ARBORICULTURAL REPORT
to BS 5837:2012
at
Grove Street
Longwood
Huddersfield
West Yorkshire
HD3 4TS

Client:
CLO Design Architectural

Client Address:
36 Club Lane
Halifax
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HX2 8DA

JCA Ref:
13331/AJB

JCA Limited
Arboricultural & Ecological Consultants

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 This report is required at **Grove Street**, **Longwood**, **Huddersfield**, to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.1.2 The purpose of this report is to summarise the findings of an arboricultural assessment of the existing vegetation at the above site; conducted in accordance with the guidelines contained within BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'.

1.1.3 This report will outline any tree works which are required within the current context of the site. It will also grade the trees in accordance with the British Standard; which should guide the design in terms of which trees are to be retained and which trees are to be removed.

1.2 Terms of Reference

1.2.1 JCA Ltd has been instructed by **CLO Design Architectural** to survey the site and prepare the findings in a report.

1.2.2 For this purpose a topographical survey from February 2001 has been supplied (**Drawing No. ADA130b**), which forms the basis for the Tree Constraints Plan at **Appendix 6**. Due to its age, the topographical survey is considered to be accurate only in part, as such; many of the group extents shown to the attached Tree Constraints Plan at **Appendix 6** should be treated as indicative only.

1.3 Scope of the Report

1.3.1 This report is compiled in accordance with *BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'* and is based on an objective assessment of the existing vegetation.

1.3.2 Preliminary recommendations are given with a view to the long-term management of sustainable tree cover and to uphold the interests of health and safety.

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, however, we are aware of a proposed residential housing development within the confines of the existing site boundary.

1.4 Survey Details

1.4.1 The survey took place during the month of March 2017 and was conducted by Andrew Bussey.

1.4.2 During this survey, all trees were inspected from ground level. Further investigations, such as a climbed inspection or a decay detection survey, have not been undertaken but may be recommended where deemed appropriate.

1.4.3 It should be noted that dense vegetation and poor terrain limited full access to all the surveyed vegetation on site. As such; all tree dimensions and observation listed in **Appendix 1** have been estimated.

2. Site Description

2.1 Land Use

2.1.1 The site is currently occupied by woodland and overgrown waste-ground. We are informed that a proportion of the site was once occupied by a mill complex.

2.2 Topography

2.2.1 The site slopes from the north down towards the southern boundary.

2.3 Treescape

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

2.3.2 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 amenity to the surrounding area.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from young to mature.

2.6 Species Diversity

2.6.1 Species surveyed include Sycamore, Wild Cherry, Silver Birch, Goat Willow, Scots Pine, Common Ash, English Elm, Common Lime, Holly, Rhododendron, English Oak, Elder and Horse Chestnut. Of these; the predominant species were Sycamore and Goat Willow.

3. Status of the Trees

3.1 An online check was made on 31st March 2017 on the **Kirklees Metropolitan Council website** service.

3.2 We are informed that there is a Tree Preservation Order (TPO) in force on the central and western portion of this site.

3.3 Before any work is organised, an application form must be submitted to the Local Authority, outlining all the proposed works along with suitable justification. A waiting period of eight weeks is then required, after which time the council will either give consent to the works, refuse the works or grant a conditional consent.

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

3.5 The presence of a TPO represents the Local Authority's desire to retain trees within the landscape. As such, trees covered by a TPO are generally more likely to require retention within a proposed scheme and this should be taken into account during the design process. In some cases, the removal of TPO trees may be agreed upon, providing the benefits of the proposed development are deemed greater than the material loss of the trees. The value of existing vegetation is just one factor in the decision making process; all benefits of the proposed development will be taken into consideration in the usual manner.

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 Relating to the Existing Treescape

5.1 Tree Condition & Recommended Works

5.1.1 The tree survey revealed a total of **27** items of vegetation (**5** individual trees and **22** groups of trees). Of these, **1** tree was identified as retention category 'A', **2** trees and **9** groups were identified as retention category 'B', **1** tree and **12** groups as retention category 'C' and **1** trees and **1** group as category 'U'. Please refer to **Appendix 2** for retention category and definition criteria.

5.1.2 Within the survey, tree works have been identified for reasons of public safety, to ensure the long-term health of the trees or for general maintenance purposes. Such recommendations have been made without regard to any projected layout and should be undertaken irrespective of development. These are summarised in the following sections. For full details on all recommendations, please refer to **Appendix 1**. For an explanation of the priority ratings, see **Appendix 2 (A2.2.5)**.

5.2 Tree Removals for Arboricultural Purposes

5.2.1 **G10** and **T25** were identified as retention category 'U' and require removal as a matter of **low priority** due to the defects detailed at **Appendix 1**.

5.3 Remedial Tree Works

5.3.1 On this occasion, no remedial works were deemed necessary at this time. However, trees which overhang public footpaths or public highways 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.

5.4 Monitoring/ Further Investigation

5.4.1 **G12, G14, T15, G16** and **G18** 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 these trees be monitored (re-inspected and assessed) on a biennial basis to assess if their condition is still acceptable.

5.4.2 In addition, to the above, all trees which are to be retained within the proposed development should be inspected on a regular basis in the interests of risk management.

5.4.3 A full detailed inspection of **all vegetation** was inhibited by restricted access or by the presence understorey vegetation. As such; it is advised that they are re-inspected for any possible defects once the understorey vegetation has been removed or access has been made available.

5.5 General Design Advice

5.5.1 The following is an overview of general design considerations relating to a tree cover. The precise details of a proposed development are not known at present. The specific implications of a proposed design should be assessed within an Arboricultural Implications Assessment (AIA).

5.5.2 The retention categories of the trees surveyed are an indication of their overall values. The category of each item is listed at **Appendix 1** and an explanation of the retention categories is included at **Appendix 2**. As a general rule, those trees listed as retention category 'A' or 'B' are the most valuable items and as such the removal of these is likely to be met with resistance by the Local Planning Authority (LPA). Those items listed as retention category 'C' are of lesser value and the removal of these is less likely to be met with resistance by the LPA. Items listed as retention category 'U' are recommended for removal regardless of any proposals and should not present a constraint to construction. The above information should guide the design in terms of which trees are to be removed and which are to be retained. However, it should be noted that the retention of trees is just one consideration in the design process and each development will be taken for its merits.

5.5.3 The location of each tree is plotted on the associated Tree Constraints Plan at **Appendix 6**. This plan identifies the retention category of each tree (Retention A: green canopy, Retention B: blue canopy, Retention C: grey canopy, Retention U: red canopy), the crown spread, and also the associated rooting zone (Root Protection Area or RPA shown in gold). In order to enable the survival of trees shown to be retained within any proposals, both the canopy of the tree and its RPA must be completely avoided wherever possible. This relates to not just the location of new buildings, but also to the location of new areas of hard standing, proposed utility routes and any ground level changes (both excavations and soil piling). Where this is not possible, specialist construction methods and materials will need to be used.

5.5.4 Where information is available, the water demand of each tree is provided at **Appendix 1**, in accordance with NHBC Standards 2014 chapter 4.2. 'Building near trees'. The water demand of trees can affect adjacent structures and this is therefore included to inform foundation design, depth and the proximity of proposed structures to trees.

5.5.5 Retained trees will require adequate protective measures during development. Such measures typically entail temporary protective fencing, installed to the full extent of the RPA. Where this is not entirely possible, ground protection may also comprise part of the protective measures. This includes a compaction reducing construction detail which enables a degree of construction traffic over/within the RPA.

5.5.6 As the RPAs of the trees will require fencing off as a protection measure, this should be brought into consideration when planning such things as access routes and material storage during development. It is accepted that in some cases it is not entirely possible to completely avoid the RPA or canopy lines within a new development. The consulting arboriculturalist should therefore be made aware of any such incursions to make comment and, where possible, advise on mitigation actions. Such details should be contained within an Arboricultural Implications Assessment (AIA).

5.5.7 No material storage is permitted within the RPA of retained trees unless confirmed to be acceptable by the consulting arboriculturalist. The exact details and location of protective measures should be included within an Arboricultural Method Statement (AMS).

5.5.8 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.

5.5.9 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.

5.5.10 Many development sites contain areas of nature conservation interest. Trees can 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.

6. Conclusions

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

6.2 A Tree Preservation Order is in force on this site.

6.3 **G10** and **T25** have been recommended for removal for arboricultural reasons. These are discussed in **Section 5.2** and are detailed at **Appendix 1**.

6.4 No pruning works are required under the current context of the site.

6.5 **G12, G14, T15, G16** and **G18** have been recommended for monitoring due to the presence of physiological or structural defects, as discussed in **Section 5.4** and detailed at **Appendix 1**.

6.6 General design advice has been provided in **Section 5.5**.

6.7 At the request of the client, this arboricultural report and the proposed development will be accompanied by an Arboricultural Method Statement (AMS) detailing the specific protection measures necessary for each tree. This will specify the required fencing standard and positions (the creation of the Construction Exclusion Zone), acceptable construction techniques and necessary tree works.

6.8 The data gained during the survey provides an indication of the health of the trees. However, it does not enable a comprehensive assessment of their condition over time. Trees are living organisms which are affected by many factors including weather conditions, diseases/disorders, light levels and human activities. Because of this, this report is only valid for a period of 1 year from the date of issuing. Should an update or revision of this report be required outside of this time period, JCA may require a further site visit to ensure that the condition of the trees has not significantly changed. It is advised that the trees are inspected regularly, in the interests of risk management.

Appendices

Tree Ref	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
G 1	Young to semi-mature Mixed *Details in observations*	To 9	0+	0+ n/a	To 20	See plan	Located outside the red line boundary indicated on the topographical plan provided Possibly self-seeded Wild Cherry and Silver Birch of reasonable form	No action required n/a	GOOD	GOOD	LOW	MOD	20+	C 1
G 2	Young to semi-mature Mixed *Details in observations*	To 12	0+	0+ n/a	To 20	See plan	Possibly self-seeded Wild Cherry, Goat Willow and Silver Birch of reasonable form	No action required n/a	GOOD	GOOD	MOD	MOD TO HIGH	20+	C 1
G 3	Young to semi-mature Mixed *Details in observations*	To 13	0+	0+ n/a	To 20	See plan	Possibly self-seeded Wild Cherry, Goat Willow and Silver Birch of reasonable form	No action required n/a	GOOD	GOOD	LOW	MOD TO HIGH	20+	C 1
G 4	Young to semi-mature Goat Willow *Salix caprea*	To 9	0+	0+ n/a	To 25	See plan	A dense mass of generally multiple-stemmed trees which are likely self-seeded	No action required n/a	GOOD	GOOD	LOW	HIGH	20+	C 1
G 5	Young to semi-mature Goat Willow *Salix caprea*	To 9	0+	0+ n/a	To 25	See plan	Overhanging the footpath and the road A dense mass of generally multiple-stemmed trees which are likely self-seeded	No action required n/a	GOOD	GOOD	LOW	HIGH	20+	C 1
G 6	Semi to early-mature Mixed *Details in observations*	To 13	0+	0+ n/a	To 28	See plan	A dense group of Scots Pine, Goat Willow, Silver Birch, Sycamore and Wild Cherry of reasonable form The species diversity present indicates that this group may have been planted	No action required n/a	GOOD	GOOD	MOD	MOD TO HIGH	40+	1 B 2
G 7	Semi to early-mature Sycamore *Acer pseudoplatanus*	To 15	0+	0+ n/a	To 50	See plan	A mass of multiple-stemmed trees which are generally of a poor form	No action required n/a	GOOD	FAIR	LOW	MOD	20+	C 1
G 8	Semi to early-mature Sycamore *Acer pseudoplatanus*	To 15	0+	0+ n/a	To 50	See plan	A mass of multiple-stemmed trees which are generally of a poor form	No action required n/a	GOOD	FAIR	LOW	MOD	20+	C 1
G 9	Young to early-mature Mixed *Details in observations*	To 15	0+	0+ n/a	To 30	See plan	Located outside the red line boundary indicated on the topographical plan provided A woodland group containing Common Ash, Sycamore, English Elm, Silver Birch and Scots Pine of reasonable form	No action required n/a	GOOD	GOOD	MOD	MOD TO HIGH	40+	1 B 2
G 10	Semi-mature Mixed *Details in observations*	To 12	0	0 n/a	To 35	See plan	A Goat Willow which is severely leaning and held up by an adjacent tree and a Common Ash of leaning form overhanging the footpath The stem locations for both trees are indicated on the attached plan	Remove Low	FAIR	POOR	LOW	MOD TO HIGH	<10	U

Tree Ref	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
G 11	Early-mature to mature Mixed *Details in observations*	To 20	0+	0+ n/a	To 75	See plan	Located on or just outside the red line boundary indicated on the topographical plan provided A linear group of predominantly Common Lime with occasional Sycamore All considered to be of a good form being well balanced and vertical Decay cavities and deadwood noted throughout Rhododendron present in the understory	No action required n/a	GOOD	GOOD	MOD	MOD	40+	1 B 2
G 12	Semi to early-mature Mixed *Details in observations*	To 19	0+	0+ n/a	To 60	See plan	Overhanging the footpath and the road A linear group of Sycamore with Holly understory Trees of a poor individual form in general with included bark present on the multiple-stemmed specimens	Monitor defects biennially Low	GOOD	FAIR	MOD	LOW TO MOD	20+	C 1
T 13	Early-mature to mature Holly *Ilex aquifolium*	13	1	1 n/a	33	3 3 3 3	Twin-stemmed at 2 5m with a balanced crown No evidence of significant pruning No major visible defects	No action required n/a	GOOD	GOOD	LOW	LOW	40+	1 B 2
G 14	Early-mature Mixed *Details in observations*	To 19	0+	0+ n/a	To 60	See plan	A group of Sycamore with Holly understory Trees of a poor individual form in general with included bark present on the multiple-stemmed specimens	Monitor defects biennially Low	GOOD	FAIR	MOD	LOW TO MOD	20+	C 1
T 15	Mature Sycamore *Acer pseudoplatanus*	18	10	10 n/a	95	7 10 6 9	Twin-stemmed at 2 5m with a balanced crown No evidence of significant pruning Significant dieback throughout	Monitor defects biennially Low	FAIR	FAIR	LOW	MOD	10+	C 1
G 16	Semi to early-mature Mixed *Details in observations*	To 17	0+	0+ n/a	To 48	See plan	Overhanging the footpath and the road A group of Sycamore, English Elm and Common Ash of a poor individual form in general with included bark present on the multiple-stemmed specimens	Monitor defects biennially Low	GOOD	FAIR	MOD	MOD TO HIGH	20+	C 1
G 17	Mature Sycamore *Acer pseudoplatanus*	To 20	0+	0+ n/a	To 90	See plan	Overhanging the footpath and the road, A linear group of nine trees of good form, Minor deadwood and decay cavities noted Occasional pruning wounds due to crown lifting	No action required n/a	GOOD	GOOD	MOD	MOD	40+	1 B 2
T 18	Mature Sycamore *Acer pseudoplatanus*	17	8	8 n/a	65	7 7 7 7	Single-stemmed and vertical with a balanced crown Covered in dense Ivy	No action required n/a	GOOD	GOOD	MOD	MOD	40+	1 B 2
G 19	Semi-mature to mature Mixed *Details in observations*	To 20	0+	0+ n/a	To 80	See plan	Overhanging the footpath and the road A woodland group consisting of Sycamore, Common Ash, Elder, Goat Willow and English Elm Not fully inspected due to dense vegetation and limited access, however, deadwood, decay cavities and included bark were amongst the defects noted	Monitor defects biennially Low	GOOD	GOOD	MOD	LOW TO HIGH	40+	1 B 2

Tree Ref	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
G 20	Semi-mature to mature Mixed *Details in observations*	To 20	0+	0+ n/a	To 80	See plan	Located outside the red line boundary indicated on the topographical plan provided A woodland group consisting of Sycamore, Common Ash, Elder, Goat Willow and English Elm Not fully inspected due to dense vegetation and limited access, however, minor deadwood, decay cavities and included bark were amongst the defects noted	No action required due to off site location n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	1 B 2
T 21	Mature English Elm *Ulmus procera*	23	8	8 n/a	87	12 12 12 12	Multi-stemmed at 8m with a balanced crown No evidence of significant pruning No major visible defects Minor branch stubs noted	No action required n/a	GOOD	GOOD	MOD	HIGH	40+	1 A 2
G 22	Semi to early-mature Sycamore *Acer pseudoplatanus*	To 17	0+	0+ n/a	To 50	See plan	Located outside the red line boundary indicated on the topographical plan provided Trees of reasonable form situated beyond a high retaining wall	No action required n/a	GOOD	GOOD	MOD	MOD	20+	B 2
G 23	Young to semi-mature Mixed *Details in observations*	To 13	0+	0+ n/a	To 30	See plan	Self-seeded Sycamore and Goat Willow of low individual value	No action required n/a	GOOD	GOOD	LOW	MOD TO HIGH	20+	C 1
G 24	Young Mixed *Details in observations*	To 7	0+	0+ n/a	To 13	See plan	Self-seeded Goat Willow and Common Ash of low value	No action required n/a	GOOD	GOOD	LOW	MOD TO HIGH	20+	C 1
T 25	Mature Horse Chestnut *Aesculus hippocastanum*	/	/	/ n/a	80	See plan	A fallen tree laying on the ground which is straddling Longwood Brook	Remove Low	DEAD	DEAD	DEAD	N/A	Dead	U
G 26	Young to semi-mature Mixed *Details in observations*	To 14	0+	0+ n/a	To 20	See plan	Overhanging the footpath and the road A shelterbelt of English Oak, Common Ash, Scots Pine, Goat Willow and Silver Birch The species diversity present indicates that this group may have been planted	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	1 B 2
G 27	Semi-mature to mature Mixed *Details in observations*	To 18	0+	0+ n/a	To 80	See plan	Overhanging the footpath and the road A woodland group of Sycamore, Horse Chestnut, Common Ash, English Elm and Goat Willow Deadwood and minor decay cavities noted throughout	No action required n/a	GOOD	GOOD	MOD	LOW TO HIGH	40+	1 B 2

Appendix 2: Explanation of Tree Descriptions

A2.1 Measurements/ Reference Information

A2.1.1 *REF NUMBER.* All items surveyed are allocated a reference number preceded with a letter, identifying the type of vegetation surveyed: T = an individual tree, G = a group of trees or an area of vegetation, W = woodland, H = a hedgerow.

A2.1.2 *SPECIES: COMMON AND BOTANICAL NAME*. The common and botanical names of the species present are noted. If the species is not clear or identifiable, then a general common name and genus will be noted.

A2.1.3 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, over-mature, veteran or dead.

A2.1.4 *HEIGHT* of the tree is measured in metres from the stem base to the top of the crown.

A2.1.5 *CROWN HEIGHT* is an indication of the height above ground level at which the crown begins.

A2.1.6 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; diameter measurements are taken for each stem. If more than five stems are present, an average stem diameter is taken. If for whatever reason it is not practical to measure multiple-stemmed trees in this way, the diameter is measured close to ground level, just above the root buttress.

A2.1.7 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches to all four cardinal points.

A2.1.8 *HEIGHT AND DIRECTION OF LOWEST BRANCH.* The height and direction of the lowest significant branch is noted because of potential issues relating to clearances and the need for tree pruning.

A2.1.9 *NHBC WATER DEMAND.* The water demand of each tree, as listed in NHBC Standards 2010 Chapter 4.2 ‘Building near trees’. This is included to aid structural engineers, architects and other members of the design team as it determines foundation depth and other considerations with regard to trees.

A2.2 Evaluations

A2.2.1 *PHYSIOLOGICAL CONDITION* is classed as good, fair, poor, or dead. This is an indication of the health and vitality of the tree and takes into account vigour, presence of disease and dieback.

A2.2.2 *STRUCTURAL CONDITION* is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

A2.2.3 *LIFE EXPECTANCY* is classed as; Dead, less than 10 years, 10+ years, 20+ years, or 40 + years. This is an indication of the minimum number of years before removal of the tree is likely to be required.

A2.2.4 *AMENITY VALUE.* A general indication is given in respect to the amenity/landscape value of the tree/group within the surrounding area.

A2.2.5 *PRIORITIES.* A priority rating is given concerning the time periods in which the recommended works should be undertaken. LOW priority works should be undertaken within 12 months of the survey, MOD (moderate) priority works should be undertaken within 6 months and HIGH priority works should be completed as soon as practically possible. If no works are recommended, N/A (not applicable) will be used.

A2.3 Retention Categories

A2.3.1 ***A (marked green on the plan) = Trees of high quality.***

These trees are of high quality and value with a good life expectancy (usually with an estimated remaining life expectancy of 40 years).

A2.3.2 ***B (marked in blue on the plan) = Trees of moderate quality.***

These trees are of moderate quality and value with a reasonable life expectancy (usually with an estimated life expectancy of at least 20 years).

A2.3.3 ***C (marked in grey on the plan) = Trees of low quality.***

These trees are of low quality and value but which are in adequate condition to remain or are young trees with a stem diameter below 15cm (usually with an estimated life expectancy of at least 10 years).

A2.3.4 Trees categorised as retention category ‘A’, ‘B’ or ‘C’ are then justified by being further divided into 3 subcategories:

1 = Mainly arboricultural qualities.

2 = Mainly landscape qualities.

3 = Mainly cultural values, including conservation value.

A2.3.5 ***U (marked in red on the plan) = Trees usually unsuitable for retention due to poor condition.***

These trees are in such a condition that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. This may be due to any of the following:

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

These trees should be removed or treated in such a way as to make them safe where they have high ecological value, such as in a woodland setting.

Appendix 3: General Guidelines

A3.1 All tree work should be undertaken to BS 3998: 2010 '*Recommendations for tree work'* or other recognised industry practice.

A3.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors. They should be covered by adequate public liability insurance.

A3.3 This report is based upon a visual inspection. The consultant shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with the guidelines and the terms listed therein.

A3.4 Any defects seen by a contractor or the employer that were not apparent to the consultant must be brought to the consultant's attention immediately.

A3.5 No liability can be accepted by JCA in respect of the trees unless the recommendations of this report are carried out under the supervision of JCA and within JCA's timescale.

A3.6 It is advisable to have trees inspected by an arboricultural consultant on a regular basis.

Appendix 4: Glossary of Terms & Abbreviations

Arboriculture The cultivation of trees in order to produce individual specimens of the greatest ornament, for shelter or any primary purpose other than the production of timber or fruit.

Canker Disease damaged area of a tree, usually caused by fungus or bacteria affecting the bark.

Co-dominant stem A stem which has grown in direct competition to the main stem and which has formed a substantial size influencing the appearance of the tree.

Crown lift The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles etc.

Crown reduction The reduction of a tree's height and spread while preserving its natural shape.

Crown thin The removal of some of the density of a tree's crown**,** usually 5-25% 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 clusters around the base of the stem of a tree or within the crown. This is usually as a result of bad pruning or some other stress factor, although can be a natural growth pattern for some species of tree (eg Lime species).

Included bark Where the bark on two adjoining branches or stems is growing tight together, forming a joint with limited physical strength.

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

RPA Root Protection Area – Theoretical rooting area of a tree as defined in BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations'*.

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

Appendix 5: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking *F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.* Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical 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 is now Technical Coordinator and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Consulting Staff: Arboriculture

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.

Emily Wilde *FdSc (Arboriculture).* Emily joined JCA having previously worked for various private tree surgery and consultancy companies over the past 8 years. She initially obtained a ND in Forestry & Arboriculture, followed by a FdSc in Arboriculture at Askham Bryan College, York. Emily has various NPTC certificates and is QTRA qualified.

Mick Eltringham *ND (Forestry).* Mick joined JCA after spending 12 years working in the industry for various private companies in the north and south of England. He has also spent the last five years working as a consultant for two canopy research projects in the Amazon Rainforest, working with Oxford University and the University of Arizona. He has various NPTC Qualifications.

Charles Cocking. Charles joined JCA in January 2014 as an Apprentice having previously worked for the company on a part time basis during 2013. In between his roles at JCA, Charles will be studying at Askham Bryan College, York, undertaking a two year course in order to obtain a Foundation Degree in Arboriculture (FdSc Arboriculture).

Consulting Staff: Ecology

Josie Collier *BSc (Hons) Ecology.* Josie joined JCA's ecology department and brings with her a degree in Ecology and Environmental Biology from the University of Leeds. Josie has gained experience from working with a local authority and is seeking to become a member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

David Bodenham *BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.* David joined JCA as an addition to the expanding ecology department. An advocate of evidence based conservation, he studied Zoology (Ind) at University and moved onto an MSc in Biodiversity and Conservation where he gained the myriad of skills needed as an ecologist. With over 7 years of experience, David specialises in bat and amphibian ecology.

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.

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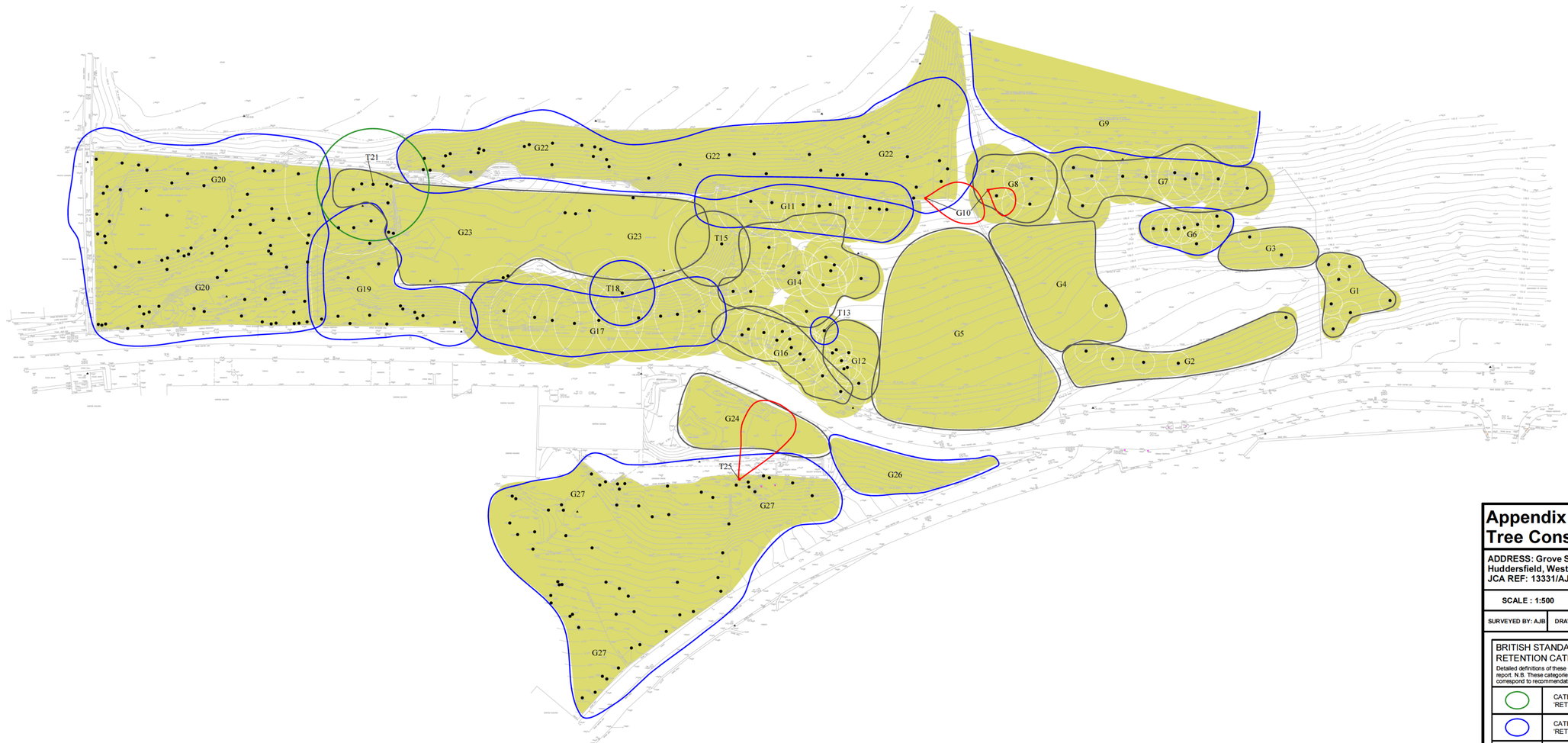

Root Protection Area: RPA

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.

PLEASE NOTE THAT ON THIS OCCASION, DUE TO THE NUMBER OF VARIABLES IN GROUND LEVEL AND IN THE AREAS OF HARD STANDING WHICH ARE DIFFICULT TO DETERMINE, ROOT PROTECTION AREAS HAVE NOT BEEN OFF-SET.

0 1 5 10 15 20 30 40 50 metres

Appendix 6: Tree Constraints Plan

ADDRESS: Grove Street, Longwood, Huddersfield, West Yorkshire, HD3 4TS.
JCA REF: 13331/AJB.

SCALE : 1:500	PAPER SIZE : A1

SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: ChC

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

Andrew Bussey.

8th June 2017

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

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Report printed on recycled paper

JCA Ltd. Arboricultural and Ecological Consultants
Professional Tree and Ecology Advice nationwide

ARBORICULTURAL SERVICES

Guidance for Architects and Developers

- British Standard 5837 Tree Surveys
- Arboricultural Implication Assessments (AIA)
- Arboricultural Method Statements (AMS)

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected Species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)

HEAD QUARTERS:

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