Arboricultural Implications Assessment and Arboricultural Method Statement

Allcroft Road
for
Telford Homes

December 2012
JBA 12/333 AR01

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1.0 SUMMARY

1.1 The following points are explained and qualified in more detail in this report and this summary is intended for quick reference only. Any actions consequent to this summary should be discussed with the Head of Arboriculture at JBA before being undertaken in order to prevent potential breach of tree protection legislation, whether by planning condition, area planning designation or specific tree preservation order (which may apply to individual trees, groups, hedges of any size).

1.2 **Overview of Tree Constraints:** Following a site inspection in November 2012 our general preliminary assessment of the site as a whole is that the existing vegetation presents a low risk to the developer - in terms of potential delay to the development process and a low risk to the developer in terms of the cost of arboricultural surgery works.

1.3 **Overview of Construction Costs:** In terms of the cost of the protecting of root protection areas and special construction methodology - from our preliminary assessment the site was deemed to be low risk to the developer in terms of the cost of the protecting of root protection areas and low risk to the developer in terms of the costs of special construction methodology.

1.4 **Notable Tree Constraints:** The main trees, tree groups or hedges of arboricultural significance (A and B grade in terms of tree health and general visual amenity contribution) there are 0 category A trees and 3 category B trees.

1.5 **Mitigation Measures:** The following mitigation measures will be included in this report:-

a) Demolition by hand
b) Possible covering or tree roots during exposure
c) Possible root pruning

2.0 INTRODUCTION

2.1 Instructions have been received to assess trees and other significant vegetation at Allcroft Road in relation to proposed development. As such our assessment is to be carried out in accordance with the principles of BS 5837:2012.

2.2 The site was visited in November 2012 in fair weather conditions. Trees detailed in the tree survey schedule at Appendix 3 have been visually inspected from ground level only with no aerial inspection or any decay detection equipment used and is relevant to the time and date of the survey only. It is proposed to develop the land at by accommodating a residential development.

2.3 As there is vegetation located adjacent to this site, which could contribute to the character and appearance of the area, it is necessary to ascertain the quality and value of that vegetation and the likely impact that the proposed development will have on them. In addition it is necessary to consider the impact retained trees could have on the development in the future.

2.4 Trees differ in their tolerance of root loss or disturbance, according to their age, species and/or condition. In addition root growth, while typically concentrated in the top metre of soil, can be affected by existing site features, including natural and man made topography and structures that can restrict tree root growth in any direction. Consideration is given to all relevant factors when ascertaining the viability of tree retention.

3.0 Site Description and Tree Discussion

3.1 The proposal site is located on Allcroft Road in the London Borough of Camden. The surrounding area is typically urban in nature and characterised by limited tree cover.

3.2 The site comprises workshops and a tarmacked driveway, no vegetation is located on site. The trees significant to the proposed development are located adjacent to the site to the northern and eastern boundaries

3.3 A total of 3 individual trees have been assessed in detail from ground level by visual means only. The Tree Survey Schedule, at Appendix 3, details the trees in respect of dimension and quality in accordance with the methodology set out in the British Standard 5837:2012. Additional comments may also be presented where appropriate.

3.4 All trees surveyed are located offsite and of the Acer (Maple) species. The trees are large and offer some greenery in a rather treeless area. The trees are not fine arboricultural specimens but offer good value for amenity and for the landscape of the immediate area. All trees have been worked on in the past due to close proximity of buildings to the trees.

3.5 It is proposed to demolish the existing workshops and redevelop the site for residential purposes the proposal does not require the removal of any trees adjacent to the site to accommodate this proposal.

3.6 The only concern is demolition works to the eastern boundary. Tree roots from T2 may have accumulated here and any below ground disturbance in this area may cause damage to roots found here. To eliminate significant damage it is recommended that demolition in this area at ground level and below ground level takes place by hand as this will allow roots to remain undisturbed Construction of the new proposed building can take place on existing footprint with any roots being able to remain in place. It is recommended that demolition takes place with supervision of the appointed aboriculturalist to record findings. To allow room for construction of the western wall a mix of ground protection and fencing should be installed to protect the root protection area from compaction, this should remain in situ for the entirety of the construction in this area (see tree protection plan for location)

5.0 Conclusions and Recommendations

5.1 Provided that appropriate protection of retained trees is suitably implemented along with specialist construction methods as advised above and in the AMS, the layout will not have any material affect or impact on the sustainable public amenity values or to the site's contribution to the landscape.

Method Statement

1.0 SUMMARY

1.1 The purpose of this report is to aid the preservation of trees shown to be retained at and adjacent to the site shown on the attached plan JBA 12/333 TS01 Trees can easily be retained and effectively protected during the proposed redevelopment of the site, by clearly setting out the tree protection methods, construction techniques and working practices. This document provides this information; principles that are approved and enforced by the local planning authority.

1.2 The following points are explained and qualified in more detail in this report and this summary is intended for quick reference only. Any actions consequent to this summary should be discussed with the Head of Arboriculture at JBA before being undertaken in order to prevent potential breach of tree protection legislation, whether by planning condition, area planning designation or specific tree preservation order (which may apply to individual trees, groups, hedges of any size).

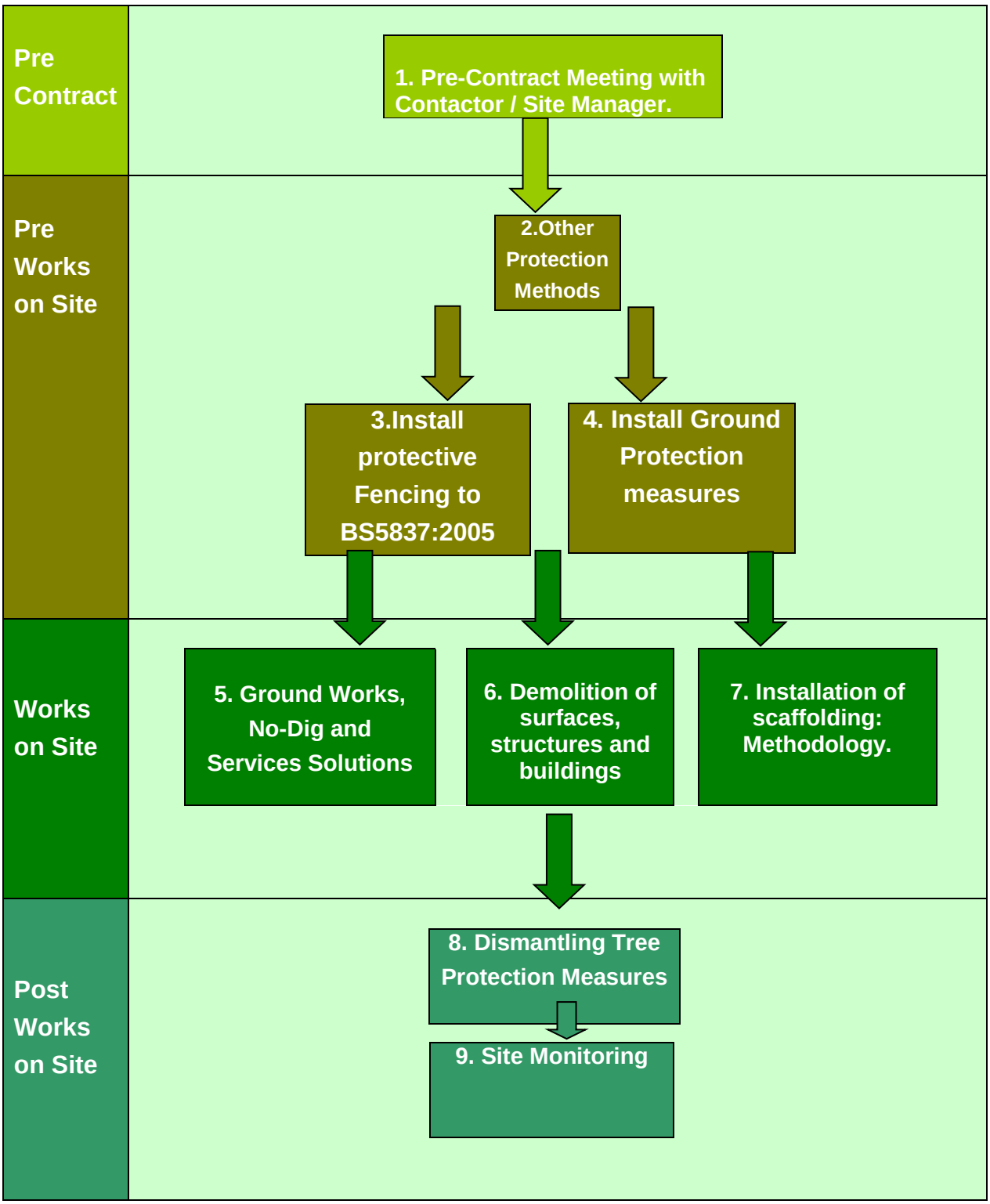
1.3 This document will give site specific instructions on the methods required to protect the existing tree stock agreed to be retained. These methods are set out in a logical sequence of operations and are also shown in the flow chart: on page 4 include:-

- Pre-construction meeting: To run through the arboricultural method statement (AMS) and ensure all relevant parties are familiar with its contents and show the trees concerned and where protection will be required.
- Tree protection fencing and exclusion signage: To BS5837:2005 or other agreed approach.
- Ground protection: Techniques to avoid compaction for access routes.
- Ground works, foundations and services: Methods to allow building operations including service routing and special measures where root protection areas (RPA's) are unavoidably breached.
- Demolition of structures and buildings
- General tree care measures and awareness
- Site monitoring

1.4 The BS recommendations are made for appropriate barriers to exclude construction from RPA's: The RPA for each tree or hedge is provided in the tree survey schedule. The protective barriers are sacrosanct and no construction activities shall take place within this zone. This fencing should be erected in position prior to any demolition or construction and be maintained in position for the duration of the development process. Where it has been agreed that vehicular or pedestrian access for construction operations can be located within the RPA a combination of barriers and ground protection should be adopted. Where the construction of permanent hard surface is considered acceptable within the RPA, a non-dig design solution should be used to avoid root loss caused by excavation - all details for these measures are set out in this document.

1.5 The Tree Protection Plan (TPP) will indicate retained trees, trees to be removed, the precise location of protective barriers and ground protection, service routing and specifications, areas designated for structural landscaping to be protected and suitable space for site materials storage and other construction related facilities. This document and the associated TPP will be endorsed by planning conditions, agreement or obligation as appropriate.

FLOW CHART FOR ARBORICULTURAL REQUIREMENTS FOR ON SITE WORKS.



2.0 Important Tree Information

2.1 As the majority of tree roots are found in the upper metre of soil, development works, including for example even shallow excavation, soil compaction and soil contamination, can be harmful to trees in close proximity. Trees differ in their tolerance of root loss or disturbance, according to their age, species and/or condition. All protection works within this document will be in accordance with BS 5837:2012

2.2 An assessment of the site's tree stock has been undertaken and those trees to be retained are clearly shown on the Tree Protection Plan (TPP). A calculation has been made of the volume of soil required to ensure the survival of these and this is represented by the Root Protection Area (RPA) indicated by the magenta circles or squares around the retained tree on the plan.

2.3 The RPA has been used to inform the Construction Exclusion Zone (CEZ), the area to be protected during development by the use of barriers, ground protection and specialised construction techniques - outlined below:-

3.0 Methodology

3.1 References may include: British Standard 5837:2005 'Trees in Relation to Construction - Recommendations'; British Standard 3998:1989 'Tree Work' and National Joint Utilities Group 'Guidelines for the planning, installation and maintenance of utility services in proximity to trees' 1995.

3.2 Sequenced Methods of Construction and Tree Protection

3.2.1 *Phase 1*

P1.0 Pre Contract Meeting

P1.1 An onsite meeting will be held with all relevant parties including the developer, appointed arboricultural supervisor and Local Planning Authority (LPA) representative. The purpose of this meeting is to record site features including tree condition, agree location of permanent and temporary access, location of site storage and the location of tree protection barriers.

3.2.2 *Phase 2*

P2.0 Tree Protection Barriers

P2.1 In order to exclude the CEZ from significant demolition and construction activity, protection barriers will be erected. The location is shown on the tree protection plan (TPP)

P2.2 Protection barriers will comprise a scaffold framework in accordance with Figure 2 of BS 5837:2005 (The BS). The framework will consist of vertical and horizontal scaffolds with vertical tubes spaced at no more than 3m intervals and driven into the ground. Weld mesh (Heras or similar) panels will be securely fixed on to this framework with wire or scaffold clamps. Tubes will be firmed into holes in the ground made with post hole boring equipment. Post holes are to be no more than 30% larger than the scaffold tube. Supporting struts will be fixed to the inside of the barrier to ensure maximum rigidity (See Appendix1).

P2.3 Once the barriers have been properly erected in position, they are to be considered as sacrosanct and are not to be removed or altered in any way without prior approval from the LPA. Clear notices are to be fixed to the outside of the fencing with words such as 'PROTECTED AREA – NO ACCESS AND NO STORAGE OR WORKING WITHIN THIS AREA'.

P2.4 All operatives and other relevant personnel are to be informed of the role of the exclusion barriers and their importance. A copy of the Tree Protection Plan will be displayed on site at all times during construction.

P2.5 Where it has been agreed that pedestrian access for construction operations can be located within a tree's RPA a combination of barriers and ground protection should be adopted to form the CEZ. For temporary pedestrian access the installation of a single thickness of scaffold boards over a compressible layer laid on to a geotextile membrane/ geoweb filled with washed shingle (20mm gauge) or supported by scaffold will be sufficient. This is shown by the hatched area on the TPP.

3.2.3 *Phase 3*

P3.0 Demolition of Existing Structures and Buildings

P3.1 Reasonable notice will be given to the LPA as to the date of commencement of any demolition adjacent to retained trees. This will provide the LPA with the opportunity to visit the site and ensure that all tree protection methods are in place.

P3.2 Buildings close to retained trees will be demolished from the inside. The removal of light structures, low walls, kerb stones and tarmac surfaces for example will be carried out by hand within the CEZ. The western wall will be demolished by hand at ground level and below ground level where the RPA of T2 is indicated within the existing building footprint. Roots are likely to be accumulated at the existing wall and should remain in situ until such time they can be recovered. Exposed roots should be covered with damp hessian to prevent desiccation of the roots.

P3.3 Should root pruning be required to allow for construction it should be carried out by a suitably qualified person and done to guidelines set out in BS5837 2012.

3.2.4 *Phase 4*

P4.0 Ground works, Foundations, Drainage and Services

P4.1 Spoil, including soil and rubble will be removed from site and not stored against any protection barriers or over any ground protection. Only predetermined access routes with appropriate ground protection will be used to during this process.

P4.2 Construction of foundations is confined to areas beyond the CEZ or on existing foundation footprints therefore no specialised foundation design is required.

4.0 General Principles for Tree Protection

4.1 A copy of this AMS and the attached TPP is to be retained on site at all times and all personnel associated with the construction process will be made familiar with the principles within.

4.2 If 360-degree excavators are to be used during construction, at no time is the excavating arm to encroach over the position of the protection barriers.

4.3 No fires are to be lit on site at any stage during the construction process.

4.4 A designated storage area is to be created away from retained trees. All materials for construction purposes are to be stored in this compound. Care must be taken to avoid the leakage or leaching of noxious materials into the soil. Limited space for dry materials can be provided on site on the existing parking area but addition off site space is expected to be required.

4.5 No materials will be stored or left stacked in positions around the site other than within the storage compound area.

5.0 Communication Details, Monitoring and Compliance

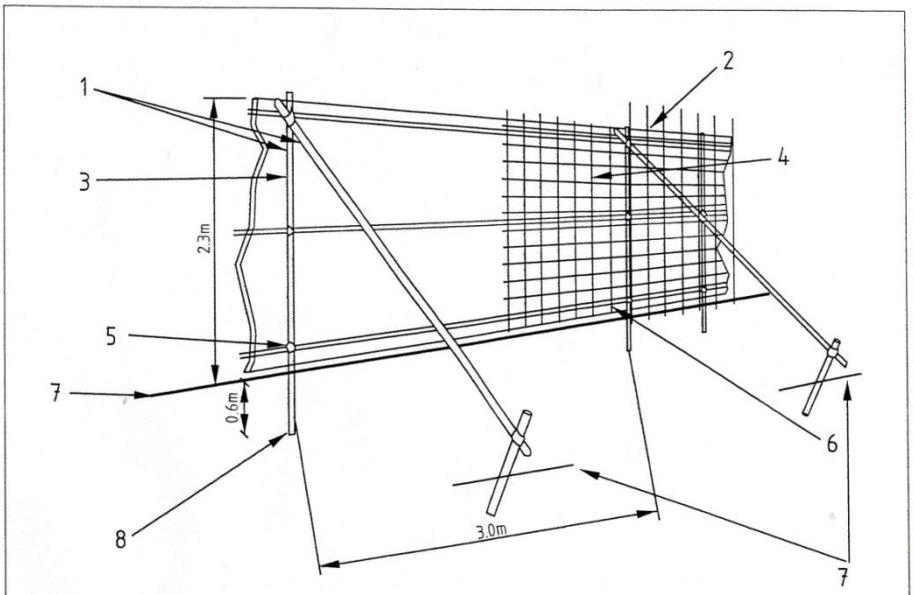
5.1 In order to ensure that the principles of tree protection set out in the statement are adhered to, it is important to set out communication details for key individuals and tasks that require monitoring. These details should be retained by all relevant parties and available on site at all times. Relevant parties will be advised of any changes in personnel or contractor during the development process. Listed below are the key activities for arboricultural monitoring.

- Demolition of eastern wall at ground and below ground level to T2
- Root pruning works if required.

5.2 Before construction begins written confirmation that the developer/contractor or its agents agree to comply in full with the principles set out within this Method Statement will be lodged with the LPA.

Stephen Milligan
Arboricultural Consultant
For and on behalf of James Blake Associates

Appendix 1: Tree Protection Fencing and Ground protection



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

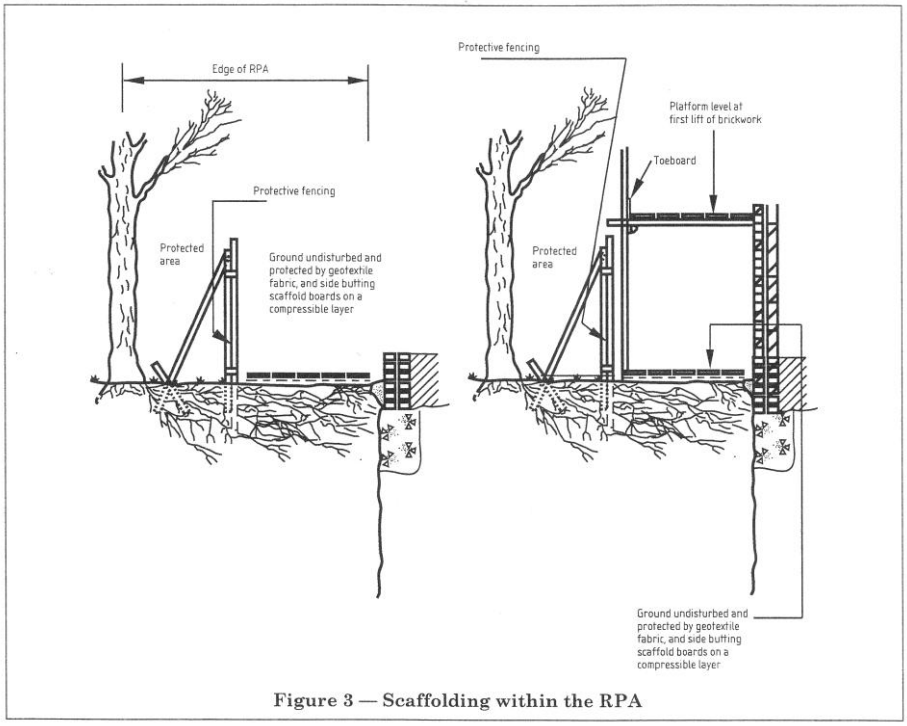


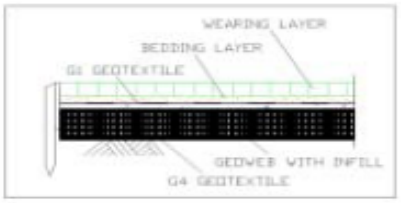
Figure 3 — Scaffolding within the RPA

Appendix 2: Example of Ground Protection

THE SOLUTION

Where access driveways or vehicle hard standing areas are planned in areas adjacent to trees, Arboricultural Officers will normally specify a 'no dig' construction to eliminate the damage associated with normal construction methods. With this method no removal of surface soils is allowed. Instead, a permeable structural sub-base is laid directly onto the existing ground level with a permeable wearing course, such as grass reinforcement, low tack resin coated gravels or block paving, laid on top.

'No dig' construction may be accommodated with the use of perforated Geoweb in the sub-base layer. Geoweb reduces the overall depth of construction by introducing a cellular structure which dissipates downward loads by a horizontal transfer through the cell structure. This process in conjunction with the perforated cell wall also imports structural integrity to free draining aggregates which would otherwise be unacceptable in road construction. Therefore, a robust, shallow and free-draining sub-base is achieved, which allows vehicular access whilst allowing water and oxygen to permeate down to the tree roots.



Expanding and staking Geoweb panels

Infilling the Geoweb

In accordance with British Standard BS5837: 1991 - Guide for Trees in Relation to Construction and APN 1:1996 – Driveways Close to Trees, Geoweb acts to protect tree roots in three main ways;

1. **Used with the correct infill, Geoweb allows the construction of a permeable sub-base.**
2. **Geoweb enables 'no dig' construction to be used, avoiding any severance of tree roots.**
3. **Geoweb prevents the compaction of soil surrounding roots.**

The permeable wearing course to complete the system can be accommodated through Ecoblock, a grass protection or gravel retention system. The cellular construction of Ecoblock provides a fully permeable, attractive wearing course which is capable of accommodating heavy vehicle loads, whilst allowing the exchange of oxygen and free drainage of water to the sub-base.

The Geoweb system has been used in tree root protection applications with great success for the following clients:

- **Node House - North Dorset District Council**
  A number of mature beech trees have been protected during the construction of a large residential property. This site has been closely monitored for the past 30 months by local tree officers. There have been no noticeable problems.
- **Woodfield School - Wigan Metropolitan Borough Council**
  Geoweb was used to protect the roots of trees lining an access road and in an extended car parking area.

KEY BENEFITS OF THE GEOWEB SYSTEM:

- ***'No-dig' solution***
- ***Cost effective***
- ***Fast and simple to install***
- ***Design flexibility***
- ***Environmentally-friendly***
- ***Tried and tested product***

We can provide comprehensive technical support for our range of ground engineering products. If you have a particular application which you would like to discuss in more detail, please contact our Specification Sales Team on 01204 862222, who will be pleased to arrange for one of our representatives to contact you.

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July 2004
A member of the Heiton Group

Appendix 3
Tree Survey Schedule

			Canopy Spread													
Tree Ref. No.	Species (Common Name)	Height (m)	N	E	S	W	Grnd Clrnc	DBH (mm)	RPR (cm)	RPA (m)	Age class	Gen Cond	Structural Defects/Comments	Estimated remaining contribution (BS 5837)	BS Cat	BS Sub Cat	Prelim Tree Work Recommendations
T1	Sycamore	10	4	4	5	6	3	400	480	72.35	MA	F	Offsite tree, good condition.	20+	B	2	
T2	Norway Maple	12	5	4	4	4	5	780	936	275.09	MA	F	Offsite tree to grassed area. Heavily pruned.	40+	B	2	
T3	Sycamore	10	3	4	6	3	4	610	732	168.25	MA	F	Offsite tree to grassed area. Heavily pruned.	20+	B	2	

Tree Schedule Explanatory Notes

Ref.no	Identifies trees, groups and hedges on the accompanying plan.
Species	Common names are provided to aid wider comprehension.
Height	Describes the approximate height of the tree measured in metres from ground level
Canopy Spread	Indicates the crown radius from the base of the tree in four compass directions, recorded to the nearest metre.
Ground Clearance	Height of crown clearance above adjacent ground in metres.
DBH (mm)	DBH is the diameter of the stem measured in cm at 1.5m from ground level for single stemmed trees or just above root flare for multi-stemmed trees. Stem Diameter may be estimated where access is restricted.
RPR (cm)	Root Protection Radius (RPR) is area required to be protected measured radially from the trunk centre.
RPA (m^2)	Root Protection Area (RPA) is the minimum rooting area in m^2 which should remain undisturbed around each tree.
Age Class	Age of the tree expressed as Y- Young, MA- Middle-Aged, EM- Early Mature, M- Mature or OM- Over-Mature
General Condition	Overall condition of tree expressed as :Good, Fair, Poor, Dead
Structural defects/Comments	May include general comments about growth characteristics, how it is affected by other trees and any previous surgery works. Also specific problems such as dead wood, pests, diseases, broken limbs. Etc
Estimated Remaining Years	Categorised in year bands of less than 10, 10-20, 20-40, more than 40.
BS Category	B.S. Cat refers to (BS 5837 :2005 Table 1) and refers to tree/overall group quality and value; 'A' - High; 'B' - Moderate; 'C' - Low; 'R' - Remove.
Sub Category	Sub Cat refers to the retention criteria values where 1 is arboricultural, 2 is landscape and 3 is cultural including conservational, historic and commemorative