



Tree Survey and Arboricultural Constraints

HALBEATH, DUNFERMLINE

For

SHEPHERD OFFSHORE

18 April 2021



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1. GENERAL INTRODUCTION

- 1.1. Alan Motion Tree Consulting Ltd has been instructed by Ironside Farrar Ltd to carry out a tree survey on behalf of Shepherd Offshore, in relation to proposed development on land at Halbeath, Dunfermline (the 'site'). This report relates to 24 trees and areas of woodland within the survey boundary shown on the plans appended to this document. The report describes the extent and condition of tree cover within and immediately adjacent to the site and highlights the above and below ground constraints presented by existing tree cover.
- 1.2. The survey has been carried out in accordance with BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations." Small trees of less than 10cm stem diameter, and areas of undergrowth are described in general terms but are not recorded in detail, except where their condition or presence merits particular attention. Within larger groups and woodlands, trees are described collectively except where dominant specimens merit individual recording.

2. STANDARD CONDITIONS RELATING TO TREE SURVEYS

- 2.1. Tree surveys are undertaken from ground level using established visual assessment methodology. This is primarily a survey to assess the general health, condition, value and life expectancy of existing trees as part of the planning and design process. The report should not be read as a detailed tree safety or risk assessment.
- 2.2. Where obvious defects are noted and further investigation is required, either by climbing or the use of specialised decay detection equipment, this will be identified in the report.
- 2.3. The findings and recommendations contained within this report are valid for a period of twelve months. Trees are living organisms subject to change. It is strongly recommended that they are inspected at regular intervals for reasons of safety.

- 2.4. Whilst every effort has been made to detect defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. Extreme climatic conditions can cause damage to apparently healthy trees.
- 2.5. The findings and recommendations contained within this report are based on the current site conditions. The construction of roads, buildings, service wayleaves, removal of shelter, and alterations to established soil moisture conditions can all have a detrimental effect on the health and stability of retained trees. Accordingly, a re-inspection of retained trees is recommended on completion of any development operations.
- 2.6. This report has been prepared for the sole use of Shepherd Offshore and their appointed agents. Any third party referring to this report or relying on information contained within it does so entirely at their own risk.

3. GENERAL DESCRIPTION

- 3.1. The survey boundaries and site layout as it currently exists are shown on the Tree Survey plan attached towards the end of this report.
- 3.2. The site is around 52 hectares in area. It is bounded by Dunlin Drive to the north, Sandpiper Drive to the east (both busy roads), a vacant development site and Calais Muir Wood to the south, and residential areas to the west. The north-west portion of the site is occupied by recent residential development. Much of the site was previously occupied by industrial activity, and all of the buildings have been removed.
- 3.3. Extensive woodlands occupy the flanks of the site, both on a large bund on the eastern boundary, and on the western boundary. One internal road has been created, Calaiswood Crescent, which runs approximately west-east across the northern part of the site. SUDS ponds have been created towards the south of the site.
- 3.4. The woodlands on the eastern flank of the site are a mixture of species, approximately 50% Scots pine, 20% larch, 10% silver birch, 10% beech and 10% willow/other broadleaves. The woodland is approximately 20 years old. The larch and pine have grown fastest, with stem diameters up to 25cm (median 15cm). Top height is up to 12m, median

about 8m. Canopy has closed, and this is now a semi-mature woodland, which has local landscape significance.

- 3.5. The woodlands on the western flank are broadly similar to the above, but featuring about 50% Scots pine, 20% larch, 15% oak and 15% birch/other broadleaves. Stem diameter is up to 25cm, median about 15cm. Top height is around 10m, median about 8m. Again canopy has closed, this is now a semi-mature woodland which has local landscape significance. Residential gardens flank the woodland edge towards the north end.
- 3.6. Calais Muir wood borders the site towards the south. Trees of up to 45cm stem diameter are within 5m of the boundary, some with canopies overhang the site by up to 3m.
- 3.7. The new internal road, Calaiswood Crescent, has standard trees (hornbeams) planted at 8m centres along both sides. These are in poor to fair condition.
- 3.8. There are some areas of scrubby regeneration on the site which are not significant in arboricultural terms, and below the size threshold for detailed recording. Hawthorn and gorse scrub extends to the south in the south-east corner within the adjacent site. Stem diameters are less than 10cm, with a few individual larger stems. These are recorded individually as part of the adjacent development site survey.

4. STATUTORY PROTECTION

- 4.1. The trees within the site are not subject to any statutory protection.
- 4.2. The trees within Calais Muir Wood immediately adjacent to the southern site boundary are subject to statutory protection by virtue of a Tree Preservation Order.

5. TREE SURVEY AND ANALYSIS

- 5.1. A visual assessment has been carried out from the ground level of 24 trees and areas of woodland within and immediately adjacent to the site. The location of the trees is plotted on the attached Tree Survey plan, and their condition and any recommended remedial works are recorded in detail in Table 2 - Tree Survey Schedule. This records relevant

details in accordance with the recommendations contained in BS 5837:2012, and includes:

- Tree number (Tree tag number where used, or plan reference number)
- Tree species (common name)
- DBH: stem diameter at breast height (1.5m above ground level)
- Canopy spread in metres (N, S, E, W)
- Tree height (estimate in metres)
- Crown height (clearance to lowest branches in metres)
- Tree Condition Category
- General condition of structure and physiology (good, fair, poor, dead)
- Age (Young, Early-mature, middle-aged, mature, over-mature, veteran)
- Number of stems arising below 1.5m
- Estimated Remaining Contribution in years
- Comments and observations (if any) on the overall health and condition of the tree, highlighting any problems or defects
- Recommended remedial works, where necessary
- Impacts of any development proposals

5.2. Where appropriate, recommendations are made on necessary remedial action such as tree surgery or felling. This is specified where there is likely to be significant risk to safety or tree health, or to abate a nuisance. The recommendations are general in nature and do not constitute a detailed work specification. Specifications, where required, can be provided to accord with the guidance and recommendations contained in BS3998:2010, "Tree work – Recommendations." Any recommendations are made on the basis that they are undertaken by a suitably qualified arboricultural contractor.

5.3. The trees have been tagged with round 4-digit tags ranging from 0514-0535. Where trees are inaccessible they are referred to by the preceding tag number and letter suffix. Closely-grouped trees of similar character may be referred to collectively as a group with a single tag number.

5.4. Trees have been categorised in accordance with the guidelines contained in BS 5837, set out in Table 1 of this report, as follows:

0 Category A

6 Category B,

17 Category C

1 Category U.

5.5. The purpose of the tree categorisation method is to identify the quality and value of existing trees, allowing informed decisions to be made concerning which trees could be removed or retained in the event of development occurring. The presence of trees and their quality is only one factor in the design and planning process, and the retention of good quality, healthy trees may be inappropriate in the context of wider planning and development considerations.

5.6. Young trees of <15cm stem diameter, and trees in Categories C and U with limited safe life or poor health and/or structure, are not normally considered to be a significant constraint on development.

6. CONSTRAINTS POSED BY EXISTING TREES

6.1. In order to minimise the risk of long-term damage to trees from construction operations, particular care is required to protect them from physical damage. Significant damage can be caused to tree root systems by ground level changes; soil compaction; contamination from oils and cement; and changes in soil moisture content. For these reasons, BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' sets out a recommended Root Protection Area (RPA) in m² based on the stem diameter of the tree. The RPA represents the anticipated below-ground constraints presented by trees within the proposed development area.

6.2. Tree roots rarely follow expected patterns. Adjustments to the RPA are recommended where restrictions to normal rooting patterns suggest that root growth will be minimal

(*e.g.* adjacent to walls, sealed surfaces, watercourses, or existing utility trenches). In addition, soil type, tree species, age, vigour, canopy volume and micro-climate will all impact on root growth and the ability of individual trees to tolerate changes in rooting environment. For all of the foregoing reasons, the RPA should be taken as a guide, and should not be treated as an absolute factor.

- 6.3. Above-ground constraints presented by trees include ultimate height and canopy spread, which will affect both physical presence and daylight availability to any proposed structures. Species characteristics, such as evergreen or dense foliage, potential for branch drop, fruit fall, *etc*, will all have an influence on the potential for development of the site. Easements for underground and above-ground apparatus; road safety and visibility; or the proposed end use of space adjacent to retained trees also needs to be fully considered.
- 6.4. Where it is determined that trees should be retained because of their quality and amenity importance, the impact of proposed designs must be assessed against the requirements of the tree, taking into account the RPA and all other relevant factors. Whilst the RPA should generally be protected where possible, any proposed incursion into the RPA should comply with the recommendations of BS5837, Sections 6 and 7. Site-specific method statements may be required to accompany such proposals.

7. ARBORICULTURAL IMPACT ASSESSMENT

- 7.1. No detailed development proposals have been considered as part of this report.
- 7.2. Existing residential development is present to the north-west of the site, with gardens backing onto the existing woodland.
- 7.3. Fife Council has adopted a policy of restricting the formation of houses and garden ground within the falling distance of trees, based on the mature height for the species. Adoption of this policy in undertaking further development on the site will mean the establishment of significant buffer zones adjacent to the woodland areas.
- 7.4. The accompanying Tree Protection Plan indicates a buffer zone of 10m adjacent to the semi-mature woodlands on the east and west edges of the site. This will provide

sufficient space to minimise future encroachment from tree canopies and limit shading of any new properties where these are located to the east of tree cover.

- 7.5. A greater buffer zone of 15m is indicated from the edge of Calais Muir Wood, along the southern boundary.




TABLE 1 BS 5837:2012 TREE CATEGORISATION				
Category and definition	Criteria			Identification on plan
Category U Those 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	<ul style="list-style-type: none">  Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U Category trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)  Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline  Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE : <i>Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i>			Red
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria – Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Trees of high quality with an estimated remaining life expectancy of 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural features and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in Category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the special quality necessary to merit the Category A designation	Trees present in numbers, usually as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value	Blue
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them a greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	Grey

TABLE 2 TREE SURVEY SCHEDULE

Tag No	Species	DBH	N	S	E	W	Ht	C.Ht	BS Cat	Condition	Age	Stems	ERC	Comments	Recommendations
514	Sycamore	0.30	5	5	5	3	8	3	C2	Fair	E-M	1	10 to 20		514-533 Line of trees with remnant hawthorn hedgerow understorey. Hawthorn shrubs 10-25cm DBH.
515	Sycamore	0.25	5	3	2	4	10	3	C2	Fair	E-M	1	10 to 20	Adjacent to old hawthorn hedge. This tree has tie ingrown into bark	
516	Sycamore	0.30	4	3	3	3	7	3	C2	Poor	E-M	1	10 to 20	Included bark, compression fork. Minor dead wood (<50mm dia).	
517	Sycamore	0.30	4	4	3	3	10	3	C2	Poor	E-M	1	10 to 20	Tie embedded	
518	Sycamore	0.40	5	4	5	3	10	3	C2	Fair	E-M	1	10 to 20	Included bark, compression fork.	
519	Goat willow	0.45	7	5	6	6	9	3	C2	Fair	M	3	10 to 20	Minor dead wood (<50mm dia).	
520	Ash	0.30	2	5	5	4	10	3	C2	Good	E-M	1	10 to 20		
521	Sycamore	0.30	3	4	4	4	11	3	C2	Fair	E-M	2	10 to 20	2 stems 30/30	
522	Sycamore	0.30	5	3	5	3	10	3	C2	Good	E-M	1	10 to 20		
523	Pedunculate oak	0.50	4	5	5	4	11	3	B2	Good	M	1	20 to 40	Minor dead wood (<50mm dia). Old tag 4990	
524	Sycamore	0.35	5	3	4	3	10	3	C2	Good	E-M	1	10 to 20		
525	Pedunculate oak	0.50	3	3	3	3	10	3	U	Dead	M	1	>40		
526	Pedunculate oak	0.55	4	3	3	4	13	3	C3	Poor	M	1	<10	Significant dieback, stag-headed. 4992	
527	Pedunculate oak	0.70	4	7	8	6	15	3	B2	Good	M	1	20 to 40	Minor dead wood (<50mm dia). 4993	
528	Pedunculate oak	0.45	6	4	4	4	13	3	B2	Fair	M	1	20 to 40	Major dead wood (>50mm dia). 4994	
529	Pedunculate oak	0.65	8	9	6	5	15	3	B2	Fair	M	1	20 to 40	Minor cavity/decay in stem. Branch stubs from past pruning/storm damage. 4995. Decay old, superficial, part occluded	
530	Pedunculate oak	0.80	5	4	5	6	12	3	C3	Poor	M	1	<10	Stem lean. Significant dieback, stag-headed. 4996. Stem probably hollow	
531	Pedunculate oak	0.60	8	6	6	4	12	3	C3	Poor	M	1	<10	Significant dieback, stag-headed. Branch stubs from past pruning/storm damage. 4997	
532	Pedunculate oak	0.65	7	7	8	8	15	3	B2	Good	M	1	20 to 40	Branch stubs from past pruning/storm damage. Minor dead wood (<50mm dia). 4998	
533	Pedunculate oak	0.65	5	5	6	5	13	3	B2	Fair	M	1	20 to 40	Minor dead wood (<50mm dia). 4999	

Tag No	Species	DBH	N	S	E	W	Ht	C.Ht	BS Cat	Condition	Age	Stems	ERC	Comments	Recommendations
534	Larch	0.25	3	3	3	3	7	3	C1	Good	E-M	1	10 to 20	Isolated tree beyond edge of Calais Muir Wood.	Retain within protected buffer to woodland.
535	Goat willow	0.15	3	2	3	2	5	3	C1	Poor	E-M	3	10 to 20	Coppice stems from old stump	Remove for development.
G2806	Sycamore	0.45	4	6	4	3	13	3	C2	Fair	M	1	10 to 20	Minor cavity/decay in stem. Start of group, mixed sycamore, goat willow, elm, 15-35cm DBH.	Remove to facilitate new access road.
2807	Sycamore	0.35	3	4	1	4	10	3	C2	Fair	M	1	10 to 20	End of small group.	Remove to facilitate new access road.
W1	Calais Muir Wood	0.45	4	4	4	4	15	1	A2	Good	M		>40	Protected woodland lying to south of sit boundary.	Requires minimum 15m buffer zone.
W2	Mixed	0.25	2	2	2	2	10	1	A2	Good	E-M		>40	Mixed woodland on W edge of site. Scots pine, larch, oak, other mixed broadleaves.	Recommend 10m buffer zone to minimise impact on woodland, and to minimise long-term shading to any new residential properties.
W3	Mixed	0.25	2	2	2	2	12	1	A2	Good	E-M		>40	Scots pine with larch, silver birch, beech, willow.	Recommend 10m buffer zone to minimise impact on woodland.

KEY TO TREE SURVEY SCHEDULE

No	Number as shown on survey plan (refers to tree tags where used)								
Species	Common name								
DBH	Stem Diameter at Breast Height, measured at 1.5m above ground level. Diameter measured in 0.05m bands and rounded up to next 0.05m.								
Canopy	Average canopy radius in metres (survey drawing shows actual canopy radius at 4 cardinal points).								
Ht	Approximate tree height in metres								
C Ht	Crown height, indicating clearance from ground level to lowest branches, estimated in metres								
BS Cat	British Standard 5837:2012 tree categorisation (See Table 1)								
Condition	General overall description of condition: <table border="0" style="margin-left: 20px;"> <tr> <td style="vertical-align: top;">Good:</td> <td>Healthy tree with no major defects Trees with significant safe life expectancy Trees of good shape and form for the species</td> </tr> <tr> <td style="vertical-align: top;">Fair:</td> <td>Healthy trees with minor defects Trees with moderate safe life expectancy Trees of average shape and form for the species</td> </tr> <tr> <td style="vertical-align: top;">Poor:</td> <td>Trees with significant defects Trees with a limited safe life expectancy Trees of low vigour, stressed, in decline Trees of poor shape and form, suppressed, structurally weak</td> </tr> <tr> <td style="vertical-align: top;">Dying/Dead:</td> <td>Dead, dying, unsafe or dangerous Trees with little or no safe life expectancy</td> </tr> </table>	Good:	Healthy tree with no major defects Trees with significant safe life expectancy Trees of good shape and form for the species	Fair:	Healthy trees with minor defects Trees with moderate safe life expectancy Trees of average shape and form for the species	Poor:	Trees with significant defects Trees with a limited safe life expectancy Trees of low vigour, stressed, in decline Trees of poor shape and form, suppressed, structurally weak	Dying/Dead:	Dead, dying, unsafe or dangerous Trees with little or no safe life expectancy
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Dying/Dead:	Dead, dying, unsafe or dangerous Trees with little or no safe life expectancy								
Age	Age class (Young, Early-mature, Middle-Aged, Mature, Over-Mature, Veteran)								
Stems	Single (1) or multiple (M) stems from below 1.5m, used to determine the appropriate Root Protection Area.								
ERC	Estimated Remaining Contribution in years, based on species, age, physiological condition and environmental factors.								
Comments	Specific comments on any observed defects within the root zone or affecting visible buttress root system; on the main stem up to and including the point of the first main fork; and affecting main scaffold branch system or secondary branch structure. Will be left blank where no defects are noted and growth characteristics are normal								
Recommendations/Impacts	Description of any recommended remedial tree work operations required to ensure safety or for cultural reasons. Or the impact of current designs or development proposals on the tree and required works to accommodate the proposals. General description of works, not a detailed tree work specification. Any recommended works should be carried out in accordance with BS3998:2010 <i>Tree work – Recommendations</i> .								