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FAO Rob Mitchell

Dear Rob,

Hayes Point, Sully:
Preliminary assessment of trees near the former mortuary building.

Further to our discussions and email exchange regarding this site I am pleased to offer the following observations. While some of the methodology of BS5837 has been followed in these assessments (notably the calculation of root protection areas or RPAs), this is *not* intended to represent a detailed arboricultural constraints report; rather it is intended to provide some base-line information about what trees are present in the vicinity of the building, their size and their general significance with specific reference to its proposed redevelopment for residential use.

Trees on the site are protected by Tree Preservation Order – See appendix for details

As can be seen in the images below, the building is currently largely surrounded by trees and some clearance is likely to be essential in order to create appropriate surroundings for a dwelling.

1- Satellite image

2- View of site from the south-east

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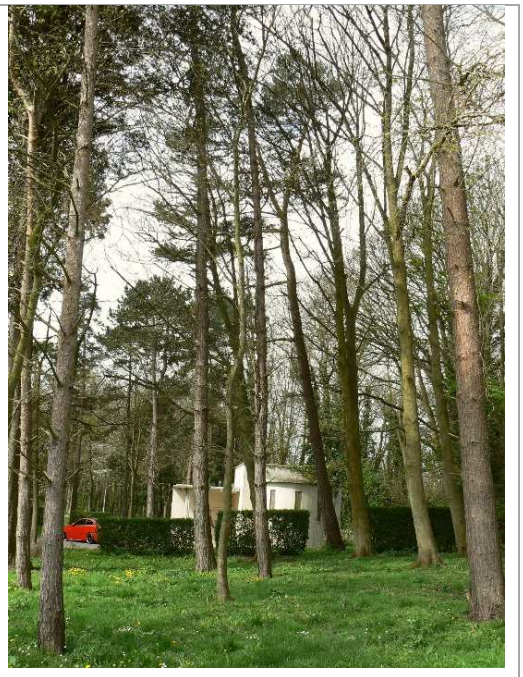
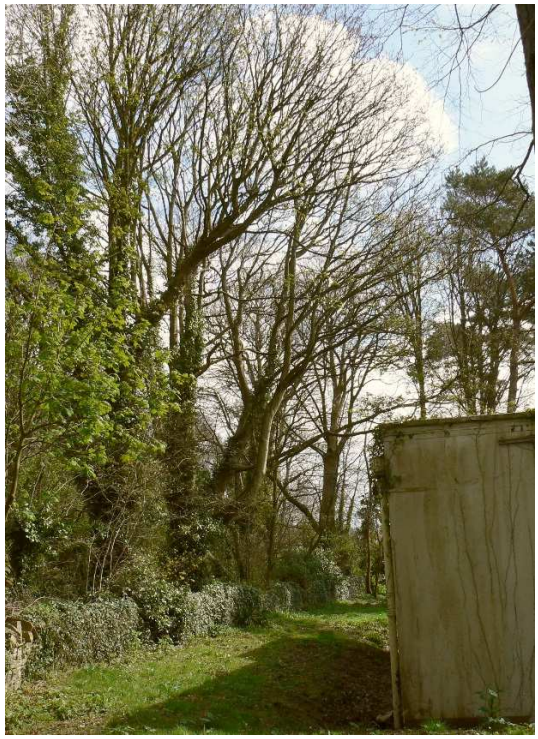
The building is set in an area of mown grass with a tarmac drive to the front (south) but on either side are areas of mown grass with mature trees.

3- Above: view from the SW



4- Left: As seen from the east.

To the rear is a low stone retaining wall, about .0.5m high, beyond which is an area of mature, semi-natural woodland:



5- Woodland trees at rear of building

Note that the building is surrounded by a narrow tarmac path which is set about 4-600mm lower than the area of mown grass. *This could be of significance as if the surrounding land should be lowered it could affect roots occupying the soil in that area.*

Trees East of building.

The trees to the east (photo 4) are mostly conifers with some evergreen holm oaks. A few deciduous trees are also present including some sycamores are present towards the rear (north) and there are also a few, evidently self-sown young wych elms. The trees here are at rather close spacing and in their competition to seek light most have developed forms typical of such 'group trees'. They have become tall with slender stems and those within the groups have rather small, high crowns while those around the edges are more or less one-sided or leaning. While collectively the group is generally acceptable, it should be noted that removing trees, especially around the edges, may leave individuals with forms that may be unsatisfactory, both visually and in terms of their stability in the more exposed conditions.

With respect to the potential instability of slender trees, it has been postulated that when the ratio of the height of a tree to its diameter is equal to or greater than fifty ($H/D \geq 50$) there is a significantly increased risk of failure as a result of exposure to high winds.[1] While some trees here are in excess of this limit and could prove to be hazardous if left fully exposed: this does not preclude all possibility of opening up the group, but careful consideration must be given to the form and condition of retained trees.

Trees West of building.

To the west there are several trees that are also drawn-up and of poor form, notably trees 30, 31 and 33 but also trees 28 and 29. The suitability of tree 28 a Corsican pine significantly larger than the other (Scots) pines is questionable in view of its close proximity to what is proposed as a residential building.

The *individual* quality of some of trees 20 to 24 is not great, some of the purple-leaved plums (*Prunus cerasifera* 'Pissardii') being distinctly one-sided. *Collectively*, however, they form an attractive grouping which could be regarded as setting-off and softening the effect of the building rather than being in any way over-dominant.

Woodland Trees.

Turning to the woodland area to the north, several of the older trees have become very tall, with high crowns and rather few branches low down; several have height to diameter ratios close to or in excess of 50 (see above). They could therefore be regarded as being *potentially* at risk of storm damage. Where they are standing amongst other trees they afford one another a good degree of shelter, but any loss of trees could have a 'knock-on' effect on their neighbours.

In one location some shelter has already been lost: as within the wood, some way north of the boundary wall, a particularly large tree has uprooted and fallen. This has been largely cleared but some of the remaining debris shows evidence of Honey Fungus (*Amillaria sp.*) suggesting that it was decayed and weakened prior to its collapse. No signs were observed to suggest that other trees near to the site in question were similarly infected, but the loss of this tree has opened up part of the wood thereby increasing to some extent the degree to which other nearby trees may be exposed to winds.

[1] Mattheck & Breloer, H (1998). The Body Language of Trees: A Handbook for Failure Analysis (Research for Amenity Trees 4) HMSO, London

Notwithstanding this, under current circumstances the level of risk posed by these trees is not unduly great. However when assessing tree risk (which may be defined as the likelihood that a tree will fail *and cause harm*) one must not simply consider the condition of the tree, but is also vital to also take into account the presence or otherwise of a potentially vulnerable 'target'. The present situation is such that a tree failure is unlikely to result in injury or serious harm. However, by making the building residential, its 'target status' will be significantly increased, thereby calling for greater safety margins than might apply now, when it is unoccupied.

Some selective removal of woodland trees in the vicinity of the building may therefore be called for. It would be prudent to remove both of trees 40 and 41, especially if the rather unsatisfactory poor pines in the western sector (trees 30, 31 and 33) are to go. It would also be expedient to remove other, poor quality trees such as numbers 42 and 44, as well as other smaller (unrecorded and generally insignificant) specimens. It is also likely that some pruning of trees 46 and 47 would be advisable to remove (or at least significantly reduce) the heavy boughs that lean out over the site (see photo 5.)

While natural regeneration would no doubt make good any losses in this area, consideration might be given to reinforcing the woodland edge through new planting of native woodland shrubs and small trees such as would typically be found in such a location.

Tree Plan and Tree Schedule

A Tree Location Plan is provided separately in A3 format. In this the Root Protection Areas are shown, calculated in accordance with BS5837:2012 based upon trunk diameter and drawn as circles centred on the tree in question. Note, however, that in practice, root spread will be constrained by physical factors on site and may not accord with these circular areas.

In the tree schedule that follows on pages 5 to 8, the trees are placed in categories and while these are similar to those used in a BS5837 tree assessment, they are not entirely equivalent but are defined as below.

Category 1 would be trees of notably high quality the retention of which should be given a particularly high priority should be given. (It was not felt that any individuals assessed here quite attained this level.)

Category 2 trees are of good quality and of some visual significance; retention would be beneficial but some losses may be acceptable.

Category 3: Acceptable but unremarkable trees; could be retained if so wished but not specimens of any exceptional value.

Category 4: trees in poor condition which should probably be removed irrespective of any proposed alterations to the site.

Note that these assessments are based on current circumstances and don't necessarily reflect constraints that may apply if the site was developed, (for example, the need to apply more stringent safety margins than at present).

ID_No	Species	Stem no.	Diam (mm)	Height (m)	Life Stage	Notes	Category
1	Ash	1	230	13	Early Mature	Leaning. An acceptable but unexceptional tree.	3
2	Scots Pine	1	425	15	Mature	Fair group tree*; broken branch in top	2
3	Wych Elm	1	205	11	Early Mature	Insignificant *	3
4	Wych Elm	1	225	11	Early Mature	Leaning*; minor significance	3
5	Scots Pine	1	270	15	Mature	Minor group tree*.	3
6	Holm Oak	1	300	13	Early Mature	One-sided crown*; otherwise fair.	3
7	Scots Pine	1	370	14	Mature	One-sided*; rather poor	4
8	Wych Elm	1	210	9.4	Early Mature	One-sided*; fair but minor only.	3
9	Holm Oak	1	455	16	Early Mature	Forks at 1.6m; somewhat disposed to W. Fair only.	3
10	Monterey Cypress	1	800	25	Mature	Large, prominent tree; broken branch hanging; some browning, but fair overall	2
11	Sycamore	2	175 & 240	13	Early Mature	Poor; leaning*; dieback; decay at base.	4
12	Scots Pine	1	410	18	Early Mature	Fair; bare stem, small, high crown.*	3
13	Scots Pine	1	305	17	Early Mature	Fair; bare stem, small, high crown.* Poor.	3
14	Sycamore	1	418	18	Mature	Slight lean; some dead wood but fair.	2
15	Scots Pine	1	500	19	Mature	Fair; one-sided crown. *[Note - on W side of existing low hedge]*	2
16	Sycamore	1	460	19	Mature	Five mature sycamores in generally good condition (although with some dead wood).Individual trees may have 'group tree' characteristics* but they collectively form a significant group.	2
17	Sycamore	1	420	20	Mature		2
18	Sycamore	1	343	19	Mature		2
19	Sycamore	1	375	18	Mature		2
	[Note: trees 20 to 24, although individually of variable quality, collectively form a moderately attractive planting]						
20	Bay Tree	6	125 (av)	7.7	Mature	Compact, multi-stemmed evergreen tree with spreading crown; generally good.	2

* 'Group trees': specimens that have grown up under the influence of (been suppressed by) other nearby trees, becoming tall & slender with a high, often one-sided crown. May be acceptable *within* the group but likely to be inappropriate and possible vulnerable to wind damage if left as an isolated tree as a result of the loss of its neighbours.

ID_No	Species	Stem no.	Diam (mm)	Height (m)	Life Stage	Notes	Category
21	Purple-Leaved Plum	2	205 & 295	9	Mature	Small ornamental tree; fair, but unexceptional as an individual.	3
22	Scots Pine	1	357	15	Mature	Quite good group tree*.	2
23	Purple-Leaved Plum	1	215	7.3	Mature	Fair; one-sided group tree*.	3
24	Purple-Leaved Plum	1	200	8.7	Mature	Fair; one-sided group tree*.	3
25	Scots Pine	1	405	19	Mature	Fair.	2
26	Scots Pine	1	374	17	Mature	Small, high crown* but acceptable within the wider group	3
27	Corsican Pine	1	583	20	Mature	Larger (a rather more vigorous species than the other Scots pines): condition fair; forks at 9m with twin leaders. (The strength and stability of the union may be an issue with respect to the nearby building.)	2
28	Scots Pine	1	415	17	Mature	Fair within group, but unexceptional	3
29	Wych Elm	1	237	13	Early Mature	One-sided; acceptable but negligible	3
30	Scots Pine	1	300	21	Mature	A group tree*, strongly suppressed by neighbouring trees: very tall & slender, leaning with a very small crown. Currently just acceptable within context of surrounding trees, but very poor as an individual	4
31	Scots Pine	1	460	23	Mature	A group tree* as above: tall & slender with a small, one-sided crown. Acceptable amongst other trees but poor as an individual	3
32	Bay Tree	2	130 & 140	11	Early Mature	Acceptable evergreen; fair but not of great significance	3
33	Scots Pine	1	365	19	Mature	A group tree* (as 32): tall & slender with a small, one-sided crown. Acceptable amongst other trees but poor as an individual	3
34	Sycamore	1	167	10	Early Mature	Severe decay in stem: poor	4

* 'Group trees': specimens that have grown up under the influence of (been suppressed by) other nearby trees, becoming tall & slender with a high, often one-sided crown. May be acceptable *within* the group but likely to be inappropriate and possible vulnerable to wind damage if left as an isolated tree as a result of the loss of its neighbours.

ID_No	Species	Stem no.	Diam (mm)	Height (m)	Life Stage	Notes	Category
35	Ash	2	263 & 222	17	Early Mature	Two-stemmed; fair, early-mature tree with capacity to achieve greater significance.	2
36	Bay Tree	1	295	14	Mature	Quite good but growing from base of damaged wall	2
37	Spruce	1	263	13	Early Mature	Rather poor (dieback - generally rather untidy)	3
38	Ash	1	261	17	Early Mature	Good young tree (growing from base of wall.)	2
	[Trees 39 to 47, below are only the largest of the woodland trees, growing in the vicinity of the site: note the presence of other, smaller specimens and numerous trees in the wider woodland. Note that although generally larger than trees 1 to 38, these woodland specimens share characteristics with 'group trees', with tall trunks with few side branches and with high, frequently somewhat constrained crowns. As a result they may be left vulnerable to storm damage if felling results in the loss of protection currently afforded by surrounding trees.]						
39	Ash	1	520	25	Mature	Substantial, tall and rather slender woodland tree. (H/D=48†) Otherwise quite good.	2
40	Ash	1	480	28	Mature	A tall tree, a generally good woodland specimen but tall and slender (**H/D=58†**); ivy up main stem. Growing close to (and partially co-dependent with) tree 41(below)	2
41	Ash	1	480	27	Mature	Close to the more dominant tree 40, also with a high height to diameter ratio (**H/D=56.3†**). Several leaders, with three leaning out, weighted towards site; no indication of serious hazard but could give rise to concern. (Note that if this tree is removed, consideration must be given to status of tree 40).	3
42	Wych Elm	1	240	7.5	Early Mature	Slender tree, leaning strongly - poor	4
43	Sycamore	1	505	8.5	Mature	Ivy; fair woodland specimen (reasonably far back from site boundary wall).	2

† Height to Diameter ratio. If equal or greater than 50 there may be an increased risk of the failure under the influence of high winds (see notes above under 'Trees East of Building')

* 'Group trees': specimens that have grown up under the influence of (been suppressed by) other nearby trees, becoming tall & slender with a high, often one-sided crown. May be acceptable *within* the group but likely to be inappropriate and possible vulnerable to wind damage if left as an isolated tree as a result of the loss of its neighbours.

ID_No	Species	Stem no.	Diam (mm)	Height (m)	Life Stage	Notes	Category
44	Ash	1	440	17	Mature	Tree very harshly topped with some regrowth; very poor	4
45	Ash	1	495	23	Mature	A tall woodland tree with high crown; a rather fine specimen, but its tall, somewhat top-heavy form, although not in excess of 50 (H/D = 46.5†) could cause concern to future residents; further assessment may be needed in the light of future developments (including the degree to which the area is opened up by clearance of other trees).	2
46	Sycamore	1	770	22	Mature	A large tree, quite close to the boundary wall. Generally good, but note the large, heavy ascending bough on the SW side, leaning directly towards the building. This bough likely to require reduction or removal.	2
47	Sycamore	1	855	22	Mature	Tree of similar stature to tree 47; also with a large bough over the site and *potentially* threatening the building. Although no indication of a significant risk of failure, consideration may be given to its reduction or perhaps removal.	2

† Height to Diameter ratio. If equal or greater than 50 there may be an increased risk of the failure under the influence of high winds (see notes above under 'Trees East of Building')

* 'Group trees': specimens that have grown up under the influence of (been suppressed by) other nearby trees, becoming tall & slender with a high, often one-sided crown. May be acceptable *within* the group but likely to be inappropriate and possible vulnerable to wind damage if left as an isolated tree as a result of the loss of its neighbours.

APPENDIX

TREE PROTECTION (TPOs).

The image below is a screen-shot provided by the Vale of Glamorgan Council indicating Tree Preservation Orders outlined in green.

It will be seen that all of the trees included in this report are within an area that is presumed to be designated as an Area or Woodland under the TPO. At the time of writing I have no information on the details of the schedule and so cannot be specific about which trees are included but until further information is available it should be assumed that *all* of the trees discussed are protected.

I have also been informed that the planning approval relating to the wider site was subject to a landscape plan which might also have implications for future developments.

KEY

Approximate tree locations are shown by symbols below, which also indicate their category (see accompanying report). Nominal root protection areas (RPAs) shown as circles drawn at a radius calculated according to BS 5837:2012. Note that these circular RPAs are for guidance only, to assist in determining the design & layout of any proposed development: they do not represent the definitive extent of root spread.

- Category 1 (High retention value)
- Category 2 (Moderate Ret. value)
- Category 3 (Low retention value)
- Category 4 (Unsuitable for retention)
- Low stone retaining wall
- Semi-natural woodland
- Grass with other scattered trees (not plotted)

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SITE	Hayes Point, Sully: Former mortuary building
CLIENT	WYG
DRAWING TITLE	Tree Location Pla (preliminary tree assessment)
DRWG. No. CF615YA/wYG/PTA	REVISION
SCALE 1:250 @ A3	DRAWN BY JPR
TREE SURVEY BY J.P. Ross	DATE 10/04/2014

NORTH

Based on drawing OS Mastermap data supplied by eMap.co.uk

TREE LOCATIONS ARE ESTIMATED ONLY: Do not scale from this drawing: check all critical dimensions on site.