Sustainable Development Goals

Impact Report

2020

RMIT UNIVERSITY

Contents

Introduction

The United Nations Sustainable Development Goals (SDGs) are a transformative global development agenda, incorporating environmental, economic and social aspects. Launched in 2015, the 17 goals encompass wide-ranging targets from poverty eradication to gender inequality, to climate action and economic development. The goals are applicable to all members of the United Nations and are accompanied by a series of targets and indicators, which set the groundwork for meaningful change.
As a global agenda, the SDGs form the backbone of the United Nations 2030 Agenda for Sustainable Development, part of the 2020-2030 Decade of Action.

As centres of both education and research, universities play a crucial role in supporting the SDGs. In 2017, RMIT publicly committed to supporting and implementing the SDGs through the Sustainable Development Solutions Network, a network that utilises scientific and technical expertise from across the globe in support of sustainable development. Since then, RMIT has used the SDGs as a sustainability framework, and embedded the SDGs into our learning and teaching, research, governance and operations.

Through learning and teaching, RMIT is equipping the next cohort of the global workforce with knowledge of the SDGs and the skills to implement them. At RMIT, much of our research also directly supports the SDGs and advances sustainable development locally and globally. Through governance and operations, RMIT embeds sustainability and SDGs as an organisational priority and influences key stakeholders to adopt sustainable practices.

As a result of this ambitious work, RMIT has received global recognition for our efforts. In the 2021 Times Higher Education Impact Rankings, RMIT was ranked number three in the world for overall global performance against the SDGs, out of more than 1,100 universities from more than 90 countries. Standout results across the SDGs included the University being placed second in the world for SDG 10: Reduced Inequalities, and third for SDG 17: Partnerships for the Goals. RMIT ranked fifth in the world for SDG 8: Decent Work and Economic Growth for the second consecutive year, 13th for SDG 11: Sustainable Cities and Communities and 23rd for SDG 6: Clean Water and Sanitation. RMIT rose 18 places to be ranked 40th for SDG 9: Industry, Innovation and Infrastructure and was ranked 84th for SDG 12: Responsible Consumption and Production.

Our annual SDGs Impact Report provides a snapshot of RMIT's contributions to the SDGs and serves as an example of RMIT's SDG leadership and deep commitments to transparency and accountability. The report showcases examples of innovative work from our researchers, professional staff, and students, who are contributing to achieving the SDGs locally and globally. This report aims to increase awareness of the SDGs and influence the tertiary education sector and our key stakeholders to embrace the SDGs.

Sustainability Committee Chairperson's message

As the governing body responsible for sustainability at the University, the RMIT Sustainability Committee ensures RMIT delivers on our commitment to the objectives of the SDGs, through supporting and encouraging collaboration, innovation and engagement across the RMIT community.

At RMIT we understand the vital role that the education sector plays in achieving the Sustainable Development Goals and helping to create a more sustainable future. The SDGs provide a valuable common platform and hope for organisations, governments and the community to work together towards a brighter future. From our innovative research, teaching and learning, to our governance and operations, we've made a genuine commitment to tackling some of the biggest societal and environmental challenges.

We are also proud of the extensive national and global partnerships with industry sectors and inter-government agencies that are helping us to make a real and positive contribution towards achieving the United Nations global sustainable development agenda.

Dionne Higgins
Chief Operating Officer and Sustainability Committee Chair

End poverty in all its forms everywhere

SDG 1 – No Poverty

1. RMIT's Financial Inclusion Action Plan (FIAP)

In 2020, RMIT joined the Financial Inclusion Action Plan (FIAP), a program designed to improve financial inclusion and resilience amongst our students. Through our participation in the FIAP program (undertaken in collaboration with Good Shepherd Australia New Zealand and the FIAP Partnership group), RMIT aims to develop an additional whole-of-University framework to enhance our current support to students. This includes scholarships for living and study-related expenses and accommodation, emergency financial assistance, and financial capability building by providing information, tools and other resources. These initiatives will provide comprehensive support for students by addressing inequalities, including financial hardship. Through this approach, RMIT will be able to evaluate the impact of current policies and identify opportunities to enhance responses to address barriers to financial inclusion.

Inclusion is one of our **core values**. RMIT believes that education is a pathway to employment and economic security and should therefore be accessible to students from all backgrounds and circumstances. RMIT celebrates and welcomes diversity, and is committed to providing appropriate support to enable students to succeed in their studies and beyond.

The University's action plan will improve our understanding of the complexities associated with financial inclusion. It will allow RMIT to develop new and innovative responses to encourage meaningful economic participation and improve the economic status of our students. This will include ensuring our programs and services are accessible and appropriate, fostering a culture that improves financial inclusion and wellbeing.

2. Scholarships and Financial Support

The RMIT needs-based **scholarship program** helps eliminate the financial barriers that prevent students from pursuing tertiary studies. This allows students to devote more time to study, and therefore supports retention and completion rates. In 2020, RMIT awarded more than 2,200 scholarships to Vocational Education and Higher Education undergraduate students. These scholarships were valued collectively at over $6.8m, and 96 per cent of scholarships were provided to students from disadvantaged backgrounds.

3. Philanthropic Impact

RMIT recognises that tertiary education can transform the lives of students, and give them the opportunity to both access knowledge and pursue their passion. RMIT provides an extensive range of assistance and support for financially vulnerable students, including emergency accommodation, vouchers and grants.

Philanthropic funds are managed by RMIT's Philanthropic Fund Committee, and in 2020 a total of $2.8 million of philanthropic funds were disbursed across the University. In 2020, RMIT provided 611 philanthropic scholarships, 30 technology grants for vocational students, and 8,000 relief grants to students during the COVID-19 crisis. Additionally, 400 students received philanthropically funded emergency food and care packages.

The COVID-19 pandemic left many students disadvantaged financially, academically, and personally. The lockdowns in response to COVID-19 resulted in a sudden shift to remote learning, loss of employment, childcare demands, and physical confinement, which created challenges for student retention and success. In response to this unprecedented crisis, RMIT provided over 8,000 students with financial support from the University COVID-19 support package. The total value of the financial package was over $10.5 million. A further 19 students also received emergency accommodation at Walert House (for an average of 49 days) and two partner accommodation providers (for an average of 116 days).






39
RMIT Research Projects

5.9%
Publications National Contribution

–
Publications with International Collaboration

–
Publications with Developing Countries Collaboration

1.1
Citations per publication—RMIT (Global Average 1.4)

50.0%
Publication in Top Journals—RMIT (Global Average 47.1%)

4. Know your Money Mindset Credential

The **Know Your Money Mindset Credential** is currently available to all RMIT students. This credential helps students recognise how personal values and mindset can impact money habits and influence financial decisions. With this knowledge, students are empowered to select strategies and resources available to them. These can be tailored to their financial needs and assist in developing healthy financial habits. The credential also provides links to useful tools and resources, including where to get help if needed, and steps to developing healthy money management behaviours. This credential was developed by RMIT in partnership with the Australian Securities and Investments Commission (ASIC), with 44 RMIT students enrolled in this credential in 2020.

5. The impact of financial inclusion initiatives

Developing an inclusive financial system is an important policy intervention to reduce poverty, create opportunities for economic growth, and improve living standards. However, despite the growing and focused research interest on financial inclusion, empirical findings on its role in accelerating economic development are mixed and inconclusive. This has limited the development of a conclusive evidence base to inform policies and strategies to address financial exclusion.

RMIT academics Dr Ashenafi Biru and Professor Alemayehu Molla conducted **a systematic review** and meta-analysis to unravel the sources of inconsistencies in financial inclusion studies. Funded by the Korea Development Institute School of Public Policy and Management, they provided a comprehensive synthesis of the current literature on financial inclusion, analysing the link between financial inclusion, various measures of poverty and income inequality. Using 67 empirical studies, Dr Biru and Professor Molla found that inconsistent measurement of financial inclusion and outcome indicators has resulted in uncertainty about the most effective forms of financial systems for yielding better livelihood changes. They identified that work that develops well-defined financial inclusion intervention and outcome indicators, and incorporates advances in digital finance, will help remove barriers from both the supply and demand sides of financial inclusion.

6. Financial inclusion and poverty alleviation

Associate Professor Sefa Awaworyi Churchill from the School of Economics, Finance and Marketing at RMIT, in collaboration with Professor Vijaya Bhaskar Marisetty from the University of Hyderabad, India, recently conducted **unique social research** to provide valuable insight into poverty alleviation. In their research, over 45,000 Indian households were surveyed to investigate the role of financial inclusion programs in reducing poverty. Financial inclusion programs are those which extend access to financial services such as banking, loans and finance to all members of society, including the poorest. Many people take access to financial services for granted, but being able to have a bank account, and receive loans and credit play an important part of day-to-day life. By distributing a survey so broadly, the researchers could collect and analyse meaningful and complete data. They found that access to financial services can increase resilience to financial shocks, and therefore facilitates opportunities to move out of poverty. These important findings can help inform financial inclusion policy in India and other developing nations.

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

SDG 2 – Zero Hunger

1. Sustainable Retail – Food waste on campus

RMIT continues to address food waste on campus. Through implementing the **Sustainable Retail Framework**, the University encourages retailers to review portion sizes and implement retailer-specific strategies to minimise food waste. RMIT also supports retailers to keep food waste out of landfill by participating in the University's food and organics waste collection service and encourages retailers to partner with local food banks to donate excess food.

2. Free Meal Program

The COVID-19 pandemic and resulting economic shock had a large impact on the RMIT student body, many of whom found themselves facing financial insecurity. In response to this unprecedented crisis, RMIT provided food support to students facing food insecurity. 184 food vouchers and 903 food delivery funds (with a value of $198,000) were provided to students in need, and over 1000 students received individual wellbeing professional support and advice. The RMIT University Student Union (RUSU) also helped to ease food insecurity amongst the student population and to promote healthy food choices. In 2020, RUSU provided free deliveries of healthy meals and snack packs to students in student accommodation and gave out over 30,000 free meals to students across all RMIT campuses.

3. Summer fruit project

In October 2020, the Australian Government Food Security Cooperative Research Centre launched the **Sensors for Summer fruit Project** in cooperation with RMIT University, Agriculture Victoria, the industry group Summerfruit Australia and the technology firm Green Atlas. The Sensors for Summerfruit Project seeks to develop sensors that can measure the sweetness, ripeness, size and prevalence of disease and pests in summer stone fruits before harvest has even begun.

RMIT researchers are investigating the use of Bitastic LiDAR sensors (operated on ground level and also by drones) to determine the health of fruit in whole orchards through measuring indicators of photosynthesis and fruit quality.

Sensors like Bitastic LiDAR will help prevent food waste by optimising harvest times based on consumer preference. This technological innovation will also make the Australian stone fruit crop more efficient, sustainable, and profitable. Development of harvest technology such as these sensors can help farmers to pinpoint ideal harvest times and plays an important role in adapting the agricultural sector to a warmer, more unpredictable climate, where traditional harvest dates are rapidly shifting.

4. Biomarkers in cheese manufacturing

A team of researchers led by RMIT Dr Roya Afshari has developed **a method to detect biomarkers** (unique markers, almost like fingerprints) in cheese manufacturing. Biochemical changes that occur during the ripening stage of cheese production determine the quality and taste of the cheese. Cheese-making is currently a complex and expensive process, as a batch of cheese can be ripening for months or years before a problem is identified.

The new research into biomarkers allows new batches of cheese to be analysed and compared to successful past batches only 30 days into the ageing process. This process can also help automate the process of grading and ageing cheese. Data on the chemical profile of a high-quality batch can be compared with the ripening cheese. This data assessment can also be combined with the traditional taste-based assessment to ensure a more objective quality assessment process.






76
RMIT Research Projects

2.2%
Publications National Contribution

60.7%
Publications with International Collaboration

60.7%
Publications with Developing Countries Collaboration

1.5
Citations per publication—RMIT (Global Average 2.0)

63.6%
Publication in Top Journals—RMIT (Global Average 52.9%)

The bioanalysis method can be expanded to adapt to almost all types of food and beverage production, making it a useful tool in the fight against counterfeit food and drinks, including the illicit trade of counterfeit wines, valued at millions of dollars. Through bioanalysis, wines can be analysed to determine their ingredients and origin.

The innovative bioanalysis method also has the potential to make food and drink production more effective and sustainable by increasing the capacity and accuracy of production and reducing waste.

5. Food security in Australian cities

Professor Michael Buxton and Associate Professor Andrew Butt from RMIT's School of Global, Urban and Social Studies co-authored a new book, **The Future of the Fringe: The Crisis in Peri-Urban Planning**. This book focuses on food systems, rather than production techniques, and reveals how unmitigated urban expansion is a hidden threat to food security in Australian cities.

The Future of the Fringe highlights the importance of the peri-urban fringe (land within 150km of city edges) in both food production and food security. Land surrounding cities is often highly productive and yields valuable crops including vegetables, poultry, berry fruits and eggs. Its proximity to major population centres also makes transporting food produced on the urban fringe easier and more sustainable than imports or rural-based production.

In Australia, peri-urban ecosystems such as the Cumberland Plains near Sydney and the Western Grasslands near Melbourne also support high concentrations of threatened native biodiversity that is vital for the structure and function of already degraded ecosystems. *The Future of the Fringe* discusses these points as they relate to food security, and suggests methods of protecting the urban fringe through planning controls to limit development in the peri-urban fringe.

6. Planning for the 21st Century Municipal Markets in Victoria

The Planning for the 21st Century Municipal Markets in Victoria project is a partnership between RMIT University's Centre for Urban Research and SGS Economics and Planning. This project draws on local and international expertise to develop and disseminate new models and planning guidelines for 21st-century municipal markets in Victoria. It aims to provide an evidence base, design principles, and technical guidance required to support municipal markets as part of the planning process for retail hierarchies and food distribution systems in Victoria. This project defines the concept of 'municipal markets' and their current and potential role in modern retail networks and sustainable food systems, and their role as key elements of liveable communities.

The project is based on extensive local and international case studies, with an emphasis on principles applicable in the Australian planning and retail context. The research also involves analysis of retail spending and turnover densities to define the viable role for markets across retail hierarchies. The project will produce a principles and guidelines 'manual' pitched at practitioners and advisers in local government. The research content will also be available to publications pitched at a broader readership, to help build the constituency for municipal markets. The research will contribute to filling a significant knowledge gap in current academic literature on planning, managing, and evaluating local community infrastructure.

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

SDG 3 – Good Health and Wellbeing

1. Staff and student wellbeing

RMIT is **committed** to providing a safe and healthy place for students and staff to work and learn. RMIT's actions are guided by the RMIT Health Safety and Wellbeing (HSW) Strategy, University's values, and the deep sense of care fostered in the RMIT community. The RMIT HSW Strategy is supported by policies, strategies, processes, guidance materials, and proactive programs.

In 2020, the rapidly evolving COVID-19 pandemic required a significant health, safety and wellbeing response. The Health Safety and Wellbeing Team worked across the University, the higher education sector as a whole, and with external stakeholders to provide a rapid response that focused on addressing both the physical and psychosocial impacts of COVID-19 for the RMIT community. For example, in 2020 RMIT delivered the *Seeds for Growth* seven-part resilience series to 1,484 staff, and *RMIT Assisting Students in Distress* training for 225 staff members. RMIT also launched the *Five Ways to Wellbeing* mental health promotion model and integrated tools for all students and staff.

2. Student counselling service

RMIT **provides professional counselling** on each campus for students to receive psychological assistance relating to personal and study issues or mental health and wellbeing concerns. The counselling service is free for all currently enrolled RMIT students, including those on an approved leave of absence. In 2020, RMIT supported over 2,730 students through more than 10,200 appointments at the counselling service.

The service offers one-on-one private conversations with counsellors. All counsellors are registered psychologists, provisional psychologists, or social workers, and are subject to either the Psychology Board of Australia's Code of Ethics and the *Health Practitioner Regulation National Law (Victoria) Act 2009*, or the Australian Association of Social Workers' Code of Ethics.

3. Medical Hub

RMIT also hosts the '**Medical Hub @ RMIT**', a clinic that offers free consultations for RMIT students and staff. Medical Hub @ RMIT offers a holistic approach to health in a safe environment for people of all backgrounds, cultures, beliefs, abilities and sexualities. In 2020, the service continued to offer support to the RMIT Community in ways that were sensitive to individual and community needs. The Medical Hub features innovative processes and a state-of-the-art facility and provides a safe, inclusive and welcoming environment that enables confidential, sensitive, private, and emotionally connected care.

4. Bacteria shredding tech to fight drug-resistant superbugs

In 2020, researchers from RMIT used liquid metals to develop new bacteria-destroying technology, providing a potential solution to the deadly threat posed by antibiotic-resistant bacteria. The technology trialled at RMIT uses nano-sized particles of magnetic liquid metal to shred bacteria and bacterial biofilm – the protective "house" that bacteria thrive in – without harming other cells.

Published in ACS Nano, the research offers a ground-breaking new direction in the search for better bacteria-fighting technologies. Antibiotic resistance is a major global health threat, causing at least 700,000 deaths a year. Without action, the death toll could rise to ten million people a year by 2050, overtaking cancer as a cause of death. The biggest issues are the spread of dangerous, drug-resistant superbugs, and the growth of bacterial biofilm infections, which can no longer be treated with existing antibiotics. The RMIT team behind the technology is the only group in the world investigating the antibacterial potential of magnetic liquid metal nanoparticles.

The team includes PhD researcher Sheeana Gangadoo, Dr James Chapman, Dr Aaron Elbourne, and Dr Vi Khanh Truong. Together, they plan to expand the technology beyond antibacterial treatment and explore how it could be used to treat fungal infections, break through cholesterol plaques, battle heart problems, and stop tumours by being injected into cancer cells.

157
RMIT Research Projects

1.3%
Publications National Contribution

50.8%
Publications with International Collaboration

77.2%
Publications with Developing Countries Collaboration

3.4
Citations per publication—RMIT (Global Average 3.1)

76.0%
Publication in Top Journals—RMIT (Global Average 55.6%)

5. Test measures immune response to improve ovarian cancer diagnosis

Researchers from RMIT have developed a simple **blood test that measures the body's own immune response to improve the diagnosis of ovarian cancer**. Ovarian cancer is one of the most common gynaecologic cancers, with the highest mortality rate of any. About 300,000 new cases are diagnosed globally each year, with an estimated 60% of women dying within five years of diagnosis. This new study found that testing for a specific immune biomarker allows clinicians to identify whether growths on the ovaries are cancerous or not, without the need for tests like MRI scans or ultrasounds.

The clinical trial was conducted in two hospitals in Melbourne, with the results published in the academic journal *Scientific Reports*. Senior Author and Chief Investigator, Professor Magdalena Plebanski, said the test could be an important diagnostic tool for assessing suspicious ovarian growths before operations.

The new test means patients with benign cysts identified through imaging could be spared unnecessary surgeries. The study used an immune marker for inflammation (IL-6) together with cancer markers to detect epithelial ovarian cancer in blood. Results were validated across two separate human trial cohorts.

6. A new study reveals why flu can be devastating for pregnant women

New research, led by RMIT in collaboration with researchers and clinicians from across Ireland and Australia, helps **explain why flu can lead to life-threatening complications during pregnancy**, suggesting the virus does not stay in the lungs but spreads throughout the mother's body. The pre-clinical study has overturned current scientific thinking surrounding the reasons why flu infections affect pregnant women and their babies so severely.

The findings could also help researchers working to understand the fundamental biology of how COVID-19, another respiratory disease, spreads from the lungs into the body. Research in animal models showed that during pregnancy flu spreads from the lungs through the blood vessels into the circulatory system, triggering a damaging hyperactive immune response. Lead author Dr Stella Liong said the research suggests the vascular system is at the heart of potentially devastating complications caused by influenza during pregnancy. She also stated that conventional thinking blamed the suppressed immune system that occurs in pregnancy, but the research found the opposite effect – flu infection leads to a drastically heightened immune response.

7. Malaria discovery could expedite antiviral treatment for COVID-19

New research into malaria suggests targeting enzymes from the human host, rather than from the pathogen itself, could offer effective treatment for a range of infectious diseases, including COVID-19. The study, conducted by an international team and led by RMIT University's Professor Christian Doerig, outlines a strategy that could save years of research and millions of dollars in drug development by repurposing existing treatments designed for other diseases such as cancer.

The approach has received government funding for its potential application in the fight against COVID-19. The study, published in the academic journal *Nature Communications*, demonstrated that parasites which cause malaria are heavily dependent on enzymes in red blood cells, where they hide and proliferate. It also revealed that drugs developed for cancer, and which inactivate these human enzymes (known as protein kinases) are highly effective in killing parasites and represent an alternative to drugs that target the parasite itself. This approach has the potential to considerably reduce the cost and accelerate the deployment of new and urgently needed antimalarials. As well as enabling the repurposing of drugs, the approach is likely to reduce the emergence of drug-resistant malaria. With an enzyme-based approach, the pathogen cannot escape by simply mutating the target of the drug, as is the case for most currently available antimalarials.

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

SDG 4 – Quality Education

1. Work-Integrated

Work-Integrated Learning (WIL) connects the classroom to the workplace and is an integral part of RMIT's commitment to providing work-relevant, industry-engaged education. As with all areas of learning and teaching, 2020 created numerous challenges for our students, staff and industry partners involved in WIL. Pivoting from face-to-face to fully online WIL was a difficult process, and many students could not complete their course requirements and required flexibility with timing and approaches to WIL. Technology was an issue for many students and industry partners. However, for some students, the move to online WIL provided excellent opportunities for engagement with industry and community partners as it reduced the need for travel and other access issues.

In 2020, RMIT worked with 2,152 unique industry partners, and 15,168 WIL activities were completed. This consisted of 7,052 placements, 7,984 projects, and 132 WIL-in-Simulated workplace environment activities.

2. Digital Campus

A commitment to sustainability is part of the fabric of our digital learning and teaching environment. In 2020, sustainability-focused outcomes were practically delivered through two broad streams of work:

Stream 1: Optimising the digital learning environment to robustly handle unprecedented usage.
As campus access for learning and teaching activities was extensively restricted for much of 2020, learners and teachers needed support to continue their activities with as little disruption as possible. RMIT's Education Portfolio worked extensively with partners (particularly Information Technology Services and college learning and teaching teams) to appropriately adapt to the digital learning environment.

Stream 2: Shifting a wide variety of learning and teaching activities online.
From a sustainability perspective, increased usage of the digital learning environment is particularly promising as it offers future opportunities for students to make choices in how and when they learn. During 2020, RMIT was forced to shift as much learning and teaching activity as was possible online when campuses were closed. The quick roll-out of remote learning means that students now have more flexible access to course learning materials when they need them. There is now far less expectation on students to travel to campus for activities such as lectures which are largely based around the transmission of information. Instead, there are on average over 6000 individual virtual classroom sessions each week, with over 100,000 average total attendees.

3. Global Learning Festival

The inaugural Global Learning Festival (GLF) ran from 1-4 September 2020 and was co-led by Wyndham City Council and Melton City Council. The festival included an important partnership with the Australian Learning Communities Network (ALCN) and RMIT University. This ambitious project had the goal of creating unity between learning cities and communities across the globe, while supporting the Sustainable Development Goals around Lifelong Learning (SDG4: Quality Education), Strong Institutions (SDG16: Peace, Justice and Strong Institutions) and Partnerships for Change (SDG17: Partnerships for the Goals). As a part of the Global Learning Festival, the Australian Learning Communities Network and Wyndham City Council formally partnered to host an RMIT student from the Master of International Development to research and evaluate the festival. The student selected for this placement, Hellen Kibowen, shared many invaluable insights from her own community in Kenya and her previous studies and experiences in anthropology.

Additionally, post-festival, RMIT led a qualitative evaluation session with 20 key global project partners using tools such as the *Most Significant Change Technique* and the *Collective Impact Assessment Tool* to measure the impact of this innovative partnership. **The final GLF report** was circulated to various community partners, including the Place and Social Capital and Learning (PASCAL) International Observatory, and the United Nation Educational, Scientific and Cultural Organisation (UNESCO) Institute for Lifelong Learning.

4. Emergent Partnering and SDG 4 as Transformation

Training of Master Trainers is a two-year project that aims to improve teaching in the Non-formal Education System in the Lao People's Democratic Republic (Lao PDR).

The project was developed to train adult educators who can combine methodical expertise with an understanding of the concept of Andragogy and Lifelong Learning.

The training plan focused on practice rather than theory, specifically tailored for the Lao culture and local learning habits.

Additional practical exercises such as coaching and mentoring on-site and an elective Module on Gender Mainstreaming were integrated into the basic guidelines of **Curriculum globALE** (Adult Learning and Education).

95
RMIT Research Projects

5.1%
Publications National Contribution

33.3%
Publications with International Collaboration

22.2%
Publications with Developing Countries Collaboration

1.0
Citations per publication—RMIT (Global Average 1.1)

40.0%
Publication in Top Journals—RMIT (Global Average 42.3%)

Aside from developing 35 Master Trainers in youth and adult education across various organisations in Lao PDR, partnerships were also developed to assist these Master Trainers to apply and continue developing their skills. These partnerships were both institutional and thematic, highlighting the ways in which SDG 4 (Quality Education) could be met and how adult teaching and learning could also transform work towards other SDGs.

The Training of Master Trainers project was an important case study that has informed the wider learning in the EU Jean Monnet Network on the Role of the European Union in implementing the SDGs in the Asia Pacific. While starting as a project aiming to contribute to professionally developing non-formal and adult education staff in Lao PDR, it also highlighted the value of cooperation and partnerships in achieving SDG 4.

The project was developed in cooperation between the Institute for International Cooperation of the Deutscher Volkshochschul-Verband e.V. (DVV International) and the Department of Non-Formal Education with the support of RMIT University, the Asia Pacific Association for Basic and Adult Education (ASPBAE), UNESCO Bangkok, and Australian Volunteers.

5. Youth Strategy Discussion Paper

In 2020, UNEVOC @ RMIT (the International Centre for Technical and Vocational Education and Training) produced a response to the Victorian Government's call for public submissions to the **Youth Strategy Discussion Paper**. Their response focused on four themes:

- Young people's health and wellbeing
- Young people, education and training
- Young people, the economy and livelihood
- Young people and the community

Several key recommendations backed by the research were made in the submission:

- Reforming Victorian policy to engage young people and incorporate the SDGs
- Addressing the climate anxieties and concerns of young people
- Incorporating First Nations' land and cultural rights
- Recognising the importance of early intervention and support services to assist young people with drug addiction.
- Providing safe housing for at-risk young people
- Increasing funding to the Child Protection Service (CPS)
- Adopting a deliberately gendered policy lens – recognising that policy traditionally geared towards young men may not be as appropriate for young women.

In line with SDG 4, UNEVOC @ RMIT recommended adopting alternative grading and ranking methods at a high school level. A decolonial approach to education to make school more accessible to First Nations students and supportive of wider reconciliation and truth-telling practices was also recommended. UNEVOC @ RMIT suggested that Victorian policy reflect the goals of SDG 8, including labour protections for gig workers, to address high youth unemployment and anxieties about precarious work and unemployment.

6. Students with disabilities face barriers to school education

An important cornerstone of inclusive education is creating education systems that are accessible to all students. Unfortunately, many students with disabilities are missing out on a quality education due to outdated ideas about managing children's behaviour in schools.

In 2020, Dr David Armstrong, Senior Lecturer at RMIT University, spoke at the Disability Royal Commission, at a special hearing entitled '**Barriers to accessing a safe, quality and inclusive school education and life course impacts**.'

Dr Armstrong argued that current 'manage-and-discipline' methods used in many Australian schools foster exclusion and disengagement of students with disabilities. He recommended that teachers be trained in a new approach based on positive reinforcement for dealing with students with disabilities who are perceived to be creating behavioural difficulties. Dr Armstrong finished his testimony detailing the disenfranchisement rooted in expulsion and suspension of students with disabilities and suggested a focus on the cause of bad behaviour (often influenced by social determinants), rather than punishment. His testimony will be incorporated into the Disability Royal Commission's report, which is due to be finalised in 2022.

Achieve gender equality and empower all women and girls

SDG 5 – Gender Equality

1. Employment outcomes

Led by the **Gender Equality Action Plan**, RMIT continued to identify and address barriers to women's inclusion and career progression. The University remains focused on delivering strategic, sustainable and meaningful change across the three priority areas: leadership and governance, employment conditions, and women's career advancement.

In 2019-2020, 58.3% of leadership promotions at RMIT were awarded to women, and 60.5% of all appointments were women. In 2020, 55.9% of RMIT's managers were female, and six out of 14 positions on the University Council were occupied by women.

2. Gender Equality and empowering women

RMIT has been awarded **Employer of Choice for Gender Equality citation** (awarded by the Workplace Gender Equality Agency) each year since 2018. The *Employer of Choice* citation highlights the extraordinary efforts undertaken across the University to drive positive change for gender equality. In 2020, RMIT continued to work hard to put its commitment to gender equality into practice, with a focus on attracting, supporting and progressing women.

In 2020, RMIT achieved Bronze status (highest available) in the Athena SWAN program for Women in STEM (Science, Technology, Engineering and Mathematics), and began implementing a five-year action plan across the University's eight STEMM (Science, Technology, Engineering, Mathematics and Medicine) schools. The action plans aim to build a more inclusive, diverse and supportive environment for female students and staff at RMIT.

Athena SWAN has an international reputation for creating a gender-inclusive workplace, with accredited institutions demonstrating a competitive edge in attracting the best scientists and engineers. Athena Scientific Women's Academic Network (SWAN) Charter is the most comprehensive and practical scheme to improve academics' careers by addressing gender inequity. Women in Science, Technology, Engineering, Mathematics and Medicine employed in organisations participating in the Athena SWAN Charter experience greater career satisfaction and fairness in the workload allocation, and increased opportunities for training and development. As the University works towards Silver accreditation, the action plan will focus on seven key areas, from *Leading Local Action* and *Building the Pipeline* to *Transforming Cultures* and *Engaging in Moments of Transition*.

3. Gender pay gap

RMIT is committed to addressing the gender pay equity gap. The **RMIT Employee Lifecycle Policy** addresses pay scale equity and demonstrates the University's commitment to measure and eliminate gender pay gaps. RMIT regularly measures gender pay equity and meets the requirements of the Australian Workplace Gender Equality Act of 2012.

A "*Pay Equity Update Report*" is also prepared and presented annually to key internal and external stakeholders. This report measures and tracks pay scale gender equity, establishes action plans to address improvement opportunities and provides results of the pay gap analysis. RMIT also reports on the measurement, analysis and planned actions to promote pay scale gender equity externally to the Workplace Gender Equality Agency, and internally to University leaders and RMIT Council each year.

4. Female career progression

In Australia, one of the key places where women face discrimination is the workplace. For many years, women across the world have been told that the solution to this problem is to simply "lean in" by embodying the characteristics stereotypically associated with men in the workforce: confidence and ambition. However, Dr Leonora Risse, an economics lecturer at RMIT University, **has found** that being more confident and ambitious does not provide a payoff for women. Dr Risse proposed that encouraging women to "lean in" in fact does more harm than good, as it inadvertently cements the idea that so-called "masculine" characteristics are more desirable in the workplace.

Dr Risse summarised this research in an article for *The Conversation*, which was shared on Facebook nearly 10,000 times, and covered by major media outlets including Forbes. This attention, in combination with her broader media commentary and established track record on gender equality research, led the Victorian Government Equal Workplace Advisory Committee to invite Dr Risse to write a series of reports on policy recommendations to support women's employment in the Victorian State Budget. This research is essential as it challenges our current thinking, which assigns blame to the individual rather than the broader social context.

47
RMIT Research Projects

4.5%
Publications National Contribution

16.7%
Publications with International Collaboration

6.7%
Publications with Developing Countries Collaboration

1.3
Citations per publication—RMIT (Global Average 1.5)

84.0%
Publication in Top Journals—RMIT (Global Average 56.7%)

5. Preventing sexism in advertising (SDG 5 or SDG16)

Dr Lauren Gurrieri, a Senior Lecturer at the School of Economics, Finance and Marketing (EFM), focuses her research on investigating how gendered portrayals in advertising both contribute to gender inequality and act as cultural drivers of violence against women.

While examining the current state of our media landscape, Dr Gurrieri also works to identify good practice which can prevent sexism in advertising. In 2020, Dr Gurrieri continued her work in addressing this deep-rooted inequality by contributing to research on **sexualised labour in digital culture**, sexual violence in the pornography market, and the performance of member states reports to the Global Alliance on Media and Gender (GAMAG).

Dr Gurrieri is a Reference Group Member for shEqual, an initiative led by Women's Health Victoria which receives funding from the Victorian State Government. This has allowed her to transform her research into policy reform across Victoria, including in the state-wide framework for championing gender equality in advertising, *'Seeing is Believing'*, which was produced in 2020. This led to a gender equity training program being created by shEqual for the advertising industry. Through shEqual, Dr Gurrieri's work was also used to inform revisions to the Code of Ethics for the Australian Association of National Advertisers, which is used to guide advertising and marketing industry self-regulation, and to develop leading gender transformative approaches to advertising education.

6. Women Transforming Justice

The **Women Transforming Justice (WTJ) Project**, a partnership between RMIT's Centre for Innovative Justice (CIJ) and the Victorian Legal Services Board, sought to find causes and solutions to the rising rates of incarceration of women in Victoria.

Commissioned by Fitzroy Legal Service Inc, the WTJ Project focused on preventing women's incarceration and recidivism through three mechanisms: the facilitation of a leadership group for women with lived experience in the justice system, the development of an integrated Court Support Program for women, and systemic reform. The CIJ found that the needs of incarcerated and recently released female prisoners were complex, and current social services are incapable of meeting them holistically.

This program was piloted for two years by the CIJ from 2019-2020. Ultimately, the CIJ found that the pilot programs were able to successfully meet the immediate social needs of the female participants. The Court Support Program resulted in better legal outcomes for women, while the leadership group provided participants with training and leadership opportunities, often leading to a sense of empowerment amongst participants. The component of the WTJ project that focused on systemic reform has also succeeded in engaging stakeholders with the issues faced by women in the justice system.

The report concluded that although several systemic factors which contribute to women's incarceration and poor justice outcomes are outside of the scope of change the WTJ Project can influence, the project was a success and should be expanded.

Ensure availability and sustainable management of water and sanitation for all

SDG 6 – Clean Water and Sanitation

1. Operational water use

RMIT's Sustainability Policy provides guidance and direction to minimise resource consumption through good design, **including actively promoting efficient water use** and maximising its reuse across the University. In 2020, RMIT consumed a total of 113,073 kilolitres of potable water in Australian higher education operations, a decrease of 38% from 2019 (182,426 kilolitres). This decrease was significantly influenced by the COVID-19 Pandemic and the move to remote learning.

The total volume of potable water is measured using water supply authority meters installed across all RMIT sites and provided to the University through regular invoicing. RMIT has a total capacity of 1,278 kilolitres in rainwater and stormwater tanks installed across our campuses, which provide water for toilet flushing and irrigation purposes. Additionally, RMIT has a significant stormwater catchment pond at the Bundoora Campus, providing a further 1,350 kilolitres of storage. RMIT sustainably extracts water from this pond for irrigation purposes throughout the campus, further reducing the requirements for potable water use. These initiatives provide RMIT with an estimated 12,000 kilolitres of water reuse every year.

RMIT Design Standards provides minimum standards for new buildings and refurbishments to minimise water use, through general design principles, water sensitive urban design initiatives, and specifying minimum water efficiency standards for fixtures and fittings. The University also applies water conscious planting through the selection of drought-tolerant planting in the urban environment.

The New Academic Street project features two rooftop terraces that have been extensively planted in drought-tolerant evergreen plants which require minimal water to maintain, reduce the Urban Heat Island Effect, and provide relaxing areas with exposure to nature. RMIT actively encourages conscious water usage through messaging to the community including promoting reusable water bottles and advising students and staff to report dripping and leaking taps and toilets. RMIT has 117 drinking fountains and an estimated 187 refill taps in kitchens and kitchenettes, providing students, staff and visitors with free drinking water.

2. Assessing the benefits of the Stream Frontage Management Programto improve river health in the Campaspe River

The Aquatic Environmental Stress (AQUEST) research group at **RMIT's School of Science was commissioned by Coliban Water for a five-year monitoring program** to assess the benefits of a program to improve the health of the Campaspe River.

The North Central Catchment Management Authority's (NCCMA) Stream Frontage Management Program (SFMP) along the Campaspe River aims to improve its ecological condition by improving riparian vegetation and stock exclusion.

This program aims to show the value of investing in the SFMP to reduce nutrient enrichment and faecal contamination in the Campaspe River and to improve its ecological health. AQUEST uses a 'multiple lines of evidence' approach to understand the benefits of the SFM Program. This includes surface water physico-chemistry, nutrient and faecal analysis, and aquatic macroinvertebrate survey, determining nutrient bioavailability, assessing water toxicity, and sediment and water chemistry.

Assessments to date show the Campaspe River to be generally of good quality and indicates signs of reducing nutrient inputs, particularly in the mid reaches. However, other reaches indicate multiple impacts from wastewater (treated discharges and untreated discharges such as septic leakage), agricultural and urban runoff, poor habitat condition and unrestricted stock access. The full benefits of the program are expected to be seen over time. Measurable improvements are seen at many sites, while at others, results are complicated by the surrounding residential, industrial and agricultural land-uses which create additional challenges for stream management.

85
RMIT Research Projects

3.8%
Publications National Contribution

54.2%
Publications with International Collaboration

66.7%
Publications with Developing Countries Collaboration

6.6
Citations per publication—RMIT (Global Average 3.4)

78.3%
Publication in Top Journals—RMIT (Global Average 65.6%)

3. Water Quality Monitoring Program Review

A Victorian water authority had a long-term monitoring program focused on pesticides in surface waters, which reflect agricultural and land use practice in the area. A multitude of new pesticides come onto the market each year, meaning that the program has become outdated. To ensure that the program remains effective at informing management decisions, a review and recommendations for new pesticide sampling was provided.

As part of this project, The **AQUEST research group** at the RMIT's School of Science completed a desktop review and carried out surface water, sediment and passive sampling. The desktop review identified pesticides likely to be used and transported to surface waters from agriculture and other land use in the catchment, while the field work tested new techniques and determined the presence/ absence of target pesticides, comparing grab sampling with passive sampling. Eighty-one pesticides were identified as potentially occurring, of which 72 were new to the program. Pesticides that were not detected in water and sediment grab samples were detected in passive samplers, therefore recommendations included adding passive sampling and extending the range of pesticides on the screening list to the program.

4. Hybrid photocatalytic nanomaterials for water purification

Less than one per cent of all the water on earth is fresh water, and the quality of this water is regularly compromised. Water pollution is a major global issue as industry, agriculture and municipalities have and in some cases continue to discharge waste into water supplies. While this waste can include solids and minerals that can be filtered or coagulated from the solution, infectious agents, toxic chemicals and other hazardous materials, many of them nonbiodegradable organic compounds, threaten water quality. The *Hybrid photocatalytic nanomaterials for water purification* project addresses these issues. This project is funded by the Australian Research Council (ARC) and a collaboration between RMIT's Professor Rachel Caruso, RMIT Enabling Capability Platform Director, Advanced Materials), Professor Srinivasan Madapusi, Professor Yasuhiro Tachibana and Dr Ken Chiang from RMIT's School of Engineering.

Advanced Oxidation Technologies are effective to degrade these organic compounds as they decompose the contaminants into less harmful compounds. Photocatalysis is viewed as the most advantageous of the Advanced Oxidation Technologies as it has low operational and installation costs. Using sunlight to initiate the reactions also makes the process environmentally friendly.

This project focuses on photocatalytic materials for water purification to address the significant problem. It has also focused on synthesising and testing novel photocatalytic nanomaterials to address the intrinsic shortfalls in many current photocatalytic materials. Potential outcomes will include the production of industrially relevant photocatalysts and building capability in Australia to decrease photocatalytic testing time and cost. This should provide significant benefits to industry and the environment, and have a positive on human health.

5. Litter Trackers

Ninety-five per cent of litter transported through stormwater drains into rivers, ultimately ends up on beaches in Port Phillip Bay. From cigarette butts to plastic bottles, most of what is dropped on our streets is washed into the stormwater system by rainfall, travels via our waterways to our bays and washes onto our beaches.

Our catchments receive stormwater from urban areas. This stormwater often contains litter carried from Melbourne's streets into the drainage system, which is transferred into local creeks and rivers. Litter items may be trapped in stream-side vegetation, collected by litter traps, or transported along the waterway eventually ending up in Port Phillip Bay. Litter reduces water quality and harms aquatic life through ingestion, choking and accumulation of pollutants.

As part of the **Litter Trackers project**, scientists from the RMIT School of Science are working with schools and community groups to launch GPS tracked bottles into Melbourne's waterways to demonstrate how and where litter travels once it enters our waterways. Education is an integral tool for achieving long-term change in community behaviours and reducing litter in waterways.

The Litter Trackers program is the first study of its kind in Victoria, with GPS-tracked litter being deployed at 20 sites within Port Phillip Bay catchments to demonstrate the life of litter once it leaves a person's hand and reaches our waterways. This project also provides educational tools that can be used in schools, councils and governments.

6. Pesticide Detectives

The **Pesticide Detectives project** is an extensive national citizen science project investigating the occurrence and concentrations of pesticides used in homes and gardens as well as agricultural and urban settings in Australia's waterways. Funded by the Department of Industry, Innovation and Science, *Pesticide Detectives* is a collaborative project enlisting the scientific expertise of RMIT's AQUEST research group and involving citizen science volunteers collecting sediment samples from waterways across Australia.

Australia's waterways have intrinsic ecological, economic and social value. Information on the quality of Australia's water resources is of critical interest to local, state and federal agencies as water quality is integrally linked to the long-term availability of clean water. Of primary concern is the ever-increasing use of chemicals in our everyday life, and the risks they pose to the health and beneficial uses of waterways.

The *Pesticide Detectives* program finished in 2020, with 48 groups and over 100 participants Australia wide, sampling at 240 sites. Pesticides were detected at 13 per cent of these waterway sites, which were surrounded by various types of land uses including residential, recreational, agricultural and industrial. The most commonly detected pesticide was the synthetic pyrethroid insecticide Bifenthrin, which appears to be an issue Australia-wide. Also, several legacy pesticides (those used historically) were detected and are still around after 30 years.

Ensure access to affordable, reliable, sustainable and modern energy

SDG 7 – Affordable and Clean Energy

1. The power of partnership

RMIT demonstrated sustainability leadership by leading the **Melbourne Renewable Energy Project 2 (MREP2)**. Building on the success of the first MREP 1 project, RMIT and six partners used their combined purchasing power to source wind energy produced in regional Victoria.

The group consisted of RMIT and six partners, who together are purchasing 110 GWh of renewable electricity per annum. This is equivalent to providing renewable energy to power more than 22,000 Australian households every year. It will reduce greenhouse gas pollution by 123,000 tonnes a year, which is comparable to taking nearly 28,000 cars off the road.

Following a rigorous procurement process in line with RMIT policy and probity procedures, the MREP2 deal was signed in June 2020 to source wind energy produced at the Yaloak South Wind Farm near Ballan. The MREP2 deal sees a further 22 RMIT buildings being powered by 100 per cent carbon neutral electricity from January 2021. This is RMIT's second large-scale renewable energy contract to date.

2. Energy use

In 2020, RMIT achieved an end-use energy intensity of 0.481 GJ/m^2, which represents a 39 per cent decrease in end-use energy intensity from the 2007 energy baseline. This result was significantly influenced by COVID-19 and the move to remote learning, as well as the previously completed large-scale energy efficiency program, renewable energy contracting, solar PV rollout and the recent focus on building optimisation.

RMIT continues to operate onsite co-generation and tri-generation plants at the City and Bundoora West campuses. RMIT has installed solar PV across the rooftops of the University building portfolio, maximising the use of on-site renewable energy generation wherever practical. Solar installation sites were selected with the assistance of RMIT Masters students from the School of Property, Construction and Project Management. During 2020, RMIT generated over 19GWh of electricity onsite. RMIT's existing renewable energy contract provided 5,000 MWh of carbon-neutral electricity in 2020. RMIT achieved a 62 per cent decrease in greenhouse gas emissions in 2020 from the 2007 emissions baseline.

3. Biosolids to make hydrogen

In 2020, researchers at RMIT patented technology that could help in driving renewable energy by upcycling the by-products of sewerage treatment. A **research project** lead by Associate Professor Kalpit Shah developed a technology which uses a material derived from biosolids (one by-product of sewerage treatment) to spark chemical reactions which produce hydrogen from biogas (another by-product). This technology allows for hydrogen production to take place on wastewater treatment sites, with all materials sourced internally.

The hydrogen industry is an exciting prospect for the international community, as when used as a fuel, hydrogen combines with oxygen to produce water as a waster product, rather than carbon dioxide. In countries such as Japan, hydrogen is already being used to fuel machines including cars, buses, and household heating systems. However, current hydrogen extraction techniques proposed for Australia come with large environmental and monetary costs. This exciting development allows for clean hydrogen production and maximum extraction of resources from waste products – a key part of the transition to a circular economy.

The technology, which includes a specialised reactor designed by RMIT, also captures carbon emissions from biogas and biosolids before it reaches the atmosphere. Instead of increasing the concentration of greenhouse gases in the atmosphere, this carbon can instead be utilised – for example as a fertiliser or as energy storage. The promotion of this new technology sparked a strong industry response in Australia and internationally, including multiple investment and partnership inquiries to work towards commercialisation.

82
RMIT Research Projects

5.6%
Publications National Contribution

61.8%
Publications with International Collaboration

69.4%
Publications with Developing Countries Collaboration

4.0
Citations per publication—RMIT (Global Average 3.1)

82.5%
Publication in Top Journals—RMIT (Global Average 62.9%)

4. Energy Hardship

In September 2020, RMIT in partnership with the University of Adelaide and The Australian Housing and Urban Research Institute (AHURI) contributed to a report titled '**Warm, cool and energy-affordable housing policy solutions for low-income renters**.' The report seeks to examine the issue of energy hardship with low-income renters., Energy hardship is experienced when people face financial insecurity surrounding energy prices, and this can often result in them being unable to afford to heat or cool their homes. During heat waves or cold winters, this can have particularly devastating psychological and physical health impacts.

In Australia, those who are socially disadvantaged and on low incomes are particularly vulnerable to energy hardship. The report found that vulnerable groups (such as those with little or no income, people with ongoing health conditions, and those facing other entrenched disadvantages) face especially dire energy hardship, and often live in poor-quality dwellings. The investigative panel also found that energy hardship is unique for renters, due to their lack of immediate control over improving the thermal efficiency of the dwellings where they live. Finally, the report stated that although one blanket set of governmental regulations of policy will solve this complex problem, a set of comprehensive measures, including changes to building codes, material assistance to vulnerable households, and investment in public housing are needed.

5. Solar chimney

Solar chimneys, which have been in existence for thousands of years, are a passive cooling system which use natural heat transfer to cool buildings. Hot air rises due to convection and cool air rushes to fill the gap, creating zero-energy cooling. Solar chimneys help warm dwellings in winter and cool them in summer, using natural energy and processes. Despite being used for millennia by ancient civilisations, the use of solar chimneys disappeared in modern Western architecture and design. However, this ancient technology is coming back into relevance as the modern world looks for renewable technologies. They are also incredibly cost-efficient, one solar chimney can halve energy costs.

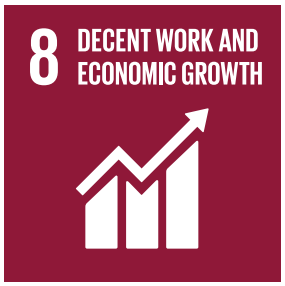
In 2020, RMIT partnered with the City of Kingston **to prototype an efficient and fire-safe solar chimney** and found that it extended the safe evacuation time from two to fourteen minutes. According to researcher Dr Long Shi, solar chimneys also suck smoke out of the building in the case of fire, reducing the risk of smoke inhalation. This research revealed that not only are solar chimneys a viable means of renewable heating and cooling, they also reduce the fire risks associated with modern homes.

This research has led to a new design standard and guide for optimised solar chimneys – and has created a buzz in architecture and design media. It also triggered an enquiry about the system from a European consultant, a book invitation from Springer Publishing on solar chimney design, and a nomination as a finalist in the 2020 Australian Engineering Excellence Awards.

6. Australian airports could generate enough solar energy to power a regional city

A new **RMIT study** has found Australia's government-owned airports could produce enough electricity to power 136,000 homes if they had large-scale rooftop solar systems installed. Researchers at RMIT's School of Science compared electricity generated by residential solar panels in a regional city to the potential green energy production of 21 leased federal airports. They found if large-scale solar systems were installed at Federal airports across Australia, they could generate enough electricity to supply 136,000 homes, while offsetting 152,000 tonnes of greenhouse gas emissions annually. This research shows the value of focusing renewable energy efforts on large centralised rooftop solar systems and highlights that airports are ideal for solar panels but are not currently being used to their full potential – many Australian airports are without adequate solar systems. Researchers also stressed the need for energy policies to include a plan for installing solar panels at airports.

Previous studies have deemed airports as great solar generators but the RMIT research goes further by precisely modelling the use of large-scale systems. The findings could also be extended to assess the solar potential of other sites, such as large commercial buildings, warehouses or distribution centres.



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

SDG 8 – Decent Work and Economic Growth

1. Careers and employability

RMIT's **Careers and Industry Experiences** (C&IE) team plays a significant role in preparing students to be ready for life and work, so they can positively contribute to, and shape the world. C&IE partners with students and industry to drive positive employment and innovation outcomes.

In 2020, 3,452 students received careers guidance and support through the **Job Shop** services which includes peer-to-peer appointments and one-on-one appointments. The Job Shop also provided 611 events including resume reviews, skill and job-ready workshops.

Moreover, 3,260 students were connected with an industry mentor or engaged in Group Mentoring Experiences to receive personalised guidance, coaching and support. Over 3,700 students registered in the Future Edge program, to build their employability/21st-century skills through a range of workshops and programs. Significantly fewer students were employed by the Jobs on Campus program in 2020, due to the impacts of COVID-19.

2. Sustainable supply chains

Guided by the **Sustainable Procurement Plan**, RMIT integrates sustainability considerations into its procurement practices including processes, responsibilities and governance. The University's approach to sustainable procurement is aligned with the international standard, ISO 20400:2017 Sustainable procurement – guidance (ISO 20400). The standard defines sustainable procurement as "procurement that has the most positive environmental, social and economic impacts possible over the entire life cycle".

The RMIT Corporate Social Responsibility (CSR) framework is applied in the procurement process to meet these principles and to ensure that suppliers meet the minimum requirements regarding their own ethical practices. The CSR framework includes a comprehensive screening process for all prospective suppliers and requires the RMIT Supplier Code of Conduct to be signed as part of the contract process.

All tenders have a weighting for sustainability, Indigenous and student engagement outcomes and sustainability outcomes are also driven through our contract management process with existing vendors.

3. Supporting start-ups and small business

One priority for **RMIT Activator** is to support change-makers and new ventures that address the SDGs and key issues including inequality and diversity. RMIT Activator provides opportunities for exposure to 'wicked problems worth solving', and through experiential programming, supports capability development and the connections needed to make a practical difference. Key projects in 2020 include the *'Investing in women in entrepreneurship'* program, a partnership with Global Sisters that addressed issues of gender inequality and diversity. This initiative delivered a female-focused program to seven entrepreneurs. Global Sisters brings an incredible track record in helping women to overcome barriers to start their own venture.

The "*Supporting circular innovation through start-ups*" initiative delivered a six-week pre-accelerator program in partnership with Circular Economy Victoria. The program supported eight start-ups *progress towards finding the right customers* and industry partners to successfully apply innovative solutions and new business models relevant to a circular economy.

4. Evaluation of Community Traineeships Pilot Project

The Victoria Council of Social Service (VCOSS)-led **Community Traineeships Pilot Program (CTPP)** is supporting up to 200 young job seekers in Dandenong, Hume and Bendigo, three areas of high youth unemployment, to undertake a traineeship in community services sector host and a certificated vocational education program.

Funded by the Jobs Victoria through the Victorian Department of Jobs, Precincts and Regions, the CTPP also provides specialist support from a youth support worker and flexible wrap-around support funding to trainees to address barriers to participation and maximise their chances of completing their programs and gaining employment.

The Future Social Service Institute (FSSI) at RMIT is leading an innovative evaluation which encompasses developmental evaluation designed to offer ongoing feedback on the CTPP project processes, a formal evaluation of student outcomes and an assessment of the efficacy and impact of a new model of traineeships for the community sector.

84
RMIT Research Projects

9.4%
Publications National Contribution

50.8%
Publications with International Collaboration

44.3%
Publications with Developing Countries Collaboration

2.5
Citations per publication—RMIT (Global Average 2.0)

75.5%
Publication in Top Journals—RMIT (Global Average 41.2%)

As part of this work, FSSI has also convened an Action Research Group (ARG) comprising program participants which will help to identify program strengths and opportunities for improvement and will involve them in co-designing project improvements for the future. Insights and learnings from the action research and evaluation will help to inform the design and delivery of future programs.

5. National Lived Experience Workforce Development Guidelines

The National Mental Health Commission engaged RMIT's Dr Louise Byrne and her research team including Dr Lena Wang, to assist with engagement processes and writing the *National Lived Experience (Peer) Workforce Development Guidelines*.

As an action from the Fifth National Mental Health and Suicide Prevention Plan, the guidelines have been identified as a key national reform initiative and will be the first national policy document for this emerging workforce. This is a much-anticipated document, particularly with a recent emphasis on the need for effective 'lived experience' workforce development in the Productivity Commission's Final Report and the Royal Commission into Victoria's Mental Health System Interim Report.

The guidelines provide a roadmap for organisational and sector leaders across diverse settings to establish governance, policies, and practices that support sustainable and effective growth of the lived experience workforce. The guidelines include high-level policy considerations, practical actions and additional resources, with specific sections and information for funders/policymakers, organisations/employers, and lived experience leaders/workers across all sectors. The guidelines are the latest project in a program of research that has spanned 11 years. Last year Louise, with Lena and other team members, led the **Queensland Lived Experience Workforce Development Framework**, which has received praise from the sector as a key initiative and has been utilised and referred to within Queensland, nationally and internationally.

Lived experience roles are increasingly being developed within the wider workforce, across industries including mining, construction and energy. This research project explores the broader potential for lived experience roles in creating a safer, more accepting work culture for people with mental health challenges within diverse work settings.

6. Reducing Modern Slavery

Researchers at RMIT are **investigating** whether labour regulators can enhance their strategies to reduce modern slavery by adapting advances in digital technologies.

The Business and Human Rights Centre in RMIT's College of Business and Law is compiling case studies of enforcement efforts in domestic meat processing and cleaning supply chains, and studies of practical applications of digital technologies. Forced and bonded labour, and poverty wages, have been uncovered in Australia's meat and cleaning industries and eight Government inquiries since 2016 have identified inadequate enforcement tools as an impediment to effective regulation.

A range of technologies could enhance detection, enforcement and coordination between labour regulators that are as yet unexplored either in Australia or overseas. These include radio frequency identification, remote sending, blockchain, crowdsourcing data collection and the use of artificial intelligence or machine learning. The toolbox of options designed in the project will enhance enforcement powers using feasible and readily useable applications that are within the budgets of regulators. The tools will also be of great interest to other jurisdictions.

Build resilient infrastructure, promote sustainable industrialisation and foster innovation

SDG 9 – Industry, Innovation and Infrastructure

1. RMIT Activator unlocks entrepreneurial potential to create a sustainable future

The RMIT Activator is the University's growth engine for entrepreneurship and innovation. RMIT Activator has developed its programs and partnerships to align with RMIT's strategic ambitions for sustainability and the SDGs. The RMIT Entrepreneurship Week 2020, was a collaboration between **RMIT Activator**, **RMIT Social Innovation Hub** and **RMIT Sustainability**. This partnership brought together expert insights and entrepreneurial mindsets to co-create new ideas and a more accessible and equitable future for all.

Over 250 people participated across the week's activities comprising an expert panel that gave insights into the sustainability challenge and a student hackathon culminating in a pitch event. The panel set the following questions for the students in the ideation challenge and innovation hackathon, funded by prominent RMIT alumni philanthropist Jacques Nasser:

- How might we close the gap of inequality for those impacted by the pandemic?
- How might we make the connectivity of our communities more sustainable?
- How might we design waste out of consumption and production?

2. Green Infrastructure and Nature-Based Solutions

The impact of nature-based solutions in addressing urban, societal and environmental challenges was in focus at a Green Infrastructure and Nature-Based Solutions Seminar hosted by RMIT Europe. Environmental sustainability, social cohesion, resilience in urban areas and climate change mitigation are some of the benefits associated with nature-based solutions in cities according to experts across RMIT and industry. The half-day **Green Infrastructure and Nature-Based Solution Seminar** brought together academics, designers, policy makers, industry leaders and practitioners to explore and discuss green infrastructure and nature-inspired solutions to address urban societal and environmental challenges.

Keynote speakers included Dr Cecily Maller, Vice-Chancellor Senior Research Fellow, Centre for Urban Research, RMIT University; Susana Saiz, Environmental and Sustainability Advisory – Associate Director, ARUP; Martí Franch, Founder Manager, Landscape Architect and Engineer in Agricultural Sciences, EMF Landscape Architects Nuria Noguer, Urban Planning Director, OUA Group; and Margarida Parés, Head of Biodiversity, Barcelona City Council.

3. Digital inclusion report warns of COVID impact

The annual Australian Digital Inclusion Index provides a snapshot of Australians' online participation using the measures of access, affordability and digital ability.

Published by Telstra, RMIT and Swinburne University, the 2020 report showed a high level of digital inequality persists in Australia with many groups continuing to miss out on the benefits of being online.

While there were improvements in some areas, the report also revealed the rate of improvement has slowed. The digital inequality highlighted in the report was made more pronounced by the social and economic impact of COVID-19 and showed steps will need to be taken to ensure that those facing financial hardship do not fall into the digital divide. Detailed in the report is the impact of COVID-19 on students in low-income family households, finding it has been highly disruptive.

Australia has just under four million primary and secondary school students with about 800,000 from households with a yearly income under $35,000. These households record an Index score more than ten points below the national average and 15.5 points lower than families with school-aged children in other income brackets.

They often lack access to technology and suitable devices, pay a larger proportion of their household income for digital services and have lower digital skills. The report also found people aged over 65 are one of the least digitally included groups in Australia. Many older Australians are not online at all, while those that are report lower levels of effective and affordable internet access and digital skills.

101
RMIT Research Projects

9.3%
Publications National Contribution

58.1%
Publications with International Collaboration

58.1%
Publications with Developing Countries Collaboration

4.1
Citations per publication—RMIT (Global Average 1.9)

63.0%
Publication in Top Journals—RMIT (Global Average 43.6%)

4. Researchers record the world's fastest internet speeds using a single optical chip

Researchers from RMIT, Monash and Swinburne universities have achieved **the world's fastest internet data speed** – enough to download 1000 High Definition movies in a split second – using a single optical chip. The ground-breaking results published in Nature Communications could fast-track Australia's telecommunications capacity and that of other countries also struggling with demand on internet infrastructure.

The research team led by Monash University's Dr Bill Corcoran, RMIT's Distinguished Professor Arnan Mitchell and Swinburne's Professor David Moss recorded a data speed of 44.2 Terabits per second (Tbps) from a single light source. These speeds were achieved by attaching their new device to existing fibre-optic technology, used across Australia's National Broadband Network (NBN). The future ambition of the project is to scale up the current transmitters from hundreds of gigabytes per second to tens of terabytes per second without increasing size, weight or cost. Long-term, the team hopes to create integrated photonic chips that could enable this sort of data rate to be achieved across existing optical fibre links with minimal cost.

Initially, these would be attractive for ultra-high-speed communications between data centres. Once the technology became sufficiently low cost and compact it could potentially be deployed for commercial use by the general public in cities across the world.

5. Transformation for a Sustainable Built Environment Global Career

The RMIT webinar **Transformation for a Sustainable Built Environment** looked at how digital technology and data is impacting what and how we design, build and operate in the built environment. The webinar featured speakers from RMIT and alumni working in the built environment in Europe, who shared their insights on how the next generation of sector leaders can implement sustainable building and design solutions.

Besides stimulating global economic recovery in response to COVID-19, government investment in construction and infrastructure also offers the built environment sector an opportunity to respond with sustainable building and design solutions. According to RMIT experts and alumni, now is not only the time for the sector to think about addressing climate change and energy challenges, but also the right moment to apply an inclusive human-centric approach.

COVID-19 has been a driver of change for more sustainable forms of transport in cities according to David Castro, Structural Engineer and Associate Director at Arup in Madrid, Spain. According to Castro, the pandemic catalysed rapid approaches to how we address urban mobility and showed that cities can drastically change without too much disruption. The discussion also looked at how governments around the world were investing in construction and infrastructure to stimulate the economy, with a big focus in Europe on green infrastructure and refurbishments to improve the efficiency of buildings.

6. Study finds adding copper strengthens 3D-printed titanium

RMIT researchers worked on a **collaborative project** to develop new titanium-copper alloys for 3D printing. The alloys could kickstart a new range of high-performance alloys for different applications, such as medical devices and aerospace. Current titanium alloys used in additive manufacturing often cool and bond together in column-shaped crystals during the 3D printing process, making them prone to cracking or distortion. But the new titanium alloy with copper appears to have solved this problem, printing with excellent properties and without any special process control or additional treatment.

Professor Mark Easton from RMIT University's School of Engineering noted a fully equiaxed grain structure, meaning the crystal grains had grown equally in all directions to form a strong bond, instead of in columns, which can lead to weak points liable to cracking. Alloys with this microstructure can withstand much higher forces and will be much less likely to have defects, such as cracking or distortion, during manufacture. The collaborative project involved leading researchers in the area of alloy composition and grain microstructure from RMIT, CSIRO, the University of Queensland and the Ohio State University.

Reduce inequality within and among countries

SDG 10 – Reduced Inequality

1. Diversity and Inclusion framework

Led by the values of inclusion, passion and courage, RMIT aims to create an environment where everyone can contribute, grow and succeed. Diversity and inclusion are celebrated and equal opportunity is an absolute. **The Diversity and Inclusion Framework**, and related Action Plans, are designed to build a diverse and inclusive community by:

- promoting diversity and inclusion through visible commitments and actions
- implementing leading practice in the equity and inclusiveness of policies, facilities, services, workplace culture and behaviour
- Improving access to education, employment and enterprise for diverse students
- Improving access to employment at the University for staff with a diverse range of personal circumstances and characteristics.

The Diversity and Inclusion Framework implementation is supported by a high-level committee reporting to the Vice-Chancellor's Executive, relevant policies, executive sponsors, and working parties comprising passionate and engaged RMIT staff and students.

Diverse members of the RMIT community shape the agenda through their contributions to events, communications, programs, and active participation in forums and online communication channels.

- 2,164 students enrolled in a degree or vocation program through SNAP Access Schemes, accounting for 62 per cent of all low-SES enrolments made through the Victorian Tertiary Admissions Centre.
- In 2020, RMIT awarded more than 2,200 scholarships to VE and undergraduate HE students, valued at over $6.8 million, with 96 per cent of scholarships provided to students from disadvantaged backgrounds.

2. Reconciliation

RMIT's dhumbali (commitment) to a just and meaningful relationship between Indigenous communities and the RMIT community is at the durrung (heart) of how we live our values.

RMIT's second Reconciliation Plan – Dhumbah Goorowa 2019-2020 focuses on how to embed reconciliation across RMIT's values, culture, processes and systems. Dhumbah Goorowa recognises that there is still much work to be done in support of First Nations' right to self-determination in education and in our community life.

All colleges, portfolios and RMIT entities outline their dhumbali to reconciliation and the specific outcomes and indicators on which their progress will be evaluated. Each college and portfolio has created a reconciliation committee called a Ngulu (voice), to develop, implement and monitor reconciliation activities, reporting to their executives and further embedding reconciliation into all aspects of RMIT's operations.

The RMIT Act legally endorses a commitment to use our expertise and resources to involve Aboriginal and Torres Strait Islander people of Australia in its teaching, learning, research and advancement of knowledge activities.

3. Accessibility

Ensuring RMIT is physically, technologically and culturally accessible for people with a disability remained a key area of focus in 2020. RMIT was proud to be recognised as the leading organisation for accessibility in the **Australian Network on Disability Access and Inclusion Index**. RMIT was also the highest-ranked organisation for 'Products and Services' for provisions for students with disability.

RMIT promotes inclusion for thousands of students with disability through individual education support plans, professional counsellors, mental wellbeing programs, mentoring and internships, and accessible teaching and learning materials. The Equitable Learning Services (ELS) team provided individual consultations to 3,000 students with a disability, long-term illness and/or mental health condition and primary carers of individuals with a disability in 2020. Through an Equitable Learning Plan (ELP), students can receive equitable adjustment arrangements, which can include adjustments to study and assessment, sign language interpreters and other support staff, accommodation scholarships, and assistive technologies.






128
RMIT Research Projects

5.7%
Publications National Contribution

51.6%
Publications with International Collaboration

32.3%
Publications with Developing Countries Collaboration

5.5
Citations per publication—RMIT (Global Average 1.6)

72.0%
Publication in Top Journals—RMIT (Global Average 52.9%)

4. Improving Digital Inclusion among older Australians

For many older Australians, using information and communication technologies (ICT) may be a daunting exercise. Going online is often perceived as a risky endeavour, and this perception can prevent these older adults from extracting the full benefit of life with technology such as being able to access government and health-related services, shop and transact online, engage in learning opportunities, share meaningful moments with loved ones, and access useful information. As a result, digital exclusion has become a significant driver of social and economic inequality. Improving the digital inclusion of these vulnerable Australians provides the backbone to reducing inequality by improving their wellbeing and their access to resources.

To help increase the digital inclusion of older Australians, the School of Economics, Finance and Marketing at RMIT has partnered with the University of the Third Age, and the City of Whittlesea to create the **Shaping Connections program**. In a project funded by the Australian Communications Consumer Action Network, the first stage of this project involved understanding and mapping the perceived risks Australians experience with ICT. During the second half of 2020, RMIT researchers conducted 22 interviews with Australians aged 65 and over. This stage of the research has detected five types (and 23 sub-types) of perceived risks that create hurdles for the adoption and use of ICT amongst older consumers. Mapping these risks was an important step in reducing digital exclusion.

The project will continue in 2021 with a survey to be sent to the 40,000 seniors, members of the U3A Network Victoria, to help quantify the mapped risks and co-design workshops used to provide seniors with strategies to better manage and overcome these perceived risks.

5. New initiative to support people with intellectual disabilities in the criminal justice system

RMIT's Centre for Innovative Justice (CIJ) has created **a new online resource** designed to help people with cognitive impairment and intellectual disabilities receive fairer treatment in Victoria's criminal justice system.

This critical new resource has been designed with input from people with disability and lived experience of the criminal justice system to help transform the way people with disability are treated in the court system. CIJ Associate Director, Research, Innovation and Reform Stan Winford said while people with a disability are over-represented in our criminal justice system, they are rarely recognised or responded to appropriately and on the whole are under-supported.

The primary focus of the Supporting Justice website is to help lawyers and court professionals learn how to recognise the signs of disability in the first instance, gain an understanding of the criminal justice system experience of people with a disability, and offer appropriate needs-based support that will ultimately lead to fairer outcomes.

The website provides practical resources for lawyers, judicial officers and court professionals to better respond to people with autism spectrum disorder, cognitive impairment, intellectual disability and dual disability. It also connects support workers, people with disability and their carers with resources to help with seeking legal advice, preparing for court and getting support while at court.

People with a cognitive impairment are severely over-represented in the criminal justice system with one study by Corrections Victoria, finding that 42 per cent of male prisoners and 33 per cent of female prisoners have an acquired brain injury. This compares to less than 3 per cent of the general population.

The website is part of the broader *Supporting Justice* program – a systems change project which works with people with lived experience, as well as key stakeholders. to improve the justice system's responses to mental health and disability.

6. Marginalised Young People's Transitions

A **research project** at RMIT (in cooperation with Charles Sturt University, and with funding from the Australian Research Council) is examining a unique perspective on the role that Arts-based Social Enterprises (ASEs) play in supporting the engagement of young people in the workforce and education.

Young people in Australia have borne the brunt of the fallout from the economic crisis caused by the COVID-19 Pandemic, and face a precarious employment market as a result. This is especially true of young people from disadvantaged backgrounds, who have been disproportionately impacted by the economic downturn. As ASEs play an important role in engaging young people in cultural and community activities, academics investigated their role in facilitating young people transitioning to work or study.

A policy brief was developed, highlighting their three main findings:

- ASEs supports and recognises young peoples' achievements while they transition to education or the workforce, and also improve their wellbeing.
- ASEs should receive more government funding to enable them to support disadvantaged young people (most ASEs in Australia rely on a blend of public funding and private donations, unlike in Europe, where funding is mostly public).
- ASEs help to broaden young people's skills, especially in creative industries and in social engagement.

This research offers a unique perspective on the role of non-government, community actors in helping to mitigate youth disadvantage. With the knowledge that funding ASEs provides great social and economic benefits, policymakers can adjust their funding priorities accordingly in line with SDG

Make cities inclusive, safe, resilient and sustainable

SDG 11 – Sustainable Cities and Communities

1. Support of arts, culture and heritage

RMIT contributes significantly to local arts, cultural activities and heritage. The RMIT Capitol Theatre, Kaleide Theatre and the RMIT Gallery, along with other exhibition and event spaces, provide a significant number of public programs, major public events and major exhibitions every year to our staff, students and the broad community.

RMIT's spaces are accessible to the public, and include open space, student study areas, libraries, galleries, historic buildings and cultural heritage locations. There are four library sites located in the City, Brunswick, and Bundoora campuses, providing free physical access to comprehensive collections of books, periodicals (print) and other course-related materials. RMIT also provides loan services to staff and students, and a fee-based library membership to individuals in the community. In 2020, RMIT libraries received over two million online visitors and readers viewed over 3.5 million eJournal articles. Through Open Educational Resources students saved $15,000 on textbooks during 2020.

RMIT is proud to provide cultural and personal support to Aboriginal and Torres Strait Islander students in their learning journey. The **Ngarara Willim Centre** at RMIT supports Aboriginal and Torres Strait Islander peoples to reach their potential with a range of study, living and cultural services. RMIT recognises and aspects the unique culture and contribution that Aboriginal and Torres Strait Islander people bring to our communities. All staff and students are offered a micro-credential that provides guidance on how to recognise and respect the living history and culture of Australian Aboriginal and Torres Strait Islander peoples. RMIT is committed to providing a socially inclusive environment that is welcoming for all, contributes to Indigenous Reconciliation, reflects RMIT's value of inclusion and protects and enhances Indigenous heritage.

2. Sustainable transport

RMIT campuses are located next to key public transport hubs in Melbourne and public transport is widely promoted and supported by the University. Local RMIT students are eligible for the local concession tickets under the Myki ticketing system and RMIT additionally subsidises public transport tickets for international students. Staff also have access to discounted public transport tickets through the RMIT Commuter Club.

Sustainable commuting is supported and promoted by RMIT through a range of other initiatives. RMIT's bike hubs, bike cages and bike parking areas offered 787 secure bike parks available to our students and staff. RMIT also installs bike hoops at key locations across all campuses, promotes free bike insurance schemes and bike repair workshops. RMIT also participates in national cycling campaigns such as 'Ride to Work Day'.

3. Sustainable buildings

As a founding member of the Green Building Council of Australia (GBCA), RMIT has a longstanding commitment to the Green Star rating tool and currently has eight buildings with a Green Star rating.

The University also takes significant elements of the Green Star rating tool and applies them to all projects under the RMIT Design Standards. This ensures that significant sustainability elements are embedded into projects of all scales at RMIT University.

RMIT's integrated approach for **sustainable buildings** aims to create sustainable and inclusive spaces that enhance the experience and wellbeing of staff, students and community and have a positive impact on the surrounding environment and society.

152
RMIT Research Projects

7.2%
Publications National Contribution

37.4%
Publications with International Collaboration

39.3%
Publications with Developing Countries Collaboration

3.1
Citations per publication—RMIT (Global Average 2.3)

58.6%
Publication in Top Journals—RMIT (Global Average 24.9%)

4. Green Solutions for City Planners Digital Tool

A European funded research project has released an online decision-making tool to identify suitable Nature-Based Solutions according to a city's specific environmental challenges. RMIT researchers have contributed to a new digital tool as part of the EU-funded **URBAN GreenUP project** to assist authorities and urban planners to identify the best Nature-Based Solutions (NBS) to tackle the environmental problems in their cities and retrieve feasible solutions based upon their specific needs.

The significant reduction in pollution levels as a result of COVID-19 lockdown measures is leading many European cities to reconsider how we navigate our urban spaces. Amid a resurgence and newfound appreciation of walking and cycling, city planners have an unprecedented opportunity to fast track green measures and infrastructure projects, which may usually take years to deliberate. URBAN GreenUP member Thami Croeser from RMIT's Centre for Urban Research is the main developer of the tool. According to Croeser, the new tool provides suggestions based on a particular city's capabilities and according to the planners' desired outcomes. The provision of cycle and pedestrian routes is one NBS being strongly considered by various cities around Europe as lockdown measures are eased.

5. The Future is Landscape

A new report on the **Future is Landscape** highlights the importance of our cities' living structure and the role that open space systems play in people's health, as well as the living systems of water, vegetation, birds, animals and insects.

The report published by RMIT's School of Architecture and Urban Design and RMIT Europe shares insights from industry leaders and international academics on the importance of integrating nature and landscape and how to tackle urban challenges through collaboration and participation, with a focus on people. Spearheaded by RMIT's Professor Martyn Hook, Dr Katrina Simon and Dr Marta Fernandez, the report showcases several urban projects in European cities that are focused on integrating nature with the landscape, improving citizens' quality of life and the overall sustainability of cities.

The report outlined a need to develop 15-minute cities, moving towards an integration of nature and culture, urban and natural. It also outlined that a city's infrastructure has to focus on returning relevance to people and nature rather than cars; the importance of measurement to drive change; and approaching landscape in a pandemic, so that planners can set up open spaces as a framework to regenerate the city and the impact on people in fragile networks.

6. Joining impact models of transport

The project '**Joining Impact models of transport with spatial measures of the Built Environment (JIBE)**', led by the RMIT Healthy Liveable Cities Group and Cambridge University, examines the links between the built environment, transport and other health-behaviour to develop computer models that can better inform urban and transport planning policy and practice in Australia and the UK.

This project brings together Australian and UK urban experts to virtually model and test the benefits of transport planning in creating healthier and sustainable cities across both countries. By testing and estimating the health impacts of scenarios in urban and transport planning interventions in different contexts, can city planners and public health practitioners and be informed about which scenarios have the greatest chance of promoting good health for future planning.

Funded by the UK Medical Research (UKRI) and the Australian National Health and Medical Research Council (NHMRC), the project brings together research linking the built environment, transport and other health behaviours to develop computer models that can better inform urban and transport planning policy and practice in Australia and the UK.

The project is led by Distinguished Professor Billie Giles-Corti and Dr Belen Zapata-Diomedi at RMIT University and Dr James Woodcock at the University of Cambridge and involves a multi-disciplinary team of leading researchers with complementary expertise across Australia (Monash University, University of Melbourne, University of Queensland) and England (Imperial College London, London School of Hygiene and Tropical Medicine, University of Leicester).

7. Australia's most liveable regional cities revealed

Researchers from RMIT's Centre for Urban Research *mapped the health and liveability across Australia's 21 largest cities*. Criteria included social infrastructure, access to public transport, access to supermarkets, distance from alcohol, public open space, local employment and housing affordability. The research revealed that Victoria is home to Australia's most liveable regional cities – Ballarat, Bendigo and Geelong.

With Australia's capital cities booming due to a growing population, lead researcher Dr Lucy Gunn from the **RMIT Centre for Urban Research**, said regional cities were often missing from the conversation because national liveability data has not been available. The maps highlighted that equitable access to key infrastructure such as public transport, healthy food and community services is better in the central, more established areas. This declines as you move to the edge of the city.

To maintain liveability in regional cities, Gunn suggests careful planning for population growth and recommends avoiding more urban growth on the fringe. Drawing on over eight years of research findings, the data for each of the 21 largest cities in Australia is available now via the recently launched **Australian Urban Observatory** led by Dr Melanie Davern and developed by the **RMIT Healthy Liveable Cities Group**.


STOP
5

Ensure sustainable consumption and production patterns

SDG 12 – Responsible Consumption and Production

1. Waste minimisation

The **RMIT Waste Management Plan** aims to prioritise avoidance and reuse activities before recycling, recovery of energy, and disposal. The operational waste profile is provided by RMIT's waste contractor and includes landfill, mixed-recycling, paper/cardboard and organic waste from all on-shore campuses.

In 2020, RMIT produced a total of 498 tonnes of waste and had a diversion rate of 23 per cent. This is a one per cent decrease from 2019. The landfill waste produced is equal to 7.5 kilos per student, which was significantly influenced by COVID-19 and the move to remote learning. RMIT also provides information to students and staff, including campus signage, focusing on waste minimisation and management of waste.

RMIT collects Construction and Demolition (C&D) waste data from all capital development projects. The University has been applying circular economy principles to capital projects to continue avoiding waste and strengthen reuse.

In 2020, RMIT had 18 active capital development projects, from which 499 tonnes of waste was produced and 90 per cent was diverted from landfill, with only 48kg of waste sent to landfill. This was achieved by putting circular economy principles into practice, such as prioritising the reuse and the upcycling of furniture before buying new items.

2. Concrete made with recycled aggregate

Concrete is made using sand, a substance ubiquitous across the modern world and unrivalled in its strength and reliability as a building material. However, the global thirst for concrete has many negative social and environmental impacts due to the necessity to mine sand.

There are now concerns that the world is running out of the type of sand that can be used to manufacture concrete and an alternative more sustainable option is needed. Concrete comprises cement, water and aggregate, which is usually sand or gravel depending on the type of concrete needed. However, the widespread use of alternative aggregates made of recycled materials has been hindered by the fact they do not perform as strongly as traditional sand and gravel.

PhD researchers Syed Kazmi and Muhammad Munir, led by Professor Yufei Wu, have developed a **new Rubberized Concrete Processing Technology (RCP-Tech)**. The RCP-Tech acts as a new method to cast concrete made with recycled aggregate (generally from industrial waste and recycled tyres), rather than mined sand. The method involves casting the concrete using these sustainable aggregates and then compressing the mixture to its lowest minimum volume in a pressurised mould. The resulting concrete is 35 per cent stronger than traditional concrete.

The RCP-Tech Team is now seeking to co-partner with the precast concrete industry to manufacture prototypes of common concrete products such as slabs, roadside barriers, beams and blocks. The team presented their project at the 2020 City of Melbourne Open Innovation Competition, where they were finalists. They were also awarded the RMIT LaunchHUB Prize for their innovative work.

3. Making biodiesel from dirty old cooking oil

Researchers have developed a powerful, low-cost **method for recycling used cooking oil and agricultural waste into biodiesel**, and turning food scraps and plastic rubbish into high-value products. The method harnesses a new type of ultra-efficient catalyst that can make low-carbon biodiesel and other valuable complex molecules out of diverse, impure raw materials.

Waste cooking oil currently has to go through an energy-intensive cleaning process to be used in biodiesel, because commercial production methods can only handle pure feedstocks with 1-2% contaminants. The new catalyst is so tough it can make biodiesel from low-grade ingredients, known as feedstock, containing up to 50% contaminants.

It is so efficient it could double the productivity of manufacturing processes for transforming rubbish like food scraps, microplastics and old tyres into high-value chemical precursors used to make anything from medicines and fertilisers to biodegradable packaging.

149
RMIT Research Projects

7.5%
Publications National Contribution

50.0%
Publications with International Collaboration

47.1%
Publications with Developing Countries Collaboration

4.6
Citations per publication—RMIT (Global Average 3.0)

73.4%
Publication in Top Journals—RMIT (Global Average 53.2%)

4. Mapping circular built environment indicators

The **Sustainable Buildings and Construction** SBC programme used the sustainable development goals (SDGs) and associated indicators to map the circular built environment. The goals, targets and indicators set in the 2030 Agenda for Sustainable Development are a good starting point for achieving circularity in the built environment. While some of the indicators are specific to the year 2020, they provide a good measure for monitoring and reporting progress. As the SDGs also support other UN-related programmes such as the National Determined Contributions (NDCs), alignment where possible supports efforts towards achieving social, economic and environmental sustainability.

A survey was deployed in 2020 to understand the building and construction sector response to a circular built environment. The survey was sent globally to academic and industry experts and professional bodies involved in building and construction. Based on the survey of 100 responses from all regions, 12 SDGs out of 17 were selected by the respondents.

5. Making stronger concrete with 'sewage enhanced' steel slag

Researchers have shown how a by-product of steel making can be used to both treat wastewater and make stronger concrete, in a zero-waste approach to help advance the circular economy. Produced during the separation of molten steel from impurities, steel slag is often used as a substitute aggregate material for making concrete. Steel slag can also be used to absorb contaminants like phosphate, magnesium, iron, calcium, silica and aluminium in the wastewater treatment process, but loses its effectiveness over time.

Engineering researchers at RMIT University examined whether slag that had been used to treat wastewater could then be recycled as an aggregate material for concrete. The concrete made with post-treatment steel slag was about 17 per cent stronger than concrete made with conventional aggregates, and 8 per cent stronger than raw steel slag. Water engineer Dr Biplob Pramanik said the study was the first to investigate potential applications for "sewage-enhanced" slag in construction material.

The global steel making industry produces over 130 million tonnes of steel slag every year. A lot of this by-product already goes into concrete, but Pramanik says we're missing the opportunity to wring out the full benefits of this material. While there are technical challenges to overcome, it is hoped this research moves us one step closer to the ultimate goal of an integrated, no-waste approach to all our raw materials and by-products.

6. How to mix old tyres and building rubble to make sustainable roads

RMIT's new research project has shown **how a blend of old tyres and building rubble could be used as a sustainable road-making material**, in a zero-waste solution to boost recycling and support the circular economy. Construction, renovation and demolition account for about half the waste produced annually worldwide, while around one billion scrap tyres are generated globally each year. The new material, developed by researchers at RMIT University, is the first to combine recycled rubble and rubber in a mix that is precisely optimised to meet road engineering safety standards.

Designed to be used for base layers, the recycled blend is more flexible than standard materials, making roads less prone to cracking. Lead researcher Dr Mohammad Boroujeni said the rubble-rubber mix could deliver both environmental and engineering benefits. Traditional road bases are made of unsustainable virgin materials – quarried rock and natural sand.

However, the new blended material is a 100% recycled alternative that offers a new way to reuse tyre and building waste, while performing strongly on key criteria like flexibility, strength and permanent deformation.

In Australia, only 16% of scrap tyres are domestically recycled. About 3.15 million tonnes of processed building rubble – known as recycled concrete aggregate (RCA) – is added to stockpiles each year rather than being reused. In 2019, federal and state governments agreed to ban the export of certain waste materials, to build Australia's capacity to generate high value recycled commodities and associated demand. As part of the agreement, whole used tyres will be banned from export by December 2021.

Take urgent action to combat climate change and its impacts

SDG 13 – Climate Action

1. Energy and emissions

RMIT is committed to becoming carbon neutral by 2030 and is striving to achieve this target ahead of schedule. The University is taking urgent action to combat climate change and its impacts, through the commitment to reducing greenhouse gas emissions and adapting the University and its systems to a changing climate.

RMIT achieved a 62 per cent decrease in greenhouse gas emissions in 2020 from the 2007 emissions baseline, and is committed to reducing its emission profile by implementing the *RMIT Carbon Management Plan*. The plan covers the University's entire scope 1&2 emissions profile, given the highest level of control can be achieved in these areas. In 2020, RMIT reported an emissions profile of 24,772 tonnes in higher education activities, consuming 233,742 gigajoules of energy. Approximately 20,069 gigajoules of this energy came from renewable energy sources, representing nine per cent of the University's total energy consumption. Initiatives implemented to move the Universities energy profile to renewable energy sources include the installation of over 600kW of on-site solar PV and the recent signing of two long-term renewable energy supply agreements.

2. Climate change adaptation

Climate change and its impacts are posing a significant risk for society today. In Australia, extreme conditions such as droughts, bushfires, cyclones and floods are expected to become more frequent and more severe. Universities are important public organisations that have significant elements at risk from climate-related impacts; including buildings, infrastructure assets, and its community. It is therefore important that key climate risks are identified, and the necessary adaptation options implemented to increase resilience to future climate shocks and stresses. The *RMIT Climate Change Adaptation Plan* is mainstreaming climate change considerations, developing the data and knowledge necessary for informed climate adaptation and establishing coordination mechanisms for the University. The adaptation plan outlines three significant climate impacts to RMIT University (extreme heat, severe storms and prolonged drought), as well as overarching actions to adapt to these impacts.

3. Climate Change Risks and Vulnerabilities

RMIT provides expert advice to The Victorian Department of Environment, Land, Water and Planning (DELWP) regarding a process **to identify cross-sector climate change risks and vulnerabilities**. DELWP suggests that a sector-based approach is used to develop coordinated and coherent sectoral policy responses in anticipation of the complex challenges of adapting to climate change. Sectors must collaborate to address climate change risks and vulnerabilities, identify trade-offs, and realise potential opportunities. This presents many governance challenges, including spanning conventional boundaries and bringing together policymakers and stakeholders with different objectives, interests and ways of working.

In this project, RMIT is supporting DELWP and the Adaptation Action Plans (AAP) leads regarding the identification of and planning for cross-sector climate change risks and vulnerabilities. RMIT's approach used concepts and methods from systems thinking, adaptive pathways planning, adaptive governance, and organisational learning theory to produce a background research report on four topics and core questions defined by DELWP: (1) sector-based adaptation planning; (2) maladaptation; (3) risk and vulnerability assessments; and (4) monitoring and evaluation.

A framework to identify sector-based and cross-sector risks and vulnerabilities was also produced. This framework takes participants through a collaborative and learning-based process to understand their system and its interactions. It is intended for use both within government and in collaboration with stakeholders.

4. Climate Change Adaptation and Mitigation in Suburban Melbourne

In 2020, a team of researchers from the Centre for Urban Research, and Schools of Construction Management, Landscape Architecture and Engineering collaborated to produce a critical policy brief entitled **Climate Change Adaptation and Mitigation in Suburban Melbourne**.

This policy brief report outlines state-of-the-art climate change mitigation and adaptation measures for urban development and redevelopment in both new and established suburbs in Melbourne in support of the SDGs. It discusses practical solutions to reduce greenhouse gas emissions; managing known climate change risks; developing adaptive capacity by increasing flexibility and resilience; the systemic interactions between different disciplinary themes and principles, and potential governance arrangements that seek to integrate climate mitigation and adaptation measures into planning practice.

67
RMIT Research Projects

2.2%
Publications National Contribution

39.7%
Publications with International Collaboration

41.1%
Publications with Developing Countries Collaboration

2.5
Citations per publication—RMIT (Global Average 2.4)

67.7%
Publication in Top Journals—RMIT (Global Average 67.6%)

This report states the following agenda items for the Victorian Government planning system to achieve the step-change required to address the climate change mitigation and adaptation challenges in Melbourne's suburbs: (1) Build the capacity at both state and local government level to take a more proactive role in formulating strategic, long-term objectives for a low-carbon, risk-mitigated urban environment; (2) Establish suitable regulatory mechanisms over and beyond traditional planning control and mediation processes to implement these; and (3) Provide leadership for public and private stakeholders to build the skills, community support and industry capacity for transformative change.

5. Local Government Climate Change Adaptation

The **Climate Change Exchange Network at RMIT** is overseeing the **'Local Government Climate Change Adaptation Roles and Responsibilities under Victorian Legislation: Guidance for local government decision-makers'** project that informs local governments on their legal roles and responsibilities under Victorian legislation for climate change adaptation. Its purpose is to inform local governments of their legal roles and responsibilities under Victorian legislation for climate change adaptation.

A legislative analysis and local government consultation workshops informed this project, run by Dr Tayanah O'Donnell and Associate Professors Susie Moloney and Andrew Butt. It is co-designed with the Victorian Department of Environment, Land, Water and Planning (DELWP) and local government representatives including the Municipal Association of Victoria and the Western and Northern Greenhouse Alliance. The consultation workshops engaged with 78 council representatives across three regions in Victoria, representing rural, coastal and metropolitan Victoria.

The central aim was to design a guidance brief for council staff to use in making reasonable decisions while navigating legal roles and responsibilities with respect to climate change. To ensure this project would be useful for local governments, the team adopted a 'reasonable decisionmaker' framing, to help the reader of this report and the accompanying guidance brief, step through key requirements for climate change adaptation in local areas. The project was not intended to form legal advice, nor is it a comprehensive assessment of all relevant laws to climate change.

In co-designing the project, the team was specifically asked by DEWLP to exclude emergency management and natural hazards legislation, and state government roles and responsibilities.

6. How Well Are We Adapting to climate change?

How Well Are We Adapting is a climate change adaptation monitoring, evaluation and reporting program for Victorian local governments, to learn about climate change risks, impacts, and responses across council services and assets. This program was developed by the Western Alliance for Greenhouse Action (WAGA) group of Councils in partnership with RMIT, the Net Balance Foundation and Federation University, with funding assistance from the Victorian Government.

This project is the result of an extensive co-design process to develop a framework and attendant indicators with relevant service owners within the council. The framework and indicators are supported by a web-based tool, with both internal and external reporting features.

The project aims to:

- Build capacity for monitoring, evaluation and reporting for climate change adaptation.
- Embed climate change adaptation considerations across council service and asset portfolios.
- Enable council decision-makers to create an evidence base for informed decision-making, identify where services might be impacted in the future, and ensure residents most at risk to climate impacts will be protected.

From November 2020, *How Well Are We Adapting* has run as a council-led tool and program to support participating monitoring, evaluation and reporting on climate change adaptation. Funding support is received through subscriptions from participating councils, and staffing is hosted through the Climate Change Exchange.

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

SDG 14 – Life Below Water

1. Plastic use

RMIT promotes the waste hierarchy of '**Reduce, Reuse, Recycle**' through the Waste Management Plan to minimise its impact on the environment, including reducing the use of plastic. A central focus for the Sustainability Team is waste avoidance, working with retailers and events teams to avoid waste through better planning and operations. Additional actions included campaigns encouraging students and staff to bring their own reusable coffee cups, drink bottles or lunch containers and reusable bags. RMIT worked with the on-campus retailer and event teams to support these initiatives, reducing the use of single-use items, accepting reusable cups and providing free drinking water.

2. Water way pollutants

Melbourne's rivers, wetlands, and bays are all affected by a variety of pollutants. Different land uses and activities in urban and rural areas generate different types of pollution and it is essential to identify the sources and impacts of high-risk pollutants to protect ecological, social and amenity values. **RMIT is completing a research project**, in partnership with Melbourne Water, to produce a synopsis of current literature, of the sources and impacts of pollutants on waterways and bays from urban and rural landscapes in the Melbourne region. Expected outcomes of this project include: (1) provide a synthesis of the sources and impacts of urban and rural pollution that are likely to pose a significant risk to environmental values; (2) identify priority sources and pollutants of concern in urban and rural waterways; (3) recommend options (management and research) to reduce the risk of urban and rural pollutants on the receiving waterways; (4) increase confidence in management interventions linked to identified factors to reduce pollutants to streams, wetlands, estuaries and bays; (5) influence stormwater management policy, rural land management policy and planning; and (6) support the achievement of Healthy Waterways Strategy targets. This project can be used as a general reference for Melbourne Water staff, agencies and the community involved in Waterway programs.

3. Boosting Australia's Biodiversity

Successfully meeting Sustainable Development Goals 14 and 15–sustainable use and protection of terrestrial and marine biodiversity–hinges on influencing human behaviours that impact biodiversity. Selecting which behaviours to change and the most effective interventions to change them can be challenging, as the behaviours that influence biodiversity outcomes are rarely directly linked to biodiversity. **RMIT collaborated with the DELWP to prioritise conservation behaviours** by 1) identifying key behaviours in Australia that positively or negatively influence biodiversity, 2) examining the best interventions to change them, and 3) estimating the projected benefits and cost-effectiveness to biodiversity if these behaviours were changed.

As a first step in the prioritisation process, an expert elicitation workshop was held that identified 27 key conservation behaviours that any Victorian could undertake. Experts were asked to rate those behaviours based on the behaviour's impact on biodiversity and the potential likelihood of a behaviour change. One of the prioritised behaviours was examined by behaviour change experts, specifically beef consumption, to provide suggestions of what interventions would be most effective in reducing beef consumption providing advantages and disadvantages. Finally, case studies of Victorian-based pet cat containment and wildlife gardening behaviour change programs were assessed for the direct and indirect impacts the interventions may have on biodiversity and compared the cost-effectiveness of different intervention scenarios. This project not only advanced behavioural prioritisation methods but also informed DELWP policy encouraging everyday Victorians to act for biodiversity.

47
RMIT Research Projects

1.9%
Publications National Contribution

70.6%
Publications with International Collaboration

52.9%
Publications with Developing Countries Collaboration

4.4
Citations per publication—RMIT (Global Average 1.9)

74.2%
Publication in Top Journals—RMIT (Global Average 62.4%)

4. Contaminant risk to environmentally sensitive areas

Melbourne Water (MW) owns and manages over 40 sites classified as Sites of Biodiversity Significance (SoBS) and is committed to protecting the important biodiversity values of these sites. Management plans for these sites are included in MW's asset management system and five-yearly assessments of condition are conducted to ensure the sites are being protected. Contaminants can enter waterways from different land uses and activities and affect sites of biodiversity significance. **RMIT partnered with MW to undertake a contaminant risk assessment** for each environmentally sensitive sites, identifying the sites that are the greatest risk from contamination, that are a priority for contaminant screening, and based on the levels, types and sources of contaminants, make recommendations for the protection of high risk environmentally sensitive sites.

The initial contaminant risk assessment for all SoBS sites is now complete and further contaminant screening is planned for some of the high priority sites within the Melbourne Water region. This project will result in a comprehensive understanding of the risks from contaminants to environmentally sensitive sites within the MW region, including the influence of groundwater, and identification of management opportunities to protect environmentally sensitive sites that are at high risk from contamination.

5. Floral foam and microplastic pollution

New RMIT research has shown that the water-absorbing green floral foam used by florists is contributing to the world's microplastic problem. **A study published** in Science of the Total Environment, by academics of RMIT's School of Science, found the plastic foam, which breaks into tiny pieces, can be ingested by a range of freshwater and marine animals and affect their health.

The vast majority of florists who use foam are disposing of floral foam particles down the sink, according to a recent survey by the Sustainable Floristry Network. The survey of more than 1200 florists globally found two-thirds of florists use foam, and of those that do, 72 per cent pour the foam wastewater down the sink or drain, while 15 per cent add it to the garden or soil.

A social media trend of crushing floral foam, often directly into the sink, is also adding to floral foam pollution issues, with one video promoting the fad amassing 70 million views. Each foam block is equivalent in weight to around ten plastic bags. Floral foam has been the base medium of choice for florists all over the world since its invention in the 1950s.

The RMIT study showed that floral foam microplastics also leach chemicals into the surrounding water and these were more toxic to aquatic invertebrates than leachates from other plastic families. This study points out that more research is needed to better understand the impact of ingestion of the particles and related compounds on animals.

6. Improving tuna health and aquaculture

RMIT's School of Science has partnered with the Australian Bluefin Tuna Industry Association (ASBTIA) and the Fisheries Research and Development Corporation **to develop a novel diagnostic testing technique** for application on water, to assist tuna farmers to make informed decisions about managing the health of their stock.

The first findings of this partnership, published in the Journal of Aquaculture, revealed the effectiveness of targeted treatments of ranched tuna and a reduction in parasite numbers. Though naturally occurring in approximately five per cent of wild tuna, the parasites are of particular concern for fishers who capture and keep fish alive for ranching in areas where the polychaete is more common.

RMIT lead researcher Dr Nathan Bott found the new methods were needed to enable accurate samples to be taken without harming live fish, as the current diagnostic testing methodology is fatal and involves taking samples from the tuna's gills, blood and internal organs. Improved diagnostic testing would help to provide more accurate guidelines for when to treat affected fish, reducing the cost of treatment and lowering mortality.

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

SDG 15 – Life on Land

1. Conserving and enhancing biodiversity

Through the University's **Sustainability Policy**, RMIT has committed to preserve cultural heritage, enhance biodiversity and promote healthy ecosystems. This commitment is embodied through the strong research capabilities at the University which focus on ecosystem conservation and biodiversity enhancement. RMIT's Sustainable Procurement Plan, Design Standards and Corporate Social Responsibility Framework all consider the environmental risks and impacts that are inherent in the lifecycle of purchase or activity, including biodiversity loss and deforestation.

2. Biodiversity challenges across the supply chain

Globally, coffee is grown by more than 25 million farmers across 60 countries and is a highly traded global commodity, with approx. 9.66 billion kg consumed annually. Coffee is grown in some of the most biodiverse areas of the world and while coffee benefits from increased biodiversity, its production is also a driver of biodiversity loss. Biodiverse shade-grown coffee, as opposed to sun-grown coffee, is intended to be better for biodiversity (e.g. through primary forest restrictions; canopy habitat protection; proper disposal of waste products). Mainstreaming shade-grown coffee is key for the industry to mitigate risk from climate change and environmental degradation.

In an **ongoing research** project funded by the Australian Research Council, Zoos Victoria and Melbourne-based Genovese Coffee, members of the Interdisciplinary Conservation Science Research (ICON Science) group at RMIT are examining the structural and behavioural barriers to increased biodiversity-friendly production, retail and consumption, and exploring how to overcome these barriers with behavioural interventions. Initial work for this project has provided insights into current levels of concern and awareness of coffee production's negative impacts on biodiversity among Melbourne coffee consumers. And using behavioural nudges has tested the efficacy of different types of messages to increase the likelihood that an individual will purchase biodiversity-friendly coffee.

The next steps for this project include examining motivations and barriers among coffee growers in Brazil and Indonesia to participate in shade-grown coffee production and evaluating Zoos Victoria's coffee behaviour change campaign. It is hoped that this research will make high-quality shade-grown coffee available to the Melbourne market and beyond whilst achieving equitable outcomes for producers and biodiversity.

3. Inquiry into Environmental Infrastructure for Growing Populations

In September 2020, RMIT's ICON Science Group **made a submission** to the Victorian Parliamentary Inquiry into 'Environmental Infrastructure for Growing Populations.' This inquiry was designed to investigate whether the provision of green spaces and infrastructure has caught up with Melbourne's rapid growth.

The submission discussed RMIT research which showed that Melbourne has lost 2,000 hectares of tree cover between 2014-2018, and how many Melburnians do not have access to a green space within walking distance of their house. The group then prepared a map that compared socio-economic status with access to environmental infrastructure (such as green spaces and tree canopy) throughout Melbourne, which highlighted a trend of economic disadvantage being correlated to lack of proximity to nature. This furthers social disadvantage, as green spaces provide a swathe of mental and physical health benefits. The team also stressed the importance of labelling tree canopy as 'green infrastructure' given the role it plays in mitigating the Urban Heat Island Effect and providing habitat for urban bird and wildlife populations.

The group advised that green infrastructure development needed to be ramped up to increase urban biodiversity to benefit both the natural environment and humans. The Group also reiterated that although Melbourne has good biodiversity planning on paper, actual policy implementation needs to follow, especially in the wake of the urban transformation which accompanied COVID-19. The team concluded that urban biodiversity helps strengthen ecosystem resilience in urban areas and increase the adaptive capacity of cities to climate change.

4. Biodiversity on green roofs

The ICON Science Research Group at RMIT began investigating **how invertebrate species use green roofs in Melbourne,** as part of their focus on urban biodiversity and human-nature interactions. Species in Melbourne include butterflies, bees, spiders and snails, which are important for pollination, ecosystem structure, and cultural heritage. Green roofs are increasing in Melbourne, as they allow for infill green infrastructure without taking land away from building capital. They also provide benefits such as thermal buffering and stormwater retention. However, despite the increasing prevalence of green roofs, their impacts as habitats for birds and animals are still largely unknown.

89
RMIT Research Projects

2.7%
Publications National Contribution

62.2%
Publications with International Collaboration

60.0%
Publications with Developing Countries Collaboration

3.4
Citations per publication—RMIT (Global Average 2.3)

74.4%
Publication in Top Journals—RMIT (Global Average 64.8%)

The study by Dr Georgia Garrard and PhD candidate Katherine Berthon, with Research Assistant Jessica Baum, monitored two retrofit green roofs (in Fitzroy and the Docklands) to examine how they are used by local invertebrate species. Identifying the species are living there, and if they can adapt to the unique conditions of a green roof.

Furthermore, the study examined which animals 'move in' first to the green roofs, as well as the different transport mechanisms species use to get there. Examining plant-insect interactions to better understand why insects prefer ground-based green spaces to green roofs. Data from the study will identify what makes a good green roof where insects and birds can successfully reproduce and fulfil their entire life cycles. This can help create better green roof design – an innovative way to introduce biodiversity back into urban spaces.

5. Onsets not offsets for biodiversity gains

In 2020, the RMIT Centre for Urban Research was awarded an Australian Research Council (ARC) grant to undertake the **Onsets not offsets for real biodiversity gains project**. This ARC Discovery Project addresses the profound challenge of reconciling development and biodiversity conservation by developing an alternative to the pervasive, yet unsuccessful, biodiversity offsetting approach.

A key outcome of the project will be a new framework for biodiversity onsetting, tested against environmental and social feasibility metrics, and new biodiversity evaluation methods for novel habitats. The project will deliver tangible environmental benefits with a substantial legacy. The shift away from off-site, future biodiversity gains and towards on-site gains will assist Australia's ability to meet international obligations, by slowing the decline of biodiversity associated with urban development and agriculture and providing new opportunities for habitats and resources in highly modified landscapes. It will provide a framework for truly sustainable development which, at its heart, aims to reconcile economic development, human wellbeing and environmental outcomes in a balanced way.

This project has great potential to deliver change and situate Australia as a leader in conservation policy and sustainable development. Australia has been a world leader in the development of offset policies, but now must lead the way by moving beyond offsets and toward onsets. The research team and research partners include those who are influential in the design and implementation of offsetting policies internationally, ensuring the project is well placed to not only produce significant new knowledge, but also to inform policy change.

6. Bioacoustic Monitoring of Frogs

The research project, 'Bio-acoustic Monitoring of Frogs' was carried out by PhD candidate Brendan Casey and supervised by Dr Jeff Hughes and Associate Professor Jeff Shimeta. The project trialled bio-acoustic monitoring of frog populations in situ within habitats located around the fringes of suburban Melbourne. Several potential sites were identified and the monitoring continued over several seasons. Bio-acoustic monitoring involved placing recorders in the field capable of monitoring frog calls.

The project focused on the Growling Grass Frog, an endangered frog species which is threatened by both loss of habitat (mainly loss of wetlands to development) and attack by the chytrid fungus. The project included all frog species that may potentially be found at the trial sites. The bio-acoustic monitoring ran concurrently with standard monitoring (desktop surveys and site visits) so the two techniques could be compared. To achieve this a reference library of frog calls was designed. The project aimed to develop a reliable, non-invasive technique for determining the presence and diversity of frog species.

To further test the value of bioacoustics monitoring for studying rare and endangered species, the method was also used to try and record the Giant Burrowing Frog in East Gippsland. This frog is extremely rare in Victoria and there are only a few reliable reported detections of this frog in the past 20 years. Recorders were placed in the field in the Mitchell River Catchment and measurements taken over three years. Success came when this frog was recorded only an hour before the project was due to shut down. The value of this project in advancing goals of environmental sustainability has been recognised by grants from Parks Victoria and the Holdsworth Environmental Sustainability Fund.

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

SDG 16 – Peace, Justice and Strong Institutions

1. Legal support for students

The *RMIT Student Legal Service* is run by qualified lawyers who are able to provide advice and information to students on a range of legal issues. This service is staffed by community lawyers from Youthlaw. The main areas of assistance to students is around security of tenure (housing), issues with employment, fines and interaction with the criminal justice system, and family/personal violence. The goal of targeted legal support to students is to assist them to navigate often confusing systems and processes at times of stress and to empower them to learn to self-advocate. The RMIT Student Legal Service team also provides assistance on fines (including public transport, driving, toll and parking), traffic accidents and driving problems, renting and tenancy, employment law, criminal law and police powers, consumer and debt matters and safety-related matters.

2. Changing the Course

RMIT has developed '**Changing the Course**', a strategic plan and framework designed to build a community where every student and staff member is safe, respected, and free from sexual harm. The framework actions include:

- Communications and social marketing such as the 'Be the Change' campaign, which aims to support the community to address sexual violence and the social norms that make it acceptable.
- Direct participation programs such as student bystander inventions workshops, which empower individuals to recognize and intervene where they witness sexism and sexual harassment. This program addresses the norms and attitudes that drive sexual violence.
- Provision of support and care: Creating a single intake point to support those experiencing sexual harm and targeting interventions aimed at those at risk of perpetrating these behaviours.
- Strengthening institutional responses through policy and process review to ensure that those seeking help for sexual harm do not have their trauma compounded by the institutional response mechanisms.

RMIT recognises that sexual harm disproportionately affects women and fits within a spectrum of gendered violence. Consequently, the 'Changing the Course' Advisory Group works closely with the Diversity and Inclusion Working Group to address the drivers of gendered violence.

3. Preventing Child Abuse

In 2020, Professor Alberto Posso from the RMIT School of Economics, Finance and Marketing collaborated with two researchers from the Australian Catholic University (ACU) to produce a strategic review of child sex abuse prevention strategies in developing countries. **This study** was the first of its kind as a review of such practices in countries with limited state resources and funding had never been completed before. Previous studies had only focused on developed countries, especially anglophone countries. The published paper, 'Preventing child sexual abuse: A systemic review of interventions and their efficacy in developing countries', identified which prevention strategies are used most often in developing countries, and identified their real impact on preventing child sex abuse.

Through this systemic review, the researchers discovered that prevention programs in developing countries focus too narrowly on school settings, and need to be extended outward to serve and benefit the broader population. Recommendations included government-led or community-driven prevention strategies, which target the broader general population and therefore empower participants with knowledge and skills to prevent child sexual abuse. This knowledge can help inform future policy and help extend justice beyond a select group of people to the wider community. As many child sexual abuse reduction strategies require systemic effort and change, research like this plays a vital role in institutional reform and accompanying cultural shifts.

91
RMIT Research Projects

3.1%
Publications National Contribution

36.9%
Publications with International Collaboration

14.1%
Publications with Developing Countries Collaboration

1.5
Citations per publication—RMIT (Global Average 1.0)

58.9%
Publication in Top Journals—RMIT (Global Average 53.4%)

4. Research Ethics for Asia-Pacific

The positive impact of research is dependent on integrity. Research conducted by the Research and Innovation Portfolio's **Research Ethics, Integrity and Governance team** has generated new guidance for researchers, institutions and funding agencies to ensure trustworthy research across Asia-Pacific. The APEC Guiding Principles for Research Integrity capture a close to consensus view of experts from across the region. Consultation with academics and administrators from Chile, Peru, Viet Nam, Indonesia and Malaysia was particularly important in shaping the guidance, which describes the key elements for the responsible and trustworthy conduct and administration of research.

The guiding principles that apply to all aspects of research conduct and administration include Honesty, Rigour, Transparency, Responsibility, Fairness, Respect and Diversity. The seven guiding principles are used to describe how researchers should plan, conduct and communicate their research as well as how institutions can foster an environment of research integrity. The guidance is non-binding and may be adopted, endorsed or adapted. It is also hoped that the APEC Guiding Principles for Research Integrity will enable greater mobility and collaboration across the Asia-Pacific region.

5. Reducing barriers to employment for Aboriginal people

Routine criminal record checks by employers are a major hurdle for people with a criminal history – even if the history is old, minor or irrelevant – who are aiming to contribute to society through employment. Criminal record checking can be a particularly significant barrier to employment in Aboriginal communities, irrespective of the relevance of the criminal history.

The Victorian Legal Services Board has funded '**Reducing barriers to employment for Aboriginal people: rethinking the role of criminal record checks**'. This project explores ways to improve employment opportunities for Aboriginal people and to support employers in the recruitment of Aboriginal people. It aims to identify existing good practice amongst employers and to communicate these practices to jobseekers with a criminal history, and to employers, including government agencies and Aboriginal-run organisations, in ways that can be readily adopted.

The project is a partnership between RMIT researchers at the Centre for Innovative Justice, and Aboriginal organisations Woor-Dungin, Victorian Aboriginal Community Controlled Health Organisations (VACCHO) and Winda Mara Aboriginal Corporation. It builds on a previous partnership between RMIT and Woor-Dungin, the Criminal Record Discrimination Project. This project advocated for legal change in the accessibility of criminal records, and in challenging the historical registering of children taken into care as a criminal record. Advocacy through this project led to legislation for the expungement of the criminal records of children taken into care, including members of the Stolen Generation, being passed in 2018, and the Victorian government's official apology for this practice on 13 August 2018. It also led to the Victorian government commitment to pass vital spent convictions legislation by the end of 2020, passed on March 18, 2021.

6. Family violence in the home

One complex form of family violence which remains under-examined in Australia is adolescent violence in the home (AVITH). In 2020, the RMIT CIJ partnered with the Centre for Family Research and Evaluation at Drummond Street Services **to investigate AVITH during COVID-19 lockdowns in Australia and the United Kingdom**. The research focused on determining what the impact of lockdowns had been on AVITH, how this compounds pre-existing disadvantage, and what policy responses are needed to help achieve a decrease in AVITH.

A paper published in November 2020, found that specific factors contributed to a rise in AVITH, including stress from remote learning, lack of access to school and community environments, and forced confinement with family.

The report then focused on what policy responses are needed in a post-COVID world to rebuild from the damage of almost six months of lockdown, and the impact it has had on AVITH. These include focusing public money into community services, focusing again on reform to the justice system, and building in a "safeguard surge" to community services, whereby services are equipped to deal with a surge in demandfollowing deconfinement. These findings will help inform policy responses to the specific issue of AVITH, and can also be applied to wider social issues and community support services. These findings support not only the prevention of violence, but also facilitate positive structural reform in the justice system.

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

SDG 17 – Partnership for the Goals

1. RMIT's commitment to partnerships

RMIT recognises that partnership is vital for achieving the SDGs. The success of the SDGs agenda requires genuine collaboration among governments, the private sector and civil society. In this context, RMIT recognises the important role universities can play in fostering cooperation and amplifying sustainable development work through innovation and leadership. The **RMIT Sustainability Policy** is a statement of the University's commitments to adopt a leadership role at a national and international level to shape a sustainable environment and society, contributing to the SDGs. The policy also commits RMIT to proactively engage in partnerships and projects on sustainability.

2. Circular Economy Hub@RMIT

The **Circular Economy Hub (CEH)** at RMIT is a cross-disciplinary, industry-engaged network of researchers and experts across the University working on cutting edge and innovative Circular Economy (CE) research across Australia and internationally. The work supports RMIT as an industry leader in circular economy research at national and global forums. The RMIT Circular Economy Hub's cross-disciplinary nature supports empirical approaches to holistic and systemic engagement across research partnerships, expanding the University's impact and expertise on the circular economy. It also supports the emergence of a new capability-building platform across micro-credentials, executive training, vocational and higher educational outcomes.

Since its inception in 2020, the members of the CEH have been involved in a range of activities. These include, at a local/state level: Response to the CE issues paper, New *Victorian Waste Act and Waste Authority*, submission to the inquiry into environment infrastructure for growing populations, development of a critical Policy Brief on *Climate change mitigation and adaptation in suburban Melbourne* and engagement with key state government and NGO stakeholders on circular economy such as Circular Economy Victoria.

Nationally, CEH contributed to the response to *'Australia's waste management and recycling industries'*, engagement across other universities and states, plus NGOs on circular economy plans such as Planet Ark, national showcasing/engagement through Tech23 Circular Economy engagement, participation through panel discussions, participating in judging panels, industry commissioned applied research on aspects of circular economy, developing and presenting World Circular Economy Forum (2020) side events on CE, engagement in AHURI study on inquiry for CE in housing and Australian Research Council funded projects such as TREMS.

Internationally, CEH was involved in various international webinars and conferences on the circular economy including the World Sustainable Built Environment Conference and World Circular Economy Forum, deployed an international survey on developing SDG metrics for a circular built environment, and engaged in various academic and non-academic publications.

3. City of Melbourne Open Innovation Challenge

RMIT Activator partnered with the City of Melbourne **2020 Open Innovation Competition** an annual challenge to solve a city issue. In 2020, the topic was: *"How might we create a more transparent circular economy by better addressing and influencing the ways in which the whole supply chain can eliminate waste?"*. RMIT Activator promoted the competition widely across its networks of researchers, students and start-ups to attract entrepreneurs and innovators to submit their bright ideas to solve the challenges faced by modern cities.

The competition attracted over 120 entrants and RMIT Activator offered prize pathways for two teams from the top 10 finalists into our startup program **LaunchHUB**. The LaunchHUB provides participants with resources and services in the form of expert coaching, credits and innovative learning.

122
RMIT Research Projects

4.8%
Publications National Contribution

45.9%
Publications with International Collaboration

57.4%
Publications with Developing Countries Collaboration

3.2
Citations per publication—RMIT (Global Average 2.1)

68.3%
Publication in Top Journals—RMIT (Global Average 52.9%)

4. Aquatic Pollution Prevention Partnership (A3P) with Melbourne Water hits its' stride

In 2020, the **Aquatic Pollution Prevention Partnership** between RMIT's School of Science (the AQUEST research group) and Melbourne Water, reached its mid-point. This project is helping to combat pollution in Australia's waterways and bays. The key value of this partnership is in the innovative way RMIT and Melbourne Water are collaborating. Throughout the project, leading experts in aquatic ecology and pollution research from RMIT listen to and co-design projects with Melbourne Water personnel and other stakeholders. Regular project meetings allow adaptability and ensure research projects can evolve to meet changing needs. This helps tailor and align outcomes to benefit specific areas of business need. RMIT's research in this partnership improves the management of Melbourne's waterways by increasing confidence in decision-making by using a multi-factorial evidence-based approach. Currently, ten primary projects are running within the partnership, with an increasing number of 'spin-off' projects.

Key elements of the research include:

1. Investigating pollutants including pesticides, industrial pollutants, and subtle and emerging pollutants such as nanoparticles and pharmaceuticals.
2. Developing new ways to monitor and assess the risk of aquatic pollution.
3. Focusing on chemicals that affect aquatic plants and animals.
4. Identifying effective options to reduce aquatic pollution in waterways.

5. Building urban climate resilience in the Solomon Islands

A multidisciplinary team of RMIT researchers, led by Professor Darryn McEvoy, is working to reduce the vulnerability of those living in informal settlements, through a range of co-designed initiatives in Honiara, Solomon Islands. **This four-year project** is supported by the United Nations Framework Convention for Climate Change (UNFCCC) Adaptation Fund, and administered by UN-Habitat, and is working to reduce the vulnerability of those living in informal settlements, through a range of co-designed initiatives.

Informal settlements of Honiara are home to almost half the city's population, and the complex challenges of these vulnerable urban communities call for tailored, multi-faceted solutions. The project is an initiative involving Honiara City Council, the Ministry of Lands, Housing and Survey, and the Ministry of Environment, Climate Change, and Disaster Management. RMIT is providing scientific support, with a multi-disciplinary team drawn from six different schools. To maximise synergies, and to build on existing local agendas, the RMIT Project Team has proactively engaged with other Government Ministries, NGOs and civil society organisations, the Solomon Islands National University (SINU), regional organisations and local government and community representatives.

Examples of the work in partnership with local stakeholders include five case studies to develop community profiles and scope and design 'fit for purpose' engineering solutions for their specific priorities. RMIT is also developing and implementing resilience actions involving flood defences and climate resilience actions based on local needs. Interventions like urban agriculture, nature-based solutions for climate-resilient open spaces, non-written communication of climate risks with women and youth groups, and guidelines to improve land administration in these contested peri-urban areas are also being developed and implemented in partnership with key stakeholders.

6. RMIT's impact in India

RMIT has always worked collaboratively with India and has developed valuable and strategic partnerships with Indian research institutions and laboratories, resulting in valuable scientific outputs, grants and innovative research. RMIT has an award-winning joint PhD program with the Academy of Scientific and Innovative Research (AcSIR), the governing academic body for 39 Indian national Council of Scientific Industrial Research (CSIR) laboratories. Programs like this leverage the strength of Indian innovation and extensive capabilities to establish a platform of intellectual infrastructure. On this platform, RMIT jointly provides skill training and supervision to support young Indian students to become graduates equipped with a global passport.

The RMIT CSIR-IICT program expands global research and industry alliances through the joint training of young high-performing Indian students across Indian and Australian research platforms and builds on a diverse student population to reach out to those in disadvantaged circumstances. Our relationships in India are helping students develop research skills that prepare them for the global job market. Details of this outstanding partnership are provided in the **RMIT – India joint Research Program 2020 Annual Report**.

7. Engaging for Impact research event inspires collaboration

RMIT's fourth **'Engaging for Impact'** event was held in February 2020 and brought together top academics, innovators and industry partners to showcase the best in research and innovative thinking. The themes covered included future energy, waste and materials, integrated health care, living in cities and digital inclusion. Many of the 86 researchers, innovators and industry partners, presenting to more than 1,000 guests at the three-day event, spoke of how they were joining forces across sectors and disciplines to find solutions to some of the world's most intractable and complex problems. During the event, visionary keynote speakers, panel discussions, master classes, industry spotlight and priority workshops focused on emerging and current trends and potential solutions to address the challenges faced by our society.

Engaging for Impact is RMIT's flagship research and innovation event, showcasing the University's leading academics, strong industry connections, and life-changing student experiences. It also provided an opportunity for attendees to network and have collaborative discussions about effective action. It fostered partnerships and provided participants with the opportunity to share insights, global trends, industry needs, and best practices to ensure research and innovation is relevant and creating value and impact for Australia and the world.


RMIT
UNIVERSITY
ENGAGING
FOR IMPACT
4 - 6 FEB 2020

Enhancing the SDGs as a Framework

This section aims to provide examples of RMIT's contributions to the SDGs framework as a roadmap for sustainable development and as a governance instrument. Examples include RMIT's cross-sectoral dialogue about the SDGs and collaboration with key stakeholders/ partners for SDGs policy development, data gathering and best practices.

1. RMIT-Wide SDGs Project

RMIT is committed to ensuring that its activities, programs and strategies deliver on the objectives of the SDGs, through supporting and encouraging collaboration, innovation and engagement across the RMIT community. Since 2018, the RMIT Sustainability Committee has been undertaking an ambitious and innovative project to implement the SDGs agenda across the university and improve the University's sustainability performance. It considers research, learning and teaching, operations and governance. The project, with a dedicated SDG staff member, has four concurrent phases:

- Raising awareness: developing and implementing communication and engagement strategies to increase internal and external awareness, commitment and embedding SDGs into RMIT's business strategies and programs.
- Defining capabilities: establishing, analysing, and maintaining a record of contributions based on a set of key performance indicators, and identifying strengths and gaps.
- Collaboration opportunities: fostering internal and external collaboration and facilitating partnerships.
- Measuring and reporting: designing and implementing a measurement process to report on RMIT's research contributions to improve accountability and transparency.

This project has the potential to influence other universities to implement the SDGs agenda across its operations and activities. It also provides great opportunities to create a shared learning environment for higher education institutions interested in or already incorporating the SDGs as part of their sustainability and business strategies.

2. The 'Propeller' Model of participatory, place-based, sustainable development

The **RMIT European Union Centre's Jean Monnet Sustainable Development Goals Network's project 'The EU's role in the implementation of the SDGs in Asia Pacific'** examined the European Union's role as a development actor in the Asia-Pacific region.

Drawing on both specific case studies and the knowledge and experience of a diverse range of scholars and practitioners, the Network explored structural responses to the United Nations Global Agenda from a distinctly local and place-based context. During the project a new conceptual framework for implementing the SDGs and sustainable development more generally the "Propeller Model" emerged. It took shape through conversations that explored potential tensions between the practice of place-based engagement with the SDGs, and the role of global development actors such as the European Union in the adoption of the SDGs.

The 'Propeller' Model derives its name from three elements (relating, learning, and measuring) arranged as three fins around a core: power. While many iterative models of participatory development work within cyclical frameworks, which see transformational practices as circular through time, the 'propeller' model portrays a sense of forward movement through the interaction amongst learning, measuring and relating.

Transformations in power relations can become possible by centring participatory development models on community needs and anchoring development activities firmly in place. This focus on localising development practices works to prevent inappropriate development activity that ignores community needs and local conditions, as it ensures development practices are appropriate to the specific place. This process, known as emplacement, is an important factor in sustainable development because it emphasises that achievement of the SDGs must be tailored to specific places and demonstrate place-specific and appropriate outcomes.

The focus on emplacement also allows for reframing development from being a one-way or top-down process, to promoting a dynamic and reciprocal framework that provides the actual transformations envisaged by the ambitious agenda of the Global Goals. Place-based realities influence both development actors and the goals as set out by the 2030 Transformation Agenda.

3. Moving from the Millennium to the Sustainable Development Goals

2020 marked the publication of **Moving from the Millennium to the Sustainable Development Goals**. This book was edited by Associate Professor Sefa Awaworyi Churchill, from the RMIT School of Finance, Economics and Marketing, and includes contributions from RMIT researchers from fields across economics, international development, finance, international trade, marketing and political economy.

The book focuses on presenting insight into factors contributing to the success of the United Nations Millennium Development Goals (MDGs), the dormer predominant global development framework from 2000–2015, and the direct predecessor of the SDGs. Utilising a number of case studies related to the MDGs, the authors examined which international development policies work best for implementing the SDGs. The editors and contributors of the book took an interdisciplinary approach to policy and development, providing a comprehensive and multi-faceted critique of current development practices and useful policy recommendations to inform policy responses to the SDGs.

The book includes contributions from different scholars providing critical examinations of many facets of development issues, such as foreign aid, trade-lead growth, financial inclusion, microfinance, and mobile money. One of the authors, Professor Simon Feeny, group leader of the International Development and Trade Research Group at RMIT, is the author of the chapter 'Transitioning from the MDGs to the SDGs: Lessons Learnt.' This chapter highlights how the SDGs have addressed some of the critiques of the MDGs but are subject to a number of criticisms themselves. It provides important findings and suggestions to improve the SDGs as a sustainability framework and governance instrument to improve sustainability performance and face the sustainability challenges our society faces.

4. SDGs Transformation Platform at RMIT

Ethical, impactful innovation around the SDGs is a transformative agenda for universities and wider society, intellectually and practically. At RMIT, Professor Lauren Rickards and Associate Professor Wendy Steele systematically laid out the implications of the SDG agenda for all portfolios of universities through their ground-breaking and provocative report **Towards a Sustainable Development Goals Transformation Platform at RMIT**. The white paper led to numerous invited presentations to different groups across RMIT, including to Academic Board and the Vice-Chancellors' Executive. It helped the University to formalise its commitment to embedding the SDGs in the institutional strategic agenda and has stimulated new thinking and ambitions around the SDGs in more specific areas, including a subsequent project in the Education Portfolio on building a Community of Practice around the SDGs. By presenting a vision for an integrated, genuine and bold embrace of the SDGs at RMIT, Professor Rickards and Associate Professor Steele have worked hard to expand thinking and ambition around how, in what ways, and to what effect, universities can critically engage with the SDG 'Transforming our World' agenda.

Beyond RMIT, they have engaged with diverse groups about the ideas, including international networks such as the Association of Commonwealth Universities, the British Council, and the University of Johannesburg, as well as with the United Nations Association of Australia, university partners and the wider public. They have translated their research into a number of public-facing pieces and into their forthcoming book with Palgrave Macmillan The Sustainable Development Goals and Higher Education: A transformative agenda? Through this ongoing series of intellectual and practical interventions, they are helping generate a shared sense of the need and opportunity for universities to engage genuinely and ethically with the SDGs in order to generate transformative societal impact.

THE GLOBAL GOALS
For Sustainable Development

5. SDGs Mapping and sustainability education

The project "SDGs mapping and Sustainability Education", led by Dr. Seth Brown lecturer in Health and Physical Education in the RMIT School of Education (College of Design and Social Context) focuses on identifying and assessing the current approaches, used within RMIT and by other universities, to identify and report learning and teaching practices that align to the commitments made under the 2030 Agenda for Sustainable Development agreement.

Universities are central players in contributing and supporting the SDGs agenda, and the SDGs provide an opportunity to leverage from the previous work over three decades in sustainability education in higher education. Mapping where SDGs are taught in university programs and courses is one way to evaluate and initiate progress towards this agenda. The extent to which mapping captures the diversity and depth of approaches to education in this area is explored in this project.

Using a cooperative inquiry methodology, a collaborative group of academics interrogated the efficacy of the mapping instrument in relation to programs and courses taught in the DSC College at RMIT University. They identified that a variety of mapping approaches are required to accurately reflect both the curriculum content and teaching methods designed for sustainability education. The process also facilitates a new way of working together and collaborating to produce a sense of collegiality. The collaborative group explores how RMIT maps and reports on embedding the SDGs into programs and courses, for example, the new Bachelor of Fashion and Textiles (Sustainable Innovation). In doing so the group asks, does this university-level mapping on the embedding of the SDGs into courses accurately reflect what is being delivered? Can it provide a useful way to reflect on how the SDGs support student learning and create transformational change?

6. Sustainability reports and SDGs reporting

A report from RMIT University and the United Nations Association of Australia has revealed a rising trend in reporting on the Sustainable Development Goals from the top 150 Australian public-listed companies (ASX150), but the quality of disclosure remains lacking. Looking at corporate sustainability reports from the ASX150, the research team assessed how each business had measured and disclosed their awareness of, commitment to, and progress towards the SDGs year-on-year. The report found that, despite a growing number of companies reporting a commitment to the SDGs from 2018 to 2019, very few disclosed measurable business performance targets related to the goals. There were also very few companies providing context on changes put in place to address the goals.

Lead author, Professor Nava Subramaniam, Deputy Dean of Research and Innovation at RMIT's School of Accounting, Information Systems and Supply Chain, said a lack of standardised guidelines for reporting on the SDGs was making it difficult to hold Australian companies accountable to their commitments. Businesses play a critical role in Australia's progress towards sustainable development through the implementation of responsible business operations, developing innovative business models, making investments in sustainable technology, and much more.

This report is a valuable resource for investors, regulators, managers and other stakeholders to understand how Australian businesses are embedding the SDGs into their organisations. It contributes to the development and use of the SDGs as a sustainability framework for sustainability reporting and sustainability performance management. It also highlights the need for disclosing such information and provides insight into how businesses can better engage with the SDGs they identify as priorities for them. This project contributes to the best practice in SDGs disclosure in sustainability reports.

RMIT's SDGs Publication Impact

RMIT remains deeply committed to demonstrating its global sustainability leadership by supporting and fostering research projects and research outcomes that contribute to the achievement of the SDGs. The diagram below provides examples of RMIT's SDGs research influence and impact. It is based only on policies and news published by mainstream media in 2020 that have referenced RMIT's SDGs publications – RMIT's SDGs publication are those mapped and published by Elsevier. Social media information was not considered in this section. This section provides just a small example of how RMIT's publications can influence and contribute to the SDGs by positively influencing policies and the communities where we operate.

SDG Quantitative Metrics 2020

Methodology

This report provides qualitative information (case studies) and quantitative metrics, which both demonstrate how RMIT's research, curriculum, governance and operations contributions to the SDGs. The case studies (qualitative information) were used to provide examples of RMIT's contributions to each of the 17 SDGs and increase readers' awareness of the different ways in which RMIT is supporting, promoting and contributing to the SDGs. These cases studies were selected based on an internal consultation process, including a review of relevant university websites and reports, and input from more than 65 professional staff and academics.

All publication metrics (quantitative information) were provided by an external organisation (Elsevier). RMIT decided to use the SDGs publication mapping information provided by Elsevier to improve the independence and credibility of the SDGs mapping process. Elsevier's SDGs publication mapping information is generated based on a set of Scopus queries related to each of the SDGs. Publication metrics used in this report were based on the Scopus data source last updated in April 2021 (year range 2020).

Research metrics were provided based on an internal research mapping process. The RMIT research mapping approach is based on a set of keywords related to specific SDG targets and indicators (keyword search approach). This set of keywords was selected based on the United Nations' SDGs official documents and the list of SDGs keywords provided by the Sustainable Development Solutions Network (SDSN). This initial set of keywords were then refined, reduced, and tailored to fit RMIT's context and to reflect specific contributions to SDG targets and indicators. To improve the quality of the information provided RMIT combined manual assessment with the keywords search.

The information included in the RMIT's SDGs Publication Impact section is fully provided by an external organisation (Altmetric). For the publication impact section, only policy and news references published in 2020 by Altmetric that have referenced at least one of the RMIT's SDGs publications were considered. RMIT's SDGs publication are those provided by Elsevier.

Elsevier and Altmetric do not provide specific metrics for SDG 17 as this SDG explicitly relates to all other SDGs. In this report, the SDG17 metrics provided are based on the average of all other SDGs.

RMIT welcomes your enquiries and feedback on this report. Please email: **sdgs@rmit.edu.au**

www.rmit.edu.au/sdgs

All images are pre-COVID.