

RANELAGH ROAD
HAVANT

ARBORICULTURAL
METHOD
STATEMENT
FOR RE-PLAN

ACD
ENVIRONMENTAL

Ecology
Archaeology
Arboriculture
Landscape Architecture

FOR
FOREMAN HOMES

Written by:	M Welby PDArb(RFS) FArborA
Checked by:	T Grayshaw
Date:	12.11.2015
Revision:	B: 07.10.2016
Ref:	FOR20239ams

TABLE OF CONTENTS

1. INTRODUCTION	3
2. PHASING OF OPERATIONS & SITE SUPERVISION	4
3. TREE PROTECTION AREAS	4
4. TREE PROTECTION FENCING	5
5. SITE STORAGE, PARKING, WELFARE FACILITIES, ETC.	6
6. TREE SURGERY AND REMOVAL	7
7. SOFT LANDSCAPING	8
8. INSTALLATION OF UNDERGROUND SERVICES	9
9. INSTALLATION OF BOUNDARY/ACOUSTIC FENCING WITHIN PROTECTED AREAS	10
10. BIBLIOGRAPHY	13
APPENDIX: TREE PROTECTION PLAN	14

1. INTRODUCTION

- 1.1. Foreman Homes instructed ACD Environmental to prepare the following method statement in support of an application for re-plan of this consented scheme.
- 1.2. The implications of the re-plan are small. Most protection fencing is as per the consented scheme. A small area of no-dig surfacing is required to ensure the boundary vegetation can be successfully retained.
- 1.3. Following the recommendations of BS5837:2012 Trees in relation to design, demolition and construction- Recommendations, this report includes the necessary information to protect the subject trees during construction.
- 1.4. The implementation of the protection methods recommended within this report are critical for ensuring the retained trees are successfully protected through the construction process and must be implemented prior to any work on site.

TO BE READ INCONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN
REF: FOR20239-03

2. PHASING OF OPERATIONS & SITE SUPERVISION

- 2.1. The development process will be subject to arboricultural supervision where construction work inside the construction exclusion zone is required, and for the installation of any special detail (eg: no-dig surface). Therefore, input and supervision from the project arboriculturist will be required at the following stages:
- 1) Pre-start site meeting with groundwork contractors, site manager and LPA arboricultural officer/landscape officer.
 - 2) During the installation of the no-dig surfacing.
 - 3) Landscape work within protected areas.
- 2.2. Supervision is also required should any unplanned access and/or work be required in the construction exclusion zone.
- 2.3. Supervision will require the arboriculturist to be present throughout the task, to ensure all the arboricultural objectives are met. If the task is to take a long period of time, provided the arboriculturist is satisfied, and after an initial 'tool-box talk', the supervision may be reduced to telephone contact between the site foreman/contractor and arboriculturist.

3. TREE PROTECTION AREAS

- 3.1. Based on tree survey data, tree protection areas have been determined for every retained tree. These areas are designed to protect at least a functional minimum of tree root mass in order to ensure that the trees survive the construction process.
- 3.2. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.
- 3.3. Inside the exclusion area of the fencing, the following shall apply:
- No mechanical excavation whatsoever
 - No excavation by any other means without arboricultural site supervision
 - No hand digging without a written method statement having first been approved by the project arboriculturist.
 - No lowering of levels for any purpose (except removal of grass sward using hand tools)
 - No storage of plant or materials
 - No storage or handling of any chemical including cement washings
 - No vehicular access
 - No fire lighting
- 3.3.1. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees
- No fire shall be lit such that flames come within 5m of tree foliage.

4. TREE PROTECTION FENCING

4.1. The tree protection plan (see the latest revision of: FOR20239-03) shows the alignment of tree protection fencing (TPF), which is to be installed prior to any of the following taking place:

- Demolition
- Plant and material delivery
- Soil stripping
- Utility installation
- Construction works
- Landscaping

4.2. Stages for installation of TPF:

- 1) Hand clearance of any vegetation to allow clear working access.
- 2) Setting out of fencing points
- 3) Fencing erected
- 4) Site meeting with project arboriculturist to 'sign-off' tree protection fencing.
- 5) Site accessible to demolition/construction traffic

4.3. Once erected, all TPF will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.

4.4. The typical TPF construction is suitable for areas of high intensity development, and shall comprise of interlocking weld-mesh panels, well braced to resist impacts by attachment to a scaffold framework that is set firmly into the ground. A detailed specification can be found on the TPP.

4.5. If any alternative method of barrier construction is proposed, consultation with the project arboriculturist will be obtained to clarify the efficacy of the revised design prior to informing the local planning authority and obtaining their consent.

4.6. Once barriers and/or ground protection have protected the exclusion zone, construction work can commence.

4.7. All weather notices should be erected on the barriers (for example see figure below).



Tree protection sign (download from www.acdarb.co.uk)

5. SITE STORAGE, PARKING, WELFARE FACILITIES, ETC.

- 5.1. The site will require provision for; site storage, contractor parking, welfare facilities, temporary services/drainage, material drop of points, etc.
- 5.2. None of the above provisions will be sited within RPAs of retained trees without the input or the project arboriculturist and the consent of the Local Authority.

6. TREE SURGERY AND REMOVAL

6.1. Currently the following surgery work proposed within the main site:

- reduction of the southern boundary hedges to 4 and 2m as shown on the appended plan
- removal of a northerly limb of a field maple, again on the southern boundary (marked on plan) - to allow the acoustic fence to be installed.

6.2. No surgery work is proposed within the re-plan area at this time.

6.3. If any further surgery work is proposed, it will be submitted to, and approved by, The Council, before being carried out.

6.4. All work will be carried out in accordance with BS3998 (BS3998, 2010) industry best practice and in line with any works already agreed with the Council.

6.5. The Tree Surgeon shall ideally be chosen from The Arboricultural Association's Approved Contractor list. All work shall be undertaken at the appropriate time and with the consent and approval of the Site Agent.

6.6. The statutory protection will be adhered to (Wildlife and Countryside Act, 1981) (Countryside and Rights of Way Act, 2000). If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

6.7. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either; cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.

6.8. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

7. SOFT LANDSCAPING

- 7.1. All landscaping and associated ground preparation within exclusion zones will be carried out sensitively to ensure root damage is mitigated as much as is practicable. At no time is any heavy plant to be used within any protected area. Removal of existing vegetation will be carried out by hand, turf may be removed using a mechanical turf stripper or by hand.

Turfing

- 7.2. Stages for turfing gardens and open spaces:

- 1) No plant/machinery to be used in the area for whatever reason
- 2) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
- 3) Remove TPF to allow access to area.
- 4) Re-erect TPF to secondary location (if required and shown on plan)
- 5) Do not reduce any high spots or excavate in any way.
- 6) Existing poor quality turf may be removed with a turf stripper.
- 7) Use good quality top-soil to level any low-lying areas and hollows, and provide a fine tilth to lay turf on. This imported soil must not result in a level increase of more than 100mm in any area.
- 8) Import turves by hand in wheelbarrow
- 9) Lay turves

Planting

- 7.3. Should the soil be compacted or have a poor structure that may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.

- 7.4. Stages for planting within tree protection areas:

- 1) No plant machinery to be used in the area for whatever reason
- 2) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
- 3) Remove TPF to allow access to area.
- 4) Re-erect TPF to secondary location (if required and shown on plan)
- 5) Remove existing vegetation by hand, turf may be removed using a mechanical turf stripper.
- 6) Do not reduce any high spots or excavate in any way.
- 7) Import good quality top-soil by hand (with wheelbarrow) into area.
- 8) Level to a depth of no more than 100mm with hand tools
- 9) Dig individual planting pits for each plant by hand (including hedging which must not be trench planted)
- 10) Any mulch should also be imported and spread by hand.

- 7.5. No works will be carried out within any protected areas if the soil moisture is of a level likely to allow compaction to occur.

8. INSTALLATION OF UNDERGROUND SERVICES

- 8.1. Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.
- 8.2. Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing should be drawn up in conjunction with the project arboriculturist. In such cases, trenchless insertion methods should be used: Microtunnelling, Surface-launched directional drilling, Pipe ramming or Impact moling (see BS5837:2012 Table 3), with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs. If this is the case, the following methodology must be followed:
- 8.3. Stages for installing services by hand within tree protection areas:

No plant machinery to be used in the area for whatever reason

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
 - 2) Remove just enough tree protection fencing to allow access to area and facilitate trenching
 - 3) Remove any surface vegetation or existing hard surfaces using hand tools
 - 4) Using an air-pick excavate the trench, keeping to minimum dimensions required
 - 5) Roots occurring in clumps of 25 mm diameter and over are encountered they will be retained, and kept damp by covering with hessian (re-wetted as required). If required, these should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability
 - 6) Feed in services.
 - 7) Back fill trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported top-soil to BS3882 (BSI, 2007), firming down with heels
 - 8) Repeat step 7 until trench is filled
 - 9) Re-erect tree protection fencing as per approved plan
- 8.4. The method of excavation above, for trenching within RPA's, is using air excavation. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. ACD can provide details of contractors supplying air excavation services if required.
- 8.5. Alternatively trenchless technology, such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on roots of the subject tree. As no access/thrust pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.

- 8.6. Reference can be made to NJUG Vol 4 (National Joint Utilities Group, 2010) for guidance, but any approach must be approved by the project arboriculturist and brought to the attention of the local authority tree officer.

9. INSTALLATION OF BOUNDARY/ACOUSTIC FENCING WITHIN PROTECTED AREAS

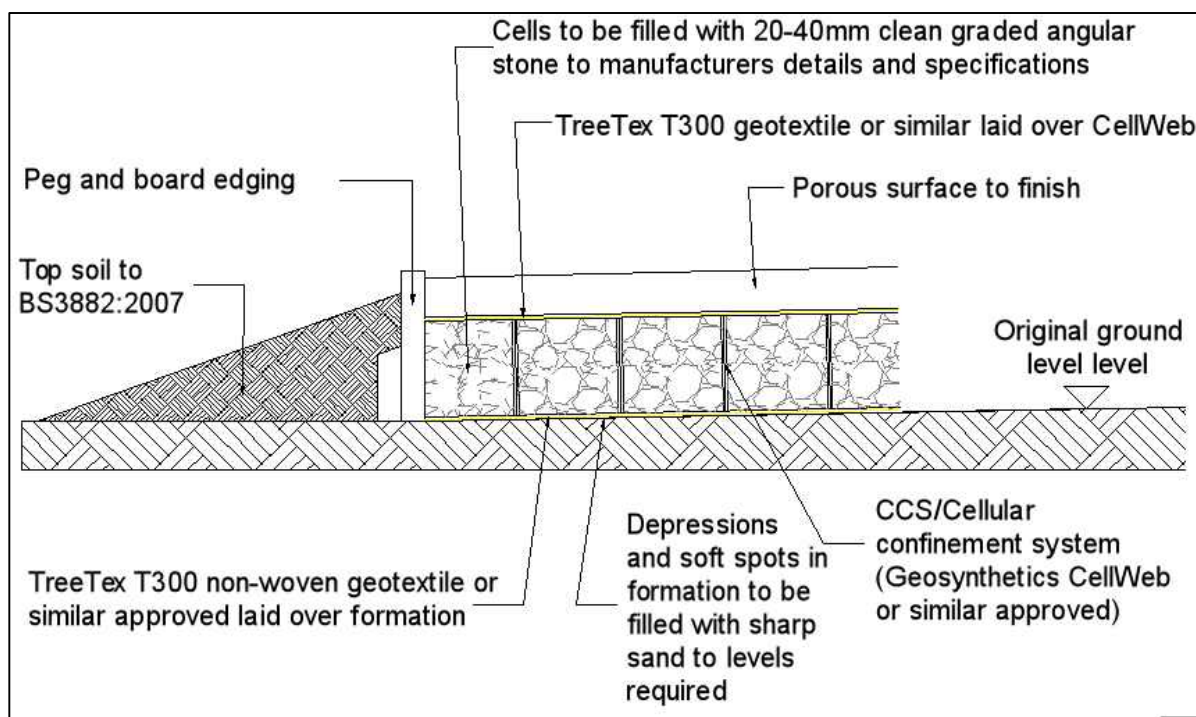
9.1. Stages for installing wooden/concrete fence posts:

No plant machinery to be used in the area for whatever reason

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
- 2) Remove TPF to allow access to area.
- 3) Dig postholes using hand tools, avoiding damage to the protective bark covering larger roots. Roots smaller than 25mm diameter may be pruned back using either secateurs or a hand saw, leaving a clean cut.
- 4) Damage or severance of roots above 25mm diameter must be avoided. If roots of this size are discovered, the hole should be relocated. If there are a large number of such roots it may be necessary to relocate the hole by half a fence panels length and adjust the fence panels accordingly.
- 5) Line hole with non porous lining, for example durable polythene bag.
- 6) Insert post and fill post hole with concrete to just below ground level.
- 7) Trim polythene to ground level and fill with clean topsoil.

10. INSTALLATION OF NO-DIG SURFACE

10.1. To ensure that tree roots, within the ground under this proposed surface, continue to survive during and after construction a cellular system such a CellWeb¹ of 75-200mm depth is to be used.



No-dig cross-section

10.2. Stages for Installation of the cellular confinement surface:

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
- 2) Dismantle TPF and re-erect in secondary location as shown on TPP
- 3) Remove existing vegetation by using a specific herbicide (as advised by a specialist) or manual removal with hand tools only. Agreed removal of shrubs, saplings or trees, within the protected areas of retained trees are to be cut, or ground out to just below ground level rather than grubbed or winched out, which can damage roots of retained trees.
- 4) Retain all original ground levels after vegetation removal. No excavation whatsoever.
- 5) Remove any existing hard surfaces (paving, tarmac etc.) Hand tools should be used if possible. If machinery is required for this operation, it must be used only on existing surfaces or outside the protection areas and tree canopies (approval from project arboriculturist must be sought before using machinery). The sub base of

¹ Geosynthetics Ltd, 01455 617139, www.geosyn.co.uk

existing surfaces or foundations should be left in situ where possible to avoid unnecessary root disturbance and provide a base for the new surface.

- 6) Install a non-woven Geotextile (such as TreeTex T300) directly over soil grade level (levelled where necessary, by non-compacted washed sand) and fix in place.
- 7) Lay the cellular system over the Geotextile, which is secured open under tension during the infill process with steel staples or wooden pegs.
- 8) Install kerbs and edgings directly on top of existing soil grade level. For light structures, a treated peg and board may be acceptable. For more substantial structures, railway sleepers, haunched concrete with road pins, drilled kerbstones, gabions or cast in situ kerbs will be appropriate.
- 9) Fill the cellular system ensuring any machinery works only on already filled areas. Typical infill consists of no fines angular granular material 20-40mm, which will remain un-compacted.
- 10) Cover with a non-woven Geotextile (such as TreeTex T300).
- 11) Install porous wearing surface.
 - Small Block Paving
 - Washed Gravel
 - Porous Asphalt

10.3. Any variation to the above specification must meet the following design criteria for low-invasive surfaces to provide the conditions for continued tree survival and growth:

- Maintain oxygen diffusion through new surface to rooting area (5-12% by volume²)
- Maintain sufficient passage of water to the rooting area (12-40% by volume³)
- Avoid compaction by maintaining a soil structure sufficient to sustain root growth (soil bulk density below 1.4g/cc⁴).

10.4. Site analysis of the soil type and its structural characteristics will be required prior to determining the specific depth of products to be adopted for example, footpaths normally require a depth of 75mm and, 100mm to 200mm depths are used for residential driveways, while greater depths may be required for the passage of heavier traffic such as for construction access and delivery vehicles.

10.5. If ground levels are to be raised more than 150mm this should be achieved by the use of a granular material, which does not inhibit vertical gaseous diffusion. For example: no-fines gravel, washed aggregate, structural soil (min. 20% sand content) or cobbles.

² Smith, R. J. (2006). *Tree Roots in the Built Environment*. HSO

³ Coder, D. K. (2000). *Tree Root Growth Requirements*. University of Georgia

⁴ Harris, C. M. (2004). *Arboriculture, Tree Management of Shade Trees and Vines*.

11. BIBLIOGRAPHY

- (2010). *BS3998- Recommendations for Tree Work*. London: British Standards Institute.
- BSI. (2007). *BS3882- Specification for topsoil and requirements for use*. London: British Standards Institute.
- (2000). *Countryside and Rights of Way Act*. London: HMSO.
- National Joint Utilities Group. (2010). *Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook*. NJUG.
- (1981). *Wildlife and Countryside Act*. London: HMSO.

LIMITATIONS OF USE AND COPYRIGHT

This assessment has been prepared for Foreman Homes. All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with Ranelagh Road, Havant. Until all invoices rendered by the Consultant to the Client have been paid in full, the copyright of any documents, forms, statements, maps, plans and other such material will remain vested in ACD Environmental and no unauthorised use of such material may be made by the Client or any person purporting to be acting on his/her behalf. It may not be sold, lent, hired out or divulged to any third party not directly involved in this site without the written consent of ACD Environmental ©

APPENDIX: TREE PROTECTION PLAN

FOR20239-03



Head Office

Rodbourne Rail Business Centre
Grange Lane
Malmesbury
SN16 0ES
Tel: 01666 825646

Surrey Office

Courtyard House
Mill Lane
Godalming
GU7 1EY
Tel: 01483 425714

Hampshire Office

Suite 6
Crescent House
Yonge Close
Eastleigh
SO50 9SX
Tel: 02382 026 300

Email: mail@acdenv.co.uk
Website: www.acdenvironmental.co.uk

ECOLOGICAL SURVEYS * PROTECTED SPECIES LICENSING * MITIGATION * IMPACT ASSESSMENT
ARBORICULTURAL SITE MONITORING AND SUPERVISION * ARCHAEOLOGY
LANDSCAPE & VISUAL IMPACT ASSESSMENT * LANDSCAPE AUDIT * PROJECT MANAGEMENT
EXPERT WITNESS* LANDSCAPE DESIGN & PLANNING LANDSCAPE MANAGEMENT