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*within Yelverton (Y) + (Yw)
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The Planning Group

FLORA AND VEGETATION SURVEY

LOT 50 GIBB ROAD, METRICUP

**ONSHORE ENVIRONMENTAL
CONSULTANTS**

January 2004

The Planning Group

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EXECUTIVE SUMMARY

Onshore Environmental Consultants Pty Ltd (OEC) was commissioned to determine if a proposed building envelope (1,500 m²) on Lot 2 of Lot 50 Gibb Road Metricup was appropriately situated, and to then survey flora and vegetation that will be disturbed by future development of the site.

A brief overview assessment of vegetation on Lot 2 (32.93 ha) occurred 12 December 2003. The preferred building envelope proposed by the property owners in conjunction with 'The Planning Group' was supported by OEC as the most appropriate siting.

A flora and vegetation survey of the building envelope occurred 19 December 2003. The objectives of the survey were as outlined by the Department of Conservation and Land Management (CALM) in the document 'minimum floristic survey requirements'. A single vegetation complex extended across the entire building envelope, described as *Corymbia calophylla* (marri) Woodland, over *Xanthorrhoea preissii* Open Low Scrub A, over *Hibbertia hypericoides*, *Patersonia umbrosa* var. *xanthina*, *Mesomelaena tetragona* Open Dwarf Scrub D. Soil was a shallow gravelly laterite, extending downslope to the east for approximately 150-200 m where there was a clearly delineated change with the broad swampy floors and wetland vegetation complexes associated with Carunup River; wetland vegetation complexes were not included in the survey.

There was evidence of historical disturbance across the proposed building envelope resulting in reduced perennial species diversity, an open vegetation structure for all three strata recorded (particularly evident for the low shrub stratum), and increased establishment by introduced annual grasses. Vegetation condition was rated as 'good' - vegetation structure significantly altered by very obvious signs of multiple disturbances but retaining basic vegetation structure or ability to regenerate. Outside the proposed building envelope, 100 m downslope to the east and 150 m upslope to the north, the same vegetation complex occurred in excellent condition, as determined by denser canopy (Forest) and low shrub stratum (Low Heath D).

A total of 26 families, 47 genera, and 56 plant taxa (including varieties and subspecies) were recorded from within the building envelope and immediate surrounds. Species representation was greatest among the following families: Papilionaceae (8), Myrtaceae (5), Poaceae (5*), Cyperaceae (5) and Restionaceae (5). No plant taxa gazetted as Declared Rare Flora pursuant to subsection (2) of section 23F of the Wildlife Conservation Act (1950) were located within the survey area. No Priority flora were recorded from the survey area.

The sole vegetation complex described from the survey area is not listed as a threatened ecological community, and is well represented within the Shire of Busselton. Flora recorded during the survey period were common taxa and there were no species of added interest.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1 PREAMBLE	1
2 OBJECTIVES	1
2 REVIEW OF FLORA AND VEGETATION	1
3 METHODS	1
3.1 Flora and Vegetation	1
3.2 Review of Conservation Status of Flora Species	2
4 RESULTS	6
4.1 Vegetation	6
4.2 Conservation Significance of Flora and Vegetation	7
4.2.1 Management	7
5 BIBLIOGRAPHY	9
 APPENDICES	
APPENDIX 1: Vegetation classification used for the flora and vegetation survey at Lot 50 Gibb Road Metricup (from Muir 1977).	13
APPENDIX 2: Flora recorded within survey area at Lot 50 Gibb Road Metricup; all specimens recorded 19 December 2003.	14
 TABLES	
TABLE 1: Vegetation condition scale as used in Perth's Bushplan (Environmental Protection Authority, 1998).	2
TABLE 2: Conservation Codes for Western Australian Flora (see Atkins 2002).	3
TABLE 3: Flora of conservation significance in the Metricup survey area.	4
TABLE 4: Dominant and common associate plant species represented in three vegetation strata recorded within the proposed building envelope (vegetation condition good) and adjacent areas (vegetation condition excellent).	5
 FIGURES	
FIGURE 1: Aerial photograph showing boundary of Lot 50 (pink), area covered in the flora and vegetation survey encompassing the building envelope (yellow), vegetation condition (red, scale as used in Perth's Bushplan - see Table 1), and landform / soil types as described by Tille & Lantze 1990 (blue). KEY: 3 = 'good' vegetation condition, 5 = 'excellent' vegetation condition; Yvw = Yelverton wet valleys, Yi = Yelverton ironstone flats, Y3 = Yelverton low slopes	11
 PLATES	
PLATE 1: <i>Agonis parviceps</i> formed dense thicket on lower slopes associated with the Carburnup River. This transition was clearly demarcated.	11
PLATE 2: Proposed building envelope defined by southwest boundary peg (foreground right) and northeast boundary peg (background left). Vegetation condition impacted by multiple disturbances, which have reduced species diversity and cover provided by the canopy and low shrub strata. Note: undisturbed 'forest' complex (denser canopy) in background.	11
PLATE 3: Outside of the proposed building envelope, vegetation structure remained intact and species diversity was high. Minimal disturbance was restricted to the perimeter of the vegetation complex (edge effects) as evidenced by the presence of non-aggressive annual grasses.	12

1 PREAMBLE

Acting on behalf of the property owners, Colin and Rosemary Smith, 'The Planning Group' is proposing to subdivide Lot 50 Gibb Road Metricup into two lots; Lot 1 (19.77 ha), the majority of which is cleared farmland and currently supports wine grapes and a bluegum plantation, and Lot 2 (32.93 ha), which is covered by remnant vegetation and dissected by the Carburnup River.

Onshore Environmental Consultants Pty Ltd (OEC) was commissioned by The Planning Group to inspect flora and vegetation over Lot 2 to determine the most appropriate building envelope, and then undertake a detailed flora and vegetation survey of the site.

2 OBJECTIVES

The objectives of the flora and vegetation survey were as outlined by the Department of Conservation and Land Management (CALM) in the document 'minimum floristic survey requirements':

1. Map vegetation complexes as an aerial photograph overlay;
2. For each vegetation complex identified provide a brief summary of the surface soil and rock type, level of inundation and or topographic location, aspect, and dominant floristic species present in each stratum;
3. Provide a thorough list of all floristic species (native and introduced) at the site, with presence / absence in each complex noted;
4. Determine conservation significance in terms of plant species (DRF / Priority flora, range extensions etc), vegetation complex (threatened ecological community), and local context; and
5. Prepare a report summarising findings.

2 REVIEW OF FLORA AND VEGETATION

Beard (1980) mapped vegetation of the Swan region at a scale of 1: 1 000 000, describing vegetation of the study area broadly as 'jarrah-marri forest'.

The survey area forms part of the Yelverton Shelf land system, located on the northern edge of the Blackwood Palteau between the Swan Coastal Plain and the Treeton Hills land system (Tille and Lantzke 1990). Department of Agriculture (2003) land profiler maps describe vegetation of the study area (immediate building envelope) as 'medium woodland, jarrah + *Eucalyptus haematoxylon*'. Lower areas of Lot 2 situated to the east, associated with the Carburnup River, are described as 'mosaic: medium forest; jarrah-marri low woodland; banksias low forest; teatree (*Melaleuca* spp.)'.

3 METHODS

3.1 Flora and Vegetation

This report is based on data recorded during an initial site assessment on the 12 December 2003, and subsequent field survey of the proposed building envelope on 19 December 2003. Prior to the field survey a variety of topographic, vegetation, and land system maps were used to provide preliminary vegetation classification of the site.

The survey comprised a total of five hours effort to ground truth the building envelope and immediate surrounds to identify flora present, record identifiable changes in vegetation composition and structure, and assess vegetation condition. During the field survey a classification was developed as a basis for mapping. The resultant map, Figure 1, represents the major vegetation association subsequently described. Description of vegetation structure follows the height, life form and density classes of Muir (1977, see Appendix 1). This is largely a structural classification suitable for broader scale mapping, but taking all ecologically significant strata into account. Vegetation condition was assessed using a six-point scale as used in Perth's Bushplan (Table 1).

Voucher specimens were taken for selected species to verify identification that could not be confidently substantiated in the field. Use was made of the Western Australian State Herbarium for confirmation of species identification. Nomenclature follows Green (1985 & 1987), Paczkowska and Chapman (2000) and the Western Australian Herbarium.

TABLE 1: Vegetation condition scale as used in Perth's Bushplan (Environmental Protection Authority, 1998).

CONDITION	SCALE	DESCRIPTION
Pristine	1	Pristine or nearly so, no obvious signs of disturbance.
Excellent	2	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good	3	Vegetation structure altered; obvious signs of disturbance.
Good	4	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it.
Degraded	5	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.
Completely Degraded	6	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species.

3.2 Review of Conservation Status of Flora Species

The flora in many areas of Western Australia is poorly collected and hence, continually being reviewed by relevant government departments and academic institutions. The Department of Conservation and Land Management (CALM) regularly reviews and revises the schedule of Declared Rare and Priority Flora listings in Western Australia (Table 2, Atkins 2002), and is responsible for collating and distributing this information.

As part of the field survey, a search was undertaken by CALM for information on rare flora previously collected or described within or in close proximity to, the study area. The database search was extended beyond the immediate survey limits to place the flora values into a local and regional context. The search co-ordinates given were 33° 42' 00" - 33° 50' 00" S and 114° 59' 00" - 115° 14' 00" E. The search investigated three databases:

1. The CALM Threatened (Declared Rare) Flora Data-base;

2. The CALM Declared Rare and Priority Flora List - this list contains species that are declared rare (Conservation Codes R, X), poorly known (Conservation Codes 1, 2, 3), or require monitoring (Conservation Code 4), and
3. The Western Australian Herbarium Specimen Database for priority species opportunistically collected in the area of interest.

From the search co-ordinates given, a total of 42 species were identified as having conservation significance (Table 3).

TABLE 2: Conservation Codes for Western Australian Flora (see Atkins 2002).

<p><u>R: Declared Rare Flora - Extant Taxa</u></p> <p>Taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.</p> <p><u>1: Priority One - Poorly Known Taxa</u></p> <p>Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farm land, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need for further survey.</p> <p><u>2: Priority Two - Poorly Known Taxa</u></p> <p>Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need for further survey.</p> <p><u>3: Priority Three - Poorly Known Taxa</u></p> <p>Taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need for further survey.</p> <p><u>4: Priority Four - Rare Taxa</u></p> <p>Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.</p>
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TABLE 3: Flora of conservation significance in the Metricup survey area.

FAMILY Species	Landform Surface	Cons. Code
ANTHERICACEAE		
<i>Johnsonia inconspicua</i>	Deep white sand over laterite	3
<i>Laxmannia jamesii</i>	Grey white sand, dune	R
<i>Thysanotus glaucus</i>	Deep grey sand over white sand	4
<i>Thysanotus isantherus</i>	Grey loam over laterite	3
ASPLENIACEAE		
<i>Asplenium aethiopicum</i>	Shaded crevices of granite outcrop	4
ASTERACEAE		
<i>Senecio gilbertii</i>	Peaty sand, swamps	1
<i>Trichocline</i> sp. Treeton	Red sandy clay over ironstone, wet	2
CYPERACEAE		
<i>Cyathochaeta teretifolia</i>	Grey sand, sandy clay, swamps	3
<i>Gahnia scleroides</i>	Heavy brown clay loam, creekline	3
<i>Schoenus</i> sp. Jindong	Moist red loams, creekline	1
DROSERACEAE		
<i>Drosera fimbriata</i>	Shallow loam over granite	4
EPACRIDACEAE		
<i>Andersonia ferricola</i>	Red clayey sand over ironstone	1
MIMOSACEAE		
<i>Acacia flagelliformis</i>	Swampy	4
<i>Acacia inops</i>	Moist soils, swampy	3
<i>Acacia semitrullata</i>	Brown sandy clay over laterite	3
MYRTACEAE		
<i>Calothamnus pallidifolius</i>	Grey sand over laterite	4
<i>Calothamnus</i> sp. Whicher	Red brown clayey loam over ironstone	4
<i>Chamelaucium roycei</i>	Loam soils, bank of stream	R
<i>Eucalyptus rudis</i> ssp. <i>cratyantha</i>	Pale grey-brown sandy loam	4
<i>Verticordia lehmannii</i>	Sand	4
<i>Verticordia plumosa</i> var. <i>ananeotes</i>	Sandy loam, seasonally inundated	R
ORCHIDACEAE		
<i>Caladenia excelsa</i>	White sand, undulating	R
<i>Caladenia plicata</i>	Sand	4
<i>Caladenia procera</i>	Rich clay loam	R
PAPILIONACEAE		
<i>Chorizema reticulatum</i>	Brown sandy clay over granite	3
<i>Daviesia elongata</i> ssp. <i>elongata</i>	Grey sandy loam	R
<i>Pultenaea pinifolia</i>	Sand over clay, creekline	3
PROTEACEAE		
<i>Conospermum paniculatum</i>	Grey sand over white sand	3
<i>Dryandra squarrosa</i> ssp. <i>argillacea</i>	creek	R
<i>Grevillea brachystylis</i>	Red brown clayey sand over ironstone	3
<i>Grevillea manglesioides</i>	White sand	2
<i>Hakea oldfieldii</i>	Red brown clayey sand over ironstone	3
<i>Isopogon formosus</i> ssp. <i>dasylepis</i>	Red clay over ironstone, winter-wet	3
RESTIONACEAE		
<i>Chordiflex isomorphus</i>	Skeletal red clays, ironstone	4
<i>Lepyrodia heleocharoides</i>	Grey black sand over clay, swampy	3
<i>Loxocarya magna</i>	Red-brown clay over ironstone	3
<i>Tyrbastes glaucescens</i>	Brown red clay loam	4
RUTACEAE		
<i>Boronia anceps</i>	Grey-black peat over granite	3
<i>Boronia capitata</i>	Grey sand, winter-wet	2
STERCULIACEAE		
<i>Thomasia laxiflora</i>	Brown laterite	1
STYLIDIACEAE		
<i>Stylidium leeuwinense</i>	White sandy clay	3
THYMELAEACEAE		

Pimelea ciliata ssp. *longituba* | Grey sand over clay | 3

4 RESULTS

4.1 Vegetation

The sole vegetation complex recorded across the proposed building envelope occurs over a gentle rise (easterly aspect) in shallow gravelly soils; laterite caprock is exposed at localised points. The soil type extends downslope to the east for approximately 150-200 m where there is a clearly delineated change associated with the broad swampy floors of Caribunup River (Plate 1). Immediately west of the proposed building envelope deep grey brown sandy soils continue upslope and across the boundary with Lot 1. The proposed building envelope is situated in an area of high relief across Lot 2 and as such, represents a relatively low risk to inundation.

Vegetation is described as *Corymbia calophylla* (marri) Woodland over *Xanthorrhoea preissii* Open Low Scrub A over *Hibbertia hypericoides*, *Patersonia umbrosa* var. *xanthina*, *Mesomelaena tetragona* Open Dwarf Scrub D (Plate 2). A total of 26 families, 47 genera, and 56 plant taxa (including varieties and subspecies) were recorded from the proposed building envelope and immediate surrounds (Appendix 2). Species representation was greatest among the following families: Papilionaceae (8), Myrtaceae (5), Poaceae (5*), Cyperaceae (5) and Restionaceae (5).

The extent of the vegetation complex recorded across the building envelope has been mapped in Figure 1, with changes in vegetation condition status indicated. The extent of the vegetation complex was distinguished by overall physiognomy, floristic elements and soil features, with specific description following the height, life form and density classes of Muir (1977, see Appendix 1).

There is evidence of historical disturbance across the immediate survey area; this has resulted in reduced perennial species diversity, an open vegetation structure for all three strata (particularly evident for the low shrub stratum), and increased establishment by introduced annual grasses. None of the eleven introduced plant taxa are aggressive species, with all being restricted to open disturbed sites.

Vegetation condition across the proposed building envelope was rated as 'good' - vegetation structure significantly altered by very obvious signs of multiple disturbances, but retaining basic vegetation structure or ability to regenerate (see Table 1, Environmental Protection Authority 1998). Outside the proposed building envelope, 100 m downslope to the east and 150 m upslope to the north, the same vegetation complex occurs in excellent condition (Table 4). The canopy cover is denser (30-50%), forming Forest, and supports a higher proportion of *Eucalyptus marginata* (jarrah) mixed with *C. calophylla* (marri). The low shrub cover is also better represented (50-70% cover) forming Low Heath D (Plate 3).

TABLE 4: Dominant and common associate plant species represented in three vegetation strata recorded within the proposed building envelope (vegetation condition good) and adjacent areas (vegetation condition excellent).

Dominant Plant Taxa	Associate Plant Taxa	Building Envelope Condition 'GOOD'		Adjacent Areas Condition 'Excellent'	
		% Cover	Mean Ht	% Cover	Mean Ht
<i>Corymbia calophylla</i>	<i>Eucalyptus marginata</i> <i>Allocasuarina fraseriana</i>	Woodland		Forest	
		10-30	15-20	30-50	15-20
<i>Xanthorrhoea preissii</i>	<i>Podocarpus drouynianus</i> <i>Hakea amplexicaulis</i> <i>Macrozamia riedlei</i> <i>Xanthorrhoea gracilis</i>	Open Low Scrub A		Open Low Scrub A	
		2-10	1.5-2	2-10	1.5-2
<i>Hibbertia hypericoides</i> <i>Patersonia umbrosa</i> <i>Mesomelaena tetragona</i> <i>Tetraria capillaris</i>	<i>Desmodadus fasciculatus</i> <i>Hovea chorizemifolia</i> <i>Leucopogon propinquus</i> <i>Leucopogon capitellatus</i> <i>Drosera glanduligera</i>	Open Dwarf Scrub D		Low Heath D	
		2-10	< 0.5	50-70	< 0.5

4.2 Conservation Significance of Flora and Vegetation

All native flora species are protected under the *Wildlife Conservation Act 1950 - Wildlife Conservation (Rare Flora) Notice 2002*. A number of plant species are assigned an additional level of conservation significance based on a limited number of known populations and the perceived threats to these locations. Species of the highest conservation significance are designated Declared Rare Flora, while species which are believed to warrant a lesser level of protection are assigned to one of four Priority Flora categories (see Table 2). No plant taxa gazetted as Declared Rare Flora pursuant to subsection (2) of section 23F of the *Wildlife Conservation Act (1950)* were located within the survey area. No Priority flora were recorded from the survey area.

The sole vegetation complex described from the survey area is not listed as a threatened ecological community, and is well represented within the Shire of Busselton. Flora recorded during the survey period were common taxa and there were no species of added interest.

Vegetation present along the banks of Caribunup River, aligned north-south through the eastern portion of Lot 2, is listed as a 'poorly represented' vegetation complex within the Shire of Busselton (less than 30% of the original cover remains) (EMRC 2003). The complex is described as 'Yelverton Wet Flats', occurring on poorly drained flats with mottled pale grey (mungite) soils (Tille and Lantzke 1990). The vegetation complex is outside the proposed building envelope and will not be impacted by future clearing associated with construction of a dwelling on Lot 2.

4.2.1 Management

Although flora of conservation significance does not occur within the proposed building envelope, strategies should be implemented to ensure clearing is restricted to the immediate building envelope, and secondary impacts on adjacent vegetation complexes associated with Caribunup River are minimised. Strategies should include

raising awareness in the work force, minimising clearing of native vegetation, prohibiting off road movement of vehicles, preventing run-off from the building envelope during construction, managing fire risks, and progressively rehabilitating disturbed areas to prevent colonisation by annual weeds.

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FIGURE 1: Aerial photograph showing boundary of Lot 50 (pink), area covered in the flora and vegetation survey encompassing the building envelope (yellow), vegetation condition (red, scale as used in Perth's Bushplan - see Table 1), and landform / soil types as described by Tille & Lantzke 1990 (blue). KEY: 3 = 'good' vegetation condition, 5 = 'excellent' vegetation condition; Yvw = Yelverton wet valleys, Yi = Yelverton ironstone flats, Y3 = Yelverton low slopes



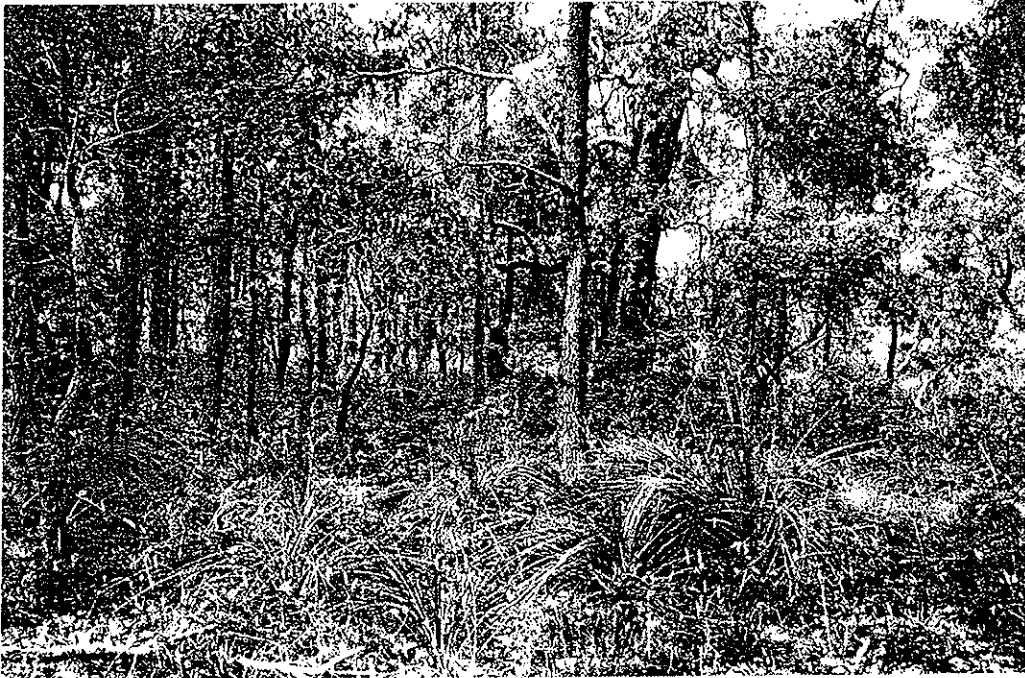
PLATE 1: *Agonis parviceps* formed dense thicket on lower slopes associated with the Carburnup River. This transition was clearly demarcated.



PLATE 2: Proposed building envelope defined by southwest boundary peg (foreground right) and northeast boundary peg (background left). Vegetation condition impacted by multiple disturbances, which have reduced species diversity and cover provided by the canopy and low shrub strata. Note: undisturbed 'forest' complex (denser canopy) in background.



PLATE 3: Outside of the proposed building envelope, vegetation structure remained intact and species diversity was high. Minimal disturbance was restricted to the perimeter of the vegetation complex (edge effects) as evidenced by the presence of non-aggressive annual grasses.



APPENDIX 1: Vegetation classification used for the flora and vegetation survey at Lot 50 Gibb Road Metricup (from Muir 1977).

LIFE FORM / HEIGHT CLASS	Canopy Cover			
	DENSE 70% - 100%	MID DENSE 30% - 70%	SPARSE 10% - 30%	VERY SPARSE 2% - 10%
Trees > 30 m	Dense Tall Forest	Tall Forest	Tall Woodland	Open Tall Woodland
Trees 15 – 30 m	Dense Forest	Forest	Woodland	Open Woodland
Trees 5 – 15 m	Dense Low Forest A	Low Forest A	Low Woodland A	Open Low Woodland A
Trees < 5 m	Dense Low Forest B	Low Forest B	Low Woodland B	Open Low Woodland B
Mallee tree form	Dense Tree Mallee	Tree Mallee	Open Tree Mallee	Very Open Tree Mallee
Mallee shrub form	Dense Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee
Shrubs > 2 m	Dense Thicket	Thicket	Scrub	Open Scrub
Shrubs 1.5 – 2 m	Dense Heath A	Heath A	Low Scrub A	Open Low Scrub A
Shrubs 1 - 1.5 m	Dense Heath B	Heath B	Low Scrub B	Open Low Scrub B
Shrubs 0.5 – 1 m	Dense Low Heath C	Low Heath C	Dwarf Scrub C	Open Dwarf Scrub C
Shrubs 0 - 0.5 m	Dense Low Heath D	Low Heath D	Dwarf Scrub D	Open Dwarf Scrub D
Mat plants	Dense Mat Plants	Mat Plants	Open Mat Plants	Very Open Mat Plants
Hummock grass	Dense Hummock Grass	Mid-Dense Hummock Grass	Hummock Grass	Open Hummock Grass
Bunch grass > 0.5 m	Dense Tall Grass	Tall Grass	Open Tall Grass	Very Open Tall Grass
Bunch grass < 0.5 m	Dense Low Grass	Low Grass	Open Low Grass	Very Open Low Grass
Herbaceous spp.	Dense Herbs	Herbs	Open Herbs	Very Open Herbs
Sedges > 0.5 m	Dense Tall sedges	Tall Sedges	Open Tall Sedges	Very Open Tall Sedges
Sedges < 0.5 m	Dense Low Sedges	Low Sedges	Open Low Sedges	Very Open Low Sedges
Ferns	Dense Ferns	Ferns	Open Ferns	Very Open Ferns
Mosses, liverworts	Dense Mosses	Mosses	Open Mosses	Very Open Mosses

APPENDIX 2: Flora recorded within survey area at Lot 50 Gibb Road Metricup; all specimens recorded 19 December 2003.

FAMILY Species (Botanical Terminology)		Within Building Envelope (veg. cond. good)	Adjacent Building Envelope (veg. cond. excellent)	Better Represented in Yvw - Carbunup River
APIACEAE				
<i>Xanthosia huegelii</i>	(Benth.) in Lehm.	×	×	
ASTERACEAE				
* <i>Hypochaeris glabra</i>	L.	×		
* <i>Sonchus oleraceus</i>	L.	×		
CASUARINACEAE				
<i>Allocasuarina fraseriana</i>	(Miq.) L. Johnson.		×	
CYPERACEAE				
<i>Baunea vaginalis</i>	(Benth.) S.T. Blake	×	×	
<i>Lepidosperma pubisquamum</i>	Steud.	×	×	
<i>Lepidosperma squamatum</i>	Labill.	×	×	
<i>Mesomelaena tetragona</i>	(R. Br.) Benth.	×	×	
<i>Tetraria capillaris</i>	(F. Muell.) J.M. Black	×	×	
DASYPONONACEAE				
<i>Lomandra caespitosa</i>	(Benth.) Ewart	×	×	
DENNSTAEDTIACEAE				
<i>Pteridium esculentum</i>	(G.Forst.) Cockayne	×	×	
DILLENIAEAE				
<i>Hibbertia hypericoides</i>	Benth.	×	×	
DROSERACEAE				
<i>Drosera glanduligera</i>	Lehm.	×	×	
EPACRIDACEAE				
<i>Leucopogon capitellatus</i>	DC		×	
<i>Leucopogon propinquus</i>	R. Br.	×	×	
GENTIANACEAE				
* <i>Centaurium tenuiflorum</i>	(Hoffmans. & Link) Janch.	×		
GOODENIACEAE				
<i>Dampiera linearis</i>	R. Br.	×	×	
HAEMODORACEAE				
<i>Anigozanthus flavidus</i>	Redoute & DC.			×
<i>Conostylus aculeata</i> ssp. <i>aculeata</i>	R. Br.		×	
<i>Haemodorum laxum</i>	R. Br.		×	
IRIDACEAE				
<i>Patersonia umbrosa</i> ssp. <i>xanthosia</i>	Endl. in Lehm.	×	×	
LOBELIACEAE				
<i>Lobelia alata</i>	Labill.		×	
MIMOSACEAE				
<i>Acacia extensa</i>	Lindl.	×		
<i>Acacia pulchella</i>	R. Br.	×		
MYRTACEAE				
<i>Agonis flexuosa</i>	(Willd.) Sweet		×	
<i>Agonis parviceps</i>	Schauer			×
<i>Corymbia calophylla</i>	Lindley.	×	×	
<i>Eucalyptus marginata</i>	Donn. ex. Smith		×	
<i>Eucalyptus patens</i>	Benth.			×
ORCHIDACEAE				
* <i>Monadenia bracteata</i>	(Sw.) Durand & Schinz	×		
PAPILIONACEAE				
<i>Bossiaea ornata</i>	(Lindl.) Benth.		×	
<i>Gompholobium confertum</i>	(DC.) Crisp		×	
<i>Gompholobium preissii</i>	Meisn.	×	×	
<i>Hardenbergia comptoniana</i>	(Andrews) Benth.		×	
<i>Hovea chorizemifolia</i>	(Sweet) DC	×	×	
<i>Hovea pungens</i>	Benth.	×	×	
* <i>Lotus angustissimus</i>	L.	×		
<i>Mirbelia dilatata</i>	R. Br.			×

FAMILY Species (Botanical Terminology)		Within Building Envelope (veg. cond. good)	Adjacent Building Envelope (veg. cond. excellent)	Better Represented in Yvw - Carbunup River
POACEAE				
<i>*Anthoxanthum odoratum</i>	L.	×		
<i>*Briza maxima</i>	L.	×		
<i>*Briza minor</i>	L.	×		
<i>*Phalaris paradoxa</i>	L.	×		
<i>*Phleum pratense</i>	L.	×		
PODOCARPACEAE				
<i>Podocarpus drouynianus</i>	F. Muel.	×	×	
PROTEACEAE				
<i>Hakea amplexicaulis</i>	R. Br.	×	×	
<i>Petrophile serruriae</i>	R. Br.	×	×	
RESTIONACEAE				
<i>Desmocladius fasciculata</i>	(R. Br.) Benth.	×	×	
<i>Empodisma gracillimum</i>	(F. Muell.) Johnson & Cutler	×	×	
<i>Hypolaena exsulca</i>	R. Br.		×	
<i>Loxocarya cinerea</i>	R. Br.		×	
<i>Meeboldina denmarkica</i>	Suess.	×	×	
SOLANACEAE				
<i>*Solanum nigrum</i>	L.	×		
STYLIDIACEAE				
<i>Stylidium amoenum</i>	R. Br.	×	×	
XANTHORRHOEACEAE				
<i>Xanthorrhoea gracilis</i>	Endl.	×	×	
<i>Xanthorrhoea preissii</i>	Endl.	×	×	
ZAMIACEAE				
<i>Macrozamia reidlei</i>	(Fisch. ex Gaud.) Gardner	×	×	