



Sustainability Report



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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 Bidjigal (Kensington campus) and Gadigal (City campus) peoples, the traditional custodians of the lands where each campus is 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

The imperative to respond to the world's grand challenges is greater than ever and it is vital that we strive to balance social, environmental and economic priorities as we look to the future. Leadership is responding to these challenges and is an important aspect of the UNSW 2015-2025 strategy.

It therefore gives me great pleasure to introduce our 2014 Sustainability Report to you as a measure of our progress against these priorities and a celebration of our achievements in the way we live, learn and work.

I have been stimulated and inspired by what I have read. I see a dedication to sustainability in our enthusiasm for academic excellence, with 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. It is clear that this informs our own strategic priority to achieving global impact.



The UNSW Sustainability Report provides a valuable record of our university's contribution to social, environmental and economic progress in 2014. 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 is UNSW's second sustainability report and documents the sustainability performance of UNSW with a focus on the 2014 reporting period: 1 January to 31 December. This report includes our environmental and social performance, as well as an overview of how the University is tracking in sustainability research and education.



The intention of this report is to provide an annual sustainability snapshot so that we can clearly and transparently give an account of what we have been doing in the last year, what has been improving and where we see opportunities for positive change.

Fast facts



OF OUR STUDENTS ARE INTERNATIONAL – A DIVERSITY MILESTONE.

179

academics at UNSW declared an interest in sustainability.

\$35 million

netted in sustainability

focused research grants.

1,270

students are volunteers.

165

PhDs awarded for sustainability research.

76% of all general waste is recycled

1,200 trees on the Kensington campus

70% of plants on campus are native

 $\ensuremath{\textbf{225}}$ megalitres of bore water used at Kensington

280,000 kWh of energy generated by UNSW's photovoltaic systems

1,850 cycle to uni

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

This is UNSW's second sustainability report and documents the sustainability performance of UNSW with a focus on the 2014 reporting period: 1 January to 31 December. 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 2014 Annual Report.

The aim of this report

This report aims to:

- identify the sustainability issues that impact on the environment and society as a result of UNSW business activities
- describe UNSW's journey towards sustainability, including past achievements, current initiatives and future aspirations
- provide a 2014 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. 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.

Collated comments and feedback on 2013 report

We collated and analysed this data and produced a register to rank the emerging issues based on the frequency with which they were referred to and the spread of interest in an issue across our different stakeholder groups.

Best practice reporting

In addition to the data collection exercise, we conducted a peer review of sustainability reports from a number of comparable universities and organisations.

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.

To ensure highest level of transparency, Ernst and Young was engaged to perform an independent limited assurance exercise. They reviewed the subject matter of 2014 UNSW Sustainability Report and confirmed complete conformance with the identified criteria.

We'd love your help!

If you have any sustainability initiative or research project you want to promote in 2015, 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 2014



New solar panels harvest sunshine from the Library roof, increasing our capacity to produce solar energy by 35% in 2014.



UNSW's student-led project, Sunswift, smashes 26-yearold world record.



Students purchase sustainable produce from trailblazing social enterprise.



UNSW researchers have programmed industrial robots to tackle the vast array of e-waste thrown out by Australians every year



UNSW's ASPIRE program, which has introduced thousands of disadvantaged school students to the world of university, has received a \$250,000 'surprise' from Google.



On World No Tobacco Day 2014, the University amended its Smoke Free Environment Policy to extend the smoke free zones to all indoor and outdoor areas on campus.

Environment

With approximately 60,000 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



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 because of the increased operation of highly advanced, energy-intensive research equipment and a continued growth in student 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 reduce 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

The NSW power grid supplies the majority of the energy consumed by UNSW with the Kensington campus alone consuming almost 76.9 gigawatt hours (GWh) of electricity in 2014. Various applications of natural gas based technologies provided most of the balance of energy with renewable sources providing 0.3% of the energy consumed during the reporting period.

The source of primary energy consumed by UNSW in 2014 can be broken down as follows:

- 74.8% from grid electricity (mostly from coal-fired power plants)
- 22.3% from natural gas
- 2.6% from co-generation
- 0.3% 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 2014, natural gas consumption at the Kensington campus was just over 80,000 gigajoules (or over 90,000 gigajoules if trigeneration is considered).

Electricity generation – photovoltaic

Since 2005, UNSW has been installing photovoltaic cells on various buildings around its campuses. In 2014 the installation of 423 solar panels on the library roof increase our overall solar capacity by 35%. The panels will provide an average annual energy output of approximately 140,000kWh, resulting in an annual saving on our energy bill of approximately \$17,000.

The continued expansion of installations meant that in 2014 photovoltaic systems were able to meet 0.3% of the University's energy demand, producing over 280,000 kWh of electricity during the reporting period.



New solar panels harvest sunshine from the Library roof

Increasing our capacity to produce solar energy by 35% in 2014

In 2014, 423 new photovoltaic panels on the library roof went live. The panels will provide an average annual energy output of approximately 140,000kWh, resulting in an annual saving on our energy bill of approximately \$17,000. This means we are producing 0.16% more power as a percentage of our total campus energy use.

They will also help us reduce our annual carbon footprint, saving approximately 140 tonnes of CO2, which is equivalent to taking 42 cars off the road. The Library PV installation is the second largest on the Kensington campus. The largest is at the Tyree Energy Technologies Building.

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 (and would otherwise have been wasted). Co-generation systems utilise 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 two co-generation systems and one tri-generation system on campus. UNSW's tri-generation power plant was cutting edge experimental technology when it was first installed. As a result over time it has required significant and ongoing maintenance. The trigeneration plant suffered a major breakdown in 2014 and is still under repair. This is reflected in reduced power generation for the 2014 year. The co-generation output is similar to 2013 but one of the two plants is likely to be decommissioned in 2015 which will might reflect in further reduction of on campus power generation.

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 (BMS)
- 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:

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

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 2014 reporting period.

In the 2013-14 financial year, the University's campuses and operations were responsible for the production of 72,455 tonnes of Scope 1 and 2 emissions of CO²e greenhouse gases, up from 64,919 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 2013/14, these emissions increased by 11.5% 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 decreased by almost 1% in 2013/14 from the previous reporting period.

Scope 1 and 2 CO₂e Emissions



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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.

New Waste Minimisation Strategy

In 2014, considerable time was spent devising a new Waste Minimisation Strategy that will complement the current Energy and Water Strategy. This aims to increase our resource recovery above 80% and help make UNSW a more sustainable campus. The strategy will be published in 2015.

Raising awareness about waste

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

These include:

- Posters promoting battery and mobile phone recycling displayed in communal areas
- A quarterly Facilities Management newsletter with articles promoting ways to responsibly manage waste
- A retail outlets' lease agreement clause concerning the use of recycled packaging
- Installing and promoting new water refill stations to encourage the re-use of drink bottles
- Installing and promoting new charity clothing bins in residential areas on campus.

Overview of waste

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

2014		
	Waste component	Total (tonnes)
General	Paper/cardboard	1300
waste	Mixed containers	193
	Plastic film	59
	Food and organics	502
	Food waste	111
	Waste oil	20.4
	Green waste	99
	General waste subtotal	2284.4
	Component sent to landfill	549
	General waste recycled	1735.4
	Percentage of general waste recycled	76%
	Waste component	Total (tonnes)
Other	Chemical waste (not recycled)	110
waste	Biological waste (not recycled)	106
	E-waste (Monitors, laptops, desktops, printers, scanners, projectors, fax machines, servers - sent for recycling)	24
	Fluorescent tubes (recycled)	2.08
	Batteries (recycled)	0.58
	Mobile phones (recycled)	0.04
	Toner cartridges (recycled)	2
	CDs/DVDs	0.1
	Concrete* (recycled)	24
	Wooden pallets** (recycled)	1.5
	Skip bins (328.5 tonnes recycled)	870
	Other waste total	1140.3
	Component sent to landfill	757.6
	Other waste recycled	382.7
	Percentage of other waste recycled	34%
	Waste component	Total cubic metres
Furniture	Furniture***	1200

Data provided by Fiona Martin, 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.

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 ensures that all general waste is collected and carefully sorted. In 2014, 76% of UNSW's general waste was recycled.

Paper and cardboard

UNSW has run a successful recycling collection service for paper and cardboard for many years. UNSW recovered approximately 1,300 tonnes of used paper and cardboard in 2014 which is then recycled. The University is reimbursed per tonne of paper so this process has both environmental and economic benefits.



UNSW residence becomes Green Hub

Students living on campus set up a reuse/recycling centre

UNSW Hall residents are spearheading an ecofriendly initiative through the setup of a Green Hub (a reuse/recycling centre) to minimise waste. The program encourages residents to recycle and reuse items as opposed to disposing of them.

From pens to pans, bowls to binders and tents to tarps, the centre is reducing waste and saving money for students who just need to check an online inventory and pick their new item up. UNSW Sustainability is helping students with marketing and providing advice and funding to safeguard the long term viability of the project. So far there is one operational Green Hub and three more in the pipeline.

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Electronic waste recycling

In 2014, 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.

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

This type of e-waste amounted to approximately 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

When batteries are disposed to landfill they can cause environmental contamination of land and waterways. A battery recycling collection service was introduced a number of years ago and is available to all UNSW staff and students. Collection points are located at strategic locations around the campus and during 2014, 581kg of batteries were collected for recycling.

Mobile phones

Mobile phones contain both hazardous and valuable materials that need to be recycled and prevented from going to landfill. During 2014, 46kg of mobile phones were collected from strategic locations around the campus.

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. All material recycled is ultimately returned to manufacturers to be reused in the process of manufacturing new printers and cartridges. During 2014 over two tonnes of toner cartridges were recycled.

CDs

Over 120kg of CDs were collected and recycled during 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.

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 in regards 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

UNSW has two programs in place that deal with food and cooking waste:

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.

Cooking oil waste

The waste cooking oil collected from campus is recycled into the process of creating bio-diesel fuel. Over 20.4 kilolitres were collected and recycled in 2014.

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 1,200 cubic metres of furniture was diverted from landfill in 2014 through this program.

In 2014, this service trialed a more proactive approach by the UNSW Furniture Reuse Centre by advertising a selection of furniture items via Adminet to over 900 users. They also provide notification before large quantities of furniture are uploaded onto the site.

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



Information source: UNSW Facilities Management

Water conservation is a top 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 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 2014, the total amount of potable water used on campus was over 349 megalitres, representing 61% of the water used on campus.

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 2014, UNSW used just over 225 megalitres of bore water, representing 39% of total water use.

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.



UNSW Water Usage Kensington Campus 2003-2014



First aid for storm water

Stormwater pollution prevention program now in place

A program to train all security services staff in storm water pollution prevention was completed in 2014. All security staff are now trained in pollution prevention and two new spill kits have been purchased.

UNSW's Safety and Sustainability Manager, Aaron Magner says, "It is vitally important we preserve the integrity of groundwater supplies running into the Botany aquifer so this program is an essential way to prevent pollution in the unlikely event of an incident."

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.



UNSW actively helps students and staff make sustainable transport choices.

More students and staff are travelling to UNSW by public transport, by bicycle and on foot than ever before. Every weekday during semester, almost 50,000 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.

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 eighth year in 2014. 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 to develop measures that reduce car dependence and parking demand on campus.

How students and staff get to campus

More than 10,000 UNSW staff and students took part in the 2014 travel survey. Some key statistics from the survey results are as follows:

Public transport: Over 60% of students travelled to UNSW by public transport in 2014. This figure has been consistently increasing from a baseline of 49% in 2007.

Private vehicles: Slightly more than19% of respondents travelled to UNSW in private vehicles. This represents a 13% decrease in private vehicle usage since 2007. This is an average decrease of 300 private vehicle users each year, despite an increase in the total campus population of approximately 14,600 people since 2007.

Walking: For 13% of students and staff, walking is the preferred mode for journeys to and from campus. This has stayed relatively steady since 2007.

Cycling: The percentage of respondents cycling to and from the campus increased from 2.7% in 2007 to 4.8% in 2014. When applied to the average daily campus population, this is a significant increase from 806 riders in 2007 to 1,850 in 2014.

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Australia's first fuel cell bicycle

UNSW researchers unveil the Hycycle: a low cost sustainable transport option

UNSW researchers have built an Australian-first bicycle that can take riders up to 125 kilometres on a single battery charge and \$2 of hydrogen proof that hydrogen power is viable right now.

Associate Professor Kondo-Francois Aguey-Zinsou and his team have developed a method of compacting 100 litres of hydrogen to just 50 grams, a key achievement in providing portable energy. "Hydrogen fuel cell technology is very exciting because it means we could have unlimited and clean energy supplies for our children."

Public transport

UNSW works with the NSW Government, Randwick City Council and a range of transport planning agencies to improve access to UNSW's campuses.

South East Light Rail update

UNSW's Kensington campus is currently the only major Sydney university without a nearby railway station, but this is set to change with the construction of the South East Light Rail project. UNSW is a key destination on this light rail route, which will extend from Circular Quay, through Sydney's CBD and on to UNSW via Central Station. The light rail project started in 2014 and expected to be completed in 2020.

UNSW is a major partner and working closely on details of the design and plan to ensure the best outcome for the University. For the latest news visit UNSW's Light Rail website.

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 from the car share company GoGet are available at Kensington for as little as an hour at a time.

In 2014, there were over 90 students signed up as drivers and four departments set up with GoGet accounts. There were over 2,600 bookings across the year with an average of seven booking per day. GoGet research shows that each GoGet car saves around 16 tonnes of greenhouse gases per year.

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.

The benefits of car-pooling include reducing travel congestion, pollution and the costs of travel.



Students triumph with world record breaking solar car

UNSW's student-led project, Sunswift, smashes 26-year-old world record

Sunswift, the sleek solar powered electric car designed, maintained and operated by students at UNSW, broke a 26-year-old world record in July 2014. But it didn't just break the record – it smashed it, averaging a speed of 107km/h over 500km, even taking into account two pitstops. The previous record, set in 1988, was an average of just 73km/h over the same distance

Sunswift is passionate about the potential of renewable energy and pushing technology to the edge. Ever since their humble beginnings, they have been constantly raising the bar for sustainable transportation. Sunswift celebrates its 20 anniversary this year and have set themselves the considerable challenge of designing and building a 'road legal' car.

Photo: Daniel Chen

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 the above 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 campus (including loading bays), with another 500 or more in the surrounding streets.

Cycling

The Kensington campus is easily accessible by bicycle and provides almost 600 designated bicycle parking spaces, two permanent bike pumps and 17 shower locations. UNSW also took part in national Ride to Work day in 2014 for the third year running.

Green fleet

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 an electric vehicle.



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 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 1,200 trees on the Kensington campus including a number of visually stunning 120-year-old Morton Bay Fig trees.

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.

Campus grounds sustainability initiatives

Native planting policy

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

In 2014, 70% of plants on campus were noted as Australian native species.

Irrigation

UNSW has recently audited and updated its landscape irrigation and water storage systems, which has resulted in significant water savings. Where irrigation is required, the preference is for drip irrigation rather than sprinkler systems, and uses bore water, rather than potable water.

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 500 cubic metres of mulch was applied to the landscaped environment in 2014 to reduce evaporation and conserve water.



Caring for our bush

UNSW is working with the community to encourage native endemic species

UNSW has currently got a contract for 'bushregeneration' services at the University-owned Manly Vale Water Research laboratories, the Tarban Creek rowing facility and the Cowan field station.

These UNSW properties all have surrounding native bushland areas and this contract allows for scheduled weed control and the re-planting of native endemic species to the area (where required).

This community engagement project complements the efforts of neighbouring properties who are working on the same thing. The neighbours involved are Manly Dam and Manly Warringah Council, Hunters Hill Council and NPWS.



Our leafy campus

Take a moment to enjoy some shady respite

Did you know there are approximately 1,200 trees on the Kensington Campus? They vary in age and size and are a mixture of native and exotic species.

Trees bring huge benefits to our community. They make our surroundings pleasant and help to create a sense of place. They provide relief from summer's heat and reduce glare from pavements. They improve air quality, reduce noise and provide habitat for local wildlife.

Some of our trees also have significant historical value, including the formal avenue of poplars along University Mall and the 120-year-old fig trees in Fig Tree Lane.

Our trees are continually monitored by the Facilities Management Grounds Team to make sure they are in good health and measures are put in place if they are not. Removal of trees is sometimes required for safety reasons or to enable campus development. However, we are committed to replacing any trees that are removed, either in the same area, or elsewhere on campus.

Technology in the garden

Computer-controlled watering systems, rain sensors and night-time watering systems 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.

Sustainable purchasing powers our procurement.



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

Sustainable procurement at UNSW 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 2014, UNSW spent 28% of total expenditure on Planet Friendly products which equates to 18% products. This was a slight increase from 17% in 2013.



Small changes, big results

When it comes to purchasing, UNSW's new Green Print Centre is not tone deaf

Purchasing a new type of toner may seem like small fry in the bigger picture of sustainability, but small positive changes are still achievements. The Green Print Centre has switched to the Unison Toner which has a few great sustainability features.

A clever relationship between the page counter and toner chemistry ensures toner cartridges aren't changed till the very last drop of toner is used up. The energy consumption of the hardware by is reduced by 30% due to the lower melting point of the toner. The life of the imaging unit is extended because the toner cartridge and imaging unit can be changed independently. This is significant because the life of the imaging unit is more than double that of the cartridge. At the end of their life, the cartridges are then taken away and 100% recycled.

Office furniture

UNSW's preferred supplier for office chairs offers a range of Good Environmental Choice Australia certified chairs. 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. Visit the Venues and Events website to find out how to book and use video conferencing.

Residential catering

UNSW has negotiated achievable environmental and sustainability standards into the 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 (eg. fridges in high functioning order), use of sustainable consumables (eg. light globes), economical use of utilities and use of locally sourced and seasonal produce.

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.

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





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 obviously a subject in its own right, but increasingly UNSW's educators are embedding sustainability 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

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

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

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Business School

UNSW Business School has long recognised the importance of its role in sustainability and social responsibility and in 2014 published its commitment in the Principles of Responsible Management Education (PRME) Sharing Information on Progress (SIP) Report.

Highlights include:

- a new Master of Business Administration (MBA) in Social Impact
- a new undergraduate course Creating Social Change: From Innovation to Impact
- the new 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. Key courses and programs include:

- Design Studio 6: Sustainability
- Sustainable Design Thinking (multidisciplinary course)
- · Graduate Certificate of Sustainable Built Environment
- · Graduate Diploma of Sustainable Built Environment
- Master of Sustainable Built Environment
- Master of Sustainable Built Environment (Extension).



Where mining and sustainability meet

Ros and her team at the Centre for Sustainable Mining Practices investigate the elephant in the room of mining engineering

Professor Ros Taplin started her career as a geophysicist in oil and uranium exploration, but growing concerns about the environmental impact of this work hastened a career change. She undertook a Masters in Environmental Management and worked as an environmental consultant and academic before coming "full circle" and taking the role of Research Director in the Australian Centre for Sustainable Mining Practices (ACSMP), based within UNSW Mining Engineering.

As a passionate educator with an international perspective, Ros teaches a fourth-year elective called Mining in the Global Environment. This subject explores the environmental, social, economic, health and safety, and resource efficiency issues of mining with a particular focus on the developing world.

"Discussions and interactive workshops form the basis of the subject with lectures as supplementary," Ros says. "This type of structure is much more conducive to learning about these ethical and environmental issues. Students need to explore their own reactions to the issues and to discuss them with their peers."

Faculty of Engineering

As the best engineering faculty in the country, and ranked 27 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 Engineering 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 15th 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 flavour and throughout their law degree, students are invited to participate in a range of activities that provide opportunities for them to engage with communities on issues of critical social and economic significance. Key degree programs include:

- Environmental Law Climate change, biodiversity loss, pollution, managing the sustainable use and exploitation of natural resources and planning for sustainable cities are just some of the many challenges faced by human societies around the world on a day to day basis.
 Environmental law is the dynamic body of law providing the frameworks and tools for responding to these challenges
- Human Rights and Social Justice Historically, teaching and research at UNSW Law has been influenced by an enduring commitment to the values and principles that underlie the protection of rights and the promotion of social justice.

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.



Information source: UNSW Workplace 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 vision of being considered one of the world's top 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 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:

- · 39,848 Local students
- 13,633 international students
- 53,481 total students.

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

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.

This unit also manages ASPIRE, an outreach program funded by the Australian Government aimed at students from low socioeconomic backgrounds in partner schools across Sydney and regional New South Wales that raises awareness of Higher Education, encouraging students from Kindergarten to Year 12 to consider following a path to university.

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.



Rainbow flag raising ceremony

Celebrating diversity at UNSW

The UNSW community came together at the main flagpole by the Chancellery in March 2015 to witness UNSW's first rainbow flag-raising ceremony, in celebration of Lesbian, Gay, Bisexual, Transgender, Intersex and Questioning (LGBTIQ) pride.

The event was hosted by the Kirby Institute in partnership with the student and staff equity group ALLY@UNSW.

Professor Andrew Grulich from the Kirby Institute opened the ceremony, commenting on the long standing partnership between the Institute and the community. "Working with the LGBTQI community has always been central to our cause."

UNSW President and Vice Chancellor, Professor lan Jacobs, attended the celebration and remarked on the significance of the event. "UNSW stands for equality of rights for all," said the Vice Chancellor. "I'm delighted to be here today and to mark my second month as President and Vice Chancellor of UNSW with such an important occasion."

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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 2014, a considerable number of these events focused on the environment, social justice and equity.

Highlights

- UNSW's three-minute thesis competition winner: Engineering solutions to political problems: the answer is blowing in the wind
- Byron Smith lecture: Climate change and what should we do about it?
- Dr Gregory Wilson lecture: Building on 35 years of progress – the next 10 years of photovoltaic research at NRE
- Jack Beale Lecture on the Global Environment: No free rides to the future: Australia's Chief Scientist on the need for a national strategy

- The inaugural Sir William Tyree Energy Lecture: How the global community should respond to anthropogenic climate change
- The annual Ghandi Oration by Australian Author Thomas Keneally – the Ghandi Oration commemorates Martyrs' Day and is delivered by a person whose life's work exemplifies the ideals of Gandhi.
- UNSW Women in Engineering Awards

In addition there were over 60 sustainability focused events run throughout 2014 by:

- · Centre for Energy and Environmental Markets
- Institute for Environmental Studies
- Climate Change Research Centre.

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Information source: Research income number from UNSW's 2013 HERDC (Higher Education Research Data Collection) return

UNSW is leading the charge in sustainability research.

In 2014, there were 179 academics at UNSW with a declared interest in environmental and/or sustainability research. This is a significant increase of 16% from 2013.

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 2014 was Water, Climate, Environment and Sustainability which showed a universally positive increase in sustainability related activities. Activities carried out under the umbrella of this research indicator:

- netted over \$35 million in research grants a 5% increase from 2013
- ranked fourth out of 10 for the percentage of income received by the University

- led to the publication of almost 700 articles, books, journal articles and conference papers – an 8% increase from 2013
- includes the award of 165 PhDs a huge increase of 53% from 2013
- includes the enrolment of almost 400 postgraduates, masters and PhD candidates – an increase of 9% from 2013.

Data is based on the 2014 HERDC (Higher Education Research Data Collection)

Research centres and institutes

Our academic staff and research students are at the forefront of sustainability research. Our electrical engineering researchers are international leaders in the development of renewable energy technologies and our economists and social scientists have devised policy responses that help combat the effects of diminishing resources. UNSW has established or partners with more than 50 research centres and institutes that have a full or part focus on environmental, social or economic sustainability.

1. Water, climate and environment research focus

- ARC Photovoltaics Centre of Excellence
- ARC CoE for Climate System Science
- Australian Centre for Sustainable Mining Practices
- Australian Climate Change Adaptation Research Network for Settlements and Infrastructure
- Australian Energy Research Institute
- Centre for Ecosystem Science
- Australian Poultry CRC
- · Australian Wetlands and Rivers Centre
- 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 Cotton Catchment Communities
- CRC for Greenhouse Gas Technology
- Evolution & Ecology Research Centre
- Institute of Environmental Studies
- · National Centre for Groundwater Research & Training
- National Centre of Excellence in Desalination
- · National Centre of Excellence in Water Recycling
- School of Photovoltaic and Renewable Energy Engineering
- Sino-Australian Research Centre for Coastal Management

- · Sustainable Design and Development Research Cluster
- Sustainable Materials Research & Technology Centre (SMaRT)
- Sydney Institute for Marine Sciences (SIMS)
- UNESCO Centre for Membrane Science & Technology
- Universities Climate Consortium
- Water Research Centre

2. Social policy, government and health research focus

- Andrew & Renata Kaldor Centre for International Refugee Law
- Asia-Pacific ubiquitous Healthcare Research Centre a WHO Collaborating Centre
- · Australian Housing & Urban Research Institute
- Australian Human Rights Centre
- Australian Institute for Population Ageing Research
- · Centre for Big Data Research in Health
- Centre for Primary Health Care & Equity
- · Centre for Refugee Research
- Centre for Social Impact
- Centre for Social Research in Health
- City Futures Research Centre
- Crime and Justice Research Network
- · Disability Studies & Research
- · Gilbert and Tobin Centre of Public Law
- Research Centre for Integrated Transport Innovation
- Indigenous Law Centre
- Industrial Relations Research Centre
- National Cannabis Prevention & Information Centre
- National Centre in HIV Social Research

- National Drug & Alcohol Research Centre
- Nura Gili Indigenous Research Centre
- Social Policy Research Centre

3. Economic research focus

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



Solar researchers score \$7 million support

UNSW Engineering is reducing the cost of solar technologies

In August 2014, on the 40th anniversary of the beginning of photovoltaics research at UNSW, Bob Baldwin, Parliamentary Secretary to the Minister for Industry, announced five new grants at an ARENA-hosted event at UNSW.

The \$7 million in grants cover research that will improve performance or reduce manufacturing costs for solar technologies. Three are for UNSWled projects and two for Australian National University-led projects that involve UNSW.

"These latest grants build on four decades of innovation and leadership in the field," said Professor Darren Bagnall, Head of the School of Photovoltaic and Renewable Energy Engineering.

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, recently 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, 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.

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

Hazards, Incidents and workplace inspections





A breath of fresh air

Smoke free UNSW

On World No Tobacco Day 2014, the University amended its Smoke Free Environment Policy to extend the smoke free zones to all indoor and outdoor areas on campus.

As an institution that prides itself in promoting health and wellbeing, conducting world-leading medical and cancer research, UNSW was proud to take this step to protect our staff, students and visitors from the harmful effects of second-hand smoke.

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

Wellbeing

Launch of a new Wellbeing website

In 2014, the University launched the new UNSW Wellbeing website, a gateway to the diverse suite of health and wellbeing initiatives across the University. In creating a truly sustainable campus we acknowledge that the health and wellbeing of our students and students is paramount. UNSW actively supports a healthy work-life balance and is committed to the ongoing promotion of the good health and wellbeing of staff.

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 (or bubblers) 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 workplacerelated musculoskeletal disorders. This can manifest as neck pain, back pain, blurry vision and poor posture.

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 the purchase of this equipment
- · 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 run about 30 times a year, 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 oncampus 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.



Sustainable Health Financing in Fiji and Timor-Leste

Faculty of Medicine 'SHIFT study' to help Fiji and Timor-Leste move towards universal health coverage

Universal health coverage (UHC), which implies all people have access to needed health services without the risk of financial ruin, has become a major goal for health reform in Fiji and Timor Leste.

Taking a systems wide approach the Faculty of Medicine SHIFT team will provide much needed evidence on the current equity of health-system financing and service use in these countries.

The three-year study, which is being undertaken in close collaboration with the national universities of Fiji and Timor Leste and the local Ministries of Health, aims to help these countries move towards universal coverage and to build local capacity in the routine assessment of health systems equity.



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 embed this into the campus experience.

Volunteering on campus

The student organisation, Arc, is the 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 3,000 volunteers worked many thousands of hours running Arc's 20 volunteer programs and 280 clubs. In addition Arc ran over 300 volunteer and social events.

Arc student development committee

The Student Development Committee is Arc's student body responsible for overseeing the support provided to Arcaffiliated 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.

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 to 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 get talking about the social and cultural issues which 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

Growing the community through gardening

The Producers is a brand new Arc program focused on sustainability; specifically, maintaining the new Arc veggie garden on campus. Student volunteers commit to two to three hours per week and get hands-on experience in planting, looking after and harvesting veggies and develop a greater appreciation of how easy it is to live and eat sustainably in this urban jungle.

In addition to the gardening, volunteers also run workshops for students on a monthly basis. These workshops cover things like: making a terrarium, growing a herb garden, composting food scraps and making a worm farm.

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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

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.

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:
		 2 ministerial appointments 2 elected academic staff 2 council appointees 2 elected students (1 undergraduate, 1 post-graduate) 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

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

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

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:
		 research towards sustainable futures education for sustainability universities as living laboratories for sustainability enhancing citizenship and engagement 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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