Cushman & Wakefield LLP

2021/0637

Land south of Bell Ground Woods and east of Black Lane

Arboricultural Method Statement

September 2021

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1.0 INTRODUCTION

1.1 This Arboricultural Method Statement (AMS) has been prepared by FPCR Environment and Design Limited on behalf of Cushman & Wakefield LLP to provide the methods of protection and pruning requirements for retained trees located at the Land south of Bell Ground Woods and east of Black Lane, Black Lane, Tankersley, Hoyland Common, Barnsley (hereafter referred to as 'the site').

1.2 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 drainage attenuation basins and associated earthworks and landscaping. This method statement sets out a definitive account for the treatment of retained trees during construction and specifies industry approved construction methods.

1.3 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.

1.4 **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

1.5 Planning consent for the drainage attenuation basins and associated earthworks and landscaping was granted by Barnsley Metropolitan Borough Council (Planning Reference 2021/0637) on 25th May 2021.

1.6 This AMS has provided details to discharge Condition 4 of the outline planning consent granted as detailed below.

Condition 4:

'No development or other operations being undertaken on site shall take place until the following documents in accordance with British Standard 5837:2012 Trees in relation to design, demolition and construction - Recommendations have been submitted to and approved in writing by the Local Planning Authority:

Tree protective barrier details

Tree protection plan

Arboricultural method statement.'

Reason: **To ensure the continued wellbeing of the trees in the interests of the amenity of the locality.**

1.7 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

1.8 A total of twenty-two individual trees, sixteen groups of trees, seven hedgerows and one woodlands were surveyed as part of the Arboricultural Assessment, some of which were considered to be off-site. 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. 9295-T-01).

1.9 The tree stock consists mostly of naturally colonised individual trees and groups of native broadleaved trees which were predominately located upon the field boundaries. Due to the intensive nature of land management and agricultural use, tree cover across the site was generally low and of moderate and low arboricultural quality.

1.10 Due to the nature of the tree material upon site and the proposed development, no matter how sympathetically designed the unavoidable removal of tree material will be needed to facilitate the development.

1.11 The proposed development will require the loss of one individual and one hedgerow to facilitate the development this being T59 and H19. Part removal of G35, G45, H14 and H15 will also be needed but due to the small amount of selective tree material needing to be removed to allow for the earthworks, it is deemed that the impact to the tree material within these groups and hedgerow is minimal and will not affect the overall vitality or the amenity value they hold. All loss of tree material is due to the soil level changes required for the earth works but it is worth noting that the accompanying new planting scheme will compensate for the loss of tree material alongside creating advantageous growing conditions to quickly replenish and improve the canopy cover initially lost.

1.12 The proposed earthworks avoids the root protection areas (RPA) of the majority of the retained trees on site, however minor conflicts are found between T45 and W1. The presence of any significant rooting material on the periphery of the RPA is likely to be insignificant and inconsequential, however it would be advised that when these areas are constructed, that there is a qualified arboriculturist present to oversee the excavation and construction within the RPA.

1.13 Due to the close nature of the earthworks within the RPA of T45 and W1, facilitation pruning may be required to allow for access to carry out works. Further details of the extent of such pruning will be address in pre-commencement meeting.

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

Statutory Constraints

1.15 Local authorities reserve the right to create Tree Preservation Orders (TPO) in order to protect specific trees and woodlands in the interests of preserving the amenity value of a particular site or location. A TPO prohibits cutting down, topping, lopping uprooting or willful damage caused to trees covered by the TPO and such actions, if carried out without the prior written consent of the acting LPA, may be prosecuted and incur an unlimited fine.

1.16 No direct consultation with the Local Planning Authority has taken place, however, it is understood having used the online search facility on the website for the Local Planning Authority, Barnsley Metropolitan Borough Council that there are no Tree Preservation Orders and Conservation Areas that would apply to any trees present on, or in close proximity to the assessment site and therefore no statutory constraints would apply to the development in respect of trees. Before any tree works are undertaken confirmation of the online information 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 4 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 4 Updated Tree Schedule, Tree Survey Plans and Retention Plans	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/s have been provided in the Impact Assessment which has been supplied alongside this AMS.

Condition Reference	Evidence of Action
Condition 4 Tree Protection details in the form of a Tree Protection Plan (TPP)	A series of Tree Protection Plans have been produced and accompany the AMS. The plans show: • 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) • Extent of calculated Root Protection Areas (blue circle) • Overlaid development proposals for reference • The position of Temporary Tree Protection fencing (orange line) • The position of Primary / Fixed Tree Protection fencing (pink line) • Measurements and Annotations for ease of interpretation (pink text) The Tree Protection Plans have been annotated for ease of interpretation.
Condition 4 Tree protection prior to / during construction as indicated on TPP	Specific Tree Protection Plans produced for the Demolition works (drwg.no. 9295-TPP-10). Tree Protection erected to specification – dimensions shown on plans and specification shown in Appendix C2. Protective Fencing Signage (Appendix B) to be firmly affixed to fencing. Appendix C3 – Supervision of Excavation Pre-commencement site meeting, tool box talks, periodic site supervision and reporting shall be carried out to ensure compliance.
Condition 4 *'Arboricultural Method Statement and Tree Protection Plan assessing any impacts that arise and demonstrating that any retained trees can be protected'*	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.

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	Arboricultural Clerk of Works (ACoW) requirements	Task Specific Method Statement / Appendix reference
Pre-commencement site meeting	Pre-commencement site meeting prior to the start of construction works on site following demolition of existing buildings and removal of areas of hardstanding. Timeline of construction processes to be shared with ACoW and changes made to the AMS as required.	Site meeting / Tool box talk by ACoW (refer to Section 3.7) 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. ACoW to check that copies of Task Specific Arboricultural Method Statements (located in Appendix C) are present.	Appendix C and AMS. Appendices C
During Pre-commencement site meeting	Temporary and Permanent Tree Protection Fencing positions to be marked out and pegged (where applicable) by the ACoW to ensure that all fencing is erected in the correct positions.	ACoW to assist with measuring out distances from trees in accordance with the Tree Protection Plans. Photos of evidence to be taken for auditing purposes.	Appendix C2 and relevant Tree Protection plans
Commence Earthworks			

Timetable	Actions	Arboricultural Clerk of Works (ACoW) 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 ACoW. Compliance with AMS checked and recorded.	ACoW 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 ACoW 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			
Construction Works Commence			
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 ACoW. Compliance with AMS checked and recorded.	Record of visit to be completed by ACoW and a copy is to be handed to Site Manager and LPA upon request.	Appendix C Tablet based Auditing App (Arboricultural Clerk of Works use only) Refer to relevant plans
Construction Works Completed			
Post Construction			
Date TBC during Pre-commencement site meeting and in line with construction program	Removal of Tree Protective Fencing	ACoW to check if all Tree Protective Fencing has been removed and in doing so no damage has occurred to retained trees and hedgerows.	
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

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Contact Number: 01509 672772

3.8 An overview of the specific involvement of the Arboricultural Clerk of Works has been provided in Tables 1 and 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)**
- Arboricultural Clerk of Works to be present to supervise earthworks within the RPA of tree T45 and W1n**(to follow pre-commencement meeting)r**
- 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.

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: 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 arboriculturist 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.

5.0 CONCLUSIONS

5.1 Provided that the protection methods in this AMS are 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 4.

KEY

- Tree Group to be Retained
- 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
- 6.0m — Line of Protective Barriers (and distance from tree or retained structure)
- 6.0m — Temporary Line of Protective Barriers (and distance from tree or retained structure)
- Root Protection Area (Shown for retained trees only)
- T1 (A) / G1 (A) — Individual / Group Number and BS Category
- Woodland Colour Indicates BS5837:2012 Category

Scale 1:1250 @ A1

0 25 50 75 100 125m

NOTES

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

Drawing has been produced in colour and is based on digital information in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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Hoyland Basin, Land west of Sheffield Road
Hoylands

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TREE PROTECTION PLAN

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CAD file: K:\9200\9295\ARB\AMS Basin\Plans\9295-TPP- Plan.dwg

Appendix A - Tree Schedule

Measurements	Age Classes	Quality Assessment of BS Category	ULE (relates to BS Category)
Height - Measured using a digital laser clinometer (m)	**YNG**: Establishing, typically with good vigour and fast growth rates and strong apical dominance; c. less than 1/3 life expectancy	**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.	<10 years
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	**SM:** Semi-mature trees less than 1/3 life expectancy	**Category A -** Trees of high quality with an estimated remaining life expectancy of at least 40 years.	40+ years
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	**EM:** Established, typically vigorous and increasing in apical height and lateral spread; 1/3 - 2/3 life expectancy. Offers landscape significance	**Category B -** Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	20-40 years
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	**M:** Fully established over 2/3 life expectancy, generally good vigour and achieving full height potential with crown still spreading	**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.	10-20 years
	OM: Fully mature, at the extremes of expected life expectancy, vigour decreasing, declining or moribund	Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value	
	V: biological, cultural or aesthetic value comprising niche saproxylic habitat. Individuals of large proportions (stem girth) in comparison to trees of the same species/surviving beyond the typical age range for their species.	**The BS category particular consideration has been given to the following:** • 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	

Structural Condition	Physiological Condition
Good - No significant structural defects	**Good -** No significant health problems
Fair - Structural defects that can be remediated	**Fair -** Symptoms of ill-health that can be remediated
Poor - Significant defects beyond remediation, present a risk of failure in the foreseeable future	**Poor -** Significant ill-health. Unlikely the tree will recover in the long term
Dead - Dead tree with structural integrity of tree severely compromised	**Advanced Decline / Dead -** Advanced state of decline and unlikely to recover or Dead

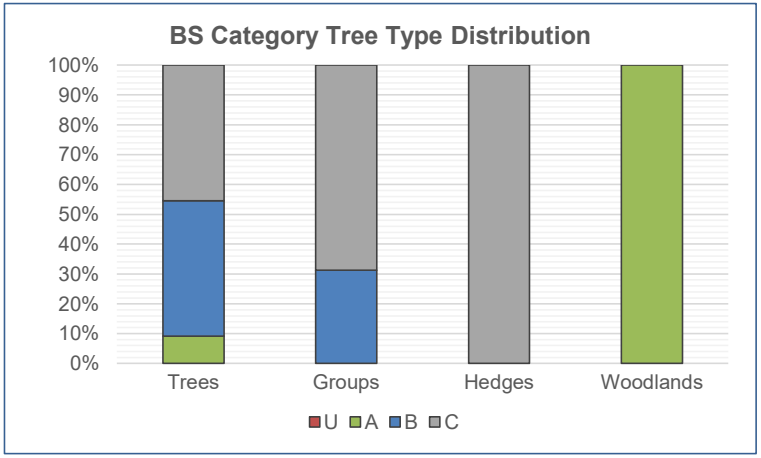
Root Protection Area (RPA)
• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully 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.

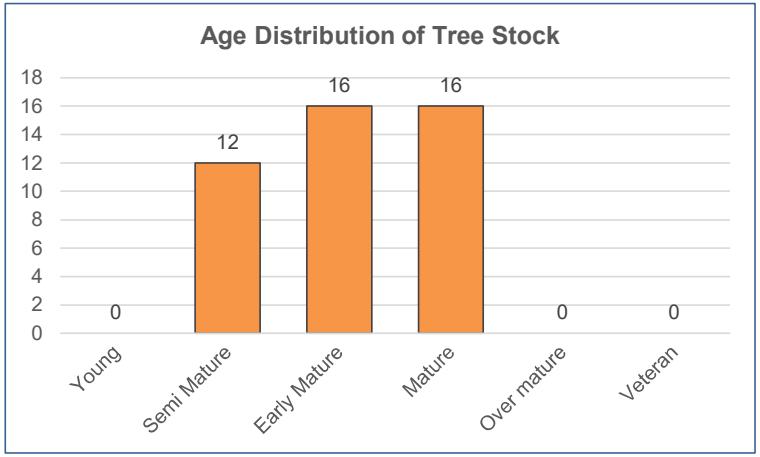
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T46, T48	2	W1	1
Category B	T39, T41, T45, T47, T49, T50, T51, T52, T59, T62	10	G32, G33, G44, G45, G46	5
Category C	T33, T34, T35, T36, T37, T38, T40, T42, T43, T63	10	G25, G26, G27, G28, G29, G30, G31, G34, G35, G36, G37, H13, H14, H15, H16, H17, H18, H19	18
	Total	22	Total	24

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										
T33	Ash Fraxinus excelsior	8	300 160 170	4	SM	F	Basal suckers present Growing from wall	65	4.6	C (i)
T34	Ash Fraxinus excelsior	8	350 320	4	SM	F	Characteristic for species Minor dead wood evident in the crown (<75mm)	102	5.7	C (i)
T35	Ash Fraxinus excelsior	8	310	4	SM	F	Characteristic for species Minor dead wood evident in the crown (<75mm)	43	3.7	C (i)
T36	Ash Fraxinus excelsior	12	350 610	6	SM	F	Characteristic for species Crossing and rubbing branches Minor dead wood evident in the crown (<75mm) Twin stemmed from base	224	8.4	C (i)
T37	Ash Fraxinus excelsior	8	570	4	M	F	Characteristic for species Minor dead wood evident in the crown (<75mm)	147	6.8	C (i)
T38	Hawthorn Crataegus monogyna	7	340 210	3	M	P	Minor dead wood evident in the crown (<75mm) Pruning wounds noted Suppressed crown form	72	4.8	C (i)
T39	English Oak Quercus robur	9	710	8	M	F	Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Burrowing around base	228	8.5	B (i)
T40	Ash Fraxinus excelsior	9	540	5	EM	P	Basal cavity observed Branch socket cavities observed Branch stubs evident Broken branches evident Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Waterlogged ground at base	132	6.5	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T41	English Oak Quercus robur	11	420 280	5	EM	F	Characteristic for species Minor dead wood evident in the crown (<75mm)	115	6.1	B (i)
T42	Silver Birch Betula pendula	10	200 80	2	SM	P	Minor dead wood evident in the crown (<75mm) Suppressed crown form	21	2.6	C (i)
T43	Silver Birch Betula pendula	10	200 240 180	2	SM	P	Minor dead wood evident in the crown (<75mm) Suppressed crown form	59	4.3	C (i)
T44	Sycamore Acer pseudoplatanus	10	400 420	6	EM	P	Bark wounds noted Branch socket cavities observed Branch stubs evident Broken branches evident Heartwood exposed Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Pruning wounds noted Suppressed crown form	N/A	N/A	U
T45	Ash Fraxinus excelsior	15	850	12	M	F	Branch stubs evident Broken branches evident Minor dead wood evident in the crown (<75mm)	327	10.2	B (i)
T46	English Oak Quercus robur	19	est 480 550 550	14	M	F	Branch stubs evident Broken branches evident Characteristic for species Minor dead wood evident in the crown (<75mm) No major defects were noted	378	11.0	A (i)
T47	English Oak Quercus robur	10	est 450	5	EM	F	Branch stubs evident Broken branches evident Minor dead wood evident in the crown (<75mm) Typical crown form	92	5.4	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T48	Horse Chestnut Aesculus hippocastanum	17	Over ivy 1040	N - 7 S - 5 E - 6 W - 6	M	G	Basal suckers present Branch socket cavities observed Characteristic for species Close cultivation of the soil Minor dead wood evident in the crown (<75mm) Multi leadered form Pruning wounds noted Good vigour and form Hard packed road running to north of stem by 50cm	489	12.5	A (i)
T49	Ash Fraxinus excelsior	11	650	5	EM	F	Branch stubs evident Characteristic for species Dense ivy cover on main stem	191	7.8	B (ii)
T50	Ash Fraxinus excelsior	13	360 410	5	EM	F	Branch stubs evident Characteristic for species Dense ivy cover on main stem	135	6.5	B (ii)
T51	Ash Fraxinus excelsior	13	538	5	EM	F	Branch stubs evident Characteristic for species Dense ivy cover on main stem Overhead cables	131	6.5	B (ii)
T52	Ash Fraxinus excelsior	8	410	4	EM	F	Branch stubs evident Characteristic for species Dense ivy cover on main stem Overhead cables	76	4.9	B (ii)
T59	Ash Fraxinus excelsior	16	540	5	M	F	Basal suckers present Broken branches evident Flail damage evident Minor dead wood evident in the crown (<75mm) Rubbish rubble and debris at base of stem	132	6.5	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T62	Sycamore Acer pseudoplatanus	12	550	N - 4 S - 3 E - 2 W - 4	EM	F	Basal suckers present Characteristic for species Close cultivation of the soil Minor dead wood evident in the crown (<75mm) Multi leadered form Pruning wounds noted	137	6.6	B (ii)
T63	Sycamore Acer pseudoplatanus	12	380	3	SM	P	Basal suckers present Characteristic for species Close cultivation of the soil Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Multi leadered form Pruning wounds noted Sparse / thinning crown	65	4.6	C (i)

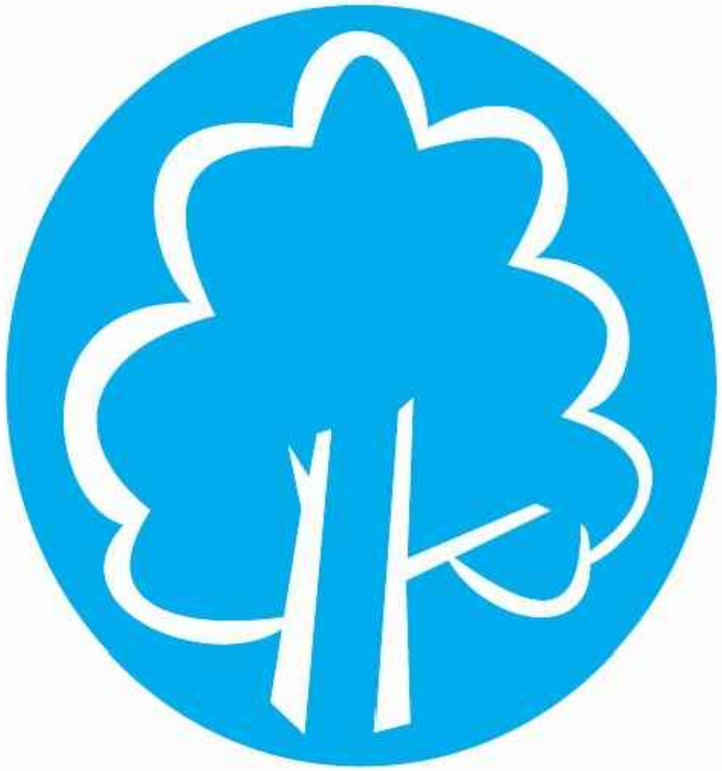
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G25	Elder Sambucus nigra Hawthorn Crataegus monogyna	6	avg 100 100 100	3	M	F	Scrappy outgrown hedgerow	14	2.1	C (ii)
G26	Elder Sambucus nigra Hawthorn Crataegus monogyna	6	avg 100 100 100	3	M	F	Scrappy outgrown hedgerow	14	2.1	C (ii)
G27	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna	6	avg 100 100 100	3	M	F	Scrappy outgrown hedgerow	14	2.1	C (ii)
G28	Hawthorn Crataegus monogyna	5	upto 300	3	M	F	Sporadic mature hawthorn on bank within horse bushes	41	3.6	C (ii)
G29	Hawthorn Crataegus monogyna	5	upto 300	3	M	F	Sporadic mature hawthorn on bank within horse bushes	41	3.6	C (ii)
G32	Common Lime Tilia x europaea	15	upto 600	6	M	F	Characteristic for species Minor dead wood evident in the crown (<75mm) Situated offsite Typical crown form	163	7.2	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G33	Beech Fagus sylvatica Common Lime Tilia x europaea Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus	15	upto 800	6	M	F	Characteristic for species Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Situated offsite Typical crown form	290	9.6	B (ii)
G34	Hawthorn Crataegus monogyna English Elm Ulmus procera	6	avg 6x 90	2.5	SM	P	Outgrown hedge with dead elm throughout	22	2.6	C (ii)
G35	Ash Fraxinus excelsior Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum	10	upto 500	6	M	P	Bark wounds noted Base obscured Branch socket cavities observed Broken branches evident Dense ivy cover on main stem Dense undergrowth at the base Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Potential Roost Features (PRF)	113	6.0	C (ii)
G36	Ash Fraxinus excelsior Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus	12	upto 400	5	M	P	Broken branches evident Dense undergrowth at the base Minor dead wood evident in the crown (<75mm)	72	4.8	C (ii)
G37	Ash Fraxinus excelsior Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus English Elm Ulmus procera	12	upto 400	5	M	P	Broken branches evident Dense undergrowth at the base Minor dead wood evident in the crown (<75mm)	72	4.8	C (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G44	English Oak Quercus robur	9	avg 350	4	SM	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Multi leadered form	55	4.2	B (ii)
G45	Ash Fraxinus excelsior Elder Sambucus nigra English Oak Quercus robur Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula Sycamore Acer pseudoplatanus	12	avg 280	3	Yng / SM	P / F / G	Characteristic for species Crossing and rubbing branches Dead trees noted Dense undergrowth at the base Minor dead wood evident in the crown (<75mm)	35	3.4	B (ii)
G46	Ash Fraxinus excelsior Elder Sambucus nigra English Oak Quercus robur Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula Sycamore Acer pseudoplatanus Wych Elm Ulmus glabra	8	avg 250	3	Yng / SM	P / F / G	Characteristic for species Crossing and rubbing branches Dead trees noted Dense undergrowth at the base Minor dead wood evident in the crown (<75mm) Predominantly hawthorn and goat willow	28	3.0	B (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H13	Hawthorn Crataegus monogyna	3	est 50	1	EM	F	Maintained hedgerow	1	0.6	C (ii)
H14	Hawthorn Crataegus monogyna	3	est 50	1	EM	F	Maintained hedgerow	1	0.6	C (ii)
H15	Hawthorn Crataegus monogyna	4	est 50 58 50	2	EM	F	Un-maintained hedgerow	4	1.1	C (ii)
H16	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna	2	est 50 58 50	1	EM	F	Maintained hedgerow			C (ii)
H17	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn Crataegus monogyna	2	est 50 58 50	1	EM	F	Maintained hedgerow	4	1.1	C (ii)
H18	Ash Fraxinus excelsior Elder Sambucus nigra Hawthorn	2	est 50 58 50	1	EM	F	Maintained hedgerow	4	1.1	C (ii)
H19	Hawthorn Crataegus monogyna	3	avg 70	1	SM	G	Maintained hedgerow	2	0.8	C (i)

Wood No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
WOODLANDS										
W1	Ash Fraxinus excelsior Beech Fagus sylvatica English Oak Quercus robur Goat Willow Salix caprea Hawthorn Crataegus monogyna Silver Birch Betula pendula	15	upto 400	4	EM	F	Characteristic for species Crossing and rubbing branches Interlocking crowns Minor dead wood evident in the crown (<75mm)	72	4.8	A (iii)



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 Protection Plans	9295-TPP-10
Appendices	**Appendix Title**
Appendix A	Tree 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 arboriculturist 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

Trees T45 shall require crown lifting in order to facilitate the correct positioning and erection of the Tree Protective Fencing as specified.

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.

- **T45 -** Remove the lowest branches of the crown to provide 4m of clearance above ground level.

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Appendix C2: Tree Protection – Working Methodology

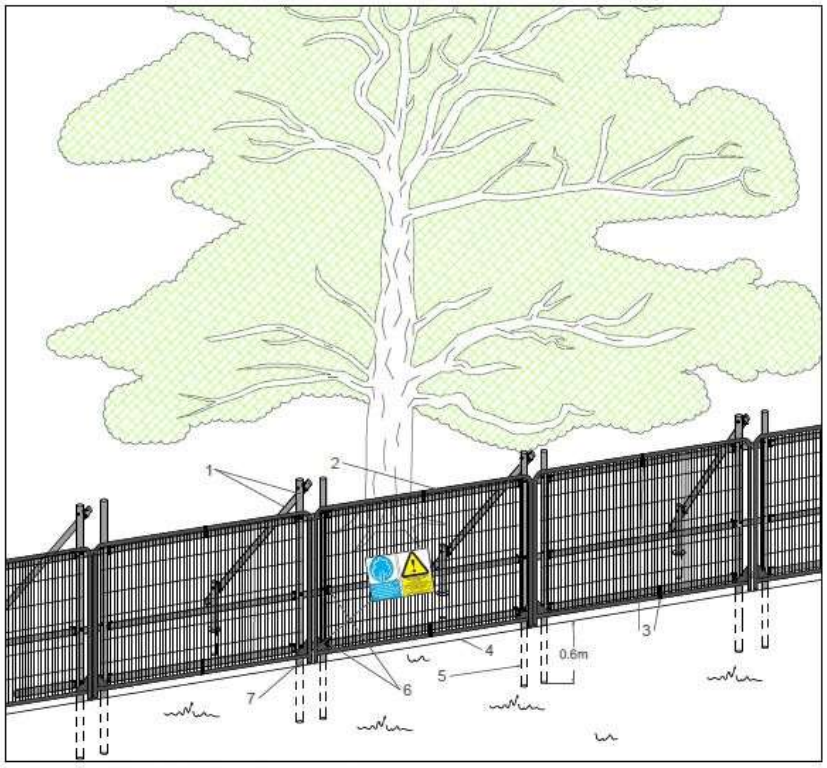
Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	9295-TPP-10
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

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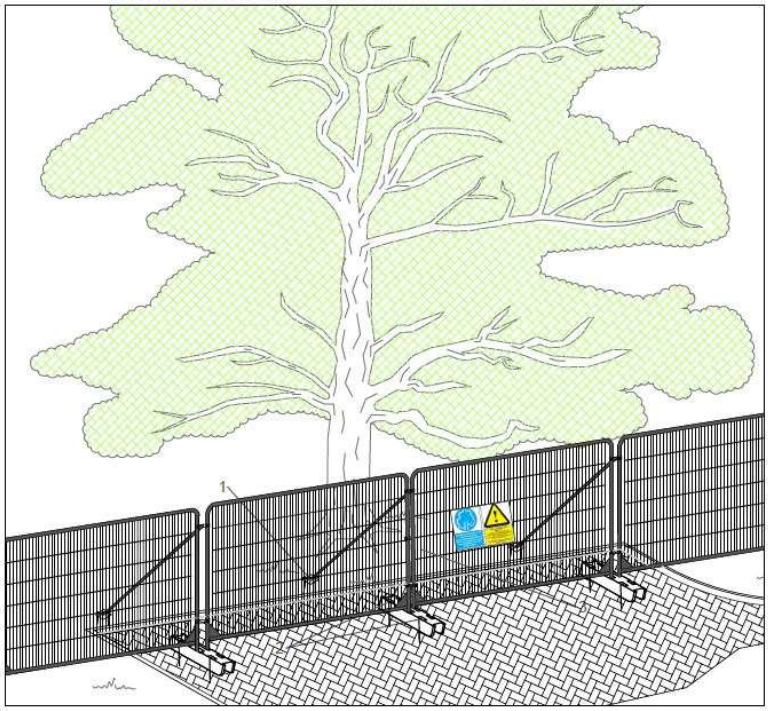
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Installation Guide

- 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).

TIMBER TREE BOX SPECIFICATION

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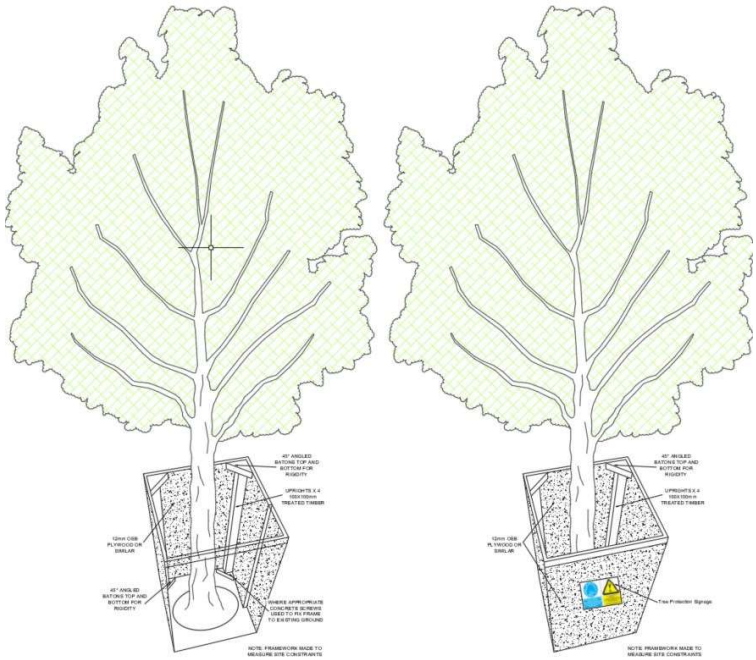
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Protective barriers are not considered practical for the protection of offsite street trees G1, G. To prevent damage during the proposed works associated with the Basin G outfall to the main stem of each tree, a hollow constructed close-board timber cube ("Tree Box") will be built.

Tree Box

1. The tree Box will be constructed prior to the commencement of any construction works.
2. The Tree Box will remain intact until all hard landscaping works are complete.
3. No part of the Tree Box must come into contact with the stem or any part of the canopy of a tree at any time.
4. The Tree Box will stand to a height of no less than 1.8m above the ground surface.
5. The Tree Box will be constructed of OSB and treated timber.
6. The OSB board timber will be fitted to a timber frame to act as a brace, that will be constructed around the outside of the stem.
7. The Tree Box will be constructed to rest on the ground.
8. No digging/trenching must occur to construct the Tree Box.
9. If it is necessary to secure the Tree Box in place, then it is considered acceptable to use narrow ground pins, driven into the ground or screws and fastened to the exterior of the box.



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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 Fencing 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.

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Appendix C3: Excavation Under Supervision – Working Methodology

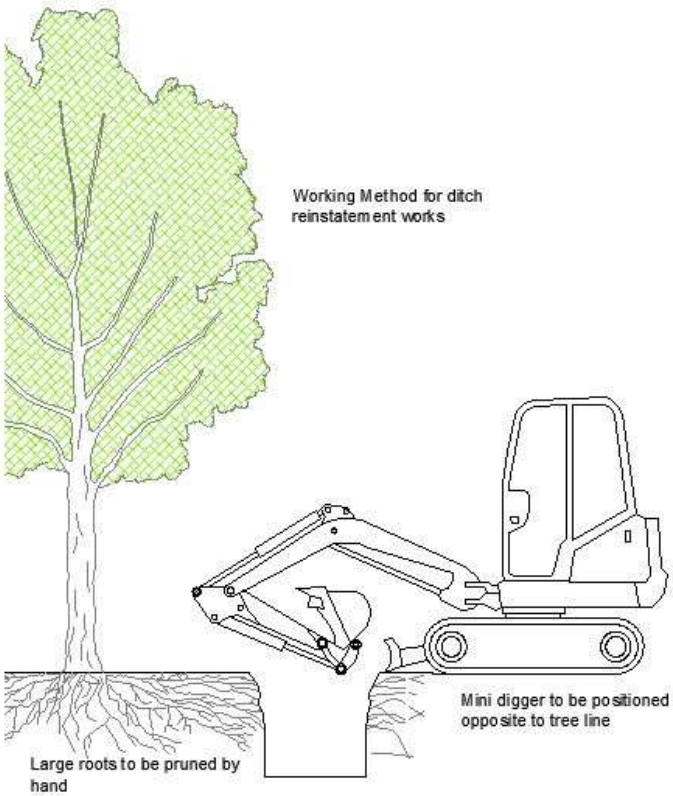
Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	9295-TPP-10

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 areas of T45 and W1 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.



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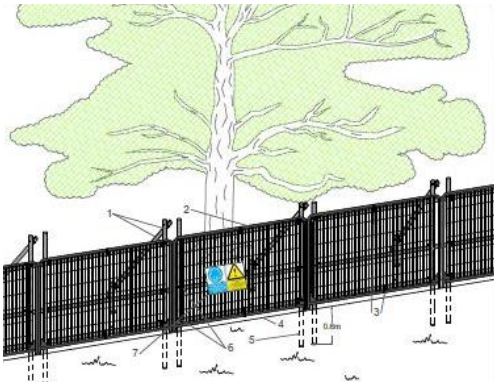
WHAT YOU NEED TO KNOW ABOUT WORKING NEAR TREES

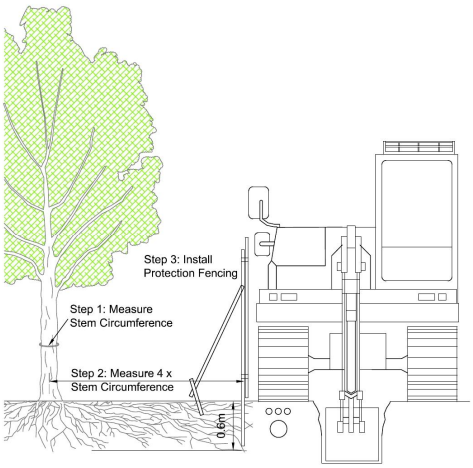
This advice note provides a brief overview of the methods of protection for trees located across the site. Compliance with these guidelines will be a requirement of all contractors working near retained trees.

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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