

# 2014 Sustainability Report Card for ANU



Photograph by Peter Meusburger

## **Key Results**

*Per capita water use declined by 50 per cent*

*Per capita waste declined by 22.3 per cent*

*Per capita energy use declined by 9 per cent*

ANU aims to provide a research and study environment that achieves world's best sustainability practice. Fifteen years ago ANU created its first Environment Management Plan (EMP). ANU is now working from its third Environmental Management Plan 2009 – 2015.

Eight major themes are covered by this report: green buildings, energy, water, waste, sustainable landscapes, transport, heritage and outreach. 2006 is used as the baseline.

## Green Buildings

### Objective

- To reduce greenhouse gas emissions, water use, environmental risk and waste by building greener buildings and retrofitting the current building stock to a high sustainability standard.

### Initiatives in 2014

- The original John Curtin School of Medical Research building was adaptively reused and refurbished to accommodate several key science faculties.
- Also see Energy, Water and Waste initiatives

### Results

ANU has a long standing commitment to green buildings. ANU became a founding member of the Green Building Council of Australia in 2002. In 2012 *Minimum Green* sustainability guidelines were developed for all new buildings and retrofits.

Over the past 13 years more than 20 new builds and major retrofits have incorporated green initiatives. This has included the College of Science Precinct, Lena Karmel Lodge, Jaeger 8 and 5, John Curtin School of Medical Research, and the Crawford extension to Old Canberra House. ANU's most significant achievement was the construction of the Frank Fenner Building which in 2013 became the first six star Green Star rated *As Built* building in Australia.

Many smaller projects have also been implemented. Since the Green Loan fund was established in 2007 and the Carbon Reduction Fund was established in 2010, over 29 projects have been approved. In 2014 one of the funded projects was the installation of photovoltaic panels at the School of Art, which increased ANU's renewable energy capacity by nearly a third.

## Energy

### Goal

- Reduce energy use and greenhouse gas emissions by 20 per cent by 2015 and 35 per cent by 2020.

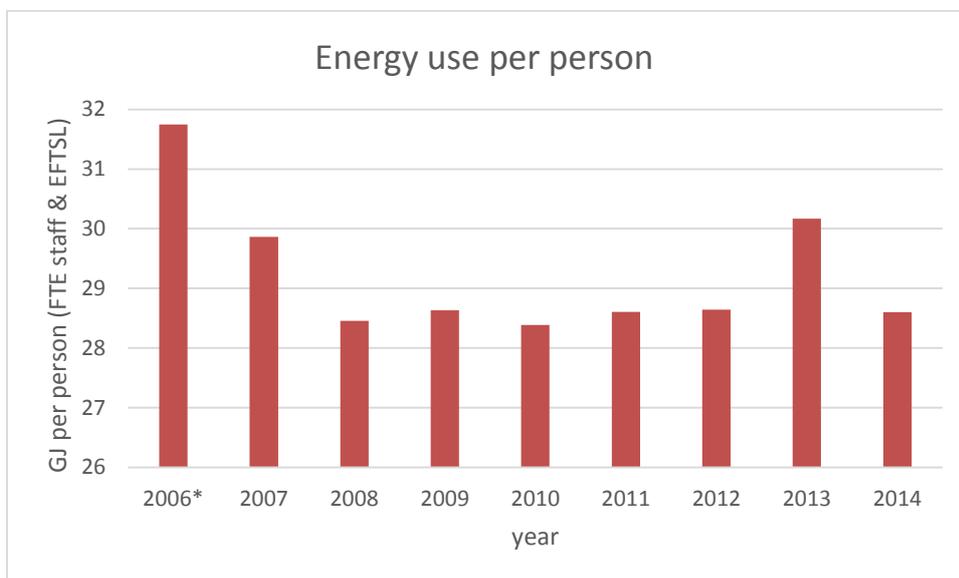
### Initiatives in 2014

- A 39.24 kW photovoltaic array was installed at the School of Art providing ANU with an additional 57 000 kWh of green energy each year. Combined with existing photovoltaic arrays the total green energy generated annually by ANU is now 137 000 kWh.

- LED lights were installed at the School of Art as part of the lighting upgrade program. These lights reduce energy use by 75 per cent compared with conventional lights.
- Twenty-one buildings were included in stage one of a Building Management System tune up program. Energy savings for individual buildings ranged between 6 and 30 per cent.
- An audit of all ANU campus gas meters was completed as part of a program to connect the gas meters to the Building Management System.

## Results

Total energy use has increased by 18.5 per cent, which is not surprising given a significant growth in the campus population and total floor area, and the construction of the National Computational Infrastructure Building (NCI) in 2012. The NCI is home to the Southern Hemisphere's fastest supercomputer and is responsible for 15 per cent of the total annual electricity use on campus. Yet despite these constraints, since 2006 per capita energy has declined by nine per cent.



## Water

### Goal

- Reduce total water use by 30 per cent by 2015 and 50 percent by 2020,
- Remove all potable water use from the landscape by 2015

### Initiatives in 2014

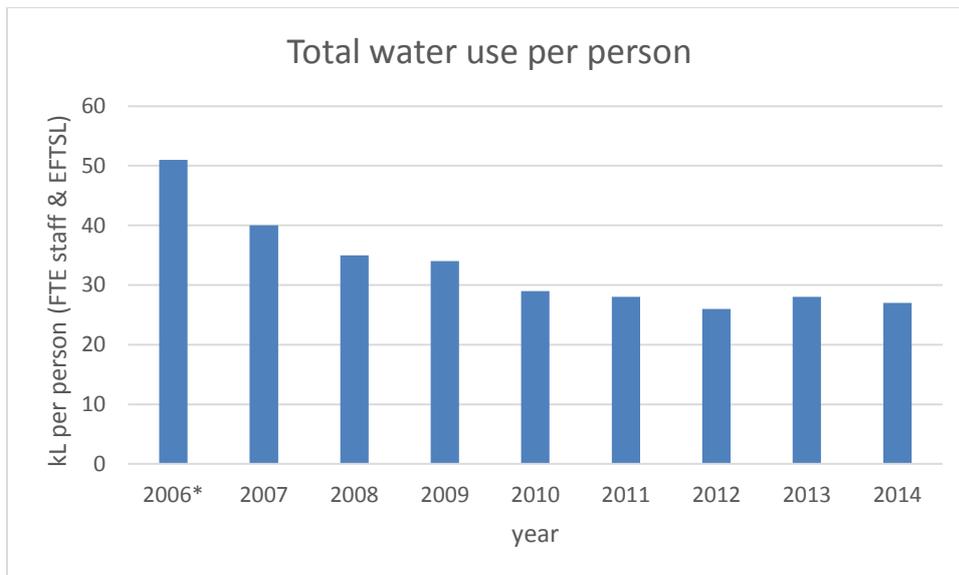
- ACTEW audited 177 water meters on campus to assess their condition, accuracy and potential for connecting to the new campus BMS.

### Results

Water consumption on campus costs \$4.3 million a year. Not only is water expensive but there is an imperative to reduce dependency on potable water in order to maintain the extensive landscaping on campus during drought conditions.

Since 2006 total potable water use has declined by 30 per cent, and per capita water use has nearly halved. This is due to a concerted strategy to reduce water consumption over the past nine years which has included:

- Using black water to flush toilets in the Frank Fenner building
- Using treated effluent to irrigate sports ovals and University Avenue.
- Installing fourteen rainwater tanks with a total capacity of 1.6 million litres
- Landscaping strategies to reduce water use such as using native plants and drought tolerant lawn species
- Installation of two process cooling units in Research Schools with an annual saving of 39 million kilolitres.



## Waste

### Goal

- Reduce waste to landfill by 40 per cent by 2015 and 70 per cent by 2020.

### Results

Total waste to landfill increased marginally by 2.2 per cent since 2006, although per capita waste to landfill decreased by 22.3 per cent. Achieving waste reduction has been difficult due to increased campus population and an impressive building program over the past few years. Waste reduction is also constrained due a significant reduction in composting due to the Hot Rot composting system breaking down in 2013. At this stage it is not cost effective to build another composter on campus, although a composting service maybe be incorporated into the new waste contract.



## Sustainable landscapes and biodiversity

### Goal

Adopting sustainable landscape strategies that protect landscape values and reduce dependence on potable water.

### Initiatives in 2014

- Interpretative signage was installed at key areas around the Old Canberra House remnant grassy woodlands and Dickson Road Wetland.
- Regular monitoring of Sullivans Creek was continued, including monthly water quality sampling and bi-annual monitoring of aquatic insects. Annual Frogwatch surveying was repeated with support from student volunteers.
- The Biodiversity Management Plan was completed and will be adopted pending feedback from the Department of Environment.

### Results:

Progress towards sustainable landscapes is measured by three KPI; use of potable water for landscape irrigation, weed distribution and Sullivan's Creek Water quality.

Significant progress has been made in reducing use of potable water (also see Water section). Since 2006 total potable water use has declined by 30 per cent.

In terms of weed coverage the improvement has been more modest. Since 2012 there have been a thirteen per cent decrease in weed coverage, and the area of weeds coverage has gone from 131,000m<sup>2</sup> to 114,000m<sup>2</sup>. Most of the weeds are Chilean Needle Grass.

Water quality in Sullivans Creek, has continued to decline. The trend for dissolved oxygen, which is an indicator of water quality, has declined slightly since 2009. This decline is believed to coincide with increased urbanisation of Canberra's Inner Northern suburbs, which drains into the creek.

## Transport

### Goal

- Reduce fleet emissions by 20 per cent by 2015
- Increase green commuting to 80 per cent by 2015 and minimize single occupant vehicles
- Increase the number of secure bicycle parking spaces

### Initiatives in 2014

- The Campus Pedestrian and Cyclist Movement Strategy is nearly complete and will guide the planning and construction of future pedestrian and cyclist infrastructure.
- The 2014 transport survey found that twenty-two per cent of respondents changed their travel due to parking fee increases. The survey also identified driver, pedestrian and cyclist conflict as a concern. This will be addressed by the Campus Pedestrian and Cyclist Movement Strategy.
- Fifty-seven bicycle hoops were installed across campus.

### Results

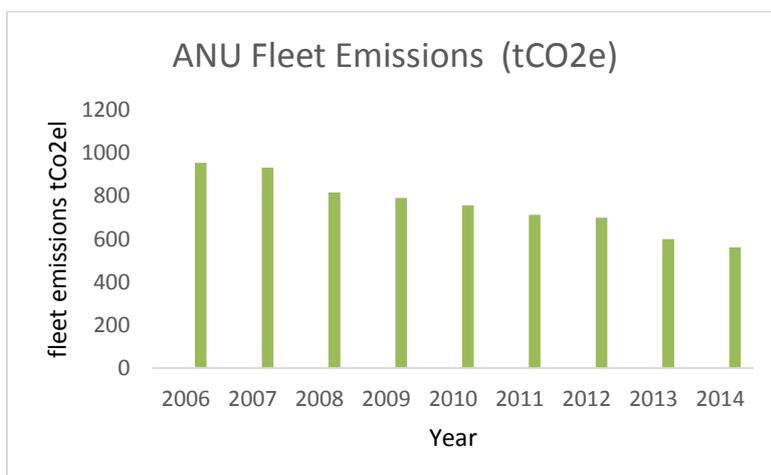
ANU fleet emissions have reduced by 20 per cent since 2006. This is partly due to a reduction in driving, and partly because of increased costs to operate a vehicle. Other factors influencing the reduction in emissions include the introduction of whole of government policies which encourage more sustainable vehicle purchases, and the ANU green fleet policy.

The ANU green vehicle fleet policy requires that vehicles:

- meet a minimum of four stars in the Green Vehicle Guide
- have four cylinder petrol or diesel engines.

Hybrids and electric vehicles are also on approved ANU vehicle list. A cash out policy is available for those who feel they don't need a vehicle.

Over the past nine years ANU has improved cycling and end of trip facilities. This includes constructing forty-one bicycle enclosures which has increased the number of bicycle parking spaces to 2012.



## Heritage Management

### Goal

- best practice conservation and management of heritage places and their values.

### Initiatives in 2014

- An Interactive Heritage Trail of the Mount Stromlo Observatory was launched with the assistance of a grant from the Commonwealth Department of the Environment.
- The Director's Residence at Mount Stromlo Observatory was partially restored after being damaged in the 2003 bushfires. With the assistance of grant from the Commonwealth Department of the Environment – the building is now a 'working ruin' with interactive and audio visual interpretive experiences for visitors.
- Old Canberra House, one of Canberra's most iconic historic structures, celebrated a belated 100<sup>th</sup> birthday, with the unveiling of a 1:12 scale model of the original structure developed by Cockington Green.
- The original John Curtin School of Medical Research building has been adaptively reused and refurbished to accommodate several key science faculties. This project included the refurbishment of over \$100,000 worth of original furniture by Fred Ward and ANU Design Unit.
- Heritage Management Plans for the Mount Stromlo Observatory and the Siding Spring Observatory were completed in line with the obligations of the EPBC Act.

### Results

ANU is required to manage heritage values under the *Environment Protection and Biodiversity Conservation Act 1999*. As a result ANU has developed a Heritage Strategy which is the primary document for managing heritage on campus. Under this strategy Heritage Management Plans are progressively being developed for all major sites of significance. In 2014 Heritage Management Plans were developed for Mount Stromlo Observatory and Siding Spring Observatory. Complementing the management of heritage are programs to educate the broader community about heritage on campus. In 2014 education programs included developing an interactive heritage trail for Mount Stromlo Observatory.



Mount Stromlo Directors Residence.  
Photograph by Stuart Hay.

## Outreach

### Goal

Increase awareness, foster engagement and celebrate environmental management success

### Initiatives in 2014

- The seventh annual Celebrate Sustainability Day involving live music, a free BBQ and market stalls was attended by 2000 students.
- This year's Great Green Debate "Does Australia have to choose between the economy and the environment? Is it possible to have a just transition away from fossil fuels?" attracted over 150 participants.

### Results

A key component to managing sustainability on campus is promoting and educating the campus community. The aim is not only to inform but to inspire behaviour change. This is done via key communication channels such as the ANU Green website, ANU Green facebook page, events, and articles in *OnCampus* and other publications. Major events in 2014 included the annual Celebrate Sustainability Day and the Great Green Debate.

ANU Green also supports the ANU organic garden and the Sustainable Learning Community which has grown from 50 members in 2006 to over 2000 in 2014.



Photograph by Gabrielle Ho.

## **Key facts**

### **Water**

- Per capita water use has halved
- Total potable water on campus declined by 30 per cent

### **Energy**

- Per capita energy use is down by 9 per cent
- Renewable energy on campus increased by a third after the installation of a 39.24 kW photovoltaic array at the School of Art

### **Transport**

- Fleet emissions down by 20 per cent

### **Green Buildings**

- Frank Fenner Building achieved a six star Green Star rating demonstrating “World Leadership”

### **Waste**

- Waste to landfill increased by 2.2 %
- Per capita waste is down by 22.3 %

### **Biodiversity**

- 106 native animals
- 11 native mammals
- 6 threatened bird species
- 1 nationally vulnerable mammal

### **Landscape**

- 10 000 trees
- 300 years – oldest tree on campus
- 1 critically endangered grassy woodland
- 1 nationally endangered flora species