

ap

## ALBION PARK

Erosional



**Landscape**—short steep upper slopes with long gentle footslopes on Berry Formation. Relief 60–100 m. Footslopes 5–15%. Upper slopes 15–50%. Mostly cleared with stands of tall open-forest.

**Soils**—moderately deep (50–100 cm) Brown Podzolic Soils (Db4.11) occur on crests, Yellow Podzolic Soils (Dy3.21) on midslopes. Soloths (Dy3.41) occur on footslopes and drainage lines.

**Limitations**—waterlogging, seasonally high watertable, shrink-swell, hardsetting (topsoil), sodicity, low wet bearing strength (subsoil), high available water-holding capacity (topsoil and subsoil).

## LOCATION

Short steep upper slopes grading into long gentle footslopes on Berry Formation on the Coastal Plain. Examples include Albion Park, Yallah, Oak Flats, Dapto and Broughton Creek.

## LANDSCAPE

### Geology

Berry Formation—mid grey to dark grey siltstone, mudstone and fine sandstone with localised outcrops of Budgong Sandstone (red brown and grey lithic volcanic sandstone) on mid to upper

slopes. Localised outcrops of Bumbo Latite occasionally occur on crests.

### Topography

Short steep upper slopes grading into long gently inclined footslopes. Relief 60–100 m. Upper slopes 15–50%, footslopes 5–15%. Drainage lines incised on upper slopes grading into broad drainage plains on lower slopes.

### Vegetation

Extensively cleared with remnant stands of tall open-forest. Common species include thin-leaved stringybark (*Eucalyptus eugenoides*), cabbage gum (*Eucalyptus amplifolia*), northern boobialla (*Myoporum acuminatum*). Forest red gum (*Eucalyptus tereticornis*), woollybutt (*Eucalyptus longifolia*), decorative paperbark (*Melaleuca decora*) and prickly-leaved paperbark (*Melaleuca styphelioides*) grow on poorer drained areas.

### Land Use

Urban areas include Albion Park, Oak Flats and Dapto. There is coalmining at Marshall Mount. Rural activities include dairying, cattle grazing and horse agistment on improved pastures.

### Existing Erosion

There is localised minor gully erosion.

## Included Soil Landscapes

Small areas of Shellharbour (**sh**), Bombo (**bo**) and Fairy Meadow (**fa**) soil landscapes occur.

## SOILS

### Dominant Soil Materials

#### ap1—Friable brownish black sandy clay loam (topsoil)

Colour	brownish black (7.5YR 3/2)
Texture	sandy clay loam
Structure	strongly pedal, <2 mm crumb peds
Fabric	rough-faced, porous
pH	6.5
Stones	nil
Roots	common, ex-ped

#### ap2—Hardsetting weakly pedal dark brown loam (topsoil)

Colour	dark brown (10YR 3/3)
Texture	loam to fine sandy loam
Structure	weakly pedal, <2 mm crumb peds
Fabric	rough-faced, porous
pH	6.5
Stones	nil
Roots	few

#### ap3—Mottled moderately pedal greyish brown light clay (subsoil)

Colour	greyish brown (5YR 4/2) red and brown mottles (50%) or brown (10YR 4/4) without mottles
Texture	light clay
Structure	moderately pedal, 50–100 mm angular blocky peds
Fabric	rough-faced, porous
pH	6.0
Stones	nil
Roots	nil

#### ap4—Weakly pedal bright yellowish brown sandy loam (subsoil)

Colour	bright yellowish brown (10YR 7/6) to dull yellow orange (10YR 7/3)
Texture	sandy loam to loamy sand
Structure	weakly pedal, <2 mm crumb peds
Fabric	rough-faced, porous
pH	6.0
Stones	nil
Roots	nil

#### ap5—Mottled moderately pedal yellow orange heavy clay (subsoil)

Colour	yellow orange (10YR 7/8) yellow and grey mottles (40%)
Texture	heavy clay

<b>Structure</b>	moderately pedal, 20–50 mm sub-angular blocky peds
<b>Fabric</b>	rough-faced, porous
<b>pH</b>	5.5
<b>Stones</b>	nil
<b>Roots</b>	nil

### Associated Soil Materials

Dark reddish brown (2.5YR 3/4) heavy clay with grey mottles occurs occasionally on midslopes.

### Occurrence and Relationships

**Crests and upper slopes.** Up to 30 cm friable brownish black sandy clay loam **ap1** overlies latite [Structured Loams (Um6.41)]. Where deeper weathering occurs, <20 cm **ap1** overlies <80 cm mottled moderately pedal greyish brown light clay (**ap3**). Boundary is clear [Brown Podzolic Soils (Db4.11)]. Total soil depth is <100 cm.

**Midslopes.** Up to 40 cm hardsetting weakly pedal dark brown loam (**ap2**) overlies <10 cm weakly pedal bright yellowish brown sandy loam (**ap4**) which in turn overlies <50 cm mottled moderately pedal yellow orange heavy clay (**ap5**). Boundaries are clear to sharp [Yellow Podzolic Soils (Dy3.21)]. Total soil depth is <100 cm. Up to 20 cm **ap1** overlies associated soil material. Boundary is clear [Red Podzolic Soils (Dr5.11)]. Total depth is >100 cm.

**Footslopes and drainage lines.** Up to 20 cm of **ap2** overlies <20 cm of **ap4** which overlies <120 cm of **ap3**. Boundaries are clear [Soloths (Dy3.41)]. Total soil depth is <150 cm.

## LIMITATIONS TO DEVELOPMENT

### Soil Limitations

- ap1** Shrink-swell potential  
High erodibility  
Sodicity  
Strongly acid  
High available water-holding capacity
- ap2** Hardsetting  
Very high aluminium toxicity  
High available water-holding capacity
- ap3** Low permeability  
Shrink-swell potential  
Low wet bearing strength  
Sodicity  
Strongly acid  
High available water-holding capacity

**ap4** High aluminium toxicity  
Sodicity  
Strongly acid  
High available water-holding capacity

**ap5** Low permeability  
Shrink-swell potential  
Low wet bearing strength  
Sodicity  
Strongly acid  
Very high available water-holding capacity

### Fertility

Moderate to high fertility. **ap2** is hardsetting. **ap1**, **ap3**, **ap4** and **ap5** are moderately structured with moderate to high CEC and very high base saturation.

### Erodibility

**ap1** has a low erodibility rating. **ap2**, which is hardsetting, has high erodibility. The subsoils (**ap3**, **ap4** and **ap5**) have moderate erodibility.

### Erosion Hazard

Erosion hazard for non-concentrated flows is moderate to high. The calculated soil loss for the first 12 months of urban development ranges up to

60–300 t/ha for topsoils and 300 t/ha for exposed subsoils. The erosion hazard for concentrated flows is high.

### Surface Movement Potential

The moderately deep clay soils are moderately reactive.

### Landscape Limitations

Waterlogging (localised)  
Seasonal waterlogging  
Water erosion hazard  
Steep slopes (localised)  
Shallow soil (localised)  
Run-on (localised)  
Rock outcrop (localised)

### Urban Capability

Generally moderate limitations for urban development, but localised high to severe limitations on slopes greater than 20%.

### Rural Capability

Generally high to severe limitations for regular cultivation. Low to moderate limitations for grazing.

