Barratt Homes

Condition 11 of Ref. 15/01326/OUT

White Post Road, Bodicote, Banbury

Arboricultural Method Statement

May 2019

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Rev	Issue Status	Prepared / Date	Approved/Date
-	Final	EKP / 08.05.19	CTT / 13.05.19

CONTENTS

TABLES

PLANS

APPENDICES

1.0 INTRODUCTION

1.1 This Arboricultural Method Statement (AMS) has been prepared by FPCR Environment and Design Limited on behalf of Barratt Homes to provide the methods of protection and pruning requirements for retained trees located at White Post Road, Bodicote (hereafter referred to as 'the site').

1.2 This statement is also supported by an updated Arboricultural Impact Assessment and Tree Retention Plan produced in April 2016 by FPCR Environment and Design as part of the reserved matters application.

1.3 This AMS outlines the methodology by which construction will be undertaken in order to safeguard trees in a satisfactory condition during the construction of the approved outline planning consent (Ref. 15/01326/OUT). This method statement sets out a definitive account for the treatment of retained trees during construction and specifies industry approved construction methods.

1.4 The detail and requirements of this Method Statement comprise commitments to complete the construction phase of the development in a specific manner and will inform the production of all relevant tender documents and instructions to contractors.

1.5 **Failure to adhere to the correct sequence, manner and timing of operations detailed in this Method Statement may result in irremediable damage to trees or disturbance to retained tree cover. Retained trees are protected by planning law and reckless damage or tree removal could result in the serving of a stop notice or prosecution by the Local Planning Authority.**

Planning Consent

1.6 Planning consent for 'up to 280 dwellings (including 30% affordable housing), introduction of structural planting and landscaping, formal and informal public open space and play areas, surface water flood mitigation and attenuation, new priority junction arrangements to White Post Road, creation of section of spine road to link Bloxham Road with White Post Road as well as creation of 34 space car park and other associated ancillary works'; was granted by Cherwell District Council (Planning Reference 15/01326/OUT) following an appeal decision on 20th December 2017.

1.7 This AMS has provided details to discharge Condition 11 of the outline planning consent granted, with all matters reserved for subsequent approval, with the exception of access.

Condition 11:

'No development shall take place until a full arboricultural survey, method statement and arboricultural implications assessment that accords with BS: 5837:2012 (or any superseding British Standard) for all existing trees and hedgerows within and around the perimeters of the site have been submitted to, and approved in writing by, the local planning authority. The development hereby permitted shall take place only in accordance with the approved details.'

1.8 This AMS sets out the methodology for all proposed works that affect trees on the site. Compliance with this AMS, once approved by the Local Planning Authorities (LPA) Arboricultural Officer, will be a requirement of all relevant contractors associated with the development proposals.

Overview of Trees on Site

1.9 A total of twenty four individual trees, twenty two groups of trees and ten hedgerows were surveyed as part of the Arboricultural Assessment. All detailed information on individual trees, groups and hedgerows can be found in Appendix A – Tree Schedule and identified on the Tree Survey Plan provided as part of the Arboricultural Assessment / AMS (drawing no. 8937-T-01).

1.10 The majority of the tree stock surveyed was situated within the hedgerows that surrounded the field parcels. From an arboricultural perspective the trees were insignificant due to their young and semi-mature proportions. The trees positioned along the borders and within the amenity grassland, and along the access drive to Banbury Cricket Club were regarded as being of the highest arboricultural quality, with nine trees and one group in total being considered a retention category A. Maintained hedgerows surrounded the arable field parcels of the site, most of them being of low landscape and arboricultural quality due to their small proportions.

1.11 The proposed development shall retain the majority of the trees on the site, and importantly all of the individual high quality category A tree cover. The only trees that are required to be removed to facilitate the proposals are; a single tree from G1 and G2, H5, H7, T3, T27, T8, a single tree from G21 and four trees from G18.

1.12 Most of this tree cover is of low arboricultural quality, and the largest amount of losses are required to facilitate the access road into the site, rather than the dwellings themselves. The four trees from G18 are the only high quality trees that are required to be removed to satisfy the development proposals.

1.13 The proposals include provision for new tree planting throughout the site as part of the accompanying landscape scheme.

Statutory Constraints

1.14 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) in order to protect and preserve specific trees and woodlands that bring significant amenity benefit to a particular site or location. Under a TPO it is a criminal offence to cut down, top, lop, uproot or willfully destroy a tree protected by that Order, or to cause or permit such actions, if carried out without the prior written consent of the acting LPA. Anyone found guilty of such an offence is liable and in serious cases, may result in prosecution and incur an unlimited fine.

1.15 Following consultation with the local planning authority, Cherwell District Council, in 2016, it is understood that there is a tree preservation order, namely 007/1994 (Salt Way, Banbury) Tree Preservation Order, which applies to a number of trees present within the assessment and therefore statutory constraints apply to the development in respect of trees. Further details are given in table 2.

1.16 An update of this current TPO information has yet to be confirmed by Cherwell District Council Once this information has been received, the report will be updated accordingly. Before any tree works are undertaken confirmation of the presence of the statutory constraints should be sought from the Local Authority.

Limitations

1.17 The Method Statement is concerned solely with arboricultural issues related to the site referenced only.

1.18 Any changes in ground level, or excavations near to tree roots not detailed within this AMS has the potential of adversely affecting the stability and physical condition of the retained trees and as such further examinations would be required.

1.19 The timescales for the construction program are not absolute. The timescales set out in this AMS are based on all supplied preliminary information available at the time of writing and is subject to change. A such the processes set out in the AMS may need to be reviewed and amended to suit as required.

2.0 CONDITION REQUIREMENTS

Specific Condition Requirements

2.1 To satisfy planning Condition 11, the following table provides a summary of the specific requirements of the AMS and how evidence of its action shall be provided.

Table 1: Condition Requirements and Evidence of Action

Condition Reference	Evidence of Action
Condition 11 *'No development shall take place until a full arboricultural survey, method statement and arboricultural implications assessment that accords with BS: 5837:2012 (or any superseding British Standard) for all existing trees and hedgerows within and around the perimeters of the site have been submitted'*	AIA – An updated arboricultural impact assessment has been carried out and provided separately to this AMS. A tabulated Tree Schedule has been provided as Appendix A of this AMS and details species; height; canopy spread; stem diameter; age class and overall condition / health. This has been used to formulate positioning of fencing and to assess the need for any facilitation pruning. An updated Tree Survey and Retention plan has been provided in the Impact Assessment (FPCR-May 2019) which has been supplied alongside this AMS.

Condition Reference	Evidence of Action
Condition 11 Method statement and Tree Protection details in the form of a Tree Protection Plan (TPP)	Site supervision requirements provided. This shall also include supervision of all works within the RPA's of retained trees. Task Specific Arboricultural Method Statements (Appendices C) have been provided for each of the relevant stages of the development. These are provided in the form of 'pull out' sheets to be shared with each of the relevant contractors. These 'pull out sheets are to be kept on file in the site office for reference and shared with relevant contractors as part of the site induction. The pull-out sheets are edged as per the contents page of this AMS for ease of identification. A Tree Protection Plans has been produced and accompanies the AMS. The plan shows: • Trees to be retained (green) • Tree Groups to be retained (green stripe hatch) • Hedgerow to be retained (solid green line) • Hedgerow to be removed (solid red line) • Trees and Tree Groups to be removed to facilitate the development (red criss-cross hatch) • Trees and hedgerows to be removed to facilitate the approved access into the site (orange) • Extent of calculated Root Protection Areas (blue circle) • Overlaid development proposals for reference • The position of Primary / Fixed Tree Protection fencing (pink line) • Measurements and Annotations for ease of interpretation (pink text) • Arboricultural Supervision during demolition (pink dashed lines) The Tree Protection Plans have been annotated for ease of interpretation.

General Condition Requirements

2.2 This AMS, the appended Task Specific Method Statements and accompanying Tree Protection Plans should be reproduced in their entirety in colour and copies should be kept on file in the site office for reference.

2.3 The relevant contractors should be provided any Task Specific Method Statements appended as part of this AMS, where relevant to their work.

2.4 The Site Manager will read this AMS. It will be the responsibility of the Site Manager to ensure its compliance throughout the construction processes.

2.5 All operations will be monitored by the Site Manager and they will be responsible for ensuring that any sub-contractors do not carry out any process or operation which is likely to impact adversely upon any retained tree or hedge.

2.6 The contractor carrying out each task specific to their work shall be responsible for ensuring the AMS is adhered to at all times, The Site Manager is to ensure there is a monitoring regime for the maintenance of tree protection adopted on site.

3.0 TREE PROTECTION METHODOLOGY

Pre-commencement Tree Work

3.1 All agreed works will need to be undertaken prior to the main construction activities commencing and so that tree protection fencing can be erected in the positions demonstrated on the Tree Protection Plans.

3.2 Appendix C1 outlines all the required pre-commencement tree work. Those trees which will be removed to facilitate the approved development layout are not detailed within the appendix.

3.3 All tree works undertaken will comply with *British Standard 3998 'Tree Work - Recommendations' (2010)* and be carried out by skilled tree surgeons preferably those approved by the Arboricultural Association (AA). The AA is the recognised authority for certification of tree work contractors. To become an Approved Contractor a company must satisfy the Associations Professional Committee of its consistently high standard of tree work.

3.4 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

Tree Protection Programme – Construction Phase

3.5 The key stages where tree protection are to be implemented along with the requirements for site supervision have been outlined in the following sections and within the relevant tables.

3.6 The timing of these stages may be subject to alteration in line with any future amendments of the construction program and as such, it is important to emphasise that the timeframe is designed to be flexible to accommodate these alterations whilst ensuring the protection of the trees on site.

Table 2: Timelines of Tree Protection for Construction Works

Timetable	Actions	Project Arboricultural Consultant requirements	Task Specific Method Statement / Appendix reference
Pre-commencement site meeting **(est. Summer/Autumn 2019)**	Pre-commencement site meeting prior to the start of construction works on site following site clearance (vegetation removal). Timeline of construction processes to be shared with Arboricultural Clerk of Works and changes made to the AMS as required.	Site meeting / Tool box talk by Arboricultural Clerk of Works (refer to Section 3.10-3.12) to ensure that the AMS has been read by the relevant person, including the Site Manager and Tree Surgeon. Site Manager to provide working Gantt Chart or Timetable of construction processes and to ensure that Tree Protection measures have been included. Arboricultural Clerk of Works to check that copies of Task Specific Arboricultural Method Statements (located in Appendix C) are present.	Appendices C and AMS.

Timetable	Actions	Project Arboricultural Consultant requirements	Task Specific Method Statement / Appendix reference
During Pre-commencement site meeting **(est. Summer/Autumn 2019)**	Temporary and Permanent Tree Protection Fencing positions to be marked out and pegged (where applicable) by the Arboricultural Consultant to ensure that all fencing is erected in the correct positions. First - Chlorophyll Fluorescence measurements to be taken for T7. Arboricultural Clerk of Works to take measurements using handheld Arborcheck system to conduct chlorophyll fluorescence tests, enabling a quick, non-invasive, physiological assessment of tree health. The Arborcheck system enables early detection of potentially severely damaging stress factors.	Arboricultural Clerk of Works to assist with measuring out distances from trees in accordance with the Tree Protection Plans. Photos of evidence to be taken for auditing purposes. Results of Chlorophyll measurements to be assessed and any recommendations for remedial management to be implemented shall be reported to Site Manager / Client and LPA (upon request).	Appendices C2 and relevant Tree Protection plan. Tablet based Arborchek system (Arboricultural Clerk of Works use only).
Commence Earthworks			

Timetable	Actions	Project Arboricultural Consultant requirements	Task Specific Method Statement / Appendix reference
Permanent Tree Protective Fencing installed **Dates TBC during Pre-commencement site meeting and in line with construction program)**	Check fencing has been erected. Supervision of Earthworks where required Tree Protective Fencing position and suitability checked by Arboricultural Clerk of Works. Compliance with AMS checked and recorded.	Arboricultural Clerk of Works to check that all Tree Protective Fencing has been erected and is of the required type and specification (as per Appendix C2 and as specified in Section 3.0 of the AMS). Any contingencies or action points required shall be outlined. Exact supervision requirements to be determined during Pre-commencement site meeting Record of visit to be completed by Arboricultural Clerk of Works and a copy is to be handed to Site Manager and LPA upon request.	Appendix C2 Appendix C Tablet based Auditing App (Arboricultural Clerk of Works use only)
Earthworks Completed			
Supervision of Construction Works for Primary Road Layout within the RPA of T7 **(Date TBC)**	Supervision of the roads installation to be carried out where these works occur within the RPA of tree T7. The cutting of roots shall not entirely be avoidable during these works. As such any roots located / identified during these works shall be pruned back to the face of the trench as they became exposed. Roots shall be wrapped with hessian material, which is to be kept damp, until the area can be back filled with topsoil.	Record of visit to be completed by Arboricultural Clerk of Works and a copy is to be handed to Site Manager. Arboricultural Clerk of Works to be present to ensure that no major / structural roots are severed or unnecessarily damaged. An assessment shall be made prior to any decision on cutting toots is made. Supervision and inspections accompanied by robust auditing.	Appendices C4 Tablet based Auditing App (Arboricultural Clerk of Works use only)
Construction Works Commence			

Timetable	Actions	Project Arboricultural Consultant requirements	Task Specific Method Statement / Appendix reference
Date TBC during Pre-commencement site meeting and in line with construction program)	Periodic compliance inspections accompanied by robust auditing of visits. Tree Protective Fencing position and suitability checked by Arboricultural Consultant. Compliance with AMS checked and recorded.	Record of visit to be completed by Arboricultural Clerk of Works and a copy is to be handed to Site Manager and LPA upon request.	Appendices C Tablet based Auditing App (Arboricultural Clerk of Works use only) Refer to relevant plans
Following completion of works within the RPA's of retained trees (as detailed)	Second Chlorophyll Fluorescence measurements to be taken.	Arboricultural Clerk of Works to take measurements using handheld Arborcheck system to conduct chlorophyll fluorescence tests, enabling a quick, non-invasive, physiological assessment of tree health. The Arborcheck system enables early detection of potentially severely damaging stress factors. Results of Chlorophyll measurements to be assessed and any recommendations for remedial management to be implemented shall be reported to Site Manager / Client and LPA (upon request)	Tablet based Arborchek system (Arboricultural Clerk of Works use only)

Timetable	Actions	Project Arboricultural Consultant requirements	Task Specific Method Statement / Appendix reference
Date TBC during Pre-commencement site meeting and in line with construction program	Soft landscaping to be planted in accordance with the approved landscape proposals. Remove barriers to allow landscaping works to be completed. Use of tracked machinery to be restricted in the RPA's of retained trees.	Tool box talk for contractor (refer to Section 3.10 - 3.12)	Appendix C3
Construction Works Completed			
Post Construction			
Date TBC during Pre-commencement site meeting and in line with construction program	Removal of Tree Protective Fencing	Arboricultural Clerk of Works to check if all Tree Protective Fencing has been removed and in doing so no damage has occurred to retained trees and hedgerows.	

Timetable	Actions	Project Arboricultural Consultant requirements	Task Specific Method Statement / Appendix reference
12 Months post Construction Completion (Date TBC)	Final (third) Chlorophyll Fluorescence measurements to be taken.	Arboricultural Clerk of Works to take measurements using handheld Arborcheck system to conduct chlorophyll fluorescence tests, enabling a quick, non-invasive, physiological assessment of tree health. The Arborcheck system enables early detection of potentially severely damaging stress factors. Report assessing the results of the Chlorophyll measurements and recommending any remedial tree management where required. Report to be handed to the client.	Tablet based Arborchek system (Arboricultural Clerk of Works use only)
Tree Protection Program Completed			

Arboricultural Supervision

Appointment of Arboricultural Clerk of Works

3.7 The Site Manager / Project Manager will be responsible for appointing the Arboricultural Clerk of Works in advance of any operations detailed in this Method Statement and in any instance where full compliance cannot be guaranteed i.e. where construction works within areas fenced off to protect trees may be required.

FPCR Arboricultural Consultant Contact Details

FPCR Arboricultural Consultant: Callum Throw

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Contact Number: 01509 672772 / 07875 013157

3.8 An overview of the specific involvement of the Arboricultural Clerk of Works has been provided in Table 2.

3.9 An initial site meeting prior to starting any construction works, implementing tree surgery and erection of tree protection fencing, shall be a requirement of this AMS. At the meeting the Site Manager and Arboricultural Clerk of Works will discuss the methodology and various tree protection measures to be implemented subject to approval by the LPA.

3.10 A toolbox talk will also be given to the Site Manager and any on site operatives on the day of the meeting. The purpose of this toolbox talk will be to inform the Site Manager and Operatives of how to protect all retained trees. The toolbox talk shall then be repeated by the Site Manager when new external trades / Contractors commence work on site.

3.11 The toolbox talk shall focus on informing Contractors on the following topics:

- The protection of trees is a requirement of planning approval and failure to comply could result in in stop notices being applied or fines;
- How trees can be harmed on development sites;
- How the trees on this site will be protected by tree protection fencing and ground protection;
- Discussion on particular methods of working near the trees as outlined in this Method Statement;
- How to report an issue before it becomes a problem;

3.12 Evidence of the toolbox being carried out shall be collected. This evidence can be viewed at any time by the Arboricultural Clerk of Works and shared with both the client and the LPA upon request. A periodic review shall be conducted to ensure continued compliance.

3.13 The Arboricultural Clerk of Works will periodically verify compliance with this AMS and sign-off elements of the work as various stages of the development commence. This shall be recorded using an online form which the Arboricultural Clerk of Works can share with the client and LPA.

3.14 The Arboricultural Clerk of Works will be responsible for specifying any tree work requirements and shall assist in, where required, the appointment of a suitably qualified Arboricultural Contractor to undertake the removal and pruning of trees.

Key Appointment, Supervision and Monitoring Stages of the Arboricultural Clerk of Works

3.15 The following stages of supervision shall be required:

- Pre-commencement site meeting and Tool box talk to be carried out.
- Marking trees to be removed and to be pruned with the appointed tree contractor where relevant **(pre-commencement meeting)**
- Walking the site with the Site Manager / Fencing Contractor to measure out the locations of the fencing **(pre-commencement meeting)**
- Chlorophyll Fluorescence measurements to be taken for retained trees T7 **(pre-commencement meeting)**
- Arboricultural Clerk of Works to be present to supervise new road construction works within RPA of T7 **(to follow pre-commencement meeting)**
- Full auditing of these visits / supervision requirements to be carried out **(ongoing)**
- Ongoing visits in accordance with Table 2 to inspect the tree protection fencing and compliance with the AMS. Any other arboricultural matters arising which are unforeseen will need to be discussed with the Arboricultural Clerk of Works during these visits to decide the most appropriate course of action.

- After each site visit a short report/record will be compiled which will be sent to the client and local authority upon request as a record of evidence.
- Second and third Chlorophyll Fluorescence measurements to be taken **(season dependant during and post development)**

Specific Tree Protection Measures

3.16 For each of the works required a Task Specific Method Statement has been provided outlining the action required. These Method Statements have been provided in chronological order and have been produced as 'pull out' sheets to be kept on record in the site office and handed to the appropriate contractors during site inductions.

3.17 The methodologies accompanying this AMS have been provided as separately titled appendices for ease of identification. These include:

- Appendix C1: Tree Contractor - Tree Work Methodology
- Appendix C2: Fencing Contractor – Working Methodology
- Appendix C3: Hard and Soft Landscaping - Working Methodology
- Appendix C4: Excavation under Supervision - Working Methodology

General Tree Protection Measures

3.18 This section details non-specific precautionary measures to be applied at all times.

3.19 No trees will be removed or pruned during construction other than those detailed within this method statement. Any proposed deviation from the tree removal and retention presented in this document must be discussed with the project Arboricultural Consultant prior to implementation.

3.20 All the retained trees will need to be adequately protected during works. Measures to protect these trees should follow the best practice principles set out in *BS5837: Trees in Relation to Construction Recommendations (2012).* These have been broadly summarised below.

3.21 No Root Protection Areas will be affected by excavation works, storage of materials, plant or machine access, other than as described by this Method Statement.

3.22 Site compounds, Portakabins, Containers and other temporary buildings can in some cases be used in root protection area if prior consent is agreed by the acting local planning authority. The method for installing the buildings and an assessment of whether temporary ground protection is required is to be agreed with the project Arboriculturalist and specified prior to installation.

3.23 No materials or soils are to be stored within the Root Protection Area of the retained trees.

3.24 Oil, bitumen, cement or other material that is potentially injurious to trees will not be stacked or discharged within 10m of a tree stem. No concrete mixing will be done within 10m of a tree. Allowance will be made for the slope of ground to prevent materials running towards the tree.

3.25 Wide or tall loads etc. should not come into contact with retained trees. Banks man should supervise transit of vehicles where they are in close proximity to retained trees.

3.26 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.

3.27 Notice boards, telephone cables or other services will not be attached to any part of a retained tree.

3.28 If unexpected large roots (>25mm diameter) are encountered during excavation for construction works the arboricultural consultant should be contacted immediately. No exposed roots will be left uncovered. They will be covered over as soon as possible to minimise the risk of drying out and dying.

3.29 As recommended within section 8.8.3 of BS5837 Post Development Management of Existing Trees, all retained trees should be subjected to sound arboricultural management where there is public access in order to satisfy the landowner's duty of care.

Removal of Tree Protection Measures and Protective Fencing

3.30 Following the completion of all construction works and in agreement with the project arboriculturalist the tree protection fencing will be removed carefully as to avoid causing root disturbance.

4.0 ARBORICULTURAL MONITORING AND TREE MANAGEMENT

4.1 Trees will require several years to adjust to environmental changes that occur during construction. Stressed trees are more prone to health problems, such as disease and insect infestations. Despite the enforcement of the recommendations continued within this AMS and the best intentions of the developer, including the implementation of the most stringent tree protection measures across the site, injury to trees may still occur.

Chlorophyll Fluorescence Assessment

4.2 Prior to, during and post construction works, a series of Chlorophyll Fluorescence measurements shall be taken from all trees to which works are to occur in the RPA, namely T7. The Arborcheck system enables early detection of potentially severely damaging stress factors well before any visible symptoms are apparent.

4.3 A plant's leaves will take energy from the sun and convert it into complex carbohydrates that it can use for nutrition, a process known as photosynthesis. Normally a healthy tree will use about 80-84% of the sunlight it receives at the leaf surface. The rest is dispersed by non-photochemical processes: re-emitting in the form of infra-red radiation (heat) or far-red radiation (referred to as chlorophyll fluorescence).

4.4 Trees which are not at optimum health do not have this balance. For example, after a period of drought or a change in growing conditions e.g. increased soil compaction or root damage resulting from construction works, the rate of photosynthesis will be slowed in response and a tree will have to increase its dissipation of energy by chlorophyll fluorescence.

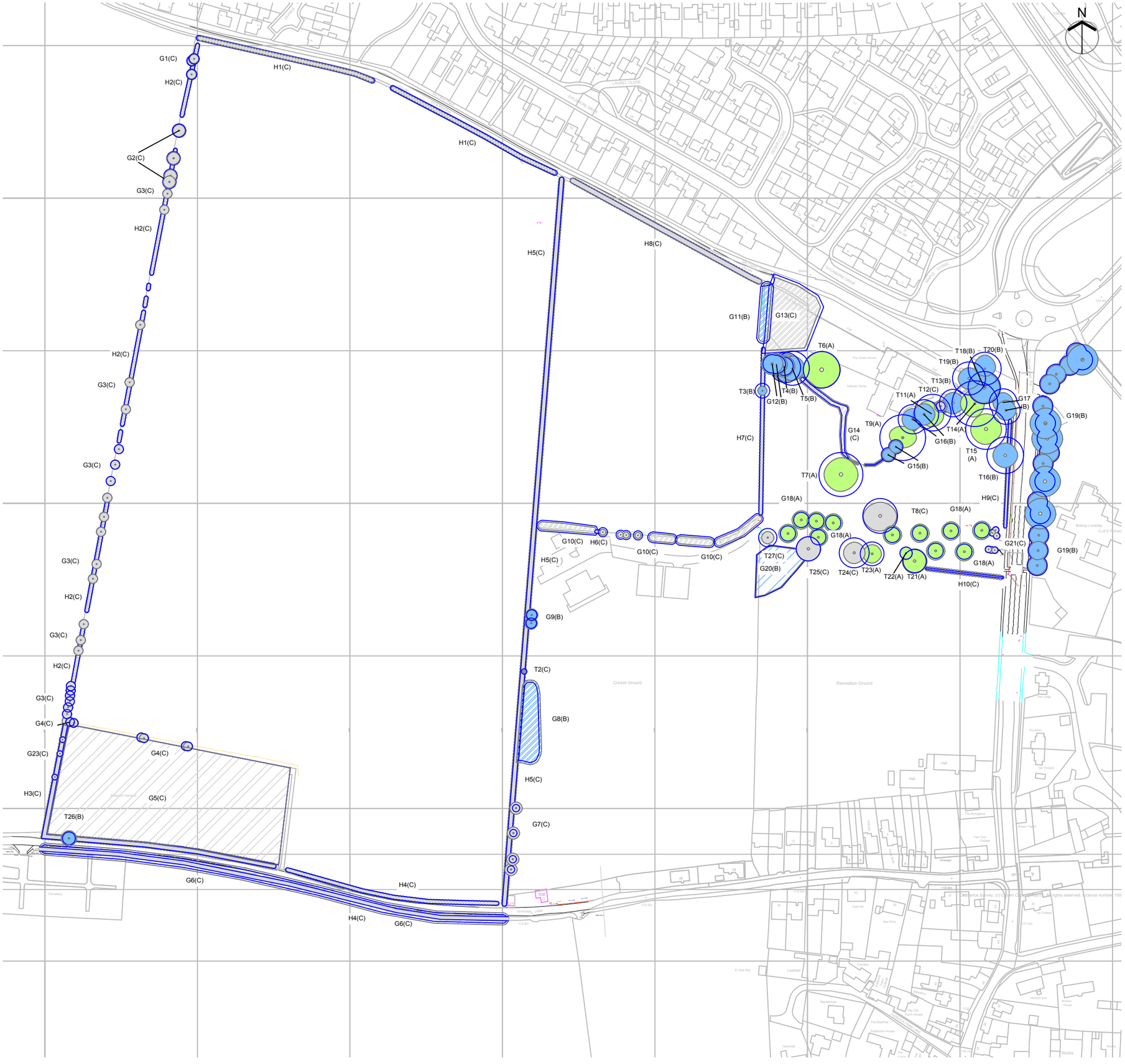
4.5 By reading the intensity and nature of a tree's fluorescence, and also by measuring the foliar chlorophyll concentrations in a leaf (leaf greenness), an informed assessment of the tree's overall health can be made, even before there are the usual visible signs of stress.

4.6 Decisions shall be made as to recommending the most appropriate course of remedial treatment to be applied to reverse the stressed state and promote good healthy tree growth.

5.0 CONCLUSIONS

5.1 Providing that the protection methods in this AMS be followed on site, there shall be no unnecessary or adverse Arboricultural impacts.

5.2 Subject to the finalising a precise timeline of construction works and further information being provided on all demolition and earthworks required to facilitate the development; to be confirmed during the pre-commencement site meeting, the AMS is sufficient to satisfy the requirements of the planning condition 11.



KEY

- Category U - Unsuitable for Retention (BS 5837:2012)
- Category A - Trees of High Quality (BS 5837:2012)
- Category B - Trees of Moderate Quality (BS 5837:2012)
- Category C - Trees of Low Quality (BS 5837:2012)
- Group hatching (Colour indicates BS Category)
- Hedgerow hatching (Colour indicates BS Category)
- Root Protection Area (the RPA has been altered where appropriate to reflect underground constraints)
- T1 (A) TG1 (A) — Individual / Group Number and BS Category
- Indicative Shade Pattern (where appropriate)

Scale 1:2500 @ A3

0 50 100 150m

NOTES

All dimensions to be verified on site. Do not scale this drawing. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing produced in colour, a monochrome copy should not be relied upon, and is based on digital information supplied by the client in dwg format. The exact position of trees are to be checked and verified on site prior to any tree work or construction work being undertaken.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by a qualified arboriculturalist or tree surgeon should works commence 12 months after the time of this survey. Please note that no works should be undertaken to any trees illustrated herein without first obtaining the proper authorisation to do so.

rev	date	description	by
-	02.05.19	First Issue	EKP

fpcr

masterplanning
environmental assessment
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project
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drawing title
TREE SURVEY PLAN

scale	drawn	date
1:2500 @ A3	EKP	May 2019

drawing number
8937-T-01

rev
-

CAD file: K:\8900\8937\ARB\Plans\Tree Survey Plan.dwg

KEY

- Tree/Group to be Retained
- Tree/Group to be removed to facilitate the proposals
- Tree to be removed to facilitate the Access as approved at Appeal (APP/C3105/W/17/3172731
- Category U - Unsuitable for retention on arboricultural grounds
- Hedgerow Proposed to be Retained and Incorporated into the New Development
- Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application
- Hedgerow To be Removed to facilitate the Access as approved at Appeal (APP/C3105/W/17/3172731)
- Root Protection Area (Shown for retained trees only)
- T1 (A) G1 (A) — Individual / Group Number and BS Category
- Indicative Shade Pattern (where appropriate)

Scale 1:2500 @ A3

0 50 100 150m

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rev	date	description	by
-	02.05.19	First Issue	EKP
A	13.05.19	Updated layout	EKP
B	14.05.19	Added access drawing	EKP

fpcr

masterplanning
environmental assessment
landscape design
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client
Barratt Homes

project
White Post Road, Bodicote
Banbury

drawing title
TREE RETENTION PLAN

scale	drawn	date
1:2500 @ A3	CTT	May 2019

drawing number
8937-T-02

rev
B

CAD file: K:\8900\8937\ARB\Plans\Tree Retention Plan.dwg

KEY

Tree/Group to be Retained

Tree to be removed to facilitate the Access as approved at Appeal (APP/C3105/W/17/3172731

Category U - Unsuitable for retention on arboricultural grounds

Hedgerow Proposed to be Retained and Incorporated into the New Development

Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application

Hedgerow To be Removed to facilitate the Access as approved at Appeal (APP/C3105/W/17/3172731)

Root Protection Area (Shown for retained trees only)

T1 (A) G1 (A) — Individual / Group Number and BS Category

Indicative Shade Pattern (where appropriate)

Construction Supervision Zone

6.0m — Line of Protective Barriers (and distance from tree or retained structure)

Scale 1:2500 @ A3

0 50 100 150m

NOTES

All dimensions to be verified on site. Do not scale this drawing. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing produced in colour, a monochrome copy should not be relied upon, and is based on digital information supplied by the client in dwg format. The exact position of trees are to be checked and verified on site prior to any tree work or construction work being undertaken.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by a qualified arboriculturalist or tree surgeon should works commence 12 months after the time of this survey. Please note that no works should be undertaken to any trees illustrated herein without first obtaining the proper authorisation to do so.

rev	date	description	by
-	08.05.19	First Issue	EKP
A	14.05.19	Updated layout and access drawing	EKP

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project
White Post Road, Bodicote
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drawing title
TREE PROTECTION PLAN

scale	drawn	date
1:2500 @ A3	EKP	May 2019

drawing number
8937-TPP-03

rev
A

CAD file: K:\8900\8937\ARB\AMS\Plans\Tree Protection Plan.dwg

Appendix A - Tree Schedule

Measurements	Age Class	Overall Condition	Root Protection Area (RPA)
Height - Measured using a digital laser clinometer (m)	YNG: Young trees up to ten years of age	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention	• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. • Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover	
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Early mature trees 1/3 – 2/3 life expectancy	P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term	
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Mature trees over 2/3 life expectancy	D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover	
	OM: Over mature declining or moribund trees of low vigour	The BS category particular consideration has been given to the following • The health, vigour and condition of each tree • The presence of any structural defects in each tree/group and its future life expectancy • The size and form of each tree/group and its suitability within the context of a proposed development • The location of each tree relative to existing site features e.g. its screening value or landscape features • Age class and life expectancy	
	V: Veteran tree possessing certain attributes relating to veteran trees		

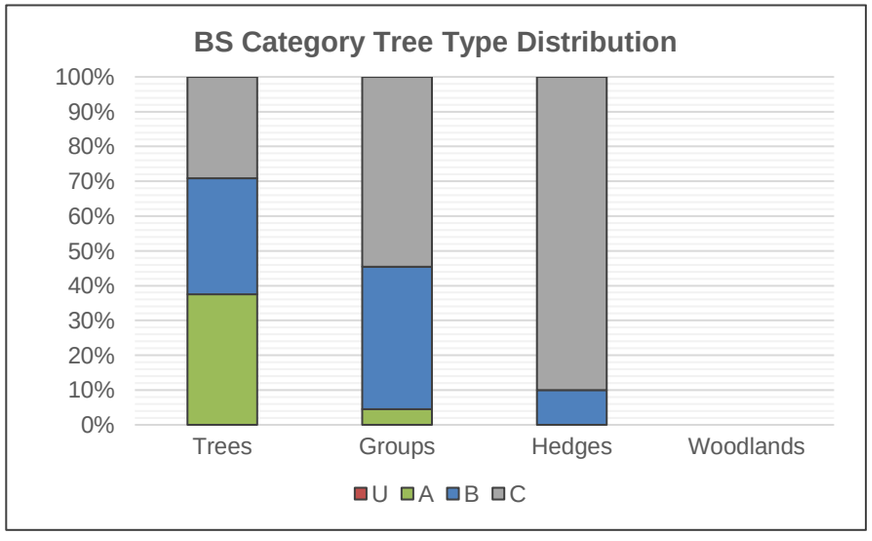
Structural Condition
The following is an example of considerations when inspecting structural condition: • The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay • Soil cracks and any heaving of the soil around the base • Any abrupt bends in branches and limbs resulting from past pruning • Tight or weak 'V' shaped forks and co-dominant stems • Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994) • Cavities as a result of limb losses or past pruning • Broken branches or storm damage • Damage to roots • Basal, stem or branch / limb cavities • Crown die-back or abnormal foliage size and colour

Quality Assessment of BS Category
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.
Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value

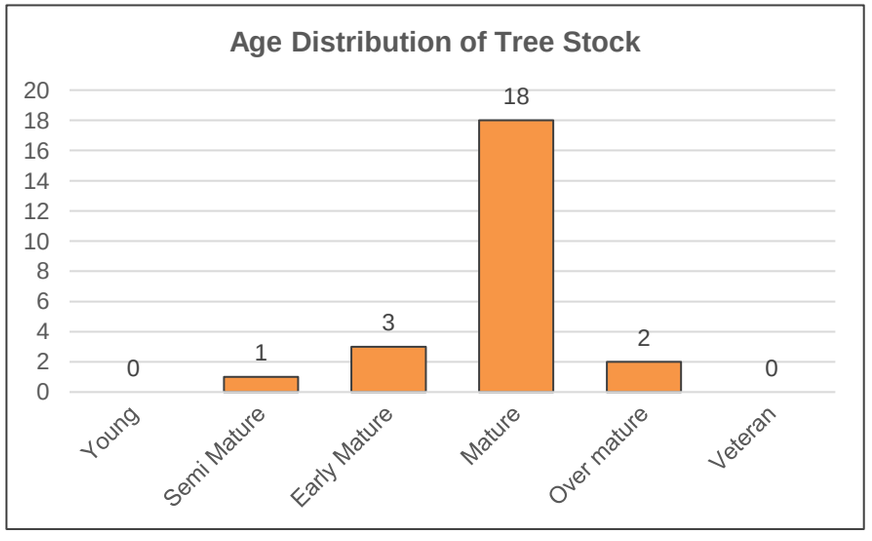
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T6, T7, T9, T11, T14, T15, T21, T22, T23	9	G18,	1
Category B	T3, T4, T13, T16, T18, T19, T20, T26	8	G8, G9, G11, G12, G15, G16, G17, G19, G20, H9	10
Category C	T2, T5, T8, T12, T24, T25, T27	7	G1, G2, G3, G4, G5, G6, G7, G10, G13, G14, G21, G23, H1, H2, H3, H4, H5, H6, H7, H8, H10	21
	Total	24	Total	32

BS Category Tree Type Distribution displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.



Age Distribution of Tree Stock shows the number of trees in each age category across the tree stock allowing assessment of their longevity to be made.



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Tree no longer present									
T2	Horse Chestnut Aesculus hippocastanum	5	est 150	1	SM	F	Situated within H5 hedgerow Unable to access base Minor deadwood	10	1.8	C (i)
T3	English Holly Ilex aquifolium	8	est 400	3	M	G	Dense canopy typical characteristic of species Previously maintained as a shrub with a tidy appearance Epicormic growth evident within the crown Light ivy cover on the main stem Twin stemmed from circa 2m	72	4.8	B (i)
T4	Common Ash Fraxinus excelsior	16.5	370 670 245 190	9	M	F	Multiple stem union situated at 1.2m above ground Dense ivy covering 8m of the tree stem, which prevented a thorough assessment Minor deadwood evident within the crown Branch stubs Broken branches Interlocking crown Eastern branch rubbing against T5	308	9.9	B (i)
T5	Common Beech Fagus sylvatica	16.5	440 750 350	8	M	F	Flail damage evident on lower half of the southern canopy Stubs had resulted from flail damage Few areas of major deadwood Supressed canopy forms from the present of competing trees Interlocking branches within canopy and against T4 Barbed wire included into main stem Light ivy cover Multi-stemmed from base South western most stem attached through included bark union	397	11.2	C (i)
T6	English Oak Quercus robur	25	est 1000	12	M	G	Multiple stem union forming at approximately 5m above ground. High canopy forming at approximately 13m Situated within a residential garden and therefore I was unable to gain access	452	12.0	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T7	English Oak Quercus robur	20	1200	11	M	G	Lower branch removals to raise height of crown to 3m above ground Minor deadwood evident sporadically spread across crown Two torn branches on the south side of the tree's canopy Increment split on major branch; facing east Stubs from past pruning operations Black spots on increment split major deadwood in lower crown Bark wounds evident on the stem and the canopy Exposed roots resulting from poaching of the soil with damage observed Elder basal sucker Woodpecker holes present Large hung up piece of major deadwood on the eastern side at circa 12m above ground level	651	14.4	A (i)
T8	Horse Chestnut Aesculus hippocastanum	18	950	N - 9 S - 10 E - 11 W - 11	OM	P	Major dieback has occurred throughout the canopy Major deadwood evident including a 7m long branch 5m large split on major limb forming a potential hazard beam Exposed wounds and bark necrosis on the stem; most prevalent in the lowest 2m Low canopy in places with just 1 - 2m ground clearance Soil poaching near the roots has occurred that has resulted in exposure Black spots was present on dead branches; indicator of bleeding canker *Pseudomonas syringae pv. aesculi* Specimen in decline Epicormic growth present in the lower crown Pruning wounds Signs of retrenchement Bark wounds Crossing and rubbing branches Lower branches loss of bark Heartwood exposed	408	11.4	C (i)
T9	Holm Oak Quercus ilex	16	est 1250	N - 7 S - 7 E - 9 W - 9	M	G	Minor deadwood evident Dense canopy with a minor amount of interlocking branches Pruning wounds Multileadered form Ivy on main stem Situated offsite by 1m No major defects	707	15.0	A (i)
T10	Tree no longer present									

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T11	Common Lime Tilia x europaea 'Pallida'	25	est 1000	N.E - 6 9	M	G	Dense ivy covering the tree up to 13m above ground Good canopy form Minor deadwood Offsite by 2 -3m Minor deadwood evident Unable to gain access	452	12.0	A (i)
T12	Common Ash Fraxinus excelsior	16	est 250	4	EM	F	Positioned offsite by 1.5m Ivy covering the tree at 9m above ground Supressed canopy caused by T11 and T13 Unable to gain access	28	3.0	C (i)
T13	Common Ash Fraxinus excelsior	22	est 750	7	M	G	Positioned offsite by approximately 2m Stem bifurcates at 5m Minor deadwood evident Ground clearance of 3m No major defects Unable to gain access	254	9.0	B (i)
T14	Copper Beech Fagus sylvatica 'Purpurea'	28	1520	E - 6 9	M	G	Exposed roots on the east side caused by vehicular access Poached soil all round the tree Numerous bulges up to 1m Few areas of major deadwood Typical species form with no major defects Pruning wounds Major and minor deadwood evident in the crown Broken branches Crossing and rubbing branches	707	Capped at 15m	A (i)
T15	Common Beech Fagus sylvatica	25	1110	10	M	G	High proportion of major deadwood in the lower canopy; up to 5m long Small quantity of minor deadwood located sporadically throughout the crown Poached soil all round the tree Exposed and damaged roots on the west side of the tree caused by vehicular access Stubs in the lower half of the canopy from past pruning operations The ground clearance of the canopy was 3m	557	13.3	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T16	Common Lime Tilia x europaea 'Pallida'	19	est 1000	8	M	F	Major epicormic growth throughout the tree; typical for cultivar type Exposed and damaged roots on the west side due to vehicular access A very dense canopy with many interlocking branches Minor deadwood mostly on the west side Major deadwood in the upper extent of the canopy Woodpecker holes	452	12.0	B (i)
T17	Tree no longer present									
T18	English Oak Quercus robur	27	880	10	M	F	Ivy covering the tree up to 15m Minor and major deadwood evident within the canopy Large gaps within the crown on the north side Torn branches high in the crown Stubs in lower crown on south side High crown form - first branch circa 10m above ground level Interlocking crowns Etiolated form	350	10.6	B (i)
T19	Common Lime Tilia x europaea 'Pallida'	27	est 900	7	M	F	Minor and major deadwood evident within the canopy Major epicormic growth; typical for cultivar type Offsite by approximately 3m Light ivy cover on the main stem Branch stubs and broken branches in the upper extents of the crown	366	10.8	B (i)
T20	English Oak Quercus robur	26	est 900	N - 9 S - 5 E - 7 W - 7	M	G	Ivy has been severed Minor and major deadwood in the crown Bark wounds and exposed heartwood Basal hollow on the southern face of the stem circa 10-15cm in depth	366	10.8	B (i)
T21	Hornbeam Carpinus betulus	16	630	8	M	G	Minor amount of deadwood evident within the crown Exposed wounds near the base of the tree at 1.5m long Minor amount of epicormic growth on the south side Basal epicormics Upper canopy leaning circa 15 degreed to the east	180	7.6	A (i)
T22	Common Beech Fagus sylvatica	17.5	330	4	EM	G	Typical species form with some pruning wounds No major defects	49	4.0	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T23	Sycamore Acer pseudoplatanus	16	650	6	M	G	Minor epicormic growth on the south side at the base Major deadwood in a few areas of the tree's canopy Bifurcated at 8m above ground Pruning wounds Broken branches Branch socket caivities	191	7.8	A (i)
T24	Variegated Sycamore Acer pseudoplatanus 'variegatum'	16	820	7	M	P	Ivy has been severed but it beginning to regrow Minor amount of epicormic growth on the south side situated at base Major deadwood evident including branches 3 - 4m long Minor deadwood also evident	304	9.8	C (i)
T25	Hornbeam Carpinus betulus	16	660	8	OM	P	Lightly sparse canopy Specimen in extensive decline Heartwood exposed Bark wounds circa 1.5m on the northern aspect of the stem and another on the southern face of the stem - the southern wound is the larger of the two approx 2m in height and 50cm wide Branch socket cavities Woodpecker holes	197	7.9	C (i)
T26	Common Ash Fraxinus excelsior	10	350	5	EM	F	Situated in hedgerow Dense ivy cover on the main stem Loss of significant limb on the northern face of the stem circa 5m above ground level Broken branches Pruning wounds Flail damage	55	4.2	B (i)
T27	Holly Ilex aquifolium	8	500	4	M	F	Large holly tree with low crown and basal suckers Northern side of the crown maintained as a hedgerow Central stem hollow to circa 1.5m Pruning wounds Crossing and rubbing branches Minor deadwood within the crown	113	6.0	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Field Maple Acer campestre Common Ash Fraxinus excelsior	8	up to 280	3	EM	F	Situated within H2 hedgerow Some of the specimens within the group were closely positioned that resulted in some supressed canopy forms Three trees One field maple with open and low crown form, the second field maple is growing in extremely close proximity to the third tree which is an ash The ash is multi-stemmed and is suspected to be an old hedge lay	35	3.4	C (ii)
G2	3 x Wild Cherry Prunus avium	7	230 290	4	EM	F	Situated within H2 hedgerow Numerous dense canopies within the group Twin stemmed forms within the group forming at approximately 1 - 1.5m Typical species form Branch stubs and broken branches observed Flail damage Dense undergrowth of hedge preventing access to base	62	4.4	C (ii)
G3	Common Ash Fraxinus excelsior Common Beech Fagus sylvatica Wild Cherry Prunus avium Field Maple Acer campestre English Oak Quercus robur Elder Sambucus nigra	4	up to 250	3	EM	G	Situated within H2 hedgerow Some twin stems forming at 1m Typical species form with no major defects	28	3.0	C (ii)
G4	English Elm Ulmus procera Common Hawthorn Crataegus monogyna	up to 7.5	up to 230	3	SM/EM	F	Pruning wounds Multi-stemmed from base The hawthorn appeared as though they were once maintained as shrubs Minor deadwood	24	2.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G5	Common Ash Fraxinus excelsior English Elm Ulmus procera Norway Spruce Picea abies Wild Cherry Prunus avium Apple Malus x domestica Sycamore Acer pseudoplatanus Common Pear Pyrus communis	5	avg 140	1 - 2	Y / SM	F	Situated within the allotment that was located towards the south-west corner Trees were sparsely situated Typical species form with no major defects Unable to gain access	9	1.7	C (ii)
G6	Turkey Oak Quercus cerris Small-Leaved Lime Tilia cordata Beech Fagus sylvatica Elder Sambucus nigra Hawthorn Crataegus monogyna Whitebeam Sorbus aria	7	avg 230	4	EM	F	Situated sporadically within H4 hedgerow Ivy cover on the main stems Typical species canopy forms with no major defects	24	2.8	C (ii)
G7	4 x Common Ash Fraxinus excelsior	9	200	4	EM	G	Typical species form with no major defects Situated in hedgerow so unable to access base Light ivy cover Multi-leadered forms	18	2.4	C (ii)
G8	Common Ash Fraxinus excelsior Common Alder Alnus glutinosa	9	avg 300	5	EM	G	Minor deadwood on many specimens within the group One specimen that was situated towards the northernmost area of the group had major dieback The group was densely populated that had resulted in numerous crossing and rubbing limbs Situated offsite	41	3.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G9	Norway Maple Acer platanoides	7.5	est 280	4	EM	G	Situated within hedgerow Both specimens contain dense canopies Due to the close proximity of the trees to each other they have resulted in a small amount of interlocking branches	35	3.4	B (ii)
G10	Common Ash Fraxinus excelsior Field Maple Acer campestre Holly Ilex aquifolium	7.5	up to 250	2	EM	F	A minor amount of flail damage on the north side but the tree has maintained a tidy appearance Minor deadwood evident Densely positioned trees have resulted in numerous interlocking branches Screening from cricket buildings Broken branches Bark wounds Close trees have etiolated forms Gaps present in the group More isolated trees have open forms	28	3.0	C (ii)
G11	Midland Hawthorn Crataegus laevigata English Elm Ulmus procera English Holly Ilex aquifolium Hazel Corylus avellana Common Ash Fraxinus excelsior	8.5	avg 350	3	EM	G	Densely populated group resulting in interlocking branches Flail damage on the western side Well maintained Dense ivy Good screening value	55	4.2	B (ii)
G12	Common Beech Fagus sylvatica	16.5	avg 500	7	EM	G	Less than a 2 metre clearance on parts of the southern canopy Interlocking branches present Light ivy cover of the tree up to 4m above ground Leaning stem that is corrected at 1.5m Lightly sparse upper canopy Broken branches Lower stem growing along the griund horizontally before growing vertically Dense holly undergrowth at base - prevented inspection of the base Flail damage Crossing and rubbing branches	113	6.0	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G13	Lawson Cypress Chamaecyparis lawsoniana English Oak Quercus robur Elder Sambucus nigra Plum Prunus domestica English Elm Ulmus procera Whitebeam Sorbus aria	12	avg 400	3	EM/M	F/G	Dense copse that is inaccessible in parts that prevented a thorough assessment Minor and major deadwood evident on many of the trees Some of the specimens had sparse canopies Dense ivy cover Dense undergrowth at base Unable to gain access	72	4.8	C (ii)
G14	Common Hawthorn Crataegus monogyna Elder Sambucus nigra English Holly Ilex aquifolium Small-Leaved Lime Tilia cordata Weeping Willow Salix x sepulcralis 'Chrycosoma' Box Buxus sempervirens Rhododendron sp.	6.5	60	1 - 2	EM	F	The group has been trimmed on the southern side (facing the site) The group is densely populated Small quantity of minor deadwood evident Dense boundary group Etiolated forms	2	0.7	C (ii)
G15	Sycamore Acer pseudoplatanus Common Ash Fraxinus excelsior	Max 11	280 160 220	4	EM	F	Ivy covering the tree up to 7m Sycamore is multi-stemmed from base Interlocking branches within canopy and amongst neighbouring vegetation Multi-stemmed from base	69	4.7	B (ii)
G16	False Acacia Robinia pseudoacacia	16	710 360	7	M	F	The easternmost specimen is twinned stemmed at base Bifurcated stem at 2m on the easternmost tree's most dominant stem The westernmost tree has been felled and left as a monolith of 5m in height Ivy covering the tree Minor and major deadwood	287	9.6	B (ii)

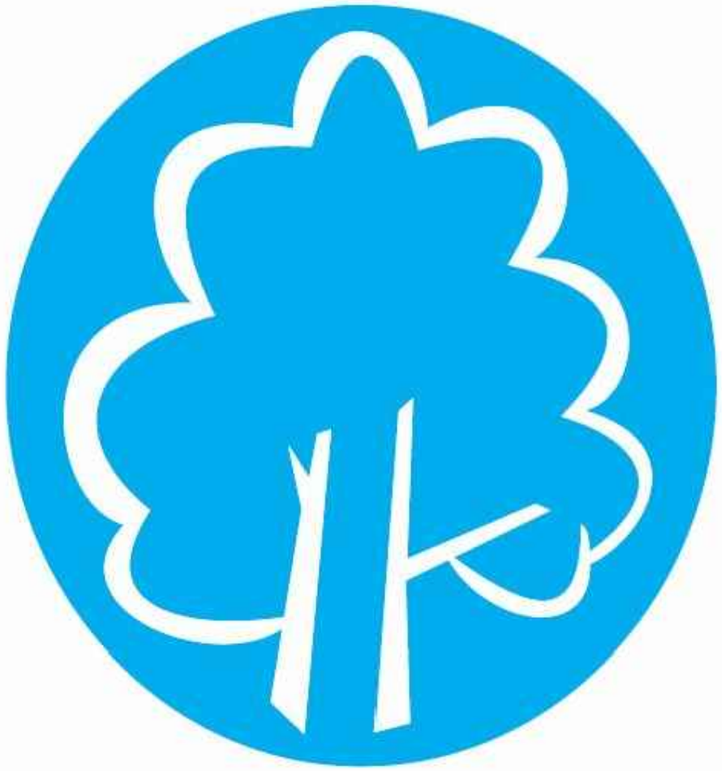
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G17	2 x Common Lime Tilia x europaea 'Pallida'	23	avg 760	6.5	M	F	The trees were roughly 5m apart Major epicormic growth throughout typical for the cultivar type Minor and major deadwood Exposed and damaged root on the south side due to vehicular access Compression fork formed at stem union Wounds present at base highly dense canopies Numerous interlocking branches Light ivy cover	261	9.1	B (ii)
G18	Copper Beech Fagus sylvatica 'Purpurea'	10	up to 420	6	EM	G	Generally the group had no major defects Well managed avenue of trees	80	5.0	A (ii)
G19	Cappadocicum Maple Acer cappadocicum Common Larch Larix decidua English Oak Quercus robur Common Hawthorn Crataegus monogyna Yew Taxus baccata Sycamore Acer pseudoplatanus Common Beech Fagus sylvatica	21	avg 550	6 - 10	M	G	Major dieback within the crowns including major deadwood Typical species forms The majority of the specimens had no major defects Pruning wounds Unable to gain access Some specimens topped at circa 13m	137	6.6	B (ii)
G20	English Oak Quercus robur Scot's Pine Pinus sylvestris Wild Cherry Prunus avium Field Maple Acer campestre Common Ash Fraxinus excelsior	15	est avg 300	3 - 5	M	G	Failed limbs evident on the Scot's pines located towards the north of the group Ivy present on some of the specimens Minor deadwood throughout Pruning wounds Situated offsite	41	3.6	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G21	Hornbeam Carpinus betulus	6	avg 180	2	SM	G	Typical species form with no major defects Bark wounds Pruning wounds One tree split bark from circa 0.5m to 1.5m	15	2.2	C (ii)
G22	Tree group no longer present									
G23	English Oak Quercus robur Field Maple Acer campestre	7	150	2	EM	F	Situated within H3 3 trees - two field maple and an oak Multi-stemmed from base Light ivy cover Broken branches Flail damage One of the field maples had a high crown form and the second have large quantities of eopicormic regrowth at the base	10	1.8	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Elder Sambucus nigra English Elm Ulmus proceraBlackthorn Prunus spinosa Ash Fraxinus excelsior Hawthorn Crataegus monogyna	3	90 40	1	EM	F	Predominantly hawthorn Dense ivy cover Occasional self-seeded hazel specimens Tidy in appearance with a consistent shape and height with very few gaps	4	1.2	C (ii)
H2	Elder Sambucus nigra English Elm Ulmus procera English Oak Quercus robur Hazel Corylus avellana Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	Max 2.5	110	1	EM	F	The hedgerow continues from H1 Predominantly English elms Some dead specimens within the group Flail damage Maintined hedgerow	5	1.3	C (ii)
H3	Elder Sambucus nigra Field Maple Acer campestre English Elm Ulmus procera Common Hawthorn Crataegus monogyna Ash Fraxinus excelsior Hawthorn Crataegus monogyna	3	120	1.5	EM	F	Situated on the south and west border of the allotment Consistent hedgerow with a tidy appearance Dense ivy cover	7	1.4	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H4	English Elm Ulmus procera Elder Sambucus nigra Field Maple Acer campestre Hawthorn Crataegus monogyna	2.5	110	1	SM / EM	G	predominantly elder No major defects	5	1.3	C (ii)
H5	Lawson Cypress Chamaecyparis lawsoniana Small-Leaved Lime Tilia cordata Elder Sambucus nigra English Elm Ulmus procera Blackthorn Prunus spinosa Ash Fraxinus excelsior Field Maple Acer campestre	4	120	1.5	EM	F	Only a minority of the group were lime or cypress. Situated on a western border of a residential garden The hedgerow contained gaps towards the north of the group No major defects Maintained hedgerow - sections maintained at different heights between 2-5m	7	1.4	C (ii)
H6	Common Hawthorn Crataegus monogyna Field Maple Acer campestre	3	80	1	SM	F	Small hedgerow possibly once linked with TG10 No major defects	3	1.0	C (ii)
H7	Common Hawthorn Crataegus monogyna Elder Sambucus nigra English Elm Ulmus procera Holly Ilex aquifolium	2.5	40	1	SM	G	predominantly hawthorn Tidy appearance Occasional dead tree	1	0.5	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
H8	Elder Sambucus nigra Common Hawthorn Crataegus monogyna English Elm Ulmus procera Field Maple Acer campestre	2.5	60	1.5	EM	G	Numerous gaps within the hedgerow No major defects Maintained hedgerow Ivy cover on some stems	2	0.7	C (ii)
H9	Common Hawthorn Crataegus monogyna Blackthorn Prunus spinosa Elder Sambucus nigra Sycamore Acer pseudoplatanus	2	30	1	SM	G	Tidy appearance with no major defects Dense ivy cover	0	0.4	B (ii)
H10	Elder Sambucus nigra Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	2.5	20 20 20 20	1	EM	F	No major defects Dense ivy cover Maintained hedgerow	1	0.5	C (ii)



PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA
KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

The following points are to be considered at all times:

1. Protective fencing has been installed at the extent of the calculated root protection area (RPA) - **DO NOT USE OR ACCESS** the ground within the fenced area. This is particularly the case for placement of site offices, stockpiles of soil or fuel and material storage, storing machinery or parking vehicles, debris or building materials or fires.

2. **AVOID** excavations, changes in ground levels or tracking machinery within the fenced area at ALL TIMES. These activities can seriously compromise the long term survival of trees due to the impact on a trees roots.

3. **REPORT** any instances where the fencing has been removed, repositioned, damaged or is not fit for purpose to the Site Manager. This shall help the Site Manager to ensure that the fencing is maintained throughout the construction process. It will also reduce the risk of any staff and contractors accidentally and inadvertently causing damage to trees as a result.

Retained trees are protected by planning law and reckless damage or non consented tree removal could result in the serving of a stop notice or prosecution by the LPA

For more information on Tree Protection please visit the website link https://goo.gl/hpBkTv or scan the QR code on a Smartphone or Tablet.

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Appendix C1: Tree Surgery Contractors – Tree Work Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Survey Plan	8937-T-01
Tree Retention Plan	8937-T-02
Tree Protection Plan	8937-TPP-03
Appendices	**Appendix Title**
Appendix A	Tree Schedule / Tree Works Schedule

The Site Manager and tree surgery contractor must ensure that any necessary consent has been received from the local authority and that no protected species are harmed whilst carrying out site clearance or tree surgery works.

The trees to be removed to facilitate the development will be marked up by the Arboricultural Clerk of Works during the pre-commencement site meeting and, where required, with the tree surgeon present. Highly visible fluorescent paint will be used to assist in identification. A pre-commencement tool box talk will be given and the works will only be carried out once the project ecologist is satisfied that there are no ecological constraints.

The trees to be removed are shown on the Tree Retention Plans (referenced above) as red circles hatched with red criss-crossing lines. A key has been provided on each of the plans to assist with identification.

Works on all trees cannot commence until all pre-commencement conditions have been discharged.

GENERARL TREE PRUNING RECOMMENDATIONS

All works shall be in accordance with BS 3998:2010 '*Tree work. Recommendations'*. Any competent arboriculturalist will be aware of this publication and will be able to carry out work to the required standard. Therefore, the use of a competent tree surgery contractor is necessary to comply with this.

Prior to any pruning operations occurring, the tree and its surroundings should be assessed for the presence of any protected species and the timing of works should best avoid the potential for any adverse impact on wildlife. Consideration should be made for the seasonal cycles of species of fauna and flora e.g. nesting birds.

Minor pruning can be carried out at any time of the year however, it is recommended that pruning is avoided when deciduous trees, particularly maples, lime and birch are coming into leaf (Spring). Equally, pruning should be avoided in the autumn months when the trees ability to seal wounds is reduced and thus vulnerability to pathogenic decay fungi is much higher. Pruning in the Autumn depletes valuable energy reserves. This is particularly important if it is necessary to carry out heavy pruning or work on older trees. Pruning should also be avoided during or soon after drought.

Before any tree work operations commence, the method of disposal, utilization or retention of arisings should be prior agreed. Disposal of arising should not involve burning unless other options of disposal are impracticable or, as in the case of Ash Dieback, the material is affected by a diseases or pest for which industry guidance on sanitation dictates.

TREE WORKS SPECIFICATION

Crown lifting / Raising

An assessment of which trees shall require crown lifting in order to facilitate the correct positioning and erection of the Tree Protective Fencing will be decided during the pre-commencement meeting.

Crown lifting is the removal of the lowest branches and/or preparing of lower branches for future removal. Good practice dictates crown lifting should not normally include the removal of large branches growing directly from the main stem of the tree as this can cause large wounds which can become extensively decayed leading to further long-term problems or more short-term biomechanical instability. Crown lifting on older, mature trees should be avoided or restricted to secondary branches or shortening of primary branches rather than the whole removal wherever possible. Crown lifting should be restricted to less than 15% of the live crown height and leave the crown at least two thirds of the total height of the tree.

As a general rule branches should be removed at their point of attachment or shortened to a lateral which is at least 1/3 of the diameter of the removed portion of the branch, and all cuts should be kept as small as possible.

Stump Grinding

Within root protection areas (RPA), stumps, shrubs and other vegetation must be removed by hand or using stump grinding machinery to minimize root damage to retained trees. Where poisoning of stumps is specified, this must be carried out by competent operatives. Only chemicals approved for this purpose and used in accordance with the manufacturer's instructions will be used.

No stumps are to be excavated due to the potential to damage existing rooting material of retained trees.

Appendix C2: Fencing Contractors – Working Methodology

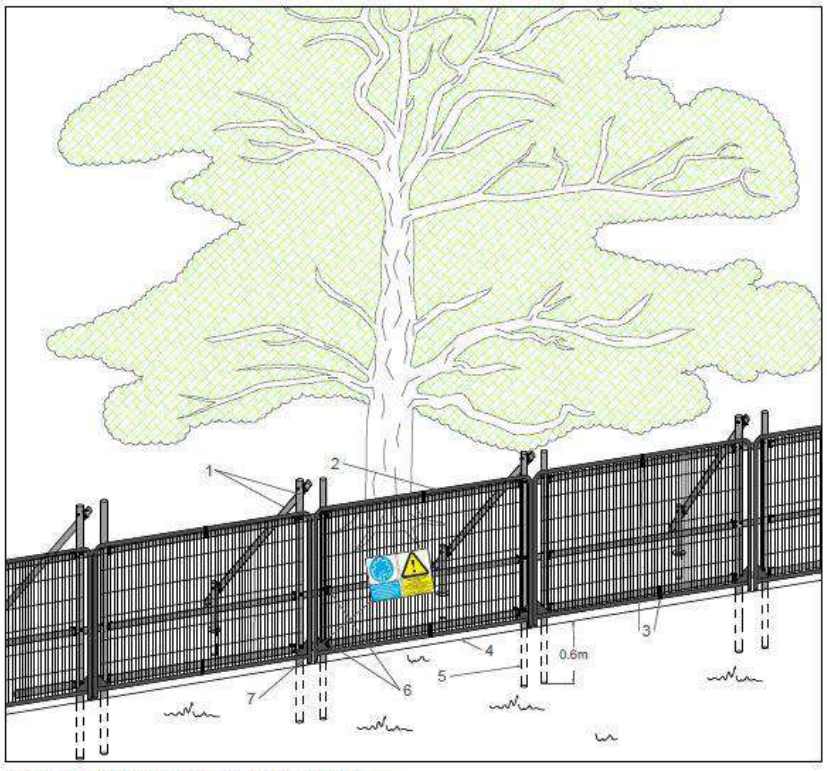
Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plan	8937-TPP-03
Appendices	**Appendix Title**
Appendix A	Tree Schedule
Appendix B	Protective Fencing Signage

Tree Protection Fencing will be installed as detailed in Tree Protection Plans (referenced above) at, where possible, the extent of the root protection areas of retained trees using the dimensions indicated on the relevant plans. The positioning of the Tree Protective Fencing shall be measured out with assistance from the Arboricultural Clerk of Works and, where deemed necessary, with the Site Manager present. Highly visible fluorescent paint and / or marker pegs / stakes will be used to assist in identification.

STANDARD FENCING SPECIFICATION

Unless stated below, Protective Fencing will comprise a Heras HSG151 panel framework supported by scaffold poles driven into the ground. An example of this has been illustrated below.



Standard specification for High Intensity Protective Barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs

Installation Guide

- The scaffold framework shall comprise of upright poles of at least 3.0 metres in length driven no less than 0.6 metres into the ground at maximum 3.0 metre centres with horizontal and diagonal poles fixed to the uprights.

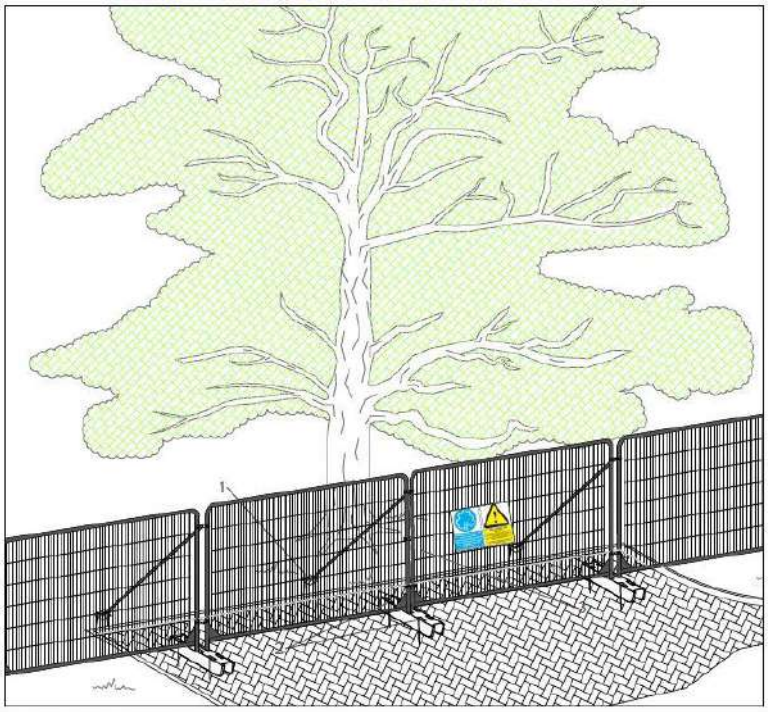
- The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 metres with clamps to each joint.

- The diagonal scaffold pole struts shall be clamped to the top rail of the scaffold framework at a 45º angle and extend back into the root protection area and clamped to a 0.7 metre length of scaffold tube that shall be driven no less than 0.5m into the ground.

- No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts.

TEMPORARY FENCING SPECIFICATION

This fencing specification shall only be used where specified on the relevant Tree Protection Plans as is not to be used as an alternative to the standard specification unless determined by the Arboricultural Clerk of Works.



Standard Specification for Above Ground Stabilizing Systems
1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

Heras Fence Panel to be supported by rubberised stabiliser blocks with a base plate which is secured to the ground using ground pins (as shown above).

GENERAL TREE PROTECTIVE FENCING METHODOLOGY

The fencing will be strong and suitable for the location, type and proximity of construction activity and prevent access of machinery, plant or operative beyond the area required to construct the development.

Tree Protection Fencing and work exclusion zones will be clearly marked using appropriate signage, an example of which has been included as Appendix B. These signs shall be laminated to ensure they last the duration of the construction works and shall be fixed to the fencing panels every 10 metres along its length.

All Tree Protective Fencing will remain rigid and in place for the duration of the development and should be inspected at weekly intervals by the Site Manager alongside regular inspections to be carried out by the Arboricultural Clerk of Works.

Following the completion of construction works and in agreement with the Arboricultural Clerk of Works, the Tree Protection Fencig will be removed carefully as to avoid causing root disturbance or leaving in situ any lengths of scaffold framework. This operation can be carried out prior to soft landscaping works such as new planting, mulching grass sowing etc.

Appendix C3: Hard and Soft Landscaping – Working Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plan	8937-TPP-03
Appendices	**Appendix Title**
Appendix A	Tree Schedule

Following the completion of construction works and in agreement with the Arboricultural Clerk of Works the Tree Protective Fencing will be removed carefully as to avoid causing root disturbance or leaving in situ any lengths of scaffold framework, to allow for the landscaping works.

Landscape Works Methodology

Weed / Shrub Management

All existing ground flora, including bramble, soft rush, rose bay willow herb etc. which has grown in previously fenced areas will be cleared by strimming and all arisings raked up. After a period of at least one month, the regrowth shall be sprayed off with appropriate herbicides. Allow for a pre-application of an approved translocated systemic herbicide to planting areas by suitable spraying apparatus to the manufacturer's instructions and in line with the 1997 Control of pesticides Regulations and 2003 COSHH.

For herbaceous vegetation this will be a Glyphosate based herbicide and for coarser growth a brushwood killer based on Triclopyr.

Stump Treatment

Stumps should be treated with appropriate herbicide to prevent regrowth. Stumps outside the root protection area may be removed using appropriate machinery. If it is necessary to remove small stumps within the root protection area, then they can be dug out by hand. Large stumps must remain intact. **No machinery or powered tools are to be used within the root protection zone at any stage of the works, unless agreed with the local authority.**

Topsoil

All planting and seeding along the perimeter mounding and throughout the site to be undertaken within the first planting season. The landscape contractor will make himself aware of the service locations prior to commencing planting operations and no tree will be planted closer than 4.5m to any adoptable cable or 3m to any private cable.

At the time of starting, work areas to be planted will be covered by either:

- Undisturbed topsoil prepared as necessary by the Main Contractor so that it is a suitable state for the cultivation operations as stated below.
- Topsoil to be 300mm for tree and shrub planting.
- Topsoil to be 100mm for turf.

IMPORTED TOPSOIL FOR PLANTED AREAS

- Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- To BS 3882, grade: General Purpose
- Source to be confirmed by the Contractor.
- Provide a declaration of analysis including information detailing each of the relevant parameters given in BS 3882, clause 6 and table 2 for the grade of topsoil specified.

CULTIVATION

- Break up any compacted topsoil to full depth.
- Within a few days before planting, but in suitably dry weather and ground conditions, cultivate top 300mm of all planting beds, using suitable plant to loosen, aerate and break up the soil into particles of 2-8mm.
- Spread well-rotted organic material, subject to approval.
- Leave surface regular and even.
- Remove weeds, perennial weed roots and undesirable material brought to the surface including stones and clods larger than 25mm in any dimension, roots, tufts of grass and foreign matter.
- Do not dig or cultivate within the root protection areas of trees and shrubs to be retained.

Tree Planting

All trees to be planted in tree pits @ 1000mm x 1000mm x 750mm or at suitable size to accommodate root ball/container size. All trees in POS areas to be back filled with top soil and suitable organic material (to be specified).

All trees should be single or double staked using pointed softwood / peeled chestnut / lurch or oak stakes, free from projections and large or edge knots and tied above ground; Single staking for standard trees, double staking for heavy standard trees.

All trees in shrub beds located within 3m of any services to have their roots directed downwards by the installation of Reroot 600 or Reroot 1000 dependant on ground conditions and service locations.

Suitable rabbit guards, fencing, or shelters will be used to protect plants from damage until established. Existing trees adjacent to the feature will be left uncut and managed in a similar way to standard trees. Tree guards will be removed once the planting is established.

SCRUB MIX

All whips for Scrub Mix to be selected according to a detailed Planting Schedule specification. All whips to be planted at 1.8m centres in bare, weed-free ground in prepared 300mm cube pits unless otherwise stated.

All plants to be supported by bamboo stakes or softwood alternative and protected by clear photodegradable 100% recycled PVC spiral rabbit guard.

Seeding / Turfing

Within the root protection areas of trees to be retained, the preparation of soil for planting and turfing will be carried out by hand. Cultivation will be kept to a minimum and new topsoil must not exceed 100mm in depth within 1m of the stem. Topsoil and other materials will be transported by wheelbarrow on running boards when working near trees.

Areas outside the root protection area can be carried out using suitable machinery provided it does not enter the rooting area of retained trees.

Finished levels shall not be compacted.

Mulching

Apply a 2- to 4-inch (5- to 10-cm) layer of organic mulch such as wood chips or shredded bark to new trees. Mulch provides a simple and effective means of enhancing root growth. The mulch helps condition the soil, moderates soil temperatures, maintains moisture and reduces competition from weeds and grass. The mulch should extend as far out from the tree as practical for the landscape site.

General Management

During the maintenance period all areas of planting shall be watered, dependant on prevailing weather conditions, to ensure healthy establishment of all stock.

Watering should be undertaken broadly in accordance with the suggested watering regime. The following watering schedule for trees throughout the first 3 years would usually consist of:

- Last week in March - 1 visit;
- April - September (inclusive) - 3 visits each month with more in dry conditions as required;
- Early October - 1 visit

All areas to be kept weed free by spot treatment with contact herbicide or hand weeding/ forked out.

Dead wood to be pruned out, pruning of epicormic growth or suckers from stems shall be removed without exposing live tissue, all pruning's to be removed from site.

Stakes and ties should be checked and adjusted accordingly to prevent growth restriction. Footpaths will be kept obstruction and waste free.

Replace failures: replace dead or dying species on like for like basis annually.

Litter and rubbish removal: Undertaken throughout the year.

Check and reaffirm fencing: Undertaken throughout the year.

On completion of the 12-month maintenance period a site inspection shall be undertaken by the landscape contractor, landscape architect/ client and a representative of the appointed management company as necessary, to ascertain that all areas of landscaping associated with the development are in a satisfactory condition for handover to the management company. Any necessary works shall then be carried out to the satisfaction of the landscape architect/ client to enable the works to be handed over to the appointed management company or Local Authority as appropriate.

ONGOING MAINTENANCE AND MANAGEMENT

The appointed management company should continue to undertake all necessary operations in line with the above notes, to ensure that the grounds are maintained in a neat and tidy appearance in line with good horticultural practice. Long term management of all communal areas of soft landscape shall be based on the above notes, however these notes are not definitive and any other works required to maintain the areas in a healthy condition should be carried out on a regular basis throughout subsequent years.

Appendix C4: Excavation Under Supervision – Working Methodology

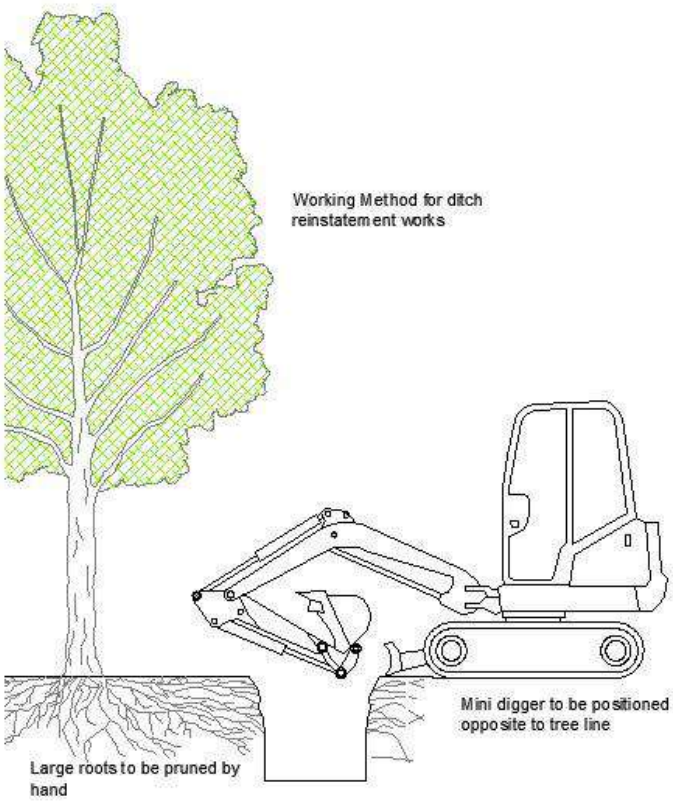
Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plan	8937-TPP-03

The purpose of the Method Statement is to ensure that damage to the rooting area of all retained trees is protected from unnecessary damage. Due to the requirement for excavation within the root protection area of T7 it is not possible to use "no-dig" construction for all proposed works.

The cutting of roots shall not entirely be avoidable during the removal of existing ground material to construct the certain parts of access road and residential plots. As such the excavation of this material is to be carried out under the supervision of the project Arboriculturalist. Any roots located / identified during these works shall be pruned back to the face of the trench as they became exposed. Roots shall be wrapped with hessian material, which is to be kept damp, until the area can be back filled.

Tree Protection Fencing positioned as shown on the Tree Protection Plans is not to be removed or moved back. No heavy machinery is to be positioned within the RPA of the tree and excavation is to be carried out with bucket of the excavator moving away from the tree.



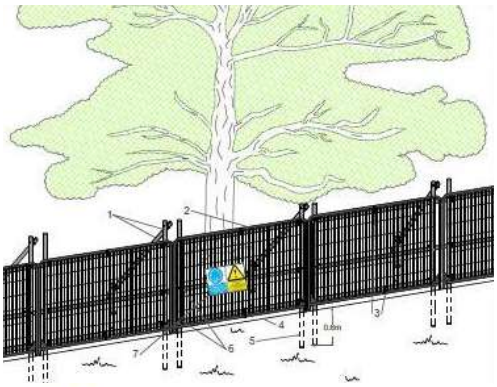
WHAT YOU NEED TO KNOW ABOUT WORKING NEAR TREES

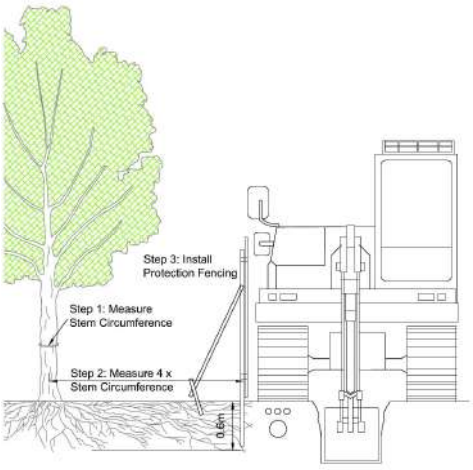
This advice note provides a brief overview of the methods of protection for trees located across the site. Compliance with these guidelines will be a requirement of all contractors working near retained trees.

Any construction works which are to be carried out near to or within the fenced off areas should be carried out in accordance with the Arboricultural Method Statement and as explained by the Site Manager during the site induction. Failure to adhere to the correct sequence, manner and timing of operations detailed in the Arboricultural Method Statement may result in irremediable damage to trees or disturbance to retained tree cover.

Retained trees are protected by planning law and reckless damage or non consented tree removal could result in the serving of a stop notice or prosecution by the LPA.

Trees make a significant contribution to the landscape character of the development and they are to be treated as important assets. To protect these assets, tree protective fencing has been installed where required across the site.





The following points are to be considered at all times.

1. Protective fencing has been installed at the extent of the calculated root protection area (RPA) - **Do not use or access** the ground within the fenced area. This is particularly the case for placement of site offices, stockpiles of soil or fuel and material storage, storing machinery or parking of vehicles, debris or building materials or fires.
2. **Avoid** excavations, changes in ground levels or tracking of machinery within the fenced area at **all times.** These activities can seriously compromise the long term survival of trees due to the impact on a trees roots.
3. **Report** any instances where the fencing has been removed, repositioned, damaged or is not fit for purpose (see images below) to the Site Manager. This shall help the Site Manager to ensure that the fencing is maintained throughout the construction process. It will also reduce the risk of any staff and contractors accidently and inadvertently causing damage to trees as a result.

Unacceptable example of tree protection due to a lack of adequate fencing and poor site management. Note mounds of soil have been placed within the Root Protection Area.

Tree Protection Fencing which has been erected prior to the commencement of any site works and the correct signage has been provided to clearly highlight that this is a protected zone.

Please acknowledge you have read and understand this document by visiting the website http://bit.ly/2EprKu8 or scanning the QR Code on a Smartphone or Tablet.

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