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## Coppice Landscapes

**Report type: Arboricultural Implication Assessment**

**Client: Saul Construction Limited**

**Site address: Brierley Hall  
Church Street  
Brierley**

**Reference No: AIA/SW/2010(BH,S1)**

**Date of report: 24 March 2010**

## **1. CLIENT**

### **1.1**

Saul Construction Limited, Burntwood Office Park, Brierley Common, Barnsley, South Yorkshire, S72 9ET.

## **2. PURPOSE OF THE REPORT**

### **2.1**

A report is needed to give detailed arboricultural advice on trees that are considered to be of significance to a proposed residential development at Brierley Hall, Church Street, Brierley. I am asked to make specific recommendations on arboricultural work and methods of tree protection in relation to the proposed development. Only trees considered relevant have been included in the report. Accompanying the report is a tree survey schedule at Section 5 Tree Constraints Plan at appendix 1 and Tree Protection Plan at appendix 2.

### **2.2**

Refer to the Design and Access Statement submitted by Saul Construction Limited for a description of the site and its surroundings.

### **2.3**

The site contains a number of specimen trees, namely Beech, Pine and Tree of Heaven which form an integral part of the Hall's setting. A number of Sycamore and mixed ornamental trees front Church Street and the south eastern site boundary.

### **2.4**

Elsewhere tree cover within the surrounding area is generally poor in terms of numbers, age and species mix.

## **4. NAME OF INSPECTOR.**

### **4.1**

Stephen Waterson.

## **4. STATUS OF TREES.**

### **4.1**

Several trees within the site are understood to be the subject of the Barnsley Metropolitan Borough Council of Tree Preservation Order (TPO7/2008). It should be noted also that those trees not subject of the Tree Preservation Order, still occupy positions within Brierley Conservation Area. In the case of trees that are subject of TPO, Conservation Area or planning application procedures it is essential the Local Authority's advice is sought and where necessary consent obtained before undertaking any tree removal or pruning operations.

## **5.0. SURVEY CONDITIONS, METHODS AND BASIS OF RECOMMENDATIONS.**

### **5.1**

The survey details were prepared in accordance with BS5837 – 2005 Guide for Trees in Relation to Construction providing an assessment as to the condition of each tree and desirability for retention within the development context. The details of the tree report should be self-explanatory, however it may help to explain the following;

Unless otherwise stated all measurements are taken in metres (m).

Stem diameter - is measured at 1.5m above ground level or above the root flare in the case of multi-stemmed trees.

Age of tree - is expressed as young (y), semi mature (sm), early mature (em), mature (m), and over mature (om) and veteran (v).

Estimated remaining contribution – relates to a trees useful life expectancy.

BS 5837 category grading – is a methodology for evaluating existing tree stock and is summarized as follows;

R = Removal necessary for arboricultural management reasons and/or having a value that would be lost within 10 years in the current context

A = Trees of high quality

B = Trees of moderate quality

C = Trees of low quality

1 = Trees with arboricultural values

2 = Trees with mainly landscape values

3 = Trees with mainly cultural values

RPA (radii) - Is the normal minimum distance specified in BS5837 table 2 in which to position protective fencing. This in turn defines the "Construction Exclusion Zone".

Preliminary management recommendations – Where tree removal is recommended solely to facilitate the proposed development a statement is made to this effect.

Tree Ref.	Species	Stem Diameter (m)	Height (m)	Branch Spread (m) n, e, s, w	Age class	Structural, physiological condition & comments	Preliminary management recommendations	Estimated remaining contribution	BS 5837 Category	RPA (radii)
T1 (T7 on tpo)	Beech	0.6	20	8 3 5 8	m	Attractive & dominant specimen, sharing crown space with T2. Major west facing wounds to bole. A number of cavities, minor snags & dead wood are evident. Climbing inspection required to determine severity of defects. This can be achieved whilst undertaking recommended pruning works.	Retain, crown lift to clear adjoining building, 20% crown thin & crown clean. Arborist to report back the severity of defects. Plant eventual replacement trees	20-40	B1	7.2
T2 (T6 on tpo)	Beech	0.8	20	8 8 8 6	m	Attractive & dominant specimen, sharing crown space with 1. Major west facing cavity at 6m. Large flush cut wound to main bole & secondary limb. A number of cavities, minor snags & dead wood commensurate with age are evident. Climbing inspection required to determine severity of defects. This can be achieved whilst undertaking recommended pruning works.	Retain, crown lift to clear adjoining building, 20% crown thin & crown clean. Arborist to report back the severity of defects. Plant eventual replacement trees	20-40	B1	9.6
T3 (T3 on tpo)	Pine	0.4	13	5 5 5 5	m	Attractive & dominant specimen, with minor snags & dead wood.	Retain crown lift to clear adjacent wall & crown clean	20-40	A1	4.8
T4	Buddleia	0.05 m/s	5	1 3 3 2	om	Inconsequential over mature & misfit shrub	Remove	0-10	R	0.5
T5	Cotoneaster	0.1 m/s	5	4 4 4 4	M	Heavily suppressed & of poor form. Inconsequential & misfit small tree/large shrub.	Remove	10-20	C2	1.0

Tree Ref.	Species	Stem Diameter (m)	Height (m)	Branch Spread (m) n, e, s, w	Age class	Structural, physiological condition & comments	Preliminary management recommendations	Estimated remaining contribution	BS 5837 Category	RPA (radial)
T6 (T1 on tpo)	Tree of Heaven (referred to as Ash on tpo)	0.25	7	4 4 4 4	sm	Promising tree, though regrettably suckering is evident some distance from parent tree	Retain no work required 10-20	10-20	C1	3
T7	Purple Plum	0.25	6	4 4 4 4	m	Reasonable example of species, with no major defects. Somewhat inappropriate species selection, though retention recommended until establishment of new planting	Retain crown lift & crown clean	10-20	C1	3
T8 (T4 on tpo)	Copper Beech	0.6	12	7 7 7 7	m	Attractive & dominant specimen, with minor snags & dead wood.	Retain crown lift & crown clean	20-40	A1	7.2
T9 (T5 on tpo)	Himalayan Birch	0.25	10	5 5 5 5	sm	Poor form having no clearly defined leader. Minor snags & dead wood. Retention recommended until establishment of new planting	Retain crown lift & crown clean	10-20	C1	3
T10	Sycamore	0.2	9	4 4 4 4	sm	Promising tree, no defects present.	Retain no work required	10-20	C1	2.4
T11	Sycamore	0.75 m/s	12	6 6 6 6	m	Dual stemmed from near to ground, with basal decay to southerly stem. Minor snags & dead wood.	Removal necessary to accommodate development	10-20	C1	7.5
T12	Almond	0.2	6	4 7 5 4	om	Very poor form with extensive die back throughout crown.	Remove & replace	0-10	R	2.4

Tree Ref.	Species	Stem Diameter (m)	Height (m)	Branch Spread (m) n, e, s, w	Age class	Structural, physiological condition & comments	Preliminary management recommendations	Estimated remaining contributio	BS 5837 Category	RPA (radjii)
T13 (T8 on tpo)	Hawthorn	0.2	6	3 3 3 3	m	Reasonable if somewhat inconsequential specimen. Minor snags & dead wood. Retention recommended until establishment of new planting, however tree is considered to be of insufficient merit to stifle an otherwise acceptable form of development.	Removal necessary to accommodate development	10-20	C1	2.4
T14 (T9 on tpo)	Cherry	0.3	6	3 3 3 3	m	Reasonable if somewhat inconsequential specimen. Minor snags & dead wood. Retention recommended until establishment of new planting, however considered to be of insufficient merit to stifle an otherwise acceptable form of development.	Removal necessary to accommodate development	10-20	C1	2.4
T15 (T10 on tpo)	Sycamore	0.3	10	5 5 5 5	sm	Promising tree, no defects present.	Removal necessary to accommodate development	10-20	C1	3.6
T16	Variegated Poplar	0.1	7	3 3 3 3	sm	Of poor suppressed form, due to dominance of T15	Remove	0-10	R	1.2
T17 (T11 on tpo)	Plum	0.15	6	4 4 4 4	m	Reasonable if somewhat inconsequential specimen. Minor snags & dead wood. Of insufficient merit to stifle an otherwise acceptable form of development. At this size readily replaceable within the development context.	Removal necessary to accommodate development	10-20	C1	1.8
T18 (T12 on tpo)	Cherry	0.6	8	8 8 6 6	om	Dominant specimen. Thinning upper crown, gummy exudations to lower bole, cavities snags & dead wood are indicative of a senescent tree. Unlikely to tolerate changing site conditions.	Removal necessary to accommodate development	10-20	C1	7.2
T19	Hawthorn	0.3	6	4 4 4 4	m	Poor form, with minor dead wood & snags. Inconsequential tree growing over line of sewer. At this size readily replaceable within the development context.	Removal necessary to accommodate development	10-20	C1	3.6

Tree Ref.	Species	Stem Diameter (m)	Height (m)	Branch Spread (m) n, e, s, w	Age class	Structural, physiological condition & comments	Preliminary management recommendations	Estimated remaining contributio	BS 5837 Category	RPA (radii)
T20	Laburnum	0.4	6	4 4 4 4	m	Reasonable form, with minor dead wood & snags. Inconsequential tree growing over line of sewer. At this size readily replaceable within the development context.	Removal necessary to accommodate development	10-20	C1	4.8
T21	Cherry	0.4	6	4 4 4 4	m	Poor form growing over line of sewer and within 1m of manhole cover. At this size readily replaceable within the development context.	Removal necessary to accommodate development	10-20	C1	4.8
T22 (T13 on tpo)	Ash	0.2	8	4 4 4 4	sm	Promising tree, no defects present. At this size readily replaceable within the development context.	Removal necessary to accommodate development	10-20	C1	2.4
T23	Sycamore	0.4	12	5 5 5 5	em	Reasonable tree with minor snags & dead wood. Will in time displace boundary palisade fence.	Retain crown lift & crown clean	10-20	C1	4.8

## **6.0 ADDITIONAL INFORMATION IN SUPPORT OF RECOMMENDATIONS.**

### **6.1**

The findings of the tree survey schedule at section 5 indicate that 2No. trees merit a high (A) category 2No. trees merit a moderate (B) category, 16No. trees merit a moderate (C) category and 3No. trees fall into the remove (R) category.

### **6.2**

In pure development terms it is feasible to retain the sites most significant tree cover that interacts most directly with the setting of Brierley Hall. However the survey findings explain that for arboricultural management reasons it is considered preferable to remove several trees on site either because they are considered inappropriate for their location or because they will unreasonably constrain an otherwise acceptable form of development. Moreover the development itself provides the capabilities to encompass a desirable scheme of replacement tree planting that will effectively mitigate for such losses. More particularly it is recommended that irrespective of the development proposal, trees T4, T12, and T16 are removed for arboricultural management reasons. In addition when considering the remaining tree cover within the context of the proposed development it is recommended that trees T11 and trees T13-T22 be removed. Taken together the trees recommended for removal are either smaller growing varieties, of a size that do not contribute significantly to the setting of the Conservation Area, poorly sited or defective in some way.

### **6.3**

With regard to additional planting scope exists to provide more dominant tree cover than presently exists. Ample space will be available to the Church Street frontage and the initial site entrance in which to plant several larger growing tree species. This planting is considered desirable in the light of the short term retention values associated with the majority of trees present on site. The desired planting would help to vary the age and species of tree present, providing for continuity of tree cover, to the benefit of nature conservation and visual amenity. The cumulative effect of desirable planting would mitigate for the future loss of defective trees, whilst enhancing the future character of Brierley Conservation Area. I would presume this is a matter the Local Planning Authority would be agreeable to conditioning as part of a detailed Planning Permission.

### **6.4**

The possibility of root damage upon foundations will need to be addressed. In this regard structures will need to be appropriately designed to have foundations that take account of roots, either past, present or future that could impact upon soil moisture levels and possibly contribute to subsidence if the structure of the soil was of a suitable nature.

### **6.5**

The recommendations are therefore in accordance with good management principles and will ensure that a desirable and secure treescape can be achieved.

## **7.0 ARBORICULTURAL METHOD STATEMENT DETAILING TREE PROTECTION PRIOR TO AND DURING CONSTRUCTION PROCESS**

### **7.1**

*In order to ensure retained trees are protected from unnecessary damage or disturbance, protective fencing should be erected prior to commencement of any construction operations. The final column of the tree survey schedule at Section 6 indicates the Root Protection Area (RPA radii) for all trees, which in turn dictates the minimum recommended construction exclusion zone that is necessary to safeguard a trees rooting environment. However trees T1, T2 and T23 occupy positions that taking account of their respective RPA's will be compromised by the proposed private drive(s) and parking bays that serve plots 1-3 and 26-29. With regard to T23 until recently a hard standing and kerb line existed tight up to this tree and this earlier arrangement can reasonably be expected to have influenced root development to such an extent that the proposed alterations will not materially impact on this tree. In the case of T1 and T2 careful consideration has been given to utilising the principles of Arboricultural Practice Note No.1. This will involve employing a "no dig technique", incorporating a geogrid system and porous surface treatment, with surfacing above grade being retained by edging so as to avoid damaging the trees rooting environment. A detailed method statement covering this aspect is discussed at paragraph 7.7 of this report.*

### **7.2**

The RPA should be created using a robust barrier that should fully meet the requirements of BS: 5837, Section 9.2.2, namely a framework of vertical and horizontal tubular scaffold poles which should be braced sufficiently to receive weld mesh which should itself be securely fixed with wire or scaffold clamps. The fencing should be sufficiently strong to withstand impacts likely to be caused during building operations. Extracts from BS5837 can be supplied for reference purposes if required. All weather signs should also be affixed to the fencing at regular intervals stating; "CONSTRUCTION EXCLUSION ZONE KEEP OUT." *Once erected the protective fencing shall not be crossed, removed or otherwise altered. No persons or materials must be allowed into the exclusion zones.*

### **7.3**

Any permitted felling of trees in close proximity to retained trees and structures may need to be removed in sections to prevent injury to retained items or property. Furthermore the tree work identified in this report shall be carried out by a qualified, competent and fully insured contractor, to the appropriate British Standard and in accordance with current Health and Safety Practice. All necessary stump or root removal shall be carried out by means stump grinding rather than excavating by JCB or similar.

### **7.4**

Services into or out of the site should be routed outside of the Construction Exclusion Zone and RPA RADII so as to avoid damaging the expected root areas of the retained trees. Should this not always be possible there are specialist techniques that can be used so as to minimise or prevent damage, and these are detailed in BS5837 and NJUG Guidelines, though these should not be implemented without first agreeing such with the Local Planning Authority.

### **7.5**

More generally care should also be taken to ensure that oil, bitumen, cement or other material likely to be injurious to a tree is not be stacked or discharged within 5m of the Construction Exclusion Zone. Cement mixing should not be carried out within a similar distance.

## 7.6

The developer should make the contractor (arborist) aware of the need to check for both overhead and underground services before commencing work and to obtain any necessary clearances. When instructing a contractor to undertake any tree work, it is essential to provide the arborist with details of any restrictions (i.e. a Tree Preservation Order, Conservation Area status, or relevant planning conditions) that may influence the recommendations contained in this report.

## 7.7

As stated in paragraph 7.1 the proposed access and parking arrangements encroach into the RPA radii of Sycamore trees T1 and T2. In this regard careful consideration has been given to utilising the principles of Arboricultural Practice Note No.1. This involves employing a "no dig technique" incorporating a geogrid, porous surface treatment, with surfacing above grade being retained by edging so as to avoid damaging the trees rooting environment. It is therefore suggested the following detailed method of construction be adopted for T3 and T4 within the area identified on the accompanying "tree protection plan" at appendix 2.

- ⇒ Prior to commencement of any demolition and construction work the Tree Protective Fencing shall be installed in accordance with the Tree Protection Plan.
- ⇒ The proposed vehicular access shall be constructed up to top of sub-base level as a minimum in the root protection area prior to commencement of demolition and all other building operations.
- ⇒ Driveway construction in the root protection areas should ideally be carried out between May and October when the ground is driest and least prone to compaction and in dry weather.
- ⇒ Carry out the recommended tree pruning operations.
- ⇒ Ground vegetation shall be removed as necessary using low ground-pressure plant (e.g. Turf cutter, Bobcat or similar)-gather up dead organic material to prevent build of anaerobic conditions beneath the construction, which might otherwise occur as vegetation decomposes.
- ⇒ Remove major protrusions including large stones by hand. Wherever practicable maximum level drop to be 50mm. Fill any major hollows with sharp sand.
- ⇒ Sub base to be formed using cellular confinement system (e.g. Cooper-Clarke *Geoweb* or Geosynthetics *Cellweb*) to retain no-fines granular fill. The construction specification shall be designed by the scheme engineer to ensure the surface will accommodate vehicular traffic.
- ⇒ It is recommended the finished surface comprise of a gravel finish or formpave - a porous type paver.
- ⇒ It is essential to use non-invasive kerbing in areas that interface with retained trees. It is recommended the edge restraint should comprise of a proprietary "Keykerb" edging detail. This basically is the same as a standard block paver but has an upstand/thickening to create a kerb effect – the cellular no-dig construction extends under this to provide the foundation. The edge restraint should then be concealed by localized grading of adjoining ground levels.
- ⇒ Retain all tree protection in place until substantive completion of development has occurred.
- ⇒ Delay construction of any hard landscaping (paving) that falls within Root Protection Area until after removal of tree protection fence and ground protection.

## 7.8

Provided satisfactory tree protection is provided development need not compromise the health of retained trees.

## **8.0 SUMMARY AND CONCLUSIONS**

### **8.1**

From the foregoing tree survey findings, comments and observations, it will be seen that the development proposal itself does not require the removal of any high (A) or moderate (B) category trees. The trees that are recommended for removal are done so purely on the basis of sound arboricultural management, when viewed in the context of the proposed development. Equally important however the proposal provides an opportunity to carry out a scheme of arboricultural management and tree planting that would not only serve to maintain, but would enhance the existing tree cover to assist in the long term protection of the local environment, for the enjoyment of future generations.

### **8.2**

The protection of trees and their subsequent health and future potential is totally dependent upon all persons operating within the site. Communications are vitally important to ensure that all parties understand the reason for tree protection and its continued existence. *Providing all necessary tree protection works are undertaken, then retained trees and development alike will satisfactorily coexist.*

### **8.3**

It is hoped that this report and recommendations provides all necessary information. *However should there be any queries or should clarification of any points be required, please contact myself.*

Stephen Waterson