



Case Study

UPCLOSE

Zero Waste SA Industry Program



## Leadership in hospital waste management

Reducing the ecological footprint of a large public hospital takes strong leadership, solid teamwork and good communication.

The Royal Adelaide Hospital demonstrated all three in a large-scale environmental program that has dramatically cut the amount of general and organic waste it sends to landfill.

The RAH has now become a model for green programming in hospitals across South Australia and interstate after showing that sustainability is an achievable goal in even the most challenging work environments.

In many ways the Royal Adelaide Hospital faces environmental hurdles on a scale similar to a small town – and arguably more complex.

South Australia's largest teaching hospital has acute-care beds for 650 patients, it employs more than 4100 full-time and casual staff, and it is home to over 300 residential medical students.

Every year the RAH deals with more than 50,000 emergencies, it caters for about 400,000 outpatient visits and countless other visitors walk through the doors. Patients are being treated around the clock, many need intensive care and they all need feeding.

“The Royal Adelaide Hospital has demonstrated outstanding leadership in the areas of sustainable waste and recycling practices. This is a result of a number of factors including passionate leaders... and a specific waste management committee comprising all the relevant stakeholders.”

**Mark Rawson**

Principal

Rawtec – Waste, Recycling and Sustainability Management Consultants



Government of South Australia

Zero Waste SA

AVOID • REDUCE • REUSE • RECYCLE



“In a large organisation like a hospital it’s important not to make recycling too complicated. If you make it easy for people it’s more likely to work.”

**Pat Rossi**  
Client Service Officer  
Royal Adelaide Hospital

## THE MOVE TOWARDS ZERO WASTE

Planning and coordinating a sustainability program in such an environment is a huge task. But the resolve of a few dedicated staff and the commitment of a waste management committee with membership across the hospital has produced some startling results.

Since 2007 the RAH has managed to increase recycling to 40% of total waste produced through initiatives that include turning leftover food into compost. New measures continue to be implemented as the hospital moves closer to a zero waste operation.

At the same time changes have been made to reduce water and energy consumption in a hospital-wide program that values the importance of sustainability in all areas.

Additional support is now being provided by Zero Waste SA as green initiatives introduced by RAH are adopted by other hospitals throughout the Central Northern Adelaide Health Service as part of standard policy.

## Sustainability objectives

A systematic approach to improving recycling and reducing waste to landfill in a complex hospital work environment.

## Annual savings

600 tonnes of waste is recycled by the RAH every year including:

- ^ 218 tonnes of kitchen food waste
- ^ 364 tonnes of paper and cardboard
- ^ 832 bales of plastic
- ^ 37,440L of co-mingled
- ^ 4000 fluorescent tubes
- ^ 1300 toner cartridges.

## Outcomes

- ^ leadership in waste management
- ^ proven collaborative approach in complex work environment
- ^ extensive recycling minimises waste to landfill
- ^ carbon emissions substantially reduced
- ^ extensive staff training and support
- ^ best practice model in sustainability for other hospitals

## Zero Waste SA support

- ^ North Terrace Sustainability Precinct waste recycling performance review
- ^ advice on new recycling initiatives
- ^ development of a case study

## Precinct promotes sustainability

The Royal Adelaide Hospital is one of six South Australian Government sites that are part of the North Terrace Sustainability Precinct overseen by Zero Waste SA.

The aim of the precinct is to drive new sustainability initiatives and identify impediments to improvements and common issues across the sites.

Other members of the precinct include the State Library, Art Gallery of South Australia, ArtLab, South Australian Museum and Government House.

A sustainability review of the precinct funded by Zero Waste SA in July 2009 reported that the RAH had demonstrated outstanding leadership in the areas of sustainable waste and recycling practices.

“This is a result of a number of factors including passionate leaders from the RAH and a specific waste management committee comprising all the relevant stakeholders,” said the report.

“Of particular note is the high recycling achieved by the Royal Adelaide Hospital from a highly complex site.”



## The making of a green champion

Patient care is the clear number one priority for any hospital where questions of sustainability tend to be a side issue.

There are numerous wards and medical departments, support services and administrative offices and each make their own individual contribution to the smooth running of the hospital.

They also each create their own waste – and in a hospital the size of the RAH that adds up to a significant amount. In such a large, complex organisation the simplest disposal option is landfill – and that’s where it all used to end up.

That is until Client Service Officer Pat Rossi started exploring other options in the early 1990s.

Pat was ideally suited for the role of green champion. She started work at the RAH in 1981 in the cleaning services division and eventually became manager, a role which took her to all parts of the hospital where she made numerous contacts.

“I organised meetings with the nursing managers to work out what could be recycled,” says Pat. “We started off with paper and cardboard and then moved on to glass.

“In a large organisation like a hospital it’s important not to make recycling too complicated. If you make it easy for people it’s more likely to work.”

Recycling bins were labelled, leaflets sent out to staff and training organised with the help of the waste contractor to minimise contamination.

“These regular meetings were the only way I could get the message across and to overcome some initial resistance,” says Pat.

## Committee drives coordinated recycling program

In 2004 when the State Government introduced a 10-year target for reducing government waste to landfill by 25% under its Strategic Plan objectives, a culture of recycling was already taking hold at the hospital.

The next critical step was the establishment of a Waste Management Committee in May 2007 to introduce new recycling ideas and oversee implementation.

Diverse representation from various hospital departments and inclusion of the waste and cleaning contractors meant the committee could provide coordinated leadership in tackling waste management.

As the green program developed, more people wanted to be involved. Theatre staff, for example, formed their own recycling team to provide feedback for the main committee’s quarterly meetings.

Recycling of multiple waste streams in each ward and department is now an accepted part of work activities and there is a high level of compliance.

Food waste has recently been added to the growing recycling and recovery list with organic bins in wards and residential kitchens. This is collected by a garden supply company and turned into compost.

Bin and collection systems are also in place for the separation of numerous other waste streams including co-mingled cans, cartons, bottles, paper and cardboard, medical waste, printer cartridges, batteries, hard waste, confidential documents for shredding, fluorescent tubes, plastics, wooden pallets, polystyrene and garden waste.

Even metals from old equipment is salvaged and collected every fortnight. The hospital’s General Services Division continues to monitor all recycling streams and conducts audits to ensure correct waste management procedures are followed.

Another major improvement has been the creation of centralised recycling facility within the hospital grounds for the storage and collection of the various waste streams.

The overall results have been so impressive that the RAH regularly receives enquiries from interstate and overseas hospitals trying to emulate its success. But even though great progress has been made, the hospital still sees zero waste as its ultimate target – and that appears close to being realised.

## Bin tracking system

Pat Rossi's persistence and dogmatic approach started to pay dividends.

She became the 'bin detective' and established an internal tracking system to ensure the correct bins were being used for recycling.

Bins were tagged and the waste contractor would alert Pat if there was any contamination. These would then be photographed and the section manager informed.

"This was all part of the education process and meant we could brief staff of their mistakes in a very visual way," says Pat. "Information was put on the staff noticeboard to remind them of the correct procedure."

Now that food is being removed from general waste – the materials left over after recycling – the remainder can be used for burning as an alternative fuel source. Trials are currently being held to reach this final stage.

## New kitchen system eliminates food waste

The Royal Adelaide Hospital provides food catering on a major scale. The hospital's main kitchen produces 2000 meals a day for its own patients plus another 820 meals for associated hospitals and health facilities.

That adds up to a huge amount of food and lot of waste.

To keep production scraps and leftovers out of the waste stream, in 2009 the hospital invested in a special vacuum processing system in the main kitchen as part of a new integrated environmental management system.

Three collecting stations have been installed in the preparation and dishwash areas from which all food waste is transferred to a grinding machine. A small amount of water is added and the resulting liquid mass is stored in a 7000L tank for weekly or twice-weekly collection. A garden supply company then turns it into compost.

"We are thrilled with the recycling benefits as well as the reduction in walking miles and staff handling," says Chief Food Services Manager Wendy Lewis. "Not only is this a sustainable solution but it eliminates issues such as smell."

The hospital estimates the food waste vacuum system is diverting about 4.2 tonnes of organic material from sewage every week.

In addition, new energy efficient dishwash machines that use minimal water have been installed along with a plastics pulper for processing drink cartons and food containers that are contaminated and cannot be recycled.

The plastics are pulped into dry waste and their volume reduced by about 80 per cent to minimise their impact on landfill.

## Energy and water saving initiatives

Steps to reduce energy and water usage are also a priority at the Royal Adelaide Hospital although budgetary constraints and lack of space have limited progress to some degree.

**Lighting** – In the mid 1990s a business management system was installed to conserve energy by automatically switching off lights in different parts of the building.

**Water heating** – Gradual replacement of large hot water tanks with instantaneous water heaters that use much less energy. Under the old system large amounts of water was heated and not used.

**Water savings** – As old plumbing equipment wears out it is being replaced by water saving devices:

- ^ all new shower heads have flow restrictors
- ^ flushometer valves in toilets
- ^ automatic timers for switching off taps
- ^ signage in staff and residential showers to save water.

Rainwater catchment is not an option because of a lack of space for storage.

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## Royal Adelaide Hospital

Founded in 1840, the Royal Adelaide Hospital is South Australia's largest accredited teaching hospital and a centre for medical and research excellence.

In addition to the 650-bed acute care hospital on North Terrace, the RAH also includes the Hampstead Rehabilitation Centre at Northfield. The RAH employs more than 4100 full-time and casual staff and houses about 300 residential medical students.

[www.rah.sa.gov.au](http://www.rah.sa.gov.au)

## Zero Waste SA

A South Australian Government agency that advances improved waste management policies and the development of resource recovery and recycling. The Zero Waste SA Industry Program advises and supports companies to achieve sustainability goals in waste, water and energy.

[www.zerowaste.sa.gov.au](http://www.zerowaste.sa.gov.au)