2 Vegetation Assessment

The vegetation in and around the site boundaries, to a distance of 140m, has been assessed in accordance with PBP (RFS, 2006). This assessment has been made via a combination of aerial photo interpretation and ground truthing exercises. Refer to Figure 2-1.

Vegetation Community classification have been undertaken across the site and within 140m of the site by RPS. The vegetation communities were delineated using the following regional vegetation community mapping packages

- Lower Hunter and Central Coast Regional Biodiversity Strategy (NPWS 2000; House 2002); and
- The Natural Vegetation of the Wyong Local Government Area (Bell, 2002).

Ten vegetation communities were identified within the site and within 140m of the site as follows (Refer to Figure 2-1):

1. Swamp Oak - Rushland Forest
2. Swamp Mahogany - Paperbark Swamp Forest
3. Coastal Clay Heath
4. Narrabeen Wallarah Sheltered Grassy Forest
5. Coastal Sand Wallum Heath
6. Coastal Sand Scrub
7. Riparian Melaleuca Swamp Woodland
8. Coastal Plains Scribbly Gum Woodland
9. Coastal Foothills Spotted Gum - Ironbark Forest
10. Apple - Palm Gully Forest

These vegetation communities have been classified for bushfire purposes into structure and formation using the system adopted by Keith (2004) and using Table A2.1 within PBP (RFS, 2006). Refer to Table 2-1 overleaf and Figure 2-1 overleaf. Generally the vegetation types adjacent to the proposed development estates are:

- Development Estate A: Open Forest occurs to the north, east, south and west (with the exception of the existing residential development).
- Development Estate B: Open Forest occurs to the north, east, south and west (with the exception of the existing residential development).

Refer to Appendix 2 for examples of Vegetation Formations

Note: For the purposes of this BTA, it has been assumed that vegetation within the development estates will be removed or managed as an APZ (with the exception of drainage lines / creeklines) as per the Concept Plan (Figure 1-3).

Table 2-1: Vegetation Classification

Vegetation Community	Classification of Vegetation formations
Swamp Oak - Rushland Forest	**Forested Wetlands**
Swamp Mahogany - Paperbark Swamp Forest	**Forested Wetlands**
Coastal Clay Heath	**Short Heath (Open Shrub).**
Narrabeen Wallarah Sheltered Grassy Forest	**Dry Sclerophyll Forests (Open Forest).**
Coastal Sand Wallum Heath	**Short Heath (Open Shrub).**
Coastal Sand Scrub	**Short Heath (Open Shrub).**
Riparian Melaleuca Swamp Woodland	**Forested Wetland**
Coastal Plains Scribbly Gum Woodland	**Dry Sclerophyll Forests (Open Forest).**
Coastal Foothills Spotted Gum - Ironbark Forest	**Dry Sclerophyll Forests (Open Forest).**
Apple - Palm Gully Forest	**Wet Sclerophyll Forests (Open Forest).**

WARNING
No part of this plan should be used for original design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.

LEGEND

- Development Estate Boundary
- 140m Buffer
- Forest
- Managed Lands

N

0 250 500m

SCALE: 1: 5000 AT A3 SIZE

TITLE: FIGURE 2-1 VEGETATION WITHIN 140M OF THE DEVELOPMENT

LOCATION: CHB

DATUM: DATUM
PROJECTION: MGA ZONE 56 (GDA 94)

DATE: 8/10/2010
PURPOSE: BTA

24530\DRAFT\BUSHFIRE\NORTH\ALLWORKSPACES
LAYOUT REF: \2010 \GWAND\FIGURE 2-1 VEGETATION 2010 A3
VERSION (PLAN BY): MD

CLIENT: COAL & ALLIED INDUSTRIES LTD
JOB REF: 24530-1

RPS AUSTRALIA EAST PTY LTD (ABN 44 140 292 762)
241 DENISON STREET BROADMEADOW PO BOX 428 HAMILTON NSW 2303
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3 Slope Assessment

In accordance with PBP (2006), an assessment of the slope throughout the development estate and for 100m around was undertaken to identify both the average slope and by identifying the maximum slopes present. These values help determine the level of gradient which will most significantly influence fire behaviour on the site. Refer to Figure 3-1.

3.1 Slope Classes

A Slope Class Map (Figure 3-1) has been produced for land within 140m of the proposed development estates. The Slope Class Map has been produced using five slope classes as follows:

- 0 - 2^0;
- 2 - 3^0;
- 3 - 4^0;
- 4 – 6^0; and
- 6^0+.

Elevations across the two development estates range from 0m AHD in Development Estate A to 58m AHD in the north-west corner of Development Estate A. The slope of vegetation surrounding each of the development estates to 140m is documented in the tables below.

Table 3-1: Slope Class Assessment

Direction of Vegetation from Development Estate	Slope of Vegetation
North	Cross-slope
South	Cross-slope
East	Upslope (10 – 15^0)
West	Downslope (0 – 5^0) Downslope (5 -10^0)

Table 3-2: Slope Class Assessment

Direction of Vegetation from Development Estate	Slope of Vegetation
North	Cross-slope
South	Downslope (10 – 15^0)
East	Cleared Managed Land
West	Cross-slope Upslope (5 – 10^0) Upslope (10 -15^0)

WARNING
No part of this plan should be used for original design dimensions. Confirmation of critical positions should be obtained from RPS Newcastle.

LEGEND

Development Estate

Approx Slope Class

100m Slope Buffer

Cross Slope / Upslope / Flat

Downslope

N

0 250 500m

SCALE: 1: 5000 AT A3 SIZE

TITLE: FIGURE 3-1 SLOPE CLASS MAP

LOCATION: CHB

DATUM: DATUM
PROJECTION: MGA ZONE 56 (GDA 94)

DATE: 8/10/2010
PURPOSE: BTA

24530\DRAFT\BUSHFIRE\NORTH\ALLWORKSPACES
LAYOUT REF: \2010 \GWAND\FIGURE 2-1 VEGETATION 2010 A3
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RPS

3.2 Slope by Degrees

A Slope Degree Map has been produced for land within 100m of the Development Estates by using contours of 2 metres, determined from aerial photography, to determine the slope that will affect bushfire behaviour. The Slope Degree Maps (Figure 3-2 and Figure 3-3) have been created to assist in the determination of APZ's by the slope that will most likely influence bushfire behaviour. The slope of vegetation surrounding the Development Estates to 100m is also documented in the tables below.

Table 3-3: Slope Degree Assessment for Development Estate A

Direction of Vegetation from Development Estate	Slope of Vegetation
North	Cross-slope
South	Cross-slope
East	12.3^0 upslope 13.86^0 upslope 14.41^0 upslope 14.47^0 upslope
West	4.18^0 downslope 5.71^0 downslope

Table 3-4: Slope Degree Assessment Development Estate B

Direction of Vegetation from Development Estate	Slope of Vegetation
North	Cross-slope
South	10.65^0 downslope 11.95^0 downslope 12.41^0 downslope
East	Clear Managed Land
West	Cross-slope 9.26^0 upslope 13.28^0 upslope