



PRE-DEVELOPMENT ARBORICULTURAL SURVEY

At:

**6 CRANBORNE GARDENS,
CHANDLERS FORD,
EASTLEIGH, HAMPSHIRE**

For:

MR & MRS CLENNETT

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*This report is the responsibility of Arbor-Eco Consultancy.
It should be noted that whilst every effort is made to meet the client's brief,
no site investigation can ensure complete assessment
or prediction of the natural environment.*

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1. INTRODUCTION

1.1 PROJECT BRIEF

Mr & Mrs Clennett commissioned Arbor-Eco Consultancy to undertake a Pre-development Arboricultural Survey of trees situated on land at 6 Cranborne Gardens, Chandlers Ford, Eastleigh. The site is within the administrative boundary of Eastleigh Borough Council and within the county of Hampshire.

It is understood that the site will be the subject of a planning application, however, the details were not provided during the preparation of this report.

The purpose of this report is to:

- Record the current condition of the trees found on and immediately adjacent to the site and categorise them using criteria outlined in BS5837:2012 “Trees in relation to design, demolition and construction - Recommendations”.
- Using the data obtained during the survey, publish a Tree Constraints Plan showing the above ground and below ground constraints in terms of minimum root protection area (RPA) and canopy spread.
- Provide guidance detailing arboricultural constraints to development and factors to be considered during the detailed design of the proposed development.

1.2 SITE DESCRIPTION

The site is rhomboidal in shape and located within a residential area of the town of Chandlers Ford and situated towards the northern area of the settlement. The site is situated off Cranborne Gardens, (cul-de-sac) minor road. The site is dominated by the existing residential building, outbuildings (including an elevated pond) areas of hard surfacing and amenity grassland. The trees surveyed were situated within the grounds of the site and predominantly towards the eastern section of the property within the rear aspect.

The site is delineated from neighbouring land by a mix of boundary features. To the northern and western boundaries, the site abuts further properties off Cranborne Gardens, (cul-de-sac) minor road. The eastern boundary was delineated by a close-board fence, beyond which was a shelterbelt of trees off Hursley Road (B3043) major road and includes a sub-station. The southern boundary is demarcated by North Millers Dale, minor road. The site is centred at National Ordnance Survey Grid Reference SU 42743 22191.

The topography of the survey area is generally flat.

1.3 CONSTRAINTS OR LIMITATIONS

A number of the trees’ upper canopies were obscured by dense understorey vegetation. The off-site trees were inaccessible from Hursley Road. Therefore, the health and safety of these particular trees could not be fully assessed.

1.4 WEATHER CONDITIONS

The survey was completed on 16th October 2023 by Marco Bartolini, Arboricultural Consultant. The weather conditions at the time of the survey are shown in Table 3.1.

Conditions	Result
Temperature (°C)	6
Cloud Cover (%)	65
Precipitation (%)	0
Wind Speed (Beaufort)	F2

Table 3.1: Weather Conditions at Time of Survey

2. ARBORICULTURAL SURVEY METHODOLOGY

2.1 DESK STUDY

A desk study was undertaken to identify if any of the trees present within or in close proximity to the site are the subject of a Tree Preservation Orders (TPO) or if the site is situated within a Conservation Area. This involved consultation with the local council. See Section 4 for the results.

2.2 CONDITION STATUS

To determine the status of the trees within the site a full ground level arboricultural survey has been undertaken, assessing the species and status of all trees present. This survey has been carried out in accordance with British Standard 5837: 2012 Trees in Relation to design, demolition and construction – Recommendations.

All trees have been given a unique reference number. Individual trees above 75 mm (measured diameter at 1.5 m above ground level) have had their position confirmed on a survey drawing. The trees were visually assessed and a schedule prepared listing tree number, species, stem diameter at 1.5 m above ground level (or in accordance with Annex C of BS5837:2012), tree height, crown spread (cardinal points), crown clearance (cardinal points), height of first branch and growth direction, age class and estimated remaining years. Any specific observations or recommendations with regard to management were also noted. Groups of trees and hedgerows have had their specific dimensions (as per individual tree) averaged and recorded as such. All these observations and measurements are summarised in Section 3.3.

Each tree was assessed and assigned to one of the following categories:

- Category A: Those trees of high quality and value with an estimated remaining life expectancy of at least 40 years.
- Category B: Those trees of moderate quality and value with an estimated remaining life expectancy of at least 20 years.
- Category C: Those trees of low quality and value with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150 mm.
- Category U: Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Categories A, B and C have further sub-categories with regards to the reasons for tree retention:

- 1: Mainly arboricultural qualities.
- 2: Mainly landscape qualities.
- 3: Mainly cultural values, including conservation.

2.3 ROOT PROTECTION AREA (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated for each of the Category A, B and C trees. This is a minimum area around a tree which is deemed to contain sufficient roots and rooting volume to maintain the trees viability. Protection of the roots and soil structure in this area should be treated as a priority.

These figures have been calculated utilising the formulas within Section 4.6 and Annex D of British Standard 5837:2012.

2.4 ENVIRONMENTAL BENEFITS OF TREES

It is worthwhile noting that the trees can intercept many of the hostile elements humans and animals need shelter from. Trees provide shading and offer significant humidity regulation and a cooling effect felt at

ground level. All trees will consume a considerable amount of ground water that will regulate the local hydrology and may assist with the removal of local flooding issues. A mature tree will consume tens of thousands of litres of water during a year. A group of trees can provide an element of acoustic dampening effect at ground level and growing next to a road many tree species have been linked with the sequestration of impurities from the atmosphere. Finally, the trees will provide some shelter from prevailing winds and inclement weather. Therefore, it can be seen that the trees will benefit, rather than hinder, the landscape in which they are growing.

2.5 PLANNING CONTEXT

It is important to note that trees are a material consideration in the UK planning system and existing trees are an important factor requiring forethought when assessing the development potential of a site, whether they are within the working area or within such proximity to it that they may be affected by construction operations.

Older mature trees, particularly of oak and beech, are a particular characteristic of Hampshire. They are a feature not only of the ancient woodlands of an open Woodland or Forest, but of the villages and other settlements that have developed over time as an integral part of the wider landscape. Local Authorities, through planning and other policies, are committed to conserving the stock of mature trees wherever possible in order to maintain the local character, cultural history and wildlife value of the area.

3. RESULTS

3.1 STATUTORY LEGISLATION

3.1.1 Tree Preservation Order and Conservation Area Designations

Examination of the Eastleigh Borough Council (2023) Interactive WebMap (<https://emaps.eastleigh.gov.uk/webmaps>) accessed on 16th October 2023, indicated, that at the time of the assessment, all of the trees surveyed are the subject of an Area Tree Preservation Order and those trees to the rear aspect are the subject of a Woodland Tree Preservation Order.

Tree Preservation Orders 54-E and 58-H apply. It is recommended that both these Orders are obtained in hard-copy from the Local Authority as each order has a different level of protection.

The Town and Country Planning (Tree Preservation) (England) Regulations 2012, Part 4 – Applications for Consent under Tree Preservation Orders states that an application for consent to the cutting down, topping, lopping or uprooting of any tree in respect of which an order is for the time being in force shall be made in writing to the authority on a form published by the Secretary of State for the purpose of proceedings under these Regulations.

Until such time as the application has been granted no works must be undertaken on the trees identified as being subject to TPOs that contravene the order. Works include pruning, topping, lopping, uprooting or wilfully damaging these trees. Any proposed pruning works will need to be fully specified and agreed within any planning application. If works are subsequently identified and not included within the original planning application, a separate TPO application will be required to be submitted to the Local Authority for permission to undertake any works (approximately an 8-week process).

Apart from [limited exceptions](#), permission must be sought from the local planning authority by submitting a standard application form. The form is available from the Local Authority [Planning Portal](#). It is important that the information on the form makes clear what the proposed work is and provides adequate information to support the case.

Further examination of the Eastleigh Borough Council (2023) Interactive WebMap (<https://emaps.eastleigh.gov.uk/webmaps>) accessed on 16th October 2023, indicated that at the time of the assessment, none of the trees are situated within a Conservation Area.

3.2 PROTECTED SPECIES

Birds

The Conservation of Habitats and Species Regulations 2017 (as amended) places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds. Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Several bird species are Species of Principal Importance for Nature Conservation in England, making them capable of being material considerations in the planning process.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (generally March to September). If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

Bats

Bats and the places they use for shelter or protection (i.e., roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017, as amended (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong. As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

3.3 LAND DESIGNATIONS (NATURAL ENGLAND)

For land you own or occupy, Natural England (NE) can select all or part of it for protection. Natural England will do this when it believes the site has features of special interest, such as its:

- wildlife
- geology
- landform

Natural England will 'notify' (or designate) the land as a site of special scientific interest (SSSI).

6 Cranborne Gardens is not situated within a designated NE site.

3.4 OCCUPIERS' LIABILITIES ACT 1957 AND 1984

An occupier of premises owes the same duty, the "common duty of care", to all his visitors whether by invite or otherwise. The common duty of care is a duty to take such care as in all the circumstances of the case is reasonable to see that the 'visitor' will be reasonably safe in using the premises for the purposes for which he is invited or permitted by the occupier to be there or for purposes other than that which they have been invited (trespassers).

The full results of the Arboricultural Assessment are detailed in Table 3.3.

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Ht 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
1	Crab Apple	1	180	6.0	2.0 E	3.0	3.0	2.5	3.5	2.0	2.0	2.0	2.0	M	G	G	10+	C1	Artificial structures within RPA.	-
2	Crab Apple	1	290	6.0	1.0 S	4.5	3.0	3.5	3.0	2.0	2.0	2.0	2.0	M	G	G	10+	C1	- Low hanging branches over turning head and driveway. - Artificial structures within RPA.	Branch tip prune to provide clear overhead access adjacent to turning head and driveway.
3	Flowering Cherry	1	170	8.0	1.0 W	4.0	3.0	3.0	1.5	2.5	2.5	2.5	2.5	M	F	G	10+	C1	- Artificial structures within RPA. - Exposed surface roots. - Minor deadwood in crown.	-
4	Wild Cherry	1	530	17.0	5.0 N	8.0	7.0	<u>7.0</u>	<u>7.0</u>	4.0	4.0	4.0	7.0	M	G	G	20+	B1	- Artificial structures within RPA. - Bifurcated at 3.5 m above ground level.	-
5	Pedunculate Oak	1	560	16.0	2.0 W	3.5	<u>8.0</u>	5.5	<u>8.0</u>	4.0	4.0	3.0	2.0	M	F	G	20+	B1	- Asymmetrical canopy due to proximity of T6. - Artificial structures within RPA. - Major deadwood in crown. - Crown weighted to SE.	Crown clean deadwood.
6	Pedunculate Oak	1	900	22.0	4.0 W	10.0	<u>9.0</u>	7.5	7.5	4.0	6.0	5.0	4.0	M	G	G	20+	B1	- Bifurcated at 3.0 m above ground level. - Artificial structures within RPA. - Major deadwood in crown. - Exposed surface roots. - Epicormic growth of stem and in crown.	Crown clean deadwood.
7	Leyland Cypress	1	360	14.0	2.0 W	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	EM	F	G	10+	C1	- Low crown density. - Suppressed by off-site group. - Tall and etiolated. - Artificial structures within RPA. - Sub-station within RPA.	Recommend removal due to suppressed form and the loss will permit the trees of better vigour and vitality to flourish.
8	Pedunculate Oak	1	640	23.0	7.0 W	7.5	7.0	6.0	7.0	8.0	8.0	8.0	8.0	M	G	G	20+	B1 Int	- Restricted access due to congested canopies. - Major deadwood in crown. - Artificial structures within RPA.	Crown clean deadwood.
9	Pedunculate Oak	2	500	21.0	5.0 S	5.0	<u>8.0</u>	6.0	4.0	6.0	6.0	6.0	6.0	M	F	F	10+	C1	- Tall and etiolated due to group pressure. - Bifurcated at 1.0 m above ground level. - Artificial structures within RPA. - Epicormic growth on stem and in crown. - Major deadwood in crown.	Crown clean deadwood.

Table 3.3: Results of Arboricultural Survey (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Ht 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
10	Pedunculate Oak	1	370	16.0	4.0 S	<u>6.0</u>	5.0	4.0	5.0	7.0	6.0	2.0	4.0	EM	F	F	10+	C1	- Stunted and suppressed. - Crown weighted to NW. - Major deadwood in crown. - Artificial structures within RPA.	Crown clean deadwood.
11	Pedunculate Oak	1	<u>500</u>	23.0	6.0 S	<u>7.0</u>	<u>7.0</u>	<u>7.0</u>	<u>7.0</u>	<u>5.0</u>	<u>5.0</u>	<u>5.0</u>	<u>5.0</u>	M	G	G	20+	B1 Int	- Off-site tree. - Artificial structures within RPA. - Restricted access prevented detailed assessment.	-
12	English Elm	1	<u>330</u>	17.0	2.0 W	<u>4.0</u>	<u>4.0</u>	8.0	<u>4.0</u>	6.0	2.0	2.0	2.0	M	F	G	10+	C1 Int	- Off-site tree. - Artificial structures within RPA. - Restricted access prevented detailed assessment. - Overhangs site 8.0 m.	-
13	Crab Apple	1	130	4.0	2.0 N	3.0	4.0	4.5	4.0	2.0	2.0	2.0	2.0	M	G	G	10+	C1	Artificial structures within RPA.	-
14	Pedunculate Oak	1	800	23.0	2.0 W	<u>10.0</u>	10.0	7.0	8.5	2.0	2.0	2.0	2.0	M	G	G	20+	B1	- Artificial structures within RPA. - Epicormic growth on stem and in crown. - Major deadwood in crown. - Wisteria growing on stem.	Crown clean deadwood.
15	Pedunculate Oak	1	570	18.0	2.0 W	6.5	7.0	5.0	6.0	4.0	2.0	2.0	3.0	M	G	G	20+	B1	- Artificial structures within RPA. - Exposed surface roots. - Major deadwood in crown.	Crown clean deadwood.
16	Pedunculate Oak	3	790	26.0	3.0 W	7.5	6.0	6.0	6.5	3.0	3.0	3.0	3.0	M	F	G	20+	B1 Int	- Artificial structures within RPA. - Exposed surface roots with mechanical damage. - Trifurcated at ground level. - Epicormic growth on stem and in crown. - Darkened staining of stem – potentially honey fungus #. - Unidentified fungi around base of stem and on buttress roots – possibly spindle shank fungus #.	Raise mower blades above exposed root height. See Section 4.2; Commission Picus Tomography and/or Resistograph to determine depth of root decay to further inform management recommendations.
G1	Viburnum Mountain Ash Plum Viburnum Willow	1	<u>150</u>	5.0	0.0 N	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	0.0	0.0	0.0	0.0	Y EM M	F	G	10+	C1,2	- Managed border of developing shrubs and small trees. - On and off-site group. - Artificial structures within RPAs.	-

Table 3.3: (cont'd) Results of Arboricultural Survey (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Ht 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
G2	Oak, Lawson Cypress, Leyland Cypress, Purple Leaved Plum, Box Leaved Maple	1	<u>270</u>	12.0	1.0 S	<u>4.0</u>	<u>4.0</u>	<u>4.0</u>	<u>4.0</u>	1.0	1.0	1.0	1.0	Y EM M	F	G	10+	C1,2	- Boundary edge group. - Artificial structures within RPAs. - Sub-station within RPAs. - Congested stems and canopies.	Recommend removal due to suppressed form and the loss will permit the trees of better vigour and vitality to flourish.
G3	Cherry, Lawson Cypress, Camelia, Leyland Cypress, Juniper, Japanese Maple, Holly	1	<u>120</u>	6.0	0.0 E	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	0.0	0.0	0.0	0.0	Y EM M	F	G	10+	C1,2	- Boundary edge group. - On and off-site group. - Artificial structures within RPAs. - Collection of ornamental trees and shrubs. - Managed garden features.	-
G4	Japanese Cedar, Lawson Cypress, Leyland Cypress, Western Red Cedar	1	<u>100</u>	6.0	0.0 W	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>	0.0	0.0	0.0	0.0	Y EM M	F	G	10+	C1,2	- Dead trees in group. - Managed garden collection of conifer trees. - Boundary edge group. - Artificial structures within RPAs.	Remove dead trees.
G5	Lawson Cypress, Leyland Cypress, Cotoneaster, Cherry	1	<u>150</u>	8.0	0.0 N	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	0.0	0.0	0.0	0.0	Y EM M	F	F	10+	C1,2	- Conifer and Cherry trees in garden collection of ornamental trees. - Boundary edge group. - Artificial structures within RPAs. - Dead tree in group.	Remove dead tree.

Key

Age Class

Y: Young = tree within first third of average life expectancy
EM: Early mature = tree within second third of average life expectancy
M: Mature = tree within final third of average life expectancy
OM: Over mature = tree beyond average life expectancy
V: Veteran = shows signs of retrenchment and in decline.
D: Dead.

Physiological Condition

G: Good = no health problems
F: Fair = symptoms of ill health that may be remedied
P: Poor = poor health
D: Dead

Structural Condition

G: Good = no structural defects
F: Fair = remedial structural defects
P: Poor = significant structural defects
D: Dead

000: Estimated measurement due to access restrictions

RPA: Root Protection Area

Major deadwood: branches in excess of 50 mm diameter
Minor deadwood: branches/twigs less than 50 mm diameter

Int: Interim category due to access restrictions.

Trees subject to Tree Preservation Order – Woodland & Area

Table 3.3: (cont'd) Results of Arboricultural Survey

#: Spindleshank fungus (*Gymnopus fusipes*) Research suggests that this fungus can act as a parasite on the roots and root collar of the host tree (even trees with high vitality), which leads to root mortality. Because of root mortality, this fungus may impact upon the physiological and structural condition of the host tree, wherein the crown may show symptoms of dieback and the tree may pose an increased risk to targets. Therefore, where this fungus is found, further investigations in to tree stability and crown management may be required. It is not considered likely that this fungus can spread via root-to-root contact. Considered to be more virulent in drier soils and to be generally rather averse to waterlogged conditions.

Honey Fungus (*Armillaria mellea*) The most prevalent of the parasitic fungi that also happens to be noticeably saprophytic is Honey Fungus.

Saprophytic fungi live on dead organic matter. This group of fungi will usually only take advantage of dieback caused by a separate factor, e.g., drought, rather than being the cause of decline themselves. While their role in the woodland ecosystem is every bit as important as that of the symbiotic, they are not so good to see on amenity trees. They may not kill trees but can ultimately cause mechanical failure.

Parasitic fungi live off or at the expense of their live host plant, often resulting in the demise of this host. In general, these fungi will only target already unhealthy or stressed plants. Not considered to be a negative approach in the woodland ecosystem as it makes way for regeneration, but not good for amenity trees.

3.5 SHRUB BEDS

Table 3.4 provides details of the shrub species present and the height of these shrub beds.

Shrub Bed Reference	Species	Height (m)
S1	Rhododendron Dogwood Berberis	2.0

Table 3.4: Shrub Species Survey Results

3.6 ROOT PROTECTION AREA (RPA)

Table 3.5 provides details of the Root Protection Area (RPA) of all trees surveyed. This table also gives an approximate root protection radius for these trees.

Tree No.	Species	Diam (mm)	Approximate Root Protection Radius (m)	Root Protection Area (m ²)
1	Crab Apple	180	2.4	18
2	Crab Apple	290	3.6	41
3	Flowering Cherry	170	2.1	14
4	Wild Cherry	530	6.6	137
5	Pedunculate Oak	560	6.9	150
6	Pedunculate Oak	900	10.8	366
7	Leyland Cypress	360	4.5	64
8	Pedunculate Oak	640	7.8	191
9	Pedunculate Oak	500	6.0	113
10	Pedunculate Oak	370	4.5	64
11	Pedunculate Oak	500	6.0	113
12	English Elm	330	4.2	55
13	Crab Apple	130	1.8	10
14	Pedunculate Oak	800	9.6	290
15	Pedunculate Oak	570	6.9	150
16	Pedunculate Oak	790	9.6	290
G1	Mixed Species	<u>150</u>	1.8*	10*
G2	Mixed Species	<u>270</u>	3.3*	34*
G3	Mixed Species	<u>120</u>	1.5*	7*
G4	Mixed Species	<u>100</u>	1.2*	5*
G5	Mixed Species	<u>150</u>	1.8*	10*
Key: <u>000</u> : estimated dimensions due to access restrictions *: Average measurement taken around centre of group				

Table 3.5: RPA and Approximate Root Protection Radius of Trees Surveyed

3.7 SURVEY RESULTS

Tree and shrub species recorded during the survey are listed in Table 3.2.

Common Name	Scientific Name
Box Leaved Maple	<i>Acer negundo</i>
Camelia	<i>Camelia sinensis</i>
Cotoneaster Tree	<i>Cotoneaster</i> sp.
Crab Apple	<i>Malus sylvestris</i>
English Elm	<i>Ulmus procera</i>
Flowering Cherry	<i>Prunus amanogawa</i>
Goat Willow	<i>Salix caprea</i>
Holly	<i>Ilex aquifolium</i>
Japanese Cedar	<i>Cryptomeria japonica</i>
Juniper	<i>Juniperus communis</i>
Lawson Cypress	<i>Chamaecyparis lawsoniana</i>
Leyland Cypress	<i>Cupressus × leylandii</i>
Mountain Ash	<i>Sorbus aucuparia</i>
Pedunculate Oak	<i>Quercus robur</i>
Purple Leaved Plum	<i>Prunus cerasifera var nigra</i>
Viburnum	<i>Viburnum tinus</i>
Western Red Cedar	<i>Thuja plicata</i>
Wild Cherry	<i>Prunus avium</i>

Table 3.6: Tree and Shrub Species Recorded During Survey

4. DISCUSSION AND CONCLUSIONS

4.1 DESK STUDY

It is understood that all of trees located on and adjacent to this site are the subject of a Tree Preservation Order. See Section 4 for further details.

The site is not situated within a Conservation Area.

4.2 TREE QUALITY

Five trees and one hedgerow have been inspected in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.

- None of the trees surveyed are considered to be Category A – Trees of high quality and value.
- Eight trees surveyed are considered to be Category B – Trees of moderate quality and value.
- Five trees and five groups surveyed are considered to be Category C – Trees of low quality and value.
- None of the trees surveyed are considered to be Category U – Trees whose long-term contribution are limited.

It must be noted that 3 of the trees surveyed were dead.

Tree number 16 may require additional investigation as to the nature of the infections around the stem.

It is of the opinion of Arbor-Eco Consultancy that this tree (T16) is experiencing stress (evident of epicormic growth and lesions of the stem). Early indications of Honey Fungus are evident along with a Spindleshank Fungus. The long-term effects of both of these fungi are that they can cause stem failure at the base of the tree. It is recommended that this tree be the subject of a Planning Application (regardless of proposed development) for removal or further investigations will be necessary if refused.

A summary of the trees in each of the four categories is given in Table 4.1.

BS 5837 (2012) Category	Tree Number
A	-
B	4, 5, 6, 8, 11, 14, 15, 16.
C	1, 2, 3, 7, 9, 10, 12, 13, G1, G2, G3, G4, G5.
U	-

Table 4.1: Summary of Trees in BS 5837:2012 Categories

4.3 TREE AGE DISTRIBUTION AND PHYSIOLOGICAL CONDITION

Chart 1 indicated the different ages of trees across the site. The majority of trees are mature in age with no trees reaching over mature or veteran status. This is likely due to their locations in the landscape and the lack of management to produce an evenly aged woodland so close to habitation.

Chart 2 shows that the majority of trees are fair to good in condition and this reflects on the management of the trees under landownership of the residential dwelling.

Trees outside of the property and directly west of the site are not generally seen to be managed as this is a public space and the risk is likely to be managed differently.

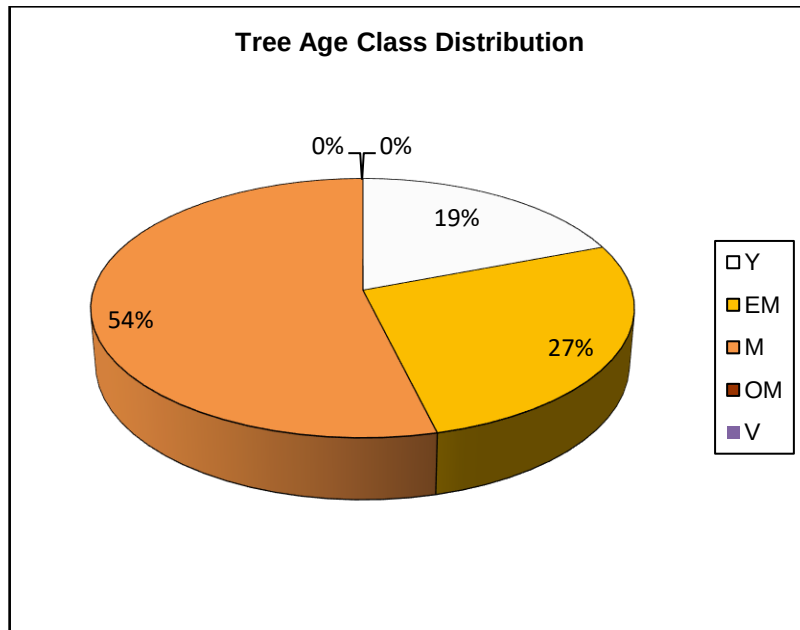


Chart 1: Age Distribution

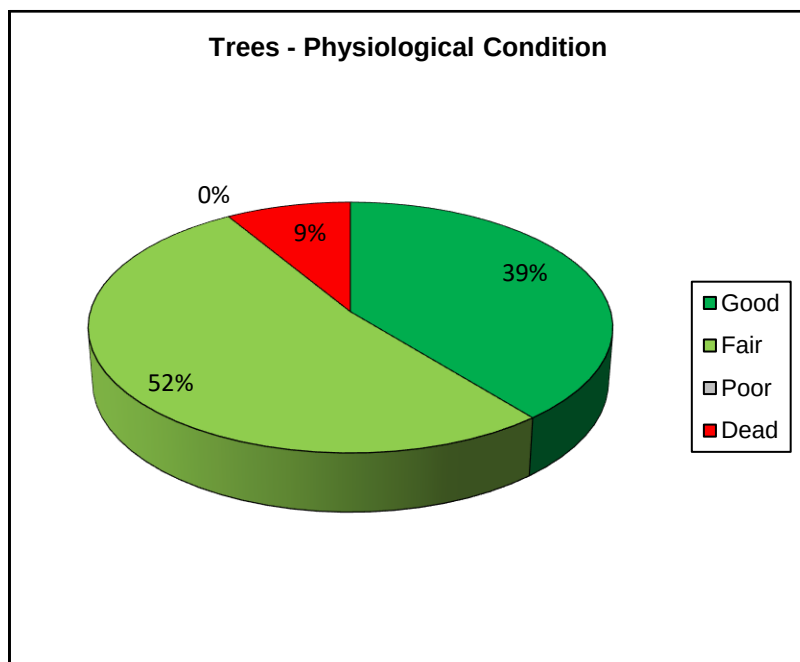


Chart 2: Physiological Condition

4.3 ENVIRONMENTAL BENEFITS OF TREES

It is worthwhile noting that the trees can intercept many of the hostile elements humans and animals need shelter from. Trees provide shading and offer significant humidity regulation and a cooling effect felt at ground level. All trees will consume a considerable amount of ground water that will regulate the local hydrology and may assist with the removal of local flooding issues. A mature tree will consume tens of thousands of litres of water during a year. A group of trees can provide an element of acoustic dampening effect at ground level and growing next to a road many tree species have been linked with the sequestration of impurities from the atmosphere. Finally, the trees will provide some shelter from

prevailing winds and inclement weather. Therefore, it can be seen that the trees will benefit, rather than hinder, the landscape in which they are growing.

4.4 INITIAL ASSESSMENT OF THE IMPACT TO THE CURRENT TREE STOCK

Initial indications, as shown on Tree Constraints Plan, Drawing Number MB230908-01-01 (Section 7), would suggest that any proposed development would be achievable within close proximity to the existing building should that be the desired location.

Overlapping RPAs and canopies, from trees on and off-site provides a good number of constraints.

The major constraints are from tree numbers 14, 15 and 16.

5. ARBORICULTURAL DESIGN GUIDANCE

5.1 THE TREE CONSTRAINTS PLAN

The Tree Constraints Plan is designed to show the influence that the trees have upon the site by virtue of their size and position. The plan seeks to act as a design tool that shows both the above and below ground constraints presented by the trees. The Arbor-Eco Consultancy, Tree Constraints Plan, Drawing Number MB230908-01-01 in Section 7 identifies these constraints.

The information provided within this section of the report is to assist in the interpretation of the ground survey results and aims to ensure that those trees selected for retention can be successfully integrated within the proposed development.

The Tree Constraints Plan can be used as a tool by the developing architect to ensure that the proposed development remains outside of the influence of all vegetation during the initial consultation processes.

5.2 TREE RETENTION / REMOVAL

The prioritisation for tree retention should be based upon the guidance contained within BS5837:2012. Category A trees should be seen as the highest priority for retention and Category C the lowest.

Category U trees generally have no retention value (although they may contribute to the overall landscape) and in most circumstances such specimens would not be considered for retention within development proposals.

When considering which Category C trees to retain, in the design of any new development, priority should be given to those trees that have been included within this category solely due to their having stem diameters of less than 150 mm at 1.5 m above ground level. These specimens are normally relatively young trees with future potential. Where possible and practicable, consideration should be given to the translocation of trees in favour of complete removal. Trees with a stem diameter below 75 mm, measured at 1.5 m above ground level, have not been included within the report, however, it is deemed that these trees can be translocated elsewhere across the site.

5.3 BELOW GROUND CONSTRAINTS

Root Protection Areas

Root Protection Areas for each tree surveyed have been determined in accordance with BS5837:2012 and a schedule of Root Protection Areas is detailed within this report at **Table 3.5** above.

It must be noted that there are areas on site where, due to the presence of existing structures (artificial and natural) and hard surfaces, tree root development will have been restricted as a result of soil distribution, reduced nutrient or moisture availability and a lack of provision for gaseous exchange. In such areas it may be appropriate to modify the shape of the RPAs, whilst not reducing their area, to take into account the likely root morphology and distribution of the affected trees. However, it is not a simple process to determine exactly where a tree's root system will extend to and whilst roots can generally be considered to be absent beneath substantial buildings, such as houses, they may well be present, if not abundant, beneath lighter structures and areas of hard surfacing. Employing a root radar would provide additional information should it be desirable.

Where possible all development, including new hard landscaping, shall be situated outside of the retained trees designated Root Protection Areas.

Removal of Existing Hard Surfaces and Structures

As noted above, there are areas on site where buildings and hard surfaces are present within the initial Root Protection Areas of trees on the site.

In addition to the effects that such construction may have upon the shape and location of the Root Protection Area of the tree, the presence of existing construction within the trees initial RPA's is also of note. Removal of such construction, should it be required, has a greater potential to cause harm to the trees due to the need for works in close proximity to them.

Where existing hard surfaces are located within the Root Protection Areas of retained trees, care should be taken in their removal, and such works should be completed by hand and supervised by an Arboricultural Consultant.

Where existing buildings are located within the Root Protection Areas of retained trees, care shall be taken in their demolition and works should be completed from outside the RPA with buildings being pulled back away from the trees. Again, it is recommended that such works are supervised by an Arboricultural Consultant.

New Hard Surfaces and Buildings within Root Protection Areas

The construction of new hard surfaces and buildings around trees has the potential to cause soil compaction, to cause root damage and to reduce nutrient and moisture availability to tree roots; to the detriment of tree health and vitality.

To minimise harm occurring as a result of such works, where installation of new hard surfacing is proposed within the Root Protection Areas of retained trees, it must be installed in accordance with no-dig principles.

Should new buildings be proposed within the RPA of an existing tree it will be necessary to take steps to minimise the potential impact to the tree to allow construction. In this respect the guidance contained within BS5837:2012 at clause 7.5 should be considered. This states: *"The use of traditional strip footings can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually Categories A or B). Designs for foundations that would minimise adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer. In shrinkable soils, the foundation design should take account of the risk of indirect damage."*

Building Foundations

Any structures built on the site should comply with the foundation depths for buildings near or adjacent to trees and allow for the potential size of the trees at maturity. The soil types throughout the site will need investigating and appropriate measures taken.

If trees are removed across the site the potential for soil heave should be assessed and foundations designed accordingly (see NHBC Chapter 4.2).

Service Runs

All service runs, utilities and similar infrastructure should take note of trees and allow for working methods that will minimise damage to trees by referring to documents such as NJUG Volume 4 - Guidelines for the planning, installation and maintenance of utility services in proximity to trees (National Joint Utilities Group 2007).

5.4 ABOVE GROUND CONSTRAINTS

Existing Canopy Spreads

The current spread of the tree is a constraint due to its dominance, size and movement in strong winds. It will typically be unacceptable to design any built development within the current spread of a tree.

Where built development is proposed in close proximity to existing trees consideration should be given to the amount of working space required to allow its construction; scaffold, machinery, cranes etc.

Additionally, where development is proposed in close proximity to the existing canopy spread of a tree the likelihood of leaf or fruit fall or an accumulation of honeydew causing nuisance must be given.

It should also be noted that where the Root Protection Areas for retained trees do not extend to the edge of existing canopy spreads it is possible that those parts of the trees extending beyond the RPA may sustain damage during construction.

Where this occurs, there are two primary options available to manage and minimise the potential for damage to tree canopies during development and these may be used singularly or in combination. The first option is to create a Construction Exclusion Zone (CEZ), by the erection of protective fencing, around the full extent of the tree's canopy. The second is to undertake pre-development pruning works to the trees to reduce the potential for branch damage to occur.

Future Tree Growth

It must be remembered that any trees surveyed (or any recently planted) are not yet fully mature and have the potential for future growth. Should these trees be retained then consideration of their ultimate crown spread should be given as future branch growth may result in interference with the proposed development, damage to branches and the need for a tree pruning regime. Even a veteran tree that may seem to be dying will still grow additional wood each year amounting to at least a metric tonne.

Within the area of maximum branch spread, construction activities should be restricted for the long-term health and vigour of the trees. It is considered that within the area of maximum branch spread, single storey buildings and the installation of hard surfaces would be an appropriate form of construction, however should car parking be proposed beneath the ultimate spread of trees the likelihood of fruit fall, leaf litter or sap exudation causing a nuisance must be considered.

In addition, it is important to consider the likelihood of damage to trees or structures that may be caused by continuous whipping of branches in windy conditions. In such circumstances, branches may have to be repeatedly cut back which will introduce wounds in the tree and may spoil its form or shape. Repeated pruning can introduce pathogens that could eventually harm the tree beyond remediation. In general terms trees, should not be retained upon the basis that their ultimate branch spread can be significantly controlled by periodic pruning.

Furthermore, consider the future use of the site. Where a building is to be constructed near to a large tree with overhanging branches, the likelihood is that the first owner will either want the tree removed due to a perceived threat (big tree = big risk) or continual pruning to remove areas of shade. This would be unfair to a living organism and so the design process should take account of nearby trees too.

Finally, the ecological benefits of trees have a long scientific record and supports thousands of species across the animal kingdom. Engaging with an ecologist and arboriculturalist early in the design process will ensure that the biodiversity of the site is retained as much as possible.

6. RECOMMENDATIONS

The following site-specific recommendations are made:

- Reduce the impact to the retained trees by developing the proposed redevelopment of the site using the Tree Constraints Plan as a guide.
- The retention of the Category B trees is strongly recommended.
- The retention of Category C trees should be considered where possible though it must be noted that these specimens have a low retention value and are likely to only offer a temporary contribution to the landscape character of the site.
- Tree works to be carried out in accordance with BS3998:2010 Tree works – Recommendations.
- Where possible all trees suitable for retention should be retained and protected as part of the development.
- Any proposed new planting should consist of native and wildlife attracting species with a robust five-year management plan to assist with the development proposal and to offer mitigation for any tree loss.
- This Arboricultural Survey is valid for a period of 12 months. If works are not commenced within this time period, then it is advised that the trees are re-inspected to ensure no significant defects have developed since the original survey.

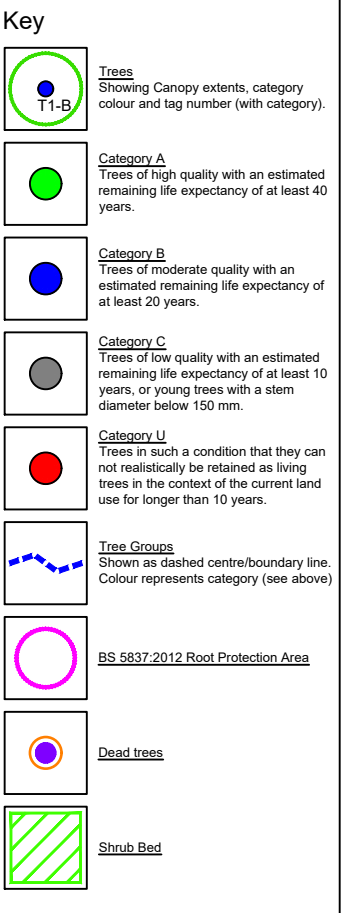
The following generic guidance should also be taken into account during the construction phase of any development, or significant engineering. The following proposals are made for this site:

- Any trees or hedgerows that are to be retained should be adequately protected by Heras fencing, in line with BS5837: 2012, extending at least to the Root Protection Radius, to prevent accidental damage by vehicles or contractors (see Table 3.5, page 11 for RPA data for each tree).
- All tree works are to be carried out by a competent and qualified arborist to BS3998:2010 standards.
- Tree protection should be included in the induction and/or briefing sessions by the contractors to site personnel.
- Soil compaction, from the storage of large quantities of materials and plant tracking, may result in changes to soil permeability and local drainage. This may lead to waterlogging or loss of soil crumb structure. These effects may in turn lead to root asphyxiation and root death, a cause of instability and or mortality in trees. For this reason, heavy machinery and the storage of materials should be excluded from the crown and Root Protection Radius of all trees.
- The recommendations of BS5837:2012 and National Joint Utilities Group Volume 4 (Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees) (as appropriate to operations) should be followed when working close to trees.
- If works take place during the bird breeding season, usually from March to September inclusive, trees and hedgerows should be checked for nesting birds. If any trees are to be removed this should be done outside the breeding season or in the presence of a suitably qualified ecologist.

7. DRAWINGS

MB230908-01-01 Tree Constraints Plan

Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
 Depictions of tree canopies are based on measurements taken to four cardinal compass points.
 No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
 The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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Project	6 Cranbourne Gardens, Chandler's Ford.
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Scale	Date	DB	CB
1:250 - A3	16/10/2023	CS	MB

Drawing Number	Rev
MB230908-01-01	A

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