

**ARBORICULTURAL REPORT
to BS 5837:2005
at
Site adjacent to Burntwood Cottage
Burntwood Road
Grimethorpe
Barnsley
S72 7JD**

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JCA Limited

Arboricultural Consultants

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1. Introduction

1.1 Purpose of the Report

- 1.1.1 A report is required at the site on **Burntwood Road, Grimethorpe**, 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 FDA Landscape 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 (Drawing Number 29134/TS/01).

1.3 Scope of the Report

- 1.3.1 This report is compiled in accordance with *BS 5837:2005 Trees in relation to construction*.
- 1.3.2 Preliminary recommendations are given with a view to 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 trees outside the site boundary, but close enough to be affected by the proposed development, are included.
- 1.3.5 The specific design of any proposed development is not generally taken into account at this stage.

1.4 Survey details

- 1.4.1 The survey took place during the month of November 2009.
- 1.4.2 The survey was conducted by Adam Winson BSc (Hons).
- 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.

2. Site Description

2.1 Land Use

2.1.1 The site was previously used for housing but now comprises of vacant land.

2.2 Topography

2.2.1 The site is sloping from north to south.

2.3 Treescape

2.3.1 Surrounding the site is a residential area containing occasional garden trees and occasional street trees.

2.3.2 The trees on this site have a minor impact on the local treescape.

2.4 Visual Amenity Value

2.4.1 The trees on site collectively provide a limited visual amenity to the surrounding area.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from semi-mature to early-mature.

2.6 Species Diversity

2.6.1 Species surveyed include Hawthorn, Sycamore, Privet, Leylandii, Lawson Cypress and Willow.

3. Status of the Trees

- 3.1 A check was made on 4th November 2009 with: **Barnsley Metropolitan Borough Council**.
- 3.2 It is understood that there is no Tree Preservation Order in force and that the site is not within a Conservation Area; however, we are awaiting confirmation on this matter and will forward this information to you as soon as it is confirmed.
- 3.3 Due to the large potential penalties for illegally carrying out work to protected trees, JCA recommend that a further check is carried out prior to any works being undertaken. We are able to arrange this and to organise and supervise professional contractors.

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 9 items of vegetation (4 individual trees, 3 groups of trees and 2 hedges).
- 5.1.2 All of the vegetation on site was identified as retention category 'C'. No retention category 'A' 'B' or 'R' trees were identified on this occasion. Please refer to **Appendix 2** for retention category and definition criteria.
- 5.1.3 The species and age diversity of existing trees on site is poor and a proposed development would improve this by incorporating a Tree Planting Scheme which introduces younger trees of a variety of suitable species.

5.2 Potential Arboricultural Implications & 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 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.
- 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 a Construction Exclusion Zone (CEZ) must be created, based on the rooting area of the tree. For the purpose of development the rooting area 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 that should not be disturbed. The RPA of each tree should be considered during the layout phase of development.
- 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 should be taken to avoid damage to tree roots when existing structures such as tarmac surfaces are removed within a 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 many solutions available to construct hard surfaces over RPAs without causing damage to 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 should 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 should be placed within the RPA without arboricultural advice.

6. Conclusions

- 6.1 The trees surveyed were generally found to be in fair condition.
- 6.2 The vegetation on site was largely limited to low value scrub along the western boundary.
- 6.3 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.
- 6.4 Care should be taken at the design stage to ensure that the retained trees are protected. 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**.

Appendices

Tree Ref.	Age Species <i>Latin Name</i>	Height (m)	Crown Height (m)	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations	Physiological Condition	Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
H 1	Semi-Mature Leylandii <i>X Cupressocyparis leylandii</i>	5	0	15	See Plan.	Situated on adjacent land. Boundary hedge feature. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 2	Semi-Mature Sycamore #N/A	6	2	13	2 1 1 1	Boundary tree. Single stemmed. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
T 3	Semi-Mature Sycamore #N/A	6	2	17	2 2 2 2	Boundary tree. Stem damage.	No action required.	GOOD	FAIR	LOW	20-40	C
G 4	Early-Mature Hawthorn #N/A	4	1	20	See Plan.	Scrappy former hedgerow.	No action required.	FAIR	FAIR	LOW	10-20	C
T 5	Semi-Mature Sycamore #N/A	6	2	30 At Base	3 3 3 3	Twin-stemmed at base. Boundary Tree. Damaged stem - limited long term value.	No action required.	FAIR	FAIR	LOW	10-20	C
G 6	Early-Mature Hawthorn #N/A	5	1	20	See Plan.	Former hedgerow. Still has screening value. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C
G 7	Early-Mature Lawson Cypress #N/A	8	2	15	See Plan.	Approximately 9 trees in group along boundary. Poor form and limited long term value.	No action required.	GOOD	FAIR	LOW	10-20	C
T 8	Early-Mature Willow #N/A	6	2	35 at Base	4 4 4 3	Multiple stems at base. Tight union. No major visible defects.	No action required.	GOOD	FAIR	LOW	10-20	C
H 9	Semi-Mature Privet #N/A	2	0	10	See Plan.	Well maintained boundary hedge. Situated on adjacent land. No major visible defects.	No action required.	GOOD	GOOD	LOW	20-40	C

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.

A2.1.3 *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.

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) = 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) = 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 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 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:

- 1) Failure is likely due to serious, irredeemable, structural defects.
- 2) Removal of other category R 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 work must be to BS 3998:1989 - '*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 Ltd 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: 2005 <i>Trees in relation to construction</i> .
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: The Author's Qualifications

Principal Consultant and Managing Director

Jonathan Cocking *FRES PDipArb (RFS) FArborA CBiol MIBiol. MICFor.* 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, a Chartered Arboriculturalist 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, is QTRA qualified and manages an office of Consulting Arboriculturists.

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. Andrew is a JCA team leader, is QTRA qualified and manages an office of Consulting Arboriculturists. He is currently working towards a degree in Arboriculture at the University of Lancashire.

Adam Winson *BSc (Hons), ND (Arboriculture).* Adam is a Professional Associate of the Institute of Chartered Foresters and an Associate Member of the Institute of Ecology and Environmental Management. Prior to joining JCA Adam worked as a tree surgeon. During his BSc in Environmental Conservation he gained the CPRE award for best dissertation and he is currently working towards an MSc in Arboriculture and Urban Forestry.

Robert Godwin *BA (Hons) (Landscape Planning), MArborA.* Robert is a Professional Member of the Arboricultural Association and a Professional Associate of the Institute of Chartered Foresters. He has a degree in Landscape Planning & Management and has several years experience as a Consulting Arboriculturist. Robert is currently working towards an MSc in Arboriculture and Urban Forestry.

Rafael Skerratt *BSc (Forestry) FArborA.* Rafael covers the London area for JCA. He ran his own Arboricultural businesses since 1972 and is experienced in tree surveys for development, safety and subsidence purposes, and is an Expert Witness.

Arboricultural Technicians

Victoria Black *FD (Arboriculture).* Victoria has been with JCA for over 6 years building her knowledge of the Arboricultural business. She has recently obtained her foundation 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, is QTRA qualified and is currently studying for his Arboricultural Technicians Certificate.

Toby Parsons. Toby recently 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), is QTRA qualified and is currently awaiting for his final exam results in the Arboricultural Technicians Certificate

David Venables *BSc (Forestry).* David joined JCA in 2009 having achieved his degree at University of Wales, Bangor. David's work experience prior to joining JCA was as a Management Support Officer for the Forestry Commission at Delamere Nursery, Cheshire, where his responsibilities included carrying out health and safety inspections to ensure all sites and staff met relevant standards, assisting with the supervision of the workforce and the initiation of a GIS system for the nursery.

Administrative Staff

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

Catherine Cocking Accounts Manager.

Yasmin Hussain Administrative Assistant.

Simeon Haigh *BSc (Hons).* IT Officer.

Sue Guest Administrative Officer.

Sally Whitwam Administrative Assistant.

Alec Fielden Cert. Arb. (RFS). CAD Technician.



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.

BRITISH STANDARD 5837: 2005 4.3.1
RETENTION CATEGORIES

Detailed definitions of these categories 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'
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	CATEGORY C: 'TREE WHICH COULD BE RETAINED'
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•	CENTRE OF TREE/SHRUB
---	----------------------

•	CENTRE OF TREE/SHRUB TO BE REMOVED
---	---------------------------------------

	ROOT PROTECTION AREA
---	----------------------

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

.....

Adam Winson BSc (Hons) E Con, ND (Arboriculture).

6th November 2009

For and on behalf of **JCA Ltd**

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Photo front cover: Sluice at Bowers Mill

Photo back cover: View from Unit 80

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