



Barton Hyett
Arboricultural Consultants

In association with:



ARBORICULTURAL METHOD STATEMENT AND TREE PROTECTION PLAN

ON BEHALF OF

LINDEN HOMES

FOR

DISCHARGE OF CONDITIONS RELATING TO APPROVED DEVELOPMENT
FOR THE CONSTRUCTION OF 175 DWELLINGS.

AT

LAND EAST OF TYE LANE, WALBERTON

Prepared by: Richard Hyett
Project code: C.2636

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Reference	Date	Rev	Prepared	Checked	Comments/Revisions
C.2636	22.05.19	-	R Hyett. MSc, BSc (Hons), MArborA, MICFor	I Monger. MSc, BSc (Hons), TechCert, MArborA	First issue

1. INTRODUCTION

Instruction

- 1.1 I am instructed by Linden Homes to prepare relevant tree protection details in order to support a discharge of condition application relating to approved development of 175 dwellings and associated infrastructure at Land East of Tye Lane, Walberton.

Background and scope

- 1.2 This report is prepared following the grant of Reserved Matters consent and pursuant to the requirements of Conditions 10 and 11. The Arun District Council planning consent reference is WA/44/17/OUT. The relevant conditions are reproduced below, however, only a small part of condition 11 relates directly to arboricultural protection matters.

Condition 10

- a. *Prior to the commencement of development or other operations likely to affect trees being undertaken on site a scheme for the protection of the retained trees produced in accordance with BS5837 (Trees in Relation to Construction 2005: Recommendations), which provides for the retention and protection of trees, shrubs and hedges growing on or adjacent to the site, shall be submitted to and approved in writing by the Local Planning Authority. No development or other operations shall take place except in complete accordance with the approved protection scheme.*
- b. *No operations affecting trees shall be undertaken on site in connection with the development hereby approved (including any tree felling, tree pruning, demolition works, soil moving, temporary access construction and/or widening of any operations involving the use of motorised vehicles or construction machinery) until the protection works required by the approved protection scheme are in place.*
- c. *No excavations for services, storage of materials or machinery, parking of vehicles, deposit or excavation of soil or rubble, lighting of fires or disposal of liquids shall take place within any area designated as being fenced-off or otherwise protected in the approved scheme.*
- d. *Protective fencing shall be retained intact until completion of the development hereby approved and shall not be removed or re-positioned without the prior written approval of the Local Planning Authority.*

Reason: In the interests of amenity and of the environment of the development in accordance with Policy GEN7 of the Arun District Local Plan.

Condition 11

No development above damp-proof course (DPC) level shall take place until there has been submitted to, and approved by, the Local Planning Authority, a landscaping scheme including details of hard and soft landscaping and details of existing trees and hedgerows to be retained, together with measures for their protection during the course of the development. The approved details of the landscaping shall be carried out in the first planting and seeding season, following the occupation of the buildings or the completion of the development, whichever is the sooner, and any trees or plants which, within a period of five years from the completion of development die, are removed or become seriously damaged or diseased, shall be replaced in the next planting season with others of similar size and species, unless the Local Planning Authority gives written consent to any variation.

Reason: In the interests of amenity and of the environment of the development in accordance with Policy GEN7 of the Arun District Local Plan.

1.3 To address the requirements of the conditions, the following information is provided:

- Arboricultural method statement.
- Tree protection plan.

2. ARBORICULTURAL METHOD STATEMENT AND TREE PROTECTION PLAN (AMS/TPP)

2.1 'Heads of terms' for an AMS was set out within the Arboricultural Impact Assessment report prepared as part of the planning application. (Ref: BHA_C.2636_AS and AIA (Rev C)_Walberton_Oct 2018). The 'heads of terms' are reproduced below:

- Project arboriculturist – schedule of monitoring and supervision
- Pre-commencement site meeting
- Tree removals and facilitation pruning
- Erection of tree protection barriers
- Main construction phase
- Watching brief on drainage installation within RPA's (Tye Lane formal link)
- Watching brief on footpath construction in the RPA of T28 and T38
- Removal of tree protection barriers
- Final landscaping including tree planting.

2.2 The AMS/TPP is attached at **Appendix 1**.

Purpose of AMS

2.3 The aim of the AMS/TPP is to prevent and/or minimise the impacts of site operations on retained trees during construction of the proposals. It gives step-by-step guidance and specifications for works which have the potential to result in loss of, or damage to retained trees.

2.4 General rules for tree protection relating to the content of this AMS/TPP are included at **Appendix 2**.

Key Contacts

- Project Arboriculturist - Richard Hyett (Barton Hyett Associates): 01386 576161
- Site Project Manager - Stuart Aldridge (Linden Homes): 023 8066 5100
- Arboricultural Officer - Mark Warwick (Arun District Council): 01903 737974

Key personnel and delegation of responsibilities

- 2.5 The Client, Linden Homes, shall hold overall responsibility for the project and shall appoint professionals and delegate responsibility in relation to the Scheme of Tree Protection as follows:
- Project Site Manager - shall hold responsibility to ensure that all key contractors and all other persons working on site have a responsibility to be aware of trees and to abide by tree protection procedures set out within the AMS/TPP.
 - Project Arboriculturist shall be responsible for independently monitoring/supervising the effectiveness of tree protection at regular intervals and report all findings in writing back to the client, the project site manager and the local planning authority. He/she shall also be instructed to provide additional advice should unforeseen circumstances develop.
- 2.6 Other appointed individuals and their contact information shall be recorded as part of the on-site pre-commencement site meeting.

How the AMS/TPP must be used

- 2.7 The AMS/TPP must be referred to by the site manager during construction operations and in particular during works close to retained and protected trees. A copy of this document must therefore be kept available in the main Site Office for quick and easy reference.
- 2.8 The site operations must be sequenced in accordance with the over-arching timetable of work stages set out within the AMS/TPP. Should any change to the sequence of operations be necessary, or if any other incidents occur, the Project Arboriculturist must be consulted. The Project Arboriculturist shall then evaluate any potential arboricultural impacts that could arise and specify additional tree protection/remediation measures as required. Confirmation that the proposed changes are acceptable within the context of relevant planning permission must be obtained in writing from the local planning authority prior to any new operations on site.
- 2.9 Where site operations have potential to result in more substantial impacts on retained trees, an arboricultural watching brief has been specified.

Site inductions

- 2.10 Prior to commencing relevant works on site, all site operatives must be briefed by the Site Manager in relation to site procedures and rules that relate to retained and protected trees as well as the content of the AMS/TPP. Site operatives shall sign to confirm that they understand and will abide by these requirements. The Site Manager shall retain copies of these site induction statements for future reference as may be necessary. A Site Induction form is provided at **Appendix 3**.

Sequence of Site Operations and Compliance Action Requirements

2.11 The AMS/TPP summary table below lists and describes the sequence of works that must be followed in order to minimise damage to retained trees and to ensure effective establishment of new ones.

Sequence of Site Operations and Compliance Action Requirements			
Work Stage	Task	Description	Compliance action
1	Pre-commencement site meeting	1. Must be attended by relevant project and site management and the main contractor. Arboricultural contractor may also attend. 2. Local Authority Tree Officer must be given 5 days' notice of the meeting in writing and be invited to attend. 3. Project arboriculturist to explain the content of the AMS/TPP to all parties and highlight that there are protected trees on the site.	Project Arboriculturist to confirm in writing to the Arun D.C Tree Officer (for inclusion on the planning file) that the meeting has taken place and who were the persons that were present.
2	Tree removals and facilitation pruning	1. Arboricultural contractor to remove all trees and stumps shown for removal on the AMS/TPP. 2. Arboricultural Contractor to prune all trees in accordance with the schedule shown at 2.23. 3. All arisings must be disposed of as instructed by the Site Manager.	Photograph site operations at suitable intervals to document work practices. Email to Arun D.C Tree Officer (for inclusion on the planning file) and Project Arboriculturist to report works carried out. Attach suitable photographs to illustrate.
3	Erect tree protection barriers	1. Set up barriers to locations and specification shown on TPP. 2. Fix A2 all-weather notices to tree protection barriers at 20m intervals. Notices must read 'CONSTRUCTION EXCLUSION ZONE - KEEP OUT'. 3. Project Arboriculturist to confirm that barriers are correctly positioned and that they are to specification and fit for purpose.	Inspect, photograph completed tree protection. Email to Arun D.C Tree Officer to report site conditions are suitable for site works to progress.
4	Groundworks	1. Do not carry out any work within CEZ. 2. Comply with all other AMS General Information shown on the AMS/TPP 3. Watching brief on tree removal for foul water drainage connection to Avisford Park Road adjacent T37. 4. Watching brief on drainage installation adjacent T28.	Photograph site operations at suitable intervals (at least weekly) to document work practices. Project Arboriculturist to visit site at monthly intervals to confirm that CEZs are properly maintained. Email to Arun D.C Tree Officer (for inclusion on the planning file) to report site conditions are suitable for site works to progress. Attach suitable photographs to illustrate.
5	Main Construction Phase	1. Do not carry out any work within CEZ. 2. Comply with all other AMS General Information shown on the AMS/TPP 3. Project Arboriculturist to confirm that barriers are correctly positioned and that they are to specification and fit for purpose.	Photograph site operations at suitable intervals (at least weekly by site manager) to document work practices. Project Arboriculturist to visit site at monthly intervals to confirm that CEZs are properly maintained. Email to Arun D.C Tree Officer (for inclusion on the planning file) to report site conditions are suitable for site works to progress. Attach suitable photographs to illustrate.

Sequence of Site Operations and Compliance Action Requirements			
Work Stage	Task	Description	Compliance action
6	Remove tree protection barriers	1. Remove tree protection barriers ensuring that there is no machinery access within the former CEZ.	1. Project Arboriculturist to visit site to confirm that site conditions are suitable for barriers to be removed. 2. Remove barriers. 3. Email to Arun D.C Tree Officer (for inclusion on the planning file) and Project Arboriculturist giving 5 working days' notice of intention to remove barriers.
7	Final landscaping	1. Pre-commencement meeting required between project managers, landscape contractor and Project Arboriculturist to identify areas within the site where landscaping works have potential to impact on trees. 2. Local Authority Tree Officer must be given 5 days' notice of the meeting in writing and be invited to attend. 3. Further landscaping-specific Arboricultural Method Statement to be prepared if required/requested by landscape contractor. 4. Follow all AMS general information. 5. Watching brief on footpath installation to the east of T28. 6. Watching brief on footpath installation to the east of T38. 7. No excavation or rotavation to be carried out within former CEZs.	Email to Arun D.C Tree Officer (for inclusion on the planning file) to confirm that the meeting has taken place. To include copy of landscape-specific AMS if required through discussion with contractor.
8	Tree establishment and health/condition monitoring	1. Inspect all trees on site: confirm new tree planting is to specification, confirm effective establishment of new trees, identify any retained trees that require replacement in accordance with Condition 11. 2. Further advice and work specifications to be provided as may be necessary.	1. Project arboriculturist to visit site on completion of the landscaping works and at annual intervals for five years thereafter. 2. Emails to Arun D.C Tree Officer for inclusion on the planning file) on each occasion to report on condition of planted trees.

2.12 The information below provides further information in relation to the AMS/TPP summary table

Pre-commencement site meeting

2.13 **NB** - Tree protection measures were installed one site to allow the excavation of archaeological trial trenches to be excavated (as required by separate condition). An initial site meeting was held between the Site Manager and the Project Arboriculturist in order to approve the protection measures on the 13th May 2019. The majority of the tree protection barriers were in the correct location and to the approved specification. Some minor amendments were required in localized areas (which will be addressed) but the barriers were fit for purpose to allow the archaeological investigation to occur.

2.14 The purpose of the formal pre-commencement meeting is to enable all relevant parties within the development team to meet, to be aware of the requirements of the AMS, and to agree a co-ordinated approach to the project.

- 2.15 The meeting shall be pre-arranged, and the Local Planning Authority Tree Officer shall be given five working days' written notice and invited to attend.
- 2.16 Required attendees:
- Site project manager
 - Project arboriculturist
 - Contractors (including arborist) and other relevant parties
- 2.17 Matters to be addressed:
- Identification of persons present and exchange of contact information
 - Familiarisation with all aspects of the AMS
 - Familiarisation with the site in relation to the AMS
 - Approval of final tree protection fence locations
- 2.18 The Project Arboriculturist shall provide written confirmation to the Local Planning Authority Tree Officer that the meeting has occurred and that specified matters have been addressed.

Tree removals and facilitation pruning

- 2.19 ***NB*** - *The partial removal of G23 has already been undertaken in order to allow plant machinery to access the site as part of the archaeological investigation works.*
- 2.20 The majority of above-ground tree works are shown on the TPP, and will be discussed and agreed in detail at the pre-commencement site meeting. The work includes tree and hedge removal (shown in red) and selective crown reshaping (shown by a dotted black line). All stumps are to be mechanically ground-out where required.
- 2.21 All tree works must be carried out in accordance with BS3998:2010 'Trees work – Recommendations'.
- 2.22 In summary, the above-ground works are:
- Removal of G23 (remainder)
 - Removal of a single hawthorn at the western end of H4
 - Crown lifting of T38
 - Crown reduction of T28 (removal of collapsed limb)
 - Crown lifting of trees within G17
 - Localised removal of trees from within G11
 - Potential risk abatement works to boundary trees within the adjacent recreation ground.
- 2.23 A summary table of tree works and timings is shown over leaf.

Tree Works Summary Table			
Tree/Group reference	Works	Specification	Timing
G23	Fell	Fell remainder of group to ground level; and mechanically grind stumps, as per approved plans.	As part of enabling works, at site mobilisation
H4	Partial removal	Fell single hawthorn at western end to facilitate foul water drainage connection.	During main construction - expected summer 2019
T38	Pruning	Crown lift to provide 2.5m of ground clearance.	Winter 2019/20
T28	Pruning	Crown reduction ('Veteranisation') to leave a final top height of circa 6.5m and reshape on north side, retaining as much foliar area of bud growth as possible - see AIA report (BHA_C.2636_AS and AIA (Rev C)_Walberton_Oct 2018).	Winter 2019/20
G17	Pruning	Crown lift on northern side to provide a minimum of 7m of ground clearance over site. (Current average ground clearance is 5m).	Winter 2019/20
G11	Partial removal	Fell to ground level the trees within the area shown on the TPP. Mechanically grind out stumps. Trees to be marked up for removal once alignment of footway/cycleway/emergency link has been set out. Project Arboriculturist to mark up trees to be removed. Loss will be minimised.	During main construction - expected summer 2019
T34, 35, 36	Pruning	Remove split out limbs on site side, along with removal of any significant (greater than 100mm) deadwood on site side of crown)	As required/agreed

- 2.24 Works to trees protected by Tree Preservation Order do not require separate LPA consent if the works were approved as part of a detailed planning consent or associated conditions.
- 2.25 Note that where trees are located off site and where pruning is specified common law obligations apply. Although there is a legal right in common law to prune any overhanging branches (no further than back to the boundary), it is vital to note that all the arisings from these works (i.e. the branches that have been cut off) remain the property of the tree owners. In legal terms, if operating without the consent of the tree owners, these arisings must be offered back (and returned if requested) to the tree owners in the state that they were removed from the trees. Arisings must not be chipped without approval of the tree owner. In order to avoid potential disputes, suitable communication with the tree owner should be achieved in all cases before any pruning works are carried out.
- 2.26 The offsite status of some trees also means that they may not be climbed by arborists (tree surgeons) carrying out the tree pruning works without the permission of the tree owners. It is recommended, that all pruning works relating to offsite trees are carried out using a Mobile Elevated Work Platform (MEWP).
- 2.27 All tree work operations must be carried out in-line with the contractor's own site specific risk assessment and method statement that shall be approved prior to commencement by the Site Manager.

- 2.28 If required, wood chip arisings may be stored on site for later use as part of landscaping works.
All other arisings shall be disposed of as instructed by the Site Manager.

Erection and final sign off of tree protection barriers and notices

- 2.29 All tree protection barriers must be installed in accordance with the default BS5837:2012 specification that is shown on the AMS/TPP.
- 2.30 All barriers are to be installed in locations as specified on the AMS/TPP.
- 2.31 All weather A2-sized notices reading, "CONSTRUCTION EXCLUSION ZONE – KEEP OUT" shall be attached to tree protection barriers at 10 metre intervals.
- 2.32 The Project Arboriculturist must approve the condition and positioning of fencing, notices, temporary ground protection and meshing and report to LPA Tree Officer prior to commencement of further stages in the construction process.

Groundworks

- 2.33 All works must be carried out outside of CEZs. All general information relating to tree protection as shown on the AMS/TPP must be complied with.
- 2.34 The installation of surface water drainage infrastructure to the south of T28 has been designed to avoid the notional RPAs. However, a watching brief shall be required.
- 2.35 The working space for the excavation is restricted. Initial excavations can be undertaken using a mechanical excavator under a watching brief. The excavator will need to work from both the east and west side of the RPA and extend the excavator arm into the work area whilst being located outside of the tree protection barrier. Should any roots be encountered a different working approach will be required. Any significant roots uncovered must be left in situ and the installation of the drainage pipe provided at the required depth and fall beneath the level of as many roots possible. Dependent on what roots are encountered the excavations may need to be continued by hand or with an Airspade. The project arboriculturist will advise on the appropriate way forward once the initial excavations have been undertaken.
- 2.36 The same approach must be adopted for the foul water drainage connection to Avisford Park Road, adjacent T37.

Main construction phase

- 2.37 All works must be carried out outside of CEZs. All general information relating to tree protection as shown on the AMS/TPP must be complied with.

- 2.38 Dependent on the final timing of operations and the phasing of development the main construction phase, including construction of highway infrastructure and dwellings, should not require any specific arboricultural input. The project arboriculturist shall be on hand to respond to any queries of issue that the site manager may have.

Remove tree protection barriers

- 2.39 Project Arboriculturist to assess site conditions and confirm that it is an appropriate stage at which to remove tree protection barriers.
- 2.40 Five working days written notice shall be given to the Local Planning Authority prior to the removal of tree protection measures.
- 2.41 All barrier removals must be carried out from outside the original CEZ. Where access within an original CEZ is required it must be pedestrian only with all works carried out by hand.

Final landscaping

- 2.42 The area beneath trees T28, T38, T39 and T40 shall be grassed in line with the approved landscape plan. Only the area within RPAs *that has previously been ploughed* can be rotovated by pedestrian operated machine to a maximum depth of 250mm. Once this has been undertaken it will be permissible to import additional new topsoil to the area provided there is no substantial increase in existing ground levels. The import of topsoil can be undertaken by excavator located outside of the RPAs and extending the machine arm in to the RPA area (without contacting with overhead branches). The topsoil must then be spread by hand. In the area south of plots 11-14, a temporary ground protection trackway (specification to be agreed) could be installed between trees T38 and T39 to give access for a small dumper (the dumper would be restricted to running on the trackway).
- 2.43 The area where will then be seeded with the approved meadow mix seed. It will not be possible to establish new grass within 1m of the base of the stem. This area should be turned over by hand removing any plant material (not including roots of trees) and then mulched with a woodchip mulch not exceeding 50mm in depth and ensuring the mulch is not placed adjacent the bark of the trunks.
- 2.44 All new tree planting must be carried out in accordance with the principles of 'BS8545: Trees: from nursery to independence in the landscape – recommendations.'
- 2.45 All tree pit excavations close to, or within, the RPAs of retained trees must be carried out by hand. Where areas of concentrated pedestrian operative activity are required within RPAs, work shall be carried out on top of 25mm ply boards set on 100mm woodchip.

2.46 Installation of footways within the RPA of T28 and adjacent that of T38 will be installed using a 'no-dig- methodology. Installation will be carried out under supervision of the Project Arboriculturist. The proposed construction 'no dig' construction detail, including a tarmacadam wearing course is shown in Figure 1 below.

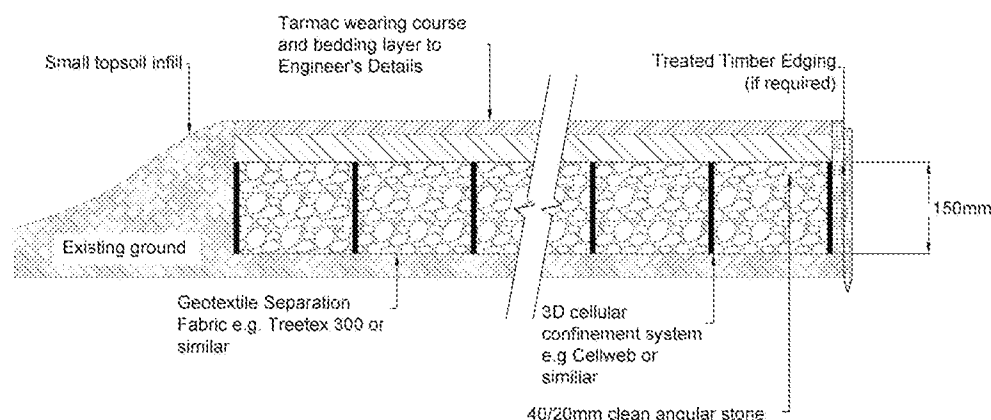


Figure 1: Proposed 'no dig' construction detail for paths within RPAs.

- This approach uses a plastic cellular confinement grid, permeable geo-textile and washed gravel fill to provide a load-bearing surface that needs no excavation and does not need to be compacted. The structure sits above the existing soil level and acts as a stiff raft which maintains soil bulk density at levels suitable for tree root growth.
- The system supplier will may specify final system design, materials as well as any variation to the below installation method.
- The area within the tree RPA will not be mechanically scrapped, graded or tilled. Any slope in the ground will not be levelled. Any voids may be made-up by a maximum of 15cm with a no-fines (washed) gravel.
- A porous geo-textile separation layer will be laid by hand over the footpath alignment and pegged in place.
- The operatives will work southwards from the northern end of the footpaths and working towards the south as the new surface is constructed (known as 'rolling out'). This avoids unnecessary compaction of the soil below. There must be no vehicle movements or storage of materials over the soil itself.

- The infill material must be a clean angular stone, Type 4/20mm or Type 20/40mm. Do not use D.O.T type 1 or crushed stone with fines for tree root protection. No compaction is required of the infill. Do not use a whacker plate or other means of compaction. Aggregate will be delivered and handled initially from working space nearby, and outside the RPA of any tree.
- Outside edge supports will be timber edging or similar and will require no excavation. They will be held in place with driven metal stakes to finish flush. It is permissible to install small soil 'fillets' to prevent a step at the edge of the footpath.
- The final surface is prescribed on the approved landscape proposal drawing as bituminous macadam surface. Within RPAs this should be permeable in nature and the final design needs to be approved by the project engineer. The work to install the surfacing should be undertaken from working on top of the installed footpath.

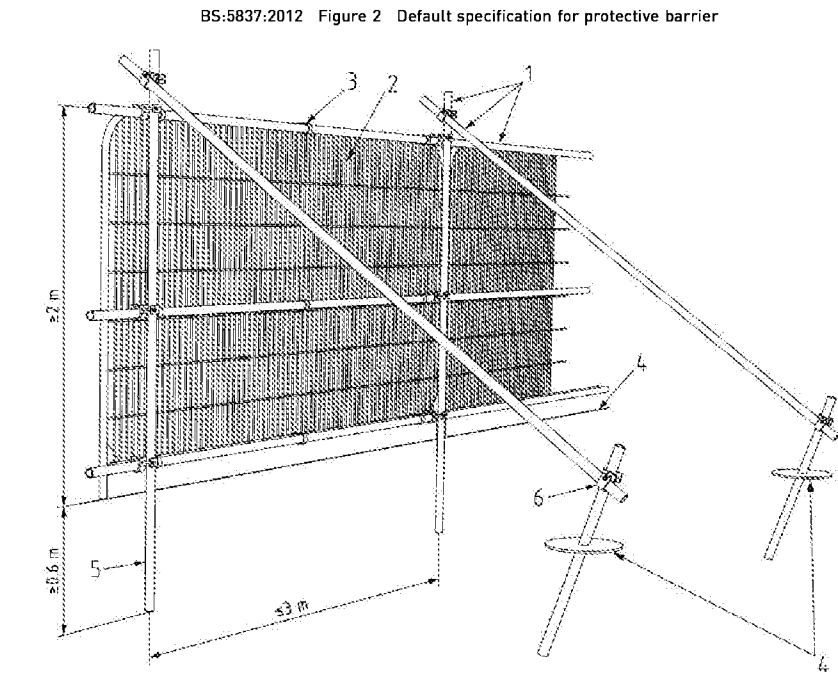
Tree establishment and health/condition monitoring

- 2.47 Following the completion of construction works and in order to comply with relevant planning conditions it will be necessary to continue monitoring works to assess and evaluate the condition of both newly planted trees and trees that have been retained.
- 2.48 Immediately following the completion of landscaping works, the Project Arboriculturist must inspect the condition of all newly planted trees to ensure that planting specifications have been properly adhered to. This will involve checks of tree size and form, staking, individual protection and weed control. Feedback must be provided to the Site Manager and to the Local Authority Tree Officer along with clear specifications for remedial action as may be necessary.
- 2.49 Subsequently, at annual intervals, the Project Arboriculturist shall inspect all the trees on the site and make recommendations for remedial action as may be necessary. This will involve, visual assessment of the condition of retained trees, a representative sample assessment (using chlorophyll fluorescence testing) of the vitality of newly planted trees, assessment of the effectiveness of tree protection and weed control in relation to newly planted trees, identification of trees that require formative pruning to improve long-term structural form. Again, Feedback must be provided to the Site Manager and to the Local Authority Tree Officer along with clear specifications for remedial action as may be necessary.

APPENDIX 1

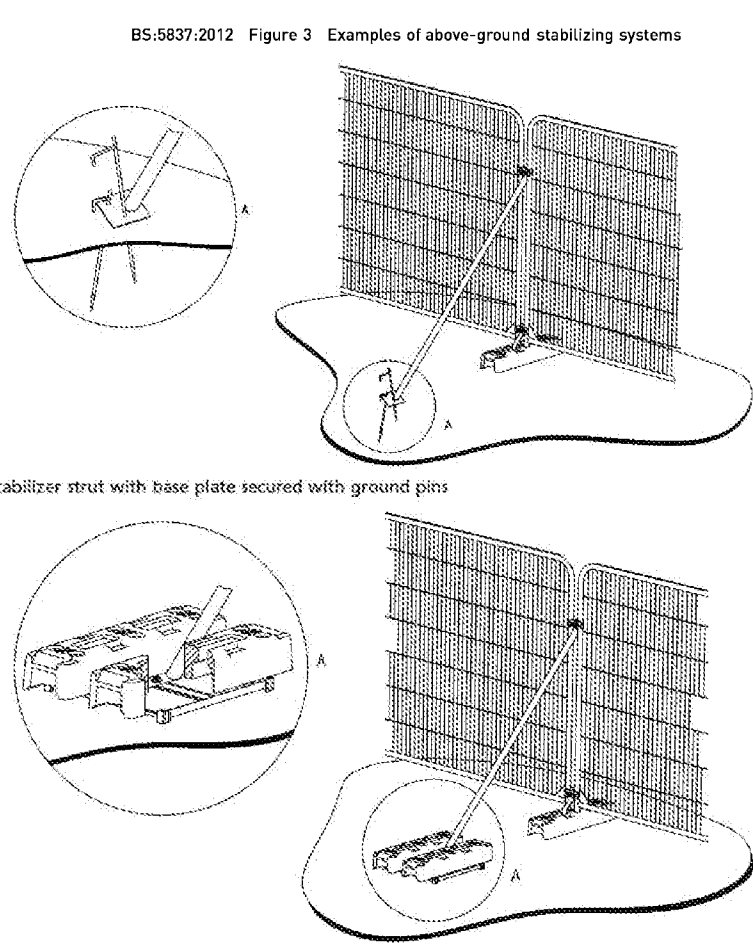
TREE PROTECTION PLAN

Tree No	Species	RPA Radius	MIPA Area	M	Category
T1	Hornbeam	3.8	46	B2	
T2	Sugar maple	2	12	C2	
T3	Rowan	1.8	10	C2	
T4	Pied Oak	4.3	59	B1	
T5	Poplar	5.4	62	C2	
T6	Poplar	4.2	55	C2	
T7	Red oak	4.5	65	B1	
T8	Cypress	1.3	5	C2	
T9	Lime	4.7	69	B2	
T10	Cherry plum (purple leaf)	2.4	18	B2	
T11	Cherry	2.4	18	B2	
T12	Sweet chestnut	4.2	55	B1	
T13	Cherry	2.6	22	B2	
T14	Pin oak	2.2	15	B1	
T15	Whitebeam	2.3	16	B2	
T16	Norway maple	2.4	18	B2	
T17	Larch	2	13	B2	
T18	Poplar	4.8	72	C2	
T19	English oak	7.8	151	B1	
T20	Field maple	6	113	B1	
T21	Field maple	4.8	72	B2	
T22	Sycamore	4.2	55	B2	
T23	Helm oak	10.6	350	A1	
T24	Monterey Pine	9	253	A2	
T25	Lime	7.8	191	A1	
T26	English oak	2.3	16	C2	
T27	Field maple	2.3	16	C2	
T28	English oak	14	619	A2	
T29	Copper beech	4.8	72	B2	
T30	Grey poplar	6.6	137	C2	
T31	Lombardy poplar	3.8	46	C2	
T32	Norway maple	4.8	72	B2	
T33	English oak	2.4	18	B1	
T34	Grey Poplar	3.6	41	C1	
T35	Grey poplar	4.2	55	C2	
T36	English oak	3	28	B2	
T37	Lombardy poplar	5.4	62	B2	
T38	Horse chestnut	12.8	518	A1	
T39	English oak	1.7	6	A2	
T40	English oak	15	707	A2	
T41	Weeping willow	2.4	18	C2	
T42	Silver birch	4.2	55	B1	
G1	Cypress, oak, maple	2.4	18	C2	
G2	Sycamore, ash	4.5	65	B2	
G3	Hawthorn, hazel, elder	1.8	10	B2	
G4	Sycamore	4.3	59	B2	
G5	Sycamore	4.5	65	B2	
G6	Hawthorn, elder	1.8	10	C2	
G7	Lombardy poplar	4.8	72	B2	
G8	Cypress	1.8	10	C2	
G9	White willow	7.2	163	B2	
G10	Poplar	4.2	55	C2	
G11	Holly, laurel, helm oak, elder, sycamore	3.6	41	B2	
G12	Sycamore, ash, hawthorn	4.2	55	B2	
G13	Poplar, goat willow, holly	5.4	62	C2	
G14	English elm	3	28	C2	
G15	Field maple	3.3	35	B2	
G16	Lombardy poplar	3.6	41	B2	
G17	Lime, oak	4.2	55	B2	
G18	Hawthorn, elm	2.2	15	C2	
G19	Grey Poplar, hybrid poplar, lombardy poplar	3.2	129	C2	
G20	Lombardy poplar	3.8	46	C2	
G21	Cherry	3	28	C2	
G22	Norway maple, sycamore, poplar, ash, rowan	4.8	72	B2	
G23	English elm, hawthorn	1.3	5	C2	
H1	English elm, hawthorn	1.3	5	C2	
H2	Holly	1.5	7	B2	
H3	Hawthorn	0.6	1	B2	
H4	Hawthorn, ash, elder	1.1	4	C2	



- Key
- 1 Standard scaffold poles
 - 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
 - 3 Panels secured to uprights and cross-members with wire ties
 - 4 Ground level
 - 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
 - 6 Standard scaffold clamps

For more details refer to BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.23



b) Stabilizer strut mounted on block tray

For more details refer to BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.21



Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross check with specific requirements of any relevant planning conditions)



KEY BS 5837 : 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- U Category - Hedgerow, Group, Woodland
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsets Tree / OOS (Out of scope)
- Tree Preservation Order (TPO)
- Tree / Hedgerow to be Removed
- Primary Tree Protection Secondary Barrier to BS 5837:2012 (FIGURE 2)
- Secondary Tree Protection Secondary Barrier to BS 5837:2012 (FIGURE 2)
- Tree Protection Barrier to BS 5837:2012 (FIGURE 3)

Where trees are considered to be subject to Tree Preservation Order more detailed checks will be required in some instances in order to confirm exact boundaries for the areas covered by each TPO

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

PROJECT TITLE
Land East of Tye Lane, Walberton (C.2686)

DRAWING TITLE
Combined Tree Retention/Removal & Protection Plan

SCALE 1:1250 **DRAWING NUMBER** BHA_401_02

DRAWN BY SD **APPROVED BY** RH **REVISION** E **SHEET** - **DATE** 01/05/2019

CLIENT Linden Homes South

COORDINATE SYSTEM / DATUM British National Grid / Newlyn Datum (AOD)

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CSA environmental
Suite 1, Deer Park Business Centre, Eckington,
Penhore, Works. WY10 3DN
01386 751100 • csaenvironmental.co.uk

Barton Hyett Associates
Arboricultural Consultants

APPENDIX 2

GENERAL RULES FOR TREE PROTECTION

ABBREVIATIONS USED

The following abbreviations and definitions apply in relation to this document:

- AIA – Arboricultural Impact Assessment
- AMS – Arboricultural Method Statement
- RPA – Root Protection Area
- CEZ – Construction Exclusion Zone
- TPP – Tree Protection Plan

INFORMATIVE - HOW TREE DAMAGE CAN OCCUR

Above the ground.

Damage can occur as a result of contacts between branches and/or tree trunks. This is often but not always associated with machine operations, groundworks excavations, teleports, high sided vehicles and crane use. Other forms of above ground damage include fixings to trunk and unauthorised cutting back of branches.

Below the ground

It is often not appreciated that the majority of most tree roots are generally located within the top 600mm of the ground. On this basis it needs to be understood that damage to roots can occur in two ways:

- Root severance can occur as a result of, for example, soil stripping during site clearance or excavations.
- Root dieback and death can result from compaction of the soil. Compaction can occur as a result of vehicle weight, weight of stored materials or increased pedestrian access. Compaction crushes out soil pore space and prevents tree respiration from occurring (respiration requires gas exchange between the ground and the atmosphere). Compacted soil is denser and therefore inhibits/prevents any further new root growth.

The effects of these impacts can be disfiguring to a tree's appearance and also weaken a tree making it more liable to attack by pest and diseases. In addition, root damage or death results in corresponding decline above the ground with dieback occurring within the tree crown.

The effects of damage to trees generally take some time to become fully apparent. In many cases, damaged trees decline slowly after the completion of a new development, until they eventually need to be removed due to ill health.

Tree protection barriers and load distributing 'no-dig' paths are specified in order to prevent soil compaction from taking place.

GENERAL SITE RULES FOR TREE PROTECTION

Do not independently carry out any activity that is at odds with the site Scheme of Tree Protection.

In simple terms: do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison with the Project Arboriculturist and written authorisation from the Local Planning Authority.

Within the CEZ:

- No mixing of cement
- No soil/turf stripping, raising/lowering of ground levels (unless advised), deposit or excavation of soil or rubble
- No excavations for services or installation of services
- No storage of materials, machinery fuel, chemicals or other materials of any other description
- No parking/use of tracked or wheeled machinery
- No siting of temporary structures including hard standing areas, portaloos, site huts
- No lighting of fires or disposal of liquids.

Fires on site should be avoided if possible. Where they are unavoidable, they must not be lit in a position where heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree or the centre line of any hedgerow to be retained.

No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained tree

APPENDIX 3

SITE INDUCTION FORM



TREE AWARENESS – SITE INDUCTION

SITE NAME:.....

DATE OF INDUCTION:.....

Trees are an important part of this development. Retained trees must be kept undamaged so that they can fully benefit the finished project well into the future. All persons working on this site have a responsibility to be aware of trees and to abide by tree protection procedures.

How trees can be damaged – think roots!

Above the ground – contacts and impacts with branches and trunk (machine operations eg telehandlers, high-sided vehicles, crane use, fixings to trunk, unauthorised cutting back of branches)

Below the ground – root severance (eg soil stripping during site clearance, excavations) and root damage resulting from compaction of soil near trees (eg vehicles, pedestrian, storage of materials). Effects of root damage take time to become obvious, but will result in disfiguring dieback of leaves and branches, or even tree death.

Tree protection procedures

Provided that the simple steps are followed most tree protection is straightforward:

- Stay out of tree Construction Exclusion Zones (CEZs). These are the areas of ground surrounding retained trees that are protected by barriers. If you need to go into a CEZ, you must first gain authorisation from the Site Manager
- No construction activity of any description within CEZs, eg soil stripping, cement mixing, services installation, storage of materials etc
- No fires within 20m of trunk of any retained tree
- If authorised to work within a CEZ, work to the Arboricultural Method Statement, eg demolition, construction, landscaping works etc
- If damage occurs, inform the Site Manager.

Remember

All trees on the site are protected by planning conditions. Many trees on the site may also be legally protected by Tree Preservation Order (TPO) or Conservation Area status

Planning Authority enforcement action needs to be avoided:

- 'Breach of Conditions' notices can prevent a site from being signed-off.
- 'Temporary Stop Notices' halt site operations and result in associated high costs.
- Wilful damage/destruction of TPO/Conservation Area trees can result in company and/or individual prosecutions - fines can be anything up to £20,000 (County Court fines can be higher). Remember that fines apply to the person committing the offence as well as the site owner and main contractors!

Be aware of tree protection and stick to the procedures. Tree protection is straightforward. If in doubt –ask!

I have received site induction in tree awareness and tree protection procedures

PRINT NAME:

SIGN:

DATE: