ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
894 Huddersfield Road
Mirfield
West Yorkshire
WF14 9HS

Client:
Leyton Homes (Mirfield) Ltd.

Client Address:
307 Walsall Road
Birmingham
West Midlands
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JCA Ref:
18064-A/AJB

JCA Limited
Arboricultural & Ecological Consultants

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 This Arboricultural Impact Assessment has been prepared for the proposed development at **894 Huddersfield Road**, **Mirfield**.

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

1.2 Terms of Reference

1.2.1 JCA Limited has been instructed by **Leyton Homees (Mirfield) Ltd.** to prepare an Arboricultural Impact Assessment, based on our Arboricultural Report dated 20th January 2022 (JCA Ref: **18064/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 We have been supplied with **Drawing Ref. 894 Huddersfield Rd - 27 July 2022**, which details the proposed development. The tree data has been overlaid onto the proposed designs to create the Arboricultural Implications 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 Arboricultural Implications Plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The original tree survey took place during January 2022 and was conducted by **Andrew Bussey** *LANTRA Accredited PTI.*

2. Tree Descriptions and Recommendations

2.1 The tree information recorded during the original survey is detailed 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 proposed development will consist of the construction of a residential housing estate.

3.1.2 All tree works required to accommodate the proposals are detailed in *italics* in the recommendation columns of the tables at **Appendix 1**. Please note that any works recommended during the initial survey are also listed in these tables in non-italics.

3.2 Tree Removals for Development

3.2.1 In order to facilitate the proposed development, it will be necessary to remove **T1, T10, G16** and **T18**. Of these, **T10** falls into retention category 'B' and **T1, G16** and **T18** fall into retention category 'C'.

3.2.2 Whilst the development will require the removal of some trees within the site, it should be noted that a tree planting scheme is included within the proposals (as indicated at **Appendix 7**). 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 T29 shall require pruning in order to provide clearance between its canopy and the proposed building and to facilitate construction access and the required scaffolding.

3.3.2 Where the footprint of the proposed hard surfaces pass within the RPA of **T4, T9, T11** and **H33** (as shown in blue shade on the plan at **Appendix 7**), root pruning will be required, under the supervision of an appointed arboriculturist. Root pruning will accommodate the proposed structure structures whilst preventing any 'ripping' damage, a problem commonly associated with mechanical excavations.

3.4 Temporary Protection Measures

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 will be located outside, and diverted away from, the RPAs of the retained trees wherever possible. Where this is not practicable, 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.

3.5 Implications for Retained Trees

3.5.1 Works within the RPA

3.5.1.1 Where the proposals require work to be undertaken within the RPA of a tree which is to be retained, specialist measures must be adopted during the construction phase to avoid ground compaction and minimise root damage.

3.5.1.2 Such areas are highlighted in **blue** on the Arboricultural Implications Plan at **Appendix 7**.

3.5.2 Demolition

3.5.2.1 In order to meet the needs of this proposal, demolition of existing structure is required adjacent to **T17, T19, T20, T21** and **T22** (as shown in a blue line on the plan at **Appendix 7**). Due to this, specialist demolition methods will be required to prevent damage. This may include collapsing structures in a direction away from trees, utilising hand digging methods, working within RPAs etc. Full details on such methods should be included in an Arboricultural Method Statement, including where arboricultural supervision is necessary.

3.5.3 Access/Construction of Hard Surfacing

3.5.3.1 Proposed hard surfacing is located within the RPA of **T4, T9, T11** and **H33** (as shown in blue shade on the plan at **Appendix 7**). In these areas, root pruning will be undertaken under the supervision of an appointed arboriculturist to prevent 'ripping' damage, which is commonly associated with mechanical excavation.

3.5.4 Construction / Foundation Design

3.5.4.1 Prior to construction, all protective measures required and listed in **Section 3.4** (Temporary Protection Measures) must to be correctly installed to prevent unnecessary damage to tree during the construction phase.

3.5.4.2 The footprints of the proposed buildings do 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.

3.5.4.3 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.

3.5.5 Utilities

3.5.5.1 Details on service routes have not been provided to JCA 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.

3.5.5.2 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.

3.5.6 Site Compound

3.5.6.1 The site compound, which typically includes the mess facilities, toilets, storage of materials and parking, must be located away from all of the trees and outside their RPAs. Care should also be taken to prevent soil contamination from chemical spillages, including petrol, diesel and oils.

3.5.7 Landscaping

3.5.7.1 Proposed fence lines may be constructed within the RPA of a tree if necessary, providing that appropriate considerations are taken with regards to the well-being of the effected tree. As such, no continual trenching is to be undertaken within the RPA (e.g. for small walls onto which panel fencing is installed). Excavations must be kept to a minimum and therefore only fence designs requiring intermittent posts will be acceptable within the RPA. Fences should also be kept as far away from the main stems of the trees as is reasonably possible.

3.5.7.2 Any patios, garden paths or other hard surfaces within RPAs which may not be shown on the projected layout (**Appendix 7)**, may be constructed using no-dig techniques, 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.

3.5.7.3 No ground level changes are to be undertaken within the RPAs 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 must be communicated to these parties at the earliest practical convenience.

3.6 Remedial Measures

3.6.1 Part of the proposed development will encroach into the RPA's **T4, T9, T11** and **H33**, resulting in possible root loss. It would therefore be prudent to apply appropriate mycorrhizae fungi to the soils around these trees after the construction phase is complete. Certain mycorrhiza fungi form a symbiotic relationship with tree roots. A tree root associated with such mycorrhiza will take up nutrients more effectively and this will therefore help the tree to produce new roots more effectively, so benefitting their recovery.

4. Conclusions

4.1 It is assumed that **T4, T5, T6, T7, T8, T9, T10, T11, T25, T26, T27** and **T29** are protected by a Tree Preservation Order.

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

4.3 The proposed development will consist of the construction of a residential housing estate.

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

4.5 **T1, T10, G16** and **T18** require removal and **T4, T9, T11, T29** and **H33** require pruning/root pruning in order to facilitate the proposed development. Tree works required to accommodate the proposals are detailed in ***italics*** in the tables at **Appendix 1**. Those trees requiring removal are shown in red on the Arboricultural Implications Plan at **Appendix 7**, where the proposals can also be viewed.

4.6 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.

4.7 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**.

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

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	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 1	Semi-mature Beech *Fagus sylvatica*	7	1	1 n/a	22	3 3 3 3	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. *Remove to facilitate the proposed development.*	GOOD	GOOD	LOW	HIGH	40+	C 1
G 2	Semi-mature Mixed species *Details in observations*	To 9	0+	0+ n/a	To 20#	See Plan	A dense group of Cypress, Holly, Silver Birch, Wild Cherry, Spotted Laurel and Mahonia.	No action required.	GOOD	GOOD	LOW	LOW TO HIGH	20+	C 2
T 3	Semi-mature Sycamore *Acer pseudoplatanus*	4	1.5	1.5 n/a	13	0 1 1.8 2	Single-stemmed and leaning with an unbalanced crown. Suppressed by T4. Occasional pruning wounds. No major visible defects.	No action required.	GOOD	FAIR	LOW	MOD	10+	C 1
T 4	Mature Common Oak *Quercus robur*	15	1	1 S	68#	7.3 3.9 5.1 7.8	Twin-stemmed at 6m with an unbalanced crown. Overhanging the driveway. Occasional pruning wounds, moderate deadwood and epicormic growth to the main stem noted. The main scaffold branches of the mid to high crown appear contorted although the unions appear to be sound. Ivy prevented a detailed inspection.	Crown clean to remove deadwood throughout (**low priority**). *Root prune the area shown in blue shade on the plan at **Appendix 7** under arboricultural supervision.*	GOOD	FAIR	MOD	HIGH	20-40	1 B 2
T 5	Early-mature Myrobalan Plum *Prunus cerasifera*	4.8	0.2	0.2 n/a	30#	1.8 3 3.4 2.6	Twin-stemmed at 0.5m with an unbalanced crown. Occasional pruning wounds. Ivy prevented a detailed inspection.	No action required.	GOOD	FAIR	LOW	MOD	10+	C 1
T 6	Early-mature Sycamore *Acer pseudoplatanus*	16	4	4 S	49	2 4 6 5.2	Single-stemmed and vertical with an unbalanced crown. Overhanging the driveway. Occasional pruning wounds and epicormic growth to the main stem noted. Minor cavity noted on the main stem. No major visible defects.	No action required.	GOOD	GOOD	MOD	MOD	20-40	1 B 2
T 7	Mature Turkey Oak *Quercus cerris*	17	7	7 S	61	6.5 6 6 6	Single-stemmed and slightly leaning with a balanced crown. Overhanging the driveway. Occasional pruning wounds. Minor deadwood. Epicormic growth to the main stem. No major visible defects.	No action required.	GOOD	GOOD	MOD	HIGH	40+	1 B 2
T 8	Mature Turkey Oak *Quercus cerris*	18	6	6 SE	75	7.5 #8.5 7.5 8	Single-stemmed and vertical with a balanced crown. Overhanging the neighbouring building. Multiple pruning wounds due to crown lifting. Minor deadwood. Epicormic growth to main stem. No major visible defects.	Crown clean to remove the epicormic growth to main stem and the deadwood throughout (**low priority**).	GOOD	GOOD	MOD	HIGH	40+	1 B 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	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 9	Mature Sycamore *Acer pseudoplatanus*	18	4	4 n/a	76#	7 7 7 6	Single-stemmed and slightly leaning with a balanced crown. Occasional pruning wounds. Epicormic growth to main stem and base prevented a detailed inspection. No major visible defects apparent.	Crown clean to remove the epicormic growth to main stem and base and re-inspect (**low priority**). *Root prune the area shown in blue shade on the plan at **Appendix 7** under arboricultural supervision.*	GOOD	GOOD	MOD	MOD	40+	1 B 2
T 10	Mature Sycamore *Acer pseudoplatanus*	17	6	7 SE	75	8.5 7.5 10 8	Single-stemmed and vertical with a balanced crown. Occasional pruning wounds. Minor decay cavities noted on old pruning wounds. Minor deadwood. Epicormic growth to main stem and the base prevented a detailed inspection.	Crown clean to remove the epicormic growth to main stem and the deadwood throughout. Monitor decay cavities biennially (**low priority**). *Remove to facilitate the proposed development.*	GOOD	GOOD	MOD	MOD	40+	1 B 2
T 11	Early-mature Cedar of Lebanon *Cedrus libani*	13	0.5	0.5 W	56	5 5 5 5	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required. *Root prune the area shown in blue shade on the plan at **Appendix 7** under arboricultural supervision.*	GOOD	GOOD	MOD	MOD	40+	1 B 2
T 12	Semi-mature Japanese Maple *Acer palmatum*	4	0	0 SE	12	3 0.6 2.8 3.5	Single-stemmed and leaning with an unbalanced crown. Occasional pruning wounds. No major visible defects.	No action required.	GOOD	GOOD	LOW	MOD	10+	C 1
T 13	Young Cypress sp. *Cupressus sp.*	6	0	0 n/a	15	1.2 1.2 1.2 1.2	Multi-stemmed at ground level with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required.	GOOD	GOOD	LOW	HIGH	10+	C 1
T 14	Early-mature Horse Chestnut *Aesculus hippocastanum*	14	0	0 SE	#55	#5 #2 #5 #3	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Single-stemmed and leaning with an unbalanced crown. No evidence of significant pruning. Bark damage due to Bleeding Canker of Horse Chestnut noted.	No action required due to off-site location.	GOOD	FAIR	LOW	MOD	10+	C 1
T 15	Early-mature Sycamore *Acer pseudoplatanus*	13	5	5 n/a	#42	#4 #2 #1.5 #3	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Single-stemmed and leaning with an unbalanced crown. No evidence of significant pruning. Deadwood and dieback noted.	Monitor biennially (**low priority**).	FAIR	FAIR	LOW	MOD	10+	C 1
G 16	Early-mature Leylandii *X Cupressocyparis leylandii*	To 12	0	0 n/a	To 45	See Plan	A line of 6 vertical and balanced trees which are of low value. No major visible defects.	No action required. *Remove to facilitate the proposed development .*	GOOD	GOOD	LOW	HIGH	10+	C 1

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	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 17	Mature Beech *Fagus sylvatica*	17	3	0 NW	86#	7# 8# 13# 6#	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects apparent.	No action required.	GOOD	GOOD	LOW	MOD	40+	1 B 2
T 18	Semi-mature Elder *Sambucus nigra*	3	0	0 n/a	18	1 1 2.5 2.5	Single-stemmed and vertical with an unbalanced crown.	No action required. *Remove to facilitate the proposed development .*	GOOD	FAIR	LOW	LOW	20+	C 1
T 19	Mature Horse Chestnut *Aesculus hippocastanum*	16	3	3 NE	72#	#7.5 #3 #7 4#	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Single-stemmed and vertical with an unbalanced crown. No evidence of significant pruning. No major visible defects apparent.	No action required.	GOOD	GOOD	LOW	MOD	40+	1 B 2
T 20	Semi-mature Sycamore *Acer pseudoplatanus*	11	2	2 n/a	23#	5# #3 3.5# #2	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Single-stemmed and leaning with an unbalanced crown and a poor form. No evidence of significant pruning.	No action required.	GOOD	GOOD	LOW	MOD	10+	C 1
T 21	Mature Sycamore *Acer pseudoplatanus*	16	3	3 NE	#60	#6 #3 6.5# #6	Situated on adjacent land and covered in Ivy, as such a full detailed inspection was not possible. Single-stemmed and vertical with an unbalanced crown. Occasional pruning wounds.	No action required due to off site location.	GOOD	GOOD	LOW	MOD	20-40	1 B 2
T 22	Mature Sycamore *Acer pseudoplatanus*	16	4	4 NE	#65	#7 #5 #6 #3	Situated on adjacent land and covered in Ivy, as such a full detailed inspection was not possible. Single-stemmed and vertical with an unbalanced crown. Occasional pruning wounds.	No action required due to off site location.	GOOD	GOOD	LOW	MOD	20-40	1 B 2
T 23	Early-mature Sycamore *Acer pseudoplatanus*	15	8	8 n/a	#48	4# 2# 4# #0	Situated on adjacent land and covered in Ivy, as such a full detailed inspection was not possible. Single-stemmed and leaning with an unbalanced crown. No evidence of significant pruning.	No action required due to off site location.	GOOD	GOOD	LOW	MOD	20-40	C 1
T 24	Early-mature Sycamore *Acer pseudoplatanus*	15	6	6 n/a	32#	3# 2# 3# 2#	Situated on adjacent land and covered in Ivy, as such a full detailed inspection was not possible. Single-stemmed and leaning with an unbalanced crown and a poor form. No evidence of significant pruning.	No action required due to off site location.	GOOD	GOOD	LOW	MOD	10+	C 1
T 25	Mature Horse Chestnut *Aesculus hippocastanum*	6	2	2 E	68	0 0 2 0	A stem remaining after the crown has snapped out.	Remove (**moderate priority**).	POOR	POOR	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	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 26	Mature Horse Chestnut *Aesculus hippocastanum*	15	1	1 n/a	97	#7 #8 5.2 #8	Twin-stemmed at 2m with a balanced crown. Occasional pruning wounds. Moderate symptoms of Bleeding Canker of Horse Chestnut indicated by brown lesions and cracking bark throughout. Honey Fungus rhizomorphs present at the base.	Remove (**moderate priority**).	FAIR	FAIR	LOW	MOD	<10	U
T 27	Mature Horse Chestnut *Aesculus hippocastanum*	15	1	1 n/a	90	7.5 6.8 7.6 7	Single-stemmed and leaning with a balanced crown. Occasional pruning wounds. Severe Bleeding Canker of Horse Chestnut has led to the structural decline of this tree. Many snapped out limbs noted as well as multiple brown lesions.	Remove (**moderate priority**).	POOR	POOR	LOW	MOD	<10	U
T 28	Mature Common Ash *Fraxinus excelsior*	16	7	4 NW	#65	7# 7# 5 6	Situated on adjacent land, as such, a full detailed inspection was not possible due to limited access. Twin-stemmed at 3m with a slightly unbalanced crown. No evidence of significant pruning.	No action required.	GOOD	GOOD	LOW	MOD	20-40	1 B 2
T 29	Mature Sycamore *Acer pseudoplatanus*	20	4	8 n/a	80	9 7 10 8	Twin-stemmed at 6m with a balanced crown. Occasional pruning wounds. No major visible defects. Moderate deadwood. Minor decay cavity to old pruning wound at 3m.	Crown clean to remove the deadwood. Monitor biennially (**low priority**). *Prune the eastern/south-eastern canopy back by 2 metres in order provide clearance for the proposed building and construction access.*	GOOD	GOOD	LOW	MOD	20-40	1 B 2
T 30	Early-mature Sycamore *Acer pseudoplatanus*	15	1	1 n/a	#34	#4 #4 4.6 4.3	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. No major visible defects.	No action required.	GOOD	GOOD	LOW	MOD	20-40	C 1
T 31	Early-mature Common Oak *Quercus robur*	13	1	3 S	46	#3 #5 5.3 6.5	Single-stemmed and vertical with a balanced crown. No evidence of significant pruning. A significant bark wound with decay present on the main stem.	Monitor biennially (**low priority**).	GOOD	GOOD	LOW	HIGH	10-20	1 C 2
T 32	Early-mature Common Oak *Quercus robur*	17	4	4 W	60 & 45#	5# 5# 9# 9#	Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. Twin-stemmed at 1m with a balanced crown.	No action required.	GOOD	GOOD	LOW	HIGH	40+	1 B 2
H 33	Semi-mature Leylandii *X Cupressocyparis leylandii*	To 8	0	0 n/a	To #25	See Plan	An unmaintained hedge. Situated on adjacent land, as such, a full detailed inspection was not possible due to restricted access. No major visible defects apparent.	No action required. *Root prune the area shown in blue shade on the plan at **Appendix 7** under arboricultural supervision.*	GOOD	GOOD	LOW	HIGH	20-40	C 1
T 34	Semi-mature Norway Spruce	13	3	3	36#	4.5# 4.5# 4.5#	Situated on adjacent land. Single-stemmed and vertical with a balanced crown. Multiple pruning wounds due to crown lifting. Not fully inspected	No action required.	GOOD	GOOD	LOW	MOD	20-40	1 B 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	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
	Picea abies			n/a		4.5#	due to limited access.							

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	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 35	Young Yew *Taxus baccata*	4	0	0 n/a	15	#0.8 #0.8 #0.8 #0.8	Situated on adjacent land. Multi-stemmed at 0.5m with a balanced crown. No evidence of significant pruning. Not fully inspected due to limited access	No action required.	GOOD	GOOD	LOW	MOD	20-40	C 1

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.

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 Tree Constraints 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 Tree Constraints 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 Tree Constraints 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.

A2.3.5 ***U (marked in red on the Tree Constraints 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.

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.

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 5-15% 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).

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.

Remedial pruning The removal of old stubs, deadwood, epicormic growth, rubbing or crossing branches and other unwanted items from the tree's crown. Sometimes referred to as crown cleaning.

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

Topping Topping is a form of pruning that removes terminal growth leaving a 'stub' cut end. Topping can cause serious health problems to a tree.

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 Director

Toby Thwaites *BSc (Hons), HND (Arboriculture), MArborA.*. 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 Director and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Operations Director

Charles Cocking *FdSc (Arboriculture), MArborA.* Charles joined JCA in January 2014 having previously worked for the company on a part time basis during 2013. Charles obtained his Foundation Degree in Arboriculture at Askham Bryan College, York, and is a Professional Member of the Arboricultural Association. Charles now oversees all internal operations for the company.

Consulting Staff: Arboriculture

Andrew Bussey. Andrew started working in consultancy at JCA in 2006 having spent 12 years working as an arborist for various private companies before joining a Local Authority forestry team. He has various NPTC qualifications, is QTRA qualified and is a LANTRA Accredited Professional Tree Inspector.

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.

Dan Kemp *FdSc (Arboriculture).* Dan joined JCA with nearly 30 years' experience in arboriculture. He worked as a London Tree Officer for 12 years and in several arboricultural and horticultural management posts, specialising particularly in tree risk assessments and tree related subsidence.

Ryan Bateman *BSc (Hons), FdSc (Arboriculture), TechArborA.* Ryan joined JCA in 2020 after working as a Lecturer on the Foundation Degree in Arboriculture at Askham Bryan College in York. Ryan has both practical skills, NPTC qualifications and theoretical knowledge and owned his own contracting business prior to, and whilst working as a lecturer.

Luke Wickham *FdSc (Arboriculture and Urban Forestry).* Luke joined JCA in 2021 after obtaining his Foundation Degree in Arboriculture and Urban Forestry at Askham Bryan College. Having previously worked within the industry for the past 4 years, running his own small business and sub-contracting for local firms, Luke brings a sound knowledge and understanding of the practical and academic sides of the industry.

Hazel Irving *FdSc (Arboriculture and Urban Forestry.* Hazel joined JCA in 2022 after obtaining her Foundation Degree in Arboriculture and Urban Forestry at Askham Bryan College. She has previously worked in the horticulture industry, volunteered with the National Trust and Yorkshire Arboretum and completed the 2021 student research internship at the RHS Wisley Plant Health Centre.

Consulting Staff: Ecology

Adam West, Principal Ecologist *BSc (Hons) Animal and Wildlife Management*. Adam joined JCA to lead the expanding ecology department. Having returned to education as a mature student, Adam studied Countryside Management for two years before undertaking a Batchelor's degree, for which he was awarded First Class Honours. Adam has many years' experience in ecological consultancy, working on projects ranging from individual planning applications to national infrastructure projects. Adam holds a Natural England Level 1 great crested newt survey class licence, a Natural England Level 2 bat survey class licence (and the Scottish and Welsh equivalents) and a CSCS card.

Poppy McDermott, Seasonal Ecologist *BSc (Hons) Ecology and Conservation.* Poppy joined JCA after completing her degree for three years at Nottingham Trent University in Ecology and Conservation. She has gained practical experience in protected species surveying and report writing whilst at university and is hoping to further develop these skills and consultancy experience whilst at JCA.

Administrative Staff

Catherine Cocking Accounts Manager.
Kelly Saunders Accounts Assistant.
Lorraine Spink Administrative Assistant.
Lisa Beedham Marketing Manager.

ESTIMATED TREE LOCATIONS

T32

T30

T31

T28

T26

T29

T27

T25

T24

T23

T18: ESTIMATED TREE LOCATION

H33

T22

T21

ESTIMATED TREE LOCATIONS

T20

T19

T17

G16

T15

T14

T34

T35

ESTIMATED TREE LOCATION

T13

T11

ESTIMATED TREE LOCATIONS

T12

T9

T10

T8

T7

T6

T5

T4

T3

G2: ESTIMATED GROUP LOCATION

T1: ESTIMATED TREE LOCATION

N

W

E

S

Appendix 6: Tree Constraints Plan

Address: 894 Huddersfield Road, Mirfield, West Yorkshire, WF14 9HS. JCA Ref: 18064-A/AJB.

SCALE : 1:500	PAPER SIZE : A3

SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: LW

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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THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 18064-A/AJB)

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.

0 1 5 10 15 20 30 40 50 metres

Appendix 7: Arboricultural Implications Plan

Address: 894 Huddersfield Road, Mirfield, West Yorkshire, WF14 9HS.
JCA Ref: 18064-A/AJB.

SCALE : 1:500	PAPER SIZE : A3

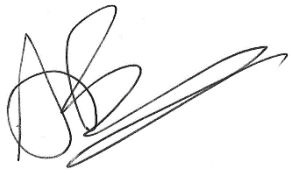
	TREE TO BE RETAINED
	TREE TO BE REMOVED
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA
	ROOT PROTECTION AREA ENCROACHED BY THE PROPOSED DEVELOPMENT WHERE ROOT PRUNING UNDER ARBORICULTURAL SUPERVISION MUST BE UNDERTAKEN
	PROPOSED NEW TREE PLANTING
	STRUCTURE TO BE DEMOLISHED

JCA Limited
Arboricultural & Ecological Consultants

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 18064-A/AJB)

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 *LANTRA Accredited PTI.*

8th August 2022

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

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Professional Tree and Ecology Advice nationwide

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- Arboricultural Method Statements (AMS)

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- Ancient Woodland Management
- Veteran Tree Management

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- 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)

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