# CLEAN TECHNOLOGIES IN ACTION



# SUNSHINE COAST AIRPORT

Showcasing the Sunshine Coast Airport, Friendship Avenue, Marcoola, as part of a series of case studies that have been developed to illustrate best practice Clean Technology solutions.

The Clean Technologies industry has been identified as one of seven high value industry sectors for the Sunshine Coast region as defined in the Sunshine Coast Council's Regional Economic Development Strategy 2013-2033.

### Clean Technology Solutions at Sunshine Coast Airport:

- Continuous control of temperature set points via the Building Management System
- Large-scale energy efficient fans that create air movement and assist in reducing air conditioning requirements
- Air curtains and skylight shading to reduce heat load and air conditioning requirements
- Replacing existing lighting with low energy LED lights
- 107,400 litre rainwater harvesting capacity for irrigation and amenities
- Installation of 4 star toilets saving between 3 and 4.5 litres of water per flush
- Australia's first solar powered On-site Composting Apparatus (OSCA), converting organic waste to compost

The Sunshine Coast Airport facilitates around 6,850 jet aircraft movements and close to 1 million passenger movements per year servicing the Australian domestic and international markets (New Zealand). It was the first Australian airport to reach Level 2 under the internationally recognised Airport Carbon Accreditation program and is in an elite group of airports to have recently achieved Level 3 status.

The Clean Technology industry on the Sunshine Coast generates \$214 million in economic activity, employs 1,770 people and has become a model for sustainability in Australia\*.

Please contact us to provide you with a list of regional solution providers.

### **BENEFITS:**

- Leading the way in carbon reduction gaining Level 3 accreditation under the Airport Carbon Accreditation program
- Reduction in carbon emission intensity from 2.11 kg CO<sub>2eq</sub>/ passenger in 2011/12 to 1.61 kg CO<sub>2eq</sub>/passenger in 2013/14
- Reduced air conditioning energy and water requirements
- Reduced energy use for lighting by almost 50%
- 15% reduction in water consumption from 2009 to 2012
- Reduction in waste to landfill
- Compost product for use in the gardens



Cleantech

INDUSTRIES

Sunshine Coast





# What is Clean Technology?

Economically viable products, services and processes that harness renewable materials and energy sources, dramatically reduce the use of natural resources and cut or eliminate emissions and wastes.



# Energy Supply and Management

The Sunshine Coast Airport has set a target to become carbon neutral by 2018. To achieve this the Airport has developed a carbon reduction strategy and management plan to increase energy efficiency and the use of renewable energy. The Airport upgraded the Building Management System (BMS) to incorporate an energy monitoring system which allows for early detection of system inefficiencies and problems leading to a more proactive maintenance system.

The air conditioning system operates based on flight schedules reducing both energy use and maintenance requirements with temperature set points fluctuating throughout the day according to expected demand. For example, the check-in area is cooled half an hour before check in times.

### **FEATURES:**

- Auto-control of air conditioning via Building Management System
- The installation of large-scale energy efficient fans that create air movement and assist in reducing air-conditioning requirements
- Replacement of halide and fluorescent bulbs with more efficient LED lights in signage and general user areas
- Replacement of carpark floodlights with LEDs
- Linked to the BMS, air curtains installed on the four main landside passenger entry and exit points retain cold air in the building even when the doors are open
- Reduced solar heat load by installing shade structures on the north-south atrium skylight



### **BENEFITS:**

- Reduction in carbon emission intensity from 2.11 kg CO<sub>2eq</sub>/ passenger in 2011/12 to 1.61kgCO<sub>2eq</sub>/passenger in 2013/14
- Real time monitoring of energy use
- Reduced energy requirements for lighting by almost 50%



### CARBON ACCREDITATION

The Airport Carbon Accreditation program is the only institutionally-endorsed carbon management certification program that recognises airports around the globe for managing their carbon emissions and reducing carbon footprints.



### Waste Management

A major contribution to Scope 3 carbon emissions is from waste generation and management. The installation of the On-site Composting Apparatus (OSCA) at Sunshine Coast Airport, reduces airport waste being sent to landfill. The majority of food and compostable waste including compostable packaging, plates, cups and wooden cutlery, is diverted from landfill. The OSCA produces a compost that is used on the Airport gardens.

To help with waste segregation, Evolve Cabinet Materials designed and installed three-way bin systems at the airport including general waste, recyclable and compostable compartments.

The Airport is reducing waste by replacing handtowels in the terminal amenities with hand dryers.

Along with savings in the cost of handtowels, life cycle studies

show that there are lower carbon emissions when using efficient hand dryers versus handtowels.

### **FEATURES:**

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- OSCA Bite Size is an automated, solar-powered, aerobic composting technology
- 3.3m x 1.1m in size with a capacity to take up to 945 litres of waste per week
- Three carbon filters to prevent odour
- Quiet operation
- Produces fully pasteurised compost
- Eye-catching signage on waste bins
- Improved separation of recyclables

The OSCA built by Worms Downunder, is the first solarpowered composting apparatus and Sunshine Coast Airport is the first Australian airport to use this technology.



### **BENEFITS:**

- Reduced organic waste to landfill
- Reduced paper waste to landfill
- Reduced carbon emissions through less waste



## Water Supply and Management

### The Airport has reduced water consumption through a combination of rainwater harvesting and efficiency upgrades.

In 2009 the first of a number of rainwater tanks was installed for use in amenities in the Check-in area of the terminal. In 2010 nine rainwater tanks were installed to harvest water from the terminal roof for use in terminal surrounds irrigation and toilets. These tanks also provide a protective screen from jet blast, the powerful waves of hot air created by the thrust of turbines in a jet engine that power an aircraft. This provides a safer environment for staff in the baggage make-up area.

In 2011, two additional rainwater tanks were installed to service amenities in the Arrivals area.

Existing dual flush toilets were upgraded to more efficient 4 star systems.

#### FEATURES:

- 107,400 litre rainwater harvesting capacity
- Upgrade to 4 stars toilets saving between 3 and 4.5 litres per flush



### **BENEFITS:**

 15% reduction in water consumption from 2009 to 2012



\*Data referenced in the Regional Economic Development Strategy (2013 - 2033).



#### FOR MORE INFORMATION

Go to www.invest.sunshinecoast.qld.gov.au or email invest@sunshinecoast.qld.gov.au or call the Coordinator - High Value Industries on +617 5475 9932.





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