



Land to Rear of Pine Valley

Pre-Development BS5837 Tree Survey

December 2013

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1.0 Introduction

1.1 Brief

Acer Ecology Ltd was commissioned by NPTC group to conduct a tree condition assessment of land at the rear of Pine Valley, Cwmavon, SA12 9NF (OS grid reference: SS77539 208).

The survey was carried out by Bettina Broadway-Mann who is considered to be a competent surveyor under BS5837:2012 whilst the report has been prepared by Bettina Broadway-Mann and Paul Hudson of Acer Ecology Ltd.

The scope of the work was to prepare a pre-development tree survey report for the site in accordance with BS5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*' (BSi, 2012). This would determine the size, condition and retention value of significant individual trees and groups of trees on and immediately adjacent to the site and provide recommendations for remedial work and root protective distances to ensure the future health and stability of retained trees.

The condition and retention value of trees on the site was assessed irrespective of development proposals.

1.2 Statutory Tree Protection

Tree Preservation Orders (TPOs) and location within Conservation Areas place various legal restrictions on the felling, pruning or damaging of trees, subject to various exemptions (DETR, 2000).

1.3 Proposed Works

The site is proposed for development comprising an extension to the existing housing development. It is proposed that 20 additional buildings are constructed onsite, which will necessitate a degree of site level changes.

2.0 Survey Methods

2.1 Desk Study

An enquiry was made to the Neath Port Talbot County Borough Council tree officer to determine the presence of TPOs and Conservation Areas within and adjacent to the site.

2.2 Field Study

The site was visited on 30th November 2013 to carry out an assessment in accordance with BS5837:2012. Trees were assessed visually from ground level. No climbed inspection, removal of ivy or detailed investigation of decay was made.

The following information was collected for each tree: species, age class, height, stem diameter at 1.5m above ground level, crown spread in the four cardinal directions and height of the crown above the ground (excluding basal sprouts and epicormic branches). The stem diameters of multi-stemmed trees and shrubs was measured in accordance with Annex C of BS:5837:2012 whereby the stem diameter was measured close to ground level, immediately above the root buttress flare. Where clusters of stems joining below ground level prevented the measure of a single basal stem diameter, a visual estimate was made of the effective basal stem diameter.

An assessment was made of the physiological and structural condition of the trees, noting any disorders or biomechanical features that present an obvious hazard to present or future users of the site or affect the trees' life expectancy.

Preliminary management works are proposed in order to either remove or reduce hazards or promote good future growth of the tree. These recommendations do not take account of any development proposals at this stage. All management works carried out should comply with BS3998:2010 *British Standard Recommendations for Tree Work*.

The overall quality and value of the trees considered for retention was assessed in accordance with BS5837:2012 (see Appendix 2). This was dependent on the trees' physiological and structural condition, safe useful life expectancy and arboricultural, landscape, cultural, ecological value and amenity value (as a function of size, prominence, attractiveness and screening).

The root protection area (RPA) radius and area for each tree was also calculated in accordance with BS5837:2012. The RPA is an area of ground that provides sufficient soil rooting volume to ensure the survival of the tree.

Tree condition can change significantly over a relatively short period of time, and therefore the results and recommendations of this survey can only be held to be valid for a period of 12 months following the survey date.

2.3 Caveats

The tree assessment comprised a visual inspection carried out from ground level only. It was intended to identify distinct defects and other failure-prone characteristics of the trees, where these features might give rise to hazard within the coming twelve months. It must nevertheless be recognized that no tree is entirely safe, given the possibility that an exceptionally strong wind could damage or uproot even a mechanically 'perfect' specimen.

Whilst every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, no responsibility can be accepted for damage or injury sustained as a result of the failure of any tree due to faults not apparent upon a visual, ground level inspection carried out at this season, or to faults developing subsequent to the survey. Similarly, no liability can be accepted for the condition of trees that are obscured in part or in whole (e.g. by dense ivy or other foliage), nor for any that proved inaccessible during the survey. Certain features that might provide evidence of ongoing decay or decline (such as fungal fruiting bodies, damage to foliage, insect emergence holes etc.) may not have been in evidence. Only features that were apparent at the time of inspection could be assessed.

3.0 Statutory Designations

The Planning Department of Neath Port Talbot Council confirmed that the area to the south of the site is a Tree Protection Order. This appears to include the trees within the site (see Plan 4). However, as the trees will be considered in the context of a planning application, the planning permission would over-ride the TPO and it would not be considered as an impediment to the planning process.

4.0 Findings and Recommendations

The tree survey results are listed in the tree details table (pages 2 – 4). No trees are listed as category **A** or as category **B**, and 8 trees, 1 group and one hedgerow as category **C**. Based upon **their condition** at the time of the survey, T4 and T6 were classed as category **U**.

The site plans provided by Acer Ecology were of the existing and proposed site layouts and they form the basis for the enclosed tree survey plans.

The site slopes downhill from North West to South East, and it is proposed to build 20 dwellings on the site. This will necessitate a degree of site level changes, and along with the proximity of the proposed garages to the existing trees, the development would require the removal of trees 1 – 7, and Hedge 1 to be implemented.

T4 is a Turkey Oak, and its crown shape and adjacent dip in ground level suggest that another tree once stood to the South West of it. As a result, it has an oval shaped crown, and significantly overshadows T3.

In addition, the remains of fungal fruiting bodies of the root decaying pathogen *Meripilus giganteus* were visible at the base of the tree to the South West. As the roots decay below ground, the risk of unexpected failure during severe weather increases, and therefore this tree has been recommended for removal.

T5 is a small tree of the *Prunus* species, and has been severely suppressed. The majority of its crown is out to the West and North West, and it is leaning at an acute angle to the North West. There is a large Canker on the underside of the trunk, immediately below the fork, and this tree has been recommended for removal.

T6 has recently blown over and fallen to the South through the boundary fence. Before that, it significantly overshadowed and suppressed T5.

T7 is a young multi-stem tree. However, a large heap of soil and rubble has been piled up around the base of the tree, with associated bark damage at the base of some of the stems. Further damage is likely to occur as the soil and rubble are removed during the course of development.

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H1 is a single line of closely spaced trees planted to form a hedgerow. It has not been regularly trimmed back or topped off, and so now has an open canopy structure and no branches for the first 1m or so of trunk. Given that this species of Cypress does not respond well to pruning back, it would not be possible to return it to a more manageable height and width.

It would also be directly South from one of the proposed dwellings, thereby casting dense shade across the garden and back of the house for most of the day. H1 does not serve any useful screening purpose, as the neighbouring dwelling to the South is further downhill, and there are a number of mature trees present in that garden between the site and the house.

T8 and T9 are beyond the site boundary in the rear garden of 65 Pine Valley. There is a low concrete retaining wall with brick boundary wall on top along the boundary line, suggesting that the ground level is higher beyond the boundary.

No cracks were visible in the boundary wall, and it is considered unlikely that major structural roots would have extended far into the site. Some of the lowest branches do overhang the proposed site entrance, and these would require pruning back to facilitate the development.

The Root Protection Areas (RPA) shown on the Tree Constraints Plan are the theoretical **minimum** areas required by trees of their size. They have been shown as a circle, but given that tree roots may not spread out consistently, these RPA circles do not necessarily reflect the likely spread of roots on this site.

5.0 References

BSi (2012) *BS5837:2012. Trees in Relation to Design, Demolition and Construction – Recommendations*. British Standards Institute.

BSi (2004) *BS5837:2005. Trees in Relation to Construction – Recommendations*. British Standards Institute.

BSi (2010) *BS 3998:2010 British Standard Recommendations for Tree Work*. British Standards Institute.

DETR (2000) *Tree Preservation Orders: a Guide to the Law and Good Practise*. Department of the Environment, Transport and the Regions.

Forestry Commission (2005) *Tree Felling – Getting Permission*. Forestry Commission.

Johnson, O. & More, D. (2004) *Tree Guide*. Harper Collins, London.

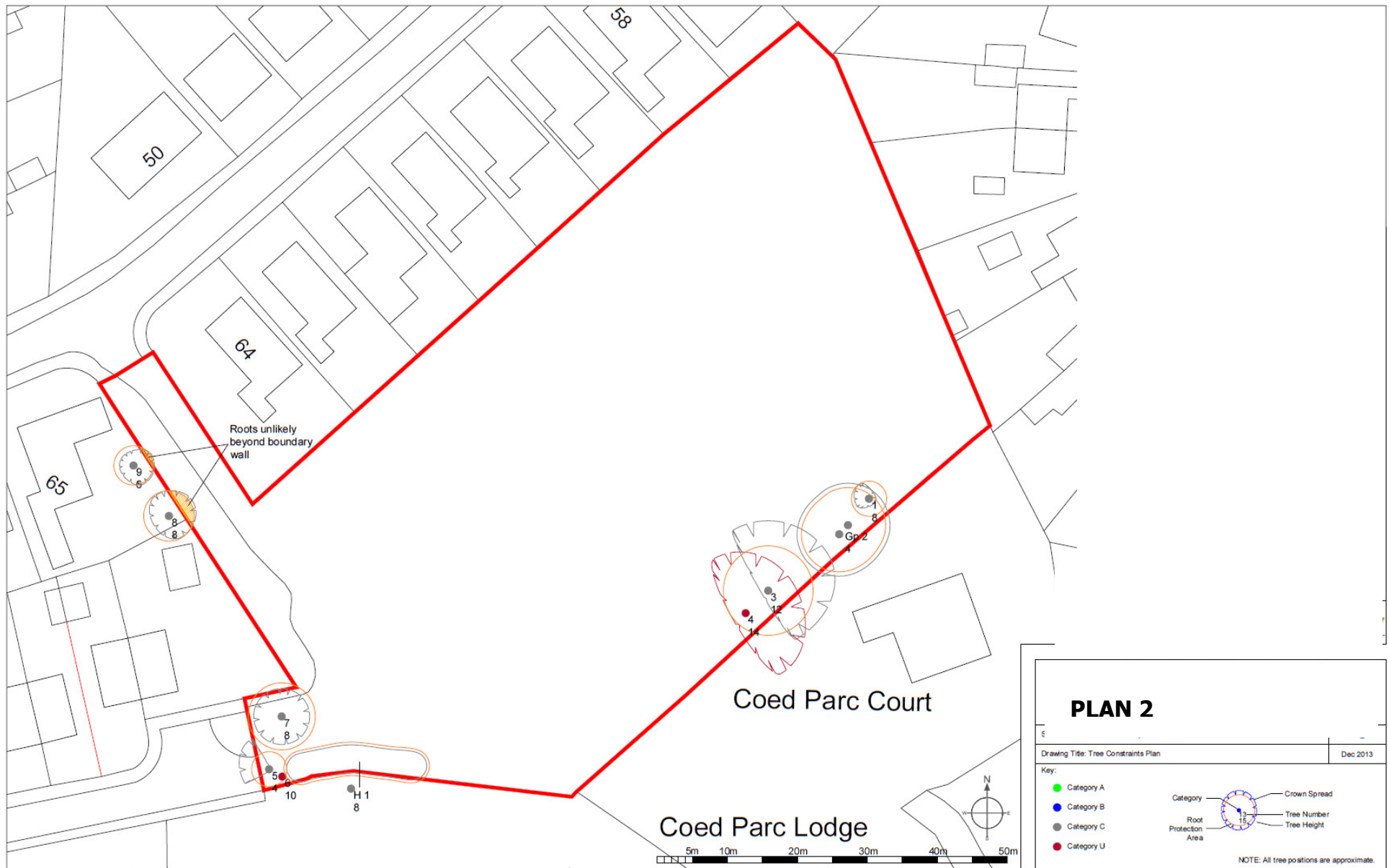
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PLAN 4: Tree Preservation Orders



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Appendix 1: Tree Survey Schedule

Tree Tag No.	Species	Height m	Stem diameter mm	Height crown clearance / m	Age Class	Branch spread (m)				Physiological Condition	Structural condition	Recommended Works	Est remain years	Category grading	RPA radius m
						N	S	E	W						
T1	Sycamore	8	210	2.0	Y	2.5	1	1	2	FAIR	- Forks at 3m into co-dominant stems - Some squirrel damage in upper crown - Located on boundary of site - Suppressed to SE by conifer hedge in neighbouring garden - No other visible defects	Would have to be removed to facilitate development	40	C	2.5
Gp 2	Holly & Sycamore	4 & 11	451	1.0	Y & Mi	6	6	6	6	GOOD	- Holly located at NE base of Sycamore - Minor squirrel damage to upper crown of Sycamore - Sycamore overshadows and suppresses Holly - Located on boundary of site - No other visible defects	Would have to be removed to facilitate development	40	C	5.4
T3	English Oak	12	530	1.5	Mi	10	8	10	1	FAIR	- Severely suppressed and overshadowed by T4 - All of crown out to North East - Small thicket of Holly and Beech saplings around base - No other visible defects	Would have to be removed to facilitate development	40	C	6.4

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Tree Tag No.	Species	Height m	Stem diameter mm	Height crown clearance / m	Age Class	Branch spread (m)				Physiological Condition	Structural condition	Recommended Works	Est remain years	Category grading	RPA radius m
						N	S	E	W						
T4	Turkey Oak	14	780	2.5	Mi	9	10	8	2	POOR	- Forks at 4m into co-dominant stems - West stem forks again at 5m - Oval shaped crown on NW – SE axis - Crown shape suggests it was suppressed to South West in past - Remains of fungal fruiting bodies of <i>Meripilus giganteus</i> at base West - Stem leaning to North at 70° angle - Large waterlogged dip in ground at base of tree to South West	FELL	0	U	9.4
T5	Prunus sp.	4	210	0.5	Mi	5	0	0	4	POOR	- Was severely overshadowed and suppressed in past by T6 to SE - All of crown out to NW - Leaning at 45° angle to NW - Forks at 2m into co-dominant stems - Large Canker below fork on NW side of trunk	FELL	10	C	2.5
T6	Cypress sp.	10	550	n/a	M	n/a	n/a	n/a	n/a	DEAD	- Has uprooted in recent past - Fallen to South through boundary fence - Twin stemmed from base	Cut up and remove Re-instate boundary fence	0	U	6.6
T7	Sycamore	8	397	1.8	Y	4	4	4	4	FAIR	- Multi-stemmed x 7 - Large heap of rubble and soil piled up around base of tree - Some damage to bark at base of stems - No other visible defects	Would have to be removed to facilitate development	20 – 40	C	4.8

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Tree Tag No.	Species	Height m	Stem diameter mm	Height crown clearance / m	Age Class	Branch spread (m)				Physiological Condition	Structural condition	Recommended Works	Est remain years	Category grading	RPA radius m
						N	S	E	W						
T8	Deodar Cedar	8	300	1.0	Y	3.5	3.5	4	2.5	FAIR	- Has been recently topped - One sided crown growth out to East - Suppressed by Willow to West - Lower limbs overhang site entrance - No other visible defects	Lower crown would have to be pruned back to facilitate development	20 – 40	C	3.6
T9	Norway Spruce	6	230	1.2	Y	2	3	3	2	GOOD	- Has been recently topped - Lower limbs overhang site entrance - No other visible defects	Lower crown would have to be pruned back to facilitate development	20	C	2.8
H 1	16 Leyland Cypress, 1 Spruce	8	825	0.5	Y & Mi	2	2	2	2	FAIR	- Closely spaced single line of trees - Inner crowns suppressing each other - Some stems much larger and more dominant than others - Has not been maintained as a closely trimmed hedge - Spruce tree located at West end of row - No other visible defects	Would have to be removed to facilitate development	20	C	9.9

Tree Survey Schedule – Explanation of Terms

Tree number Relates to tree tag number and number on attached plan/s

Height estimated and taken to nearest half metre

Diameter Measured at 1.5m above ground level for single or multi-stemmed trees, or at the narrowest point for trees that fork below 1.5m (mm)

Branch spread Measured from the stem to the North, East, South and West (m)

Crown clearance height of the first significant branch and direction of growth, and of

Age class Y young – less than 1/3 life expectancy; Mi = middle aged – 1/3 to 2/3 life expectancy; M = mature – over 2/3 life expectancy; OM = over-mature – over 2/3 life expectancy and in decline; V Veteran

Physiological condition Categorized to Good, Fair, Poor or Dead

Structural condition Description of the tree's condition and whether any decay or physical defects are present

Preliminary management recommendations Immediate Remedial tree works required (if any)

Estimated remaining contribution in years categorised to less than 10, 10+, 20+, 40+

Quality grading U, or A to C category grading, also recorded on the tree survey plan (See the BS5837 category explanation table in Appendix 2).

RPA radius m: Root Protection Area given as the **radius** in metres around the tree to be protected during development works

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Appendix 2: Tree Quality and Retention Value Categories

TREES UNSUITABLE FOR RETENTION		
Category and definition	Criteria	Plan colour
Category 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 a serious, irreversible, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category tree (ie: 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 (eg: Dutch elm disease) or very low quality trees suppressing adjacent trees if better quality - NB: Habitat reinstatement and mitigation may be appropriate (eg: U category tree used as a bat roost: installation of bat box in nearby tree).	Dark red

TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Plan colour
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).	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 (eg: the dominant and/or principal trees within an avenue).	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (eg: avenues or other arboricultural features assessed as groups).	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (eg: veteran trees or wood-pasture).	Light green
Category B Those of moderate quality and value: in such a condition as to make a significant contribution (a minimum of 20 years is suggested).	Trees that might be included in the high category, but are downgraded because of impaired condition (eg: presence of remedial defects including unsympathetic past management and minor storm damage).	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (eg: trees of moderate quality within an avenue that include better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	Trees with clearly identifiable conservation or other cultural benefits.	Mid blue
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.	Trees not qualifying in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits.	Grey
NB: Whilst C Category trees will usually not be retained where they impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.				

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Appendix 3: Site Photographs



T3 & T4 – View of crown suppression of T3 (red arrow)



T4 – View of remains of fungal fruiting bodies of *Meripilus giganteus* at base (red arrows)



T4 – View of waterlogged ground to West side of tree



T5 – View of stem severely leaning to North



T5 – View of extensive Canker on trunk North side



T6 – View of stems fallen through boundary fence

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T7 – View of multi-stems and rubble heaped around base



T8 & T9 – View of lower crowns overhanging site entrance