

ADELAIDE AIRPORT LIMITED

Landscape Guidelines



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Introduction

The airport landscape guidelines provide a set of standards to be used when planning, constructing and maintaining landscapes within the airport sites.

The standards provide the minimum benchmarks and expectations relative to the landscape character and usage zones defined within the guidelines documentation. This ensures that the allocation of time, budgets and resources responds to an appropriate level of intervention and ongoing care that is site specific.

Relevant Documentation

The landscape guidelines support the objectives of the Airport Master Plan and defines the responses required to meet the ongoing operational and functional needs of a major air transport hub.

The following relevant documentation may provide additional assistance and information.

- Adelaide Airport Master Plan 2004
- Parafield Airport Master Plan 2004
- Sustainability Policy (AAL + PAL)
- Adelaide Airport Environment Strategy 2004
- Parafield Airport Environment Strategy 2004
- AAL Building Approval Guide
- Application Package - Building Activity
- Airports Act 1996
- Airports (Environmental Protection) Regulations 1997
- Environmental Protection and Biodiversity Conservation Act 1996

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Landscape Guidelines

The landscape guidelines define the minimum expectations that are required for development and building approval. All plans should be prepared by a landscape architect or qualified landscape designer. Plans must:

Be at a recognised scale (1:100, 1:200, 1:500) suitable for the size of the development

- Contain details of all hardscape and softscape materials.
- Contain plant lists including provenance, source, size and density.
- Contain a correct north point and submission date.
- Provide a project description and location plan
- Contain full contact details of applicant/s and details of any relevant consultants.
- Contain sufficient notations and legends to accurately describe all parts.

Objectives

The Adelaide Airport Landscape Guidelines have been prepared to provide guidelines for proposed developments and ensure the procedures for applications and approvals are legible and understood.

The landscape guidelines provide the minimum expectations and standards that apply to all landscape works within the site.

The landscape guidelines are in accordance with Commonwealth legislation (Airports Act 1996), AAL's environmental obligations legislation and the visual and functional expectations of the local community.

Relevant Legislation:

- Airports Act 1996
- Airports (Environmental Protection) Regulations 1997
- Environmental Protection and Biodiversity Conservation Act 1996.

The landscape guidelines are cogniscent of both ongoing maintenance requirements and the availability of resources.

Character

Landscape works contribute directly to the character and identity of the site and the experience of users. The guidelines provide consistency and enhance the distinctive character of the airport.

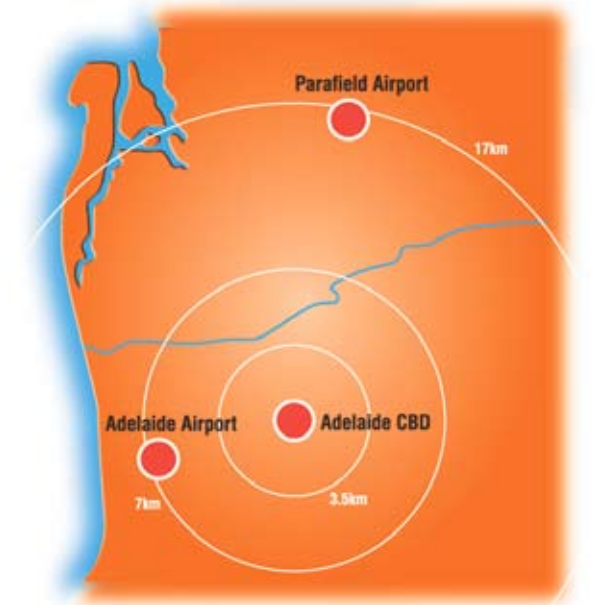
One of AAL's key objectives is to integrate the principles of sustainable development, economic viability and operational efficiency into decision making at all levels and communicate these to our stakeholders.

Sustainability

The Airport is committed to providing sustainable landscapes that contribute to biodiversity, manage water resources effectively, reduce energy requirements and minimises waste production.

Ecology

Improving environmental conditions within the open space and effective controlled ecology add to the contribution of the site within a wider context of the Adelaide region and related catchments.



Airport locations

Function

Landscape works support the operational and functional requirements of air transport and facilitate movement and controlled access to facilities.

Aviation safety is paramount to all activities occurring within the Airport.

Management

Effective management will ensure new works are consistent with objectives and provide resources to maintain an appropriate quality standard.

Landscape Guidelines

The landscape guidelines provide the general intent and minimum requirements for landscape works within the airport site.

The landscape guidelines have been compiled and structured according to the following element headings that should be addressed in all landscape designs.

- Site Location and Context
- Site Character
- Usage
- Landscape Precincts
- Open Space
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- Geology and Soils
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- Biodiversity and Ecology
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- Landscape Buffers

Site Location and Context

Site Location

Adelaide Airport is situated between the St Vincent Gulf coastline and the City of Adelaide. The site is approximately 785 hectares and is predominantly open airfield space (grassland) with runways and terminal facilities.

The site is bounded by Sir Donald Bradman Drive, Tapleys Hill Road, and the residential suburbs of Netley, Novar Gardens and Glenelg North.

Adelaide Airport is approximately 6 kilometres east of the Adelaide city centre and 5 kilometres from the Keswick Railway terminal.

The Airport is within the City of West Torrens local government area and the federal electorate of Hindmarsh.

The current Adelaide Airport site was established in 1947 with flights in operation from 1954. The new T1 terminal building was completed in 2005.

Site Context

The Adelaide Airport site originally consisted of a mixture of sand dunes and flood prone swampland known as 'The Reedbeds'.

With the leveling of the dunes and filling of low areas the resultant soil profiles over the site are quite variable. The water table fluctuates, but generally occurs at a depth of between 0.75 m and 2 m over the Airport.

The south-west corner of the airport experiences coastal conditions, and high winds occur throughout the winter months.

Reclaimed water is used in the recreation areas in the north east of the Airport, resulting in high growth rates of all plants. Throughout the Airport are significant areas of indigenous plants that provide a local seed source for landscaping in the immediate area.



Location Plan

Usage

Adelaide Airport is the primary air transit facility for Adelaide and is the fifth busiest airport in Australia with over 6.7 million passengers yearly (2007/08).

Adelaide Airport also facilitates a wide range of freight and private charter services.

Terminal 1 (T1)

T1 is the primary domestic and international terminal. T1 houses the check-in counters, arrival and departures areas, retail shopping and is well serviced by car parking and public transport options.

Export Park

Export Park incorporates a commercial office and convenience retail centre, specifically designed office/warehouse buildings, a cold storage warehouse and a Child Care Centre. Further development potential includes uses ranging from a hotel, offices or additional office/warehousing with some airside accessibility potential.

All buildings are linked by an internal system of landscaped roads, developed to cater for all forms of vehicular traffic from small passenger vehicles to semi-trailer and B Double Trucks.

Export Park is specifically developed to provide a high portion of park-land-to-building ratio, and provides occupiers with an exceptional occupational environment.

The Australian Quarantine and Inspection Service (AQIS) occupies a site adjacent to the entrance.

Burbridge Business Park

The Burbridge Business Park is a 38 hectare parcel of land, located on the corner of Sir Donald Bradman Drive (formally Burbridge Road) and Tapley's Hill Road.

AAL in partnership with with Australand Property Group and CIP Pty Ltd are progressively developing the Business Park into a campus style environment that caters for small, large and high technology office accommodation as well as office and warehouse developments of varying sizes.

Burbridge Business Park is well placed within a central location on the western side of Adelaide, and close to the metropolitan coast.

Features

Vickers Vimy and Sir Ross & Sir Keith Smith Memorial

A memorial building at Adelaide Airport commemorates the first official flight from England to Australia - the Air Race of 1919 with Adelaide brothers Ross and Keith Smith. The restored Vickers Vimy converted bomber (Registration G-EAOU) flown by the famous aviators is housed inside the building for public display.

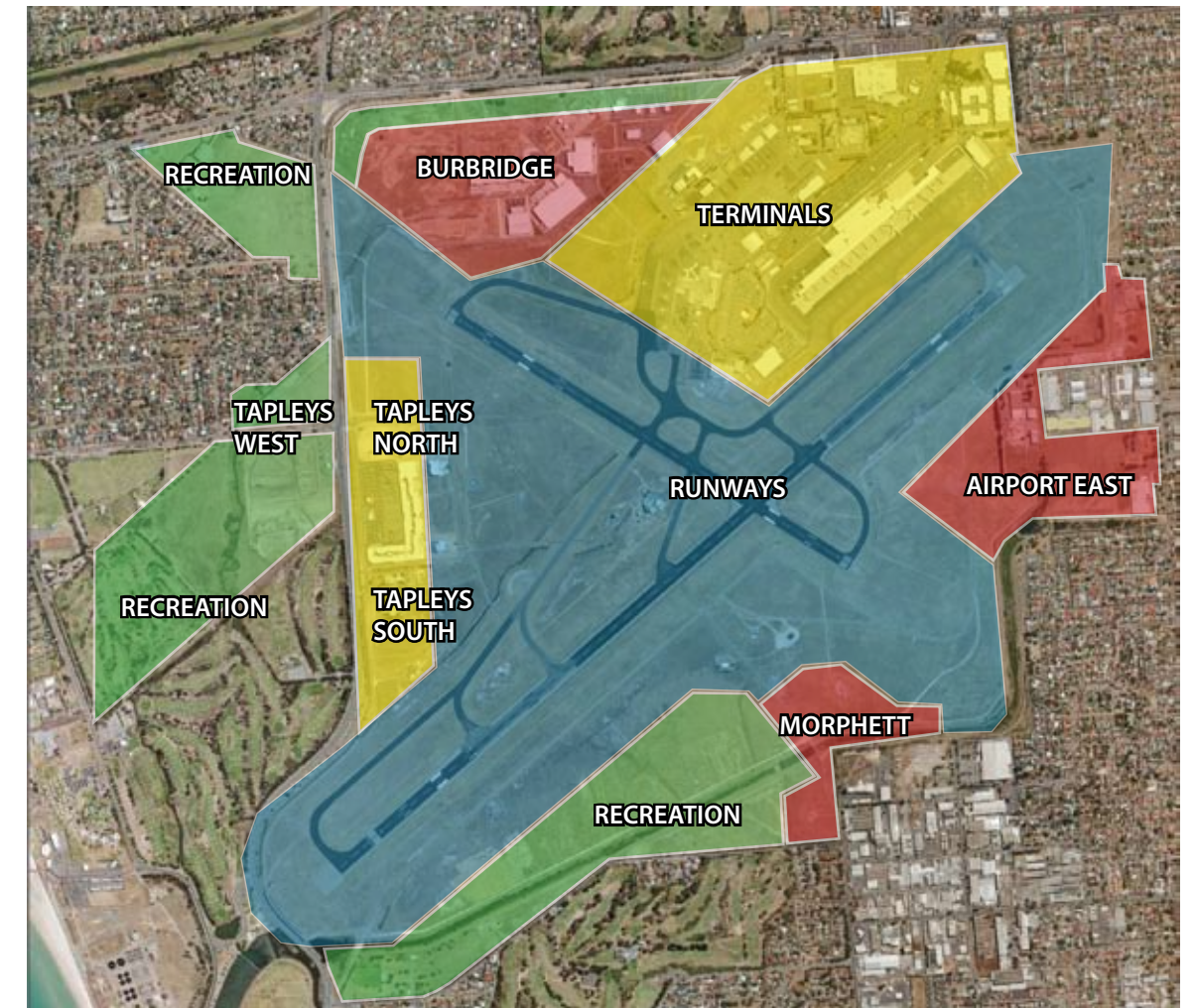
Vimy Walk

Adelaide Airport and Arts SA worked together to develop the new Vimy Walk - stretching from Terminal 1 to the Memorial building - marking each stopping point that the Vimy made on its epic route to Australia.

Landscape Precincts

Landscape Precincts are grouped according to the Airport Master Plan precincts for ease of use.

- Terminals Precinct
- Burbridge Precinct
- Runways Precinct
- Airport East Precinct
- Morphett Precinct
- Recreation Precinct
- Tapleys North + South Precinct
- Tapleys West Precinct



Landscape Precincts

Terminals Precinct

The Terminal Precinct is the main activity centre for the airport and is primarily concerned with the movement of people and vehicles in and out of T1 and access to administration and public facilities.

The entry on Sir Donald Bradman Drive is a gateway to the city and is characterised by low level ground cover plantings and large scale signage.

The road network is structured to provide a loop system leading to facilities and returning to the entry.

Burbridge Precinct

The Burbridge Precinct is developing into the Burbridge Business Park. The Burbridge Business Park project is a campus style environment that caters for small, large and high technology office accommodation as well as office and warehouse developments of varying sizes.

Runways Precinct

The runways precinct is 'airside' and is primarily open grassland and bitumised runways for aircraft. This precinct is controlled and managed by AAL.

Airport East Precinct

Airport East is suitable for a range of office and warehousing facilities with landscape buffers to surrounding residents.

Morphett Precinct

The Morphett Precinct is open space suitable for a range of general industry at the end of Morphett Road.

Recreation Precinct

The Recreation Precinct is publicly accessible open space with pathways and wetlands providing a popular jogging and dog walking zone.

Tapleys North and South Precinct

Tapleys North and South are primarily occupied by the Harbour Town development which offers direct factory outlets (DFO) retail and commercial facilities.

Tapleys West Precinct

Tapleys West features the open space where the silt ponds were formerly stored. This precinct also includes the remnant section of the Patawolong Creek. Extensive revegetation work is recreating an important riparian environment with native biodiversity.

Open Space

Adelaide Airport occupies the largest open space in the western Adelaide plains.

Secondary open space is provided by the River Torrens corridor and a range of recreation facilities including golf courses, public reserves and school sporting ovals.

Major streetscapes also contribute to open space where the road width allows for wide footpaths, verge and street tree planting.

1. Adelaide City Parklands

2. River Torrens Linear Park

- Breakout Creek
- Horse Paddocks

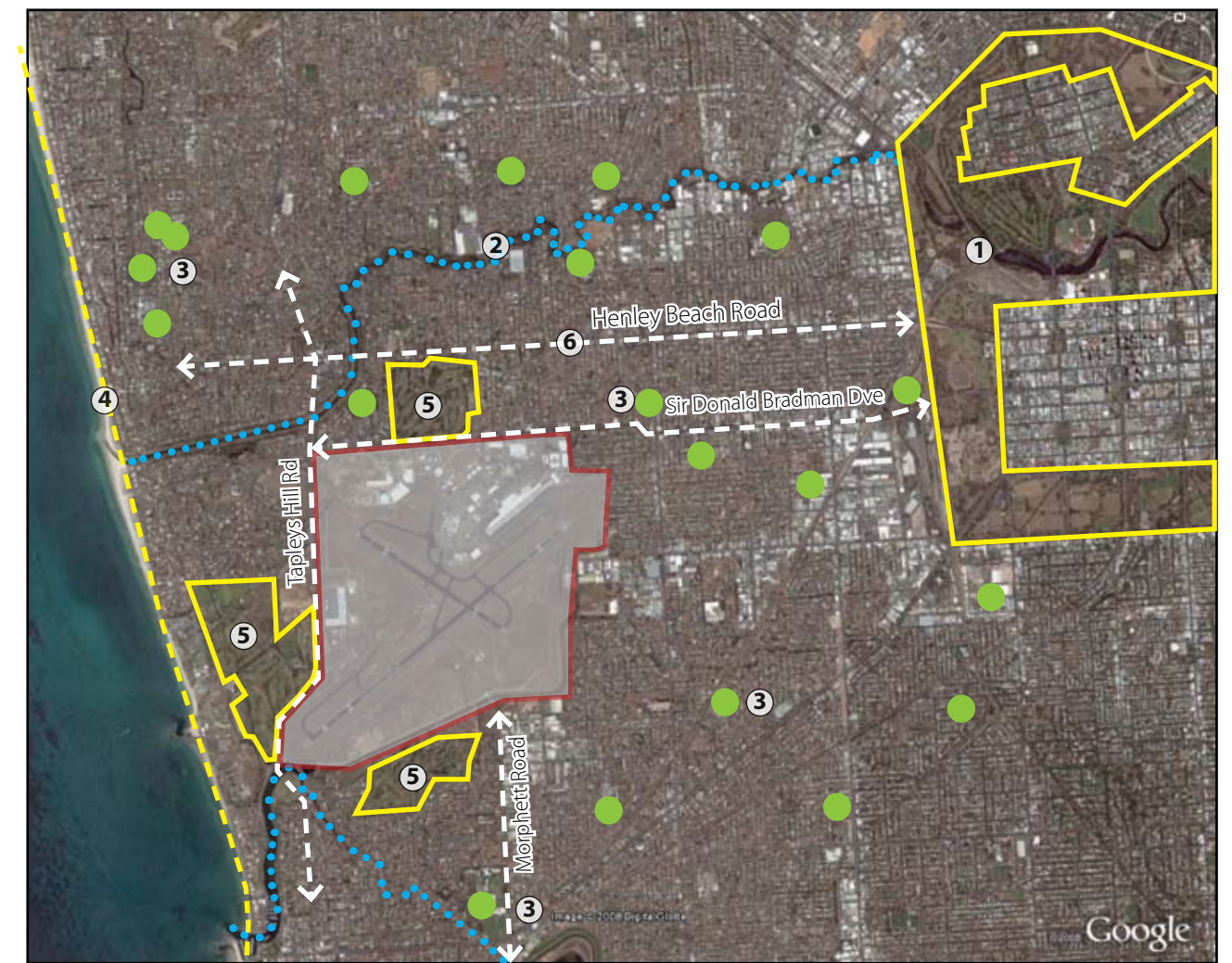
3. Community Reserves + School Ovals

4. Coastal Park Network

5. Golf Courses

6. Major Streetscapes

- Sir Donald Bradman Drive
- Tapleys Hill Road
- Henley Beach Road
- Morphett Road



Access and Circulation

- Access should provide clear and legible entry to sites.
- Driveways should provide for relevant vehicle turning circles and be located to provide a clear view of incoming traffic.
- Carparks should provide appropriately defined car parking spaces and provide clear pedestrian routes.
- Canopy trees are recommended to provide shade for vehicles.

The following Crime Prevention Through Environmental Design (CPTED) Principles apply to all landscape works:

Sightlines

- Pedestrians should have a clear view of surrounding areas
- Fencing and kerbing should not restrict vision
- Landscape features should be considered for sizes at maturity and density of tree crowns.

Lighting

- All lighting is to comply with Civil Aviation Safety Regulations 1998 Part 139 Manual of Standards (MOS 139) and in accordance with AAL electrical standards.
- All pathways, connections, access routes and signs should be lit to Australian Standards (AS1158)
- Lighting should be controlled to reduce upward reflection and nuisance glare for aircraft.
- Lighting should reduce the contrast between areas of shadow and brightly illuminated areas.
- Light fixtures should be robust and provide access for maintenance.
- Low energy fittings and alternative power sources should be considered for all external lighting.
- Lighting should be appropriate for the functional and operational requirements of the site.

Signage

Signs should:

- Clearly indicate the entry and exits to facilities and features.
- Be legible using distinct colours and use standard symbols for wayfinding.
- Be strategically located for visibility and reference points.

- Indicate how to report maintenance or vandalism problems.
- Indicate where to go for assistance.
- Identify main routes for pedestrians and indicate in direction of travel in the ground surface.
- Explain time restrictions for entries/exits at the entrances to the route.

Good design and legibility will reduce the need for users to rely on signage to safely find their way around the site.

Space Definition

The location of landscape elements including garden beds, paving, lawns, bollards, street furniture, different ground surfaces, and changes in ground level provide both physical and psychological barriers and edges. These elements should consider the definition of public and private space and the relevant access control appropriate for the site.

Fencing

Fencing styles should be of open construction rather than solid. The use of spaced timber battens, steel rod, or open mesh provides security and allows for surveillance from external areas. Subject to the location of fencing, the Department of Transport, Energy and Infrastructure, Regional Development and Local Governments standards will need to be complied with.



Entry Sign

Geology + Soils

Soils are generally sandy to sandy loam with a 'back of dunes' profile. This provides a free draining substrate well suited to native coastal species.

Some interspersed layering of silty black clay is also evident.

The stratigraphy of the site typically consists of Fulham sand and or Pooraka formation clays between 3 and 4 m deep, overlying undifferentiated Quaternary Alluvium.

Pleistocene formation clays are encountered at a depth of between 12 and 15 m. Fulham sand is a reddish brown, well-sorted, unconsolidated fine quartz sand of aeolian origin. The sand is generally associated with dunes throughout the western coastal suburbs of Adelaide.

The Pooraka formation is of late Pleistocene age consisting predominantly of alluvial or fluvial clays, which are sometimes calcareous. They may contain sediments of marine origin due to the former marginal marine environment of the site. The quaternary alluvium is an interbedded deposit of sands and mottled greyish clays of poor quality due to impeded drainage, and high plasticity. Some gravels are noted at times.

The Pleistocene formation consists of an over-consolidated sequence of high plasticity, interbedded with clayey sands and sands.

General Review

TEC – the exchange capacity is consistent with a loam soil. The clay incorporated has increased the exchange capacity.

pH - the soil is alkaline and this should be taken into account when selecting species to plant.

Organic Matter - is low - care should be taken to retain organic matter during earthworks. Organic matter can be built up with additions of compost to facilitate beneficial microbial activity.

Sulphur - is high in some areas which is an indicator of poor drainage. This occurs in areas that are waterlogged in winter.

Phosphorus - levels are moderate so no additional phosphorus is needed for native species however some P fertiliser may be applied for amenity landscaping and turf areas.

Calcium: Magnesium - calcium is low and magnesium is very high so the soil will tend to be hard setting. The application of gypsum and lime are recommended to improve the soil structure.

Potassium - is well supplied and no additional fertiliser is needed.

Sodium - is elevated and will be contributing to poor soil structure. Sodic soils tend to be dispersive and hard setting.

Salts and Chlorides - are high but could be leached out of the soil. A range of salt tolerant native species could be used in these areas.

Trace Elements - trace elements are well supplied.

For more information please see the AAL Environment Strategy.

* Review Samples taken from North Eastern areas Pro Ag Consulting 17/4/06

Water + Drainage

Storm Water

Storm water management is a critical issue for Adelaide Airport Ltd (AAL), guided by the commitments listed in the Adelaide Airport Environment Strategy 2004. Our goal is to improve the quality of storm water leaving the airport.

AAL is achieving this by working in partnership with tenants, local government and the Adelaide and Mount Lofty Ranges Natural Resource Management Board to better manage the storm water drains that pass through the airport.

Catchment Water

The airport site also receives water from the larger surrounding catchment due to its low lying profile.

Drainage

(1) Cowandilla-Mile End Outfall Drain – located on the airport’s northern and western boundaries (ie. Sir Donald Bradman Drive and portion of Tapleys Hill Road). Accepts water from the western suburbs of Adelaide and directs it through the remnant Patawalonga Creek conservation area.

(2) Keswick-Brownhill Creek Drain – located on the eastern and southern boundary of the airport. Accepts water from the Adelaide Hills and eastern and southern suburbs of Adelaide.

(3) Airport Drain – located entirely within AAL land and along the southern portion of Tapleys Hill Road. Water from the majority of the airport is directed into this drain.

- Storm water from the airfields is directed into the outfall drain through a network of overland swales.
- Water quality is improved by removal of large debris by trash racks and the filtration and aeration of water through vegetated reedbeds.
- The outfall drain is also protected from onsite spill runoff through fuel traps.
- Storm water from all three drains ends up in the Patawalonga Lake where it is released out to sea through either the Barcoo Outlet or the Patawalonga weir.

Reuse Main

Class A recycled water from the Glenelg Wastewater Treatment Plant is used for toilet flushing within the T1 building and for landscape irrigation.

On site storage ensures a consistent supply throughout the year. This water is generally acceptable for landscape use. Some cocktailing with rainwater or mains supply may be beneficial for use in plant establishment in order to dilute any mineral concentrations.

Ongoing monitoring of water quality is carried out by SA Water.

Water Use

There is a preference for on site capture and storage of all storm water. Where this is not possible storm water shall be diverted to grassed swales and detention areas to provide filtration and aeration of the water prior to discharging from site.

Where possible, storm water should be stored on site to be used for irrigation

Water carts should also be used in locations where recycled water is not available.

New Development

New developments require the installation of storm water interception devices that help prevent sediment, litter and other gross pollutants entering the storm water system.



Stormwater Basin

Biodiversity + Ecology

Adelaide Airport is situated on the terminal floodplains of the Torrens River, Brownhill and Keswick Creeks, and Sturt River just before the Patawalonga Inlet, which was open to the sea prior to the construction of the weir. Historically, this area was known as the Reedbeds.

Little specific information exists on the flora and fauna of the airport site prior to development, although Kraehenbuehl (1996) provides general information on the ecology of the Reedbeds area. The general topography of the area consisted of sand dunes between the Patawalonga Creek and the beach, with scattered sand rises further inland on the area now occupied by the Glenelg Golf Course and the airport.

The area behind the fore dunes comprised freshwater intertidal wetlands, which were gradually filled over time through the ongoing development of residential areas, the airport and community and sporting facilities.

Flora

The following species are recorded on site and are listed under State legislation:

- *Maireana decalvans* (Black cotton bush)
Status - Endangered
- *Stipa puberula* (Fine-hairy Spear-grass)
Status – Rare

The following species are listed as locally significant.

- *Maireana decalvans* (Black cotton bush)
Status – Endangered;
- *Stipa puberula* (Fine-hairy Spear-grass)
Status – Rare;
- *Haloragis aspera* (Rough Raspwort)
Status – Rare;
- *Vittadinia blackii* (Narrow-leaf New Holland Daisy)
Status– Rare;
- *Gahnia filum* (Smooth cutting-grass)
Status – Rare;
- *Selliera radicans* (Shiny swamp-mat)
Status – Rare;
- *Melaleuca halmaturorum* (Swamp paperbark)
Status - Vulnerable;
- *Wilsonia rotundifolia* (Round-Leaf Wilsonia)
Status – Vulnerable;
- *Halosarcia indica* (Brown-head Samphire)
Status - Uncertain;

- *Eragrostis dielsii var. dielsii* (Mulka)
Status – Uncertain
- *Stipa trichophylla* (Spear Grass)
Status – Uncertain
- *Lawrencia glomerata* (Clustered Lawrencia)
Status – Uncertain;
- *Lawrencia spicata* (Salt Lawrencia)
Status – Uncertain;
- *Lawrencia squamata* (Thorny Lawrencia)
Status – Uncertain;
- *Acacia ligulata* Umbrella Bush
Status – Uncertain
- *Samolus repens* (Creeping brookweed)
Status –Uncommon;
- *Lotus australis* (Austral Trefoil)
Status – Uncommon;
- *Wilsonia humilis* (Silky Wilsonia)
Status – Uncommon;
- *Lavatera plebeia* (Australian Hollyhock)
Status – Uncommon;
- *Schoenoplectus pungens* (Spiky club-rush)
Status –Uncommon;
- *Pelargonium australe* (Australian pelargonium)
Status –Uncommon.

Fauna

No nationally significant fauna species have been identified on the airport.

Please refer to the AAL Environment Strategy for more information.



Native Species

Sustainability

AAL is committed to providing sustainable landscapes adopting systems that are practical, cost effective, contribute to biodiversity and consume minimal resources.

Airport landscapes:

- meet aviation safety standards (MOS 139)
- are well designed to suit local environmental conditions.
- contain plants that require minimal additional water than natural rainfall provides.
- contain plants that are not invasive in the location and will become environmental weeds.
- employ practical water conservation measures such as mulch to conserve soil moisture, efficient irrigation and grouping plants with similar water needs together.
- provide habitat for local native fauna such as butterflies, bats, lizards and frogs.
- will avoid planting inappropriate species with regards to birds and aviation safety
- uses little if any pesticide or chemical that could harm natural insect populations and other beneficial organisms, or could contaminate soil and waterways.
- minimise the use of fuel-powered devices such as use of lawn mowers and power tools, and uses local materials and products to reduce transportation.
- carefully selects materials and products that, in their acquisition or production, do not threaten or damage vulnerable ecosystems. Unsustainable materials may include moss rocks, pebbles or wood collected or harvested from wild landscapes.

Design:

- Seek to maximise existing site features such as available shade trees
- Minimise hard heat absorbing surfaces
- Design to protect hard surfaces from excessive sunlight
- Incorporate porous paving where possible to allow water to permeate
- Where possible, collect and retain water from roofs and/or hard surfaces for reuse on planted areas
- Design with consideration of the needs of vulnerable local fauna such as bats, butterflies, small birds, small lizards, beneficial insects, soil fauna

- Design for low energy and chemical use in maintenance
- Use recycled rubbles and concretes in construction of hard surfaces
- Use recycled plastics and timbers in markers, bollards and in furniture
- Recycle materials from the site itself or nearby sites for use in construction where possible.

Plants:

- Use plants requiring minimal water in summer other than natural rainfall, including any grass selected for lawn areas
- Minimise lawn areas (by placing them only where they will be utilised) and, where the 'lawn aesthetic' is required, use drought tolerant groundcovers
- Trial arid land plant species in dry areas
- Use plants that will not become invasive in the location or in sensitive nearby areas such as waterways or bushland
- Use at least some local indigenous plants from local provenance seed
- Consider the habitat value of plants including appropriate food, shelter and breeding habitat

Water Conservation:

- Use subsurface irrigation where irrigation is necessary
- Use soil moisture detection devices to ensure plants are only watered when necessary
- Group plants with similar water needs together
- Collect and reuse water collected on site if possible
- Utilise recycled water for irrigation where possible
- Use mulch on garden beds

Habitat:

- Consider adjacent habitat and protect its integrity
- Consider the location of the site in relation to wildlife and water corridors
- Provide some degree of habitat for vulnerable local fauna such as bats, small insectivorous birds, butterflies, beneficial insects and soil fauna in any plantings
- Where possible protect vulnerable fauna from introduced predators such as cats, dogs and foxes
- Consider lighting and the effect of night light pollution on local fauna

Chemical use:

- Consider alternative methods of controlling pest plants and animals
- Use minimal quantities of low toxicity pesticides
- Where soil additives are considered necessary, use organic rather than synthetic fertilisers and other products
- Minimise the need for chemical use in maintenance
- Avoid the leaching of chemicals into soil and water

Energy use:

- Consider and avoid where possible the need for energy use in site maintenance, such as fuel or electricity powered equipment
- Use locally sourced products to reduce embodied energy costs in transportation
- Use lighting powered from renewable sources where possible
- Consider the potential for using renewable energies for energy requirements on site

Materials and products:

- Recycle materials from the site itself or nearby sites to use in construction
- Use recycled rubbles, plastics and timbers in construction and in furniture
- Use locally sourced products
- Avoid using rocks, pebbles, timber or other materials collected from wild landscapes



Recycled Water Use

Ornithological Conditions

Vegetation and Birds

In the management of the airport, consideration must be given to existing and potential problems with birds. There are a number of species that are currently recognised as being hazardous to Airport operations. These include a variety of water birds (silver gull, ducks and herons) and some terrestrial species (galah, domestic pigeon, Australian magpie and kestrels).

Landscaping and replanting programs, therefore, should not produce habitats or resources that may cause these birds to increase in number at the Airport and therefore pose a risk to aviation safety.

Predicting the response of birds to habitat modification is difficult, but is made easier with the use of local native species in natural planting arrangements. Bird response in and around the existing native vegetation is often already available for the Airport.

Block planting of a single species should be avoided. Although an individual plant species may not be attractive to birds by itself, if planted en masse it may provide enough of a food source or a suitable habitat for certain birds.

Anything that resembles a line or corridor of vegetation should also be avoided if it has the potential to channel birds near to or across flight paths. This philosophy includes uniform avenues down roads and lines of screening vegetation.

Any development and planned landscaping must involve responsive management to the point of developing contingencies to deal with unforeseen bird issues that may arise.

Significant landscaping proposals will be subjected to a risk assessment for bird attraction.

Where problems develop the most likely action would be the removal or replacement of troublesome plant species. Landscape designs for the Airport therefore need to be sufficiently flexible and diverse in species composition to allow these adjustments to be made without having to destroy the landscape and start again.

Trees

Trees that attain significant heights should be avoided due to the risk of penetrating the Obstacle Limitation Surface as required under MOS 139. Large trees with open canopies provide perches for problem bird species.

The following plants are examples of large trees that should not be planted under any circumstances:

- Eucalyptus camaldulensis,
- Eucalyptus citriodora,
- Eucalyptus cladocalyx,
- Eucalyptus occidentalis,
- Casuarina glauca;
- Phoenix canariensis
- Phoenix dactylifera

These species have very open crowns at maturity, produce suckering growth or attract specific bird species.

Similarly, deciduous trees can provide favourable perching areas during winter months; their use should also be restricted around the Airport.

Other large trees that should be avoided are those that produce substantial amounts of nectar when flowering (eg. Eucalyptus leucoxylon ssp. leucoxylon) or edible fruit (eg Ficus macrophylla). Species that have dense canopies, erect posture (thus reducing perching due to a lack of horizontal boughs) and are relatively non-floriferous and set little edible fruit should be used in preference to other species, where possible

Shrubs and Bushes

Most shrubs and bushes do not provide enough nectar or fruit by themselves to support a bird. Mixes of species should be used so as not to provide a wealth of food at any one time.

Ornithological Conditions

Grasses and Groundcovers

The use of groundcovers is as for shrubs. Any groundcover that is a potential food source should be used in a mixture of species and not used solely to cover a large area. Care should be taken in choosing grasses for lawn. For example, Kikuyu Grass is used extensively as a food source by Galahs during winter and should be avoided where possible.

Aquatic Plants

Aquatic plant selections must provide rapidly establishing species to minimise open water and limit the attractiveness for bird nesting sites.

Obstacle Limitation Surface

The OLS is a series of surfaces that set the height limits of objects around an aerodrome as per MOS 139.

The airspace around the aerodromes of the Airport is to be maintained free of obstacles so as to permit the intended aircraft operations to be conducted safely. Any object that projects through the OLS becomes an obstacle and represents a hazard to aircraft operations, thereby compromising the safe and economical operations of the aerodrome.

With respect to landscaping around the Airport, the OLS only affects plantings in specific areas in proximity to the runways. Each landscaping application will be reviewed on its own merits with respect to OLS penetration.

Planting Selections + Themes

Selection

Appropriate plant selection is a key element of landscape works. Plants must be selected against the following criteria:

- Minimal water requirements
- suitability for climate
- suitability for rainfall
- suitability for soil conditions
- compatibility with existing landscapes

Climate and Rainfall information specifically relating to the Airport is available from the Australian Bureau of Meteorology website.

www.bom.gov.au

Planting shall be appropriate for the Adelaide plains and for the intended use of the site.

Plant selections should be in accordance with the species lists provided in these guidelines.

Planting densities shall be varied according to the location and siting of beds and provide an appropriate level of vegetative cover to all planting zones.

Mature tree heights and spreads shall be taken into consideration at the time of planting to ensure mature species are healthy and are not overcrowded reducing the longer term maintenance of the site.

All planting shall be carried out in accordance with best practice techniques to ensure the highest likelihood of survival.

Plant Sizes

| Container Size | Plant Type |
|-------------------------------|--|
| Cell | Aquatic Species and Native Grasses |
| Tubestock | Native Grasses, Groundcovers, Shrubs and Trees |
| Pot (150-200mm) | Native and Exotic species |
| 300mm (Springring/Rocket Pot) | Trees to 2.5m high |
| 45L - 100L | Advanced and Mature Trees |

All tree supply shall be in accordance with NATSPEC Guide: Specifying Trees – a guide to assessment of tree quality (Clark R. 2003).

Softscape Works

In order to provide the best outcome for planting areas the following softscape elements are to be considered:

Preparation

Planting beds and grassed areas shall be cultivated to a minimum depth to aerate the soil and break up compaction.

| | |
|---------------|-------|
| Turf | 150mm |
| Planting beds | 300mm |

Mulch

The use of recycled green organics is recommended in accordance with Australian Standards.

Planting beds are to provide a minimum 75mm depth of mulch to retain soil moisture and suppress weeds.

Use of gravel and pebble mulches is also recommended with suitable edging to ensure containment.

Soil Conditioning

Any importation of topsoil onto airport grounds requires pre-approval from the Environment Department. Conditioning of existing site soils is the preferred means to provide suitable growing media for plant material.

Existing site topsoil shall be stripped and stockpiled for reuse on site.

General improvements to organic content and leaching of residual chemicals, salts and minerals may also be beneficial.

Some works may require a site specific soil test please contact the Environment Department for more details.

Turf

Large areas of turf are to be avoided and turf species must be selected to suit the location and available water resources.

Seeding

Hydroseeding and Direct seeding is considered appropriate in large scale areas where broad coverage is required for dust suppression or revegetation.

Swales

The use of grassed swales is recommended to direct storm water and provide a first stage filtering of sediments and VOC's . All grassed swales require the approval of AAL.



Low Native Shrubs

Hardscape Works

All hardscape works are to complement existing designs in proximity to new works.

Paving and Pathways

Unit Paving shall provide high quality and level surfaces for building surrounds and pathways. Recycled aggregates are preferred subgrade materials.

Concrete Paving is appropriate for plaza and courtyard spaces with washed aggregate, broomed and trowelled finishes.

Bitumen is appropriate for vehicles areas including carparks, driveways and crossovers.

Gravel is appropriate for informal pathways, planting bed mulch and must be restrained by appropriate edging.

Hard Surfaces

Timber - Recycled hardwoods or sustainably managed plantation timbers are appropriate for decking and furniture.

Concrete - Recycled aggregates and non-slip finishes including washed, shot blasted and stiff bristled broom finish

Steel and Aluminium - Recycled content and durable material suitable for structures, battens and fencing

Edge Treatments

Formed concrete edges or haunching are appropriate for paving and garden bed edges. Steel reinforcing may be required where vehicel traffic may be expected.

Galvanised steel edging is appropriate for edging between pathways and surrounding surfaces. Concealed pins and fixings are recommended.

Spade edges are suitable for large scale mulched beds where the edges can be controlled through spraying.



Street Furniture

Street furniture shall be selected for robust design, low maintenance requirements and the presentation of a consistent high quality public image.

Seating

Seats shall provide comfortable seating and be appropriate for internal and external use. Preference is for hardwood battens and steel frame and options for the inclusion of armrests.

Benches shall provide comfortable seating and be of appropriate length for the location and expected duration of use. Preference is for hardwood battens and steel frame.

Bins and Waste Disposal

Bins and bin surrounds shall be selected for robust design and ease of access for maintenance. The addition of cowls or hoods is required to control the size of waste objects and to secure waste from scavaging birds and animals.

Clearly designated recycling options are to be used to separate waste material prior to collection.

Bollards

Bollards are to be used to direct traffic and to provide protection for users and features. Hardwood bollards and removable/drop down steel bollards are appropriate for use.

Bicycle Racks

Bicycle racks are an important element to promote health and alternative transport within the site. Preference is for individual stainless steel hoops setout according to Australian Standards.

Drinking Fountains

Drinking fountains are to be of robust design and to allow for equitable access.

Tree Protection

Tree protection may be provided by grills and barriers in areas where the risk of damage from vehicles and machinery is high.

Hardscape Works

Planter Boxes

Planter boxes are to be of appropriate size and proportion for the location and species selection. Drainage of planter boxes and connections to sewer must be incorporated within the design.

Structures

Shade and shelter structures provide protection from both wind and sun. Details of materials, proportions and fixing methods must be provided for approval. Building and development approval may also be required with certified engineering details.

Lighting

Lighting must be selected for both the appropriate level of illumination for external spaces and in accordance with Airport standards for limiting the upwards deflection of light.

Pathway lighting may be provided to allow use of select pathways at night. Low energy fittings and the use of solar power should be considered.

All lighting must also be MOS 139 compliant.

Feature lighting may be provided to building facades and landscape features in accordance with airport standards.

Water

External water features including fountains and reflection pools that rely on mains water are considered inappropriate within the airport without incorporation of water sensitive design features.

Areas of open water that will attract bird congregations are to be avoided.

Artworks

AAL encourages the identification of opportunities for temporary and permanent artworks that explore the themes of:

- aeronautical activity
- travel
- movement
- South Australian character
- iconic forms
- gateway features



Low Water Species

Services

A variety of services exist within the Airport. Services may be above or below ground and may include:

- Water (Mains Potable and Recycled)
- Storm water
- Sewer
- Gas (High and Low Pressure)
- Electricity (High and Low Voltage)
- Communications including Telstra
- Fibre Optic
- Fuel Lines

Landscape works shall:

- allow access to inspection points, distribution boards, hydrants, transformers and serviceable parts for maintenance and emergency use.
- give consideration to the location of trees and underground services
- consider the mature heights of vegetation and any overhead cabling.
- use root control barriers where trees are placed within 1.3m of kerbs or other structures.

Excavation

Excavation permits are required prior to any excavation works within the airport grounds. Permits must be arranged through the Adelaide Airport Limited.

Irrigation

Irrigation of landscape works is to be assessed using the airport water matrix (see appendix) to ensure efficient and appropriate levels of water use are established and maintained.

The results of the water matrix assessment must be included in any landscape development application for approval.

Irrigation is to be used in accordance with best practice techniques and operated for hours and durations according to current Water Restrictions.

Standard proprietary fittings and accessories from a recognised manufacturer are to be used.

Irrigation plans must be submitted for approval prior to construction.

Water Source

Recycled water, stormwater and harvested rainwater to be used where possible.

Controllers

Irrigation shall be automatically controlled and applied in accordance with soil moisture levels.

Dripline

Inline drip is to be used for planting bed areas and placed under mulch to minimise evaporation and deliver water to plant roots.

Sub surface

Subsurface irrigation may be used for areas of turf or garden beds. The extent of subsurface shall be identified.

Sprinklers

Sprinkler head placement is to achieve full coverage and minimise overspray or covering of footpaths or roads.



Recycled Water Fittings



Recycled Water Irrigation

Streetscapes

Major Roads

Width: 8m+
Speed: 50 kmph

Roads:

- Sir Richard Williams Avenue

Volume: 27,000 daily (24hr 2-way flow June 2008 DTEI)

Landscape Character

- Street tree planting in verge and median where appropriate. Check for service locations.
- Low level shrubs and groundcovers to provide visual contrast
- Allow for signage and footings.
- Allow for lighting and services within corridor.
- Consistent with existing landscape design.

Minor Roads

Width: 6-7m
Speed: 50kmph

Roads:

- Sir Hubert Wilkins Drive
- James Schofield Drive
- Hamra Drive
- Graham Street
- Comley Street
- Corbett Court
- Lum Street
- Chegwiddon Avenue

Landscape Character

- Street tree planting in verge where possible with an understorey of mulched beds.
- Cycle path network connections and inclusion of defined cycle lanes.
- Water sensitive urban design to capture and direct storm water using swales, pits and filtration beds.
- Landscape works shall provide clear sightlines along roads and pathways.
- Consistent with existing landscape design.

Carparks

Carparks provide opportunities for storm water capture and for the inclusion of feature landscaping.

For many users of the site the relationship between the carparks and terminal buildings form the entire Airport experience.

Carparks shall therefore provide efficient movement and a high quality landscape amenity.

Landscape works shall use water wise species that provide colour and interest and low ongoing maintenance.

The use of gravel mulch and automatic dripline irrigation is recommended to maintain a consistent and high quality landscape with a South Australian character.

Entries shall support signage and directional movement with low level planting and shade trees where appropriate.

Islands and traffic medians shall allow for clearly designated pedestrian movement.



Carpark Feature Planting



Pedestrian Corridor

Landscape Buffers

Landscape buffers are utilized to provide screening from activities and services and to provide visual separation within the site.

Buffers provide an important transition zone and may also provide a beneficial wind break depending on tree species and the planting density.

The use of native plant species increases the biodiversity potential and allows for accessible open space for the public.

Landscape buffers also incorporate storm water and drainage corridors that control the movement of water through the site.



Acoustic Mound Buffer

Maintenance

Maintenance is an important part of all landscape works and ensures the consistent quality of the airport environment.

Maintenance is targeted to an appropriate level for all precincts to ensure that resources and funding are allocated in an efficient and functional manner.

The appropriate level of maintenance is identified with the following criteria:

- location of site
- visibility and exposure
- landscape treatments and expected condition
- available resources

The airport contributes to the experience of visitors and residents and is a statement and reflection of South Australia values.

The landscape contributes to this statement and reflects both a local context and character through plantings and material selection.

Maintenance is required to ensure this character is sustainable and consistent over time.



Low Maintenance Landscape

| Precinct | Maintenance Level | Detail |
|--------------|-------------------|---|
| Terminals | High | Garden Beds, Carparks, Roundabouts, Medians, Verges |
| Burbridge | High | Street trees, Medians, Reserves |
| Runways | High | Grasslands, Runway linemarking |
| Airport East | Low | Grasslands, Revegetation, Acoustic Mounds |
| Morphett | Low | Grasslands |
| Recreation | Medium | Turf Sportsfields |
| Tapleys East | Low | Grassland |
| Tapleys West | Low | Grassland |

Species List

The following plant schedules provide species that are considered suitable for use within the airport.

Priority should be given to plant selections from local natives species. Non-local native species are a second preference followed by exotic selections.

These lists are provided as a guide only and additional species may be approved in consultation with AAL.

AAL encourages the choice of species from the following lists, however we are aware that from time to time there are problems with the use of these species such as:

- availability from suppliers;
- incompatibility with other species already present; and
- unsuitability in certain soil and environmental conditions.

Due to the factors above, AAL will consider the suitability of other proposed species which must be approved by AAL prior to planting.

Considerations such as plant origin, potential height and attractiveness to birds will be taken into account when making a decision on species selection.

Species are provided in 3 categories:

- **Local Natives**
- **Australian Natives**
- **Exotic**

Plant Supply

A list of plant suppliers is also provided who can assist with plant selections particularly for endemic species that may have limited commercial availability due to demand.

- Provenance Indigenous Plants
- Coromandel Native Nursery
- Indigeflora
- Greening Australia
- Urban Forests

| Precinct | Suitable Planting Type | Landscape Areas |
|--------------|---|--|
| Terminals | Tree, Grasses, Groundcovers | Garden Beds, Carparks, Roundabouts, Medians, Verges |
| Burbridge | Trees, Shrubs, Grasses and Groundcovers | Street trees, Medians, Reserves, Gardens |
| Runways | Grasses and Samphires | Grasslands, Runway linemarking |
| Airport East | Trees, Shrubs, Grasses and Groundcovers | Grasslands, Revegetation, Acoustic Mounds |
| Morphett | Trees, Shrubs, Grasses and Groundcovers | Grasslands, Revegetation |
| Recreation | Trees, Shrubs, Grasses and Groundcovers | Turf Sportsfields, Shade Trees, Perimeter and Screen Planting. |
| Tapleys East | Trees, Grasses and Groundcovers | Grassland, Carparks |
| Tapleys West | Trees, Grasses and Groundcovers | Grassland, Perimeter and Screen Planting |

Local Natives

| Scientific Name | Common Name | Family |
|--|---------------------------|----------------|
| Grasses + Groundcovers | | |
| <i>Atriplex semibaccata</i> | Berry Saltbush | CHENOPODIACEAE |
| <i>Atriplex suberecta</i> | Lagoon Saltbush | CHENOPODIACEAE |
| <i>Austrodanthonia caespitosa</i> | Common Wallaby Grass | GRAMINEAE |
| <i>Austrodanthonia setacea</i> | Smallflower Wallaby Grass | GRAMINEAE |
| <i>Austrostipa elegantissima</i> | Elegant Spear-grass | GRAMINEAE |
| <i>Austrostipa flavescens</i> | Coast Spear-grass | GRAMINEAE |
| <i>Austrostipa hemipogon</i> | Half-beard Spear-grass | GRAMINEAE |
| <i>Austrostipa nodosa</i> | Smooth Spear-grass | GRAMINEAE |
| <i>Austrostipa trichophylla</i> | Spear grass | GRAMINEAE |
| <i>Bulbine bulbosa</i> | Bulbine Lily | LILIACEAE |
| <i>Calostemma purpureum</i> | Garland Lily | LILIACEAE |
| <i>Carpobrotus rossii</i> | Karkalla | AIZOACEAE |
| <i>Chloris truncata</i> | Windmill Grass | GRAMINEAE |
| <i>Chrysocephalum apiculatum</i> | Common Everlasting | COMPOSITAE |
| <i>Cyperus gymnocaulos</i> | Spiny Flat-Sedge | CYPERACEAE |
| <i>Dianella revoluta</i> var. <i>brevicaulis</i> | Short-stem Flax-lily | LILIACEAE |
| <i>Dianella revoluta</i> var. <i>revoluta</i> | Black-anther Flax-lily | LILIACEAE |
| <i>Dichondra repens</i> | Tom Thumb or Kidney Weed | CONVULVULACEAE |
| <i>Dillwynia hispida</i> | Red Parrot-pea | LEGUMINOSAE |
| <i>Disphyma crassifolium</i> ssp. <i>clavellatum</i> | Round-leaved Pigface | AIZOACEAE |
| <i>Elymus scaber</i> | Common Wheat-Grass | GRAMINEAE |
| <i>Enchylaena tomentosa</i> | Ruby Saltbush | CHENOPODIACEAE |
| <i>Enneapogon nigricans</i> | Black-head Grass | GRAMINEAE |
| <i>Frankenia pauciflora</i> | Southern Sea-heath | FRANKENIACEAE |
| <i>Goodenia amplexans</i> | Clasping Goodenia | GOODENIACEAE |
| <i>Helichrysum leucopsidium</i> | Satin Everlasting | COMPOSITAE |
| <i>Hibbertia riparia</i> | Erect Guinea Flower | DILLENIACEAE |
| <i>Isolepis cernua</i> | Nodding Club-rush | CYPERACEAE |
| <i>Isolepis nodosa</i> | Knobby Club-rush | CYPERACEAE |
| <i>Juncus pauciflorus</i> | Loose Flower-rush | JUNCACEAE |
| <i>Juncus subsecundus</i> | Finger Rush | JUNCACEAE |
| <i>Kennedia prostrata</i> | Running Postman | LEGUMINOSAE |
| <i>Kunzea pomifera</i> | Muntries | MYRTACEAE |
| <i>Lavatera plebeia</i> | Australian Hollylock | MALVACEAE |
| <i>Lobelia alata</i> | Angled Lobelia | CAMPANULACEAE |
| <i>Lomandra densiflora</i> | Iron-grass | LILIACEAE |
| <i>Lomandra leucocephala</i> | Woolly Matrush | LILIACEAE |

Australian Natives

| Scientific Name | Common Name |
|---------------------------------------|------------------------|
| Grasses + Groundcovers | |
| Acacia cognata 'Limelight' | Limelight Wattle |
| Acacia pravissima | Little Nugget Wattle |
| Acacia ligulata | Umbrella Bush |
| Acacia myrtifolia | Myrtle Wattle |
| Acacia notabilis | Notable Wattle |
| Acmena 'Allyn Magic' | Acmena |
| Adenanthos sericea | Woollybush |
| Anigozanthus flavidus | Kangaroo Paw |
| Atriplex sp. | Saltbush |
| Banksia integrifolia 'Roller Coaster' | Banksia |
| Callistemon 'Captain Cook' | Bottlebrush |
| Callistemon 'Betka Beauty' | Bottlebrush |
| Callistemon 'Endevour' | Bottlebrush |
| Callistemon 'Little John' | Bottlebrush |
| Carex appressa | Carex |
| Correa pulchella | Correa |
| Dianella caerulea 'Little Jess' | Dianella Little Jess |
| Dianella caerulea 'Breeze' | Dianella Breeze |
| Dianella caerulea 'Cassa Blue' | Dianella Cassa Blue |
| Dianella 'Silver Streak' | Dianella Silver Streak |
| Dianella revoluta 'Little Rev' | Dianella Little Rev |
| Dianella tasmanica 'Tas Red' | Dianella Tas Red |
| Dodonea viscosa purpurea | Purple Hop Bush |
| Eragrostis elongata 'Elvera' | Elvera Lavander Grass |
| Eremophila glabra | Eremophila |
| Eremophila kalbarri Carpet | Kalbarri Carpet |
| Escallonia macrantha 'Red Dwarf' | Red Dwarf |
| Grevillea 'Bronze Rambler' | Bronze Rambler |
| Grevillea 'Red Sunset' | Red Sunset |
| Grevillea obtusifolia | Spider Grevillea |
| Halosarcia sp. | Samphire |
| Hardenbergia violacea | Native violet |
| Hakea rugosa | Pin Cushion Bush |
| Kennedia prostrata | Running Postman |
| Leucophyta brownii | Cushion bush |
| Lomandra contertifolia 'Wingarra' | Wingarra |
| Lomandra longifolia 'Katrinus' | Katrinus |
| Lomandra longifolia 'Tanika' | Tanika |

Australian Natives

| Scientific Name | Common Name |
|----------------------------------|---------------------|
| Lomandra longifolia 'Nyalla' | Nyalla |
| Maireana decalvans | Bluebush |
| Maireana brevifolia | Small Leaf Bluebush |
| Myoporum parvifolium | Creeping Boobialla |
| Myoporum parvifolium (Fine Leaf) | Creeping Boobialla |
| Myoporum insulare | Boobialla |
| Pelargonium australe | Native Geranium |
| Poa labillardieri 'Eskdale' | Poa Eskdale |
| Poa poiformis 'Courtney' | Courtney |
| Poa poiformis 'Kingsdale' | Kingsdale |
| Pultenea largiflorens | Bush Pea |
| Rhagodia candolleana | saltbush |
| Rhagodia parabolica | Saltbush |
| Scaevola albida | White Fan flower |
| Scaevola 'Mauve Clusters' | Fan Flower |
| Themeda australis 'Mingo' | Mingo |
| Thryptomene saxicola | Thryptomene |
| Thryptomene 'Super Nova' | Super Nova |
| Westringia 'Smokie' | Westringia Smokie |
| Westringia fruticosa | Jervis Gem |
| Westringia 'Zena' | Westringia Zena |

| Scientific Name | Common Name |
|-------------------------|----------------|
| Trees | |
| Angophora costata | Queensland Box |
| Eucalyptus macrocarpa | Grey Box |
| Eucalyptus sideroxylon | Ironbark |
| Eucalyptus socialis | Red Mallee |
| Eucalyptus 'Summer Red' | Summer Red |
| Eucalyptus fasciculosa | Pink Gum |
| Jacaranda mimosifolia | Jacaranda |

Exotic Species

| Scientific Name | Common Name |
|---|------------------------|
| Grasses + Groundcovers | |
| Abelia grandiflora | Glossy Abelia |
| Brachyscome multifida 'Compact' | Daisy |
| Coprosma 'Black Cloud' | Coprosma |
| Cerastium tomentosum | Snow in Summer |
| Choisya ternata | Mexican Orange Blossom |
| Cordyline australis | Cabbage Tree |
| Crocea exalata | Crocea |
| Eriostemon 'Flower Girl' | Eriostemon |
| Escallonia laevis | Escallonia |
| Felicia amelloides | Daisy |
| Hebe 'Blue Gem' | Hebe |
| Lavandula 'Coconut Ice' | Lavender |
| Leptospermum 'Wiri Donna' | Tea Tree |
| Liriope muscari | Liriope |
| Phormium tenax | New Zealand Flax |
| Pimelea 'Storm Cloud' | Fan flower |
| Pittosporum tenuifolium | Pittosporum |
| Trees | |
| Acer campestre 'Elsrijk' | Maple |
| Acer x freemanii 'Jeffersred' Autumn Blaze' | Maple |
| Acer sp. | Maple |
| Celtis occidentalis | Hackberry |
| Ginkgo biloba | Ginkgo |
| Gleditsia triacanthos sp. | Honey Locust |
| Prunus sp. | Ornamental Cherry |
| Pyrus calleryana (subsp) | Ornamental Pear |
| Lagerstroemia indica | Crepe Myrtle |
| Malus ioensis 'Plena' | Crab Apple |
| Melia azederach 'Caroline' | White Cedar |
| Pistacia chinensis | Pistachio |
| Prunus sp. | Flowering Cherry |
| Tilia cordata 'Baileyi' Shamrock | Tilia |
| Ulmus parvifolia 'Todd' | Chinese Elm |
| Zelkova serrata 'Green Vase' | Zelkova |

Water Matrix

The following water decision matrix provides a guide for the use of water within the site. The matrix assesses key criteria and assigns a relevant score according to the most relevant response.

To use the matrix consider the most appropriate response to each of the given criteria and write the scores in the end column. Once all criteria have been answered, match the total score to the scoring range to determine the likely response.

| | | Score | | | |
|----------|-----------------------|---------------------|-------------------------|----------------|--|
| | | 0 | 1 | 2 | |
| Criteria | Source | Recycled/Rain Water | Mixed Source (Cocktail) | Mains | |
| | Difficulty to Install | Easy | Moderate | Difficult | |
| | Capital Cost | Low | Medium | High | |
| | Efficiency | Dripline/Subsurface | Mixed | Aerial/ Pop-up | |
| | Operation | Automatic | Mixed | Manual | |
| | Maintenance | Low | Medium | High | |

Score Range and Anticipated Result

| Score Range | Result |
|-------------|----------|
| 0 - 4 | Accept |
| 5 - 7 | Consider |
| 8 - 12 | Reject |

Please note:

This matrix provides a guide only and all applications are assessed on an individual basis.

Landscape Checklist

- Name of Project**
- Location/Address of Site**
- Applicants Name and Contact Details**
- Submission Date**
- North point**
- Recognised Scale (1:100, 1:200, 1:500)**
- Details of all surfaces including hardscape and softscape**
- Plant lists, provenance, source, size, and density**
- Annotations and legend suitable to describe all works**
- Drainage and water management**
- Irrigation design and water source**
- Water Matrix Score (self assessed)**
- Grading and levels**
- Circulation, access and movement diagrams**
- Street furniture and play equipment**
- Signage and lighting**
- Environmentally Sustainable Development (ESD) components**
- Bird Hazard Assessment including food sources, habitat, roosting, and general attraction including construction and maintenance periods.**
- MOS 139 Compliance (<http://www.casa.gov.au/>)**

Glossary

AAL - Adelaide Airport Limited

CPTED - Crime Prevention Through Environmental Design

DTEI - Department of Transport Energy and Infrastructure

MOS 139 - Civil Aviation Safety Regulations 1998 Part 139 Manual of Standards

PAL - Parafield Airport Limited

RAAF - Royal Australian Air Force

TAFE - Technical and Further Education

TEC - Total Exchange Capacity

UniSA - University of South Australia

VOC - Volatile Organic Compound

Aerial Photography sourced from Google Earth. (<http://earth.google.com/>) and AAL.

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