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Tree Survey Revision A
Barnsley Hospital – Women and Children's Block



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May 2010

ENVIRONMENTAL CONSULTANCY

Beaumont and Cowling

15 Collegiate Crescent

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REPORT TITLE: **TREE SURVEY**

Barnsley Hospital – Women and Children's Block

REVISION: Final Report – Revision A

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Table 1 – Tree Survey Schedule

Figure 1 – Location Plan (within report text)

Figure 2 – Tree Survey Plan Revision A

Figure 3 – Tree Constraints Plan Revision A

1 Introduction

1.1 ECUS Limited were commissioned by Beaumont and Cowling to undertake a tree survey of trees within a courtyard in front of the maternity block off Gawber Road, within the grounds of Barnsley Hospital. The site location is shown on Figure 1 below.

1.2 The survey was carried out to inform a planning application to demolish the existing Department of Psychiatric Medicine building and build a new Women and Children's block. This report sets out the findings of the survey and relates these to the development proposals.

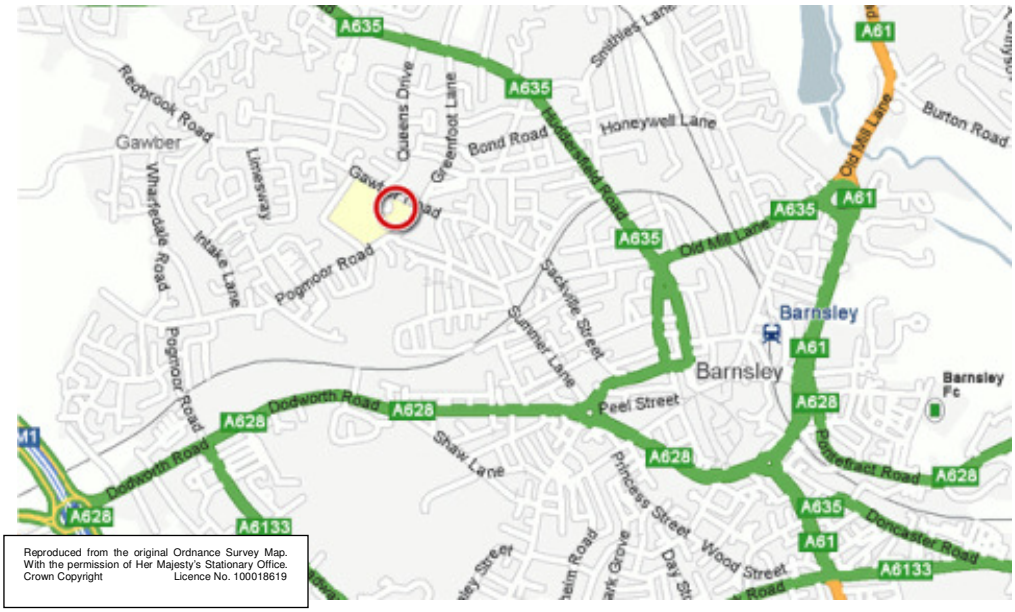


Figure 1: Site Location

2 Methodology

2.1 Tree Survey

2.1.1 ECUS carried out the initial tree survey of T28-T36 in April 2010 when the trees were starting to come into leaf. T1-T27 were surveyed in May 2010 when the trees were fully in leaf. The survey covered trees within the site. The tree survey was a ground based visual inspection carried out by landscape architects. The trees were not tagged as part of the survey.

2.1.2 The following characteristics were recorded:

- Species
- Stem diameter at 1.5m above ground level (mm).
- Estimated height (m)
- Safe Useful Life Expectancy (an estimate of the number of years that the tree is likely to remain suitable for retention).

  0 (dead/dying) = less than 10 years

  S (short) = 10-20 years

  M (medium) = 20-40 years

  L (long) = more than 40 years

- Approximate crown diameter (m)
- Height of crown clearance above adjacent ground level (m)
- Age class

  Y (young)

  MA (middle-aged)

  M (mature)

  OM (over-mature)

  V (veteran)

- Condition category in accordance with *BS 5837:2005 Trees in relation to construction*. The categories listed are defined as per BS5837:2005 and briefly are:

  R = Remove

  A = Those of high quality and value - best trees with a long expected safe life

B = Those of moderate quality and value

C = Those of low quality and value and trees less than 15cm diameter

- Value subcategories in accordance with *BS 5837:2005.* The subcategories listed are defined as per BS5837:2005 and briefly are:

  1 = Mainly arboricultural values

  2 = Mainly landscape values

  3 = Mainly cultural values, including conservation

- General notes about physiological and structural condition and any management recommendations.

2.1.3 A plan of the site showing tree locations was provided. This was used as the basis for producing the tree survey plan.

2.1.5 The survey also included identification of any existing designations affecting trees on site such as Tree Preservation Orders and Conservation Area status by consulting with Barnsley Metropolitan Borough Council officers.

2.2 Tree Retention

2.2.1 A Tree Constraints Plan (Figure 3) was produced to assess the impacts of the development on the existing trees by overlaying the tree survey onto the development proposals.

2.2.2 The Tree Constraints Plan is a design tool which shows the below ground constraints represented by the Root Protection Areas, and the above ground constraints the trees pose by virtue of their size and position. The Root Protection Areas (RPA) of each tree surveyed was calculated in accordance with *BS5837:2005 Trees in relation to construction* and is shown on the Tree Constraints Plan.

3 Survey Results

3.1 General Site Description

3.1.1 The site is currently a courtyard and car park for the Barnsley Hospital maternity block including parking spaces, footpaths, grass, shrubs and individual trees. Surrounding land use is comprised predominantly of other hospital buildings and residential properties.

3.2 Results of Tree Survey

3.2.1 The trees surveyed are individual trees as part of the courtyard landscaping and trees lining the boundary of the hospital along Gawber Road and Pogmoor Road.

3.2.2 Table 1 describes the results of the trees surveyed and should be read in conjunction with Figure 2 Tree Survey Plan, which illustrates the location of the trees surveyed and the extent of their canopies.

3.2.3 The majority of the trees surveyed have been classified as category B trees (moderate quality and value) with some classified as category C trees (low quality and value). There were no category A trees (high quality and value) or category R trees (remove) identified on site.

3.3 Tree Designations

3.3.1 Barnsley Metropolitan Borough Council confirmed that the trees on site are not covered by a Tree Preservation Order (TPO). They also confirmed that the site is not within or adjacent to a Conservation Area.

4 Impacts of Development on Trees & Recommendations

4.1 Development Proposals

4.1.1 The development proposals comprise of a new Women and Children's Block to be built on the footprint of the Department of Psychiatric Medicine building which is to be demolished. The new building will also use land currently covered by several car park spaces to the west of the existing building.

4.2 Tree Retention & Removal

4.2.1 The effect of the development on the existing trees is shown on the Tree Constraints Plan. The Tree Constraints Plan has been produced in accordance with *BS5837:2005 Trees in relation to construction* and is shown in Figure 3. All trees surveyed are proposed for retention.

4.3 Recommendations for Protection of Retained Trees

4.3.1 The following section gives some suggestions as to how retained trees could best be protected during construction. More detailed guidelines for tree protection during construction are given in *BS5837:2005 - Trees in relation to construction*.

4.3.2 The root protection areas of all retained trees should be fenced and protected from site preparation and construction activities in accordance with *BS5837:2005 Trees in relation to construction*.

4.3.3 Care should be taken to protect trees during the preparation for construction works (site clearance) and during the construction works themselves to minimise the potential for damage to the trees during construction from site machinery and inappropriate storage of materials. To limit the likelihood of damage occurring during construction, we recommend that locations for the site compound and storage of materials should be specified away from retained trees. In addition, protective fencing should be erected outside the root protection area prior to construction commencing and retained throughout the construction period to physically separate the trees from the development works. The protected area should not be used for the storage of building materials and vehicles should be prevented from running over this area. The location of the protective fencing is shown on Figure 3.

4.3.4 Any excavations or alterations in ground levels within the root protection area of a tree may cause damage to tree roots and impact on the health and stability of that tree. Any excavations within the root protection area should be carried out carefully by hand and any roots that are exposed that are smaller than 25mm diameter should be carefully pruned. Roots greater than 25mm should only be severed after consultation with an arboriculturalist as this could affect the trees health and stability.

4.4 Tree Management Recommendations

4.4.1 It is recommended that the health of the trees be monitored on a regular basis and any remedial action taken to remove branches or trees that become unsafe. It is recommended that further inspection of all trees should normally take place at least once in every two years, unless there is a particular concern about the condition of a

tree, when annual inspection may be required. All tree management work should be carried out by a suitably qualified and insured arboriculturalist to the guidance detailed within *BS3998:1989 Recommendations for tree work*.

5 Appendix – Table and Figures

Table 1 - Tree Survey Schedule

ID REF (ECUS notation on site)	**Common Name**	**DBH** (Diameter of tree stem at 1.5m height m) (in mm)	**RPA** (Radius of Root Protection Area in mm)	**Estimated Height** (in m)	**Safe Useful Life Expectancy**	**Estimated Crown Spread** (in m)	**Height of Crown Clearance** above adjacent ground level (m)	**Age Class**	**BS5837: 2005 Category**	**Comments & Recommendations**
T1	Red Horse Chestnut	250	3000	8	L	8	1.5	MA	B2	
T2	Red Horse Chestnut	130	1560	6	L	5	1.5	Y	C2	Suppressed by T3.
T3	Red Horse Chestnut	250	3000	9	L	7	1.5	MA	B2	
T4	Red Horse Chestnut	200	2400	9	L	7	1.5	MA	B2	
T5	Red Horse Chestnut	250	3000	9	L	8	1.5	MA	B2	

ID REF (ECUS notation on site)	Common Name	DBH (Diameter of tree stem at 1.5m height m) (in mm)	RPA (Radius of Root Protection Area in mm)	Estimated Height (in m)	Safe Useful Life Expectancy	Estimated Crown Spread (in m)	Height of Crown Clearance above adjacent ground level (m)	Age Class	BS5837: 2005 Category	Comments & Recommendations
T6	Norway Maple	300	3600	9	L	10	2	MA	B2	
T7	Norway Maple	250	3000	9	L	7	2.5	MA	B2	
T8	Norway Maple	350	4200	9	L	7	2	MA	B2	
T9	Norway Maple	300	3600	9	L	9	1.5	MA	B2	Triple stemmed at 2m high.
T10	Norway Maple	250	3000	9	L	9	2	MA	B2	

ID REF (ECUS notation on site)	Common Name	DBH (Diameter of tree stem at 1.5m height m) (in mm)	RPA (Radius of Root Protection Area in mm)	Estimated Height (in m)	Safe Useful Life Expectancy	Estimated Crown Spread (in m)	Height of Crown Clearance above adjacent ground level (m)	Age Class	BS5837: 2005 Category	Comments & Recommendations
T11	Norway Maple	300	3600	10	L	9	2	MA	B2	
T12	Red Norway Maple	300	3600	9	L	8	4	MA	B2	
T13	Norway Maple	250	3000	9	L	10	1.5	MA	B2	
T14	Norway Maple	300	3600	9	L	8	3	MA	B2	Twin stemmed at 2m high.
T15	Norway Maple	300	3600	10	L	7	2	MA	B2	Branches previously cut back to avoid lamp post.

ID REF (ECUS notation on site)	Common Name	DBH (Diameter of tree stem at 1.5m height m) (in mm)	RPA (Radius of Root Protection Area in mm)	Estimated Height (in m)	Safe Useful Life Expectancy	Estimated Crown Spread (in m)	Height of Crown Clearance above adjacent ground level (m)	Age Class	BS5837: 2005 Category	Comments & Recommendations
T16	Norway Maple	400	4800	10	L	9	2	MA	B2	
T17	Norway Maple	300	3600	9	L	9	2	MA	B2	
T18	Norway Maple	250	3000	9	L	8	2	MA	B2	Triple stemmed at 1.8m high.
T19	Norway Maple	200	2400	8	L	6	2	MA	B2	Branches previously cut back to avoid lamp post.
T20	Norway Maple	200	2400	8	L	6	1.5	MA	B2	

ID REF (ECUS notation on site)	Common Name	DBH (Diameter of tree stem at 1.5m height m) (in mm)	RPA (Radius of Root Protection Area in mm)	Estimated Height (in m)	Safe Useful Life Expectancy	Estimated Crown Spread (in m)	Height of Crown Clearance above adjacent ground level (m)	Age Class	BS5837: 2005 Category	Comments & Recommendations
T21	Swedish Whitebeam	300	3600	9	L	6	2	MA	B2	
T22	Swedish Whitebeam	200	2400	9	L	6	2	MA	B2	
T23	Swedish Whitebeam	250	3000	9	L	9	2	MA	B2	
T24	Swedish Whitebeam	300	3600	9	L	7	2	MA	B2	
T25	Swedish Whitebeam	250	3000	9	L	6	2	MA	C2	Narrow canopy, shaded by building and T24 and T26.

ID REF (ECUS notation on site)	Common Name	DBH (Diameter of tree stem at 1.5m height m) (in mm)	RPA (Radius of Root Protection Area in mm)	Estimated Height (in m)	Safe Useful Life Expectancy	Estimated Crown Spread (in m)	Height of Crown Clearance above adjacent ground level (m)	Age Class	BS5837: 2005 Category	Comments & Recommendations
T26	Swedish Whitebeam	220	2640	9	L	6	2	MA	C2	Narrow canopy, shaded by building and T25 and T27.
T27	Swedish Whitebeam	300	3600	9	L	7	2	MA	B2	
T28	Cherry	500	6000	12	L	13	2.5	M	B2	Trunk splits at 1.5-2m high to quadruple stems.
T29	Weeping Willow	500	6000	12	L	14	1	M	B2	Trunk splits into 3 at 4m high.
T30	Cherry	250	3000	6	L	7	2.5	Y	C2	Multi-stemmed from 1.5m high.

ID REF (ECUS notation on site)	Common Name	DBH (Diameter of tree stem at 1.5m height m) (in mm)	RPA (Radius of Root Protection Area in mm)	Estimated Height (in m)	Safe Useful Life Expectancy	Estimated Crown Spread (in m)	Height of Crown Clearance above adjacent ground level (m)	Age Class	BS5837: 2005 Category	Comments & Recommendations
T31	Norway Maple	250	3000	10	L	8	2.5	MA	C2	Quadruple stemmed from 2m high.
T32	Red Norway Maple	250	3000	10	L	5	3	MA	C2	Twin stemmed from 3m high.
T33	Cherry	200	2400	8	L	7	2	Y	C2	Multi-stemmed at 2m high.
T34	Norway Maple	400	4800	11	L	11	3	MA	B2	Twin stemmed from 2m high.
T35	Red Norway Maple	200	2400	8	L	6	3	Y	C2	
T36	Cherry	200	2400	7	L	7	2	Y	C2	

GAWBER ROAD

POGMOOR ROAD

Car Park

EXISTING BUILDING
TO BE DEMOLISHED

MATERNITY BLOCK

El
Sub Sta

135.1m

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36

LEGEND

Tree surveyed by ECUS - location of tree centre from architects plan

Tree surveyed by ECUS - location of tree centre from measurements taken on site

Tree categories (BS 5837:2005)

Category A Tree

Category B Tree

Category C Tree

Category R Tree

N

REVISIONS

A: Additional trees surveyed. May 10, KM.

NOTES

See ECUS Tree Report for Tree Schedule.

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Job			
Barnsley Hospital			
Title			
Tree Survey Plan			
Drawn by	**Date**	**Scale**	**Drg. no.**
KM	Apr 10	1:500@A3	Figure 2A

GAWBER ROAD

POGMOOR ROAD

OUTLINE FOR NEW
WOMEN AND
CHILDREN'S BLOCK

MATERNITY BLOCK

Car Park

El
Sub Sta

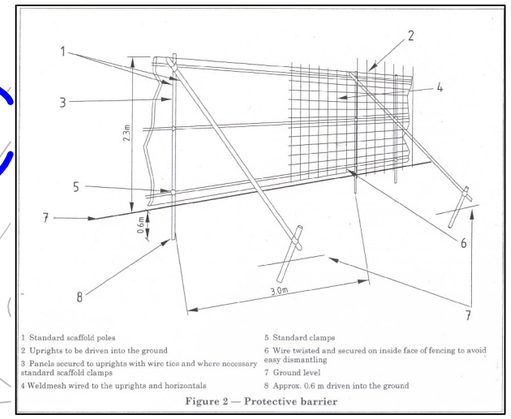
135.1m

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36

LEGEND

- Site Boundary
- Tree surveyed by ECUS - location of tree centre from architects plan
- Tree surveyed by ECUS - location of tree centre from measurements taken on site
- Category B Tree to be retained
- Category C Tree to be retained
- Root Protection Area
- Protective Fencing to *BS5837:2005 Trees in relation to construction* (see Fig 2)

BS5837:2005 Protective Fencing Figure 2



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier

N

REVISIONS

A: Additional trees surveyed. May 10, KM.

NOTES

See ECUS Tree Report for Tree Schedule.

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Job
Barsley Hospital

Title
Tree Constraints Plan

Drawn by	Date	Scale	Drg. no.
KM	Apr 10	1:500@A3	Figure 3