

ARBORICULTURAL METHOD STATEMENT – REV A

Proposed Mixed Use Development, London Road, Purbrook

**July 2010
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Prepared by

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1.0 INTRODUCTION

- 1.1 The following guidance has been produced for Tesco Stores Ltd to detail what actions need to be taken to prevent any unacceptable damage to the existing trees shown for retention in Tree Constraints & Protection Plan as a result of the proposed development.
- 1.2 No trees as shown to be retained on the Tree Constraints & Protection Plan (Appendix 2.0) shall be felled, pruned, uprooted or damaged or otherwise disturbed without the prior written agreement/consent of the LPA.

at this early stage
of construction

Statement (AIA)

- 1.5 This report has been amended in accordance with the revised AIA and Proposed Site Layout including associated additional tree protection methods.

2.0 SITE DESCRIPTION

Please refer to Arboricultural Impact Assessment Section 2.0 for details.

3.0 TREE SURVEY

- 3.1 This report follows a visit to the site on 28th June 2010 where a tree survey in accordance with the guidelines in BS5837 2005 has been carried out. The trees have been surveyed visually, from ground level, using no specialist equipment, by *Mark Watson, Arboricultural Manager for Ground Control Ltd.* All tree locations have been plotted by hand from the nearest reference point on site as a detailed land survey was not available at the time of undertaking this survey.
- 3.2 Please refer to Ground Control Tree Survey Schedule and Tree Survey Plans for details and locations of the trees.

4.0 TREE PROTECTION METHODS

- 4.0.1 All retained trees as shown in the Tree Constraints & Protection Plan (GC.42161.002) and outlined in Arboricultural Impact Assessment requiring protection shall be protected for the duration of the contract in accordance with British Standards BS 5837:2005.
- 4.0.2 For the purpose of this report we are assuming that all trees surveyed and those highlighted for protection will be retained and the following methods of protection will be carried out to ensure no unacceptable damage is caused to the trees.
- 4.0.1 Refer to Tree Constraints & Protection Plan in accordance with measures outlined below.

4.1 Working within the RPA

- 4.1.1 Care should be taken to ensure during tree removal or remedial work that damage to the retained trees and/or disturbance to the RPA is avoided. Appropriate precautions should include dismantling techniques to reduce the risk of accidental damage and ground protection where excessive pedestrian movements or use of plant and machinery may lead to compaction.
- 4.1.2 Debris from tree work might be removed from site, chipped and left on site, or left on site in an unprocessed form as habitat depending on the site circumstances. Debris should not be burnt where it could damage the crowns of retained trees. Stumps within RPA's should not be dug or pulled out but should be ground out, if removal is required, to avoid adverse impact on retained trees.

4.2 Site Protection - Tree Protection Fencing in accordance with BS 5837:2005

- 4.2.1 All trees which are being retained on site will be protected by Tree Protection Fencing as detailed on plans as detailed in the Tree Constraints & Protection Plan throughout the demolition and construction period.

The protection fencing will be located outside the site boundaries so that the land owner's permission/consent will be required prior to installation of the fence.

- 4.2.2 The installation and removal of the Tree Protection Fencing will be carried out under Arboricultural Supervision.
- 4.2.3 Tree protection fencing will be erected before any materials or machinery are brought onto the site and before any demolition, development or stripping of soil commences and will remain in place until the completion of all construction works.
- 4.2.4 Site hoarding could be used as protection fencing along the western boundary of the site due to limited space between the trees and the proposed boundary wall. The site hoarding to be positioned to the external site of the proposed wall.
- 4.2.5 Once erected, barriers should be regarded as sacrosanct and should not be removed or altered without prior consultation and approval with both the developer's arboriculturist or as outlined below.
- 4.2.6 All works within protection fencing are to be supervised by a qualified arboriculturist.

4.3 Construction Exclusion Zone (CEZ)

- 4.1.1 The protective fencing as detailed in 4.2 should cordon off all RPA's apart from those areas specified for construction activities in harmony with this report and the control measures herein.

- 4.1.2 No site traffic or storage of materials should be allowed within this area during the works. Site monitoring of this can be undertaken by the Arborist to ensure compliance.
- 4.1.3 All works to be carried out within CEZ to be carried out by hand (manual excavation) and should be carried out under arboricultural supervisor.
- 4.1.4 All weather notices should be erected on the barrier with words such as:
"Construction exclusion zone — Keep out".

4.4 Construction & Demolition within the RPA

- 4.4.1 All works to be carried out within the Root Protection Areas of the existing trees to be carried out by hand (manual excavation) and should be carried out under arboricultural supervisor.

Requirements for tree protection during demolition and hard surface removal

- 4.4.2 All plant and vehicles engaged in demolition works should operate from outside the RPA. Care should be taken during demolition not to allow the accumulation of excessive dust on the adjacent trees, where this does occur it should be hosed off immediately following the causative action.
- 4.4.3 Where practical, subsequent removal of debris will be carried out by hand within the RPA of the existing trees. Should mechanical means be required due to the size of the debris, then a small (1.5ton) digger may be used providing that when picking up debris, no tines, teeth from the bucket cause any damage to the underlying soil surface. Once left with manageable size pieces, hand removal will be used. Where the digger is employed, it will only travel undisturbed hard surface (within the RPA), clearing debris as it progress out of the RPA. If a larger digger is required, for whatever reason, to clear the area it must follow the guidance above and work only from outside the RPA.
- 4.4.4 The advice of an arboriculturist should be sought where underground structures present within the RPA are/will become redundant. In general it is preferable to seal these off as this avoids the need for significant excavation.
- 4.4.5 Where an existing hard surface is scheduled for removal, care should be taken not to disturb tree roots that may be present beneath it. Hand held tools or appropriate machinery should be used (under arboricultural supervision) to remove the existing surface. Tree roots exposed by such operation should be treated in accordance with Bs 5837:2005 Section 11.3.
- 4.4.6 The removal/demolition of the wall and exiting fences including associated foundations along the western boundary near the trees to be undertaken inwards towards to the site.
- 4.4.7 The initial breaking up of any surface during the demolition may be carried out by low impact pneumatic tools, or preferably by hand.
- 4.4.8 If the area around the retained trees is to be left following the removal of existing hard surface, before a new hard surface is laid or soft landscaping implemented, then the line of protective fencing must be correctly re-established immediately the hard surface removal works has been completed.
- 4.4.9 If, for whatever reason there is delay before the area is left exposed prior to awaiting a new surface, then a temporary surface must be implemented or the area fenced off.
- 4.4.10 No reduction in levels of the underlying soil surface will occur.
- 4.4.11 At no point is any heavy machinery permitted within the RPA.

- 4.4.12 During excavation works all roots with a diameter greater than 25mm shall be retained where possible. Any necessary root severance will be done using a clean flush cut and the end located to the tree protected with clean Hessian sacking if likely to be exposed for periods of more than 12 hours.

Principles for avoiding tree damage during the construction

- 4.4.13 Prior to the installation of a new ground surface, existing ground cover vegetation (e.g. grass sward) should be killed using an appropriate herbicide (see Pesticides Handbook [15]). Herbicides that can leach through the soil, e.g. products containing sodium chlorate, should not be used. Specialist advice should be sought in order to determine the most suitable herbicide treatment.
- 4.4.14 The soil surface should not be skimmed to establish new paving or other surfaces at the former ground level. Loose organic matter and/or turf should be removed carefully using hand tools. The new surface should then be established above the former ground level, using a granular fill, where required. Granular fill and any surface in the root protection area to receive a geotextile and possibly cell web or similar hardcore reinforcement to keep hardcore and soil separate and protect roots.
- 4.4.15 Any excavation works have to be undertaken within the RPA should be carried out by hand, avoiding damage to the protective bark covering larger roots. During excavation works all roots with a diameter greater than 25mm shall be retained where possible. Any necessary root severance will be done using a clean flush cut and the end located to the tree protected with clean Hessian sacking if likely to be exposed for periods of more than 12 hours.
- 4.4.16 Where the construction of hard surface access cannot be avoided within the root protection area, a no-dig design (beyond that discussed above) should be used to avoid root loss due to excavation. In addition the structure of the hard surface should be designed to avoid localized compaction, by evenly distributing the carried weight over the track width and wheelbase of any vehicles that will use the access. Such designs might include the use of a three dimensional cellular confinement system as an integral component of the sub-base, to act as a load suspension layer. Driveways and roadways constructed according to this principle can be designed to be suitable for most types of traffic. Where this type of access is proposed, site-specific and specialist advice should be sought from an engineer and an arboriculturist in order to ensure that it is fit for purpose.
- 4.4.17 If ground levels are to be raised within the RPA this should be achieved by use of a granular material which does not inhibit vertical gaseous diffusion. Examples of suitable granular materials include, no-fines gravel, washed aggregate, or cobbles. Depending on the California Bearing Ratio (CBR) of the soil, it may be necessary to install a load suspension layer such as a cellular confinement system.

Foundation within the RPA

- 4.4.18 The retaining wall and its associated foundations along the western boundary to be installed from the inside of the site away from the trees.
- 4.4.19 Foundation of the new wall in close proximity to the trees T7-T13 to be installed to the same location and depth as the existing wall.
- 4.4.20 The proposed wall in close proximity to the trees T1-T6 & G1 to be installed within the existing hard landscaped areas (tarmac and concrete) which will have reduced foundation depth of 300 mm. Foundation/excavation depths will not exceed the existing make up level. Foundation location to fall within the existing hard landscaped area only.

- 4.4.21 The above method of treating the roots also applies to the foundation construction within the RPA; excavation should be carried out carefully by hand to a depth of 750mm, after which machinery may be used.
- 4.4.22 All excavation works in relation to the foundations within the RPA's to be carried out by hand or air spading under the Arboricultural Supervision.
- 4.4.23 No underground services will be installed within the RPA's of the existing trees.

4.5 Soft Surfaces Around Trees

- 4.5.1 Tractor mounted rotovation or other heavy mechanical cultivation should not occur within the RPA. Any cultivation should be undertaken carefully by hand or pedestrian controlled light machinery, to minimize damage to the tree, particularly the roots. Changes of ground level within the root protection area of established trees should be avoided.
- 4.1.5 In order to avoid compaction, there should be no vehicle or plant access within the root protection area. Where compaction has occurred, advice should be sought from an arboriculturist on de-compaction measures, such as forking, spiking, subsoil replacement by hand-dug radial trenching or subsoil aeration using compressed air injection equipment
- 4.5.2 Herbicides for use in the vicinity of existing trees should be appropriate for the type of vegetation to be killed. Special care should be taken to avoid any damaging effects upon existing plants and trees to be retained.
- 4.5.3 Open soil and shrub planting areas around trees should be mulched to inhibit weed growth, reduce groundwater evaporation, resist compaction, enable gaseous exchange and water penetration to roots, and reduce maintenance requirements. The mulch material should be weed-free, non-matting, easy to apply, containable within the area of application and readily available.
- 4.5.4 The use of peat should be avoided for reasons of sustainability. Non-composted organic materials such as grass cuttings, leaves, straw, sawdust or wood chips should not be used as these extract nitrogen from the soil as they decompose and may promote weed or harmful forms of fungal growth.

4.6 Tree Works

- 4.6.1 Before any works start on site, the remedial tree surgery works as outlined within the section 3.3 of AIA to be carried out.
- 4.6.2 All tree works to be carried in accordance with the BS 3998:2010 'Recommendations for Tree Works'.

4.7 General Site Operations

The following should be avoided. (BS5837 2005sec 9.4)

- 4.7.1 Materials, which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of the tree stem.
- 4.7.2 Fires should not be lit in a position where their flames can extend to within 5 m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction.
- 4.7.3 Notice boards, telephone cables or other services should not be attached to any part of the tree.

- 4.7.4 Allowance should be made for the slope of the ground so that damaging materials such as concrete washings; mortar or diesel oil cannot run towards trees.
- 4.7.5 Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees.

4.8 Arboricultural Supervisor

The arboricultural consultant will be supervising and advising on construction works that have to be undertaken within root protection areas. These include:

- Location of protective fencing.
- Lifting/excavation and removal of existing hard surfaces.
- Construction of proposed hard surfaces
- Construction of any structures such as walls, kerbs and associated foundations etc.
- Excavations associated with lighting columns

5.0 DOCUMENT CONTROL

Report Prepared by;

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Revisions;

Rev A To suit with revised AIA and TCPP and additional tree protection methods RA MW 04.03.2014

