T68 T69 T70 T71 T72 T73 T74 T75 T76 T77 T78 T79 T80 T81 T82 T83 T84 T85 T86 T87 T88 T89 T90 T91 T92 T93 T95 T96 T97 T98

G2 G3 G4 G9 G18 G44 G45 G48 G59 G60 G62 G64 G65 G69 G70 G73 G80 G83 G92 G94

H66

ESTIMATED GROUP LOCATION

ESTIMATED TREE LOCATION

G44, G45 & G48 ESTIMATED GROUP LOCATIONS

Root Protection Area: RPA

THE ROOT PROTECTION AREA (RPA) INDICATES THE LIKELY ROOTING ZONE OF A TREE. THE RPA SHOULD IDEALLY REMAIN UNDISTURBED IF A TREE IS TO BE RETAINED.

THE DEVELOPMENT PROPOSALS SHOULD THEREFORE BE DESIGNED TO AVOID THE RPA OF ANY TREE WHICH IS TO BE RETAINED.

IF IT IS NECESSARY FOR THE DEVELOPMENT TO ENCROACH INTO THE RPA OF A TREE WHICH IS TO BE RETAINED THEN SPECIALIST CONSTRUCTION TECHNIQUES AND MATERIALS MUST BE CONSIDERED.

PLEASE NOTE THAT ON THIS OCCASION, DUE TO THE NUMBER OF VARIABLES IN GROUND LEVEL AND IN THE AREAS OF HARD STANDING WHICH ARE DIFFICULT TO DETERMINE, ROOT PROTECTION AREAS HAVE NOT BEEN OFF-SET.

HOWEVER; WHERE APPLICABLE, RPA'S HAVE BEEN BLANKED OUT IN ORDER TO TAKE INTO ACCOUNT BUILDINGS, STEEP BANKINGS AND WATER FEATURES.

0 1 5 10 15 20 30 40 50 metres

Appendix 6: Tree Constraints Plan

ADDRESS: Washpit Mills, Choppards Lane, Holmfirth, West Yorkshire, HD9 2RD.
JCA REF: 13024-A/AJB.

SCALE : 1:500	PAPER SIZE : A1
SURVEYED BY: XX	DRAWN BY: XX	APPROVED BY: FO

BRITISH STANDARD 5837:2012: 4.5 RETENTION CATEGORIES

Detailed definitions of these catagories are at Appendix 2 of our report. N.B. These categories do not necessarily represent or correspond to recommendations for action made in this report.

	CATEGORY A: 'RETENTION MOST DESIRABLE'
	CATEGORY B: 'RETENTION DESIRABLE'
	CATEGORY C: 'TREE WHICH COULD BE RETAINED'
	CATEGORY U: 'TREE FOR REMOVAL'
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA

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0 1 10 20 30 40 50 100 metres

Appendix 7: Development Proposals

ADDRESS: Washpit Mills, Choppards Lane, Holmfirth, West Yorkshire, HD9 2RD.
JCA REF: 13024-A/AJB.

SCALE : 1:1000	PAPER SIZE : A2

	TREE TO BE RETAINED
	TREE TO BE REMOVED
•	STEM OF TREE TO BE RETAINED
•	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA

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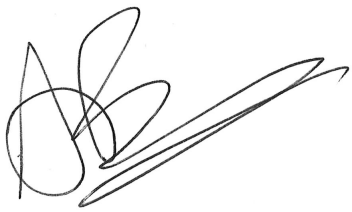
Arboricultural & Forestry Consultants

I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

Signed



.....

Andrew Bussey.

10th October 2016

For and on behalf of ***JCA Ltd***

Registered Office:

Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 OAD

Tel. 01422 376335
Fax. 01422 376232
Email: jon@jcaac.com

www.jcaac.com

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Professional Tree and Ecology Advice nationwide

ARBORICULTURAL SERVICES

Guidance for Architects and Developers

- British Standard 5837 Tree Surveys
- Arboricultural Implication Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected Species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)

HEAD QUARTERS:

Unit 80 Bowers Mill,
Branch Road,
Barkisland,
Halifax, HX4 0AD.

Tel: 01422 376335
Mobile: 07778 391986
Email: jon@jcaac.com
Website: www.jcaac.com

Company Reg No. 05005041
VAT No. 686 4674 78