ARBORICULTURAL SURVEY
to BS 5837:2005
at:
Worsbrough Hall
Hall Close
Worsbrough
Barnsley
S70 5LN

Client:
Alan Wyatt of Worsbrough Hall Developments

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[redacted]

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7497/A/AW

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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 Alan Wyatt, of Worsbrough Hall Developments, Barnsley, to visit the site and prepare my findings in a report.

1.2.2 For this purpose JCA have not been supplied with a topographical survey and have thus plotted the trees using an O/S map and on site measurements.

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 May 2008.

1.4.2 The survey was conducted by Adam Winson BSc (Hons) E Con, ND (Arboriculture).

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.

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2. Site Description

2.1 Land Use

2.1.1 The site is currently an unused section of ground to the south of Worsbrough Hall residential properties; the area is undergoing development to provide an access route from Worsbrough Road.

2.2 Topography

2.2.1 The site is approximately level.

2.3 Treescape

2.3.1 The trees on this site have a moderate impact on the local treescape.

2.3.2 Surrounding the site is a mix of rural and residential areas containing a good mix and distribution of trees.

2.4 Amenity Value

2.4.1 The trees on site collectively provide a reasonable amenity to the surrounding area. Occasional specimens have a higher amenity value.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from semi-mature to mature. However, the significant trees were all mature.

2.6 Species Diversity

2.6.1 The predominant species was Lime (*Tilia x europaea*). Other species being occasional or single specimens.

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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.

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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.

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4. Status of the Trees

4.1 A check was made on 17th of August 2006 with: **Barnsley Metropolitan Borough Council.**

We are informed that there is a Tree Preservation Order in force on this site.

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

No work should be done to any trees until this permission has been granted.

4.2 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.

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, for a full explanation of the tables and plan.

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6. Discussion

6.1 Tree Condition & Recommended Works

6.1.1 In total 9 items of vegetation were surveyed.

6.1.2 Of these trees, 4 have been given retention category "B" and the remaining 5 trees/shrubs have been given retention category "C".

6.1.3 The significant trees on site relate to **T2 to T5** and **T7**. The rest is low value vegetation that could easily be replaced.

6.1.4 The most prominent "green feature" on site is formed by the line of mature Lime trees **T3 to T5**, which run along the western boundary. Collectively these trees have a high amenity value and form an important part of the surrounding landscape character. They should be retained and protected throughout any development.

6.1.5 The mature Horse Chestnut (**T2**), situated alongside the group of Limes (**T3 to T5**) does, to a lesser degree, form part of the green feature. However, the fact it is the single significant example of the species does reduce its visual impact, and being situated further from the roadside its amenity is similarly reduced.

6.1.6 The Horse Chestnut has features that give cause for concern as to its long term suitability for retention. The crown shows evidence of several large limbs within the crown previously failing and the trees massive stem does lean over the boundary within the target area of neighbouring properties.

6.1.7 Because of the trees large size and moderate visibility from the roadside it has been given retention category "B". However, due to the defects detailed, whilst not considered a present hazard, close future monitoring would be advisable.

6.1.8 Most of these trees have crowns that overhanging the adjacent land and several have pruning works recommended for reasons of public safety and to ensure the long term health of the trees. This work is detailed in Appendix 1.

6.1.9 The crown of the mature Lime (**T7**) contains some major deadwood which, it has been suggested from the land owner, has formed in the last 3 years (when the tree apparently had crown cleaning and other minor pruning works undertaken). This fact, combined with other indicators of stress such as dense epicormic growth throughout the tree and dieback in the crown extremities, combined with the twin-stemmed form, suggest that its long term future may be limited. As such pruning works have been recommended (detailed in Appendix 1) to ensure a satisfactory structural condition.

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6.2 Implications of Development

6.2.1 Whilst unaware of the specific details of the proposed development. It is understood that the southern boundary wall is to be rebuilt with a new entrance from Worsbrough Road and a "coach house" type building is to be constructed on the site to the north of the group of Lime trees (**T3 to T5**).

6.2.2 The development of the "coach house" structure, which it is suggested, will be situated to the north of the Lime trees will likely require the removal the mature Horse Chestnut (**T2**) and the low value Horse Chestnut (**T1**).

6.2.3 The removal of **T1** is unlikely to have an impact. Yet due to its size, the removal of **T2** would have some immediate impact to the immediate treescape. However, the defects detailed previously (6.1.6 and 6.1.7) reduce the trees value and suggest its long term retention may be problematic. As such, a landscaping scheme, in Section 6.3, details replacement planting that mitigates the impact of this trees removal.

6.2.4 Trees **T3 to T5** form a high amenity group within this site. They will enhance any proposed development and care should be taken at the design stages to ensure that these trees are retained. As they are situated close to the site boundary it should be possible to retain these trees.

6.2.5 The Root Protection Areas (RPAs) marked on the plan at Appendix 5 represent the likely rooting zone which should not be disturbed. The development should be designed in order to avoid the RPAs of trees to be retained.

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

6.2.7 Any proposed development should be accompanied by an Arboricultural Method Statement detailing the specific protection measures necessary for each tree. This should specify fencing standard and positions, acceptable construction techniques, necessary tree works and the potential damage caused by demolition, soil stripping, and provision of services.

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6.3 Replacement Planting Scheme

6.3.1 In order to mitigate the impact of removing the mature Horse Chestnut (**T2**), replacement planting will be undertaken along the frontage of the site.

6.3.2 The high value group of Limes (**T3 to T5**), mentioned previously, is in keeping with the landscape character of the area. Thus the planting scheme uses similar species strategically positioned so as to increase the amenity value of the tree cover on site and improve the long term sustainable tree cover.

6.3.3 It is suggested that 3 trees will be used as replacement plantings. The trees used will be heavy standard, small-leaved Lime (*Tilia cordata*), at approximately 3.5m in height and 12-16 girth.

6.3.4 The use of large heavy trees with root-balls will thus provide immediate visual effect. The trees positioning along the frontage, adjacent to the main road (as detailed in Appendix 5) will maximise the sites potential for long term high amenity tree cover.

6.3.5 The planting will link the existing group (**T3 to T5**) to the individual Lime (**T7**) and, once established, will greatly improve the visual amenity of the existing tree cover. It is recommended that this long term approach is taken appose to attempting to build the development around a tree with limited long term prospects with no strategy for long term continual tree cover.

6.3.6 The pruning works recommended for the Lime (**T7**) whilst primarily done for health and safety reasons, will also allow increased sunlight to the ground where the new plantings are to be positioned, which will reduce the competition for the new trees and improve their early establishment.

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7. Conclusion

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

7.2 **T3** to **T5** form a high value group and should be retained.

7.3 Most other trees on site are of lower value and have been given retention category "C".

7.4 The development will require the removal of **T1** and **T2**.

7.5 The incorporated planting scheme will mitigate the impact of removing the mature Horse Chestnut (**T2**) and will, in the long term, greatly improve the amenity value of the sites tree cover.

7.6 Some works were recommended for reasons of public safety and to ensure the long term health of the trees. These are summarised in Section 6 and detailed in Appendix 1.

7.7 It is recommended JCA provide a comprehensive Method Statement in order to ensure the continued health of trees throughout the proposed development. JCA are also able to organise and supervise tree works, and if necessary undertake climbed inspections and decay detection analysis.

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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	Physio-logical Condition & Structural Condition	Amenity Value	Life Expectancy (yrs)	Retention Category
T1	Early-mature Horse Chestnut *Aesculus hippocastanum*	10	3	51	3 / 3 4 / 2	Single-stemmed and vertical. Stem damage at 1m. Minor deadwood.	No action required/ Remove to facilitate development	GOOD / FAIR	LOW	10-20	**R/C**
T2	Mature Horse Chestnut *Aesculus hippocastanum*	19	3	106	4 / 8 6 / 6	Single stemmed with a massive stem that has a slight lean over the boundary and the crown overhanging boundary. Previously had limbs fail, now with pruning wounds on stem. Earth piled near stem base.	Reduce overhanging crown 30%. Monitor lean closely./Remove to facilitate development	GOOD / FAIR	MOD	10-20	**R/B**
T3	Mature Lime *Tilia sp*	17	4	58	4 / 5 4 / 3	Single stemmed vertical – epicormic prevented detailed inspection. Minor deadwood. No major visible defects.	Reduce overhanging crown 20%	GOOD / GOOD	MOD	20-40	**B**
T4	Mature Lime *Tilia sp*	18	4	60	3 / 5 4 / 4	Single stemmed vertical. Minor cavity at 2.5m. Minor deadwood. No major visible defects.	Reduce overhanging crown 20%	GOOD / GOOD	MOD	20-40	**B**
T5	Mature Lime *Tilia sp*	19	4	64	3 / 5 3 / 3	Single stemmed and vertical. Dense epis prevented detailed inspection. Occasional major deadwood in crown.	Reduce overhanging crown 20%, clear all deadwood.	GOOD / GOOD	MOD	20-40	**B**
T6	Semi-mature Sycamore *Acer pseudoplatanus*	7	4	17	2 / 3 1 / 2	Single stemmed, slight lean over boundary, limited long term value.	No action required, consider removal.	GOOD / FAIR	LOW	20-40	**B**
T7	Mature Lime *Tilia sp*	20	9	83	4 / 4 5 / 3	Twin-stemmed at 2m, partially included bark to stem base. Some reaction growth shown by bulbous stem union. Dense epicormic throughout- some major deadwood. Cavity on stem from torn branch.	Crown reduce 50%.	GOOD / FAIR	MOD	20-40	**C**
T8	Semi-mature Holly+ Yew *Ilex sp +Taxus sp*	4	1	20	2 / 2 2 / 2	Single stemmed -no major visible defects.	No action required	GOOD / GOOD	LOW	40+	**C**
T9	Semi-mature Cypress *Cupressus sp*	5	1	16	2 / 2 2 / 2	Single stemmed – no major visible defects.	No action required	GOOD / GOOD	LOW	20-40	**C**

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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.

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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.

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.

Graham King *Dip Arb (RFS) FArborA MRAC.* Graham covers the Midlands for JCA. He ran his own arboricultural business from 1980 before gaining his Diploma in 1992 and is a Fellow of the Arboricultural Association.

Arboricultural Technician

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.

Edward Jowett. Edward has achieved his BSc (Hons) Arboriculture at the University of Lancashire. He has had temporary appointments as Tree Officer with local authorities in the Manchester area, joining JCA to further his commercial knowledge and experience.

Administrative Staff
Andrew C Parker, GM, BA (Hons), PGCE, Practice Manager
Catherine Cocking, Accounts Manager
Sue Guest, Administrative Officer
Yasmin Hussain, Administrative Assistant
Simeon Haigh, BSc (Hons), IT Officer
Alec Fielden, CAD Technician

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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.

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Appendix 5: Site Plan

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