

ARBORICULTURAL SURVEY
to BS 5837:2005
at
Wakefield Road
Mapplewell
Barnsley

Client:

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1. Introduction

1.1 Purpose of the Report

- 1.1.1 A report is needed at the above location to give detailed, independent, arboricultural advice on the trees present, in the particular context of potential development.

1.2 Terms of Reference

- 1.2.1 I am instructed by John R. Paley Associates Ltd 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.

1.3 Scope of the Report

- 1.3.1 This report is compiled in accordance with *BS 5837:2005 Trees in relation to construction*. The specific design of any proposed development is not generally taken into account at this stage.
- 1.3.2 Preliminary recommendations are given with a view to safety and the long-term management of a sustainable tree cover.
- 1.3.3 All trees within the site boundary with a stem diameter above 75mm are included.
- 1.3.4 Where applicable smaller trees and significant shrub masses are included.
- 1.3.5 Where applicable trees outside the site boundary, but close enough to be affected by development, are included.

1.4 Survey details

- 1.4.1 The survey took place during the month of July 2008.
- 1.4.2 The survey was conducted by Simona Ferutta.
- 1.4.3 Inspection was made at ground level. Further investigation, such as climbed inspections or decay detection surveys, may be recommended where appropriate.
- 1.4.4 Measurements were obtained using clinometers, specialist tapes or electronic distometers. Where this was not possible measurements were estimated.
- 1.4.5 No digging or drilling was carried out on this occasion.

2. Site Description

2.1 Land Use

- 2.1.1 The site is currently the grounds of an unused factory, consisting of buildings, waste areas and green spaces.

2.2 Topography

- 2.2.1 The site slopes gently upwards from the south to the north.

2.3 Treescape

- 2.3.1 The trees on this site have a low to moderate impact on the local treescape.
- 2.3.2 Surrounding the site are residential and agricultural areas occasionally containing street trees and garden trees.

2.4 Amenity Value

- 2.4.1 The trees on site collectively would provide a reasonable amenity to the surrounding area if properly managed.

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 early-mature.

2.6 Species Diversity

- 2.6.1 Species surveyed included:

- Broadleaf trees: English Oak, Sycamore, Wild Cherry, Apple, Black Poplar, Willow and Silver Birch;
- Conifer trees: Leyland, Cypress and Western Red Cedar;
- Shrubs: Hawthorn, Wild Rose, Elder and Firethorn.

3. Explanation of tree descriptions

3.1 Measurements

- 3.1.1 *HEIGHT* of the tree is measured from the stem base. Where the ground has a significant slope the higher ground is selected.
- 3.1.2 *CROWN HEIGHT* is an indication of the average height at which the main crown begins.
- 3.1.3 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; the diameter is measured close to ground level, just above the root buttress.
- 3.1.4 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches in all four cardinal points.

3.2 Evaluations

- 3.2.1 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, or over-mature.
- 3.2.2 *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.
- 3.2.3 *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.
- 3.2.4 *LIFE EXPECTANCY* is classed as; less than 10 years (<10), 10-20 years, 20-40 years, or more than 40 years (40+). This is an indication of the number of years before removal of the tree is likely to be required.

3.3 Retention Categories

- 3.3.1 *RETENTION CATEGORY* values for the trees are as follows:
- 3.3.2 *A (marked green on the plan) = retention most desirable*
These trees are of high quality and value with a good life expectancy. They may be further sub-divided as follows:

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

- Aii) Groups of trees having a significant landscape impact or with excellent screening properties, or those softening the effect of existing structures;
- Aiii) Those having significant conservation or historical value e.g. veteran trees.

3.3.3 ***B (marked in blue on the plan) = retention desirable***

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

- Bi) 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;
- Bii) Groups of trees forming distinct landscape features, thereby attracting a higher collective rating than they might as individuals;
- Biii) Trees with clearly identifiable conservation or other cultural benefits.

3.3.4 ***C (marked in grey on the plan) = trees 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:

- Ci) Trees not qualifying in higher categories;
- Cii) Groups of trees which do not form a distinct landscape feature;
- Ciii) Trees with very limited conservation or other cultural benefits.

3.3.5 ***R (marked in red on the plan) = 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:

- i) Failure is likely due to serious, irredeemable, structural defects;
- ii) Removal of other category R trees will render them exposed and unstable;
- iii) They are in serious, overall decline or are dead;
- iv) They are of low quality and suppressing adjacent trees of better quality;
- v) 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.

4. Status of the Trees

- 4.1 A check was made on July 2008 with Barnsley Metropolitan Borough Council.

We are informed that there is no Tree Preservation Order in force, and the site is not within a Conservation Area.

5. Tree Descriptions and Recommendations

- 5.1 Full details of all individual trees surveyed are recorded in the tables at Appendix 1. Please refer also to the attached plan at Appendix 5 and section 3 above, for a full explanation of the tables and plan.

6. Discussion

6.1 Tree Condition & Recommended Works

- 6.1.1 In total 27 items of vegetation were surveyed including a number of groups, of which 11 items fell into Retention Category 'B', 13 items fell into category 'C' and 3 items fell into category 'R' (for details see paragraph 6.2.3 below).
- 6.1.2 Most of the trees surveyed were located to the edge of the site. Occasional specimens are located close to the ex-factory.
- 6.1.3 In order to get a general overview I have divided the trees into the following groups for the purpose of this discussion:
 - 6.1.3.1 Those with specific defects which render them unsafe, as described in Appendix 1. Such trees should be removed as soon as is reasonably practicable. These include **G14**, and **G27**.
 - 6.1.3.2 Those which should be removed in order to benefit adjacent trees and clear the footpath along Wakefield Road. Their removal is of a lower priority and includes **G10**.
 - 6.1.3.3 Selective felling is recommended to remove some weaker and/or poor formed specimens from some groups to benefit the adjacent, better formed trees. The groups requiring this work are identified as **G8**, **G9**, **G11**, **G12**, **G15** and **A17**.
 - 6.1.3.4 Some trees and shrubs have been recommended for remedial pruning actions, these are identified as **H3**, **T13**, **T23** and **T26**. The apple trees (**T13** and **T23**) have dense weeds growing at the base and as such have also been recommended to have the weeds removed from around the base of the trees.
 - 6.1.3.5 Those which are valuable as a screen (Cypress rows on Wakefield Road) or as an important part of the treescape (Oak trees on the east and the two Weeping Willows in front of the factory): **G1**, **G2**, **T6**, **T7**, **T16**, **T18**, **T19**, **T20**, **T21**, **T22**, **G24** and **T25**.
 - 6.1.3.6 Those which require no action. These are **T4** and **T5**.
- 6.1.4 Some works are recommended for reasons of public safety and to ensure the long term health of the trees. This work is detailed in Appendix 1. The recommended work should be carried out as a matter of moderate priority.
- 6.1.5 Many trees overhang public highways, footpaths and spaces, as described in Appendix 1. They will require future maintenance in order to ensure the following clearance heights for vehicular and pedestrian traffic: 5.6m above a road and 2.5m above a footpath.
JCA recommend that the following crown heights be maintained:

Height for pedestrian access:	No less than 2.5m
Height for vehicular access:	No less than 4m for a minor road No less than 6m for major roads or where buses will pass.
Distance from overhead cables:	No less than 2m
Distance from building or other structures:	No less than 2m
Distance from lamp post or signs:	Sufficient to not impede visibility for 2 years.

6.2 Potential for Development

- 6.2.1 I am unaware of the details of the proposed development. However the following comments can be made about the site in terms of its suitability for development:
- 6.2.2 The Root Protection Areas RPA's marked on the plan at Appendix 5 represent the desired rooting zone which should not be disturbed. The development should be designed in order to avoid the RPA's of trees to be retained.
- 6.2.3 Decisions about which trees are to be retained should be influenced by their retention categories as suggested below.
- 6.2.3.1 **Category A** trees: These are high quality, high amenity trees which should be retained if at all possible. Significant amendments to the development should be considered before removing these trees. There are no trees falling into this category.
- 6.2.3.2 **Category B** trees: These are reasonably high quality trees whose retention is desirable. Minor amendments to the development should be considered before removing these trees. Trees falling into this category include **G1, G2, T6, T7, T18, T19, T20, T21, T22, G24 and T25.**
- 6.2.3.3 **Category C** trees: These are lower quality trees, the removal of some of these should be considered acceptable, if required to facilitate the development. Most trees on site fall into this category: **H3, T4, T5, G8, G9, G11, G12, T13, G15, T16, A17, T23 and T26.**
- 6.2.3.4 **Category R** trees: These are trees in such poor condition that they should be removed. Trees falling into this category include **G10, G14 and G27.** Trees belonging to group **G14** should be removed as a matter of high priority as they are potentially hazardous to a daily frequented area (the nursery school parking).
- 6.2.4 The majority of trees recommended for retention are situated close to the site boundary. This offers a potential window for development within the centre of the site.
- 6.2.5 There are no high amenity trees within the site, but there are a number of moderate

amenity trees. They will enhance any proposed development and care should be taken at the design stages to ensure that these trees are retained (category 'B' trees) and managed.

- 6.2.6 The Age and Species Diversity is poor and any proposed development would benefit from a landscaping scheme which introduces younger trees of a variety of suitable species.

6.3 General Development Advice

- 6.3.1 All development work to be carried out within close proximity of the retained trees should be done so in a manner sympathetic to their needs. Failing to do so could seriously affect the health and condition of the trees and may even result in tree death.
- 6.3.2 Root Protection Areas (RPA's) have been plotted around each tree (see the attached plan at Appendix 5). The RPA's are generally represented by a circle with the tree located at the centre.
- 6.3.3 It should be noted due to the presence of existing features such as roads, buildings and retaining walls, the shape of some RPA's on the site plan have been changed from a circle to give a more realistic representation of rooting patterns.
- 6.3.4 The RPA's represent the likely rooting zone of a tree, which should ideally remain undisturbed. The development should therefore be designed so that new structures, such as buildings, driveways, car parking spaces and paths, are positioned outside the RPA's of those trees which are to be retained.
- 6.3.5 On some occasions it may be possible to construct new buildings upon mini/narrow pile and beam foundations. This could allow new buildings to be constructed within the RPA's of trees without being detrimental to their long term health. A structural engineer should be consulted on the potential to use pile and beam foundations on this site prior to any plans being drawn.
- 6.3.6 In addition to the roots, the position of any new structure should take into account tree canopies. Adequate clearance between new structures and the canopies is required in order to avoid conflict in the future. This could be achieved by crown lifting or re-shaping the crowns of the trees or possibly by angling the roof pitch to accommodate the trees.
- 6.3.7 Before positioning new structures beneath the canopies of trees, consideration should be made to the potential nuisances which may arise as a result of this (e.g. dripping sap or leaf litter blocking gutters). Where buildings are to be constructed beneath the canopies of trees, controlled overflow gutters should be considered.
- 6.3.8 The shade that will be cast by the retained trees must also be considered when positioning new buildings. Where buildings are to be positioned within the shade cast

area of trees, these should be designed in order to maximise light levels by utilising, for example, dual aspect windows, sky lights or by maximising the number and size of windows or patio doors.

- 6.3.9 Where possible, ground levels should not be significantly altered within the RPA of any retained tree, as this can be detrimental to their health. Raising the ground level can cause a reduction in the oxygen supply to the roots and can slow down the rate of gas exchange between the roots and the air in the soil pore space. Lowering ground levels often results in root severance or exposes roots to the air and reduces the supply of nutrients and moisture available to the roots. If ground levels do need to be altered, then this must be carried out in a sympathetic manner using specialist construction methods and materials.
- 6.3.11 In order to ensure the protection of the trees throughout the development, a detailed arboricultural Method Statement is recommended. This Method Statement would detail tree root protection areas and the positions of protective fencing, service runs, site access and storage, specifications for special hard surfacing and a timetable of events relating to the procedures. Failure to adhere to such procedures will greatly reduce the life expectancy of the surveyed trees. A detailed Method Statement is frequently required by the local authority before planning permission is granted.

7. Conclusion

- 7.1 The trees surveyed were generally found to be in fair condition.
- 7.2 Three groups of tree require removal. These are discussed in Section 6 and detailed in Appendix 1.
- 7.3 No Category A trees were found on this site, but effort should be made at the design stage to retain Category B trees where possible.
- 7.4 Individual trees with retention Category C could be removed with little impact on the local treescape and they could be replaced with a variety of species which would provide a higher amenity.
- 7.5 I recommend JCA provide a comprehensive Method Statement in order to ensure the continued health of trees throughout the proposed development. JCA can also be able to provide planting schemes and management plans, organise and supervise tree works.

Appendix 1: Tree Descriptions and Recommendations

Ref No.	Age & Species & Latin Name	Height (m)	Crown Height (m)	Stem Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition & Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
G1	Early-mature Leyland <i>x Cupressocyparis leylandii</i>	12	0	Mixed	See plan	Row of trees, single stemmed and vertical with a balanced columnar crown. No evidence of previous pruning. Minor dieback. Screening the building along Wakefield Road.	Crown clean Monitor yearly	GOOD FAIR	M O D	20-40	B
G2	Early-mature Leyland <i>x Cupressocyparis leylandii</i>	12	0	Mixed	See plan	Row of trees, single stemmed and vertical with a balanced columnar crown. No evidence of previous pruning. Minor dieback. Screening the building along Wakefield Road. Occasional specimens of Hawthorn (<i>Crataegus monogyna</i>) and Wild Rose (<i>Rosa canina</i>) on the road side.	Crown clean Monitor yearly	GOOD FAIR	M O D	20-40	B
H3	Early-mature Mixed	Up to 3	0	Mixed	See plan	Mixed hedge of single or few specimens of Hawthorn (<i>Crataegus monogyna</i>), Firethorn (<i>Pyracantha coccinea</i>), Wild Rose (<i>Rosa canina</i>) and others overwhelmed. Multi-stemmed at ground level with an unbalanced crown. Overgrown. Occasional pruning wounds. One specimen of Cypress (<i>Cupressus sp.</i>) included.	Remedial prune	FAIR POOR	L O W	10-20	C
T4	Early-mature Western Red Cedar <i>Thuja plicata</i>	5	0	17	1 1 1	Single stemmed and vertical with a balanced crown. No evidence of previous pruning.	No action required	GOOD GOOD	M O D	20-40	C
T5	Mature Hawthorn <i>Crataegus monogyna</i>	4	0	23 at base	2 2 2	Twin-stemmed at ground level with a balanced crown. No evidence of previous pruning.	No action required	GOOD GOOD	M O D	20-40	C
T6	Mature Weeping Willow <i>Salix babylonica</i>	10	0	47	5 4 4	Single stemmed and vertical with a balanced crown. Dieback in lower hidden branches.	Crown clean	FAIR FAIR	M O D	20-40	B
T7	Mature Weeping Willow <i>Salix babylonica</i>	10	0	43	4 3.5 4	Single stemmed and vertical with a balanced crown. Dieback in lower hidden branches.	Crown clean	FAIR FAIR	M O D	20-40	B
G8	Mixed Hawthorn Wild Rose <i>Crataegus monogyna</i> <i>Rosa canina</i>	Up to 6	0 to 1	Mixed	See plan	Small group, single stemmed and vertical with an unbalanced crown. No evidence of previous pruning. Poof forms due to negligence.	Remedial prune	POOR POOR	L O W	<10	C

Ref No.	Age & Species & Latin Name	Height (m)	Crown Height (m)	Stem Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition & Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
G9	Young to Semi-mature English Oak <i>Quercus robur</i>	Up to 7	2	Mixed	See plan	Limited inspection, no access to the site, due to overgrown shrubs and weeds. Small group, single stemmed and vertical with a balanced crown. No evidence of previous pruning. Other species included: Sycamore (<i>Acer pseudoplatanus</i>), Hawthorn (<i>Crataegus monogyna</i>) and Wild Rose (<i>Rosa canina</i>).	Clean shrubs	FAIR FAIR	L O W	40+	C
G10	Semi-mature Elder <i>Sambucus nigra</i>	Up to 5	0	Mixed	See plan	Small group adjacent to G1, single stemmed and vertical with an unbalanced crown. Overgrown. Hawthorn (<i>Crataegus monogyna</i>) included. Overhanging footpath.	Remove	FAIR POOR	L O W	10-20	R
G11	Young Wild Cherry <i>Prunus avium</i>	Up to 6	0	Mixed	See plan	Small group, single stemmed and vertical with a balanced crown. Young Sycamore (<i>Acer pseudoplatanus</i>) included. Overgrown shrubs and weeds beneath.	Clean shrubs	FAIR POOR	L O W	20-40	C
G12	Young to Early-mature Mixed	Up to 7	0 to 1	Mixed	See plan	Large group of mixed self-sown species, including Hawthorn (<i>Crataegus monogyna</i>), Sycamore (<i>Acer pseudoplatanus</i>), English Oak (<i>Quercus robur</i>) and Wild Cherry (<i>Prunus avium</i>). Limited inspection, no access to the site due to overgrown shrubs and weeds. Single stemmed and vertical with a balanced crown. No evidence of previous pruning.	Clean shrubs Remedial prune	FAIR POOR	L O W	10-20	C
T13	Early-mature Apple tree <i>Malus sp.</i>	5	1	~ 30	3 3 3 3	Limited inspection, no access to the site due to overgrown shrubs and weeds. Single stemmed and vertical with a balanced crown. No evidence of previous pruning.	Clean shrubs Remedial prune	FAIR FAIR	L O W	20-40	C
G14	Over-mature Black Poplar <i>Populus nigra</i>	Up to 15	6	~ 40 to 60	See plan	Limited inspection, no access to the site due to fences and shrubs. Row of trees, single stemmed and leaning with an unbalanced crown. Occasional pruning wounds. Screening the buildings. Significant dieback and deadwood. Many hazardous trees. Some branches overhanging nursery car parking. Hawthorn (<i>Crataegus monogyna</i>) beneath.	Remove and replace	POOR POOR	L O W	<10	R
G15	Young Silver Birch Goat Willow <i>Betula pendula</i> <i>Salix caprea</i>	Up to 8	0	Up to 15	See plan	Dense group of young self-sown specimens, single stemmed and vertical with a balanced and unbalanced crown. No evidence of previous pruning. Hawthorn (<i>Crataegus monogyna</i>) and Wild Rose (<i>Rosa canina</i>) beneath.	Selective thin	FAIR POOR	L O W	10-20	C
T16	Mature Willow <i>Salix sp.</i>	7	0	10 to 25	7 9 7 8	Single stemmed and leaning with an unbalanced crown due to coppicing. No evidence of significant pruning. Deadwood.	Thin minor shoots	FAIR POOR	L O W	10-20	C
A17	Young Hawthorn <i>Crataegus monogyna</i>	Up to 3	1	Mixed	See plan	Large area of sparse self-sown specimens, single stemmed and vertical with a balanced crown. No evidence of previous pruning. Wild Rose (<i>Rosa canina</i>) included.	No action required	GOOD GOOD	L O W	10-20	C

Ref No.	Age & Species & Latin Name	Height (m)	Crown Height (m)	Stem Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physio-logical Condition & Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T18	Semi-mature English Oak <i>Quercus robur</i>	7	1	Mixed	4 4 4 3	Out of boundary. Multi-stemmed at ground level with a balanced crown. Overhanging footpath.	No action required	GOOD FAIR	M O D	40+	B
T19	Early-mature English Oak <i>Quercus robur</i>	8	1	Mixed	4 5 5 4	Out of boundary. Multi-stemmed at ground level with a balanced crown. Minor deadwood. Overhanging footpath.	Crown clean	FAIR FAIR	M O D	40+	B
T20	Semi-mature English Oak <i>Quercus robur</i>	7	1	41	3.5 3.5 3.5 3.5	Out of boundary. Single vertical with a balanced crown.	No action required	GOOD GOOD	M O D	40+	B
T21	Semi-mature English Oak <i>Quercus robur</i>	8	1	Mixed	4 3 3.5 4	Out of boundary. Multi-stemmed at ground level with a balanced crown. Minor deadwood.	Crown clean	FAIR FAIR	M O D	40+	B
T22	Semi-mature English Oak <i>Quercus robur</i>	6	1	Mixed	3.5 3 3.5 3.5	Out of boundary. Multi-stemmed at ground level with a balanced crown.	No action required	GOOD FAIR	M O D	40+	B
T23	Early-mature Apple tree <i>Malus sp.</i>	4	0.5	~20	2.5 2.5 2.5 2.5	Limited inspection, no access to the site, due to fence and overgrown weeds. Single stemmed and vertical with a balanced crown. No evidence of previous pruning.	Clean shrubs Remedial prune	FAIR FAIR	L O W	10-20	C
G24	Semi-mature English Oak <i>Quercus robur</i>	Up to 8	1	Mixed	See plan	Small group. All specimens but two out of boundary. Multi-stemmed at ground level with a balanced crown. Minor deadwood. Hawthorn (<i>Crataegus monogyna</i>) beneath.	Crown clean	FAIR FAIR	M O D	40+	B
T25	Early-mature English Oak <i>Quercus robur</i>	9	1	43	4 6 6 5	Out of boundary. Single stemmed and vertical with a balanced crown.	No action required	GOOD GOOD	M O D	40+	B
T26	Early-mature Sycamore <i>Acer pseudoplatanus</i>	10	0	8 to 25	5 5 5 5	Boundary tree. Multi-stemmed at ground level with a balanced crown. Overgrown shoots. Deadwood.	Remedial shoots reduce	FAIR POOR	L O W	10-20	C
G27	Over-mature Black Poplar <i>Populus nigra</i>	Up to 13	1	Up to 30	See plan	Limited inspection, no access to the site, due to fence and overgrown shrubs and weeds. Row of trees, single and multiple-stemmed and leaning with an unbalanced crown. Moderate screening function. Occasional pruning wounds. Elder (<i>Sambucus nigra</i>) beneath.	Remove and replace	POOR POOR	L O W	<10	R

Appendix 2: 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.
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 3: The Author's Qualifications

Principal Consultant and Managing Director

Jonathan Cocking *FRES PDipArb(RFS) FArborA CBIol MIBiol.* Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 28 years experience in the arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. He has since developed JCA's portfolio of services and its extensive client base. Jonathan is a Chartered Biologist and an expert witness with much experience of litigation work.

Consulting Arboriculturists

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 Lancashire. Toby is a JCA team leader and manages an office of consulting arborists.

Ivan Button *NCH (Arboriculture) BSc (Hons) PGCE.* Ivan joined JCA in 2005 after nine years having managed his own landscaping and tree surgery business. He has studied at the Universities of Leeds, Lincoln and Wales and is currently working towards a degree in arboriculture at the University of Lancashire. Ivan is a JCA team leader and manages an office of consulting arborists.

Andrew Bagshaw *FD (Arboriculture).* Andrew 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. He is currently working towards a degree in arboriculture at the University of Lancashire.

Adam Winson *BSc (Hons) E Con, ND (Arboriculture).* Prior to working at JCA Adam has worked as a tree surgeon for eight years for a range of private companies and Sydney City Council. Adam achieved a national award for best Dissertation on the subject of Urban Greenspace Management at Sheffield Hallam University. Adam is currently working towards an MSc in Arboriculture at the University of Lancashire.

Robert Godwin *BA (Hons) Landscape Planning, ISA Certified Arborist.* Robert joined JCA having spent several years as an arboricultural consultant particularly in relation to subsidence. He also has considerable experience in landscape and arboricultural contracting. Robert is currently working towards an MSc in Arboriculture at the University of Lancashire.

Simona Ferutta *MSc Forestry and Environmental Sciences.* Simona achieved her Msc in Forestry and Environmental Sciences at the University of Turin, Italy in 1996. She has recently joined JCA after several years in forest, crops and tree care in Italy as a professional.

Arboricultural Technicians

Victoria Black. Victoria has been with JCA for over 5 years building her knowledge of the arboricultural business. She is currently working towards a degree in arboriculture at the University of Lancashire.

Andrew Bussey. Andrew joined JCA having spent 12 years doing tree surgery for various private companies and a local authority. He has various NPTC qualifications and is currently studying for his Arboricultural Technicians Certificate.

Lee Major. Lee recently joined JCA having gained his RFS Certificate in Arboriculture. Lee also has two years climbing experience, working for a local tree surgeon. He is currently working towards his degree in arboriculture at the University of Lancashire.

Administrative Staff

Andrew C Parker, GM, BA (Hons), PGCE, Practice Manager

Catherine Cocking, Accounts Manager

Sue Guest, Administrative Officer

Sally Whitwam, Administrative Assistant

Yasmin Hussain, Administrative Assistant

Alec Fielden, City and Guilds 3, CAD Technician

Appendix 4: General Guidelines

- A4.1 All work must be to BS 3998:1989 - '*Recommendations for tree work*'.
- A4.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors, and should be covered by adequate public liability insurance.
- A4.3 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.
- A4.4 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.
- A4.5 No liability can be accepted by the consultant in respect of the trees unless the recommendations of this report are carried out under his supervision and within his timescale.
- A4.6 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 5: Site Plan

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

A handwritten signature in black ink, appearing to read 'Simona Ferutta', written over a dotted line.

Simona Ferutta
MSc Forestry and Environmental Sciences.

01st August 2008

For and on behalf of *JCA Ltd*

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