ARBORICULTURAL REPORT
to BS 5837:2012
at
Land at Church Lane
Hoylandswaine
Penistone
South Yorkshire
S36 7JQ

Client:
Barratt Homes and David Wilson Homes

Client Address:
Vico Court
Ring Road
Lower Wortley
Leeds
LS12 6AN

Client Contact:
0113 2205193 (Tel)
0113 2205192 (Fax)

JCA Ref:
11385/MR

JCA Limited

Arboricultural Consultants

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 A report is required at **Land at Church Lane, Hoylandswaine, Penistone;** to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.2 Terms of Reference

1.2.1 I am instructed by **Barratt Homes** and **David Wilson Homes**, to visit the site and prepare my findings in a report.

1.2.2 For this purpose I have been supplied with a topographical survey, Drawing No. **S7920**.

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.*

1.3.2 Preliminary recommendations are given with a view to the long-term management of a sustainable tree cover.

1.3.3 Where applicable trees outside the site boundary, but close enough to be affected by the proposed development, are included.

1.4 Survey Details

1.4.1 The survey took place during the month of December 2013.

The survey was conducted by Michelle Ryan *BSc (Hons) Arboriculture.*

1.4.2 Inspection was made at ground level. Further investigation, such as climbed inspections or decay detection surveys, may be recommended where appropriate.

1.4.3 Measurements were obtained using clinometers, specialist tapes and electronic distometers. Where this was not possible measurements were estimated.

2. Site Description

2.1 Land Use

2.1.1 The southern field is currently used as a paddock, with the central and most northerly fields used for crop production. Directly east of the site lies a Church and residential housing, beyond the east and southern site boundary. The site is bordered directly north and east by agricultural fields.

2.2 Topography

2.2.1 The site slopes gently from the south down towards the northern boundary

2.3 Treescape

2.3.1 South-east of the site lies a small residential area containing the occasional mature garden tree. The remaining land use comprises predominantly land associated with agricultural practises; bordered by the occasional mature hedgerow trees. The trees on this site have a moderate impact on the local treescape.

2.4 Visual Amenity Value

2.4.1 The trees on site collectively provide a reasonable visual amenity to the surrounding area. Occasional specimens have a high amenity value e.g. **G18**.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from young to mature. However, the trees were predominantly semi-mature and mature.

2.6 Species Diversity

2.6.1 Species surveyed include Sycamore, Ash, Oak, Elder, Wych Elm, Hawthorn, Silver Birch, Holly, Lime, Horse Chestnut and Cypress. The predominant species were Oak, Ash and Hawthorn, with other species being occasional specimens.

3. Status of the Trees

3.1 A check was made on 4th December 2013 with: ***Barnsley Council.***

3.2 We are informed that there is no Tree Preservation Order in force on this site and that the site is not within a Conservation Area. However, the trees located within the grounds of St. John the Evangelist's Church (**G15**) are protected as **TPO 27/2008**.

3.3 Before any work is organised, all the necessary steps to get the permission of the Local Planning Authority must be taken.

3.4 ***No work must be done to any trees until permission has been granted.***

4. Tree Descriptions and Recommendations

4.1 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.

5. Discussion

5.1 Tree Condition & Recommended Works

5.1.1 The tree survey revealed a total of 29 items of vegetation (12 individual trees, 13 groups of trees and 4 hedges). Of these, 1 tree and 1 group was identified as retention category 'A', 5 trees, 2 groups and 4 hedges were identified as retention category 'B', 4 trees and 9 groups were identified as retention category 'C' and 2 trees and 1 group was identified as retention category 'U'. Please refer to **Appendix 2** for retention category and definition criteria.

5.1.2 **T2, G16** and **T28** were identified as retention category 'U'. These trees require removal for arboricultural reasons regardless of any on site development, as detailed below:

- **T28** is considered to be unsafe and should be removed as soon as it is reasonably practicable; their removal is of **high priority**.

- **T2** and **G16** have been recommended for removal to prevent them from becoming dangerous; their removal is of **low priority**.

5.1.3 Tree pruning works are recommended for **G18, T19, T25** and **T26** for reasons of public safety, as detailed at **Appendix 1**. The recommended work should be carried out as a matter of **moderate priority.**

5.1.4 The trees within **G18** and **T20** were noted to have structural or physiological defects, as detailed at **Appendix 1.** Although these trees were considered to be in an acceptable condition at the time of the inspection, the defects observed may lead to their early demise or render them unsafe in the future. As such, it is recommended that **G18** be re-inspected in 2 years and **T20** should be re-inspected in 1 year, to assess if their condition is still acceptable.

5.1.5 Where decayed wounds or cavities have been noted, as detailed at **Appendix 1**, further detailed investigations should be undertaken before a decision is made regarding tree retention or removal. A decay detection analysis is therefore recommended (using a Resistograpth or Picus) to determine the extent of the decay and to establish the extent of the tree works required.

5.1.6 Those trees which overhang the public footpaths or public highways, as detailed at **Appendix 1**, shall require future maintenance in order to maintain clearance heights for vehicular or pedestrian traffic. These heights should be 5.6m above a road and 2.5m above a footpath.

5.2 Potential Arboricultural Implications & General Design Advice

5.2.1 The details of the proposed development are not known at present. However, the following comments can be made about the site in terms of its tree cover in relation to a potential development.

5.2.2 There are a number of high and moderate value amenity trees within and bordering this site. They will enhance any proposed development and care should be taken at the design stage to ensure that these trees are retained.

5.2.3 During development the part of the tree most commonly under threat, and most commonly ignored, is the rooting system. When trees are damaged, particularly the roots, their long-term health and stability can be affected. Most development activity can have an impact on the future condition and safety of a tree, and therefore careful planning and management of tree protection should ensure a continued sustainable tree cover with minimal stress to existing trees.

5.2.4 In order to ensure that the retained trees on site are properly protected during the development phase, the tree rooting zones are to be considered. For the purpose of development the rooting zone of the tree is known as the Root Protection Area or RPA. The RPA of each tree or group is marked on the Tree Constraints Plan at **Appendix 6** and represents the rooting zone which, where possible, should remain undisturbed. The protection of retained trees can therefore be achieved by erecting a temporary barrier (based on the RPAs), so creating a **Construction Exclusion Zone**.

5.2.5 Damage caused by any construction activity such as demolition, soil stripping, and provision of services needs to be considered at the design stage. Care must be taken to avoid damage to tree roots when existing structures such as tarmac surfaces are removed within an RPA.

5.2.6 The laying of access roads, driveways, parking areas or any other hard surfaces planned in proximity to retained trees needs to be considered. There are solutions available allowing for the construction of hard surfaces within the RPAs without causing significant damage to the trees.

5.2.7 Boundary walls or other light structures can be constructed without damage to roots through the use of piled foundations rather than the more traditional strip foundations.

5.2.8 The location of drainage and utilities within the RPA can be achieved if need be, using special techniques and supervision.

5.2.9 The position of the site compound is a major consideration. It is recommended that this, which typically includes the site office, facilities, toilets, storage of materials and parking, is located away from trees and outside the RPA.

5.2.10 Consideration must be given to movement of both vehicle and pedestrian traffic. If possible traffic should be diverted away from the RPAs. If this is not possible a range of temporary surfaces are available to distribute the weight of traffic and allow the roots to receive moisture and air.

5.2.11 Generally, the alteration of ground levels within the RPA is not acceptable. However, should ground levels need to be lowered in areas adjacent to trees or within the minimum distance recommended, appropriate measures must be taken to minimise the detrimental effects on the trees and their root systems. With regards to raising levels, it is necessary to maintain adequate supplies of moisture and oxygen through the soil to the tree roots. Therefore, no material must be placed within the RPA without arboricultural advice.

5.2.12 The shade that will be cast by the retained trees must also be considered. Where buildings are to be positioned within the shade cast area of trees, these should be designed in order to maximise light levels. If required, JCA can provide a shade cast prediction plan.

5.2.13 Many development sites contain areas of nature conservation interest. Trees and hedgerows, in particular, provide an important habitat for birds, bats, invertebrates and fungi and appropriate attention needs to be paid to preserving habitats throughout the development process. JCA can provide Ecological Surveys and Bat Surveys where required.

5.2.14 Where a landscape planting scheme is proposed, consideration must be made at the planning stage as to where this is to be implemented on site. Such locations should be protected in order to prevent soil compaction and/or contamination and should therefore form part of the Construction Exclusion Zone. JCA can provide Tree Planting Schemes where required.

6. Conclusions

6.1 The trees surveyed were generally found to be in good condition.

6.2 The trees within **G15** are protected by a Tree Preservation Order, **TPO 27/2008**.

6.3 **Two** trees (**T2 and T28**) and **one** group (**G16**) have been recommended for removal for arboricultural reasons. These are discussed in **Section 5.1.2** and detailed at **Appendix 1**.

6.4 **Three** trees (**T19, T25 and T26**) and **one** group (**G18**) require pruning works for reasons of public safety and to enhance their long term health. These are discussed in **Section 5.1.3** and detailed at **Appendix 1**.

6.5 **One** tree (**T20**) requires a re-inspection in one year and **one** group (**G18**) requires a re-inspection in 2 years as they have structural and/or physiological defects. These are discussed in **Section 5.1.4** and detailed at **Appendix 1**.

6.6 All development work carried out in close proximity to trees must 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.

6.7 Care must be taken at the design stage to ensure that the retained trees are protected. The protection of the retained trees can be achieved by installing a temporary barrier to create a Construction Exclusion Zone (based on the Root Protection Areas). The Root Protection Area of each tree or group is marked on the Tree Constraints Plan at **Appendix 6**.

6.8 Upon instruction JCA Limited 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.

Appendices

Tree Ref.	Age Species *Latin 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	Life Expectancy (yrs)	Retention Category
G 1	Young-Mature Mixed species *#N/A*	To 14	3	2 NW	Av 44	See plan.	Situated on adjacent land. Linear group containing Ash, Oak, Sycamore and Silver Birch. Single and twin-stemmed specimens with unbalanced crowns that overhang the boundary, road. Minor deadwood in crowns. Pruning wounds over the road (healing well). No major visible defects.	No action required.	GOOD	FAIR	MOD	20-40	B
T 2	Mature Ash *Fraxinus excelsior*	13	2.5	2 NW	55	6 4 6 6	Situated on adjacent land and located within G1. Twin-stemmed at 1.8m with included bark. Vertical stem with an unbalanced crown that overhangs the boundary and road. Moderate deadwood and cankers throughout the crown; with vertical cracks in bark on the lower stem.. Occasional pruning wounds and stubs. Limited long term future.	Remove (Low priority).	FAIR	FAIR	LOW	10-20	U
G 3	Early-mature Wych Elm *Ulmus glabra*	To 10	0.5	1 NE	Av 11	See plan.	Situated on adjacent land. Multi-stemmed at bases with slightly unbalanced crowns; overhanging the road. Shrubby forms with crossing branches. Pruning wounds (healing slowly). No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 4	Early-mature Elder *Sambucus nigra*	To 5	0	0 n/a	To 13	See plan.	Situated on adjacent land. Multi-stemmed at ground level with a balanced crown that overhangs the road. Shrubby form typical for species. No major visible defects and in acceptable condition at present.	No action required.	GOOD	GOOD	LOW	20-40	C
G 5	Early-mature Ash & Silver Birch *Fraxinus excelsior & Betula pendula*	To 7	0	0 n/a	# To 13	See plan.	Dense vegetation around bases prevented a detailed inspection. Mixture of multi-stemmed and single-stemmed specimens, all with unbalanced crowns. Previously topped and regrowing well. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 6	Semi-early mature Ash *Fraxinus excelsior*	To 7	1	0 n/a	# To 16	See plan.	Dense vegetation around bases prevented a detailed inspection. Mixture of multi-stemmed and single-stemmed specimens, all with unbalanced crowns. Previously topped and healing well. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 7	Semi-mature and Mature Ash, Oak & Hawthorn *Fraxinus excelsior, Quercus robur & Crataegus monogyna*	5	1	1 n/a	# To 30	See plan.	Partly situated on adjacent land. Dense vegetation around bases prevented a detailed inspection. Single and twin stemmed specimens with balanced crowns. Previously topped and regrowing well. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 8	Early-mature Elder & Hawthorn *Sambucus nigra & Crataegus monogyna*	5	0	0 n/a	# To 12	See plan.	Situated on adjacent land. Dense growth of Brambles in the crown; suppressing the specimens and preventing a detailed inspection. Previously topped and well healed. No obvious major visible defects.	Remove Brambles (Low priority).	FAIR	FAIR	LOW	10-20	C

Tree Ref.	Age Species *Latin 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	Life Expectancy (yrs)	Retention Category
T 9	Mature English Oak *Quercus robur*	4.5	0.5	0 n/a	# 50 at base	6 3 5.5 4.5	Situated on adjacent land. Limited access prevented a detailed inspection. Single-stemmed and vertical with a slightly unbalanced crown. Previous topping has caused the squat form. Honeysuckle throughout the canopy. Acceptable condition at present.	No action required.	GOOD	GOOD	MOD	40+	B
G 10	Early-mature Holly *Ilex aquifolium*	To 3.5	0	0 n/a	# To 10	See plan.	Situated on adjacent land. Limited inspection due to the dense crown. Multi-stemmed at base. Previously topped and well managed. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 11	Mature Hawthorn *Crataegus monogyna*	To 3.5	0	0 n/a	# To 20	See plan.	Situated on adjacent land. Dense vegetation growth prevented a detailed inspection. Multi-stemmed at bases with unbalanced crowns. Forms part of the boundary and are regularly maintained. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
H 12	Early-mature Elder, Holly, Hawthorn & Sycamore *Sambucus nigra, Ilex aquifolium, Crataegus monogyna & Acer pseudoplatanus*	To 2	0	0 n/a	# To 13	See plan.	Well managed hedge, regularly maintained at 1.8m. No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
T 13	Mature Sycamore *Acer pseudoplatanus*	12	4	3 W	# 60	6 6 6 5	Situated on adjacent land; limited access prevented a detailed inspection. Single-stemmed and vertical with a balanced crown weighted and leaning east. The crown overhangs the boundary. No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	C
H 14	Early-mature Elder, Holly, Hawthorn & Sycamore *Sambucus nigra, Ilex aquifolium, Crataegus monogyna & Acer pseudoplatanus*	To 6	0	0 n/a	# To 20	See plan.	Well managed hedge, regularly maintained at 1.8m. Contains 3 old hedgerow trees (Hawthorn) with Ivy in their crowns. No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
G 15	Mature Lime, Sycamore & Horse Chestnut *Tilia sp, Acer pseudoplatanus & Aesculus hippocastanum*	To 17	4.5	4 N	Av # 60	See plan.	Situated on adjacent land with limited access; preventing a detailed inspection. Single-stemmed with slightly unbalanced crowns. Predominantly the stems have slight leans. Occasional pruning wounds (healing well). Bark wounds noted and epicormic growth on Limes. Acceptable condition at present.	No action required.	GOOD	GOOD	MOD	40+	B

Tree Ref.	Age Species *Latin 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	Life Expectancy (yrs)	Retention Category
G 16	Semi-mature English Oak *Quercus robur*	To 7	2	0.5 N	To 13	See plan.	Suppressed twin-stemmed and single-stemmed specimens, vertical with unbalanced crowns. Occasional pruning wounds and bark wounds (healing slowly). Poor specimens with a limited long term future.	Remove (Low priority).	POOR	POOR	MOD	<10	U
H 17	Early-mature Elder, Holly, Hawthorn & Sycamore *Sambucus nigra, Ilex aquifolium, Crataegus monogyna & Acer pseudoplatanus*	To 2.5	0	0 n/a	# To 13	See plan.	Well managed hedge, regularly maintained at 1.8m. Contains larger individual trees G18 & T19. No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B
G 18	Mature Ash & English Oak *Fraxinus excelsior & Quercus robur*	14	3	2 S	# To 90	See plan.	Group of boundary hedgerow trees part of H17, inspection was limited due to their location within the hedge. Single-stemmed and vertical with slightly unbalanced crowns. Occasional moderate deadwood. Bark wounds, pruning wounds and stubs noted (all healing well). Potential to become veteran trees, excellent specimens. No major visible defects.	Remove deadwood (Moderate priority) and re-inspect in 2 years.	GOOD	GOOD	HIGH	40+	A
T 19	Mature English Oak *Quercus robur*	14	3	2 S	# 92	8 8 8.5 8	Boundary hedgerow tree part of H17, inspection was limited due to its location within the hedge. Single-stemmed and vertical with a slightly unbalanced crown. Damaged lower limb (east). Moderate deadwood in crown. Acceptable condition at present.	Remove limb and deadwood (Moderate priority).	GOOD	GOOD	HIGH	40+	B
T 20	Mature English Oak *Quercus robur*	9	2	1 W	# 100	6.5 6.5 6.5 6.5	Situated on adjacent land with limited access; preventing a detailed inspection. Single-stemmed and vertical with a balanced crown; overhanging the boundary. Pruning wounds and stubs (healing well). Large bark wound on stem with good formation of wound wood.	Re-inspect in 1 year.	GOOD	GOOD	HIGH	40+	B
G 21	Semi-mature Cypress *Cupressus sp.*	To 3	0	0 n/a	To 10	See plan.	Single-stemmed and vertical with balanced crowns. Acceptable condition at present. Provides screening. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 22	Mature English Oak *Quercus robur*	12	4	3 W	# 100	6.5 6.5 6.5 6.5	Situated on adjacent land with limited access; preventing a detailed inspection. Single-stemmed and vertical with a balanced crown; overhanging the boundary. Epicormic growths on stem. Moderate deadwood noted in canopy. Acceptable condition at present.	No action required.	GOOD	GOOD	HIGH	40+	A

Tree Ref.	Age Species *Latin 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	Life Expectancy (yrs)	Retention Category
T 23	Semi-mature English Oak *Quercus robur*	6	0.5	0.5 W	# 20	# 3.5 # 3.5 # 3.5 # 3.5	Situated on adjacent land with limited access; preventing a detailed inspection. Twin-stemmed at 0.5m, vertical with a balanced crown overhanging the boundary. Occasional pruning wounds and stubs (with epicormic growth on) which are healing well.	No action required.	FAIR	FAIR	LOW	20-40	C
T 24	Mature English Oak *Quercus robur*	9	2	2 W	# 70	6 5 6 7	Situated on adjacent land with limited access; preventing a detailed inspection. Single-stemmed and vertical with a balanced crown overhanging the boundary. Minor deadwood in crown. Pruning wounds observed and healing well. No major visible defects.	No action required.	GOOD	GOOD	MOD	40+	B
T 25	Mature Ash *Fraxinus excelsior*	10	3	2 NW	# 55	5.5 3.5 5.5 4	Tree of good form. Situated on adjacent land with limited access; preventing a detailed inspection. Single-stemmed and vertical with a slightly unbalanced crown, overhanging the boundary. Minor deadwood in crown. Decay column in branch (north). No other major visible defects.	Remove decayed branch (Moderate priority).	GOOD	GOOD	MOD	40+	B
T 26	Early-mature English Oak *Quercus robur*	10	3	3 S	# 45	# 5.5 # 5.5 # 5.5 # 5.5	Situated on adjacent land with limited access; preventing a detailed inspection. Single-stemmed and vertical with a balanced crown, overhanging the boundary. Occasional pruning wounds and stubs (healing well). Decay cavity in limb (west). No other major visible defects.	Remove decaying limb (Moderate priority).	FAIR	GOOD	MOD	40+	C
T 27	Early-mature Ash *Fraxinus excelsior*	10	0	0 n/a	# 33	# 4.5 # 4.5 # 4.5 # 4.5	Situated on adjacent land with limited access; preventing a detailed inspection. Twin-stemmed at base with a balanced crown that overhangs the boundary. Partially included bark at stem union with large suckering growths noted.	No action required.	GOOD	GOOD	MOD	20-40	C
T 28	Mature Ash *Fraxinus excelsior*	10	2	2 W	# 90	# 4.5 # 4.5 # 4.5 # 4.5	Situated on adjacent land, with limited access and dense vegetation; preventing a detailed inspection. Fungal bracket # 6m up on stem (north-east) most likely to be *Inonotus hispidus.* Southern portion of stem base up to # 4m is severely decayed. Limited long term future.	Remove (High priority).	FAIR	POOR	MOD	<10	U

Tree Ref.	Age Species *Latin 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	Life Expectancy (yrs)	Retention Category
H 29	Early-mature Elder, Holly, Hawthorn & Sycamore *Sambucus nigra, Ilex aquifolium, Crataegus monogyna & Acer pseudoplatanus*	To 4	0	0 n/a	# To 13	See plan.	Well managed hedge, regularly maintained at 2m.Occasional Sycamore present, considered to be self-sown. No major visible defects.	No action required.	GOOD	GOOD	MOD	20-40	B

Appendix 2: Explanation of Tree Descriptions

A2.1 Measurements

A2.1.1 *HEIGHT* of the tree is measured from the stem base in metres. Where the ground has a significant slope the higher ground is selected.

A2.1.2 *CROWN HEIGHT* is an indication of the average height at which the crown begins. Also recorded is the height of the first significant branch and the direction of growth.

A2.1.3 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed below a height of 1.5 metres, the diameter is measured at the narrowest point below the fork.

A2.1.4 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches in all four cardinal points.

A2.2 Evaluations

A2.2.1 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, or over-mature.

A2.2.2 *PHYSIOLOGICAL CONDITION* is classed as good, fair, poor, or dead. This is an indication of the health of the tree and takes into account vigour, presence of disease and dieback.

A2.2.3 *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.

A2.2.4 *LIFE EXPECTANCY* is classed as; less than 10 years, 10-20 years, 20-40 years, or more than 40 years. This is an indication of the number of years before removal of the tree is likely to be required.

A2.3 Retention Categories

A2.3.1 ***A (marked green on the plan) = trees of high quality; retention most desirable.***

These trees are of high quality and value with a good life expectancy. They may be further sub-divided as follows:

A1) Particularly good examples; perhaps rare or unusual species, or forming an essential part of arboricultural features e.g. avenues.

A2) Groups of trees having a significant landscape impact or with excellent screening properties, or those softening the effect of existing structures.

A3) Those having significant conservation or historical value e.g. veteran trees.

A2.3.2 ***B (marked in blue on the plan) = trees of moderate quality; retention desirable.***

These trees are of moderate quality and value with a significant life expectancy. They may be further sub-divided as follows:

B1) Trees that might be included in the high category but because of their numbers or slightly impaired condition, are downgraded in favour of the better individuals.

B2) Groups of trees forming distinct landscape features, thereby attracting a higher collective rating than they might as individuals.

B3) Trees with clearly identifiable conservation or other cultural benefits.

A2.3.3 ***C (marked in grey on the plan) = trees of low quality but which could be retained.***

These trees are of low quality and value, and are in adequate condition to remain until new planting could be established. They may be further sub-divided as follows:

C1) Trees not qualifying in higher categories.

C2) Groups of trees which do not form a distinct landscape feature.

C3) Trees with very limited conservation or other cultural benefits.

A2.3.4 ***U (marked in red on the plan) = unsuitable for retention: trees for removal.***

These trees are in such a condition that any existing value would be lost within 10 years. This may be due to any of the following:

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

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 work must be to BS 3998: 2010 - '*Recommendations for tree work*'.

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 in this report.

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 Limited 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 regularly. In this instance it is recommended that these inspections are made every year.

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.
Canker	Disease damaged area of a tree, usually caused by fungus or bacteria.
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 reduce	The reduction of a tree's height or 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 uncharacteristic clusters around the base or the stem of a tree, usually as a result of bad pruning or some other stress factor.
Formative pruning	The trimming of a tree to remove weaknesses and irregularities which may lead to problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown.
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 of the tree is cut at about 4m, 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 – The 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 causes 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 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 was promoted to Technical Coordinator and now oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Arboriculture

Andy Bagshaw *FdSc (Arboriculture).* Andy joined JCA in 2005 having gained several years experience in tree surgery and landscaping. He is trained in aerial rescue and is JCA's principal first aid person. Andy has obtained a foundation degree in Arboriculture at the University of Central Lancashire, is QTRA qualified and is a JCA team leader who manages an office of Consulting Arboriculturists.

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.

Flora Harding *BSc (Hons) Fd.BSc. (Arboriculture and Tree Care).* Flora has a degree in Rural Resource Development (specialising in Wildlife and Landscape Conservation). She spent her former career working for a local authority and has a licence for QTRA. In 2012, Flora published an article to enable industry based research for the purpose of gaining Chartered Arboriculturist status.

Michelle Ryan *BSc (Hons) Arboriculture.* Michelle has recently joined JCA having previously worked for a Local Authority. She obtained a degree in Arboriculture at the University of Central Lancashire and has various NPTC qualifications. Michelle is seeking to become LANTRA certified in Professional Tree Inspection.

Liam Plummer *BSc (Hons), Ecology.* Liam graduated from Bangor University in Ecology. He has recently joined JCA having worked for the Forestry Commission Scotland and previously in the Arboriculture and Conservation sectors. Liam has various NPTC qualifications and has completed several National Diploma (Arboriculture) units.

Consulting Staff: Ecology

David Ryder. David has recently 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.

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.

N
W E
S

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 10 20 30 40 50 100 metres

Appendix 6: Tree Constraints Plan

ADDRESS: Land at Church Lane, Penistone, South Yorkshire, S36 7JQ.
JCA REF: 11385/MR

SCALE : 1:1000	PAPER SIZE : A2	
SURVEYED BY: MR	DRAWN BY: MR	APPROVED BY: PH

BRITISH STANDARD 5837:2012: 4.5 RETENTION CATEGORIES

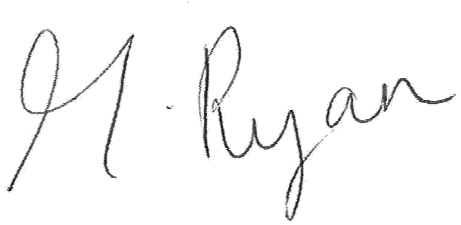
Detailed definitions of these catagories are at Appendix 2 of our report. N.B. These categories do not necessarily represent or correspond to recommendations for action made in this report.

	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

JCA Limited
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



.....

Michelle Ryan *BSc (Hons) Arboriculture*.

18th December 2013

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

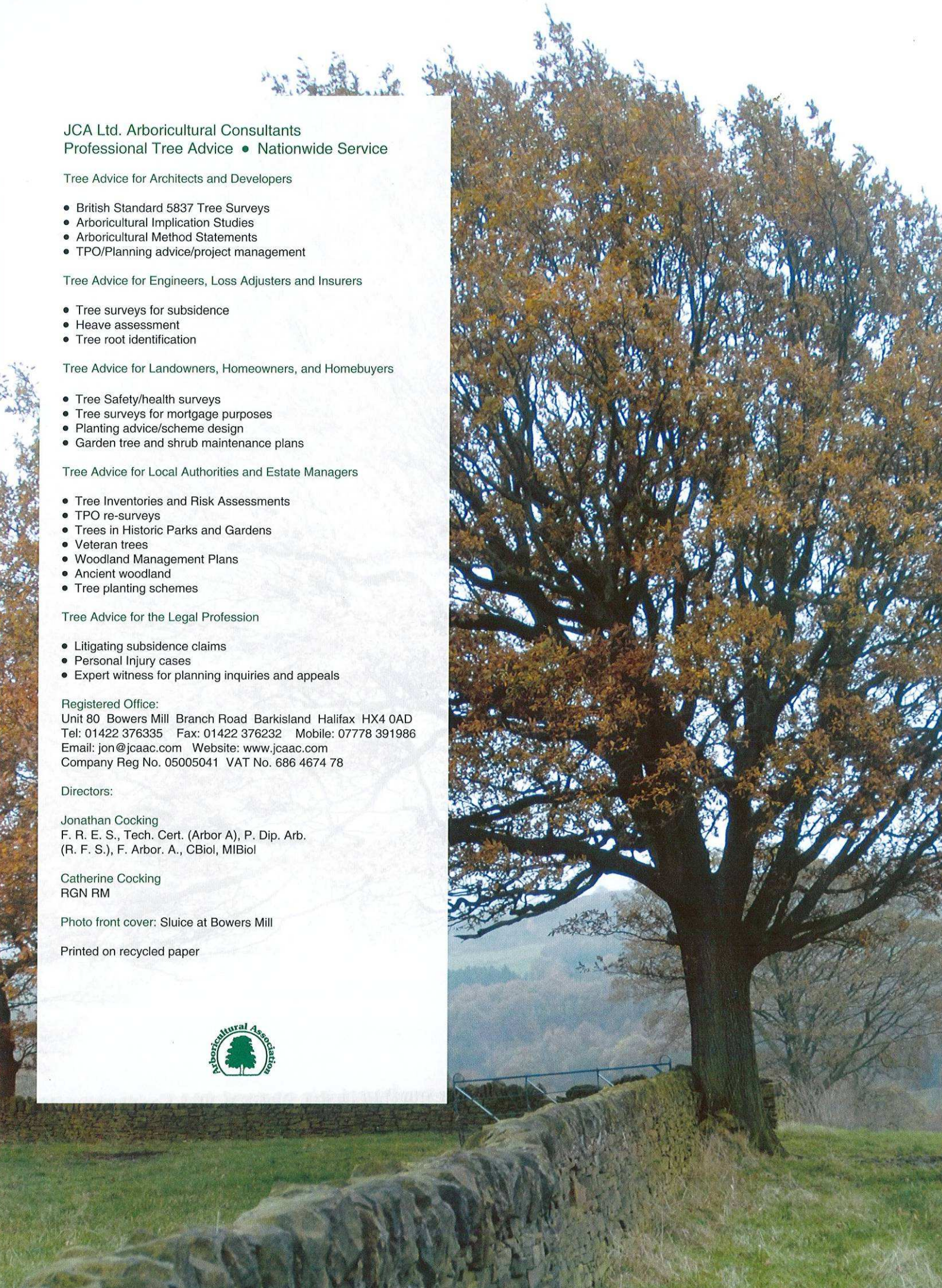
Registered Office:

Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 OAD

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

www.jcaac.com

Report printed on recycled paper



JCA Ltd. Arboricultural Consultants
Professional Tree Advice • Nationwide Service

Tree Advice for Architects and Developers

- British Standard 5837 Tree Surveys
- Arboricultural Implication Studies
- Arboricultural Method Statements
- TPO/Planning advice/project management

Tree Advice for Engineers, Loss Adjusters and Insurers

- Tree surveys for subsidence
- Heave assessment
- Tree root identification

Tree Advice for Landowners, Homeowners, and Homebuyers

- Tree Safety/health surveys
- Tree surveys for mortgage purposes
- Planting advice/scheme design
- Garden tree and shrub maintenance plans

Tree Advice for Local Authorities and Estate Managers

- Tree Inventories and Risk Assessments
- TPO re-surveys
- Trees in Historic Parks and Gardens
- Veteran trees
- Woodland Management Plans
- Ancient woodland
- Tree planting schemes

Tree Advice for the Legal Profession

- Litigating subsidence claims
- Personal Injury cases
- Expert witness for planning inquiries and appeals

Registered Office:
Unit 80 Bowers Mill Branch Road Barkisland Halifax HX4 0AD
Tel: 01422 376335 Fax: 01422 376232 Mobile: 07778 391986
Email: jon@jcaac.com Website: www.jcaac.com
Company Reg No. 05005041 VAT No. 686 4674 78

Directors:

Jonathan Cocking
F. R. E. S., Tech. Cert. (Arbor A), P. Dip. Arb.
(R. F. S.), F. Arbor. A., CBiol, MIBiol

Catherine Cocking
RGN RM

Photo front cover: Sluice at Bowers Mill

Printed on recycled paper

Arboricultural Association