ECUS
environmental • consultancy

Tree Survey
Mount Vernon Hospital - Entrance, Barnsley

Report to:
NHS Barnsley
Estates Department
Kendray Hospital
Doncaster Road
Barnsley
S70 3 RD

Report prepared by:
ECUS Ltd
Endcliffe Holt
343 Fulwood Road
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February 2010

ENVIRONMENTAL CONSULTANCY

Report to:

NHS Barnsley

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Kendray Hospital

Doncaster Road

Barnsley S70 3RD

REPORT TITLE: **TREE SURVEY**

Mount Vernon Hospital - Entrance, Barnsley

REVISION: Final Report – Revision A February 2010

DATE: February 2010

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CONTENTS

1 Introduction

1.1 ECUS Limited were commissioned by NHS Barnsley Primary Care Trust to undertake a tree survey in the grounds of Mount Vernon Hospital, Barnsley. The site location is shown on Figure 1 below.

1.2 The survey has been undertaken as part of an application for planning consent to create additional car parking spaces at the entrance of the hospital. This report sets out the findings of the survey and relates these to the development proposals with recommendations for mitigation measures for potential impacts to trees. Recommendations have also been made for further work that may be required.

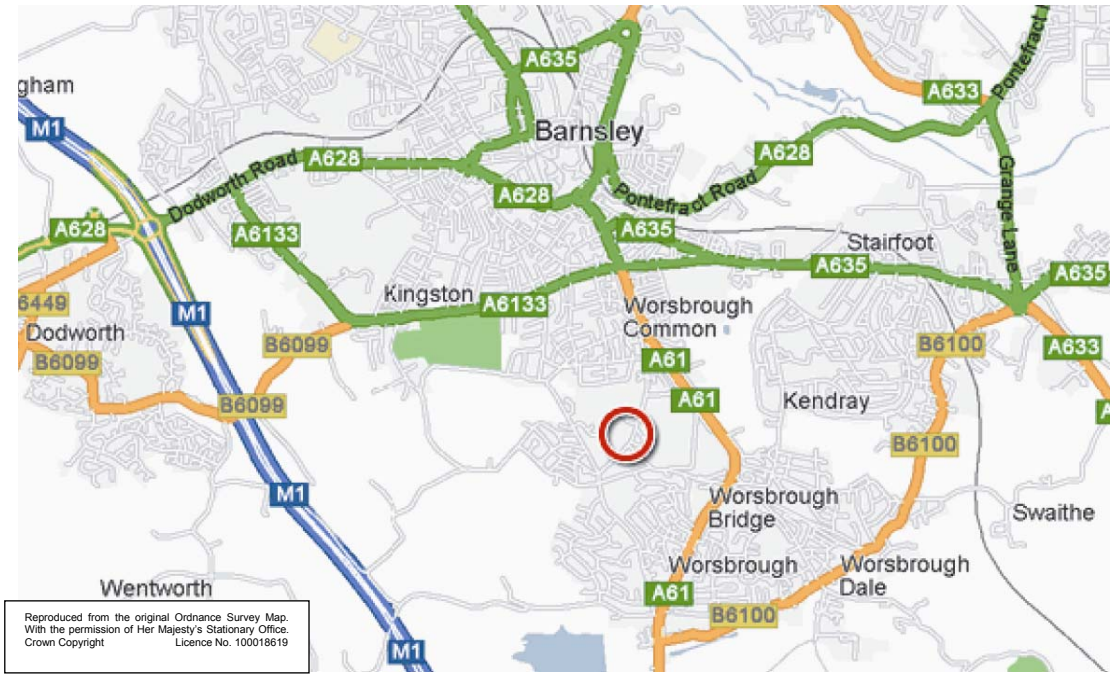

Figure 1: Site Location

2 Methodology

2.1 Tree Survey

2.1.1 ECUS carried out the tree survey in February 2010 when the trees were not in leaf. The survey covered trees within the site boundary. 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)
- 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 condition and any recommendations for works

2.1.3 A topographic survey of the site 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 on site that can be adequately retained 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 the open space at the entrance to the hospital comprising of a series of hospital ward buildings linked by a central corridor and has associated landscaped courtyards and grounds. The surrounding land use is predominantly residential with some areas of open fields. Worsbrough Common Primary School is located to the north west of the hospital.

3.2 Results of Tree Survey

3.2.1 The trees on site comprise of individual trees growing on grass and within shrub beds.

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 trees have been classified as category C (low quality and value). Four trees on site have been classified as category B (moderate 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 consist of the construction of new additional car parking bays to the entrance of Mount Vernon Hospital to alleviate pressures on current car parking.

4.2 Tree Retention & Removal

4.2.1 The effect of the development on the existing trees is described below and 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.

4.2.2 The majority of the trees surveyed are to be retained. T2 and T3 are proposed for removal to enable construction of the car parking bays. The Root Protection Areas of T1 and T7 conflict slightly with the new car parking bays.

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*.

4.5 Replacement Tree Planting

4.5.1 Replacement tree planting could help to compensate for the removal of trees on site. Details of replacement tree planting have been included on Figure 3 Tree Constraints Plan. Two new trees have been proposed to replace the two trees to be removed.

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)	**BS5837:2005 Category**	**Comments & Recommendations**
T1	Willow	450	5400	12	L	11	B2	Twin stemmed at 2m high.
T2	Cherry	300	3600	7	L	8	C2	
T3	Pine	250	3000	8	L	8	C2	
T4	Cherry	300	3600	10	L	11	B2	
T5	Cherry	200	2400	9	L	8	B2	Sign next to tree stating – 'tree to commemorate the silver jubilee of Mount Vernon Hospital. 23rd November 1986'.
T6	Cherry	400 from base	4000	7	M	4	C2	Multi-stemmed from base.
T7	Cherry	400	4800	6	L	8	C2	

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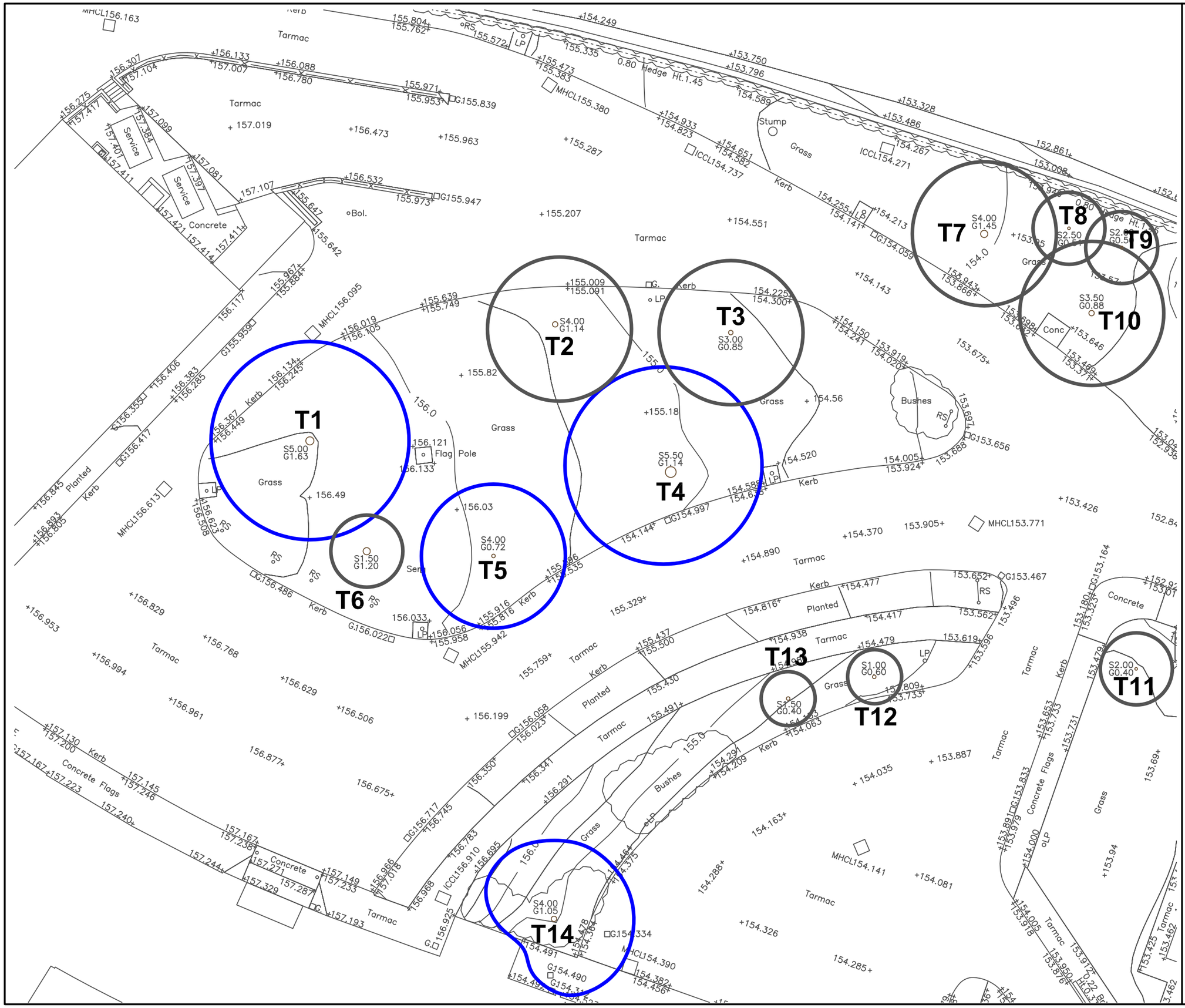
T8	Cotoneaster	150	1800	7	L	4	C2	Slight lean to the north-east.
T9	Holly	150	1800	7	L	4	C2	
T10	Cherry	250	3000	7	L	8	C2	
T11	Cherry	150	1800	4	L	4	C2	
T12	Ornamental Conifer	200 from base	2000	4	L	3	C2	
T13	Ornamental Conifer	200 from base	2000	5	L	3	C2	
T14	Norway Maple	300	3600	11	L	9	B2	



LEGEND

Tree surveyed by ECUS - location of tree centre from topographic survey

Tree categories (BS 5837:2005)

- Category A Tree
- Category B Tree
- Category C Tree
- Category R Tree

N

NOTES

See ECUS Tree Report for Tree Schedule.

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Job			
Mount Vernon Hospital - Entrance, Barnsley			
Title			
Tree Survey Plan			
Drawn by	**Date**	**Scale**	**Drg. no.**
KM	Feb 10	1:200@A3	Figure 2

Tarmac

Service

Service

Bol.

12 NO. PROPOSED PARKING BAYS (4.8x2.4m)

7 NO. EXISTING UNMARKED BAYS RE-DESIGNATED (4.8x2.4m)

1No. Prunus 'Sargentii'

T1

T2

T3

T4

T5

T6

T7

T8

T9

T10

Conc

GRASSED AREA

1 NO. PROPOSED PARKING BAY (4.8x2.4m)

EXISTING PARKING (7 NO. CARS)

1No. Prunus 'Sargentii'

EXISTING PARKING (8 NO. CARS + 4 ACCESSIBLE)

T11

T12

T13

T14

EXISTING PARKING (9 NO. CARS + 2 ACCESSIBLE)

Concrete

Concrete Flags

Tarmac

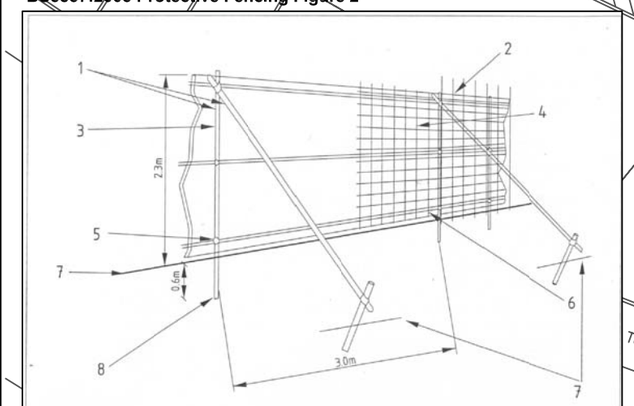
Tarmac

Tarmac

0.22 Ht.0.37 Brick W

Kerb

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

LEGEND

- Tree surveyed by ECUS - location of tree centre from topographic survey
- Category B Tree to be retained
- Category C Tree to be retained
- Tree to be removed
- Root Protection Area
- Protective Fencing to *BS5837:2005 Trees in relation to construction* (see Fig 2)
- Replacement Tree Planting
  2No. Prunus 'Sargentii' (ornamental cherry)
  Size - Extra Heavy Standard

N

REVISIONS
A: Revised to comply with the architect's revised layout, Feb 10, KM.

NOTES
See ECUS Tree Report for Tree Schedule.

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Job
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Title
Tree Constraints Plan

Drawn by	Date	Scale	Drg. no.
KM	Feb 10	1:200@A3	Figure 3 A