UNSW SYDNEY

Australia's Global University

# Sustainability Report

2015

## Sustainability Report contents



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## Additional information



**This report was originally published as a website in order to reduce printing and subsequent waste.**

Visit the online version of this report at http://sustainabilityreport.unsw.edu.au

UNSW acknowledges the Bedegal (Kensington campus) and Gadigal (City and College of Fine Arts campuses) peoples, and all other traditional custodians of the lands where our campuses are located. We acknowledge all Aboriginal and Torres Strait Islander Elders, past and present, and their communities who have shared and practised their teachings over thousands of years. We recognise Aboriginal and Torres Strait Islander people's ongoing leadership and contributions, including to business, education, research and industry.

# Message from Ian Jacobs, Vice-Chancellor and President

Our UNSW Sustainability Report is a measure of our progress and a celebration of our achievements in the way we live, learn and work. I have been encouraged and inspired by what I have read.

We continue to focus on improving the operations of our university and I see increasing numbers of researchers and students focusing on environmental innovation and social impact.

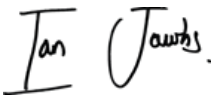
I also observe a growing passion for social engagement, with thousands of staff and students volunteering their time and attending events that connect people with common purpose on campus, across Australia and throughout our international alumni.

Our report is certified under the Global Reporting Initiative, making UNSW one of the few Australian universities to meet this international sustainability reporting standard. It is a commendable achievement. It is also wonderful to note UNSW's role in the growing network of international universities sharing ideas and collaborating on sustainability initiatives. This facilitates our strategic priority of achieving global impact.

The UNSW Sustainability Report provides a valuable record of our university's contribution to social, environmental and economic progress. I would like to acknowledge the hard work and dedication of the people here at UNSW who have brought this report to life.

You have my warm thanks and congratulations.

**Ian Jacobs**
President and Vice-Chancellor
UNSW Australia



## Introduction

**Sustainability means a lot of different things to different people, but the oft-quoted definition of sustainability – living successfully in the present without compromising our ability to do so in the future – still holds true.**

As one of Australia's leading research and teaching universities, UNSW recognises the vital role the university sector has in driving the change to sustainability as well as the urgency with which this change must take place.

This year the University's approach to sustainability was embodied in UNSW's 2015-2025 strategy which outlines an innovative, ambitious and altruistic agenda for the future. Arguably, sustainability as a concept underpins the whole strategy, but specifically (and excitingly) the strategy ushers in a series of focused initiatives that will establish UNSW as a global sustainability leader.

There is the 'Grand Challenges' program which will systematically identify, explore and address the major challenges facing society (including climate change, refugees, migrants and equality).


There is the 'Just Society' program which places huge emphasis on promoting equity, diversity and inclusion with the University itself. And there is the 'Global Impact' program with its initiatives to improve lives within disadvantaged and marginalised communities across the world.

This year has definitely marked a positive shift in the direction of the University and it will be interesting to see how these changes are reflected in this report over the next 10 years.

## Fast facts

**96%**
GENERAL WASTE DIVERTED FROM LANDFILL FROM OCTOBER 2015

**1.45 Tonnes**
of batteries recycled

**5,970**
staff and students walked to/from campus (Approximately)

**36%**
of total water use is bore water

**57%**
more renewable energy production than 2014

**1,200 trees**
cared for on Kensington campus

**80%**
of trees on campus are Australian native

Australia's first international university with international enrolments of over **27% in 2015**

Students from more than **120 countries**

UNSW campus ranks in **world's top 15%**

**435,614 kWh**
of renewable energy produced

**1,817 cycle to uni**
1,000 more than 2007

# Approach

## Sustainability defined

Sustainability means a lot of different things to different people, but the oft-quoted definition of sustainability – living successfully in the present without compromising our ability to do so in the future – still holds true. To that end, sustainability encompasses not just environmental, but social, cultural and economic dimensions.

As one of Australia's leading research and teaching universities, UNSW recognises the vital role the university sector has in driving the sustainability agenda as well as the urgency with which this change must take place.

## Reporting period

UNSW's 2015 Sustainability Report documents the sustainability performance of the University with a focus on the 1 January to 31 December 2015 reporting period. This report includes our environmental and social performance, as well as an overview of how the University is tracking in sustainability research and education. Information about our economic impact can be viewed in UNSW's 2015 Annual Report.

## The aim of this report

This report aims to:

- To identify the sustainability issues that impact on the environment and society as a result of UNSW business activities
- To describe UNSW's journey towards sustainability, including past achievements, current initiatives and future aspirations
- To provide a 2015 sustainability snapshot to allow comparison with our past performance and a benchmark for the future.

## Identifying our reporting needs

UNSW Sustainability is championing UNSW's charge towards sustainability but we understand the vital importance of bringing the whole UNSW community along with us.

When initiating the annual Sustainability Report in 2013, our first step was to explore what sustainability issues were important, so we:

- interviewed key members of senior management and a sample of students
- conducted interviews and focus groups with internal managers and data owners
- undertook staff engagement activities.

## Best practice reporting

In terms of the structure and reporting style, we have been guided by the Global Reporting Initiative (GRI) reporting principles for defining report content.

Our approach is built on the AA1000 Principles and informed by Account Ability's 5-part materiality test.

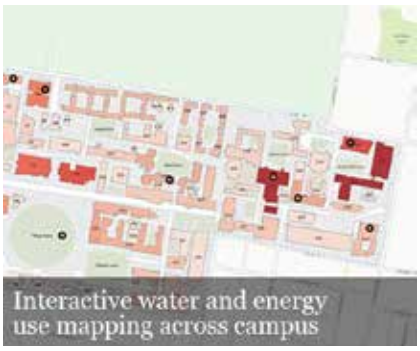
## We'd love your help!

If you have any sustainability initiative or research you want to highlight in 2016 or if you think there are any sustainability indicators missing in this report we want to hear from you. Email us at sustainability@unsw.edu.au.

## Highlights during 2015


**UNSW researchers help OzHarvest with the logistics of feeding the homeless with custom-built mathematical models that maximise driver routes.**


**In 2015, UNSW came 57th out of 407 in a leading Green University ranking.**




**New interactive map tracks the energy, CO2 and water use in the buildings on the Kensington Campus as part of a commitment to creating sustainable campuses.**


**Communities displaced by natural disasters, conflict or economic hardship will be assisted by graduates from the humanitarian stream of UNSW's new Master of Architecture.**


**Climate activists banded together on campus in October to add their voices to those clamouring for change in the run up to the UN Climate Change Conference in Paris.**


**Arc volunteer program is a fun and practical way to learn about green living.**

# Environment

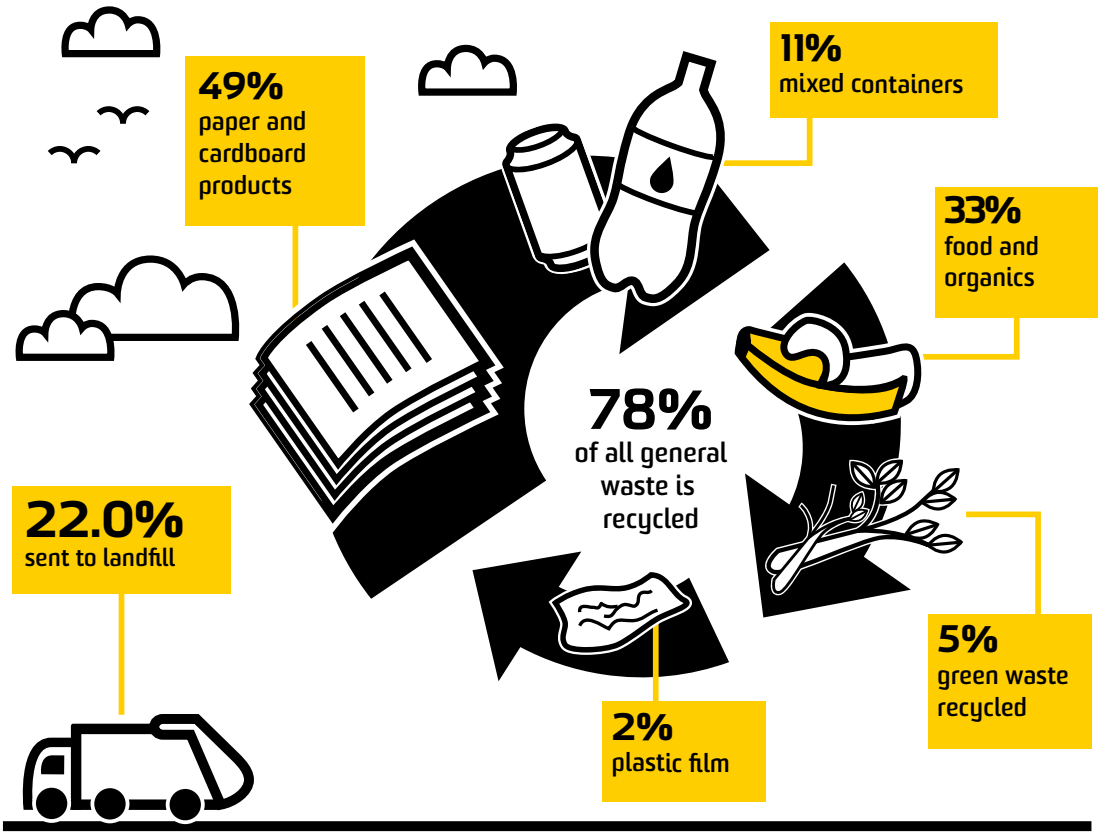
**With approximately 54,000 students and more than 6000 staff, the UNSW campuses are equivalent in population to a small town. These campuses consequently have the potential for significant and wide-ranging environmental and ecological impacts. Although every member of the University community has a role to play in improving sustainability, many of the operational impacts are the responsibility of UNSW's Facilities Management unit. This unit manages and maintains all of UNSW's buildings, campuses and research facilities.**

## In this section






## Waste




Information source: UNSW Facilities Management

### UNSW's waste management initiatives involve reducing, reusing, recycling and composting.

UNSW applies the principles of the internationally recognised Waste Management Hierarchy which states that waste is best managed according to:

- **avoidance** including the reduction of waste
- **resource recovery** including reuse and recycling
- **disposal** in an environmentally responsible way.

In common with many organisations, waste management is a considerable challenge for UNSW. With a number of different streams of waste generated by a wide variety of activities the University proactively looks for new ways to deal with waste.

### Raising awareness about waste

Waste is not just an institutional responsibility, UNSW Sustainability and Facilities Management are also involved in University-wide waste reduction and recycling campaigns.

These include:

- Installing and promoting water refill stations to encourage the re-use of drink bottles
- installing and promoting charity clothing bins in residential areas on campus
- stickers applied to paper recycling bins promoting UNSW recycling
- recycling fluorocarbon gases from disposed refrigerators
- posters promoting recycling displayed in communal areas
- a quarterly Facilities Management newsletter with articles promoting ways to responsibly manage different types of waste (i.e. fridges, pallets, batteries etc).

## Overview of waste

The following table outlines the total waste generated by UNSW in 2014 and 2015:

| | | 2014 | 2015 |
|---|---|---|---|
| | **Waste component** | **Total (tonnes)** | **Total (tonnes)** |
| **General waste** | Paper/cardboard | 1300 | 1045 |
| | Mixed containers | 193 | 232 |
| | Plastic film | 59 | 42 |
| | Food and organics | 502 | 571 |
| | Food waste | 111 | 108 |
| | Waste oil | 20.4 | 15 |
| | Green waste | 99 | 108 |
| | **General waste subtotal** | **2284.4** | **2121** |
| | **Component sent to landfill** | **549** | **472** |
| | **General waste recycled** | **1735.4** | **1649** |
| | **Percentage of general waste recycled** | **76%** | **78%** |
| | | | |
| | **Waste component** | **Total (tonnes)** | **Total (tonnes)** |
| **Other waste** | Chemical waste (not recycled) | 110 | 114 |
| | Biological waste (not recycled) | 106 | 106 |
| | E-waste (Monitors, laptops, desktops, printers, scanners, projectors, fax machines, servers - sent for recycling) | 24 | 16 |
| | Fluorescent tubes (recycled) | 2.08 | 1.34 |
| | Batteries (recycled) | 0.58 | 1.45 |
| | Mobile phones (recycled) | 0.04 | 0.05 |
| | Toner cartridges (recycled) | 2 | 3.5 |
| | CDs/DVDs | 0.1 | 0 |
| | Concrete* (recycled) | 24 | 30 |
| | Wooden pallets** (recycled) | 1.5 | 1.5 |
| | Skip bins (328.5 tonnes recycled) | 870 | 858 |
| | **Other waste total** | **1140.3** | **1131.84** |
| | **Component sent to landfill** | **757.6** | **538.1** |
| | **Other waste recycled** | **382.7** | **593.74** |
| | **Percentage of other waste recycled** | **34%** | **52%** |
| | | | |
| | **Waste component** | **Total cubic metres** | **Total cubic metres** |
| **Furniture** | Furniture*** | 1200 | 800 |

Data provided by UNSW FM Waste team

* Calculated by 8 x 3 tonne skip bins of concrete go directly to recycle from R9 civil engineering

** Pallets used for E-waste recycle and exam desk storage. 72 x pallets 20kilos/pallet = 1.5 tonne

*** Estimate from Furniture re-use contract and items re-used from UNSW Randwick Tram Shed storage.


## Creating fuel from waste

### UNSW waste combustibles transformed into PEF

In October 2015, UNSW's waste contractor, Doyle Bros started to produce an alternative fuel known as Processed Engineered Fuels (PEF) from some of the general waste picked up from UNSW.

The Manager of Waste and Relocations in Facilities Management, says this includes all plastics, paper packaging and timber. These materials are separated from food and non-combustibles, then shredded and compressed into one tonne 'blocks'. This is then transported to cement producers and used as fuel in lieu of burning fossil fuels. This will result in a significant reduction to UNSW's contribution to landfill - from about 21% of the general waste stream to 4% - which is a positive result.

The generation of PEF by Doyle Bros was initiated with financial support from the NSW Environmental Protection Agency (EPA). UNSW Facilities Management was consulted throughout the Doyle Bros' EPA application for funding and the site plant and equipment installation.

## Waste not, want not

### The logistics of feeding those in need

Ten years ago, Ronni Kahn, the founder of OzHarvest had an elegant idea: Why don't we pick up unwanted food from restaurants and grocery stores and transport it to homeless shelters and people in need?

Despite the simplicity of the brainwave, actually figuring out the most efficient routes to pick up and distribute the donated items has always been a major logistical challenge.

Enter Dr Vinayak Dixit and the team from UNSW's Research Centre for Integrated Transport Innovation (rCITI) who won a $150,000 Australian Linkage Project Grant in 2015 to develop a holistic mathematical model for vehicle routing.

"Immediately it was a fascinating engineering research challenge," explains Dixit, who accompanied a driver on his route one day to get a deeper understanding of the problem. "We hope our research will inform multiple facets of their work."

OzHarvest has delivered over 30 million meals to many of the 2.5 million Australians who don't have access to quality nutritious food. The not-for-profit organisation saves $8 billion of food waste in Australia each year and has diverted a total of 10,000 tonnes of surplus food from landfill.

### General waste

General waste consists of all waste collected from public spaces, offices, labs and teaching spaces. UNSW's current waste management contract with Doyle Bros ensured that all general waste is collected and carefully sorted. In 2015, 78% of UNSW's general waste was recycled. In October 2015, UNSW's waste contractor, Doyle Bros started to produce an alternative fuel known as Processed Engineered Fuels (PEF) from some of the general waste picked up from UNSW. This has increased our recycling rate to a whopping 96%.

### Paper and cardboard

UNSW recovered approximately 1,045 tonnes of used paper and cardboard in 2015. This is a decrease of 255 tonnes since 2014. The University is reimbursed per tonne of paper so this process has both environmental and economic benefits.

### Electronic waste recycling

In 2015, UNSW Sustainability partnered with Sustainability Materials Research & Technology (SMaRT@UNSW), Australian Research Council (ARC) and TES-AMM Australia (an ethical e-waste recycling company) in an exciting new Living Laboratory project. The project aims to use the e-waste generated on campus to research better ways to recycle e-waste. It now operates as eReuse.

**Monitors, laptops, desktops, printers, scanners, projectors, fax machines and servers**

This type of e-waste amounted to approximately 16 tonnes in 2015, down from 24 tonnes in 2014.

UNSW has an agreement in place with the current IT equipment suppliers, HP and Lexmark. Serviceable items such as laptops and desktops that are no longer of any use to UNSW are remanufactured, resold or donated via HP Planet Partners.

**Batteries**

A battery recycling collection service is available to all UNSW staff and students. Spent batteries that are D-size and smaller, and all button batteries can be recycled by depositing them in the specific recycling tubes in most schools and buildings. There are also recycling tubes at the following locations:

- FM Assist
- Arc Precinct
- The Chancellery

During 2015, 1.45 tonnes of batteries were collected for recycling, an amount considerably greater than some local government collections in NSW! This is an increase of 150% since 2014. For any further information email sustainability@unsw.edu.au.

**Mobile phones**

Mobile phones contain both hazardous and valuable materials that need to be recycled and prevented from going to landfill. During 2015, 50kg of mobile phones were collected from strategic locations around the campus. This is an increase of 25% from 2014. For any further information email sustainability@unsw.edu.au.

**Printer and photocopier toner cartridges**

Toner recycling bins are found throughout campus. UNSW partners with Close the Loop and Planet Ark, who collect and recycle cartridges and toner bottles from any brand of printer, photocopier or fax. During 2015, 3.5 tonnes of toner cartridges were recycled. This is an increase of 75% since 2014.

## Chemical and biological waste management

UNSW researchers are involved in activities which use a wide variety of chemical and biological materials. UNSW has contracts with specialist chemical and biological waste management companies who collect and dispose of these materials safely.

Fluorescent light globes and paint products are processed as chemical waste and recycled.

**Green Lab Program**

The UNSW Green Lab Environmental Compliance Program works directly with faculties and schools to ensure relevant staff are informed of their legal responsibilities with regard to environmental compliance. The program offers training for staff and students who use the laboratories and environmental auditing of campus laboratories as necessary.

## Food waste

Food waste bins are available to campus food outlets and owners have been encouraged to separate their food scraps. These bins are collected and the contents composted.

**Food waste and organics**

Food and organics are separated from general waste collected on site and separated at the UNSW contractor Materials Recovery Facility and composted.

**Cooking oil waste**

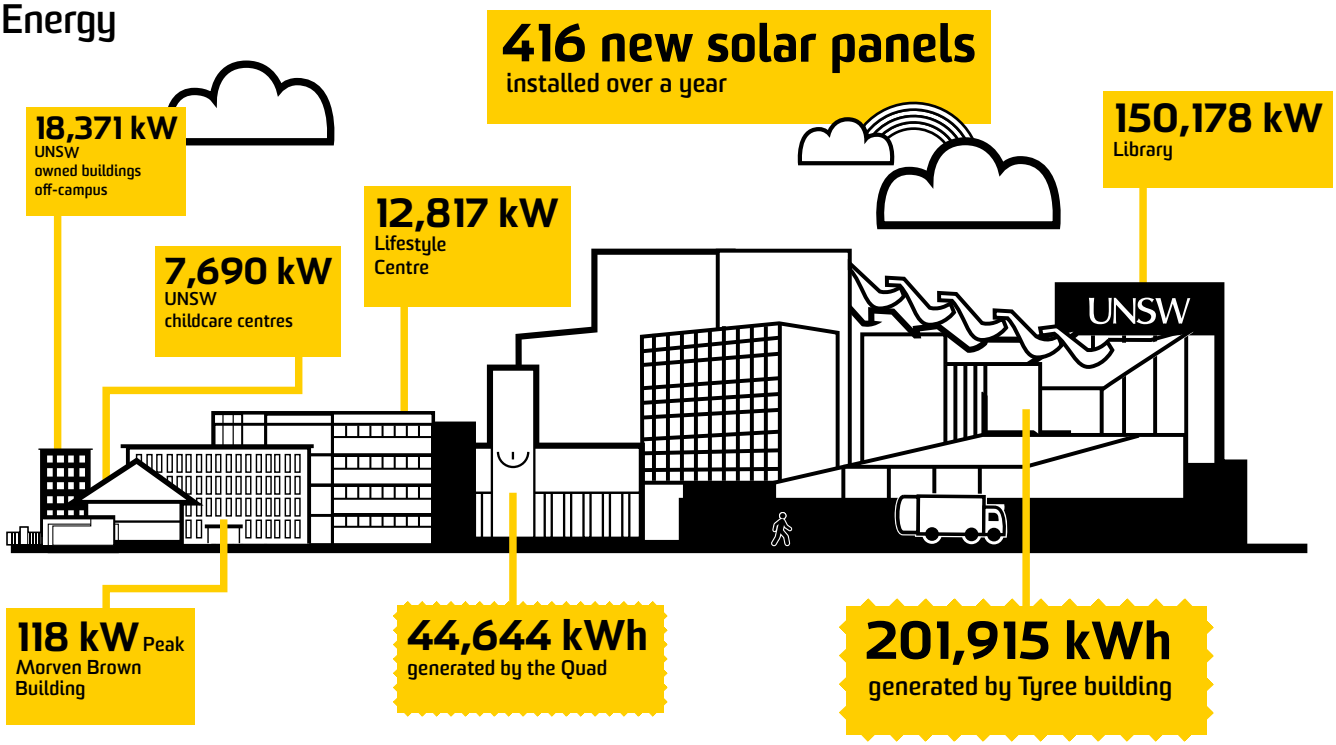
The waste cooking oil collected from campus is recycled to create bio-diesel fuel.

## Furniture reuse

Any UNSW staff member or student needing additional furniture for their work space at the University, or wanting to responsibly dispose of old workplace furniture, can use the UNSW Furniture Reuse Centre. An estimated 800 cubic metres of furniture was diverted from landfill in 2015 through this program.

Lab equipment is reused through a similar scheme called Technet. Both Adminet and Technet are sharing portals and run by staff volunteers.

## Energy




2: UNSW Facilities Management

**At UNSW we are proactively finding new ways to conserve energy and progressively switch to cleaner energy sources, such as solar power.**

UNSW has taken an active approach to reducing energy consumption through the implementation of various energy saving initiatives. Despite this, total energy use continues to rise due to the increased operation of highly advanced, energy-intensive research equipment and a continued growth in student and staff numbers.

Like most organisations in New South Wales, the majority of UNSW's energy requirements are currently met either directly or indirectly through the burning of fossil fuels. The University is committed to finding new ways to meet its energy needs that are both environmentally and economically sustainable and has implemented a number of strategies to minimise the environmental footprint of the energy required by its facilities.

Reducing our reliance on energy sourced from fossil fuels is critical because:

the burning of fossil fuels releases greenhouse gases that accelerate climate change

fossil fuels are a finite resource that will run out

the price of energy generated from fossil fuels in NSW has doubled since 2007 and is expected to double again by 2020.

Good progress has been made to improve the efficiency of energy use and generate low and zero carbon energy onsite. UNSW's Energy and Water Strategy has been produced to provide a summary of recent and future activities.

## Total energy use

Total energy use on the Kensington campus has risen from 93.5 gigawatt hours (GWh) in 2013 to 110.8 GWh in 2015. This is an increase of 18.5%.

The source of primary energy consumed by UNSW in 2015 can be broken down as follows:

- 72.2% from grid electricity (mostly from coal-fired power plants)
- 24.5% from natural gas
- 2.2% from co-generation
- 0.4% from renewable sources such as solar energy.

## Energy initiatives

**Energy Generation - Natural gas**

Although natural gas is a fossil fuel, its conversion into energy results in approximately 40% less greenhouse gas emissions than coal-based alternatives. The use of natural gas for space and water heating at UNSW therefore offers significantly better environmental outcomes than grid-based electric alternatives. In 2015, natural gas consumption at the Kensington campus was about 98,000 gigajoules, up about 43% since 2013.

**Electricity generation – photovoltaic**

Since 2005, UNSW has been installing photovoltaic cells on various buildings around its campuses and at the end of 2015, installed an additional 416 solar panels on the roof of the Morven Brown building. The new 118 kilowatt peak (kWp) system will have an average annual output forecast at 160MWh and will take UNSW's total solar generating capacity to 400kWp.

The continued expansion of installations meant that in 2015, photovoltaic systems were able to meet 0.4% of the University's energy demand. This is an increase of 63% since 2013.

**Electricity generation – co-generation & tri-generation**

Co-generation and tri-generation are techniques for energy generation that capture and use the heat energy that results from the production of electricity (that would otherwise

## UNSW campus ranks in world's top 15%

### UNSW came 57th out of 407 in a leading Green University ranking

In 2015, UNSW ranked 57th out of 407 participating institutions in the 2015 UI Greenmetric Ranking of world universities. This was the first year of taking part and UNSW came second only to the University of Melbourne among Australian participants. Our energy use improvements were ranked highly in the assessment.

The UI Greenmetric Ranking is an initiative of Universitas Indonesia, one of UNSW's key regional partners. The ranking considers each university's setting, energy use, waste, water, transportation, education and carbon footprint.

UNSW Sustainability Manager, Arifa Sarfraz, says it was an honour to be recognised. "The aim of the University's sustainability programs is to reduce our environmental impact and educate future leaders who can lead change for a sustainable future."

Aaron Magner, UNSW Sustainability Director, says key initiatives included a range of innovative programs to reduce energy usage, including using the "campus as a living laboratory" and embedding sustainability principles into the curriculum.

have been wasted). Co-generation systems use waste heat from the production of electricity to supply hot water to buildings, whilst tri-generation systems capture both the heating and/or cooling potential of the waste energy.

UNSW currently has one co-generation system and one tri-generation system on campus. There were previously two co-generation systems but one was decommissioned in 2015. The co-generation output for 2015 is similar to 2013 and 2014 but this will be reduced in the future due to the decommissioned plant.

The tri-generation plant suffered a major breakdown in 2014, which is reflected in reduced power generation for the 2015 year, but the system is now repaired and fully functional once again.

**Energy efficiency - building upgrades**

The energy management team at UNSW continually seeks to improve the energy efficiency of the University's facilities through initiatives such as:

- replacing ageing electric hot water systems with solar- or gas-powered systems
- replacing old lighting systems with new, more energy efficient, sensor-controlled lights
- fitting new bathrooms with only cold-water taps.
- Installing variable speed drives to pumps and fans
- 'tuning' of the building management systems (BMSs)
- enhanced energy efficiency design for new buildings
- re-commissioning of major heating, ventilating, and air conditioning (HVAC) plants.

**Energy efficiency - awareness campaigns**

The University also runs awareness campaigns about energy efficiency for staff, students and the wider community. These campaigns include:

- making live energy data available for the UNSW community.
- encouraging security staff patrolling buildings at night and cleaners to turn off lights
- creating posters such as '7 things you can do'.

## Carbon and other greenhouse gas emissions

The University is required to report its carbon and greenhouse gas emissions to the Commonwealth Government under the National Greenhouse and Energy Reporting (NGER) Act.

The term 'greenhouse gas' refers to any gas that absorbs infrared radiation when released into the atmosphere. The absorption of this energy creates an insulating layer that balances the amount of energy received from the sun with energy radiated away from the earth's surface, creating a stable surface temperature. Different gases are able to absorb different levels of radiation and remain in the atmosphere for different periods of time, making comparisons between them difficult. To enable us to estimate how much a given mass of a greenhouse gas is contributing to global warming, the gas is compared to a baseline of one unit of carbon dioxide (CO2) and is expressed as a carbon dioxide equivalent (CO2e). For example, methane has an insulating (global warming) potential 21 times greater than that of carbon dioxide, meaning the emission of one tonne of methane is equivalent to the emission of 21 tonnes of carbon dioxide (21 CO2e).

The NGER Reporting Guidelines break emissions down into three categories:

**Scope 1:** These are direct emissions, such as those from the burning of natural gas and motor vehicle fuels.

**Scope 2:** These are indirect emissions, removed by a single step such as those generated as a result of the use of electricity produced by a third-party.

**Scope 3:** These are emissions that are more than one step removed. This category is most difficult to measure and includes emissions such as those resulting from business travel by staff, the disposal of waste, the extraction and transmission of energy, and the production of the energy embodied in a resource such as water. UNSW did not measure scope 3 emissions during the 2015 reporting period. This is something we intend to investigate for future reporting, as scope 3 emissions are likely to represent the greatest proportion of UNSW's carbon emissions.

In the 2014-15 financial year, the University's campuses and operations were responsible for the production of 77,372 tonnes of Scope 1 and 2 emissions of CO2e greenhouse gases, up from 72,455 tonnes in the previous reporting period.

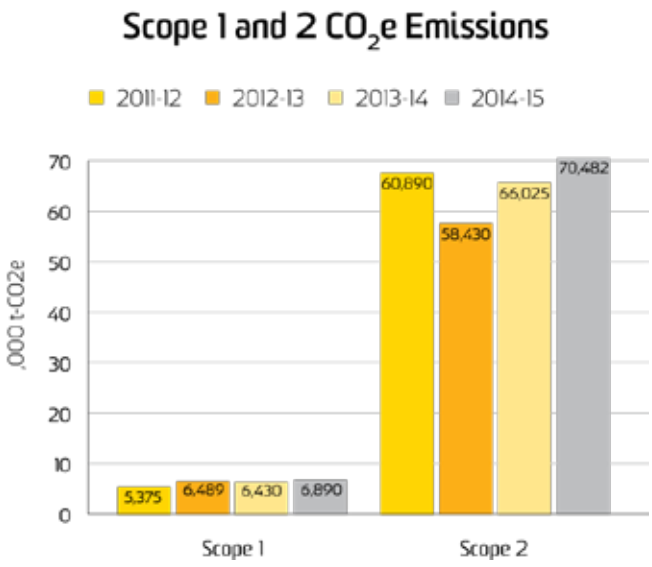
Scope 2 CO2e greenhouse gas emissions associated with the consumption of NSW grid electricity are the largest contributor to the University's carbon footprint. In 2014/15, these emissions increased by 6.8% from the previous reporting period.

The Scope 1 CO2e greenhouse gas emissions from the burning of natural gas (primarily for heating), and the liquid fuels used by the vehicle fleet increased by 7.2% in 2014/15 from the previous reporting period.

Scope 2 $CO^2e$ greenhouse gas emissions associated with the consumption of NSW grid electricity are the largest contributor to the University's carbon footprint. In 2013/14, these emissions increased by 11.5% from the previous reporting period.

The Scope 1 $CO^2e$ greenhouse gas emissions from the burning of natural gas (primarily for heating), and the liquid fuels used by the vehicle fleet decreased by almost 1% in 2013/14 from the previous reporting period.

### UNSW greenhouse gas emissions




## Morven Brown joins the UNSW solar-generating club

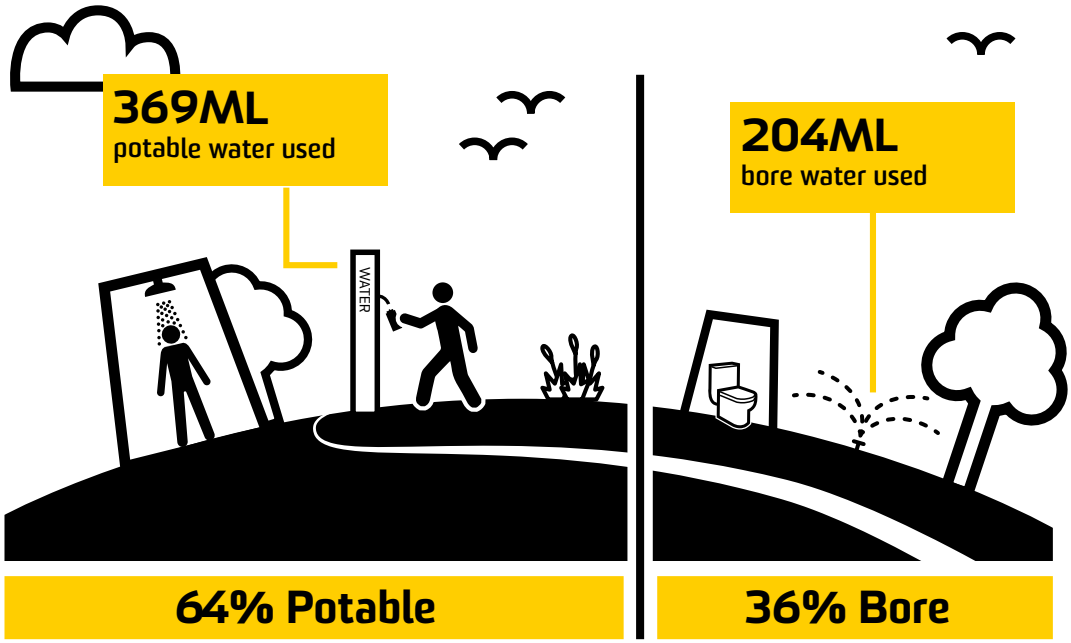
### Over 400 new panels installed on the Kensington campus

In November 2015, UNSW's solar generating capacity increased again, with the addition of 416 PV panels to the roof of the Morven Brown building on the Kensington campus

The 118-kilowatt peak (kWp) system will have an average annual output forecast at 160MWh, making it slightly larger than the system installed in 2014 on the UNSW Library roof. This project will take UNSW's total solar generating capacity to a substantial 400kWp.

The Morven Brown PV installation has been funded from the sale of 13,000 Energy Saving Certificates that were generated as a result of FM Energy Management's recent campus lighting upgrade project.

# Water




Information source: UNSW Facilities Management

**Water conservation remains a priority at UNSW for our current operations and future planning.**

The intermittent and uncertain supply of water in Australia has led individuals and organisations to take an active interest in their water usage and the long-term sustainability of water supply. UNSW accepts its ongoing responsibility as an efficient water user and takes water conservation seriously in the planning of future developments on campus.

Good progress has been made to improve the efficiency of water usage at UNSW and the Energy and Water Strategy has been produced to provide a summary of recent and planned activities for the future.

## Water sources and use

### Potable water

Since 2003, UNSW has instigated a range of water-saving initiatives that have seen potable water usage at the Kensington campus decrease in both per capita and real terms. In 2015, the total amount of potable water used on campus was 369 megalitres, representing 64% of the water used on campus.

Potable water use rose from last year due to construction works on campus. Bringing recently finished buildings up to full occupancy has added to the total.

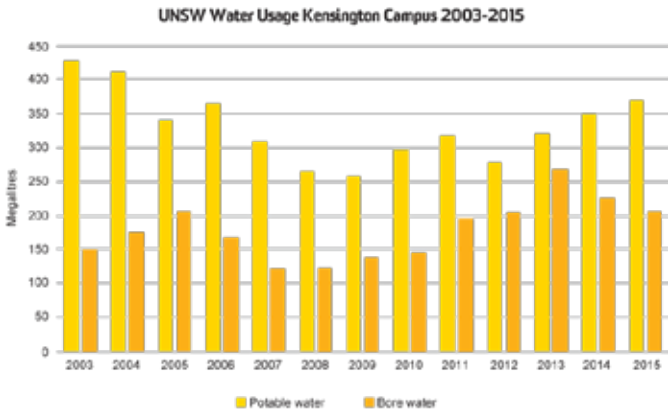
### Bore water

Where potable water is not required, UNSW is systematically replacing it with bore water. In addition to irrigation and toilet flushing, the applications of bore water have been extended to include laboratory process cooling, and heat dissipation in air-conditioning systems. In 2015, UNSW used 204 megalitres of bore water, representing 36% of total water use.

The graph on the next page shows how water use has changed since 2003.

### Stormwater

UNSW uses a managed aquifer recharge process to mitigate the effects of the extraction of bore water from the Botany aquifer. Managed aquifer recharge is a significant area of research at UNSW, through the UNSW's Connected Waters Initiative. As a part of this initiative the University has installed Sydney's largest percolation pit, capturing close to 70% of the stormwater runoff on campus. Surface runoff that would normally flow out to sea is redirected into the percolation pit from where it can recharge the aquifer.




Although this water is not directly used on the University's campuses, it replenishes the aquifer and therefore feeds UNSW's bore water system. This process enables UNSW to capture and return 160 megalitres of water to the aquifer per year, the equivalent of 64 Olympic-sized swimming pools.

### Ongoing water conservation initiatives

We actively investigate opportunities to reduce water use at UNSW. Initiatives include:

- upgrading toilets and showers to incorporate high efficiency water-saving fixtures and fittings
- planting drought-tolerant grasses and native plants
- undertaking water consumption reviews of campus cooling towers to improve operational efficiency and reduce water wastage,
- installing a bore water treatment plant in the new Materials Science building
- incorporating bore water systems into all of our major building projects
- undertaking leak detection in pipes and continuous monitoring of water use.

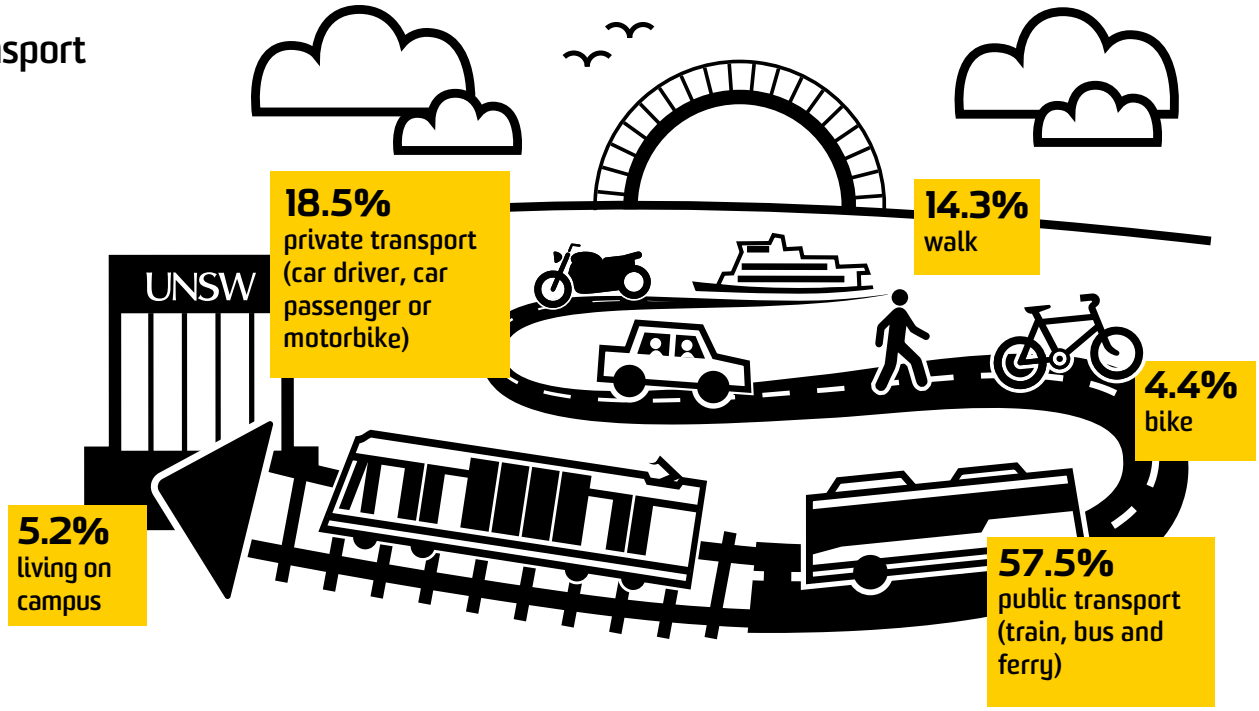
## Water and energy use: how does your building rate?

### FM releases new interactive map

UNSW Facilities Management has released a new interactive map that tracks the energy, CO2 and water use in the buildings on the Kensington Campus as part of a commitment to creating sustainable campuses through data collection and sharing.

Reducing the university's environmental impact requires in-depth knowledge of where, when and how much energy and water is being used on site. FM's Energy Management team keeps track of all energy and water use in our campuses, with a large network of more than 830 smart energy and water sub-meters. These meters provide UNSW with live data for individual buildings and significant energy and water systems such as large chiller plants, cooling towers and even PV generation systems.

## Transport




Information source: UNSW 2015 Travel Survey

### UNSW actively helps students and staff make sustainable transport choices.

More students and staff are travelling to UNSW by public transport and by bicycle than ever before. Every weekday during semester, around 40,000 trips are made to and from UNSW's Kensington campus making it the largest single destination in Sydney's eastern suburbs.

Unlike other Sydney-based universities, UNSW is not located close to a railway station meaning there is a higher reliance on the use of buses, although this will change in 2020 with the opening of the new South East Light Rail.

### Annual travel survey

UNSW's annual Travel Survey provides critical input to the University's transport strategy. The survey is run every April and completed its ninth year in 2015. The University analyses survey results each year to design programs that promote sustainable transportation options including walking, cycling and public transport. The results are also used to develop measures that reduce car dependence and parking demand on campus. One trend that is influencing our surveys is the increase in students living on campus, with almost double the number of student residents than 2014.

Some 18%, or almost 10,000, UNSW staff and students took part in the 2015 travel survey. Some key statistics from the survey results are as follows:

**Public transport:** In 2015, a majority of the respondents (57.5%) travelled by public transport, an 8.5% increase since 2007 when this method of travel was used by only 49% of staff and students.

**Private vehicles:** In 2015, 18.5% of respondents travelled in private vehicles, a 13.6% decrease in private vehicle usage since 2007. This equated to an average decrease of 380 private vehicle users each year despite a growth in the total campus population of approximately 15,765 since 2007.

**Walking:** Walking to and from the campus has been fairly consistent over the years with 14.3% of all respondents walking to campus in 2015.

**Cycling:** The percentage of respondents cycling to and from the campus increased from 2.7% in 2007 to 4.4% in 2015. When extrapolated to the average daily campus population, this is a significant increase from 922 daily riders in 2007 to 1,817 daily riders in 2015.

## South East Light Rail – coming soon!

UNSW is a key destination on the new South East Light Rail route which will extend from Circular Quay, through Sydney's CBD and on to UNSW via Central Station. Construction started in 2015 and is expected to be completed in 2020. The light rail is set to transform public transport to UNSW and is anticipated to greatly reduce staff and student reliance on private vehicle usage. For the latest news visit UNSW's Light Rail website (http://www.lightrail.unsw.edu.au/).

## Car sharing and car pooling

**Car sharing**

In 2011, UNSW became the first university in Australia to have car sharing facilities on campus. Four vehicles (including a van) from the car share company GoGet are available for hire.

In 2015, approximately 110 students and staff used the service. There were over 2,600 bookings across the year with an average booking length of 4.3 hours per booking.

GoGet data has shown carshare members drive, on average, 2,000km less per year than the average car owner. This results in about 2.2 million less kilometres travelled per year by UNSW students and staff.

**Car pooling**

UNSW has a dedicated car-pooling website called MyCarpools which has been designed to match drivers with passengers based on location, travel times and personal preferences. Car-pooling reduces travel congestion, pollution and the costs of travel.


## The new South East Light Rail

### A vital transport link for UNSW

As UNSW has grown, we have outgrown the existing public transport system and a high capacity mass transport solution was desperately needed to alleviate current transport issues, improve accessibility and make sure UNSW continues to attract students and staff of the highest potential.

In 2015, after many years of planning and debate, work finally started on the South East Light Rail which, by 2020, will connect UNSW to the heart of Sydney's CBD.

Each light rail vehicle carries around five times the number of people as a bus. This increase in capacity and the additional number of vehicle entry and exit points is expected to result in faster travel times for staff and students.

As the landscape around the University is shaped to accommodate the new light rail, Transport for NSW have also advised that active transport options, such as walking and cycling, will be an important element of the streetscape design. Cycleways and footpaths will be included to ensure active transport is connected with light rail.

## Bike riders push cycling cause at Ride2Uni Day

### Big turnout of UNSW students and staff for national Ride2Work day

Over 50 cyclists from across the city relied on pedal power to travel to UNSW in celebration of National Ride to Work Day.

Sarah from UNSW's Faculty of the Built Environment says she rides to work from Maroubra because it's fast, free and it helps get in some regular daily exercise. "The days that I ride, I'm just in a better place than when I don't," says Sarah.

All cyclists were rewarded with a delicious free breakfast courtesy of UNSW Sustainability and the opportunity to tune their bikes.

Cycling is increasing dramatically in Sydney having soared 132% over the last four years. Safe cycle access to UNSW is excellent and exciting plans are afoot to provide secure parking, lockers, showers and a workshop space for the Arc Bike club in the near future.

### Car parking

Whilst car parking at UNSW is limited, driving to and from the University remains attractive to many staff and students. Because car transportation is in direct conflict with the University's sustainability goals, UNSW has implemented carsharing and carpooling strategies to reduce single passenger private vehicle dependency.

In addition, we have increased car parking fees at a greater rate to encourage students and staff to choose more sustainable transport options. There are approximately 2,800 parking spaces on its Kensington campus (including loading bays).

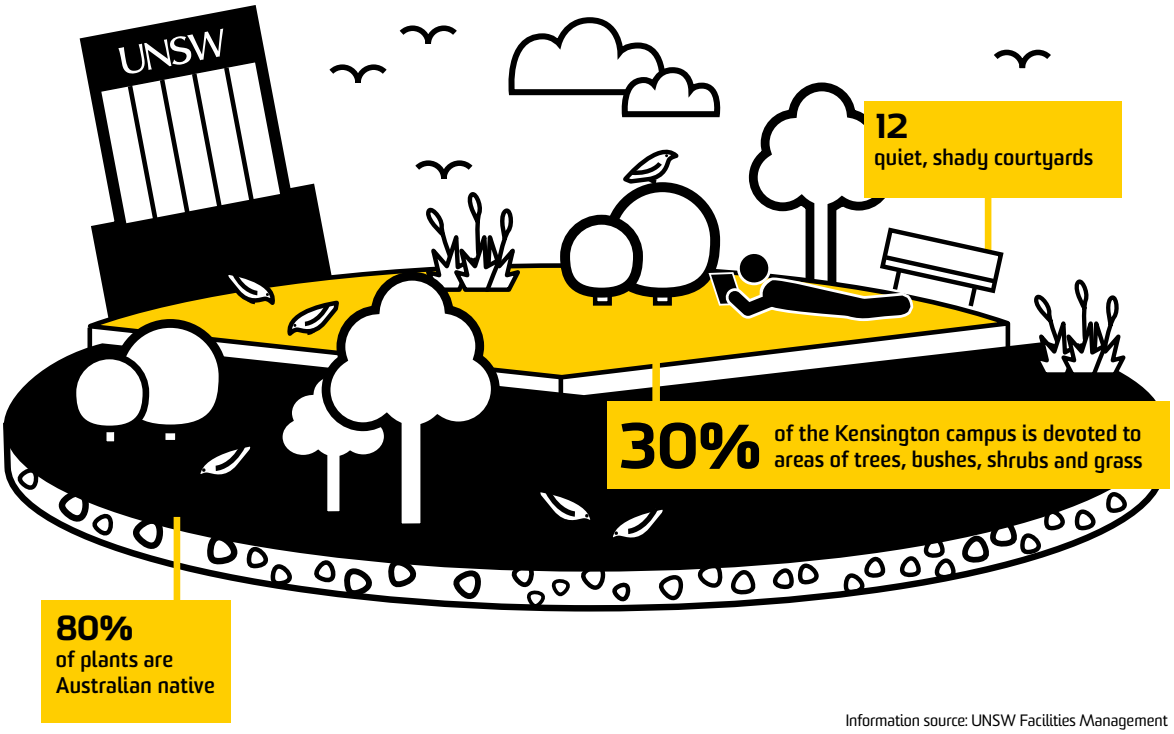
### Cycling

The Kensington campus is easily accessible by bicycle and provides over 50 indoor and almost 700 outdoor designated bicycle parking spaces. This is an increase of about 17% since 2013. There are also two permanent bike pumps and 19 shower locations. UNSW also took part in national Ride to Work day in 2015 for the fourth year running (or riding!).

### Fleet vehicles

UNSW ensures that a high proportion of its 83 fleet vehicles are energy-efficient or use alternative fuels. Fuel-efficient vehicles in the fleet include hybrid cars (Toyota Prius and Toyota Camry) and three electric vehicles.

## Campus




Information source: UNSW Facilities Management

### UNSW's campuses inspire a green outlook

UNSW has appealing campus grounds that are planned, planted, and maintained with the local environment and ecology in mind. We protect and create wildlife habitat and conserve water and other natural resources.

### Grounds management

UNSW maintains approximately 120,000m² of landscaped areas and another 80,000m² of playing fields. The University recognises that the way these grounds are managed can have significant environmental impacts and employs a number of strategies to ensure they are managed in a sustainable way. These strategies include:

- choosing appropriate plants (i.e. planting native species that complement the soil and climactic conditions)
- maintaining soil quality
- minimising the use of chemical and fertiliser treatments
- ensuring the responsible disposal of green waste.

### Trees

UNSW is the proud caretaker of over 1200 trees on the Kensington campus including a number of visually stunning 120-year-old Morton Bay Fig trees.

In 2015, a new tree database system commenced. Risk assessments were undertaken, trees were tagged, GPS co-ordinates were noted and aligned to an interactive tree plan of the campus.

As well as contributing to a pleasing aesthetic, trees create a microclimate that can significantly reduce the 'urban heat island effect'. This provides staff and students with a more comfortable campus environment and the temperature decreases can significantly reduce the amount of energy required to cool (and in some instances to heat) buildings.

## Taking care of our aging tree population

**The trees of UNSW have recently been receiving some very specific attention as part of our ongoing commitment to conserving the mature trees on campus.**

Down at Gate 4, Fig Tree Lane, a crew from Sydney Arbor has been climbing through and over the top of the historic figs. This was part of an annual aerial assessment to pick up on any cracks or weaknesses and undertake minor pruning.

In addition, technicians from Total Height Safety installed 'lazy restraint cabling systems' into the canopies of two Ficus microcarpas at the Roundhouse beer garden and on the Main Walk adjacent to the flag pole. A risk assessment on these trees recognised that they are developing a structure which, although common, will leave them susceptible to future failure.

The beginning of the implementation of our new tree database system by Arborplan also commenced in 2015. A group of three arborists were onsite for a week doing risk assessments on each individual tree, of which there are some 1200 around campus. The trees were tagged, GPS co-ordinates noted and aligned to an interactive tree plan of the campus.

## Campus grounds sustainability initiatives

**Native planting policy**

UNSW's planting policy is to promote local biodiversity. While the Kensington campus has some mature non-native trees, new plantings favour native plants and grasses that are indigenous to Australia and the Randwick/Kensington area. These plants are suited to the local climactic conditions, reducing their watering requirements, and allowing students from UNSW and beyond to learn about bioregionalism.

In 2015, 80% of trees on campus were noted as Australian native species. This is an increase of 14% since 2013.

**Irrigation**

UNSW continues to audit its landscape irrigation systems and has a contractual requirement in place for the grounds maintenance contractor to ensure optimum outcomes. Where irrigation is required, the preference is for bore water drip irrigation, rather than sprinkler systems.

In 2015, as part of the Biosciences Renewal Project, a 50,000 litre stormwater storage tank was installed underneath the Gate 11 driveway which has resulted in significant water savings.

**Healthy soil**

UNSW has reduced its use of synthetic garden chemicals and replaced these with slow-release organic fertilisers wherever possible. This reduces potential toxicity issues, improves the soil structure and reduces watering requirements.

UNSW has limited the use of pesticides on campus through modifications in grounds maintenance contracts. Low toxicity chemical solutions are still used for pest and weed control, but only as a last resort.

**Mulching**

UNSW processes all tree prunings on site into mulch and woodchips to use in gardens across its campuses. Approximately 870 cubic metres of mulch was applied to the landscaped environment in 2015 to reduce evaporation and conserve water.

**Technology in the garden**

Automatic watering systems, rain sensors and night-time watering regimes are in operation at UNSW. These high-tech solutions are applied to approximately 80% of the Kensington campus and have significantly reduced overwatering.

**Reusing and recycling**

UNSW's campuses continue to evolve as we adapt facilities and landscapes to meet our changing needs. Surplus materials and equipment, such as old sandstone, paving bricks, outdoor furniture, plants, bike racks and bollards, are saved and stored on site by the UNSW grounds manager. This policy of reuse before recycling or disposal helps to minimise the waste from these adaptations and gives rise to the possibility of zero-purchase projects.

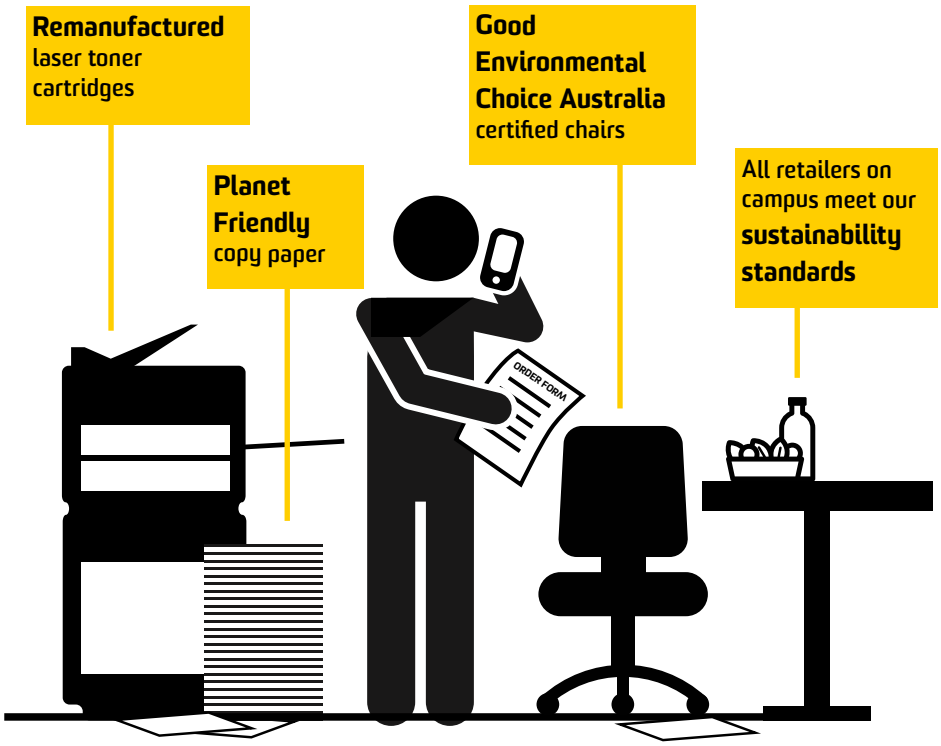
## Eco-friendly caterpillar trap

### Simple method protects our trees

To protect our White Cedar trees (Melia azedarach) on campus from caterpillar damage, Facilities Management has implemented an insecticide-free pest control method. The White Cedar tree is native to Australia and South East Asia. This species of tree is a larval food plant for the White Dedar Moth. Unfortunately, the caterpillars damage the trees.

The pest control method involves placing a hessian band around the trunk of the tree. This method is specific designed to protect this type of tree as it exploits the caterpillar's habit of hiding and resting at the base of the tree during the day. The caterpillars congregate under the hessian, making it easy to check and collect them every few days during their lifecycle. The caterpillars are then disposed of humanely.

# Purchasing




Information source: UNSW P3 Print, Post, Plus

## Sustainable purchasing powers our procurement

Sustainable procurement considers the broader economic, environmental and social cost of purchases made by UNSW.

## Sustainable procurement at UNSW

Our approach to procurement means that when buying goods and services we consider:

- strategies to avoid unnecessary consumption and manage demand
- ways to minimise the environmental impacts over the life of goods and services from cradle to grave
- suppliers' social responsibility practices, including compliance with legislative obligations to employees, the community, supply chain management and international treaties
- value-for-money over the lifetime of goods and services, rather than just initial price.

The University encourages significant and strategic purchases to be made through the centralised strategic procurement office and, whenever possible, for them to be made online using e-procurement. This allows UNSW to more accurately measure and manage efficient material and services use, avoid unnecessary expenditure and calculate carbon emissions.

As our use of strategic electronic tools increases over time, the University will be able to generate more accurate data, presenting greater opportunities for tracking and assessing purchasing habits and volumes.

## Sustainability features of current supply agreements

### Stationery and office supplies

UNSW's preferred stationery supplier provides a range of environmentally preferred goods as a 'Planet Friendly' sub-brand. Items include copy paper and other paper products with recycled content, remanufactured laser toner cartridges, janitorial equipment, Fair Trade teas, coffees and hot chocolate.

The supplier also encourages the return of their shipping packaging for reuse. A small order handling fee has also been agreed to encourage staff to consolidate stationery orders and reduce unnecessary delivery trips to campus.

In 2015, UNSW spent $300,000 of total expenditure on Planet Friendly products. This equates to 27% of products. In 2013, only 17% of products purchased were Planet Friendly so this represents a significant increase.

**Office furniture**

UNSW's preferred supplier for office chairs offers a range certified by Good Environmental Choice Australia. The supplier is currently undergoing certification of an Environmental Management System compliant with ISO 14001.

Woollen fabric standards have been chosen. Woollen fabric is known for its long life and ease of cleaning as well as being a natural fibre capable of being recycled. Sustainable practices are conducted in the processing and manufacturing of these fabrics.

**Travel / video conferencing**

UNSW offers high quality video conferencing facilities as an alternative to staff travelling for meetings.

**Residential catering**

UNSW has negotiated achievable environmental and sustainability standards to become part of our Residential Catering Agreement. This service includes initiatives on:

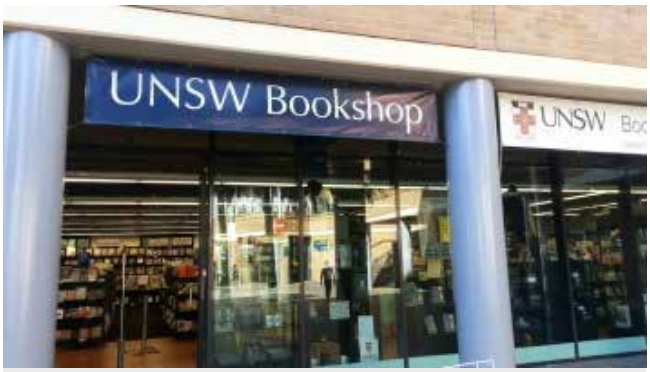
- water conservation
- waste disposal and recycling
- cooking oil, including reprocessing for bio-diesel
- food waste, including compost and food rescue
- packaging
- economical use of equipment (e.g. fridges in high functioning order), use of sustainable consumables (e.g. light globes), economical use of utilities and use of locally sourced and seasonal produce.

## UNSW Sustainability inspires positive shift

### Fair trade tea and coffee at UNSW leads to corporate change

In 2012, at the request of Aaron Magner, UNSW's Sustainability Director, Gastronomy investigated moving to only using fair trade coffee and tea in all UNSW venues. After extensive trialing they partnered with Sacred Grounds, a company that is Australian owned, roasts locally and is proud to serve only organic and fair trade coffee.

In 2015, UNSW Sustainability learned that Gastronomy has used UNSW as an example of best practice to promote the importance of fair trade coffee to other corporate clients. So far, UNSW has inspired three other Gastronomy clients to move away from other leading coffee brands to Sacred Grounds as a more socially conscious alternative.




## Making knowledge readily available

### UNSW Bookshop and Interdisciplinary Environmental Studies team up to make sure top environmental titles are available

The Interdisciplinary Environmental Studies (IES) sits at the vanguard of interdisciplinary environmental studies in Australia, offering specialised postgraduate environmental management coursework and research programs.

Environmental concerns, and more broadly sustainability, are providing both greater constraints and greater opportunities for businesses, governments and NGOs. Finding solutions to environmental problems, including climate change, water management and deforestation are now international imperatives. It has been recognised that the challenges are complex and interconnected, and that solutions cannot come from one single area of research, profession or sector of society.

This is why the UNSW Bookshop and the IES have teamed up to present a specialised selection of books and publications that address these urgent concerns.

### Green Print Centre

UNSW's Green Print Centre is our onsite printing centre providing staff and students with a variety of print solutions. The print centre has implemented a number of initiatives to reduce its environmental impact, including reduction in paper use, energy and CO2, as well as recycling of consumables and paper.

**Campus cleaning contracts**

UNSW's insists that all cleaning contractors implement and maintain a Green Cleaning Regime. Some of the requirements include:

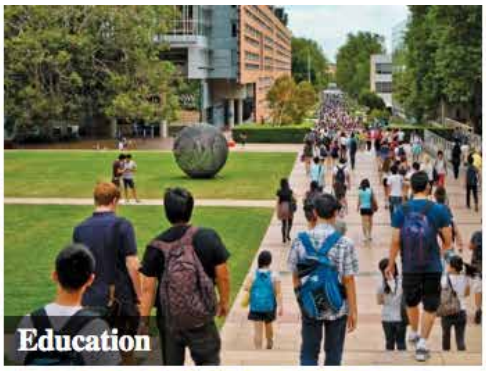
- using methods that reduce environmental impact in relation to chemicals and equipment used; cleaning techniques; and waste and energy management practices
- not using any ozone-depleting substances, and ensuring that hazardous chemicals are only used where no viable alternatives exist (these must be approved by UNSW prior to use)
- using the minimum amount of power and utilities, and minimising resource consumption and waste generation, including the use of chemical dispensing systems and colour-coding systems.

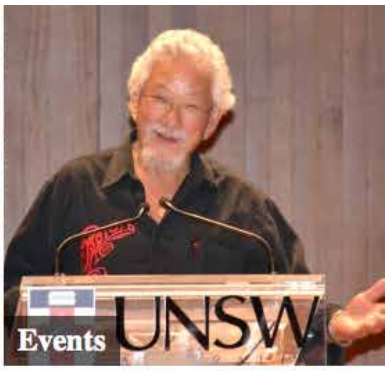
Our contractors are required to keep abreast of emerging developments in industry best practice with regard to sustainability and expected to propose innovations which will further improve sustainability performance.

# Community

**UNSW is not simply a place to learn. It is a unique and diverse community of socially aware global citizens focused on creating positive change. UNSW's academics, researchers and students share a sense of compassion and appreciate that community service and public engagement is fundamental to the creation of sustainable communities.**

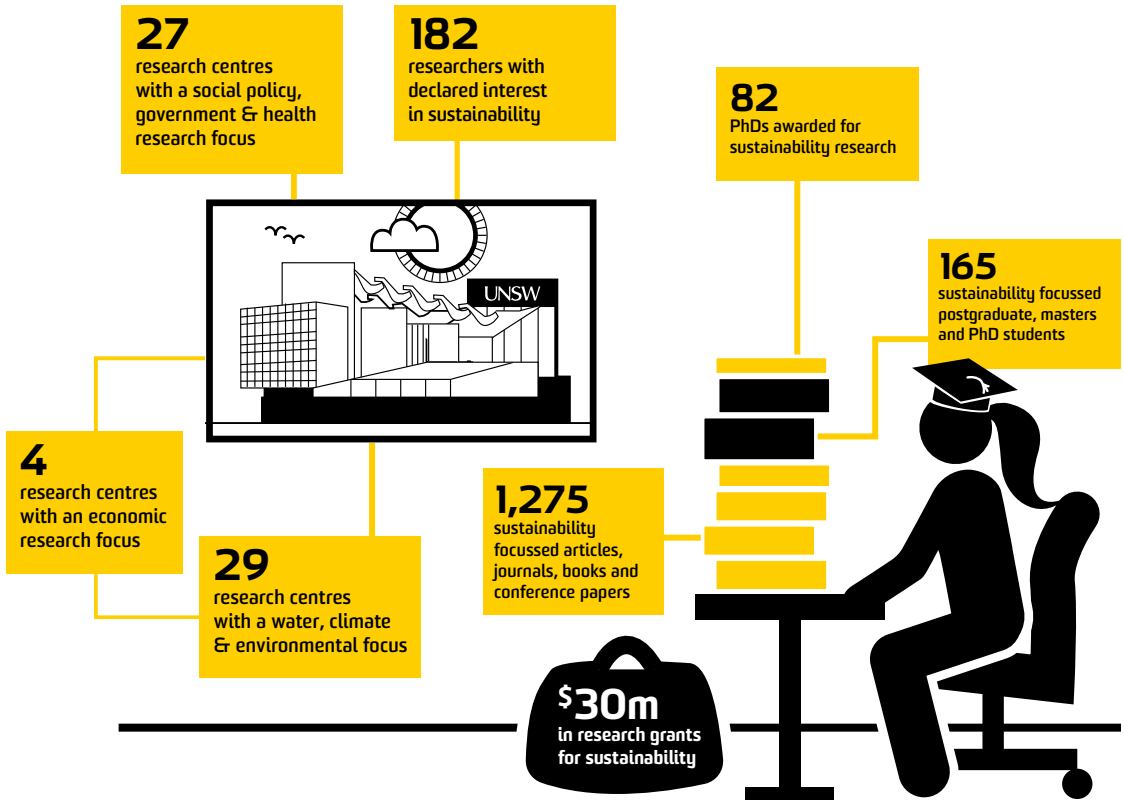
## In this section




## Research




Information source: Research income number from UNSW's HERDC (Higher Education Research Data Collection) return

### UNSW is leading the charge in sustainability research.

UNSW is not simply a place to learn. It is a unique and diverse community of socially aware global citizens focused on creating positive change. UNSW's academics, researchers and students share a sense of compassion and appreciate that community service and public engagement is fundamental to the creation of sustainable communities.

### Research indicators

UNSW measures a number of research indicators that demonstrate the most active areas of interest for researchers at the University over the course of a year.

One of the top research topic areas in 2015 was Water, Environment and Sustainability that has shown an almost universally positive increase in sustainability related activities since 2013. Activities carried out under the umbrella of this research indicator:

- netted over $30 million in research grants
- ranked third out of 10 categories for the percentage of research income received by the University
- led to the publication of almost 1275 articles, books, journal articles and conference papers (an amazing 103% increase from 2013)
- includes the award of 82 PhDs
- includes the enrolment of over 450 postgraduates, masters and PhD candidates

| | 2013 | 2014 | 2015 |
|---|---|---|---|
| Publications* | 629 | 687 | 1,275 |
| PhDs awarded (Completions) | 77 | 165 | 82 |
| Enrolments** (HDR Load) | 364 | 398 | 451 |
| Total amount received for research grants (in millions) | $33.20 | $35 | $30 |
| Percentage of total income received by UNSW | 10.82% | 11% | 11.62% |
| Rank*** | 4th | 4th | 3rd |
| Full time employees | | 231 | 243 |

Data is based on the HERDC (Higher Education Research Data Collection)

* Includes articles, books and book chapters, journal articles and conference papers

** Number of enrolled masters and PhD candidates

*** Rank out of 10 categories for the percentage of income received in total by the University in research grants

## Research centres and institutes

Our academic staff and research students are at the forefront of sustainability research. UNSW has established or partners with more than 60 research centres and institutes that have a full or part focus on environmental, social or economic sustainability.

**Water, climate and environment research focus**

- Advanced Environmental Biotechnology Centre
- ARC Centre of Excellence for Climate System Science
- ARC Research Hub for Green Manufacturing
- Australian Centre for Advanced Photovoltaics
- Australian Centre for Sustainable Mining Practices
- Australian Climate Change Adaptation Research Network for Settlements and Infrastructure
- Australian Energy Research Institute
- Australian Poultry CRC
- Australian PV Institute
- Australia-US Institute for Advanced Photovoltaics
- Centre for Ecosystem Science
- Blue Mountains World Heritage Institute
- Centre for Infrastructure and Engineering Safety
- Centre for Marine Bio-Innovation
- Centre for Sustainable Materials Research & Technology Centre (SMaRT)
- Climate Change Research Centre
- Connected Waters Initiative
- CRC for Greenhouse Gas Technology
- CRC for Low Carbon Living
- Evolution & Ecology Research Centre
- Global Water Institute
- Institute of Environmental Studies
- National Centre for Groundwater Research & Training
- National Centre of Excellence in Desalination
- National Centre of Excellence in Water Recycling
- Sino-Australian Research Centre for Coastal Management
- Sustainable Design and Development Research Cluster
- Sydney Institute for Marine Sciences (SIMS)
- UNESCO Centre for Membrane Science & Technology
- Water Research Centre

**Social policy, government and health research focus**

- Australasian Legal Information Institute
- Australian Centre of Research Excellence in Offender Health
- Andrew & Renata Kaldor Centre for International Refugee Law
- Asia-Pacific Ubiquitous Healthcare Research Centre - a WHO Collaborating Centre
- Australian Housing and Urban Research Institute
- Australian Human Rights Centre
- Australian Institute for Population Ageing Research
- Centre for Big Data Research in Health
- Centre for Clinical Research Excellence in Aboriginal Health: Sexually Transmitted and Bloodborne Viral Infections
- Centre for Primary Health Care & Equity
- Centre for Refugee Research
- Centre of Research Excellence in Population Health Research
- Centre of Research Excellence in Suicide Prevention
- Centre for Social Impact
- Centre for Social Research in Health
- City Futures Research Centre
- Crime and Justice Research Network
- Gilbert and Tobin Centre of Public Law
- Indigenous Law Centre
- Industrial Relations Research Centre
- Lowitja Institute Aboriginal and Torres Strait Islander Health CRC
- National Cannabis Prevention & Information Centre
- National Centre in HIV Social Research
- National Drug and Alcohol Research Centre
- Nura Gili Indigenous Research Centre
- Social Policy Research Centre
- Research Centre for Integrated Transport Innovation

**Economic research focus**

- Centre for Applied Economic Research
- Centre for Energy & Environmental Markets
- Centre for Law, Markets and Regulation
- Institute of Global Finance.

**Other**

- The Environmental Research Initiative for Art

## Do you have the best solar-producing roof in Australia?

### How much can a solar system reduce your power bill

Consumers curious about how much various rooftop solar systems could reduce their electricity bills can now find out with the click of a mouse, thanks to an innovative tool developed by a UNSW researcher.

The award-winning Solar Potential Tool uses 3D spatial data to allow users to zoom down to rooftop level to assess the impact of shade from surrounding buildings and trees. The tool also calculates the tilt and orientation of roof surfaces and the solar resource available on each surface.

It then estimates annual electricity generation, potential financial savings and emissions offset from installing a solar photovoltaic (PV) system.

The tool, developed by UNSW's Dr Anna Bruce, from the School of Photovoltaic and Renewable Energy Engineering, in partnership with the Australian PV Institute and other collaborators, is part of the Australian Solar Mapping Tools.

Dr Bruce says it is being used to inform and facilitate the ongoing investment in solar photovoltaic (PV) systems and their integration into the energy network in Australia.

## Research centre highlights

**Centre for Sustainable Materials Research and Technology (SMaRT)**

SMaRT was established to work with industry partners to develop innovative materials and processes that have a reduced impact on the environment. The centre's work focuses on energy efficiencies, recycling processes and waste minimisation. Professor Veena Sahajwalla, the centre's director has received international attention after pioneering the use of waste plastic and tyres in a 'green steelmaking' processes.

**Australian Energy Research Institute**

The AERI is a sustainable energy think tank that focuses on transforming energy research into practical applications. The Institute builds upon 30 years of energy research leadership at UNSW and has launched coordinated strategies to address every level of the energy challenge.

**Climate Change Research Centre**

Bringing together more than 60 researchers from various disciplines across the University, the CCRC is one of the largest university research facilities of its kind in Australia. The centre's multi-disciplinary team covers all aspects of atmospheric, oceanic and terrestrial processes.

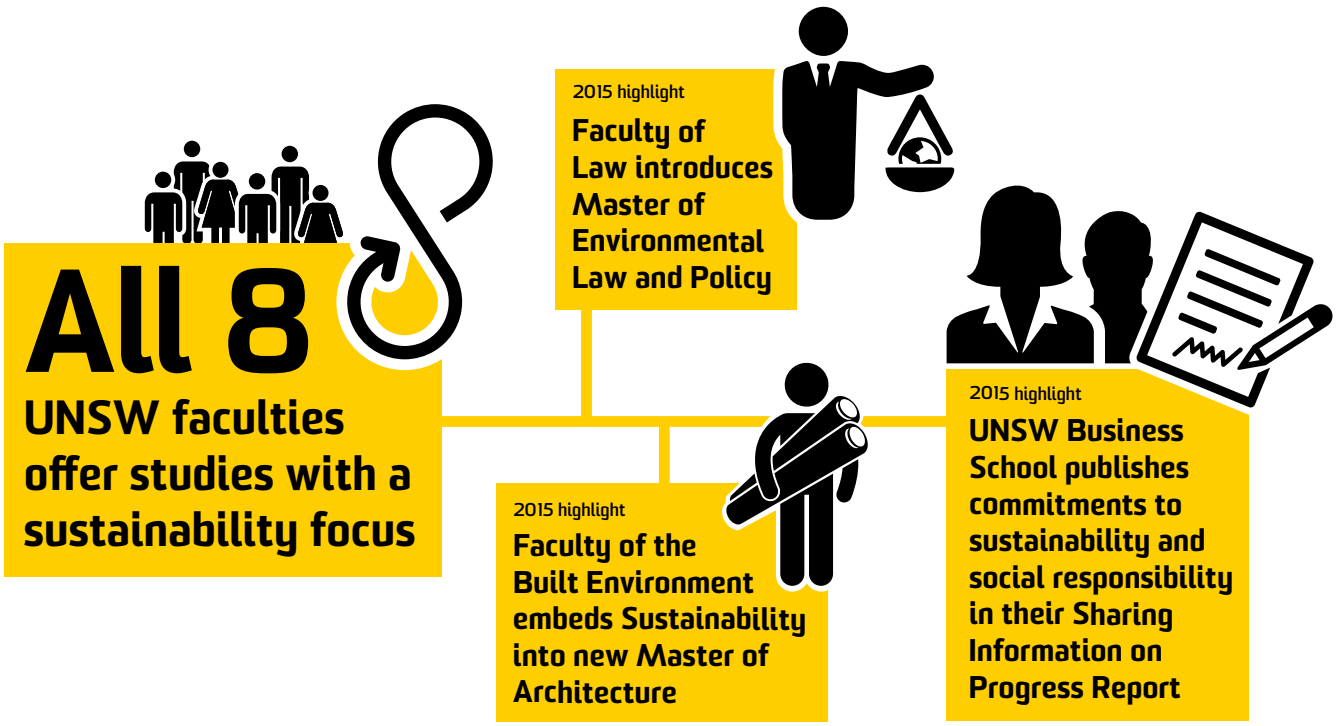
**Centre for Energy and Environmental Markets (CEEM)**

CEEM undertakes interdisciplinary research in the design, analysis and performance of energy and environmental markets and their associated policy frameworks. It brings together UNSW researchers from the Australian School of Business, the Faculty of Engineering, the Faculty of Arts and Social Sciences, the Institute of Environmental Studies, and the Faculty of Law and works with a growing number of international partners.

**Centre for Social Impact (CSI)**

CSI is a network of teachers, researchers, communicators and administration teams located at UNSW, The University of Melbourne, Swinburne University of Technology and The University of Western Australia. CSI's mission is to improve the delivery of beneficial social impact in Australia through research, teaching, measurement and the promotion of public debate. They bring together leaders and organisations from business, government and social purpose sectors to build evidence-based, sustainable and scalable approaches to improving impact.

# Education




## Leading the way in sustainability education.

UNSW has a diverse range of formal education programs that critically address issues of sustainability. By educating its students about sustainability, UNSW is arming our future leaders, scholars, workers, and professionals with the skills to tackle the sustainability challenges we will face in the future, as well as those that we face today.

## Sustainability curriculum

All eight faculties at UNSW offer opportunities to undertake studies with a sustainability focus. Sustainability is a subject in its own right, but increasingly UNSW's educators are embedding sustainability considerations into the courses they develop.

### Faculty of Art and Design

The Faculty of Art and Design is UNSW's hub of experimentation and exploration in art and design, fostering collaboration across science, engineering, the humanities and social sciences. Sustainability is embedded as a component of many courses with notable cases including:

- Sustainable Design Theories and Practice
- Art and the Environment – Studies in the Field
- SPI Experimental Fieldwork
- Imperatives for a Sustainable Future
- Introduction to Contemporary Textiles.

### Faculty of Arts and Social Sciences

The Faculty of Arts and Social Sciences offers students a licence to explore and address the social issues of sustainability. Key programs and courses include:

- Environmental Humanities
- Women's and Gender Studies
- Social Research and Policy
- Social Work
- Indigenous Studies.

## Planning for a sustainable future

### Sustainable systems engineering and industrial ecology take environmental engineering to the next level

"More than ever, engineers need to find holistic and effective solutions to currently unsustainable practices of production and consumption," says Tommy Wiedmann, leader of the Sustainability Assessment Program in the School of Civil and Environmental Engineering.

Wiedmann says that sustainable systems engineering and industrial ecology are concepts that take environmental engineering to the next level by considering interactions between technical, ecological, social and economic systems and by avoiding shifting problems from one area to the other. These include concepts such as life-cycle thinking, resource efficiency and triple-bottom-line assessment.

"The Sustainable Systems specialisation under the Master of Engineering Science brings together the latest knowledge in sustainability theory, concepts and practice from different disciplines pertinent to achieving sustainability, including engineering and technical sciences, natural and environmental sciences as well as social sciences," he says.

**Business School**

UNSW Business School has long recognised the importance of its role in sustainability and social responsibility in 2015 and published its commitment in the Principles of Responsible Management Education (PRME) Sharing Information on Progress (SIP) Report.

Highlights include:

- Master of Business Administration (MBA) in Social Impact
- Creating Social Change: From Innovation to Impact
- Entrepreneurship Practicum
- the creation of new placement opportunities for students to work with Indigenous communities.
- an initiative to introduce Indigenous perspectives into the curriculum
- the introduction of the new PRME Teaching Award.

**Faculty of the Built Environment**

Creating sustainable built environments that satisfy environmental, social and economic objectives requires critical thinking that considers the value systems and cultures that influence communities.

There is a growing body of principles and techniques to do this and most of the programs offered by the Built Environment have sustainability embedded into their courses. A brand new offering in 2015 was the Master of Architecture, while other key courses and programs include:

- Graduate Certificate of Sustainable Built Environment
- Graduate Diploma of Sustainable Built Environment
- Master of Sustainable Built Environment

**Faculty of Engineering**

As the best engineering faculty in the country, and achieving the 2015 QS Ranking of #21 in the world, the Faculty of Engineering lives up to its promise of solving tomorrow's problems today. Engineers conceive, design and build the world around us and, as such, have a critical role in our sustainable future. It is no surprise that sustainability considerations are embedded into the majority of programs.

In addition to the School of Photovoltaics and Renewable Energy Engineering, which offers two full degree and masters programs in photovoltaics and renewable energy engineering, the Faculty offers a degree in Environmental Engineering from the School of Environment and Civil Engineering. Numerous other sustainability courses are offered across all nine schools.

**Faculty of Law**

Ranked 13th in the world, UNSW Law School is Australia's leader in progressive and rigorous legal education and research. The majority of courses have a distinct human rights and social justice focus. Throughout a law degree, students are invited to participate in a range of activities that provide opportunities to engage with communities on issues of critical social and economic significance. A brand new offering in 2015 was the Master of Environmental Law and Policy, while other key courses and programs include:

- Environmental Law
- Human Rights and Social Justice
- International Law.

**Faculty of Medicine**

UNSW Medicine is committed to improving healthcare delivery and outcomes for every patient. Courses which specifically explore sustainability issues include:

- Society and Health – explores the inter-relationships between the health of people and the environment in which they live. The major themes include the societal determinants of health, the diversity of society focusing both on culture, systems that provide health care and the relationship between health and human rights.
- Environmental Health – takes a broad look at current concepts in environmental health in Australia and overseas

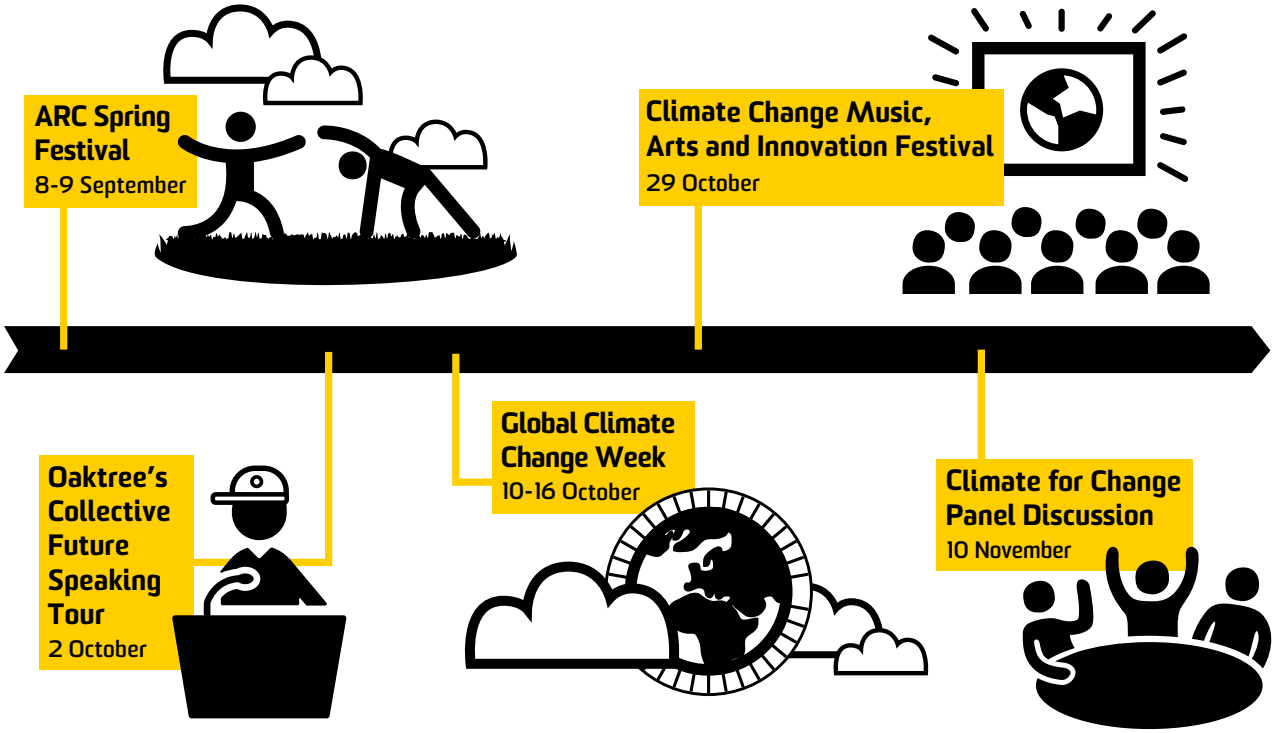
**Faculty of Science**

With a central part to play in understanding our impacts on the world around us, the Faculty of Science is at the forefront of sustainability education.

The School of Biological, Earth and Environmental Studies offers degree programs in Biology, Marine Science, Geology, Ecology, Earth Science, Paleontology, Geography, Climate Science and Environmental Management.

The Faculty also offers a Master of Environmental Management which provide students with the basis for the critical appreciation of environmental management frameworks and 'environmental literacy' in key disciplinary areas.

## Events




### UNSW: Advocating for the environment, social justice and equity.

UNSW hosts a wide range of events both on and off of its campuses throughout the year. In 2015, a considerable number of these events focused on the environment, social justice and equity.

Due in part to the establishment of the Climate Change Grand Challenge initiative of UNSW's 2015-2025 Strategy, and in part to COP21, the UN Climate Change Conference that took place Paris in November, UNSW hosted a number of important campus-wide sustainability events in 2015. Highlights include

**ARC Spring Festival:** A two-day festival in September celebrating everything environmental and community focused.

**Oaktree's Collective Future Speaking Tour:** In September, UNSW hosted one of a series of national forums looking at the urgent need to support the people whose livelihoods are most at risk from climate change.

**Global Climate Change Week:** A week of activities on campus in October included movie screenings, panel discussions and awareness raising in support of this global initiative

**Climate Change Music, Arts and Innovation Festival:** UNSW students led this festival in November to stimulate dialogue beyond policy and politics, and find a better way to inspire human-centered sustainability solutions.

**Climate for Change Panel Discussion:** The promises and pitfalls of the imminent Paris climate summit were debated before a capacity audience by experts from climate science, political journalism, agriculture and business, as part of the UNSW Grand Challenges initiative in November 2015.

**Pitch off:** Three UNSW students travelled to Paris in November to take part in events surrounding the UN Climate Change Conference, after winning the Climate Change Grand Challenge Pitch Off competition.

In addition to these highlights, there were hundreds of sustainability focused events run throughout 2015 by the more than 60 UNSW research centres and affiliated institutes that have a full or part focus on environmental, social or economic sustainability.


## Can Paris live up to its promise?

### First UNSW Climate Change Grand Challenge event took part in front of capacity crowd

Experts from climate science, political journalism, agriculture and business debated the promises and pitfalls of the Paris climate summit before a capacity audience as part of the UNSW Grand Challenges initiative in November 2015.

President and Vice-Chancellor Professor Ian Jacobs said climate change had been chosen as the first Grand Challenge to be addressed following widespread consultation for the University's new 2025 strategy.

"We believe at UNSW that tackling climate change is an extraordinarily important topic," Professor Jacobs said. "When we consulted on our strategy, one of the things that our staff, students and alumni felt most passionate about was playing a role in thought leadership around the grand challenge of climate change."

The inaugural Forum @ UNSW panel discussion was presented in partnership with The Sydney Morning Herald.

## Passion for change leads to Paris

### Students win tickets to Paris ahead of the climate change summit

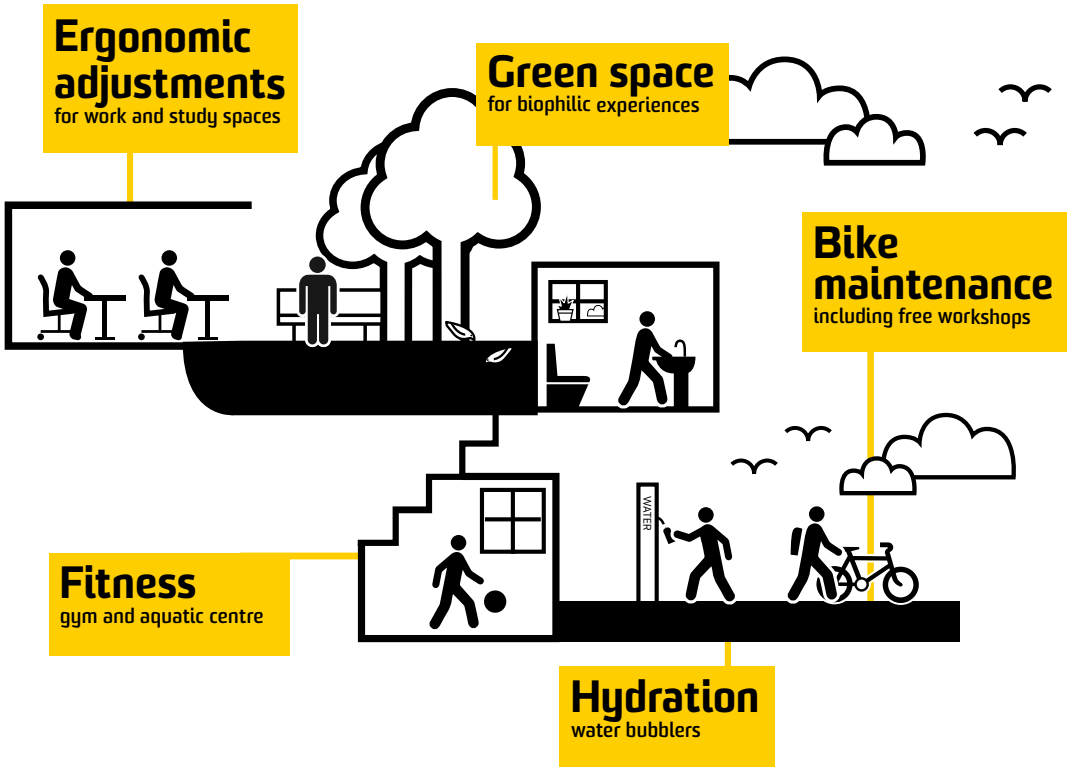
Three UNSW students travelled to Paris in November 2015 to take part in events surrounding the UN Climate Change Conference, after winning first prize in the Climate Change Grand Challenge competition.

Science student Matt Hale, Commerce student Lindy Hua and Executive MBA student Andrew Beehag were jointly awarded the trip for their innovative solutions to addressing climate change.

The competition was the culmination of a campaign on the UNSW Ideas platform, where students from across the University posted ideas and cast votes on proposals to encourage sustainability.

Finalists pitched their solutions to a live audience and panel of judges at the UNSW Climate Change and Innovation Festival, hosted by the Michael Crouch Innovation Centre in October.

## Safety and wellbeing




### The safety and wellbeing of UNSW staff and students is paramount.

UNSW provides its staff and students with access to a range of resources that promote a safe, active, healthy, happy and productive campus experience.

### Safety

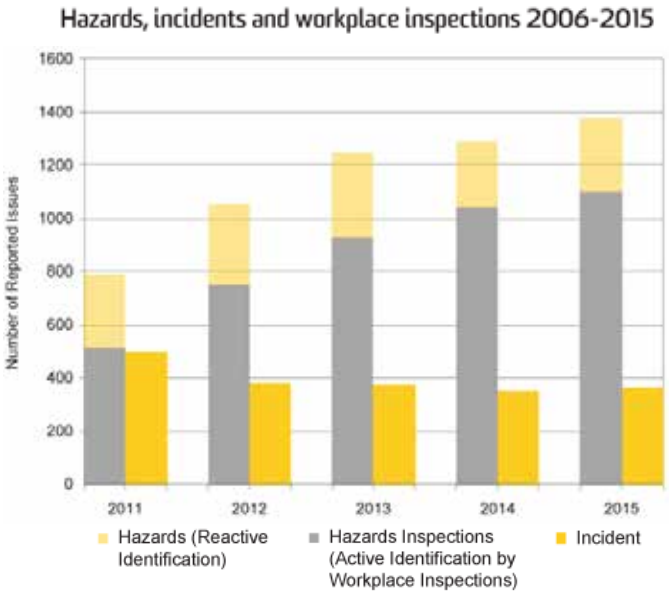
As one of the University's guiding principles, safety is central to everything we do. As well as working hard to ensure a safe campus experience, the University proactively manages risks with a series of risk management and continuous improvement strategies.

#### Health and safety management system

UNSW's Health and Safety management system (HSMS) is a set of plans, actions and procedures that are designed to systematically manage health and safety in the workplace.

More information on health and safety governance and training can be found at UNSW Health and Safety.

#### Our safety performance



**Maintaining a safe campus**

UNSW's Campus Security provides the following essential services and facilities to keep staff, students and visitors safe on campus:

- StaySafe @ UNSW app
- night shuttle bus
- safety escorts
- help points
- Cops on Campus initiative
- Gate 2 Security Office.

## Wellbeing

**UNSW's Wellbeing website**

UNSW Wellbeing is a gateway to the diverse suite of health and wellbeing initiatives across the University.

**Free flu shot**

UNSW's campus is susceptible to influenza outbreaks, so to help keep our campus population healthy the University offers the flu vaccine free of charge to all staff and students at the start of winter every year.

**Hydration**

Because staying hydrated is essential for optimal health and brain function, UNSW has installed free water refill stations and fountains around the Kensington campus.

The refill stations have been fitted with both a tap and a spout to make it easy for students and staff to refill water bottles. They are vandalism resistant, hygienic and accessible to wheelchair users and children.

**Ergonomic adjustments**

With many staff and students spending considerable amounts of time sitting for long periods at desktop and laptop computers there is an increased risk of workplace-related musculoskeletal disorders. This can manifest as neck pain, back pain, blurry vision and poor posture. They also dramatically cut down on the waste and energy use associated with plastic single-use water bottles.

## Multi-million-dollar donation towards suicide prevention

### Saving the lives of Australians at risk of suicide

A $14.7 million donation to the Black Dog Institute at UNSW from the foundation established by the late entrepreneur Paul Ramsay will be used to save the lives of Australians at risk of suicide.

The donation will support a world-first trial in four Australian communities that will test a new approach to suicide prevention. The six-year trial will commence in 2016.

Every year, over 2500 Australians die by suicide and a further 65,000 make an attempt. It is estimated the new initiative will reduce the Australian suicide rate by at least 20% in just a few years and also significantly improve the lives of those in distress.

In tandem with this new policy, UNSW implemented a health and wellbeing campaign to help reduce smoking by students and staff.

UNSW has responded to this by providing:

- compulsory online ergonomic training to all staff
- the opportunity for staff to trial ergonomically designed equipment before their unit commits to its purchase
- a workstation assessment service
- general advice and resources on ergonomics.

**Bicycle maintenance**

UNSW Bike Club in collaboration with Bike-ology provides a free service to help with everything bike-related. Free bicycle maintenance workshops are regularly run, and anyone is welcome to drop by with their bike to learn from the volunteer enthusiasts.

In addition to workshops, the UNSW Bike Club organises social rides and advocates for, and promotes cycling at UNSW.

**Fitness**

UNSW encourages a healthy lifestyle through the on-campus Fitness and Aquatic Centre. The centre has a range of group fitness classes, personal fitness sessions, a pool and gym to help staff and students to stay fit.

In addition, Arc (UNSW's student organisation) has more than 30 fitness clubs that encourage students to keep active and maintain their fitness throughout their studies.

**Green space**

In response to the growing amount of literature surrounding the importance of green space in physical health, mental health and overall wellbeing, UNSW has increased investment in the development of its green spaces.

With approximately 30% of the Kensington campus devoted to green space and 12 shady, intimate courtyards, the University provides a variety of opportunities to escape the built environment and enjoy a biophilic experience.

## Scholarship to balance academia and parenthood

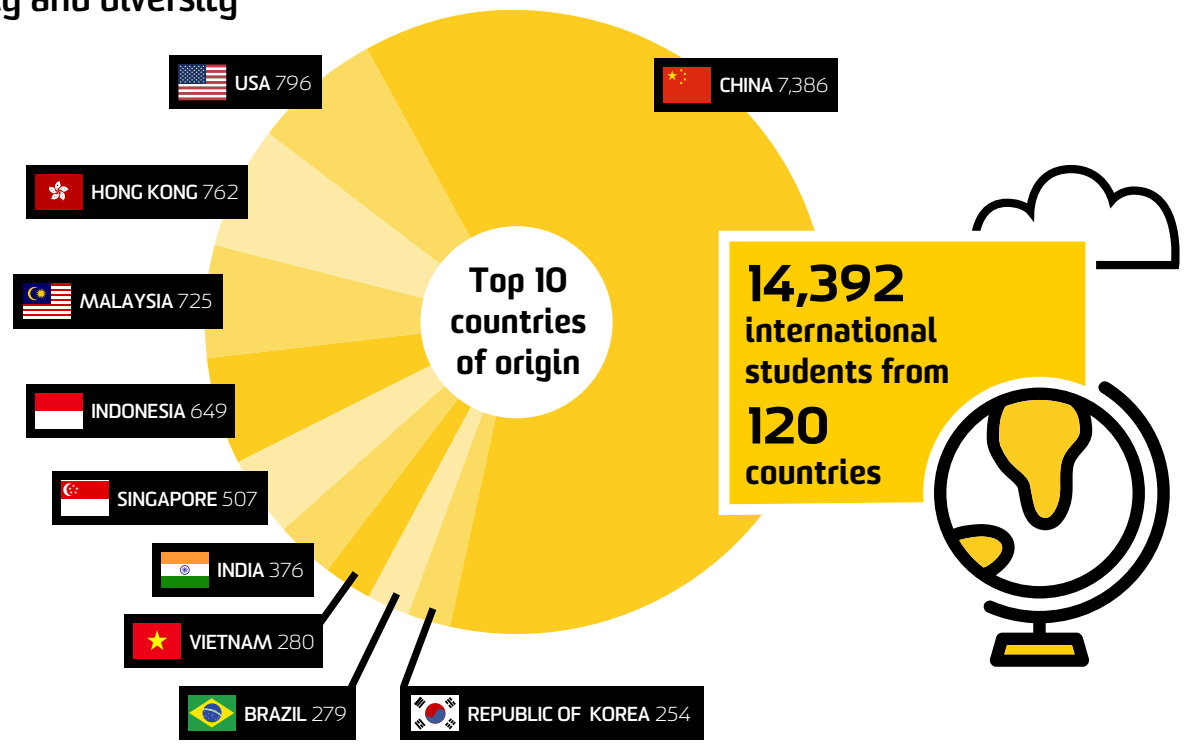
### Balancing parenthood with university commitments is set to become easier with a UNSW Medicine scholarship

The Scholarship has been named after the NSW Premier's Woman of the Year, Professor Minoti Apte OAM, and has been designed to help early career women focus on research when returning to work after parental leave.

The scholarship will provide eligible staff with relief from teaching and administration to write publications, applications and/or access research assistance. UNSW Medicine Dean Rodney Phillips said the scholarship – the first of its kind in the faculty – reinforces a long and proud tradition of employing and promoting female academics across all schools and affiliated research institutes.

"Some of the nation's leading academics and researchers are also mothers and it is vital that we do everything we can to support women who are balancing parenthood with academia," Professor Phillips says.

# Equity and diversity




## Providing an equitable and inclusive environment for all.

Equity is a fundamental element of the UNSW vision and is a guiding principle in the University's strategic intent. The maintenance of an equitable and inclusive campus and workplace is fundamental to UNSW's mission to become one of the world's top 50 universities.

## UNSW: Committed to equity and diversity

The University:

- fosters a culture that values and responds to the rich diversity of its staff and students
- provides equal opportunity by removing barriers to participation and progression in employment and education so that all staff and students have the opportunity to fully contribute to University life
- promotes clear and accountable educational and management policies and practices to engender trust between managers and their staff and students
- enhances the quality of students' learning through the provision of culturally, socially and gender inclusive education in areas such as curricula, teaching methods, assessment and review provisions, written and audiovisual material and support services
- ensures that its staff and students are aware of their rights and their responsibilities as University members.

## Students

UNSW is Australia's most cosmopolitan university. Our Australian students come from diverse backgrounds, many being the first in their family to attend university.

We are also Australia's first international university, having enrolled significant numbers of international students since 1951, with more than 120 countries now represented.

In the reporting period, enrolments numbered:

- 39,651 local students
- 14,392 international students.

The top 10 countries of origin for international students were China, USA, Hong Kong, Malaysia, Indonesia, Singapore, India, Vietnam, Brazil and the Republic of Korea.

**Student Equity and Disabilities Unit**

The Student Equity and Disabilities Unit provide expertise in educational liaison and student equity and ensure that UNSW:

- provides safe and inclusive environment for all students
- is free from discrimination
- is a place where diversity and multiculturalism is celebrated and welcomed.

## Staff

UNSW staff are supported by Workplace Diversity which provides strategic advice to management and the University Executive on opportunities to remove barriers to equity and inclusion in the workplace and campus community.

Workplace Diversity advocates for a University community that is inclusive, aware and informed, tolerant of diversity, and intellectually and emotionally comfortable with difference.

The unit supports staff in the development of diversity initiatives focused on gender, mature age, accessibility, LGBTIQ (lesbian, gay, bisexual, transgender, intersex and questioning) and cultural competence.

## Gender equity and diversity initiatives in 2015

**SAGE:** UNSW is an inaugural participant in an Australia-first pilot program to improve the promotion and retention of women in science, technology, engineering, maths and medicine. The Science in Australia Gender Equity (SAGE) Pilot Program is a partnership between the Australian Academy of Science and the Australian Academy of Technological Sciences and Engineering.

**Science 50:50:** UNSW launched the Science 50:50 Initiative, which is aimed at inspiring young women to pursue degrees and careers in science and technology. Led by Scientia Professor Veena Sahajwalla, it will provide internships, scholarships and mentoring to girls so they can succeed in an innovation-driven future. It is supported by UNSW, Professor Sahajwalla's ARC Georgina Sweet Laureate Fellowship and industry partners.

**Nura Gili:** provides pathway programs to university for Indigenous students and ongoing study support. In 2015, UNSW graduated a record number of eight Indigenous doctors. A record number of Indigenous PhD students also completed their studies.

## UNSW Joins national equity program for women in science

### UNSW joins SAGE an Australia-first pilot program

UNSW has joined a pioreering initiative to improve the promotion and retention of women in science, technology, engineering, maths and medicine.

The Science in Australia Gender Equity (SAGE) program, launched in September 2015 is a partnership between the Australian Academy of Science and the Australian Academy of Technological Sciences and Engineering.

The pilot – designed to address the chronic underrepresentation of women in STEM disciplines – is the first Australian trial of the successful UK Athena SWAN gender equity accreditation program, which has been operating for a decade. The first group of participants includes universities, medical research institutes and the CSIRO.

## Volunteering


Information source: Arc, UNSW's student union

### Volunteering at UNSW: growing friendships, skills and community.

UNSW provides considerable support and resources to engaging students in sustainability learning experiences outside the classroom. Sponsored co-curricular offerings deepen students' understanding and application of sustainability principles and embeds this into the campus experience.

### Volunteering with Arc

The student organisation, Arc, is a hub of volunteering at UNSW. Under Arc's competent leadership, with guidance and support provided by the University, volunteering has grown steadily over the years. Volunteering activities complement the academic side of university life by providing a vibrant culture of 'giving back' and greatly enhance the experience of everyone at UNSW.

In this reporting period over 3000 volunteers worked many thousands of hours running Arc's 27 volunteer programs, 290 clubs and over 350 volunteer and social events.

**Arc student development committee**

The Student Development Committee is Arc's student body responsible for overseeing the support provided to Arc-affiliated clubs, volunteer programs, courses, grants and relevant student events. Students are elected to represent the interests of Arc clubs and volunteer programs.

**Volunteer programs with a sustainability focus**

**BRIGHTSIDE**

BRIGHTSIDE is an artistic mentoring program that pairs up Faculty of Art and Design students with underprivileged Sydney high school students with a focus on Indigenous youth, to inspire and assist them in developing their creative skills, confidence and discover new career pathways.

# The volunteering year in review for UNSW Legal

## Staff come out in support of important causes

Each year across campus, there are an unknown (but anecdotally significant) number of events and activities which fall under the volunteering banner. UNSW Legal, for example, is proud to report on a number of events where staff volunteered in support of some great causes.

In April, a team from the Legal Office took part in voluntary bush regeneration activities in Sydney Park. During the course of the day, the team managed to fill 16 large sacks of weeds. This was an "above average load" according to the Conservation Volunteers Australia (CVA) guide, who was particularly pleased because CVA gets paid by Sydney City Council according to the number of sacks collected.

On another occasion, staff from the Legal Office volunteered to help out at the UN Refugee Agency's World Refugee Day Breakfast. The annual event is designed to raise money and awareness for families impacted by war worldwide and a total of $155,000 was raised for the Nigeria Crisis Appeal.

Then, in November, UNSW Legal joined with UNSW ASPIRE in support of the Youth Off the Streets Tug of War Charity Event, part of the national White Ribbon Day campaign against violence against women. The event was attended by more than 150 high school students from the area and not-for-profit organisations including Traxside, Save the Children, Mission Australia, Macarthur Family & Youth Services, Burnside Uniting Care, REACT, Benevolent Society and St Vincent De Paul.

**Global Village**

Between each semester, Global Village sends teams of students to developing nations to lend a helping hand with a local community project. Students have been to Malaysia, Thailand, Fiji, and Nepal to work on projects including building houses and teaching in local primary and high schools.

**Mosaic Mentoring**

This program offers both UNSW volunteers and local Sydney high school students the unique opportunity to come together and talk about the social and cultural issues that shape and define us.

**Shack tutoring**

The aim of the program is to provide a free high school tuition service to local students who have been identified as disadvantaged, or who cannot access a required paid tuition service.

**Stationery reuse centre**

This ingenious free program provides the UNSW community with good quality recycled stationery that has been previously used or discarded, preventing it from going to landfill.

**Walama Muru**

Walama Muru means 'a return of road or path' and offers an opportunity for UNSW students to travel to a regional Aboriginal community in order to learn and share in the local Aboriginal culture

**The Producers**

The Producers is interested in sustainable practices and growing fresh produce. Producers get hands-on experience in planting, maintaining and harvesting veggies and develop a greater appreciation of how easy it is to live and eat sustainably in our urban jungle.

# Additional information

**Building capacity in leadership, strengthening operations and maximising our resources to create the best possible campus environment for learning and research underpins the pursuit of our strategic priorities across the University.**

## Global Reporting Index

The following disclosure elements and indicators from the Global Reporting Initiative (GRI) G3 Reporting Guidelines have been used in the preparation of this report. In this section, we provide a table comparing information on this report to the guidelines of the GRI, entitled 'Sustainability Reporting Guidelines 2006.'

| No. | Short Description / Title of Disclosure | Notes |
|---|---|---|
| **1** | **Strategy and Analysis** | |
| 1.1 | Statement from the most senior decision-maker of the organisation | See Overview. |
| **2** | **Organisational Profile** | |
| 2.1 | Name of the organisation | University of New South Wales |
| 2.2 | Primary brands, products, and/or services | Education and Research |
| 2.3 | Operational structure | See UNSW organisational chart |
| 2.4 | Location of organisation's headquarters. | Randwick, Sydney, NSW, Australia |
| 2.5 | Number and name of countries where the organisation operates | 1 |
| 2.6 | Nature of ownership and legal form | Body corporate under statute |
| 2.7 | Markets served | Main markets served are Australia, India, China, United States |
| 2.8 | Scale of the reporting organisation | See About UNSW |
| 2.9 | Significant changes | There were no significant operational changes in the past year |
| 2.10 | Awards received | See Appendix 3: Prizes |
| **3** | **Report Parameters** | |
| 3.1 | Reporting period | 1 January 2013 to 31 December 2013 |
| 3.2 | Date of most recent previous report | This is UNSW's first sustainability report |

*Table continued on next page*

| No. | Short Description / Title of Disclosure | Notes |
|---|---|---|
| 3.3 | Reporting cycle | Calendar year to be consistent with UNSW's Financial Reporting period. It is UNSW's intention to produce an annual sustainability report. |
| 3.4 | Contact point | Aaron Magner, Director of UNSW Safety and Sustainability. a.magner@unsw.edu.au |
| 3.5 | Process for defining report content | See Overview |
| 3.6 | Boundary of the report | See Overview |
| 3.7 | State any specific limitations | None |
| 3.8 | Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations | The reporting boundary includes controlled entitites, subsidiaries, leased facilities, outsourced operations where these fall within UNSW's operational control. This report applies the definition for "operational control" in section 11 of the National Greenhouse and Energy Reporting Act 2007. |
| 3.9 | Data measurement techniques and the bases of calculations | See Overview |
| 3.10 | Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement | Not applicable as this is UNSW's first report |
| 3.11 | Significant changes from previous reporting periods | Not applicable as this is UNSW's first report |
| 3.12 | Table identifying the location of the Standard Disclosures in the report. | See Appendix 1: GRI Table |
| **4** | **Governance** | |
| 4.1 | Governance structure | In accordance with the University of New South Wales Act 1989 (NSW), UNSW is governed by a Council of 15 members representing University and community interests. |
| 4.2 | Indicate whether the chair of the highest governance body is also an executive officer. | The Chancellor is the chair of the University Council, a non-executive position. The Vice-Chancellor is the Principal Executive Officer of the University and is responsible for the overall direction of corporate planning, budget activities and external relations. Under the University Council, the Vice-Chancellor manages and supervises the administrative, financial and other activities of the University. |

*Table continued on next page*

| No. | Short Description / Title of Disclosure | Notes |
|---|---|---|
| 4.3 | For organisations that have a unitary board structure, state the number of members of the highest governance body | Of the 15 members of University Council, three are official members (the Vice-Chancellor, President of Academic Board and the Chancellor). Others include:<br>• 2 ministerial appointments<br>• 2 elected academic staff<br>• 2 council appointees<br>• 2 elected students (1 undergraduate, 1 post-graduate)<br>• 1 elected non-academic staff. |
| 4.4 | Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body | There is a Student Representative Council with elected student leader office bearers that meet the Vice-Chancellor and Executive Team to raise issues on behalf of students on a regular basis. The Vice-Chancellor also holds regular town hall meetings where members of staff are able to ask questions. The University also recognises and meets with the trade unions including the NTEU, CPSU and United Voice, as employee representatives. |
| 4.12 | Externally developed economic, environmental, and social charters, principles to which the organisation subscribes/ endorses | See Appendix 2: Declarations and charter |
| 4.14 | List of stakeholder groups engaged by the organisation | Stakeholder groups the university engages with include students, staff, alumni, donors, government, local councils, suppliers, other universities, student organisations and staff unions. |
| 4.15 | Basis for identification and selection of stakeholders with whom to engage | See Overview |
| 4.16 | Approaches to stakeholder engagement | See Overview |
| **EC** | **Economic** | |
| EC1 | Direct economic value generated and distributed (Core) | The economic performance of the University is reported on in the UNSW Annual Report. |
| EC3 | Coverage of the organisation's defined benefit plan obligations (Core) | No defined benefit super |
| EC4 | Significant financial assistance received from government (Core) | See UNSW Annual Report |
| **EN** | **Environmental** | |
| EN2 | Materials used that are recycled (Core) | See Environment, Purchasing |
| EN3 | Direct energy consumption (Core) | See Environment, Energy |

*Table continued on next page*

| No. | Short Description / Title of Disclosure | Notes |
|---|---|---|
| EN4 | Indirect energy consumption (Core) | See Environment, Energy |
| EN8 | Water withdrawal by source (Core) | See Environment, Water |
| EN16 | Direct and indirect greenhouse gas emissions by weight (Core) | See Environment, Energy |
| EN18 | Initiatives to reduce greenhouse gas emissions and reductions achieved (Additional) | See Environment, Energy |
| EN22 | Waste by type and disposal method (Core) | See Environment, Waste |
| EN23 | Significant spills (Core) | None |
| EN24 | Waste deemed hazardous under the terms of the Basel Convention (Additional) | None |
| EN28 | Significant fines and total number of non-monetary sanctions (Core) | None |
| EN29 | Significant environmental impacts of transporting products (Additional) | None |
| **LA** | **Labour Practices** | |
| LA1 | Total workforce (Core) | See Community, Equity and Diversity |
| LA4 | Employees covered by collective bargaining agreements (Core) | UNSW Employees are covered by two enterprise agreements. The UNSW (Academic Staff) Enterprise Agreement 2011 and the UNSW (Professional Staff) Enterprise Agreement 2010. See UNSW Human Resources Enterprise Agreements. |
| LA7 | Rates of injury, occupational diseases, lost days and absenteeism, and number of work related fatalities by region (Core) | See Community, Safety and Wellbeing |
| LA9 | Health and safety topics covered informal agreements with trade unions (Additional) | The UNSW (Academic Staff) Enterprise Agreement 2011 and the UNSW (Professional Staff) Enterprise Agreement 2010 contains provisions relating to Occupational Health and Safety. See UNSW Human Resources Enterprise Agreements |
| LA13 | Composition of governance bodies and employees according to gender, and other diversity indicators (Additional) | See Community, Equity and Diversity |
| **HR** | **Human Rights** | |
| HR3 | Employee training on human rights (Additional) | See UNSW Equity and Diversity statement |
| HR4 | Incidents of discrimination (Core) | None |
| HR5 | Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk (Core) | None |

*Table continued on next page*

| No. | Short Description / Title of Disclosure | Notes |
|---|---|---|
| HR6 | Operations identified as having significant risk for incidents of child labour (Core) | None |
| HR7 | Operations identified as having significant risk for incidents of forced or compulsory labour (Core) | None |
| SO | Society | |
| SO4 | Actions taken in response to incidents of corruption (Core) | No incidents during reporting period |
| SO5 | Public policy positions and participation in public policy development and lobbying (Core) | See UNSW Code of Conduct. See also Community, Research and UNSW Newsroom |
| SO8 | Significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations (Core) | In a decision of the NSW Industrial Court issued in March 2013, UNSW was found to have breached the Work, Health and Safety Act 2000 after a student suffered leg injuries and a broken wrist after falling from a boat while undertaking a research field trip on 31 July 2009. UNSW pleaded guilty and received a fine of $100,000. See WorkCover NSW report. |
| **PR** | **Product Responsibility** | |
| PR2 | Incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts (Additional) | None |
| PR5 | Practices related to customer satisfaction (Additional) | UNSW undertakes a regular graduate satisfaction survey of all UNSW graduates approximately four months after they complete the requirements for their awards. For more information see UNSW's Business Reporting and Intelligence, and Data Governance. |
| PR7 | Incidents of non-compliance with regulations and voluntary codes concerning marketing communications (Additional) | None |
| PR8 | Substantiated complaints regarding breaches of customer privacy (Additional) | None |
| PR9 | Significant fines for non-compliance with laws and regulations concerning the provision and use of products and services (Core). | None |

## GRI Application Table

We believe this report qualifies for application level C of the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines. Details of the profile disclosures and performance indicators addressed in this report can be found in the table at Appendix A and on the UNSW Sustainability website.

## Declarations and charters

The following are the major declarations and organisations that are endorsed by UNSW and call for universities to make a strong commitment to the implementation of sustainability.

| Declarations and Charters | Organisation or Event | Main Goal |
|---|---|---|
| Agenda 21 (see Chapter 36 'Education, Public Awareness and Training') | UNESCO | Set in place a range of activities to implement global sustainable development. Advocates a holistic approach to environmental education. |
| Australian Universities Ecological Development Charter | National Union of Students | Provide a strong framework to guide sustainability within Australian universities. Similar in content to the Talloires Declaration. |
| AVCC Policy on Education for Sustainable Development | Universities Australia | Commit to education for sustainable development and acknowledge the leading role played by universities in furthering the goals of the UN Decade of Education for Sustainable Development (DESD). |
| Kyoto Declaration on Sustainable Development | United Nations | Urge universities worldwide to seek, establish and disseminate a clearer understanding of sustainable development. It is recommended that each university have its own action plan that makes an institutional commitment to the principle and practice of sustainable development. |
| Sapporo Sustainability Declaration | G8 University Summit | Outline the responsibility of universities to contribute towards sustainability and the specific actions they must undertake to fulfil that responsibility. It recognises eight principles concerning the role of universities in global efforts to attain sustainability. |
| Talloires Declaration | University Leaders for a Sustainable Future | Outlines a 10-point action plan for incorporating sustainability and environmental literacy in teaching, research, operations and outreach at colleges and universities. |
| The Greenhouse Challenge | Australian Greenhouse Office | Reduce greenhouse gas emissions from buildings, waste products and plant and office equipment |
| United Nations Decade of Education for Sustainable Development (DESD) 2005-2015. | UNESCO | Implement environmental education globally, for everyone's benefit, while working to build the community's capacity to co-create a sustainable future |

*Table continued on next page*

| Declarations and Charters | Organisation or Event | Main Goal |
|---|---|---|
| Universitas 21 Statement on Sustainability | Universitas 21 (U21) | Member network of 20 research-led universities that benchmark against each other and commit to progressing global sustainable development in five areas:<br>1. research towards sustainable futures<br>2. education for sustainability<br>3. universities as living laboratories for sustainability<br>4. enhancing citizenship and engagement<br>5. building capacity through cross-network collaboration and action. |
| Sustainability Collaboration Agreement | Randwick City Council | Enables UNSW students to access internship and placement opportunities with Randwick Council and for the council to access a number of specialist sustainability activities underway across the University. It facilitates practical student learning and the application of particular areas of research and teaching into on-ground sustainability related projects or strategy areas being delivered through Council programs. |

# Prizes

## National

**CSIRO Eureka Prize for Leadership in Science**

Professor Martin Green, ARC Photovoltaics Centre of Excellence

**Land & Water Australia Professor Peter Cullen Eureka Prize for Water Research and Innovation**

Jointly awarded – Associate Professor Greg Leslie, School of Chemical Sciences & Engineering (UNSW) with Professor Bruce Sutton (USyd)

**NSW Scientist of the Year Awards – Environment, Water and Climate Change Sciences Category**

Professor Andy Pitman, Climate Change Research Centre (Inaugural) Future Justice Prize

**The Copenhagen Diagnosis**

International team led by Professor Matthew England Climate Change Research Centre

## International

**Eni New Frontiers of Hydrocarbons Prize (Italy)**

Jointly awarded – Professor Val Pinczewski, School of Petroleum Engineering (UNSW) with Professor Mark Knackstedt (ANU)

**Energy Institute Awards (UK) – Individual Achievement Category**

Professor Martin Green, ARC Photovoltaics Centre of Excellence

**Energy Institute Awards (UK) – Technology Category**

Jointly awarded – Professors Martin Green and Stuart Wenham, ARC Photovoltaics Centre of Excellence (UNSW) with Drs Ji and Zhengrong Shi (Suntech Power Co)

Also, all three of our new ARC Australian Laureate Fellows (premier Fellowship of the Australian Research Council) for 2010 were awarded in this broad area. These are prospective (awarded for research to be undertaken July 2010–June 2015)

**ARC Australian Laureate Fellowship**

Professor Matthew England, Climate Change Research Centre

Awarded to study: Quantification of the risks that ocean warming will transform Australia's climate, rainfall, and sea level; as well as the ocean's uptake of carbon and the global ocean circulation.

**ARC Australian Laureate Fellowship**

Professor Chris Turney, School of Biological, Earth & Environmental Sciences (joining UNSW from University of Exeter, UK)

Awarded to study: (Palaeoclimatology) Extending the historical records of change, and understanding the complex linkages between Australian and global atmospheric, terrestrial and marine processes in the climate system.

**ARC Australian Laureate Fellowship**

Professor Mark Bradford, School of Civil & Environmental Engineering Awarded to study: Development of a "green" sustainable composite steel-concrete building frame system.

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