Sustainability Report 2021

LEAVE NO ONE BEHIND

“Universities are ground zero when it comes to problem solving. It is university academics and researchers who first explore possible concepts and ideas in search of an answer.”

Andrew Parfitt,
Vice-Chancellor and President

UTS acknowledges the Gadigal People of the Eora Nation, the Boorooberongal people of the Dharug Nation, the Bidiagal people and the Gamaygal people upon whose ancestral lands our university stands. We would also like to pay respect to the Elders both past and present, acknowledging them as the traditional custodians of knowledge for these lands.

Statement from the Vice-Chancellor

Andrew Parfitt
Vice-Chancellor and President

I am pleased to present the 2021 Sustainability Report. Sustainability is an important contributor to UTS's distinctive identity and is integrated across all areas of the university.

In 2021, we achieved our long-term greenhouse gas reduction target: a 30% reduction from the 2007 baseline year, when the Kyoto Protocol came into effect. This target was part of a collaborative effort with other Australian Technology Network (ATN) universities across the country, and I am pleased to announce that all ATN institutions met or exceeded their targets. Of course, this is only one small step in our overall climate journey at UTS.

This year, we continued our program of installing roof-top solar and commenced the development of the UTS Climate Positive Plan detailing a pathway towards net zero and beyond. The Plan should be out for consultation in 2022. We also announced our intention to move investments to better align with our ESG (Environmental, Social, Governance) objectives, specifically to move away from fossil fuels.

For the first time, we participated in the Times Higher Education Impact ranking, with results due in April 2022. The ranking uses the United Nations Sustainable Development Goals (SDGs) as a framework. This same structure has been used as the framework for our own Sustainability Report this year, reflecting on how the university is making progress towards each of the SDGs through our research, teaching and learning, operations and community engagement.

As showcased in this report, our researchers continue to perform at the global level, delivering real-world impact in many key sustainability areas.

I am always proud to see UTS staff and students achieving recognition for their outstanding work on the national and world stages, and this year was no different. Dr Emma Camp won a prestigious science Eureka Prize for her research exploring ways to make coral reefs more resilient to climate change, and the Bachelor of Creative Intelligence & Innovation won a Green Gown award for integrating sustainability into the teaching curriculum.

2021 was a challenging year for everyone, especially young people. Despite this, our staff and students have driven our sustainability agenda to new heights, and I am incredibly proud of their achievements.

Statement from the Head of Sustainability

Danielle McCartney
Head of Sustainability

The COVID-19 Pandemic continued to impact our operations, with lockdowns and campus closures for part of the year. We continued implementing the *UTS Sustainability Strategy*, with the COVID-19 disruptions postponing the planned development of a new Strategy. Our ongoing program of energy efficiency, assisted by individual building closures and lockdown periods, resulted in greenhouse gas reductions of 3.8% from the previous year. Total waste volumes were down 27% compared to 2020, also influenced by reduced numbers of people on campus.

Sustainability engagement with staff and students remained strong with 1274 people attending 45 sustainability events throughout the year, some on-line and some face-to-face. The Green Impact program, where staff and students work together in teams, had 15 teams participating including 5 student teams, with more than 250 actions undertaken. Subscriptions to our monthly newsletter rose 14%.

Our renewable energy journey continued with the installation of a new 142kW of solar on the roof of the Tech Labs in Botany, bringing the total on UTS owned or leased buildings to 1279kW.

UTS won two Green Gown Awards, achieving another accolade for UTS Central's Plastic-Free Food Court in the Creating Impact category, and for the first time in the *Next Generation Learning and Skills* category.

I'd like to finish by thanking the staff and students of the Sustainability team, members of the UTS Sustainability Steering Committee, the senior executive, and all staff and students who helped champion sustainability across the university. Thank you for your ongoing and valuable contributions.

About UTS

The University of Technology Sydney (UTS) is a dynamic and innovative university in central Sydney. UTS has a distinct model of learning, strong research performance and a leading reputation for engagement with industry.

With over 45,000 students (34,344 EFTSL) and 3,857 staff, UTS offers over 510 undergraduate and postgraduate courses across disciplines such as architecture, built environment, business, communication, design, education, engineering, information technology, international studies, law, midwifery, nursing, pharmacy and science.

One of the University's five values in the 2027 Strategy is to sustain our local and global environment, organisational health and our ability to create a positive, viable future. The university is committed to integrating sustainability principles into its key functional areas of teaching and learning, research, operations, and community engagement.

United Nations SDGs

The United Nations Sustainable Development Goals (SDGs) provide an organisational framework for action on and progress towards sustainability and is the framework for this Sustainability Report.

The 17 SDGs have been designed to help guide governments, businesses, organisations and the community towards creating a more just and sustainable world. Below the 17 high-level goals sit 169 targets and 232 indicators to guide and evaluate progress.

In 2016 UTS was one of the first universities in the Asia Pacific region to become a signatory to the University Commitment to the SDGs. In 2017 the UTS Institute for Sustainable Futures (ISF), in collaboration with Australasian Campuses Towards Sustainability (ACTS) produced a *Guide for Universities Getting Started with the SDGs*. The same year, our academics began to incorporate the SDGs into their research and teaching. In 2019 UTS signed the UN Global Compact, the world's largest corporate sustainability initiative, with a mission to support action on the SDGs. As a signatory and member of the Global Compact Network Australia (GCNA), the UTS Business School is working to deepen engagement with future business leaders on the SDGs and responsible and sustainable management.

In 2020 we established the SDGs Working Group to guide our work on the SDGs across the organisation, and the Climate Change Cluster Research Centre began mapping and aligning their work against the SDGs.
See details here

Our 2021 Sustainability Report has adopted the SDGs framework for the first time to present our sustainability work and achievements.

End poverty in all its forms everywhere

Research outputs in the area of poverty (FWCI index)	1.68
International collaborations	58.2%
Proportion of publications in the top 10% of journals (according to Citescore)	29.8%
Number of publications	153
Number of citations	1307

Supporting students and staff

UTS has an ongoing program of scholarships and grants to support students in financial hardship. Open to both domestic and international students these provide one-off and ongoing financial support for eligible students. In response to the pandemic the university established the *COVID-19 Student Support Package (SSP)* and the *Staff Hardship Fund (SHF)* specifically to provide support for staff and students experiencing financial hardship as a result of the pandemic. The SHF is financed partly by the university and partly through donations from staff with grants of up to $5000 available to eligible staff throughout 2021. The total commitment to supporting students was approximately $1.7 million. *The Housing Rental Subsidy Program* designed to provide support for students in housing stress provided grants to 44 students totally $52,000. The *Financial Support Program* provided over 1600 student grants totally $1.08 million, and 60 students received grants for textbooks totally $19,550.

Glebe energy transitions

As part of the Climate Impact Lab a workshop was run with public housing residents in our neighbouring suburb of Glebe to explore practical and innovative opportunities to reduce greenhouse gas emissions in the home. Focusing on energy efficiency, the workshop explored ways to reduce both emissions and energy bills for residents. Twenty-six people attended representing a wide cross section of households and dwelling types. The successful session provides a model for future energy transition projects.

CASE STUDY

Digital mentoring program

Two groups hardest hit by the COVID-19 pandemic in Australia have been international students and retirees. The economic impacts and loss of casual work pushed many international students into poverty, struggling to afford rent and food. The impact for people aged over 55 was quite different. Overnight everyday life involved QR codes, digital vaccine passports, and on-line shopping. Many low-income elderly people, already economically disadvantaged found the digital divide simply locked them out everyday activities. Even registering for a COVID-19 vaccine became an insurmountable technological barrier for some.

The solution was to bring these two groups together. A project initiated by the UTS Centre for Social Justice and Inclusion teamed up residents over the age of 55 from the inner-city suburb of Glebe with tech-savvy UTS international students. The students were paid to work collaboratively with their retiree partner to build the digital skills required to participate in the post-COVID world. Transferring the knowledge and skills that young people take for granted such as registering on-line for services, accessing government services online, and shopping online. The project provided students with valuable income and their retiree mentees with new skills and the ability to access essential services.

An added bonus reported by all participants was the social connection. Bringing the two groups together not only helped overcome social isolation, but also gave both groups valuable cultural insights and experience. The Glebe Digital Mentoring Program succeeded in bringing both of these groups together to provide mutual benefit, increasing the digital literacy, confidence and skills of older residents while offering income and experience for international students.

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Research outputs in the area of food and hunger (FWCI index)	2.64
International collaborations	76.0%
Proportion of publications in the top 10% of journals (according to Citescore)	51.4%
Number of publications	221
Number of citations	4541

Student hampers ready for distribution

Student food hampers

Pandemic lockdowns had a big impact on casual workers this year, impacting young workers especially hard. Many UTS students lost jobs or hours at work and struggled to pay rent and put food on the table. To help, our Student Services team provided support services including food hampers for students most in need - 60 in total including 55 International students. Volunteer students helped in the preparation and distribution, with recipients reporting the social support of peers and colleagues was just as important as the hampers themselves.

60

hampers were provided

CASE STUDY

Bluebird Brekkie and Night-owl Noodle Bar

Run by students for students, the pop-up Bluebird Brekkie and Night-owl Noodle Bar provides free healthy sustainable food for students four times per week.

While healthy affordable food is essential for everyone, unfortunately many students are time poor, juggling study with paid work and often resorting to cheap unhealthy food choices. Financial pressures, exacerbated by the COVID-19 pandemic, mean some students go hungry. This is where the student run Blue Bird Brekkie and Night-owl Noodle Bar helps, providing free healthy sustainable food to students on-campus. The large-scale pop-up cafe provides free, nutritious breakfast twice per week – muesli, natural yoghurt, local sourdough with avocado and spreads, fresh organic fruit and fair-trade tea and coffee – all in an inclusive community setting. Two evenings per week Blue-bird also provides hot healthy Asian noodle soups with multiple different mix and match options. The aim is to improve student welfare while at the same time laying the foundation for positive long-term healthy and sustainable eating habits. In 2021 they started strong, offering approximately 4000 free meals per week. The COVID-19 pandemic and Sydney-wide lockdowns saw the initiative temporarily closed for the second half of the year. Bluebird is run by the UTS Student's Association.

See details here

Ensure healthy lives and promote well-being for all at all ages

Research outputs in the area of health and wellbeing (FWCI index)	2.65
International collaborations	62.1%
Proportion of publications in the top 10% of journals (according to Citescore)	28.7%
Number of publications	2526
Number of citations	48607

UTS medical service

UTS provides an on-campus medical service to facilitate access to high quality health care for all staff, students and members of the Ultimo community. The service offers full general practitioner doctor and nursing services as well as student counselling and includes administering COVID-19 vaccinations. In 2021 the UTS Medical Service provided 21,400 GP consultations and administered 1712 vaccinations, with 38% during a three-month Sydney COVID-19 Delta lockdown from July to September.

Wellbeing program

UTS Wellbeing runs a range of seasonal and ongoing initiatives to support staff physical, emotional, career, and financial wellbeing. Initiatives include participation in national programs including RUOK Day and 10,000 steps, along with UTS dedicated initiatives including the UTS Faculty Fit Program. The Employee Assistance Program (EAP) provides individual counselling support for staff and their families.

Ensure healthy lives and promote well-being for all at all ages

CASE STUDY

Supporting midwives to stay in the profession

In 2021 the UTS School of Nursing and Midwifery started a new five-year study in Australia exploring ways to better support midwives, to help reduce burnout and their departure from the workforce. Midwives provide critical care for mothers and babies yet they are burning out and leaving the profession in large numbers. Studies in Australia and overseas confirm this, with one large study finding midwives had higher rates of burnout than nurses. The COVID-19 pandemic has exacerbated the problem with significant numbers of health workers leaving the profession.

Improving support for midwives is vital for the long-term sustainability of the workforce, and for the wellbeing of women and babies. This 5-year trial is examining the efficacy of Group Clinical Supervision (GCS) as a support strategy for midwives working in the industry. Participating midwives are being offered GCS monthly for up to two years. Issues being measured include levels of burnout, sick leave rates, perceptions of workplace culture, workforce exit rates, and the efficacy of the GCS model. The study is funded by the Australian National Health and Medical Research Council. Across seven NSW Local Health Districts, 12 maternity sites in greater Sydney are involved.

Positive impacts on midwives attending regular GCS can be multifactorial including greater job satisfaction, improved professionalism, less burnout and higher retention rates. Higher levels of job satisfaction and improved morale enhances workplace communication and culture. Together, these factors can help improve healthcare management and efficiency, and more importantly, improve the quality of care women and families receive at a pivotal time in their lives.

CASE STUDY

Ensuring PPEs effectiveness in low income countries

During a pandemic, Personal Protective Equipment (PPE) saves lives – but only if it does what the manufacturer says it will. Unfortunately testing PPE often requires materials and equipment that are not readily available in many low-income countries. Many struggle to meet the strict requirements set by international standards bodies for testing.

The UTS Rapido Social unit teamed up with NGO Field Ready who make humanitarian aid supplies to create CAD drawings and instructions for building PPE testing equipment designed specifically to be rapidly manufactured on the ground in the countries where it is needed.

The partnership and involvement of in-country engineers helped establish what is – and just as important what is not – possible in different countries. Most of the equipment can be assembled using easy to access items. While sometimes it might not look like much, it can be life-saving by testing things like whether a face shield really does block infectious airborne droplets. So far, testing equipment drawings and guides for the project have been shared with engineers in Kenya, Iraq, Bangladesh and Uganda.

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Research outputs in the area of education FWCI index)	1.79
International collaborations	39.7%
Proportion of publications in the top 10% of journals (according to Citescore)	21.1%
Number of publications	353
Number of citations	3409

Award winning curriculum

The university's teaching program was recognised with an award win in the Australasian Green Gown Awards. The subject *Industry Innovation Project*, part of the Bachelor of Creative Intelligence & Innovation, won the *Next Generation Learning & Skills* category. The subject matches students with community and business partners to work on real-world 'wicked problems', often with sustainability at their core. The initiative is now shortlisted in the international Green Gown awards with winners announced in July 2022.

The Creative Intelligence and Innovation team with their award

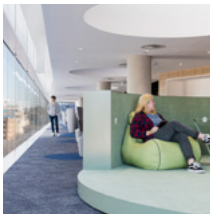
Sustainability radio and podcast

As a public purpose university UTS is committed to the dissemination of knowledge for the public good. For the fourth consecutive year the Think Sustainability podcast and radio program was produced in collaboration with community radio station 2SER. The program continued to grow, with approximately 78,656 podcast listens and over 60,000 weekly radio listeners.
Listen here

Times Higher Education Ranking

In recent years UTS has performed highly in the prestigious Times Higher Education (THE) rankings, and was again this year ranked number one young university (under 50 years) in Australia, and number nine internationally. For the first time, UTS also participated in the THE Impact ranking in 2021. The ranking uses the SDGs framework for assessment, with 2021 results released in April 2022.

Sustainability in the curriculum



The UTS LX Lab provides teaching support for academics and has collated an extensive list of support and resources that is available for teaching staff to use to incorporate sustainability into their curriculum. Resources include a new tool kit for academics *Staying present, engaged and positive in the face of climate change: a toolkit of emerging ideas and resources*.

Toolkit here
More LX lab resources here

4 QUALITY EDUCATION

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Students at Cecil Hills High School participating in STEM X.

CASE STUDY

Girls in STEM school outreach program

To address the gender gap in women studying science, technology, engineering and maths (STEM) at university it is critical to address the core barriers to participation across the primary and secondary school years. The UTS Faculty of Engineering and IT has established a dedicated primary and secondary school outreach program, 'STEM X', to encourage girls to study STEM at school.

The Australian Academy of Science in their national Women in STEM Decadal Plan (2019) identified the key barriers faced by girls to include stereotypes, bias, lack of role models, lack of understanding of STEM career options, disengagement from STEM education, as well as family and cultural expectations. Running in its current 6-8 week in-classroom structure since 2019, the program is designed to address these core barriers.

Students develop scientific investigation and digital technology skills to design and develop solutions. Importantly, they do this in an enabling environment, surrounded by peers and women as role models, working collaboratively to solve real-world challenges.

Analysis of feedback data from the programs in primary schools in 2021 (9 schools, 1075 students – 538 girls) show the following outcomes:

Girls increase in interest

Engineering

65.4%

feel it is fun post-program, compared to 51.6% pre-program

Solving problems

64.8%

feel it is fun post-program, compared to 43.1% pre-program

Girls increase in confidence

Engineering

43.2%

feel they are good at it post-program, compared to 26.6% pre-program

Solving problems

61.5%

feel they are good at it post-program, compared to 44.6% pre-program

Building things

77%

feel they are good at it post-program, compared to 71.8% pre-program

Achieve gender equality and empower all women and girls

Research outputs in the area of gender equality (FWCI index)	1.85
International collaborations	53.5%
Proportion of publications in the top 10% of journals (according to Citescore)	18.2%
Number of publications	318
Number of citations	3275

RNA volunteers join forces to "Orange the world" in support of this year's 16 Days of Activism against Gender-Based Violence campaign.

Respect. Now. Always

UTS is a proud and active member of the national Respect. Now. Always. Campaign aiming to eliminate sexual assault and harassment on Australian campuses. Despite the disruptions caused by extended lockdowns, 2021 was an active year with the team coordinating UTS participation in the national student safety survey, with 10,000 UTS students randomly selected to participate. The team continued to run an annual program of events (both on campus and remote), campaigns and advocacy, and compulsory online *Consent Matters* training for all staff and students. See more in their **2021 wrap here**

Fixing fast fashion

The Faculty of Law produced a new report to help make the fashion industry fairer on women and the environment. The industry employs millions in the developing world, overwhelmingly women, working in substandard conditions. Released in November the report, *Fast Fashion for 2030: Using the Pattern of the SDGs to Cut a More Gender-Just Fashion Sector*, outlines a six-step process to improve unethical work practices as well as the voracious environmental impacts of the fast fashion industry. **More details here**

Achieve gender equality and empower all women and girls

CASE STUDY

UTS Women in Engineering and IT program

Women are underrepresented in the workforce in science, technology, engineering and maths (STEM), making up only around 28% of the sector in Australia. This means that women's voices are not being heard in the development of new technologies that we may be using everyday, they are missing out on rewarding career opportunities in fast-growing sectors, and Australia is deprived of a huge potential source of talent and human capital.

The UTS Women in Engineering and IT program (WiEIT) is the longest running program of its type in Australia. The program aims to challenge the gender gap in opportunities, build and run innovative programs to create and sustain educational pathways, foster leadership, share knowledge and connect an inclusive community that celebrates diversity and achievements. The program has the following core pillars:

Ambassadors in the WiEIT program

'STEM X' primary and high school outreach

Addressing early barriers to STEM participation through in-classroom learning involving students, teachers, and families. (see page 11)

Scholarships

Celebrating high-achieving young women commencing engineering and IT university studies with industry co-operative scholarships and internships.

Mentoring

Student-industry mentoring program, pairing students with an industry mentor to build career confidence and awareness.

Gender Equity

Ambassador program: Equipping the community to be gender equity social change makers.

Community

Building an inclusive community for students, staff and industry through regular social events and celebrations. Over 1200 students and staff are part of WiEIT community mailing list, contributing over 200 hours in 2021 across all WiEIT programs. 36 community events were hosted in 2021, including 6 cultural celebrations (e.g. Lunar New Year, Nowruz, Eid, and Diwali), and 6 awareness days (e.g. Wear it Purple Day, Reconciliation Week), and 16 fortnightly social coffee hours.

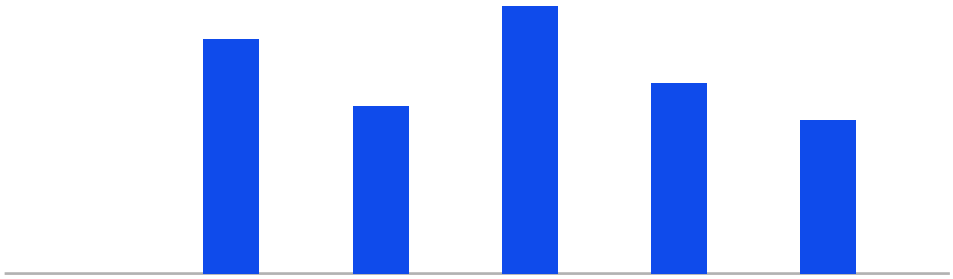
Ensure availability and sustainable management of water and sanitation for all

Research outputs in the area of water and sanitation (FWCI index)	2.25
International collaborations	82.1%
Proportion of publications in the top 10% of journals (according to Citescore)	65.5%
Number of publications	987
Number of citations	24592

Water saving

Water saving, recycling and efficiency initiatives continued, helping achieve an overall fall in water consumption of 6% compared to 2020 and an improvement in water intensity to 0.37 kL/m2 GFA from 0.43 in 2020. Selected building shutdowns and campus closures for part of the year due to COVID-19 contributed to the result, both through less water use in kitchens and bathrooms and also less demand from the evaporative air conditioning chillers. There was also a slight increase in the use of recycled water to off-set potable water use.

Water consumption

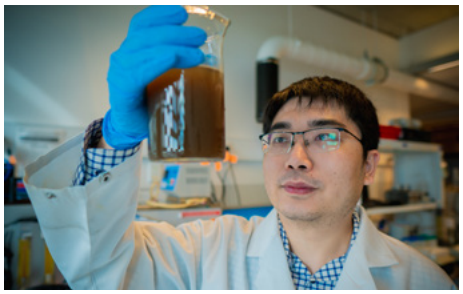


Year	2017	2018	2019	2020	2021
Water [kL]	178,831	127,000	203,000	145,000	117,000

CASE STUDY

Greening sewerage treatment plants

The world's 7.8 billion people produce a lot of sewerage. Treating this material in safe, efficient sewerage treatment plants consumes large amounts of energy and water and produces potentially toxic by-products. Associate Professor Qilin Wang from the Faculty of Engineering and IT is working to change this by developing technology to turn sewerage treatment plants into carbon-neutral energy generators.



Associate Professor Qilin Wang in his lab

The technology, which is under development, uses the sewerage sludge and a potentially toxic unused by-product, free ammonia, to generate sustainable green energy turning the plants into zero energy, low-emissions processes. Currently, free ammonia must be removed to avoid eutrophication in the discharge water body, but this new technology aims to harness the free ammonia to maximise energy recovery. The technology is easy to implement, with no need for special equipment or inputs such as chemicals or external energy, making it potentially transferable to a wide variety of settings around the world. This new technology could help dramatically reduce the energy inputs and chemical outputs of sewerage treatments plants world-wide to improve efficiency and reduce costs.

7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all

Research outputs in the area of energy and energy efficiency (FWCI index)	2.85
International collaborations	82.6%
Proportion of publications in the top 10% of journals (according to Citescore)	59.9%
Number of publications	1197
Number of citations	34900

Integrated vegetation and solar cells on the roof

Green Wave Project

UTS along with Curtin and Monash universities conducted a unique project – Green Wave, leveraging their own carbon reduction efforts to establish a roadmap for decarbonising across the economy. The Race for 2030 project looked at opportunities for net zero energy and emission reduction strategies to improve planning processes and hopefully lead to better investment decisions to achieve energy decarbonisation at scale. See **Race for 2030 here**

First bio-solar green roof

A collaborative project with property developer Lendlease, green roof company Junglefly, and UTS researchers created the first combined PV green roof in Australia. Solar panels were installed around and on top of low-level vegetation such as grasses and groundcover on the roof top. The project revealed some surprising and exciting results. The solar cells had little impact on the biodiversity and thermal benefits of the green roof. The big surprise was the improved energy output from the PV cells due to the cooling effect provided by the green roof. Surface temperatures of the PV cells were up to 20 degrees cooler in the vegetated section of roof compared to the un-vegetated area. This improved the solar performance by 3.6%, equating to approximately $2500 over the 8-month period of the study. The results could have a significant impact on how solar installations are designed for city buildings. **See more here**

CASE STUDY

UTS solar journey

UTS is on a journey transitioning to renewable energy. In 2014 UTS started with the decision to invest directly in solar energy on our buildings to help meet the University's electricity requirements. Next, in an Australian first, a Power Purchase Agreement was signed in 2015 with a solar farm in Singleton to facilitate direct power purchasing from solar farms in rural NSW. So far, two solar farms, one in the Hunter Valley and one in Orange, supply UTS with electricity and the university is currently in the final stages of negotiations to build a new large scale solar farm that will provide up to 50% of the university's electricity when completed.

To date, 599 solar panels have been installed on six UTS campus buildings, supplying 1279 kW of power. The Botany Tech Labs installation, commenced in 2021, has been enabled by an innovative roof-license agreement with building owners Dexus and is part of a larger program that will ultimately see 2520 PV panels installed, producing 1279 kW of power. This year 142kW, or 347 panels, were installed on Block D of our engineering Tech Labs in Botany, with more planned for next year.

UTS is aiming to decarbonise as rapidly as possible and is currently developing a Climate Positive Plan with a pathway to achieve net zero emissions and beyond.

Solar cells being installed on the Botany Tech labs

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Research outputs in the area of work and economic growth (FWCI index)	2.38
International collaborations	67.2%
Proportion of publications in the top 10% of journals (according to Citescore)	49.4%
Number of publications	427
Number of citations	8012

Student employment services

UTS Careers delivers services designed to build student skills and networks to help them secure good jobs. Throughout 2021, Careers hosted events providing opportunities for students to connect and engage with employers and alumni, hosting over 130 events with over 3,000 attendees. The CareerHub online portal received 32,480 distinct student logins and promoted a total of 23,710 positions via the CareerHub job board.

UTS Careers delivered the Accomplish program virtually, designed to enhance students' success by helping them identify and articulate their skills, knowledge and experience. The program has three core modules and two electives. This year 246 students participated.

Protecting workers during heatwaves

A new report published by the UTS Climate Justice Research Centre - *High Heat and Climate Change at Work*, found regulations for addressing workplace heat across Australia are inadequate. The research involved a national survey across multiple sectors including utilities, cleaning, manufacturing and education. The Survey found in the previous 12 months 20% of workers were unable to work due to high heat on at least one occasion. With heating expected to increase due to climate change the report found workplace heat is expected to impact labour productivity in the coming decades.

"Through this program I was able to network with Managers and company executives efficiently and effectively and learn excellent skills that I would cherish and utilise for years to come in my career and corporate life."

Student participant in the Accomplish program.

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Heat stress and firefighters

A new report on how firefighters deal with heat stress, fatigue and recovery found most currently use simple interventions to cool down such as drinking water, finding shade, and removing helmets and jackets. However, the research conducted by Dr Hugh Fullagar in the School of Sports Exercise and Rehabilitation, in collaboration with NSW Fire and Rescue, suggests that alternative management practices could help. Rotating tasks, training firefighters to better recognise heat related stresses on the body, and equipment such as ice packs could improve outcomes for workers. **More here**

Supporting small business

It was another tough year for small business retailers on campus, with government mandated lockdowns, and lower volumes of people on campus for most of the year. To help support our small businesses, many family-run enterprises, UTS offered rent waivers to the 14 retail operators on campus. At the end of the year we are pleased to report that all are still operating.

CASE STUDY

Anti-Slavery Australia

Over 40 million people globally are estimated to be living in conditions of modern slavery. Australia is no exception, with estimates of up to 1900 people living in modern slavery conditions at any one time.

Modern slavery is an umbrella term used to describe human trafficking, slavery, servitude, forced labour, debt bondage, deceptive recruitment for labour services, forced marriage, and the worst forms of child labour. It could be a migrant worker tricked into coming to Australia on the false promise of a good job, only to find themselves threatened and working excessive hours in a drastically different job to the one promised - for no pay. Or maybe a young person being tricked into travelling overseas and forced into marriage.

Anti-Slavery Australia is a dedicated centre within the UTS Faculty of Law, working to end modern slavery. Since 2011, Anti-Slavery Australia has lead policy development, advocacy, research and legal representation for survivors. Anti-Slavery Australia also leads Australia's forced marriage response through the My Blue Sky initiative.

Each year, Anti-Slavery Australia supports hundreds of survivors of modern slavery across the nation through its free legal practice, empowering survivors to rebuild their lives.

Anti-Slavery Australia trains and builds the capacity of individuals, organisations and businesses to recognise, identify and respond to modern slavery through awareness raising, education and training for businesses, government, law enforcement, universities, schools and community organisations.

Anti-Slavery Australia also works collaboratively with government, civil society and business to address modern slavery, sitting on the National Roundtable on Human Trafficking and Slavery and convening a number of community networks. Anti-Slavery Australia's policy and advocacy has made significant contributions to law reform including the establishment of forced labour and forced marriage as specific criminal offences in Australia and the establishment of the Australian Modern Slavery Act.

UTS has developed a Modern Slavery Declaration of Commitment, helping to focus the university's strengths on the problem of modern slavery.

See the declaration here

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Research outputs in the area of industry, innovation and infrastructure (FWCI index)	2.51
International collaborations	67.6%
Proportion of publications in the top 10% of journals (according to Citescore)	50.0%
Number of publications	685
Number of citations	13232

Green building award

The 5 Star Green Star certified UTS Central building was recognised with a prestigious international award from the Council on Tall Buildings and Urban Habitat - winning the Council's Design Award for 2021. The building was designed by FJMT architects and built by Richard Crookes Construction. The building's sustainable design features include automated sunshades to reduce air-conditioning demand, use of district chilled water from Central Park, and three green roofs. **Video of the building here**

Indigenous Residential College

UTS has a strong commitment to supporting Indigenous students. The Jumbunna Institute for Indigenous Education and Research helps develop university pathways for Indigenous students to come to UTS and provides support while they are here. Planning is underway for a dedicated Indigenous residential college where students can live and thrive while studying. This year the Sustainability Strategy for the Haymarket Masterplan and Indigenous Residential College was produced, laying the strategic direction and foundations for the next stage of planning.

Green Start-Ups

For the first time UTS Start-ups ran a dedicated program for green start-ups. The two-week Green Sprint program was designed to guide and mentor young entrepreneurs with an innovative idea to disrupt the status quo. Participants heard from existing successful sustainability start-ups, and worked through a program of topics including sustainable product design, green manufacturing, and ethical marketing. **Watch Green Sprint here**

CASE STUDY

Seaweed Bio-plastic

The world's oceans and waterways are awash with plastic, however a bioplastic alternative made of red seaweed could help.

The SEAweed Tech project (SEA stands for Southeast Asia) is led by UTS researchers in the Faculty of Science, in collaboration with Coast 4C based in the Philippines, where one million coastal-dwelling people depend on seaweed for their income.

By harnessing the existing large-scale seaweed farming industry, the project proposes an elegant and impactful solution: create a biodegradable alternative whose manufacturing process produces zero waste, with a clean and green supply chain that provides local, future-proof employment opportunities.

"We want to empower local communities to manage their marine plastics pollution, and develop a new green industry that can generate a new income source for seaweed farmers in coastal communities in the Philippines,"

SEAweed Tech project lead
UTS Professor Peter Ralph.

Everything about the seaweed-based bioplastic is sustainable, but to be successful, it also needs to be inexpensive. After receiving a significant funding boost of $840,000 (over three years) in 2021 from Swiss philanthropic foundation, the Julius Baer Foundation, the project has moved from a successful concept testing phase to product development.

The SEAweed tech research lab

Reduce inequality within and among countries

Research outputs in the area of reduced inequalities	2.14
International collaborations	48.3%
Proportion of publications in the top 10% of journals (according to Citescore)	22.3%
Number of publications	414
Number of citations	5085

Widening student access and participation

UTS runs a number of programs designed to widen participation and support students from low socioeconomic backgrounds access and thrive at university. In 2021 the *Transition and Academic Support Program* provided support to 540 students, ten of these were from a refugee background and 147 with a disability or ongoing medical condition. The Enhanced Computer Access program is designed to ensure no student is disadvantaged through lack of access to digital tools. In 2021 $113,250 was awarded through 107 grants to students for laptops and related hardware and software.

Climate Justice

The Climate, Environment and Society Research Centre (formally Climate Justice Research Centre) ran a webinar series *Emerging frontiers and issues in climate and environmental justice* with four events throughout the year;
- Law, litigation, and climate justice
- NSW Renewable Energy Transition: benefits for Aboriginal land holders?
- Climate change and coastal livelihoods
- Water stories: activating water civic ecologies in Green Square (Sydney)

Disaster recovery linked to economic wellbeing

New research by Professor Kate Barclay from the Climate Society Environment Research Centre on the value of coastal fishing revealed the potential economic and social benefits of a well-managed commercial fishing sector. The research report, *Victoria's fisheries and aquaculture: economic and social contributions*, demonstrates the contribution made by the state's seafood sector to help coastal communities devastated by the Victorian bushfires rebuild their financial and social wellbeing. **See details here**

CASE STUDY

Climate, Society and Environment Research Centre (C-SERC)

Globally, societies are facing social, political and economic upheaval. The Climate, Society and Environment Research Centre (C-SERC), within the Faculty of Arts and Social Science has been established to contribute to our understanding of how societies interact with energy, technology and the environment. Formed to take advantage of the expertise and relationships at UTS, specifically in the fields of Indigenous land justice, fisheries and marine resource governance, work and environment, civic ecologies, and the transformation of urban life, C-SERC's major research themes are;

- Civic ecologies, healthy environments and urban transformations
- Climate justice and energy transitions
- Fisheries, maritime and coastal communities
- Indigenous land and justice
- Work, climate and environment

Visit the centre here

Make cities and human settlements inclusive, safe, resilient and sustainable

Research outputs in the area of sustainable cities and communities (FWCI index)	2.16
International collaborations	68.1%
Proportion of publications in the top 10% of journals (according to Citescore)	47.8%
Number of publications	656
Number of citations	10964

Green Week Photo Competition winner 'Hope' by student Jiuyi Zheng.

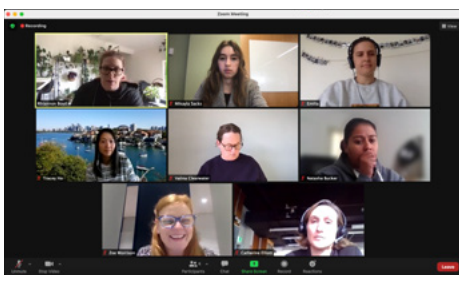
Campus engagement activities

Engaging staff, students and the community in sustainability is an ongoing part of the UTS Sustainability team's outreach program. This year we ran the annual Green Hero Awards recognising and celebrating the good work of staff and students promoting sustainability, with winners announced on World Environment Day, June 5th. First place went to student Mourya Reddy Polka, second place to staff member Klara Janickova and third place student Damien Nguyen.

The annual Green Week photo competition received 50 entries and over 1800 likes on Facebook. Despite COVID-19 lockdowns we ran 45 sustainability events (some online) for 1274 participants, including 4 orientation stalls for new students attended by 690 students. The University's annual Green Week event in May had talks, stalls, workshops and more. Unfortunately the annual Ride to UTS and Walk to UTS events promoting active transport in October were cancelled due to COVID-19 lockdowns. Subscriptions to our monthly sustainability newsletter rose 14%.

Green Impact program

For the third consecutive year we delivered the Green Impact Program, a behaviour change program where staff and students work in teams to undertake sustainability actions. Examples include pledging to not use single-use plastics, starting a worm farm, beach clean-ups, and attending community eco events. Actions completed as part of the program were undertaken both on campus and in the broader community. In 2021, 15 teams, including 5 student teams, undertook more than 250 actions.



Green Impact teams embracing the Zoom transition

Make cities and human settlements inclusive, safe, resilient and sustainable

Granville Smart Precinct proposal.

CASE STUDY

Granville Smart Precinct Project

Like many inner-city suburbs, Granville in Sydney faces complex challenges including crime, congestion, and the lack of economic opportunities to cultivate and retain local talent. Many of these social problems are connected to environmental issues including lack of communal green space, poor recognition and preservation of local natural assets, congested roads, noise pollution and urban heating.

A project coordinated by Associate Professor Nimish Biloria in the School of Architecture using SMART technology is tackling these issues to enhance the liveability, sustainability, and productivity of the suburb. The project developed a scalable and replicable Smart City strategy that could be applied by the local government area, Cumberland City Council.

The model included;

- More mixed-use facilities
- Enhanced active mobility, increasing pedestrianisation by 40%
- Increased tree cover by 30%
- More economic opportunities to attract a new, younger demographic
- Improved social cohesion and safety with child friendly play zones
- Reduced congestion by redesigning mobility hubs
- Reduced carbon footprint through the use of sustainable materials.

The SMART technology, on-ground community participation, intelligence driven design, and socio-economic projections to develop this approach for Cumberland City Council is a model that could be used in urban communities elsewhere.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns

Research outputs in the area of consumption and production (FWCI index)	2.48
International collaborations	68.0%
Proportion of publications in the top 10% of journals (according to Citescore)	58.5%
Number of publications	391
Number of citations	7952

COVID-19 continued to impact the university's sustainability activities in 2021. UTS's utility use again decreased due to the reduced occupancy of campus buildings and selected building shut-downs – along with our ongoing program of energy efficiency initiatives.

Campus waste and recycling

The total volume of general waste was down 27% compared to 2020, falling from 832,245 tonnes in 2020 to 600,177 tonnes in 2021. Waste sent to landfill was 64,624 tonnes, achieving a recycling rate over 85%. Waste generation intensity remains stable from 2020 to 2021 at 24 Kg per occupant. UTS participates in the National Fluorocycle program, recycling 100% of our lamp waste which was .927 tonnes in 2021. We recycled .661 tonnes of batteries.

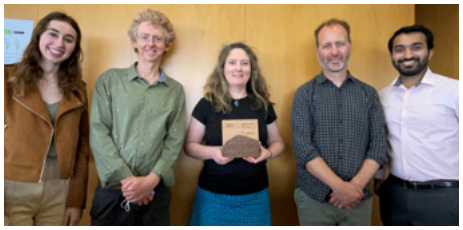
Award winning Food Court

Our plastic-free food court in the UTS Central building, the first of its kind in Australia, received an accolade, winning the *Creating Impact* category in the Australasian Green Gown Awards. All food and drink packaging in the food court is compostable, with pre-packaged drinks (including water) sold in glass, aluminium and paperboard only – no plastic. The initiative is now shortlisted for the international Green Gown awards with winners announced in July 2022.

General waste figures

Year	Total tonnes per annum
2017	960,036
2018	958,586
2019	1,310,000
2020	832,245
2021	600,177

The jump in 2019 represents a change in our reporting. Previously, waste from the campus food retailers was not included, but from 2019 it was including given a more comprehensive picture of total waste volumes.



Sustainability team members with their Green Gown award

Ensure sustainable consumption and production patterns

SR2 installed in the BVN office space in Sydney

CASE STUDY

3D-printed air: a cool solution to climate change

The construction industry contributes around 40% of global carbon emissions. As a society we need to do better, with new approaches to design, materials and construction.

A collaborative industry partnership has developed the world's first 3D printed air diffusion system, called 'Systems Reef 2 (SR2) - SR2: towards zero carbon and zero waste'. SR2 is a collaborative project between BVN Architects and the Transformative Technologies Group in the School of Architecture at UTS.

Designed for circularity and disassembly, the robotically 3D printed system uses recycled plastic waste. Switching to recycled plastics and designing out redundancy reduces the carbon footprint of SR2 by 90% compared to traditional steel ducting. Furthermore, at end-of-life, each component can be shredded and reused, creating new material to be 3D print again into new components.

Shaped for air, the system's aerodynamic form reduces friction, leakage and energy consumption, helping reduce the size of each component. Thousands of tiny pores on the surface allow the system to 'breathe' through its skin, diffusing air into the space. Through its plug and connect system, building owners and tenants can easily adapt and reconfigure the layout to suite their changing needs.

Take urgent action to combat climate change and its impacts

Research outputs in the area of climate change and impacts (FWCI index)	2.12
International collaborations	73.2%
Proportion of publications in the top 10% of journals (according to Citescore)	57.7%
Number of publications	572
Number of citations	11680

Gas and electricity usage

Along with our ongoing program to improve electricity and gas efficiency through new technologies and building optimisation, this year COVID-19 related lockdowns and building closures helped to reduce electricity use by 16.5% and gas by 7.5% compared to the year before. Total carbon emissions were down 3.84% compared to 2020.

Greenhouse targets achieved

Almost ten years ago UTS made a commitment to reduce carbon emissions by 30% between 2007 and 2021, which was considered an ambitious commitment at the time. The target was part of a number of individual and collective emissions target commitments by UTS and other Australian Technology Network (ATN) universities. This year UTS met our long-term 30% reduction target, despite significant growth of student and staff numbers and a 50% increase in floor area are over the same period. Collectively the ATN universities significantly exceeded their 25% absolute reduction target by achieving a 46% reduction. UTS significantly exceeded its emissions intensity target of 105 Kg CO2-e/m² GFA by achieving 72 Kg CO2-e/m² GFA. Collectively the ATN universities also significantly exceeded their emissions intensity target of 105 Kg CO2-e/m² GFA by achieving 68 Kg CO2-e/m² GFA.

Electricity

Year	Gj	Gross Floor Area (m2)
2017	167,990	322,713
2018	148,699	371,537
2019	159,236	434,688
2020	161,784	437,756
2021	135,041	434,517

Gas

Year	Gj	Gross Floor Area (m2)
2017	54,172	322,713
2018	46,249	371,537
2019	49,921	434,688
2020	52,598	437,756
2021	48,646	434,517

Take urgent action to combat climate change and its impacts

Climate Positive Plan

The next step in the University's decarbonisation journey has began, with the development of the *UTS Climate Positive Plan* - a road map with targets and timelines to transition UTS to net zero and beyond. Initial UTS community consultation sessions were held in April and May to generate ideas and obtain input from staff and students to contribute to the Plan. These sessions were divided into different themes exploring emission sources and options for reduction in different areas including; Travel, Behaviour Change, Research, Teaching and Learning, Campus Operations, Corporate services (Finance, Investment and Procurement), and Governance. The next step is to complete a draft *UTS Climate Positive Plan* which will then be shared with the UTS Community in 2022 for their review and feedback.

Student actions

Despite social distancing and lockdowns students remained engaged in sustainability, organising a strong UTS contingent to the Student Climate march and rally in May, as well as ongoing advocacy on the Stop Adani and fossil fuel divestment campaigns.

Banner painting for the student climate march

"The University of Technology Sydney is committing more resources for action-oriented climate change research and skills creation, ensuring our graduates are armed with the tools to contribute towards positive change."

Andrew Parfitt, Vice-Chancellor and President

CASE STUDY

UTS4Climate webpage

The UTS4Climate website showcases UTS contributions to climate change research, advocacy and action. Inspired by the 2019 Global Climate Strikes and the energy and passion of our own students and other young people around the globe, UTS signed a climate emergency declaration.

This committed the university to:

- provide more resources to climate change research and skills creation
- increase sustainability education across the curriculum, campus and community programs
- continue to bring communities, industry and government together to debate the contested themes around the climate emergency
- argue for the need for a climate consensus
- and work towards carbon neutrality on campus.

The UTS4Climate website highlights some of the contributions the university has made so far. The site provides access to world-leading climate research, expert talks and panel discussions, podcasts, debates, student action, and more.

See the site here

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Research outputs in the area of oceans, seas and marine resources (FWCI index)	2.0
International collaborations	66.0%
Proportion of publications in the top 10% of journals (according to Citescore)	51.4%
Number of publications	482
Number of citations	8306

Science prize winner

Dr Emma Camp from the Faculty of Science won a prestigious science Eureka Prize for her research exploring ways to make coral reefs more resilient to the impacts of climate change. She is studying "super-corals" that thrive in unlikely locations such as mangrove lagoons with warm acidic water with lower oxygen levels than most reefs. **See more here**

Dr Emma Camp at work

"The Eureka Prizes are the preeminent national science awards and it's a huge achievement,"

Kate McGrath, Deputy Vice-Chancellor (Research)

Tropical fish on the move

A new research project demonstrates the extent of tropical fish migration in response to rising ocean temperatures and acidification. A collaboration between UTS researchers led by Professor David Booth from the Faculty of Science, and the University of Adelaide, the team found that ocean warming and acidification play opposing effects influencing how tropical species migrate to cooler, more southern waters. **See more here**

"This not only has implications for incoming tropical fishes but will affect the productivity of our coastal fisheries into the future."

Professor David Booth

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Researchers studying marine heat waves

CASE STUDY

Reef conservation and management in the Pacific

Coral reefs are in steep decline around the world, facing multiple threats. A large collaborative study with partners from multiple universities including UTS has revealed the measures that successfully help protect and sustainably manage coral reefs and marine conservation zones. The UTS team was led by professor David Booth from the UTS Fish Ecology Lab. Examining around 1,800 tropical reefs from 41 countries across the globe, the project revealed that only five percent of reefs currently meet the combined goals of providing enough fishing stocks, while maintaining biodiversity and a sustainable ecosystem. The team identified some of the management interventions working to achieve this successful balance. Critically, they found that marine reserves and conservation zones can be highly effective when located in areas of ecological value and low human pressure.

The study found that the location of marine reserves is a critical factor in their success. Where they are located helps to determine the desired outcomes - a healthy ecosystem able to support the people that rely on the reef.

See the site here

CASE STUDY

Marine heatwaves and outbreaks of aquatic pathogens

Marine heatwaves are occurring more frequently as a consequence of climate change and there is emerging evidence that they are causing outbreaks of pathogenic marine bacteria that can threaten ecosystem and human health.

The increasing frequency of marine heatwaves are making graveyards of Australia's once vibrant coral reefs, mangroves and kelp forests as seawater temperatures increase. Emerging evidence has revealed a more insidious threat - the spread and growth of a group of pathogenic marine bacteria known as Vibrio, which can have negative impacts on human and marine ecosystem health. This consequence of marine heatwaves poses risks to Australia's coastal ecosystems, communities and industries.

This year, researchers from the UTS Climate Change Cluster, and Charles Darwin University commenced a new three-year study, funded by the Australian Research Council Discovery Project, investigating the role of marine heatwaves on Vibrio bacteria outbreaks and their impacts on public health, the resilience of temperate corals, and disease outbreaks in oyster hatcheries.

"As marine heat-wave events occur more frequently and with greater intensity, we're expecting to see blooms of these potential pathogens,"

Professor Justin Seymour, UTS Climate Change Cluster.

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Research outputs in the area of land ecosystems, rivers and biodiversity (FWCI index)	1.92
International collaborations	65.6%
Proportion of publications in the top 10% of journals (according to Citescore)	46.0%
Number of publications	360
Number of citations	6064

Drying rivers

An analysis report on the health of the Murray and Murrumbidgee River systems conducted by a team in the School of Mathematical and Physical Sciences used statistical analysis to establish trends in rainfall and river height records. Their findings show that the impacts of climate change on the river system have accelerated in the latter half of last century, and especially since the 1990s, with the catchment drying and warming significantly. They predict drastically reduced future water availability as a result. **See more here**

Institute for Sustainable Futures

The Institute for Sustainable Futures conducts leading sustainability research, often in collaboration with industry and community partners.

Key projects this year included;

- A White Paper on spatial distribution of food insecurity in Australia. While Australia is a global food exporter, approximately 21 per cent of Australians suffer from food insecurity.
- Launched the Australian Product Stewardship Centre of Excellence in March in collaboration with the Australian Industry Group, Cox Inall Communications and the Australian Government. In December the Centre hosted the inaugural Product Stewardship Centre of Excellence Awards to recognise and celebrate leading product stewardship and sustainable design.
- Joined the influential international network REN21, whose mission is to accelerate the transition to renewable energy by providing data and analysis addressing renewable energy technology, policies and markets.
- Partnered with Blue Mountains City Council to explore opportunities and initiatives to support planetary health with potential local benefits.
- Hosted a virtual event on Climate Change Response for Inclusive WASH (Water, Sanitation and Hygiene) research, attended by around 50 participants from 35 organisations from Indonesia, Timor-Leste and Australia.
- Launched research showing Australia has the natural resources to be a global superpower in wind energy.

"The UTS Institute for Sustainable Futures is leading the charge when it comes to adopting practical approaches to mitigating the impacts of climate change."

Andrew Parfitt,
Vice-Chancellor and President

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

CASE STUDY

Using low-flammability plant species to manage wildfires

Climate change is leading to more frequent and intense wildfires around the world. Such fires have major social and environment impacts in Australia, as witnessed by the catastrophic 2019 -2020 bushfires.

Research being undertaken by the Biodiversity Conservation Lab at the UTS School of Life Sciences is looking into strategies to reduce the impacts of wildfires on human life, homes and urban infrastructure. Using bespoke experimental equipment, the research identifies plant species that have low-flammability properties such as long lead times before ignition, and/or short periods of time spent burning. The aim is to better understand plant species that help to reduce the risk of fire starting, and mitigate the worse impacts of fire in and around human settlements. When combined with information about the biodiversity values of different plant species, the work also contributes to the conservation of native flora and fauna.

The project is led by a collaborative team made up of ecologists, eco-statisticians, land managers and conservation scientists. Together they use a wide range of field and laboratory experiments, in conjunction with desktop and statistical analyses, with the aim of sharing the knowledge with policy makers, planners, governments and emergency services.

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Research outputs in the area of peace, justice, laws and governance (FWCI index)	4.26
International collaborations	42.7%
Proportion of publications in the top 10% of journals (according to Citescore)	25.3%
Number of publications	412
Number of citations	12300

Times Higher Education ranking

For the first time UTS participated in the Times Higher Education (THE) Impact ranking. Data was collated and submitted in the later part of the year, with results out in April 2022. The Times Higher Education Impact ranking uses the SDGs framework for assessment and analysis, similar to the format of our own reporting in this document.

CASE STUDY

AustLII – providing free access to law

A just and fair judicial system relies on open and transparent access to legal information. Without this, corruption and injustice can flourish.

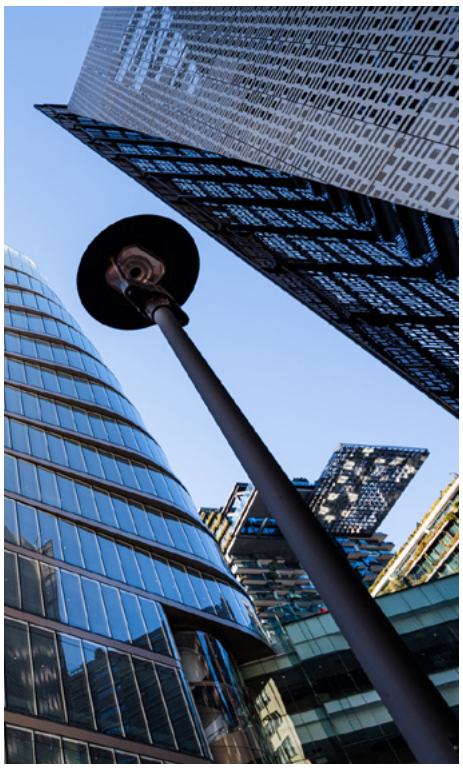
The Australasian Legal Information Institute (AustLII) is run by the Faculties of Law at UTS and the University of NSW to promote free access to law in Australia and internationally, providing critical legal information to government, education, courts and tribunals, business and the general public.

By maximising access to legal information, AustLII helps to ensure that the legal system operates effectively and efficiently, supports access to justice, and helps to enable the rule of law and democratic institutions for Australia and internationally. The free online service receives over 240 million page access requests annually (around 700,000 daily) from over 6.5 million distinct hosts.

AustLII maintains extensive data provision agreements with government, courts, and other data providers, and assists other nations and regions to develop online access to their laws to promote and strengthen accountability and transparency of legal systems in other countries. AustLII is a founding member of the international Free Access to Law Movement (FALM) which now includes over 65 institutional members who provide access to the laws of more than 160 nations. FALM aims to maximise access to justice and the rule of law on a free not-for-profit basis, supporting good governance and the rule of law in all countries.

Strengthen the means of implementation and revitalise the global partnership for sustainable development

Research outputs in the area of partnerships for the goals (FWCI index)	2.35
International collaborations	63.90%
Proportion of publications in the top 10% of journals (according to Citescore)	42.6%
Number of publications	634
Number of citations	12764



Better Buildings Partnership

UTS is a member of the Better Buildings Partnership (BBP), owners and managers of large commercial buildings in the Sydney CBD collaborating to improve the sustainability of city buildings. A Memorandum of Understanding was signed this year for our ongoing membership, and members of the UTS Sustainability team participate on the Leadership Panel, and Climate Positive and Circular Economy Working groups. **Visit the BBP**

Artists in residence program

Artist Sidney McMahon worked with FEIT to understand the potential uses of neuroprothetics and Brain Computer Interaction technology while Wiradyuri artist Amala Groom worked with the Jumbunna Institute and the Faculty of Design, Architecture and Building to develop an immersive virtual reality environment in collaboration with Andrew Burrell (UTS, DAB, School of Design). **See more here**

Wiradyuri conceptual artist Amala Groom. Photo by Penelope Benton

Centre of Excellence in Sustainable Fashion & Textiles

The UTS School of Design partnered with TAFE NSW to establish the new Centre of Excellence in Sustainable Fashion & Textiles, supported by grant funding from the NSW State Government. Both TAFE and UTS teach fashion design and the Centre will utilise new technology and design approaches to support innovation and improved sustainability in the fashion industry. **See more here**

17 PARTNERSHIPS FOR THE GOALS

Strengthen the means of implementation and revitalise the global partnership for sustainable development

Corals growing as part of the restoration project.

CASE STUDY

Coral Nurture Program

In a world first, coral reef researchers at UTS have partnered with tourism operators in Queensland to develop an innovative coral restoration project.

Led by Professor David Suggett and Dr Emma Camp from the Climate Change Cluster, along with Wavelength Reef Cruises John Edmondson, the Coral Nurture Program has seen more than 65,000 corals planted across 27 sites from Cairns to Port Douglas. By 2021, the first corals planted had grown large enough to start reproducing on their own. Local operators have installed over 100 reef coral nurseries to propagate thousands of corals. The simplicity of the approach is that restoration tools and workflows integrate into day-to-day tourism operations.

Building the stewardship capacity of the reef tourism industry helps diversify and strengthen businesses. In 2021 operators were supported through a Government COVID-19 stimulus package ("Activate Tourism") to undertake stewardship activities, including planting coral. This helped safeguard skilled workers and tourism assets (e.g. vessels) when tourism activity was low. This evidence now forms the foundation of a new blended finance model for the industry, building both ecological resilience (strategic coral planting and site maintenance) and industry resilience (diverse yet complementary income streams).

Given that the Great Barrier Reef region supports 64,000 jobs and contributes more than $5 billion to the local economy annually, a lot is at stake. This collaborative project between scientists, government and tourism operators demonstrates the power of working together to protect the reef ecology as well as safeguarding local livelihoods.

CASE STUDY

Adrift - mapping marine microbe ocean journeys

Marine microbes play a critical role in sustaining our planet. They are small organisms of immense significance, producing approximately 50% of Earth's atmospheric oxygen and removing much of its carbon dioxide. However, due to climate change, ocean habitats are undergoing unprecedented change; parts of the ocean are warming and becoming more acidic, and the frequency of climate extremes such as heatwaves is increasing. How marine microbes experience this increasingly variable environment is an important question for ocean scientists.

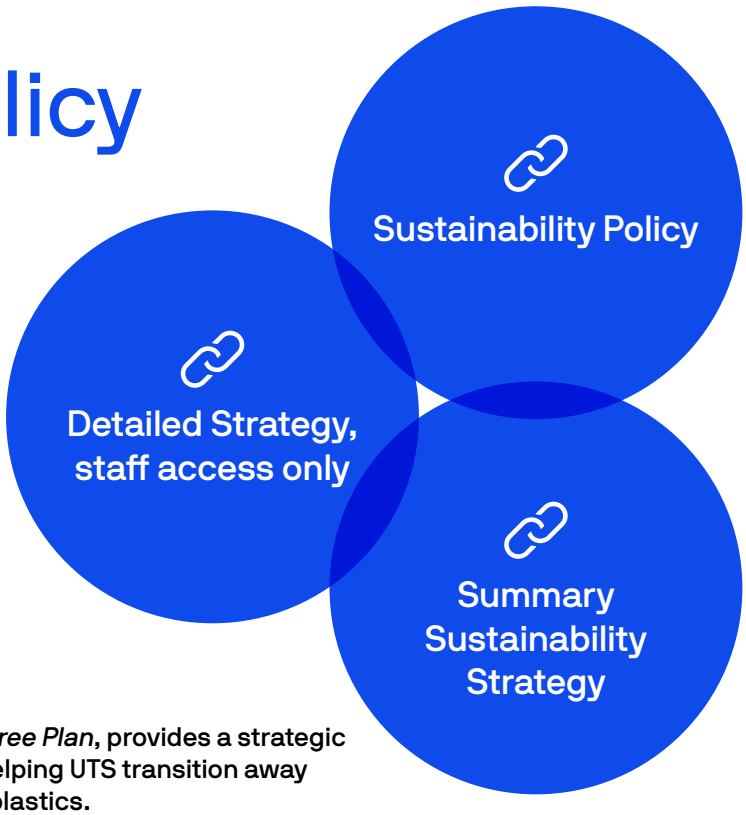
The ocean is vast and largely unexplored, rendering a significant challenge for oceanographic research. Through representative models of the ocean's surface circulation, this project called *Adrift*, provides a simulated web environment that makes the global ocean more accessible.

A multi-disciplinary collaboration between the Faculty of Science and School of Design, the project uses the input of citizen scientists to help map the ocean trajectories of marine microbes within a simulated web environment. By compiling data along drift trajectories, participants help ocean scientists better understand the biological experiences of marine microbes and more accurately predict their future.

Simulations from the Adrift project

Leadership and governance

Sustainability Policy and Strategy



The *UTS Sustainability Policy* provides a framework for sustainability at UTS across the four key areas of teaching and learning, research, campus operations and community engagement. The Policy was reviewed this year, with minor additions and updates made to incorporate and reflect best practice.

The *UTS Sustainability Strategy 2017 – 2020* provides the framework for implementing the Policy and outlines the University's sustainability vision, goals, and the mechanisms to achieve those goals. A new Strategy is developed every four years. This was due to take place in 2021 but has been delayed due to the impacts of the COVID-19 pandemic so will commence in 2022.

The *UTS Plastic Free Plan*, provides a strategic framework for helping UTS transition away from single use plastics.
(Full Plan here - staff-only access)

The *UTS Social Impact Framework* articulates and structures the University's current and future endeavours in social justice.

Sustainability Steering Committee

The Sustainability Steering Committee oversees implementation of the UTS Sustainability Strategy 2017 – 2020 and provides high-level guidance for sustainability activities across the university. The Committee meets quarterly. Throughout the year membership was made up of the following;

- **Patrick Woods**, Deputy Vice-Chancellor (Resources)
- **Glen Babington**, Chief Operating Officer
- **Glen Rabbitt**, Director, Facilities Management Operations
- **Nigel Oliver**, Director, Program Management Office
- **Danielle McCartney**, Head of Sustainability
- **Celia Hurley**, Vice President Advancement
- **Dr Katherina Petrou**, Chair Science Faculty Sustainability Committee
- **Dr Emma Camp**, Post-Doctoral Research Fellow, Science
- **Dr Nic Surawski**, Deputy Head of School, Engineering and IT
- **Amy Persson**, Director Government Relations
- **Miranda Crossley**, Student Enviro Collective
- **Dr Paul Brown**, Senior Lecturer, School of Transdisciplinary Innovation
- **Professor Stuart White**, Director, Institute for Sustainable Futures
- **Professor Peter Scott**, Pro Vice-Chancellor (Education)
- **John Chalmers**, Director, Marketing and Communications
- **Aidan O'Rourke**, President UTS Students Association
- **Distinguished Professor Jim Macnamara**, Deputy Dean, Faculty of Science
- **Dr Melissa Edwards**, Senior Lecturer, Business School
- **Murray Hurps**, Director, Entrepreneurship, Innovation & Entrepreneurship
- **Verity Firth**, Executive Director, Centre for Social Justice and Inclusion
- **Dr Charles Cranfield**, Senior Lecturer, Faculty of Science
- **John Bonnici**, Facilities Manager, UTS College.

Sustainability Development Goals Working Group

The SDGs Working Group aims to develop UTS's institutional response to the UN Sustainable Development Goals with the aim of embedding the SDGs across the university's academic, operational and engagement activities. Working Group membership this year were;

- **Professor Stuart White**, Director, Institute for Sustainable Futures (Chair)
- **Professor Margaret Petty**, Executive Director, Innovation and Entrepreneurship Unit
- **Verity Firth**, Executive Director, Centre for Social Justice and Inclusion
- **Danielle McCartney**, Head of Sustainability
- **Professor Roger Hadgraft**, Director, Educational Innovation and Research
- **Dr Rosemary Sainty**, Lecturer, Business School
- **Dr Emma Camp**, Postdoctoral Research Fellow, Science
- **Jen Mansell**, External Communication Manager
- **Professor Kees Dorst**, School of Transdisciplinary Innovation
- **Robynne Quiggin**, Associate Dean (Indigenous Leadership and Engagement)

About this report

Methodology

For the first time, this year our Sustainability Report uses the UN Sustainable Development Goals (SDGs) framework, reflecting our ongoing journey working towards integrating the SDGs across all areas of UTS's research, teaching and learning, operations, engagement and governance. The report itself has a section on each of the 17 SDGs, under which is included highlights of relevant campus-based initiatives and academic activities contributing to the SDGs. Case studies provide qualitative information and help conceptualise how individual projects relate to specific SDGs and contribute to the 'bigger picture'. Data for these was drawn from internal sources including websites and reports as well as interviews with relevant staff and students.

Research metrics and some graphs throughout the report provide quantitative data. The graphs relate to campus operations and data for these was drawn from internal operational reporting systems and processes. Data for the research metrics is from external sources, mostly through Elsevier's SciVal, and relate to the 2017-2021 period. The Elsevier reporting is based on Scopus mapping information for each SDG. Metrics in this report were based on this Scopus data source updated in April 2022. Elsevier do not provide metrics for SDG 17 as this SDG relates to each of the other SDGs (i.e. partnerships). For this report we have generated an average across the other 16 SDGs to generate metrics for SDG 17.

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Image credit: Anthony Browell, Andy Roberts, Florian Groehn, Toby Burrows, Unsplash, UTS Sustainability Team

“UTS is proud to produce graduates that are next-generation leaders with real-world experience and digital transformation skills in new and emerging fields.”

Professor Andrew Parfitt,
UTS Vice-Chancellor and President