

Tree Survey and Report

BS 5837

Acorn Lodge, Pinder Oaks
Upper Sheffield Road, Barnsley

FOR CAS BEHAVIOURAL HEALTH

SEPTEMBER 2017

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1. Instructions

- To carry out a survey of trees and vegetation on a site adjacent to Pinder Oaks Private Hospital, Barnsley, as indicated on the attached survey plan; and to record information with reference to: *BS 5837: 2012: Trees in relation to design, demolition and construction*.
- To comment and advise on the development proposals in relation to the survey findings and to detail measures required for the protection of any trees to be retained.

2. Inspection Details

The site and trees were inspected in summer conditions on 18th August 2017. The Group 2 trees were originally outside the development area and so were only visually checked.

3. Site Context & Protections

The site is located in a southern suburb of Barnsley, with open green space to the east - well populated with trees - and housing to the north beyond the main car park for the complex. To the west and south is a recently completed housing development on a previous transport depot. The site itself is currently partially occupied by an all-weather sports area, with the remaining areas colonised by scrub and weed vegetation around an unfinished concrete floor.

The site is not believed to be within a Conservation Area, but there are Tree Preservation Orders in place on some of the trees fringing the proposed development area, on all the mature trees alongside the access road to the site, as well on individuals no longer present on site.

The proposed development is a new residential brain injury unit, with associated car parking, access paths and garden spaces.

4. Condition of Trees

The condition of all trees inspected accompanies this report in schedule form, and locations are noted on the accompanying survey drawing. Information is detailed and described as follows:

- Tree type with reference number,
- Species in Latin, with English common name,
- Maximum height, and trunk diameter at 1.5m above ground level,
- Crown spread, and height from ground to lowest part of crown,
- Age Class,
- Physical and structural condition,
- Preliminary Management Recommendations,
- Estimated remaining contribution (RC); (or Safe useful life expectancy; SULE),
- Tree Quality Assessment in relation to BS 5837: 2012,
- Root protection areas calculated in accordance with BS 5837: 2012,
- In addition, photographs were taken and filed.

Recommendations have been made with regard to the development proposals and likely construction methods, and also in relation to the general management of the trees.

5. Wildlife and Countryside Act

Where birds and bats may be affected by work to trees and hedges, consideration should be given to the timing and scope of work. Bats are protected under the Wildlife & Countryside Act 1981 and subsequent legislation and it is an offence to deliberately or recklessly disturb them or damage their roosts.

If the presence of bats is suspected when works commence then contact should be made with Natural England, or via the UK Bat Line and 'The Bat Conservation Trust' (0345 1300 228). It is also suggested that tree felling and major pruning should be avoided in the bird nesting season, generally specified as March 1st to July 31st, though often extending through August.

6. Development Comments

6.1. Summary

The development and associated works will occupy most of the main site and involve significant regrading work to establish a suitable platform; thus all of the scrub vegetation on site will be lost. The proposed building forms an L-shape enclosing a south-east facing courtyard, and extending very close to the southern boundary and its protected trees T6 and T7. It is understood that these trees are site-owned, but this has not yet been absolutely confirmed.

A section of road and overspill parking is proposed within the mature trees of Group 2 (covering T8 to T16 inclusive) to be constructed using a low impact, no-dig construction method.

Access to the site is via the existing well-constructed tarmac drive from Upper Sheffield Road. This runs past the mature trees of Group 2, some of which will require some crown lifting as specified to avoid possible branch damage.

6.2. Tree Constraints Plan - Summary

The locations of the trees are shown on the attached drawing, along with allocated grades in relation to criteria in BS5837: 2012. Trees of grades 'A' and 'B' are normally considered as features to be retained in any proposed development, with grade 'C' trees retained only where they do not significantly affect proposals. Trees graded 'U' are those with recommendations to fell, and/or with only minimal amenity or conservation contribution.

The trees on this site are generally of fair, moderate, or declining health and condition, and are thus individually graded B or C. Taken as a group however, G2 can be considered as Grade A.

6.3. Root Protection Areas

Root protection areas (RPAs) for any retained trees are derived from area calculations based on stem diameter. These areas are then overlapped to create a zone of root protection (Construction Exclusion Zone (CEZ)) and suitable fixed fences erected to delineate and define these zones. Suggested construction details for these fences are included in BS5837:2012, and their positions are discussed below and shown on the included tree protection plan (TPP).

7. Arboricultural implications assessment

7.1. Tree constraints and design/proximity to structures – Discussion

The plan of proposals indicates that the TPO Sycamores T6 and T7 cannot be retained, as they are immediately adjacent to the necessary retaining wall which will be a significant structure. The ownership status of these trees must be established before full construction details are agreed. Replacements for T6 & T7 and for previously lost or fallen TPO trees are included in the scheme and are fully detailed on the landscape plan which accompanies the application.

The Sycamores T1 to T5 inclusive on the western boundary are relatively low grade trees. Two of these are TPO trees but which numbers is not confirmed. All will be retained to give some screening and continuity to the site. A proposed CEZ fence is indicated on the TPP and this must be positioned as far eastwards as construction of the required north-south retaining wall allows.

Within Group G2 a space is proposed for overspill car and minibus parking. This is located on a more open area within G2, relatively free of trees, and adjacent to Sycamore T10 that shows significant decline. Removal & replacement of T10 is therefore proposed to establish a suitable and efficient parking space. A temporary set-back of the CEZ is proposed and a predominantly no-dig construction method will be used to create the parking and roadway. This will be a stabilised gravel 'Geogrid' system, over a geotextile membrane and free-draining hardcore, with a small section of full depth construction to allow a level approach from the existing road.

Construction principles are described in paragraph 3 of the Arboricultural Method Statement.

The remaining trees in G2 are outside the principal red-line site area but may be impacted by site compounds, traffic, storage, parking etc. The whole area should therefore be fenced as shown on the TPP, with a temporary set-back only for construction of the overspill parking as described. Those trees in G2 alongside the access road (including T9, T11, and T13, T14, T15 & T16) should be crown lifted to a nominal 4 to 5m above the road, with appropriate re-balancing on the opposite verge side as required.

Notwithstanding any development works or approvals, it is recommended that all trees in G2 are more fully safety inspected because various issues and potential safety problems were identified in this BS5837 survey. In addition Ivy should be cut and, if possible, removed from the crowns.

7.2. Tree Management and New Planting

A new tree planting and management scheme is proposed to replace lost trees and to promote those retained, which will enhance and/or screen the development and maintain amenity.

Indicative planting positions for new trees are shown on the TPP, with full details confirmed on the accompanying landscape proposals drawing.

In principle, new tree species should include a range of suitable specimens, with consideration given to amenity, conservation interest and microclimate improvement. The site's location and character must be considered when identifying new species. All new planting should receive appropriate and specific maintenance to maximize growth and speed of establishment.

8. Arboricultural Method Statement & Tree Protection Plan: Notes

1. The following arboricultural method statements and tree protection plan should be read in conjunction with the accompanying tree report. The report details and comments on all the significant trees present on site in relation to BS 5837 2012, and this statement includes general notes and advice relating to the relationship between trees, development and construction.

Site personnel, employees and contractors, will be made aware of these Arboricultural Method Statements (AMS) before development commences and will attend a site induction meeting, if required. A copy of the AMS and notes / plans will also be kept in the site office file so that it can be referred to or viewed at all times.

2. **Tree protection plan**

When trees are retained then the Root Protection Areas indicated on the accompanying drawings should be protected during development. The protected areas are the Construction Exclusion Zones. Fencing must be erected prior to any site works commencing, including demolition, preparatory excavations and materials delivery. These areas to be protected with **secure, immovable fencing** which will prevent access throughout the development and which will be installed prior to starting and not be removed until completion. Depending on the scale of the development and the trees to be protected, the protection fencing should be appropriate to the degree of protection required. The fencing must be clearly labeled "TREE PROTECTION: DO NOT MOVE". All fencing should be checked on site by a Tree Consultant to ensure it is placed in the correct locations and is adequate for the purpose.

No materials, equipment, site huts, fuels or other items shall be placed or stored within the areas enclosed by the CEZ fencing and the ground levels within those areas shall not be altered, nor shall any excavation be made, without the prior written consent of the Local Planning Authority. Burning of materials or other items shall not take place within 5 metres of the edge of the crown spread of any of the trees to be retained.

Services shall not be routed under the spread of the crowns of the trees to be retained without the prior written consent of the Local Planning Authority. No retained tree shall be cut down, up-rooted, destroyed, topped or lopped without the prior written consent of the Local Planning Authority and if any tree which is to be retained dies within five years beginning with the date on which the development is commenced it shall be replaced with a tree of such size and species as may be specified in writing by the Local Planning Authority.

3. 'No-dig' roads, paths and driveways:

Method statement for the Construction of 'No-dig' roads, paths and driveways

An area of no-dig construction is proposed to create the overspill parking area within Group G2. Construction details will be in general accordance with the relevant content of BS5837, with specific construction proposals to be agreed before any work commences.

Outline Methodology Includes:

Strip existing turf to maximum 75mm to 100mm by suitable hand-operated machinery;
Lightly stabilise existing soil by compacting plate-vibrator;
Lay suitable engineering-grade permeable geotextile;
Fix treated timber edging, nominal 150mm x 50mm secured by driven timber pegs;
Supply and spread 100mm *no-fines* permeable hardcore; do not heavily compact;
Supply and fix proprietary geogrid gravel stabilization system; nominally 75mm deep;
Fill grid to top with suitable permeable gravel or aggregate;
Make up/grade surrounding soil levels to top of timber edge with on-site topsoil.

4. Barriers and ground protection within the Root Protection Area

As discussed above in paragraph 3. If temporary construction access is justified within the RPA this should be facilitated by a setback in the alignment of the tree protection barrier.

5. Progress of development

Prior to the commencement of installation of access roads, services and foundations, a predevelopment meeting should be held between the Local Authority Tree Officer, Tree Consultant, site manager/foreman, and Supervising Officer, to ensure that the Construction Exclusion Zone fencing is in place and preparatory tree works have been undertaken.

The site will be visited on a regular basis by a tree consultant once development has begun, if required, to ensure that all protection measures are being adhered to and any problems in relation to retained trees and vegetation are resolved.

6. Preparatory Tree works

All recommended preparatory tree works and shrub clearance should be carried out prior to development of the site including the erection of protection fencing. All tree pruning and felling is to be undertaken by professional tree contractors and in accordance with BS 3998: 2010: Recommendations for Tree Work.

7. Pile foundations within the Root Protection Area:

Not applicable.

Tree No.	Species	Hgt (m)	Diam (mm)	Spread N, S, E, W (m)	Hgt 1 st brch	Hgt to crown	Age Class	Physiological and Structural Condition. Preliminary Management Recommendations	Est RC years	Grade BS5837	RPA (rad) (m2)	Photo
T1 to T7 inclusive		Note						Trees T1 to T7 inclusive were not accessible due to site vegetation, so a re-assessment to confirm the condition of retained tress is suggested.				
T1	Sycamore <i>Acer pseudo-platanus</i>	15	400? ~	7, 5, 3, -	1	1	M	Good foliage health, low canopy, low limb overextended to north-east at ~2m AGL. <i>Suggest remove limb to NE. Other work TBC.</i>	10-20	C	4.5 64	1, 2, 3
T2	Sycamore <i>Acer ps.</i>	5	300 ~	3, 3, 3, 3 ?	1	1	M	Has been topped (presumably by neighbours to west) so form potentially very compromised. <i>No immediate works required - TBC.</i>	10-20	C	3 28	2, 3
T3	Sycamore <i>Acer ps.</i>	8	?	2, 2, 2, 2 ?	-	-	M	Good foliage health, low canopy. <i>No immediate works required - TBC.</i>	10-20	C	3 28	2, 3
T4	Sycamore <i>Acer ps.</i>	10 ~	?	4, 4, 4, 4 ?	-	-	M	Good health, low canopy, possibly multi-stem. Larger than neighbours. <i>No immediate works required - TBC.</i>	20-30	B	4.5 64	2, 3
T5	Sycamore <i>Acer ps.</i>	10 ~	?	2, 2, 3, 3	-	-	M	Good foliage health, low canopy. Squirrel damage at top of canopy. <i>No immediate works required - TBC.</i>	10-20	C	3 28	2, 3
T6	Sycamore <i>Acer ps.</i>	12 ~	400 ~	4, 3, -, -	1	1	M	Assumed to be in site ownership - TBC. Good foliage health; appears to be compromised by T7. Ivy up stem to 8m+. <i>To be felled for development purposes - for retaining wall construction.</i>	10-20	C	4.5 64	4
T7	Sycamore <i>Acer ps.</i>	18	550+ ~	6, 7, 7, 4	2	2	M	Assumed to be in site ownership - TBC. Good foliage health, dominant tree on this boundary. Twin stemmed at 2m, junction appears sound, but not checked. Minor deadwood. Very close to houses to south. <i>To be felled for development purposes - for retaining wall construction.</i>	20-30	B	6.6 135	4
G1	Birch, Osier, Willow Poplar	1 to 5	Up to 60	Plan	-	-	Y SM	Pioneer vegetation on all open sections of site. Unmaintained. Has wildlife value, but limited external amenity value and no long term viability. <i>To be removed for development.</i>	-	-	-	2, 5

Tree No.	Species	Hgt (m)	Diam (mm)	Spread (m)	Hgt 1 st brch	Hgt to crown	Age Class	Physiological and Structural Condition. Preliminary Management Recommendations	Est RC years	Grade BS5837	RPA (rad) (m2)	Photo
G2	Comprises all Mature Trees, as below. Not on original development site so visually checked only. Notes for specific individuals; as described. Heights, 20 to 25m; DBHs 600- 900mm; Spreads 12 to 20m							Full Safety Inspections Recommended. Some possibly hollowing detected by sounding, crown deterioration in some trees. Possibly fungal brackets present – verbal indication from site staff. Ivy up some stems, recommend cutting.	30+	A As Group	Plan	6 to 11
T8	Sycamore <i>Acer ps.</i>						M	Alongside access road, foliage in fair health. No obvious structural issues.		B	Plan	6, 7
T9	Sycamore <i>Acer ps.</i>						M	Alongside access road, foliage in fair health. No obvious structural issues.		B	Plan	6, 7
T10	Sycamore <i>Acer ps.</i>						M	Crown showing serious decline, possible stem hollowing from soundings. Close to footpath. <i>To be felled for development purposes - for roadway and parking construction</i>		C	-	8
T11	Horse Chestnut <i>Aesculus h.</i>						M	Alongside access road, foliage showing leaf miner/virus. Twin stem at 1.5m appears sound. Low growth, compromising bigger vehicles. Recommend crown lifting.		B	Plan	9
T12	Horse Chestnut <i>Aesculus hippo-castanum</i>						M	Serious stem base decay, probably initiated by fire damage. Full inspection and diagnosis required. Foliage has serious decline, from leaf miner and probable virus infection. Suggest crown reduction as minimum solution, possibly fell and replace.		C or U TBC	-	10
T13	Beech <i>Fagus sylvatica</i>						M	Crown showing minor decline, possibly stem hollowing. Close to access road, recommend crown lifting to clear vehicles. Cut Ivy		B	Plan	9, 11
T14	Beech <i>Fagus sylvatica</i>						M	Crown showing minor decline, possibly stem hollowing. Close to access road, recommend crown lifting to clear vehicles. Cut Ivy.		B	Plan	11
T15	Sycamore <i>Acer ps.</i>						M	Close to access road, recommend crown lifting to clear vehicles. Cut Ivy		B	Plan	11
T16	Horse Chestnut <i>Aesculus h.</i>						M	Alongside access road, foliage in fair health. Stem scarring, but no obvious structural issues. Recommend crown lifting to clear vehicles.		B	Plan	11

KEY

Dimensions ~ – indicates estimated dimension	Life St: Life Stage (or age class)	Other Headings & Notes	Grade: Tree Quality based on BS5837:2012
Ht: Maximum height of tree, in metres.	Y – Young	Ref: Reference number (which <i>may</i> refer to a tag fixed to a tree). T – Tree, H – Hedge, G – Group	U – Trees in such a condition where any existing value would be lost in 10 years.
Diam: Stem diameter at ~ 1.5m above ground level (AGL), in mm. MS indicates 'multi-stem'	SM – Semi-Mature	Species: Common name, plus Latin name where appropriate. Species in brackets () indicate shrub or subsidiary species, in hedges and in groups.	A – Trees of high quality and value.
Spread: Minimum spread of branches to the 4 cardinal points, in metres.	EM – Early-Mature	Est RC: Estimated remaining contribution, in years.	B – Trees of moderate quality and value.
Ht 1st branch: Height AGL of first significant branch, and growth direction where applicable, in metres.	M – Mature	RPA: Root Protection Area, in m ² , calculated from stem diameter, in accordance with BS5837.	C – Trees of low quality and value. <i>Trees in this category should not be retained where they impose significant constraints on development.</i>
Ht to Crown: Height AGL to lowest significant section of canopy, and direction where applicable, in metres.	LM – Late-Mature OM – Over-mature	Photo: Photograph reference number, where applicable.	Other Abbreviations: AGL – Above Ground level CEZ – Construction Exclusion Zone TPP – Tree Protection Plan

Tree Protection Plan: September 2017

Photographs:



Photo 1: T1 Sycamore, western boundary



Photo 2: T1 RHS, T2 (topped), T3 & T4 to LHS; all Sycamores



Photo 3: T1 RHS, T2 (topped); T3, T4 & T5 LHS



Photo 4: T7 LHS, T6 hidden, south-west boundary

Photographs:



Photo 5: Group 1, scrub and self-seeded within site



Photo 6: Mature trees in Group 2, along access road, from site



Photo 7: Group 2, along access road; T8 and T9 Sycamores



Photo 8: T10 Sycamore decline, in Group 2



Photo 9: Chestnut T11 in Group 2, Beech T13 far left



Photo 10: Chestnut T12, serious stem decline (off-site)



Photo 11: Group 2, access road, T13 RHS; T14, T15, T16 LHS



Photo 12: Northern site boundary, T1 to far left.