

ARBORICULTURAL SURVEY, IMPACT ASSESSMENT AND PROTECTION PLAN

FOR

RESERVED MATTERS SUBMISSION FOR THE CONSTRUCTION
OF 175 DWELLINGS AND ASSOCIATED INFRASTRUCTURE

AT

LAND EAST OF TYE LANE,
WALBERTON, ARUNDEL

ON BEHALF OF

LINDEN HOMES SOUTH

Validation statement for LPA application registration

This report is submitted to Arun District Council to accompany a Reserved Matters planning application. The report contains arboricultural information relating to the proposed development at Land East Of Tye Lane.

For local planning authority (LPA) validation purposes, this report contains the following:

- A full tree survey compliant with the requirements of BS5837:2012 '*Trees in relation to design, demolition and construction – recommendations*' undertaken by a competent and qualified arboriculturist.
- A suitably scaled plan with a north point and the tree survey information.
- An assessment of the impacts of the proposed development on the existing trees. This includes recommendations of which trees should be removed/retained and the proposed protection measures.
- Heads of Terms for an arboricultural method statement outlining appropriate methods of tree protection and any specific technical construction methods needed to implement the design proposals.

CONTENTS:

Page No:

1.	INTRODUCTION	1
2.	REPORT LIMITATIONS	2
3.	DOCUMENTS AND INFORMATION PROVIDED	3
4.	DESCRIPTION OF SITE AND TREES	4
5.	STATUTORY PROTECTION	5
6.	ARBORICULTURAL SURVEY	7
7.	TREE SURVEY FINDINGS	8
8.	IDENTIFICATION OF PRELIMINARY TREE CONSTRAINTS	11
9.	DESCRIPTION OF PROPOSED DEVELOPMENT	13
10.	ARBORICULTURAL IMPACT ASSESSMENT (AIA)	14
11.	TREE PROTECTION MEASURES	18
12.	HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT	19
13.	SUMMARY	20

APPENDICES:

APPENDIX 1 – TREE SURVEY METHODOLOGY AND SCHEDULE

APPENDIX 2 – TREE SURVEY AND CONSTRAINTS PLAN

APPENDIX 3 - COMBINED TREE RETENTION/REMOVAL AND PROTECTION PLAN

APPENDIX 4 - PHOTO SHEET OF THE PROPOSED TREE WORKS (T28)

Reference	Date	Rev	Prepared	Checked	Comments/Revisions
C.2636	19.10.2018	-	I. Howell L4 Dip Arb (ABC)	R. Hyett. BSc (Hons), MSc, MArborA, MICFor	First issue
C.2636	17.01.2019	A	R. Hyett. BSc (Hons), MSc, MArborA, MICFor	P. Barton. BSc (Hons), MSc, MArborA	Updated layout, protection plan and text
C.2636	11.02.2019	B	R. Hyett. BSc (Hons), MSc, MArborA, MICFor	P. Barton. BSc (Hons), MSc, MArborA	Updated layout, protection plan and text

 Institute of
Chartered Foresters
registered


Arboricultural
ASSOCIATION
Professional Member
Member No: PR03525

1. INTRODUCTION

- 1.1 Barton Hyett Associates have been instructed by CSA Environmental Ltd on behalf of Linden Homes South, to inspect the trees that could affect, or be affected by, the development proposals on land east of Tye Lane, Walberton; hereafter referred to as 'the site'. This report, in compliance with BS5837:2012 '*Trees in relation to design, demolition and construction - recommendations*' is required to accompany the submission of a Reserved Matters planning application for residential development to include 175 dwellings.
- 1.2 The scope of the instruction was to visit the site and to survey relevant trees, hedges and shrub masses in accordance with BS5837:2012 and to prepare the following information:
- Tree survey summary
 - Schedule of tree survey data
 - Tree survey plan: an updated topographical survey showing preliminary tree constraints
- 1.3 With reference to the above information and BS5837:2012, the instruction extended to assess the impact of the proposed development on the site's arboricultural resource and to produce the following:
- Arboricultural impact assessment
 - Tree retention and removal details
 - Tree protection details
- 1.4 This report has been updated further to comments made by the LPA and subsequent changes made to the proposed site layout.

2. REPORT LIMITATIONS

- 2.1 The tree survey was undertaken from ground level and observations have been made solely from visual inspections for the purposes of assessment in terms relevant to planning and development. Only binoculars, mallet and a probe have been used to aid tree assessment. No invasive or non-invasive internal decay detection devices have been used in assessing tree condition.
- 2.2 The recommendations and conclusions in this report relate only to the conditions found on this site at the time of the site visit and inspection. The recommendations contained within this report are valid for a period of 12 months from the date of this report.
- 2.3 Any significant alteration to the site that may affect the trees present, for instance changes in ground level, tree works, extreme weather events, hydrological changes etc,) may invalidate the survey findings and could necessitate a re-assessment of the trees.
- 2.4 This report is prepared for planning purposes only and does not evaluate the degree of risk posed by trees.
- 2.5 Trees are living organisms and self-supporting dynamic structures. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. They have the potential to fail structurally, without prior manifestation of any reasonably observable symptoms. It is therefore not possible to categorically state that any tree is 'safe'.
- 2.6 It is beyond the scope of this report to comment in relation to structural damage – direct or indirect, existing or potential – that might be associated with vegetation growth, or vegetation-related soil subsidence or heave.
- 2.7 Any management recommendations set out within this report are of an advisory and preliminary nature only and relate to trees within the context of current site use. Any physical alterations to site conditions subsequent to the date of the site survey will have the potential to change/invalidate the findings and recommendations of this report.

3. DOCUMENTS AND INFORMATION PROVIDED

3.1 For the purposes of carrying out the assessment I have been provided with, and made reference to, the following information:

- Topographical survey - Walberton 3d Topo (08/2016)
- Revised Site Layout - LIND171208SL.01 B4
- Revised Proposed Drainage Strategy - 183240-X

4. DESCRIPTION OF SITE AND TREES

4.1 The site is located approximately 2 miles west of Arundel town and within close proximity to Walberton village.

- Post code: BN18 0PF
- Grid ref: SU 97321 06222



Photo 1: aerial photo of the site with approximate site boundary shown in blue. (Source: Google Maps)

Site description

- 4.2 The site lies to the north of the village of Walberton which is located approximately two miles west of Arundel town. The locality is a mixture of residential dwellings to the south of the site with Avisford Park golf club to the north. Surrounding land is a mixture of agricultural fields and horticultural nurseries.
- 4.3 Access to the site is currently off Yapton Lane. The site lies on largely flat land with no identifiable water courses nearby. The site has a good degree of visual screening from semi-mature to mature trees around much of its perimeter.
- 4.4 The arboricultural resource for the site consists of predominantly off-site trees that are located along the perimeters of neighbouring properties such as Avisford Park golf course and Walberton and Binstead Church of England Primary school. There are also four significant trees within the site interior and a substantial shelter belt of trees running the length of the sites western perimeter which bounds Tye Lane.

5. STATUTORY PROTECTION

Statutory tree protection

- 5.1 I have contacted Arun District Council, the Local Planning Authority (LPA), and they have confirmed that the site is not located within a Conservation Area, although the site bounds a conservation area to the south west. They have also confirmed that many of the trees on, and adjacent to, the site are currently protected by Tree Preservation Order (TPO).
- 5.2 The TPO references relevant to the site are:
- TPO/WA/3/17, WALBERTON NO.3/68
 - TPO/WA/1/16. TPO
 - WALBERTON NO.2/72 (adjacent the site)
 - WALBERTON NO.3/68 (adjacent the site).
- 5.3 Those trees believed to be protected by the Orders are show on the combined tree retention, removal and protection plan at **APPENDIX 3**. The following information is provided for advisory purposes.
- 5.4 Notwithstanding specific exemptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of protected trees or woodlands without the prior written consent of the LPA.
- 5.5 Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £20,000 if convicted in a Magistrates' Court, or an unlimited fine is the matter is determined by the Crown Court.
- 5.6 Similarly, and again notwithstanding specific exemptions, it is an offence to carry out any works to a tree in a Conservation Area with a trunk diameter greater than 75mm diameter at 1.5 height without having first provided the LPA with 6 weeks written notification of intent to carry out the works.
- 5.7 On many non-residential sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter without having first obtained a felling licence from the Forestry Commission.
- 5.8 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with the statutory controls outlined.

Statutory Wildlife Protection

- 5.9 Although preliminary visual checks from ground level of likely wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside of the scope for this report.
- 5.10 Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for protected species such as bats in addition to birds and small mammals. In some instances specialist ecological advice may be required. This may result in tree works being carried out following a detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the site manager, owner or consulting arboriculturist should be informed and appropriate action taken as recommended by the appointed Ecologist or the relevant Statutory Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Natural Resources Wales.
- 5.11 It is advised that tree/hedgerow works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. This time period only provides an indication of likely nesting times and as such diligence is required when undertaking tree works at all times.
- 5.12 Irrespective of the time of year, and other than any actions approved under General Licence, it is an offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destroy the nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird nesting period. However, any tree works should always only be carried out following a preliminary visual check of the vegetation.
- 5.13 For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in England and Wales.
- 5.14 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with any relevant statutory controls, outlined above.

6. ARBORICULTURAL SURVEY

Site visit

- 6.1 The tree survey was undertaken by Ian Howell on the 13TH July 2018. The weather at the time of the visit was clear and sunny; these conditions in no way hindered the ability to view the trees. All observations were made from ground level (aided by the Visual Tree Assessment method – Mattheck and Breloer, 19941) and all dimensions were measured unless otherwise stated as estimated in the survey schedules.

Methodology

- 6.2 The survey was undertaken in accordance with BS5837:2012 and the methodology is set out within **APPENDIX 1** of this report.
- 6.3 The tree survey findings are recorded in the tree survey schedule at **APPENDIX 1** of this report.
- 6.4 Within the tree survey schedule, each surveyed tree (T), group (G) or hedgerow (H) on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan which can be found at **APPENDIX 2** of this report.

¹ The Body Language of Trees: A Handbook for Failure Analysis (Research for Amenity Trees)

7. TREE SURVEY FINDINGS

7.1 A summary of the tree survey quality assessment findings that are relevant to the current proposals are shown in table form below:

	Total	A - High quality trees whose retention is most desirable	B - Moderate quality trees whose retention is desirable	C - Low quality trees which could be retained but should not significantly constrain the proposal	D - Very poor quality trees that should be removed unless they have high conservation value
Trees	42	7	22	13	-
Groups	23	-	12	11	-
Hedgerows	4	-	2	2	-
Total	69	7	36	26	-

7.2 From the above table it can be seen that the majority of the arboricultural resource for the site is considered to be of moderate quality with an estimated life expectancy of at least 20 years.

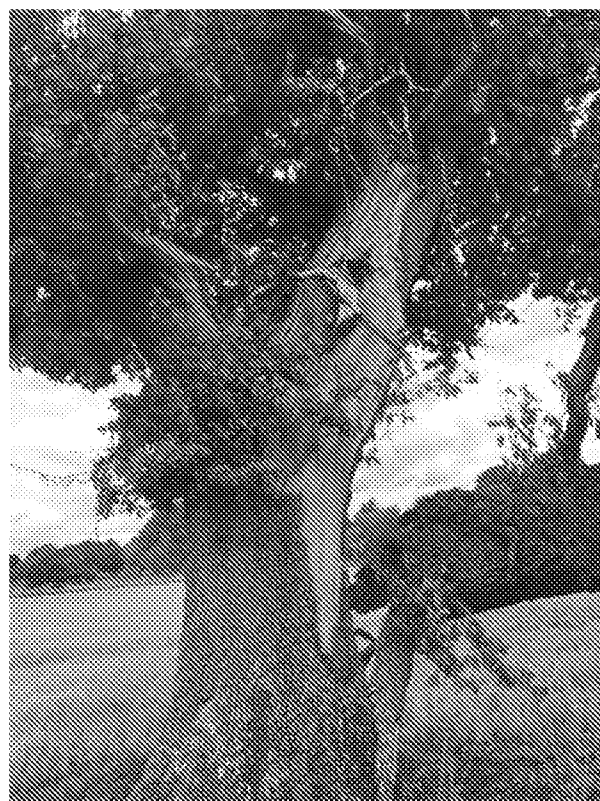
7.3 A lesser amount of trees were assigned Category C, as being of low quality with an estimated life expectancy of at least 10 years.

7.4 Seven of the sixty nine survey items were considered to be high quality and therefore having an estimated life expectancy of at least 40 years.

7.5 Select photographs of the site are shown on the following pages:



Photoview 1: Looking east at T28, image taken on 14/9/18, illustrating the more recent tear out/failure. (TPO/WA/3/17)



Photoview 2: close up of the point of failure and subsequent tearing of structural branch, stem and cambium. (TPO/WA/3/17)



Photoview 3: Looking east at the 2 Category A (high quality) English oak trees T39, T40. (TPO/WA/1/16)



Photoview 4: Looking east at G23, low quality group requiring removal to facilitate the visibility splay for the site access.

8. IDENTIFICATION OF PRELIMINARY TREE CONSTRAINTS

8.1 In accordance with BS5837:2012, below ground constraints, or root protection areas (RPAs), for the surveyed trees have been plotted onto the tree survey plan for the site. These are represented as a circle centred on the base of each tree stem with a radius of 12 times stem diameter measured at 1.5m above ground level.

8.2 With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure should be treated as a priority”. “The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained”.

8.3 BS5837:2012 states (4.6.2) that, “where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced.” The BS goes on to state that, “modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,” and that any deviation from the original circular plot should take into account:

- morphology and disposition of roots
- topography and drainage
- soil type and structure
- the likely tolerance of the tree to root damage/disturbance

8.4 Root systems can be damaged in a number of ways as follows:

- Severance of a root will destroy all parts of the root beyond that point. The larger the root severed, the greater the impact on the tree. If roots are damaged close to the trunk, the anchorage and stability of the tree can be affected
- The root bark protects the root from decay and is also essential for further root growth. If damage to the bark extends around the whole circumference, the root beyond that point will be killed
- Soil compaction, which may occur from storage of material or passage of heavy equipment over the root area, can restrict and even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.

- Lowering the soil level will strip out the mass of roots near the surface
- Raising soil levels will have the same effect as soil compaction
- Incorrect selection and application of herbicide
- Spillage of oils or other harmful materials

8.5 Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments; usually post occupancy. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and protected trees.

9. DESCRIPTION OF PROPOSED DEVELOPMENT

- 9.1 The site benefits from an extant outline planning permission and reserved matters consent is now being sought the construction of 175 residential units with the associated highway and landscape infrastructure.
- 9.2 As with the outline application, vehicular site access is proposed off Yapton Lane in the east with a pedestrian link to Tye Lane in the west.
- 9.3 The proposed layout is shown on the combined tree retention, removal and protection plan at

APPENDIX 3.

10. ARBORICULTURAL IMPACT ASSESSMENT (AIA)

10.1 With reference to BS5837:2012 '*Trees in relation to design, demolition and construction*', this AIA evaluates the direct and indirect effects of the proposals on the site's arboricultural resource.

10.2 The AIA considers the effects of any tree loss required to implement the design as well as any reasonably foreseeable potentially damaging activities proposed in the vicinity of retained trees. With reference to BS5837:2012 and the nature of the proposals, such activities might include:

- Tree removals to facilitate the design
- Demolition of hard surfaces in proximity to retained trees
- Soil compaction in proximity to retained trees
- Direct impact damage to trees and roots associated with construction operations

Description of proposed arboricultural losses

10.3 Anticipated tree losses in relation to the proposals are very minimal, with just one low quality English Elm group (G23) requiring removal to facilitate the visibility splay for the site access off Yapton Lane, and one low quality hedgerow (H1) requiring partial removal to facilitate the pedestrian link to Tye Lane.

10.4 To facilitate the installation of foul water drainage connection to Tye Lane, a limited number of trees will require removal (from within G1) either side of the pipe/trench alignment. In addition, it will be necessary to undertake a small amount of tree removals to the north of the proposed pipe route to allow for the construction of a formal pedestrian/cycle link to Tye Lane. The trees in this area are of varying quality with most being small and/or low quality. The area over the proposed foul water drainage connection will be restocked but suitable clearance to the pedestrian/cycle link (circa 0.5-1m) will be maintained. In addition, a small section of H4 will require removal to allow the foul water connection to Avisford Park Road.

Significance of proposed arboricultural losses

10.5 The significance of the above tree removals in the context of the arboricultural resource of the whole site, is deemed to be very low. This is especially true when viewed in the context of the landscape proposals for the site.

10.6 It is considered that the proposals for the site will provide significant potential for considered tree planting to take place as part of detailed landscaping proposals.

Impacts on retained trees

Demolition and site clearance

- 10.7 No demolition or site clearance is required at the site.

Tree works & Facilitation pruning

- 10.8 Some minor facilitation pruning in the form of crown raising and possible reduction of lateral spread of G21 will be required over the proposed footpath.
- 10.9 T28 will require crown reduction/veteranisation in order to re-balance its canopy after the recent failure of a significant structural limb. The anticipated reduced canopy dimensions are indicated on the Combined Tree Retention/Removal and Protection Plan at **APPENDIX 3**. The photosheet at **APPENDIX 4** illustrates the extent of the pruning works proposed for T28 in order to retain the tree within the context of the development. A combination of pruning cuts made to BS:3998 and veteranisation techniques e.g. tear cuts/coronet cuts should be employed during the tree works. This should assist in promoting the longevity of tree along with its ecological value.

Service installation

- 10.10 The installation of the foul water drainage connections will require localised removal of trees (as detailed in 10.4). This will be limited to G11 and H4 and will consist of the removal of trees up to 1.5m either side of the pipe alignment only. In order to ensure the works is carried out appropriately and to limit the potential for impact on retained trees adjacent to the trenches the work is to be undertaken under an arboricultural watching brief.
- 10.11 Installation of the pipeline adjacent (but outside of) the RPA of T28 is to be carried out using open trench techniques, unless trenchless techniques for example Thrust Boring (or similar) are deemed appropriate by the ground work contractor. Whichever technique is to be used, the work will need to be undertaken in accordance with an arboricultural method statement to limit potential impacts to T28.

Ground level changes

- 10.12 The swale at the northern boundary of the site incurs upon the RPA's of trees within the neighbouring golf course by a nominal amount. The swale will be of a shallow depth, and given that the field is currently of agricultural (arable) use, and has been regularly ploughed, it is not suspected that any significant root proliferation will be present within the required depth of the swale. Since an earlier iteration of the proposed layout the swale within the RPA of T28 has been removed.

Foundations

- 10.13 No foundations are proposed within the RPA's of retained trees.

Hard surfacing

- 10.14 Hard surfacing, in the form of a pedestrian footpath is proposed to be installed within the east portions of the RPA's associated to T28 and in part within the RPA of T38. The alignment of the path in the RPA of T28 been moved further away from the tree since the last iteration of the proposed site layout. Both paths will be of a 'no dig' design that are prepared in response to the soil conditions present and acknowledges the previous land management of the area around T28 and T38. The proposed construction 'no dig' construction detail, including a tarmac wearing course is shown in Figure 1 below. Please note, this section is subject to final approved from the project engineer.

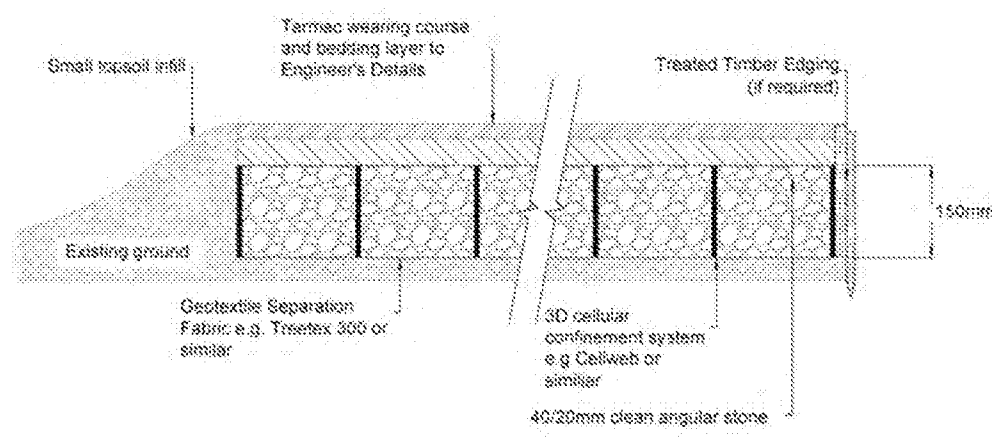


Figure 1: Proposed 'no dig' construction detail for paths within RPAs.

- 10.15 The construction of the footpaths must be undertaken in line with a detailed Arboricultural Method Statement (AMS) in order to control construction activity and eliminate potential impacts. Secondary protective barrier locations are shown on the plan at **APPENDIX 3** which must be used during the construction of the paths. The installation of the paths will be undertaken with an Arboricultural watching brief in place.
- 10.16 Hard surfacing is also proposed in close proximity to retained trees in order to establish the formal pedestrian/cycleway link to Tye Lane. This link will be formed of a tarmacadam wearing course and constructed to adoptable standards. In this location the trees are generally small, and sufficient trees will be removed (in part utilising the gap in G11 created to accommodate the foul water drainage connection to Tye Lane) in order to provide suitable clearance to either side of the footpath and avoid the need for alternative construction techniques.

Soft landscaping

- 10.17 No significant soft landscaping is provided within the RPA's of retained trees. Where areas of existing soil within RPA's are to be improved and turned to amenity grass (or similar) the works will need to be undertaken in accordance with the detailed Arboricultural Method Statement (AMS).

11. TREE PROTECTION MEASURES

- 11.1 A combined Tree Retention/Removal and Protection Plan is attached at **APPENDIX 3** of this report.
- 11.2 In accordance with BS5837:2012 the plan is superimposed onto the proposed site layout plan and based on the topographical survey.
- 11.3 Where practical the plan has been drawn to ensure the square metre area of the RPA's for individual trees has been maintained and also that the RPAs cover the likely rooting area of individual trees. Any hard surfacing and structures within the RPAs of trees to be retained are highlighted on the plan. In addition, where relevant, the plan shows indicative locations of protective barriers (forming Construction Exclusion Zones in relation to RPAs of retained trees).
- 11.4 The preparation of the TPP has considered the following factors where relevant:-
- Site construction access;
 - intensity and nature of construction activity;
 - contractors car parking;
 - availability of special construction techniques;
 - spatial requirements for:
 - - Temporary and permanent apparatus and service runs;
 - - Foundation excavations and construction works;
 - - Cranes, plant scaffolding and access during works;
 - - Site huts, toilets (including drainage) and other temporary structures;
 - - Storage (either temporary or long-term) of materials, spoil, fuel and mixing of concrete.
 - All changes in ground levels including location of retaining walls, steps and adequate allowance for foundations of such walls and backfillings;
- 11.5 The tree protection measures shown on the plan demonstrate the feasibility of the proposed development in relation to retained trees. However, they must be implemented with specific reference to a finalised tree protection plan and an arboricultural method statement that is relevant to the proposals.

12. HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT

12.1 BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following on from the approval of the feasibility of a detailed scheme by the relevant regulatory body.

12.2 Annex B and Table B.1 of BS5837:2012, an informative, advises that arboricultural method statement heads of terms are a sufficient level of information in order to deliver tree-related information into the planning system. An Arboricultural Method Statement will be prepared once approval for the detailed Reserved Matters layout has been given.

12.3 In relation to the above site, it is anticipated that arboricultural working methods are likely to be quite straightforward. A draft, 'heads of terms' is set out 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.

13. SUMMARY

- 13.1 The site is located to the north of Walberton village and approximately 2 miles west of Arundel town. The arboricultural resource for the site consists of predominantly off-site trees that are located along the perimeters of neighbouring properties such as Avisford Park golf course and Walberton and Binstead Church of England Primary school. There are also four significant trees within the site interior.
- 13.2 The majority of the arboricultural resource associated to the site is of moderate-quality with an estimated life expectancy of at least 20 years. A lesser amount was of low-quality with an estimated life expectancy of at least 10 years. Seven of the sixty-nine survey items were considered to be high-quality and therefore having an estimated life expectancy of at least 40 years.
- 13.3 The primary constraints for the site are largely the RPA's of retained trees and the shading associated with these trees. In addition, a number of protected trees are also present on the site.
- 13.4 T28 will require crown reduction/veteranisation in order to re-balance the canopy after the recent failure of a significant structural limb. A combination of pruning cuts made to BS:3998 and veteranisation techniques e.g. tear cuts/coronet cuts should be employed during the tree works. This should assist in promoting the longevity of tree along with its ecological value.
- 13.5 The tree losses in relation to the proposals are very minimal, with just one low quality group requiring removal to facilitate the visibility splay on Yapton Lane, and one low quality hedgerow requiring part removal to facilitate the formal pedestrian/cycle link in the location of the drainage connection to Tye Lane.
- 13.6 Impacts upon retained trees are to be limited to minor facilitation pruning to trees within G21. The crown management works proposed to T28 are significant and will have an impact on the tree but given the historic large branch tear out and the more recent significant limb loss this is deemed necessary for the appropriate long-term retention of the tree.
- 13.7 The proposed site layout and drainage layout have been amended to avoid potential construction impacts to T28. However, there still remains the need to construct a pedestrian footpath within the RPA of T28 and T38 (both alignments have been adjusted since earlier layout iterations to provide more clearance to the relevant trees). These paths must still be of 'no dig' design in line with the specification provided and installed in accordance with a detailed arboricultural method statement.
- 13.8 Overall, the proposals are acceptable from an arboricultural perspective so long as tree protective measures set out within this report are adhered to throughout the construction process.

APPENDIX 1

TREE SURVEY METHODOLOGY AND SCHEDULE

BS5837:2012 TREE SURVEY SCHEDULE

LAND EAST OF TYE LANE, WALBERTON

PROJECT NUMEBR: C.2636

SURVEYOR: IAN HOWELL

DATE: JULY 2018

INDIVIDUAL TREES

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²	TPO
T1	Hornbeam	9.0	1	#	320	3.50-3.50-2.00-3.50	2.0	1	E	SM	Historically cut back from the field to the south otherwise typical for species and age. Located north of the site boundary.	Good	Fair	40+	B2	3.8	46	Yes
T2	Sugar maple	5.0	1	#	160	1.50-2.00-1.50-1.50	2.0	2	E	Y	Typical for species and age. Located north of the site boundary.	Good	Good	20+	C2	2.0	12	Yes
T3	Rowan	4.5	1	#	150	2.00-2.00-2.00-2.00	2.0	2	E	Y	Typical for species and age. Located north of the site boundary.	Good	Good	20+	C2	1.8	10	Yes
T4	Red Oak	11.5	1	#	360	6.50-6.00-2.00-4.00	2.0	3	E	SM	Crown bias to the north with an elder adjacent to the base of the tree. Located north of the site boundary.	Good	Fair	40+	B1	4.3	59	Yes
T5	Poplar	16.0	1	#	450	6.50-8.00-5.50-6.00	6.0	4	W	M	Cankering throughout canopy and on main stem. Located north of the site boundary.	Fair	Fair	20+	C2	5.4	92	Yes
T6	Poplar	16.0	1	#	350	8.00-5.50-4.50-4.50	7.0	5.5	S	EM	Ivy on main stem, small diameter deadwood throughout canopy, cankering throughout canopy. Located north of the site boundary.	Fair	Fair	20+	C2	4.2	55	Yes
T7	Red oak	13.0	1	#	380	8.00-5.00-4.00-6.50	2.0	2	S	EM	Crown bias to the north, otherwise typical for species and age. Located north of the site boundary.	Good	Good	40+	B1	4.5	65	No
T8	Cypress	4.5	1	#	100	2.00-2.00-1.00-2.00	0.2	0.2	N	SM	Historically cut back from the field to the south. Located north of the site boundary.	Good	Good	20+	C2	1.3	5	No
T9	Lime	115.0	1	#	390	6.00-5.00-3.00-5.00	1.5	1	E	EM	Historically cut back from the field to the south. Located north of the site boundary.	Good	Good	40+	B2	4.7	69	No
T10	Cherry plum (purple leaf)	5.5	1	#	200	4.00-4.00-4.00-4.00	2.0	1	W	SM	North of the site boundary by 4.5m. Typical for species and age. Located north of the site boundary.	Good	Good	20+	B2	2.4	18	Yes
T11	Cherry	6.0	1	#	200	4.50-4.50-4.00-4.50	2.0	1.5	S	SM	Typical for species and age. Located north of the site boundary by 4m.	Good	Good	20+	B2	2.4	18	Yes
T12	Sweet chestnut	6.5	1	#	350	6.00-5.50-3.00-5.50	1.8	2	N	EM	Tree has been historically cut back from the field to the south. Otherwise typical for species and age. Located north of the site boundary.	Good	Good	40+	B1	4.2	55	Yes

BS5837:2012 TREE SURVEY SCHEDULE

LAND EAST OF TYE LANE, WALBERTON

PROJECT NUMEBR: C.2636

SURVEYOR: IAN HOWELL

DATE: JULY 2018

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²	TPO
T13	Cherry	7.5	1	#	220	5.00-5.00-2.00-5.00	1.5	2	N	EM	Tree has been historically cut back from the field to the south. Otherwise typical for species and age. Located north of the site boundary.	Good	Good	20+	B2	2.6	22	Yes
T14	Pin oak	7.5	1	#	180	5.00-5.00-4.00-5.00	2.0	2	W	SM	Typical for species and age. Located north of the site boundary.	Good	Good	40+	B1	2.2	15	Yes
T15	Whitebeam	6.0	1	#	190	4.50-4.00-1.50-4.00	1.0	0.8	W	SM	Historically cut back from the field to the south. Otherwise typical for species and age. Located north of the site boundary.	Good	Good	40+	B2	2.3	16	Yes
T16	Norway maple	7.5	1	#	200	4.50-4.00-1.50-4.00	1.0	2.5	N	SM	Historically cut back from the field to the south. Otherwise typical for species and age. Located north of the site boundary.	Good	Good	40+	B2	2.4	18	Yes
T17	Larch	9.0	1	#	170	3.00-3.00-3.00-3.00	2.5	2.5	N	SM	Typical for species and age. Located north of the site boundary.	Good	Good	40+	B2	2.0	13	Yes
T18	Poplar	19.0	1	#	400	8.00-6.50-6.50-7.00	6.5	4.5	E	EM	Some cankering of secondary and tertiary branches throughout upper canopy. Located north of the site boundary.	Good	Fair	20+	C2	4.8	72	Yes
T19	English oak	12.0	1	#	650	8.00-7.00-8.00-8.00	6.0	3	S	M	Broadly spreading form. Historically cut back from the field to the east. Located east of the site boundary.	Good	Good	40+	B1	7.8	191	Yes
T20	Field maple	14.0	1	#	500	7.00-6.00-6.00-6.50	6.0	1	W	M	Historically cut back from the field to the east. Otherwise typical for species and age.	Good	Good	40+	B1	6.0	113	Yes
T21	Field maple	11.0	1	#	400	6.00-6.50-5.00-4.00	4.5	2	S	M	Historically cut back from the field to the east. Located amongst linear group of trees.	Fair	Good	20+	B2	4.8	72	Yes
T22	Sycamore	15.0	2	#	350	6.00-6.00-6.50-6.50	5.0	2.5	S	EM	Possibly 2 trees forming a cohesive canopy. No access to stem base. Historically cut back from the field to the east.	Good	Good	40+	B2	4.2	55	Yes
T23	Holm oak	18.0	2	#	880	9.00-8.50-9.00-9.00	0.5	4	W	M	Significant tree with no visible defects.	Good	Good	40+	A1	10.6	350	Yes
T24	Monterey Pine	22.0	1	#	750	6.00-7.00-6.00-6.50	8.0	7	S	M	Significant tree with a large stem diameter and no visible defects.	Good	Good	40+	A2	9.0	255	Yes
T25	Lime	18.0	1	#	650	8.50-8.00-8.00-8.50	2.0	Not known	Not known	M	Significant tree with no visible defects.	Good	Good	40+	A1	7.8	191	Yes
T26	English oak	12.0	1	#	190	5.00-4.00-0.50-4.00	5.0	6	N	SM	Suppressed by neighbouring trees.	Good	Fair	40+	C2	2.3	16	Yes

BS5837:2012 TREE SURVEY SCHEDULE

LAND EAST OF TYE LANE, WALBERTON

PROJECT NUMEBR: C.2636

SURVEYOR: IAN HOWELL

DATE: JULY 2018

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²	TPO
T27	Field maple	11.0	1	#	190	5.00-4.00-0.50-4.00	5.0	5	N	SM	Suppressed by neighbouring trees.	Good	Fair	20+	C2	2.3	16	Yes
T28	English oak	18.0	1	-	1170	7.50-11.30-12.00-6.00	5.5	4	S	M	Significant tree, large diameter branch tear out at 4m W. Good formation of new growth around the historic tear out indicating the tree has good vigour.	Good	Good	40+	A2	14.0	619	No
T29	Copper beech	15.0	1	#	400	6.00-4.00-6.00-4.00	2.0	2	N	EM	Suppressed by neighbouring trees. Otherwise typical for species and age. Located south of the site boundary.	Good	Good	40+	B2	4.8	72	No
T30	Grey poplar	21.0	1	#	550	11.00-7.00-10.00-8.00	5.0	6	S	M	Tree overhanging the site by 10m. Large diameter partially failed branch hanging in canopy at 10m over the site perimeter. Located south of the site boundary.	Fair	Fair	20+	C2	6.6	137	No
T31	Lombardy poplar	21.0	1	#	320	3.00-3.00-3.00-3.00	3.0	0.5	S	EM	Typical for species and age. Located south of the site boundary.	Good	Fair	20+	C2	3.8	46	No
T32	Norway maple	15.0	1	#	400	7.00-7.00-7.00-7.00	6.0	2	E	M	Typical for species and age. Located south of the site boundary.	Good	Good	40+	B2	4.8	72	No
T33	English oak	9.0	1	#	200	4.00-4.00-4.00-4.00	3.0	Not known	Not known	SM	Typical for species and age. Located south of the site boundary.	Good	Good	40+	B1	2.4	18	Yes
T34	Grey Poplar	9.0	1	#	300	5.00-3.00-5.00-5.00	4.0	4	N	EM	Tree has lost its apically dominant stem. Ivy throughout canopy. Located east of the site boundary.	Fair	Poor	10+	C1	3.6	41	Yes
T35	Grey poplar	15.0	1	#	350	7.00-4.50-5.00-7.00	6.0	6.5	N	M	Tree in poor condition with numerous branch tear outs. Large diameter partially failed branch over hedgerow. Located east of the site boundary.	Fair	Poor	10+	C2	4.2	55	Yes
T36	English oak	7.0	1	#	250	6.00-5.00-3.50-4.00	4.0	Not known	Not known	SM	Establishing tree suppressed by neighbouring poplar. Located east of the site boundary.	Good	Good	40+	B2	3.0	28	Yes
T37	Lombardy poplar	20.0	1	#	450	4.00-4.00-4.00-4.00	4.0	2	W	M	Ivy throughout canopy. Dead branch suspenDutch Elm Disease at 4m over the hedgerow. Located east of the site boundary.	Good	Good	20+	B2	5.4	92	Yes
T38	Horse chestnut	18.0	1	-	1070	8.00-7.50-8.00-7.50	2.0	2	S	M	Significant tree with no visible defects. Elder group has established around the base of the tree.	Good	Good		A1	12.8	518	Yes

BS5837:2012 TREE SURVEY SCHEDULE

LAND EAST OF TYE LANE, WALBERTON

PROJECT NUMEBR: C.2636

SURVEYOR: IAN HOWELL

DATE: JULY 2018

Ref	Species	Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. Canopy Height (m)	1st branch ht (m)	1st branch dir.	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²	TPO
T39	English oak	16.5	1	-	1400	9.50-8.00-11.00-10.00	5.0	3	S	M	Significant tree with no visible defects other than medium diameter historic branch tear outs in the N canopy. Crown is slightly more sparse in foliage in comparison to the neighbouring oak.	Good	Good	40+	A2	1.7	9	Yes
T40	English oak	18.0	1	-	1280	13.00-11.00-11.50-9.50	5.0	4	S	M	Significant tree with no visible defects, forming a cohesive canopy with the neighbouring oak.	Good	Good	40+	A2	15.0	707	Yes
T41	Weeping willow	10.0	1	#	200	5.50-5.50-4.00-5.50	1.0	3	S	SM	Within neighbouring property. Overhanging the site by up to 5m. Difficult to determine the site boundary due to ruderal vegetation.	Good	Fair	20+	C2	2.4	18	No
T42	Silver birch	15.0	1	#	350	7.00-6.00-5.50-6.50	5.0	4	W	M	Located within neighbouring property. Although unable to determine the site boundary due to dense ruderal vegetation.	Good	Good	20+	B1	4.2	55	No

GROUPS OF TREES

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO
G1	Cypress, oak, maple	8-9	5	#	200	3	1.0	SM	Linear group of Screening trees, all have been historically unsympathetically pruned. Located north of the site boundary.	Good	Fair	20+	C2	2.4	Yes
G2	Sycamore, ash	10-11	4	#	380	5	2.0	EM	All trees of uniform size and age, partially forming a cohesive canopy. Located north of the site boundary.	Good	Good	40+	B2	4.5	Yes
G3	Hawthorn, hazel, elder	4.5-6	5	-	150	2.5	0.5	SM	All trees form a low level screen and have historically been cut back from the field to the south. Located north of the site boundary.	Good	Good	20+	B2	1.8	No
G4	Sycamore	11-12	2	#	360	4.5	1.5	EM	Trees of uniform age and form forming a cohesive canopy. Located north of the site boundary.	Good	Good	40+	B2	4.3	No
G5	Sycamore	12-13	2	#	380			EM	Trees of uniform age and form. Located north of the site boundary.	Good	Good	40+	B2	4.5	No
G6	Hawthorn, elder	3-5	6	#	150	2	1.0	SM	Low level screening trees. Historically cut back from the field to the south. Located north of the site boundary.	Fair	Fair	20+	C2	1.8	Yes
G7	Lombardy poplar	15-16	3	#	400	3	1.5	SM	Trees evenly spaced at approx 12m apart. Uniform age and form.	Good	Good	40+	B2	4.8	Yes

BS5837:2012 TREE SURVEY SCHEDULE

LAND EAST OF TYE LANE, WALBERTON

PROJECT NUMEBR: C.2636

SURVEYOR: IAN HOWELL

DATE: JULY 2018

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO
G8	Cypress	5-6	9	#	150	2	0.5	SM	Low level screening trees. Historically cut back from the field to the south. Located north of the site boundary.	Good	Good	20+	C2	1.8	Yes
G9	White willow	19-20	3	#	600	8.5	5.0	M	Ivy throughout lower canopies. Two of the three appear to have low unions. Located north of the site boundary.	Good	Fair	40+	B2	7.2	Yes
G10	Poplar	18-19	2	#	350	5	6.0	EM	Ivy on stems to 8m, chlorotic and sparse foliage. Located north of the site boundary.	Fair	Fair	20+	C2	4.2	Yes
G11	Holly, laurel, holm oak, elder, sycamore	5-15	50+	#	300	4	1.0	SM	Densely planted linear belt of trees forming a shelter belt with a cohesive canopy. Mixed cat. B and cat. C trees. Some trees are showing signs of stress/decline.	Good	Fair	20+	B2	3.6	Yes
G12	Sycamore, ash, hawthorn	8.5-15	5	#	350	5.5	6.0	M	Group of trees located within neighbouring property which form a cohesive canopy. Located south of the site boundary.	Good	Good	40+	B2	4.2	Yes
G13	Poplar, goat willow, holly	6-10	4	#	450	6	5.0	M	Group forming a cohesive canopy, historically cut back from the field to the north.	Good	Fair	20+	C2	5.4	Yes
G14	English elm	10-12	2	#	250	5.5	2.0	SM	Forming an understorey to the mature pine. Of an age likely to succumb to Dutch Elm Disease. Located south of the site boundary.	Good	Fair	10+	C2	3.0	Yes
G15	Field maple	11-13	18-20	#	280	5	4.5	EM	Located 1m within the school boundary. Trees of uniform age and species forming a cohesive canopy.	Good	Good	40+	B2	3.3	Yes
G16	Lombardy poplar	16-18	12	#	300	4	5.0	EM	Located 1m within the school boundary. Group of uniform species and age forming a cohesive canopy.	Good	Good	40+	B2	3.6	Yes
G17	Lime, oak,	12-16	21	#	350	6.5	5.5	EM	All trees located 1m within the school boundary. Of uniform age and form, forming a cohesive canopy.	Good	Good	40+	B2	4.2	Yes
G18	Hawthorn, elm	7-8	4	#	180	3	4.0	SM	Low level screening trees. Located south of the site boundary.	Good	Fair	20+	C2	2.2	No
G19	Grey Poplar, hybrid poplar, lombardy poplar	20-22	3	#	680	9	6.0	M	Mixed species poplar group all with branch union defects, giving them the potential to shed branches onto the site. Located south of the site boundary.	Good	Poor	20+	C2	8.2	No
G20	Lombardi poplar	15-16	2	#	320	3	2.0	EM	Trees of uniform age and form, ivy throughout canopies.	Good	Fair	20+	C2	3.8	Yes
G21	Cherry	9-10	2	#	250	4	0.5	EM	Both trees have low main unions and form a cohesive canopy. Borderline cat C/B.	Good	Fair	20+	C2	3.0	No
G22	Norway maple, sycamore, poplar, ash, rowan.	6-17	14	#	400	6	3.0	EM	Linear group forming the southern half of an avenue parallel to the golf club entrance road. Located north of the site boundary.	Good	Good	40+	B2	4.8	No

BS5837:2012 TREE SURVEY SCHEDULE

LAND EAST OF TYE LANE, WALBERTON

PROJECT NUMEBR: C.2636

SURVEYOR: IAN HOWELL

DATE: JULY 2018

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO
G23	English elm, hawthorn	6-8	25+	#	100	3.5	1.5	Y	Predominantly young elm with the occasional hawthorn interspersed throughout. All elm of an age likely to succumb to Dutch Elm Disease.	Fair	Fair	<10	C2	1.3	No

HEDGES

Ref	Species	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H1	English elm, hawthorn	7.0	5.0	100	0.5	SM	Outgrown hedgerow, predominantly elm of an age likely to succumb to Dutch Elm Disease. Falls within TPO boundary.	Fair	Good	10+	C2	1.3
H2	Holly	6.5	3.0	120	0.2	EM	Outgrown hedgerow, trimmed up to 4.5m. Falls within TPO boundary.	Good	Fair	40+	B2	1.5
H3	Hawthorn	2.5	1.5	50	0.5	SM	Regularly maintained boundary hedge located 1m outside (W) of site perimeter. Falls within TPO boundary.	Good	Good	40+	B2	0.6
H4	Hawthorn, ash, elder	4.5	3.0	90	0.5	SM	Outgrown hedgerow with significant gaps between trees. Falls within TPO boundary.	Good	Fair	20+	C2	1.1

Notes:

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

METHODOLOGY

TREE SURVEY:

- The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (eg avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals
- The full tree survey findings are recorded in the following tree survey schedule.
- Within the tree survey schedule, each surveyed **TREE (T)**, **GROUP (G)**, **HEDGEROW (H)**, **WOODLAND (W)** or **SHRUB MASS** on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan.
- **TREE SPECIES** are listed by common name.

The **DIMENSIONS** taken are:

- **STEM-No.** Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- **DIAMETER** (in millimetres), obtained from the girth measured at approx.1.5m. For trees with 2 to 5 sub-stems, a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- **HEIGHT**, are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The **CROWN SPREAD** are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- **CROWN CLEARANCES** are expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- **ESTIMATES.** Where any measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

- | | |
|----|---|
| Y | Young: normally stake dependent, establishing trees. Should be growing fast, usually primarily increasing in height more than spread, but as yet making limited impact upon the landscape. |
| SM | Semi-mature: Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature). |
| EM | Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. |
| M | Mature: Well-established trees, still growing with some vigour, but tending to fill out and increase spread. Bark may be beginning to crack & fissure. In the middle half of their safe, useful life expectancies. |
| LM | Late -Mature: In full maturity but possibly beyond mature and in a state of natural decline). Still retaining some vigour but any growth is slowing. |

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY): Essentially a snapshot of the general health of the tree based upon its general appearance, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

Good	no significant health issues.
Fair	indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth)
Poor	Significant stress or disease noted; larger areas of dieback than above
Dead	(or Moribund)

STRUCTURAL CONDITION: Defects affecting the structural stability of the tree, including decay, significant dead wood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. etc. Classified as:

Good	No obvious structural defects: basically sound
Fair	Minor, potential or incipient defects
Poor	Significant defect(s) likely to lead to actual failure in the medium to long-term
Dead (or Moribund)	

REMAINING USEFUL LIFE EXPECTANCY: An estimate of the length of time in years that a tree might be expected to continue to make a useful contribution to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance)

- less than 10 years
- 10+ years
- 20+ years
- 40+ years

QUALITY CATEGORY: Trees are classed as category **U, A, B or C**, based on criteria given in BS5837:2012; summary definitions as follow (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value:

(1) **arboricultural** qualities (2) **landscape** qualities and (3) **cultural, historic or ecological/conservation** qualities. Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.

- U UNSUITABLE:** Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site usage arise as a result of development.
- Dead or moribund trees; those at risk of collapse or in terminal decline; trees that will be left unstable by other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially affect other trees; low quality trees that are suppressing better specimens
- (Category U trees may have conservation values that it might be desirable to preserve. It may also include trees that should be removed irrespective of any development proposals.)
- A HIGH QUALITY:** Trees or groups whose retention should be given a particularly high priority within the design process. Normally with an expected useful life expectancy of at least 40 years.
1. *Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.)*
 2. *Trees, groups or woodlands of particular visual importance as landscape features.*
 3. *Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)*
- B MODERATE QUALITY:** Trees or groups of some importance with a likely useful life expectancy in excess of 20 years. Their retention would be highly desirable; selective removal of certain individuals may be acceptable, but only after full consideration of all alternative courses of action.
1. *Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)*
 2. *Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees' overall, collective value).*
 3. *Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.*
- C MINOR VALUE:** Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Also small trees below 15cm diam.
- Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.
1. *Unremarkable trees of very limited merit or of significantly impaired condition.*
 2. *Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.*
- Trees with extremely limited conservation or other cultural benefit.*

APPENDIX 2

TREE SURVEY AND CONSTRAINTS PLAN

Tree No	Species	RPA Radius	RPA Area M	Category
T1	Hornbeam	3.8	46	B2
T2	Sugar maple	2	12	C2
T3	Rowan	1.8	10	C2
T4	Red Oak	4.3	29	B1
T5	Poplar	5.4	92	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	191	B1
T20	Field maple	6	113	B1
T21	Field maple	4.8	72	B2
T22	Sycamore	4.2	55	B2
T23	Helm oak	10.8	250	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	92	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	92	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	6.2	129	C2
G20	Lombard 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

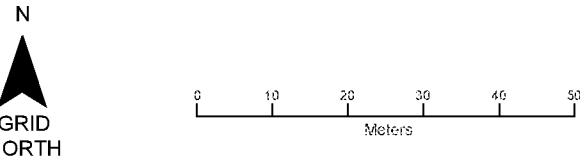


KEY BS 5837 - 2012 Categories

- 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 / Offsite Tree / OOS (Out of scope)
- Tree Preservation Order (TPO)

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.

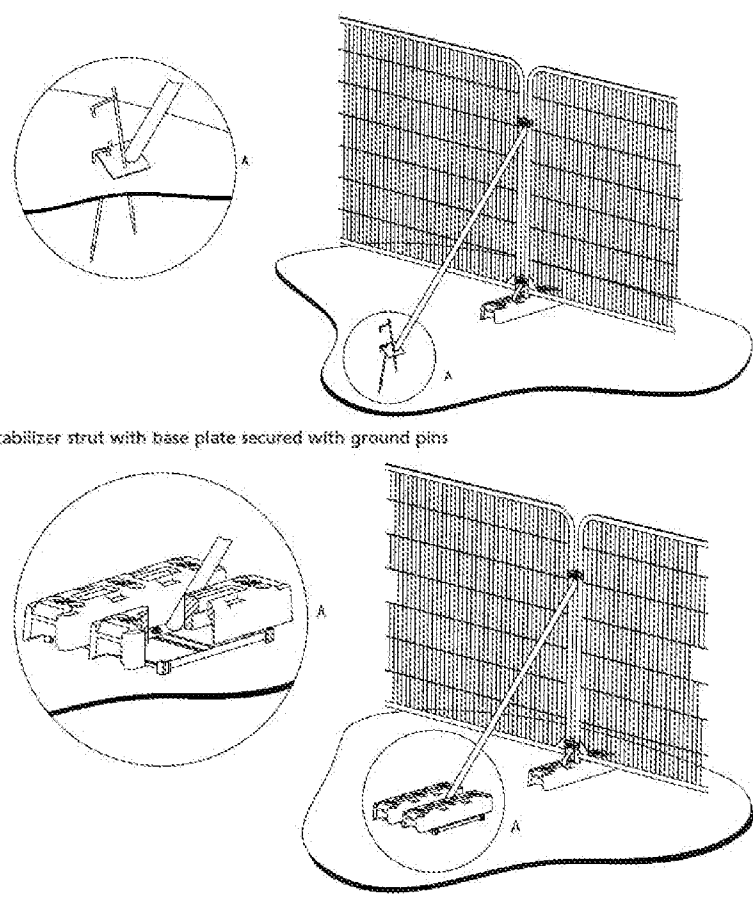


PROJECT TITLE			
Land East of Tye Lane, Walberton (C.2686)			
DRAWING TITLE			
Tree Survey & Constraints with Shading			
SCALE		DRAWING NUMBER	
1:1250 @ A1		BHA_401_01	
DRAWN BY	APPROVED BY	REVISION	SHEET
DB	RH	-	1/2
DATE			
17/07/2018			
CLIENT			
Linden Homes South			
COORDINATE SYSTEM / DATUM			
British National Grid / Newlyn Datum (AOD)			
Crown copyright. All rights reserved. 2018 Emapsat Licence number 0100051284 Ordnance Survey Copyright Licence number 100054267.			
CSA environmental			
Suite 1, Deer Park Business Centre, Eckington, Penshore, Works. W10 3DN 01386 751100 - csaenironmental.co.uk			
Barton Hyett Associates Arboricultural Consultants			

APPENDIX 3

COMBINED TREE RETENTION/REMOVAL & PROTECTION PLAN

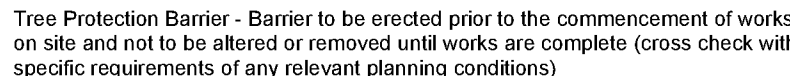
BS:5837:2012 Figure 3 Examples of above-ground stabilizing systems



For more details refer to BS:5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.20

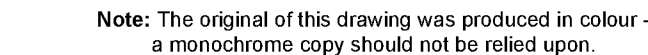
b) Stabilizer strut mounted on block tray

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



-  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



PROJECT TITLE

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

AWING TITLE	Combined Tree Retention/Removal & Protection Plan
-------------	---

SALE		DRAWING NUMBER		
1:1250	@ A1	BHA_401_02		
DRAWN BY	APPROVED BY	REVISION	SHEET	DATE
SD	RH	D	-	09/02/2019

Linden Homes South

COORDINATE SYSTEM / DATUM
British National

Crown copyright. All rights reserved.
2018 Emapsite Licence number 0100081284.
Ordnance Survey Copyright Licence number 100054267.

CSA
environmental

Suite 1, Deer Park Business Centre, Eckington
Pershore, Worcs WR10 3DN
t 01386 751100 w csaenvironmental.co.uk

 Barton Hyett Associates
Arboricultural Consultants

APPENDIX 4

PHOTO SHEET TO ILLUSTRATE THE EXTENT OF THE PROPOSED TREE WORKS (T28)



Image 1: View of T28 from the east showing the failed portion of the tree on the ground.

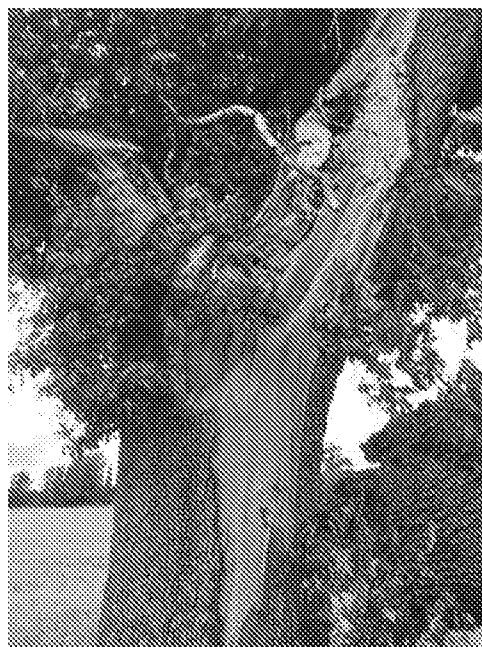


Image 2: View of southern side of the trunk of T28 showing the large branch tear out wound



Image 3: View of T28 from the west showing the significant disfiguration to the canopy shape and the extent of the tree works (canopy reduction) required to retain the tree in a safe and appropriate form,



Image 4: Close up of the failed stem on the gourd with mobile phone shown for scale.