

PRELIMINARY ARBORICULTURAL IMPACT ASSESSMENT AT NURSERY FIELDS, CHALCRAFT LANE, BOGNOR REGIS



Prepared for Landform Estates

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1. Terms of Reference

- 1.1 The aim of this assessment is to survey trees that may be affected by a development at Nursery Fields, Chalcraft Lane, Bognor Regis. The aim of this preliminary assessment is to advise the design team of the constraints imposed by the trees on the site and to provide recommendations for the protection of retained trees during construction work based on BS 5837:2012 "Trees in relation to design, demolition and construction-Recommendations".
- 1.2 A previous Preliminary AIA, completed on 21 May 2020, focuses on the Chalcraft Nurseries site; the trees in this site are included in Appendix 1 and 3 of this Preliminary AIA, however, this one focuses solely on the tree constraints relating to the agricultural fields to the north-west of Chalcraft Nurseries.
- 1.3 The client has provided a topographical survey showing the accurate position of most trees and features on site. Where accurate positions were not shown, the tree positions have been plotted on the plan based on site measurements and therefore, these positions should be regarded as approximate. This plan has been used to form the basis of the Tree Constraints Plan (Appendix 3 - TCP).

2. Site Description

- 2.1 The site comprises three agricultural fields located to the north-west of Chalcraft Lane. The site partially encircles Chalcraft Nurseries. The site is bounded by Chalcraft Nurseries, residential dwellings, Chalcraft Lane Cemetery, playing fields and agricultural fields.
- 2.2 There is incomplete tree cover on all of the exterior boundaries of the fields, which is shown in the figures below. A dense tree belt forms the boundary between the site and the cemetery to the east (Fig 4).



Fig 1: Northern boundary of Field 1.



Fig 2: Northernmost point of Field 1 and the footpath separating Field 1 and Field 2.



Fig 3: South-western boundary of Field 1.



Fig 4: Southern section of the south-eastern boundary of Field 1.



Fig 5: Boundary separating Field 2 and 3.



Fig 6: Field 1 viewed from the southern corner.



Fig 7: Southern boundary of Field 3.



Fig 8: Field 3 viewed from the north-eastern corner.

- 2.3 The boundary between the site and the playing fields to the north, comprises several large trees (Fig 9 and 10).



Fig 9: Northern boundary of Field 3.



Fig 10: Tree group

3. Tree Survey Details

- 3.1 Appendix 1, the Tree Survey Schedule gives the survey findings in tabular form. The schedule contains all the information specified in section 4.4.2.5 of the British Standard. Appendix 2 gives a full explanation of the survey headings.
- 3.2 The trees in Chalcraft Nurseries were surveyed on 15 May 2020 and the those around the nursery on 29 May 2020; they were not climbed but surveyed from ground level.
- 3.3 The details recorded during the tree survey have been collected independently of any development proposals, and the categorisation of the quality and amenity value of the trees is made purely on arboricultural grounds.
- 3.4 No assessment of the soil has taken place as part of this report. The British Standard states that a soil assessment should be carried out by a competent person to establish the structure, clay content and potential for volume change of the soil. A survey of this nature is considered outside the scope of this Arboricultural Assessment. For guidance on soil structure in relation to construction advice should be sought from a Structural Engineer. Guidance on foundation depth in relation to building and trees can be found in NHBC Chapter 4.2.

4. Assessment of Tree Constraints

- 4.1 To facilitate the proper assessment of tree constraints a Tree Constraints Plan (TCP) has been prepared and forms Appendix 3. The plan has been produced as a basis for the assessment of the constraints imposed by existing trees on the proposed design.
- 4.2 Appendix 3 shows the position of trees marked by a coloured dot matching the retention category status and a reference number (as listed in Appendix 1). Heights (Ht) are marked in metres for each tree, together with the predicted ultimate heights (U/Hgt).
- 4.3 The plan deals with constraints that the trees may place on the development in two areas as follows:



Below ground Constraints

- 4.4 The Root Protection Areas (RPA) for the trees are shown as a coloured circle to match the retention category colour. The RPA will be used to help inform the closest positions of any future buildings. The RPA will be protected during any development work with temporary barriers as prescribed by the British Standard.
- 4.5 The British Standard states that likely root morphology should be considered when drawing the RPAs of trees. The root morphology is likely to be affected by features and structures currently in place on the site; in this instance, the numerous ditches throughout the site are likely to form root barriers, and therefore the RPAs of the adjacent trees have been adjusted accordingly.

Above Ground Constraints

- 4.6 The branch spreads were measured at the four cardinal compass points, with a shape drawn around these points to indicate approximate branch spread, represented by green broken lines on the plan. The ultimate crown spread has been shown with an orange dashed line. This is a predicted distance based on personal experience of how far it is likely the crown will grow.
- 4.7 A shade pattern has been shown for each tree forming an arc from north west to due east. This gives an indication of the patterns of shadows created by the trees around mid-day in the summer. This is as recommended in BS5837:2012 (Section 5.2.2) but actual shade patterns throughout the year will vary widely. If shading is likely to be a serious constraint a more detailed analysis of shade pattern using proprietary software may be deemed necessary.

5. Arboricultural Impact Assessment

- 5.1 A total of thirty individual trees and forty-five tree groups were included in this report. Groups contain trees forming continuous features or clusters with similar characteristics.
- 5.2 The trees are largely confined to the periphery of the site. In some cases, they are under separate ownership.
- 5.3 Twenty-six individual trees (T2-6, T8-17, T19-22, T24-30) and thirty-one tree groups (G3, G5, G7-12, G15, G17-21, G23, G25, G28, G30-33, G36-45) have been classed as Category B. These trees are generally in good condition and confer landscape values. They are suitable for retention where possible in the context of a development.
- 5.4 Four individual trees (T1, T7, T18, T23) and fourteen tree groups (G1, G2, G4, G6, G13, G14, G16, G22, G24, G26, G27, G29, G34, G35) have been classified as Category C. These trees are small or in poorer condition and do not play such a significant role in the local landscape. C category trees are usually of such a quality that the Local Authority may consider it acceptable for them to be removed for development purposes, if required.
- 5.5 Any trees that are retained will be provided with their proper protection according to BS5837:2012 regardless of the category in which they have been placed.



5.6 The constraints posed by the trees have been shown on *Appendix 3 – TCP*. Appropriate protection must be provided to each retained tree, regardless of its category, in order to prevent damage during any construction related activity.

5.7 No detailed design plans have been made available. The constraints affecting individual aspects of the site are discussed below:

5.8 The Proposed Development Area

5.8.1 Most of the trees included within this report are situated around the periphery of the site with the exception of T21 and G25-29, which are located on the interior field boundaries. Therefore, the central areas will be most suitable for future development. This can be seen on the Tree Constraints Plan (TCP, Appendix 3).

5.8.2 Where trees are within the boundaries of neighbouring properties, unless by agreement with the owner of the trees, they must be retained and protected throughout the development.

5.8.3 The default position should be that any new buildings will remain outside the RPA of retained trees. The principal recommendation of this report is to provide ample space for the future growth of retained trees. The long-term liveability and usability of any buildings must be considered so that no post-development tree conflicts arise.

5.8.4 If it becomes necessary to carry out construction within the RPA of any retained trees, the British Standard does allow for the use of special foundations, such as piles or mini-piles, together with suspended or rafted floors that are placed at or above ground level. However, in the context of a pre-development survey attempts must be made to avoid positioning buildings within the RPA or crown spreads of trees, especially on a site that is largely free of tree constraints. Any specialist foundations required must be designed by a suitably experienced engineer and approved by the consulting arboriculturist prior to their use. These techniques must only be used if placement of the building within the RPA is unavoidable.

5.8.5 Any development should take place outside the current or predicted ultimate crown spreads as shown on the TCP to avoid damage to the trees or the new buildings during construction, and to avoid conflict between the future users of the building and the trees.

5.8.6 There are some tall trees throughout the site, notably G23 and G28, that will cast shade into the site. If a building is placed within the shade pattern, this will need to be mitigated by adequate fenestration, light gathering features or placing habitable rooms away from the shaded areas. Whilst it is desirable to have some shelter from the sun within gardens, a total lack of sun is a common source of complaint from residents of houses adjacent to trees and can lead to pressure to remove trees.

5.8.7 Proximity of buildings to trees needs to be considered. A number of the trees included in the survey are mature examples and therefore, it is recommended that they are given sufficient room to prevent any pressure being placed on them to be removed once the development is completed.



5.9 Site Access and Paths, Hard Surfaces and Driveways

- 5.9.1 The default position is that any new access points will avoid the RPA of retained trees. As shown in Appendix 3C of the previous Preliminary AIA, the proposed access point is located in the westernmost corner of Chalcroft Nurseries.
- 5.9.2 If a new road is to be put in place within RPA of retained trees where there is no existing surface, it must be formed using a No-Dig method, with the road surface placed above ground level on a cellular confinement system such as Geocell, Cellweb or similar that will spread the weight to prevent compaction. Such a system must be designed by a suitably experienced engineer and in conjunction with the Consulting Arboriculturalist to ensure that there is no damage to the tree roots. This No Dig surface must not be within 500mm of the stem of a retained tree and must have a permeable top surface.
- 5.9.3 No more than 20% of the RPA of retained trees can be covered by a hard surface.

5.10 Services and Soakaway

- 5.10.1 Service runs should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including microtunnelling, surface launched directional drilling, Pipe ramming and Impact Moleing/thrust boring. It is important common ducts should be used where it is not possible to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2). This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging.
- 5.10.2 Soakaways must not be excavated within the RPA of retained trees.
- 5.10.3 It will be necessary to prepare detailed plans for any services that run through the RPA of retained trees. This should be produced in conjunction with an arboriculturist and include allowance for the space needed for access for the installations, and the levels across the proposed area.
- 5.10.4 Any above-ground apparatus including CCTV cameras and lighting should also be positioned to avoid the need for any regular or detrimental pruning to the trees. Minor facilitative pruning is acceptable. However, positions that require repetitive and significant tree work must be avoided.

5.11 Tree Protection Measures

- 5.11.1 The specification for temporary protective barriers and any other tree protection measures will be outlined in the Arboricultural Method Statement which will be produced in the context of a full Arboricultural Impact Assessment; these specifications will be required once detailed design proposals become available. No construction related work of any kind will take place until the appropriate tree protection methods are installed.



- 5.11.2 It may also be necessary to provide access for construction traffic on currently unprotected ground within the RPA of retained trees. If this is the case, temporary ground protection must be put in place. This temporary ground protection will be specified according to BS5837:2012 and further details will be included within the Arboricultural Method Statement.

6. Comments on Illustrative Masterplan

- 6.1 An illustrative masterplan has been provided (Appendix 4). With the exception of the tree losses required to facilitate the construction of the road leading from Chalcraft Lane to Nursery Fields, the illustrative masterplan appears to have been designed in a sensitive way with regards to the existing tree cover and there are considerable opportunities to mitigate the tree losses whilst increasing amenity value and biodiversity.
- 6.2 The trees on the field boundaries have been given ample room for future, conflict free growth. This is especially true where landscaped areas have been positioned on the northern, southern and western boundaries. Where roads and paths cross field boundaries, there are gaps in the tree cover, which can be utilised to minimise tree losses.

7. Tree Management

- 7.1 Preliminary tree work has been specified in column 12 of Appendix 1 for arboricultural and health and safety reasons. The work is not urgent but should be carried out within 6 months from the date of this report, or prior to the commencement of works, whichever is soonest.
- 7.2 This schedule does not refer to, and will be superseded by, any requirements for tree felling for development purposes that may be required.
- 7.3 Please note that the inspection of trees on site was of a preliminary nature, gathering, as set out in the British Standard, only information needed to assess tree constraints. While any obvious tree defects that may constitute a risk have been recorded in the survey and appropriate remedial work specified this assessment does not constitute a full tree health and safety survey. In particular inaccessible trees, trees with heavy Ivy cover and trees within groups have not been inspected fully and dimensions estimated. However, any comments on the trees relating to health and safety remain valid for 12 months from the date of this report after which the trees will require re-inspection.
- 7.4 There is potential to improve and re-generate old hedgerows around the site particularly along the north-western boundary and the boundary between Field 2 and 3. This can be done by coppicing, laying and enrichment planting.
- 7.5 There is potential to improve the tree cover through enrichment planting on the field boundaries.
- 7.6 If trees need to be removed for development purposes provision should be made for replacement planting normally on a one-for-one basis.



8. Further Arboricultural Input into the Design Process, Construction and Aftercare

- 8.1 This assessment will need to be revised to include a Tree protection Plan (TPP), Arboricultural Method Statement (AMS) and Timetable for the Implementation of Tree Protection Works when a final design has been produced.

9. Permissions and Constraints

- 9.1 A tree constraints check was carried out on 04 June 2020 using the Arun District Council website, and none of the trees on the site are subject to a Tree Preservation Order (TPO), nor is the site within a Local Authority Conservation Area. However, TPO's can be issued with no prior notice and as such, it is recommended that an additional tree constraints check is carried out prior to any tree work taking place.
- 9.2 This is a rural site and, as such, will be subject to the Felling Licence Regulations administered by the Forestry Commission. This restricts felling to 5m³ per calendar quarter, and 2m³ if the timber is sold.
- 9.3 Hedgerows on site will be subject to the Hedgerow Regulations 1997 therefore no hedgerows should be removed without reference to the Local Planning Authority (LPA).
- 9.4 To assist the planning process the LPA should be provided with a copy of this report and invited to comment on tree protection issues.
- 9.5 When dealing with developments close to trees, special attention should be paid to related legislation ensuring that the Wildlife and Countryside Act (1994), Conservation of Habitats and Species Regulations (2010) and the Countryside Rights of Way Act (2000) are adhered to. It must be ensured that nesting birds and protected species such as bats and reptiles are considered and protected.

10. Conclusions

- 10.1 This assessment has set out the constraints imposed by trees in the form of a Tree Constraints Plan to advise the design team.
- 10.2 As far as possible the design should aim to retain B category trees and the associated shrub mass and hedging.
- 10.3 The design should take full consideration of the root protection requirements, branch spreads and potential for shading of retained trees.
- 10.4 Recommendations for preliminary tree work have been provided together with recommended timescales for the work some of which has health and safety implications.



- 10.5 There is potential to improve and re-generate old hedgerows around the site particularly along the north-western boundary and the boundary between Field 2 and 3. This can be by coppicing, laying and enrichment planting.
- 10.6 There is potential to improve the tree cover through enrichment planting on the field boundaries.
- 10.7 Carrying out an assessment at this early stage is a vital first stage in a process that will provide arboricultural advice and input through the design and construction phase to completion. This approach is exactly as recommended in BS5837:201.
- 10.8 An illustrative masterplan has been provided and it appears to have been designed sensitively with regards to the existing tree cover.
- 10.9 A further revised Arboricultural Impact Assessment, together with a Tree Protection Plan and Arboricultural Method Statement will need to be produced when a design for the development becomes available. All trees can be retained and protected as set out in BS5837:2012 throughout the works.

A. T. Coombes NDF, MSc (Arb & Urban For), FICFor, PDArb (RFS) MArborA

A.T. Coombes Associates Ltd

29 October 2020



**APPENDIX 1-
TREE SURVEY SCHEDULE**

**SITE: NURSERY FIELDS, CHALCRAFT LANE,
BOGNOR REGIS**

SURVEY COMPLETED: 15/05/20 and 29/05/20

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
T1	Goat willow	8.0	295	6	5.0	4.0	5.0	5.0	-	2.5	EM	Good	Moderate - multi-stemmed	-	20+	C1	3.5	39.4
T2	Monterey cypress	18.8	890	1	6.6	6.2	4.9	6.0	3.8 N	2.0	M	Fair - dieback throughout crown	Moderate - codominant stems	Remove loose and dangerous deadwood	20+	B1	10.7	358.4
T3	Leyland cypress	19.0	950	7	5.0	5.9	5.0	5.2	-	2.9	M	Good	Moderate - multi-stemmed	-	20+	B1	11.4	408.3
T4	Leyland cypress	17.4	842	4	4.5	4.6	4.5	5.1	-	3.3	M	Fair	Moderate - multi-stemmed, minor deadwood	Remove loose and dangerous deadwood	20+	B1	10.1	320.7
T5	Oak	9.9	580	1	4.4	8.1	7.0	7.5	2.2 N	1.8	M	Good	Good - minor deadwood	-	20+	B1	7.0	152.2
T6	Field maple	9.2	686	3	8.4	5.9	8.1	6.5	1.6 N	1.8	M	Good	Good	-	20+	B1	8.2	213.1
T7	Goat willow	10.5	310	1	4.3	1.5	3.8	5.5	4.0 NW	7.5	EM	Good	Good	-	20+	C2	3.7	43.5
T8	Crack willow	14.1	450	1	5.5	5.5	5.5	5.5	3.5 N	4.5	EM	Good	Good	-	20+	B2	5.4	91.6
T9	New Zealand privet	7.7	565	7	5.0	4.9	5.1	5.5	-	3.2	M	Good	Good	-	20+	B1	6.8	144.4
T10	Hawthorn	6.5	300	1	4.3	1.5	0.0	2.0	1.8 N	4.0	M	Fair - heavy ivy	Moderate - lean to north	Sever ivy at base	20+	B2	3.6	40.7
T11	Oak	6.7	300	1	3.5	3.0	3.0	3.0	-	2.5	EM	Fair	Moderate - suppressed	-	20+	B2	3.6	40.7
T12	Crack willow	10.3	208	3	3.0	3.0	3.0	3.0	3.0 E	6.0	EM	Good	Moderate - multi-stemmed	-	20+	B2	2.5	19.5

SURVEYED BY A.T. COOMBES ASSOCIATES

denotes estimated dimensions due to lack of access to tree

Sheet 1 of 7

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SURVEY COMPLETED: 15/05/20 and 29/05/20

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
T13	Oak	9.0	520	1	3.5	4.3	3.0	3.6	2.8 N	4.0	EM	Fair - previous failures in crown	Moderate - minor deadwood, previous failures in crown, large stem wounds	-	20+	B2	6.2	122.3
T14	Ash	10.5	250	1	6.8	4.8	0.5	4.0	3.5 E	2.0	EM	Good	Moderate - suppressed	-	20+	B2	3.0	28.3
T15	Oak	8.3	290	1	4.0	3.2	4.0	5.4	2.5 N	0.8	SM	Good	Good	-	20+	B2	3.5	38.1
T16	Oak #	14.6	671	2	7.0	6.0	8.3	6.0	3.2 E	4.5	M	Good	Good	-	20+	B2	8.0	203.6
T17	Ash #	13.7	350	3	6.6	8.0	7.9	4.0	3.8 S	3.5	M	Good	Good - minor deadwood, <i>Daldinia concentrica</i>	-	20+	B2	4.2	55.4
T18	Cherry #	6.3	141	2	3.5	4.5	4.0	2.0	-	1.2	SM	Good	Good	-	20+	C1	1.7	9.0
T19	Ash #	11.0	500	1	7.0	7.0	7.0	7.0	-	3.0	EM	Good	Good - ivy	-	20+	B2	6.0	113.1
T20	Ash	11.1	519	2	6.1	6.5	6.5	6.9	2.8 W	1.8	M	Good	Good - multi-stemmed	-	20+	B1	6.2	122.0
T21	Ash	11.5	500	1	4.0	7.0	8.4	4.0	2.0 S	4.0	EM	Good	Good - <i>Daldinia concentrica</i> present on one stem	-	20+	B1	6.0	113.1
T22	Oak #	10.7	600	1	6.7	6.7	6.7	6.7	2.5 S	3.7	EM	Good	Good	-	20+	B2	7.2	162.9
T23	Hawthorn #	8.0	200	1	3.0	3.0	3.0	3.0	-	4.0	EM	Good	Good	-	20+	C2	2.4	18.1
T24	Oak #	14.5	566	2	7.0	8.2	7.5	4.0	5.0 E	3.5	EM	Good	Good	-	20+	B2	6.8	144.8
T25	Oak	10.0	600	1	6.0	6.0	6.0	6.0	1.2 W	3.5	EM	Good	Good	-	20+	B2	7.2	162.9
T26	Field maple	8.7	311	2	4.5	4.5	4.5	4.5	3.5 W	4.0	EM	Good	Good	-	20+	B2	3.7	43.8

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denotes estimated dimensions due to lack of access to tree

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Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
T27	Cherry	8.0	294	2	3.5	3.5	3.5	3.5	2.0 S	2.0	EM	Good	Moderate - multi-stemmed	-	20+	B2	3.5	39.2
T28	Aspen	16.5	764	2	6.5	6.5	6.5	6.5	2.8 S	1.2	M	Good	Moderate - multi-stemmed, deadwood	Remove loose and dangerous deadwood	20+	B1	9.2	264.1
T29	White willow	14.5	776	3	6.5	6.5	6.5	6.5	2.8 S	1.2	M	Good	Moderate - multi-stemmed, deadwood	Remove loose and dangerous deadwood	20+	B1	9.3	272.1
T30	White willow #	14.5	900	1	8.5	8.5	8.5	8.5	1.0 S	0.0	M	Good	Moderate - multi-stemmed	-	20+	B1	10.8	366.5
G1	Mixed hedge #	6.0	100	1	2.0	2.0	2.0	2.0	-	2.0	SM	Good	Good	-	20+	C2	1.2	4.5
G2	Hawthorn, variegated sycamore #	5.0	100	1	2.0	2.0	2.0	2.0	-	2.0	SM	Good	Good	-	20+	C2	1.2	4.5
G3	Field maple	10.0	700	6	6.2	4.7	5.9	6.7	-	2.0	M	Good	Moderate - deadwood	Remove loose and dangerous deadwood	20+	B2	8.4	221.7
G4	Hawthorn, ash	7.0	200	1	3.0	3.0	3.0	3.0	-	2.0	SM	Good	Good	-	20+	C2	2.4	18.1
G5	Hawthorn, cherry, ash, goat willow	11.0	300	1	4.0	4.0	4.0	4.0	-	4.0	EM	Good	Good	-	20+	B2	3.6	40.7
G6	Goat willow	10.0	275	1	6.0	3.0	3.0	3.0	-	2.0	EM	Good	Good - ivy, leaning	-	20+	C2	3.3	34.2

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denotes estimated dimensions due to lack of access to tree

Sheet 3 of 7

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					N	E	S	W										
G7	Ash x3	13.0	400	1	7.6	7.0	7.0	7.0	-	6.5	M	Good	Good - multiple woodpecker holes, old coppice stools	-	20+	B2	4.8	72.4
G8	Ash x2, willow	13.0	495	2	8.5	6.0	6.0	6.0	-	4.5	M	Fair - possible ash dieback	Moderate - multi-stemmed	-	20+	B2	5.9	110.8
G9	Field maple x2, hawthorn x1 #	10.0	325	1	3.0	3.0	3.0	3.0	-	4.5	M	Good	Good - fallen tree adjacent	Clear up fallen tree	20+	B2	3.9	47.8
G10	Hazel x3, hawthorn x1 #	10.0	208	3	3.0	3.0	3.0	3.0	-	2.5	EM	Good	Good	-	20+	B2	2.5	19.5
G11	Oak x2	14.5	700	1	8.0	8.0	8.0	8.0	-	2.5	M	Good	Good	-	20+	B2	8.4	221.7
G12	Field maple x2	10.5	250	2	6.5	6.5	4.0	5.7	-	2.5	M	Good	Good	-	20+	B2	3.0	28.3
G13	Hawthorn, hazel #	6.0	100	3	2.5	2.5	2.5	2.5	-	2.0	SM	Good	Good	-	20+	C2	1.2	4.5
G14	Hawthorn	6.5	150	3	3.0	3.0	3.0	3.0	-	2.5	EM	Good	Good	-	20+	C2	1.8	10.2
G15	Field maple x2, hawthorn x1	9.0	370	1	5.0	5.0	5.0	5.0	-	2.5	EM	Good	Good	-	20+	B2	4.4	61.9
G16	Cherry x5	9.5	180	1	3.0	3.0	3.0	3.0	-	5.0	SM	Good	Good - base of stems buried by newly formed mound	Clear mound away from trees	10+	C2	2.2	14.7
G17	Ash x4 #	12.3	400	1	7.0	7.0	7.0	7.0	-	2.5	EM	Good	Good - possible coppice stool	-	20+	B3	4.8	72.4
G18	Field maple, oak #	11.5	350	1	3.5	3.5	4.5	6.0	-	2.5	EM	Good	Good	-	20+	B2	4.2	55.4

SURVEYED BY A.T. COOMBES ASSOCIATES

denotes estimated dimensions due to lack of access to tree

Sheet 4 of 7

**APPENDIX 1-
TREE SURVEY SCHEDULE**

**SITE: NURSERY FIELDS, CHALCRAFT LANE,
BOGNOR REGIS**

SURVEY COMPLETED: 15/05/20 and 29/05/20

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
G19	Field maple, ash, hawthorn	10.0	180	2	3.0	4.0	3.0	5.2	-	1.8	SM	Good	Good	-	20+	B2	2.2	14.7
G20	Ash, oak, grey alder, field maple, aspen	15.0	300	1	5.0	5.0	5.0	5.0	-	1.8	EM	Good	Good - one fallen tree at southern end	Fell fallen tree hungup at southern end	20+	B2	3.6	40.7
G21	Hazel x2	8.0	201	5	6.0	4.0	4.7	4.0	-	1.8	EM	Good	Good	-	20+	B2	2.4	18.3
G22	Hawthorn x2	4.0	127	2	2.0	2.0	2.0	2.0	-	1.8	SM	Good	Good	-	20+	C2	1.5	7.3
G23	Aspen, willow, ash, field maple	18.0	400	1	6.5	6.5	6.5	6.5	-	3.5	EM	Good	Good	-	20+	B2	4.8	72.4
G24	Aspen, field maple	11.0	120	1	4.5	4.5	4.5	4.5	-	3.5	SM	Good	Good	-	20+	C2	1.4	6.5
G25	Oak x2	10.0	500	1	6.5	6.5	6.5	6.5	-	3.0	EM	Good	Good	-	20+	B2	6.0	113.1
G26	Field maple, hawthorn, ash, elder	7.0	175	1	3.0	3.0	3.0	3.0	-	1.5	SM	Good	Good - ivy	-	20+	C2	2.1	13.9
G27	Ash x2	8.5	200	1	4.0	4.0	4.0	4.0	-	3.0	SM	Good	Good	-	20+	C2	2.4	18.1
G28	Oak x3	14.5	630	1	9.0	9.0	9.0	9.0	-	4.0	EM	Good	Good	-	20+	B2	7.6	179.6
G29	Hawthorn	5.5	180	1	2.5	2.5	2.5	2.5	-	2.5	SM	Good	Good - lapsed hedgerow	-	10+	C2	2.2	14.7
G30	Hawthorn, field maple	9.0	300	1	4.0	4.0	4.0	4.0	-	4.0	SM	Good	Good	-	20+	B2	3.6	40.7
G31	Ash x2	15.0	583	3	10.0	10.0	11.0	10.0	-	2.8	M	Good	Moderate - multi-stemmed	-	20+	B1	7.0	153.8
G32	Oak x2	16.0	500	1	10.0	10.0	10.0	10.0	-	4.5	M	Good	Good	-	20+	B1	6.0	113.1
G33	Field maple	10.5	250	1	5.0	5.0	5.0	5.0	-	4.0	EM	Good	Good	-	20+	B2	3.0	28.3
G34	Field maple	9.5	255	2	4.5	4.5	4.5	4.5	-	4.5	SM	Good	Good	-	10+	C2	3.1	29.3

SURVEYED BY A.T. COOMBES ASSOCIATES

denotes estimated dimensions due to lack of access to tree

Sheet 5 of 7

**APPENDIX 1-
TREE SURVEY SCHEDULE**

**SITE: NURSERY FIELDS, CHALCRAFT LANE,
BOGNOR REGIS**

SURVEY COMPLETED: 15/05/20 and 29/05/20

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
G35	Hawthorn, hazel	6.0	100	1	2.0	2.0	2.0	2.0	-	1.8	SM	Fair	Moderate - deadwood	-	10+	C2	1.2	4.5
G36	Field maple x4	8.0	283	2	4.2	4.2	4.2	4.2	-	5.0	SM	Good	Good	-	20+	B2	3.4	36.2
G37	Field maple, ash	12.5	495	2	6.5	6.5	6.7	6.5	-	4.5	EM	Good	Good	-	20+	B2	5.9	110.8
G38	Hawthorn, goat willow, field maple	8.5	346	3	5.0	5.0	5.0	5.0	-	4.5	SM	Good	Good - some multi-stemmed	-	20+	B2	4.2	54.3
G39	Ash, field maple	10.0	300	1	3.5	3.5	3.5	3.5	-	3.5	EM	Good	Good	-	20+	B2	3.6	40.7
G40	Lombardy poplar x2	15.5	400	1	2.5	2.5	2.5	2.5	-	0.5	EM	Good	Good	-	20+	B2	4.8	72.4
G41	Oak, ash, lime, alder	13.0	300	1	5.0	5.0	5.0	5.0	-	1.0	EM	Good	Good	-	20+	B2	3.6	40.7
G42	Oak, ash, rowan, horse chestnut, lime	10.0	300	1	5.0	5.0	5.0	5.0	-	3.0	EM	Good	Good	-	20+	B2	3.6	40.7
G43	White willow	10.1	400	1	5.5	5.5	5.5	5.5	-	2.5	EM	Good	Moderate - multi-stemmed	-	20+	B2	4.8	72.4
G44	White willow	15.5	800	1	8.5	8.5	8.5	8.5	-	3.5	M	Good	Moderate - multi-stemmed	-	20+	B2	9.6	289.6
G45	White willow	11.2	400	1	8.0	8.0	8.0	8.0	-	1.0	EM	Good	Moderate - multi-stemmed	-	20+	B2	4.8	72.4
H1	Hawthorn	3.5	0															
H2	Hawthorn, hazel	4.5	0									Fair	Scrappy hedge with sporadic trees					
H3	Hawthorn	4.0	0															

SURVEYED BY A.T. COOMBES ASSOCIATES

denotes estimated dimensions due to lack of access to tree

Sheet 6 of 7

**APPENDIX 1-
TREE SURVEY SCHEDULE**

**SITE: NURSERY FIELDS, CHALCRAFT LANE,
BOGNOR REGIS**

SURVEY COMPLETED: 15/05/20 and 29/05/20

1	2	3	4	5	6				7	8	9	10	11	12	13	14	15	16
Tree No.	Species	Ht (m)	Stem dia (mm)	No of Stems	Branch Spread				Height and Direction of First Branch (m)	Mean Canopy Ht	Life Stage	Physiological Condition	Structural Condition	Preliminary Tree work	Estimated remaining contribution (Yrs)	Cat grading	Radius of RPA (m)	RPA (sq m)
					N	E	S	W										
H4	Hazel, hawthorn	5.0	0									Fair	Gaps in hedge					
H5	Blackthorn	4.0	0															

SURVEYED BY A.T. COOMBES ASSOCIATES

denotes estimated dimensions due to lack of access to tree

Sheet 7 of 7

Appendix 2: Notes on the Column Headings in Appendix 1

Col#	Title	Notes
1	Tree No.	Tree numbers to correspond with those shown on the TCP.
2	Species	Each tree has been identified and the common name given in each case.
3	Ht (m)	Height of the tree
4	Stem dia (mm)	The stem diameter measured in millimetres at 1.5 metres above ground. For multi-stemmed trees the stem diameter has been calculated according to the formula given in BS 5837:2012. For trees with up to 5 stems, each stem has been measured at 1.5m, squared and added together. The diameter shown is the square root of the total. For multi-stemmed trees with over 5 stems a sample of five diameters has been taken at 1.5m, averaged and squared, then multiplied by the total number of stems. The square root of this sum gives the stem diameter figure.
5	Number of Stems	Total number of stems on the tree.
6	Branch Spread	The branch spread measured in metres from the stem to the tip of the outer branches has been measured in four directions of the compass North, South, East and West.
7	Height and Direction of First Branch spread (m)	First significant branch and direction of growth (relative to the four cardinal compass points).
8	Canopy Ht	Mean height of the canopy above ground level.
9	Life Stage	The life stage of the tree has been assessed into one of the following categories: Y =Young, SM = Semi Mature, EM = Early Mature M = Mature, OM = Over mature and V = Veteran.
10 and 11	Condition	The British Standard recommends that a note is made of the structural and physical condition of the tree.



Col#	Title	Notes
12	Preliminary Management Recommendations	This column includes all work considered necessary to, as far as is practicable, ensure health and safety and for the good arboricultural management of the trees. These works are not associated with the development proposals. All work to be carried out to BS 3998: 2010 "Tree Work-Recommendations". Recommendations given in respect of Health and Safety remain current for 12 months from the date of this assessment after which further inspection is recommended. It should be noted that trees are dynamic structures subject to the forces of nature, which can fail without showing external symptoms.
13	Estimated remaining Contribution (Yrs)	The estimated remaining contribution of each tree in years has been assessed, using personal experience, into the following groupings: < 10 = Less than 10 years 10+ years = More than 10 years 20+ years = More than 20 40+ years = More than 40 years
14	Category grading	U = Those in such a condition that any existing value would be lost within 10 years and which should in the current context, be removed for reasons of sound arboricultural management. (Trees that have serious, irremediable structural defects, such that their early loss is expected due to collapse or ill health including trees that will become at risk due to the loss of other U category trees). A = Those trees of high amenity quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested) 1) Trees that are particularly good examples of their species if rare unusual or essential components of groups or formal or semi-formal arboricultural features 2) Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views in or out of the site, or those of particular visual importance. 3) Trees groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran tree or wood pasture)



Col#	Title	Notes
14 cont	Category grading cont	B = Those of Moderate quality and amenity value: those in such a condition as to a significant contribution (a minimum of 20 years is suggested) 1) Trees that might be included in the high category but are downgraded because of impaired condition (e.g. remediable defects) 2) Trees and woodland that forming distinct landscape features but do not form essential components 3) Trees with clearly identifiable conservation or other cultural benefits. C = Those of low quality and amenity value currently in adequate condition to remain until new planting is established (minimum of 10 years is suggested) or trees under 150 mm stem diameter. 1) Tree not qualifying in higher categories 2) Trees present in groups or woodlands but not with a significantly higher landscape value and or offering low or temporary screening benefit. 3) Trees with very limited conservation or other cultural benefits. Note: Category C trees are the least suitable for retention, where they would impose a significant constraint on the development their removal for development purposes may be considered acceptable by the LPA. Trees with a stem diameter under 150mm could be considered for relocation.
15	Radius of RPA (m)	The distance that would form the radius of a circular protection zone is given in metres calculated by multiplying the stem diameter given in column 4 by 12. The methods for calculating the stem diameter of multi-stemmed trees is given in section 4 above.
16	RPA (m ²)	The area of the RPA is given in square metres calculated by the following formula: Single Stemmed Trees; $RPA\ m^2 = \left(\frac{(stem\ diameter\ mm\ @\ 1.5m \times 12)}{1000} \right)^2 \times 3.142$ The methods for arriving at the stem diameter for multiple stemmed trees are described above in the notes for column 4.

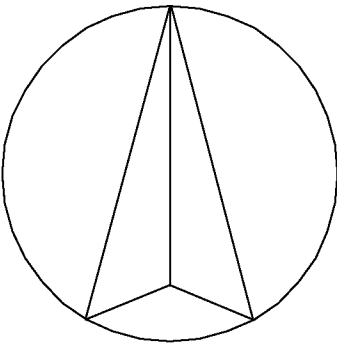




Drawing Title:
**Appendix 3C - Tree
Constraints Plan - Proposed
Access Road**

Site:
**Chalcraft Nurseries, Chalcraft
Lane, Bognor Regis**

Client:
Landform Estates



To Scale 1:500 at A1

- KEY**
- B Category RPA
 - C Category RPA
 - Current Crown Spreads
 - Ultimate Branch Spreads
 - Shade Patterns

Drawn By: JD Date: 21/05/2020



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Appendix 4 – Illustrative Masterplan



Drawing No. 1:2000 Rev

Scale 0 20 40 60m

ITP