

# Sustainable Development Goals Impact Report 2021





## **Bundjil Statement**

RMIT University is a public-sector organisation under Victorian law, which stands on the Aboriginal Country of the Kulin Nation. RMIT recognises and acknowledges the laws of Bundjil, the Kulin Nation's ancestral creator and leader, who travels as an eagle hawk. These laws help all RMIT staff to respectfully and lawfully work, live and study on Aboriginal Country.

RMIT recognises and acknowledges the Bundjil Statement, which helps all of the RMIT community to respectfully work, live and study on Aboriginal Country through a dhumbali (commitment) to not harm the wurneet (waterways), biik biik (lands) and bubups (children) of Bundjil.

RMIT supports the rights and the self-determination of Indigenous peoples and acknowledges the importance of Indigenous knowledge in preserving and protecting place for current and future generations.

**Bundjil Womin Djeka ngarna-ga –  
Bundjil asks you to come and asks  
what is your purpose for coming  
and understanding.**

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# Sustainability Committee Chairperson's message

**Universities have a responsibility to play a leading role in addressing complex social and economic issues through education, research, and industry and community engagement. This responsibility drives RMIT's commitment to sustainability – exemplified by our public commitment to the UN Sustainable Development Goals (SDGs) in 2017.**

RMIT applies the SDGs lens across our policies, initiatives and practices to embed sustainability across the University. This involves working with our staff, students and wider stakeholder and alumni communities.

The RMIT Sustainability Committee, formed in 2009, is the governing body responsible for our sustainability agenda enterprise-wide, and delivering on our public commitments. Our ability to deliver impact was recognised in 2021, when RMIT was placed third globally in the Times Higher Education (THE) University Impact Rankings for its contributions to the SDGs. This outstanding achievement reflects RMIT's collective determination to create a more sustainable future. Standout results in this ranking included RMIT being placed 2nd in the world for our efforts to reduce inequality within and among countries (SDG 10), 3rd for strengthening partnerships for the goals (SDG 17) and 5th for promoting decent work and economic growth (SDG 8).

Our remarkable performance in the 2021 THE Impact Rankings can be attributed to the University's dedication to support and encourage collaboration and innovation across the communities where we operate, both locally and globally. We are proud of our achievements and extensive partnerships and our continuing contribution toward the UN's 2030 sustainable development agenda.

I am delighted to share this report as a snapshot of our contributions to the SDGs and RMIT's sustainability leadership. It highlights examples of our work towards a more sustainable world and our ability to positively influence our stakeholders and the wider community to embrace the SDGs.

## **Professor Sherman Young**

Deputy Vice-Chancellor, Education and Vice-President  
Incoming Chair, RMIT Sustainability Committee





# Our Impact

 <p><b>1</b> NO POVERTY</p>	Over 6,500 scholarships and grants provided	 <p><b>10</b> REDUCED INEQUALITIES</p>	96% of scholarships are provided to students from disadvantaged backgrounds
 <p><b>2</b> ZERO HUNGER</p>	Over 18,000 free healthy breakfast bags, lunches, meals and meal vouchers provided for students	 <p><b>11</b> SUSTAINABLE CITIES AND COMMUNITIES</p>	RMIT has eight projects rated 5 stars by the Green Building Council of Australia
 <p><b>3</b> GOOD HEALTH AND WELL-BEING</p>	1,144 staff and 788 student attendees at wellbeing webinars, workshops, and training	 <p><b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	97.6% of our construction and demolition waste was recycled in 2021
 <p><b>4</b> QUALITY EDUCATION</p>	1,107 SDG Related Course Units	 <p><b>13</b> CLIMATE ACTION</p>	Commitment to be Carbon Neutral by 2025
 <p><b>5</b> GENDER EQUALITY</p>	45% Female representation in senior roles	 <p><b>14</b> LIFE BELOW WATER</p>	38 water-focused research partnerships with the private, public and non-for-profit sectors
 <p><b>6</b> CLEAN WATER AND SANITATION</p>	12% reduction of water consumption across Australian operations	 <p><b>15</b> LIFE ON LAND</p>	87% of our audited trees are native species
 <p><b>7</b> AFFORDABLE AND CLEAN ENERGY</p>	75% of RMIT's grid electricity requirements now come from renewable sources	 <p><b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	2,917 researchers have completed the research integrity training and education online course
 <p><b>8</b> DECENT WORK AND ECONOMIC GROWTH</p>	83.4% graduate in overall employment	 <p><b>17</b> PARTNERSHIPS FOR THE GOALS</p>	Research and publications in partnership with 103 countries
 <p><b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	52 intervention disclosures commercialising RMIT research		

# SDG1



# No Poverty



45

Research Projects



6

International Partnerships



31

Course Units



36

Publications



3.9%

National Contribution



2.31

FWCI (Global Average 1.1)



81.0%

Publication in top 25% Journals (Global Average 52%)



5.0

Citations per Publication (Global Average 1.7)



41.7%

International Collaboration (Global Average 26.2%)



18%

Developing Country Collaboration

## Philanthropy

**RMIT's Philanthropy Team** builds and fosters an active, inspired community of donors and supporters; leveraging their generous support to help RMITUniversity reach its strategic goals. This includes delivering long-term funding pipelines for student support and research through targeted donor relations, philanthropic campaigns and the coordination of philanthropic grant applications. Managed by the Philanthropic Fund Committee, a total of \$2.9m of philanthropic funds were disbursed across RMIT in 2021. RMIT provided 678 philanthropic scholarships with a 10% increase in scholarship applications. Additionally, 146 students were supported through the Global Leader Experience online, 28 students were supported in the Global Innovation Sprint online and 69 philanthropic prizes were awarded.

## Scholarship Programs

The RMIT needs-based coursework **scholarship programs** help eliminate the financial barriers that prevent students from pursuing tertiary studies, enabling them to devote more time to their studies, and therefore supports retention and completion. RMIT Vietnam is the largest Australian university campus overseas and over 1,500 scholarships were provided to Vietnamese and international students in 2021. RMIT also awarded more than 5,000 scholarships and grants to VE and undergraduate HE students, valued at over \$9m, with 96 per cent of scholarships provided to students from disadvantaged backgrounds. Examples include, 78 students that were part of the industry experience program and 23 students, from asylum seeker backgrounds, that were provided with fee-waiver access, cash living allowance scholarships, student services and career development, including industry experience. Since 2018, 32 students have graduated as part of RMIT's support for students from asylum seeker backgrounds.

## Publication Impact



34

Media Highlights



0

Patents



17

Policy References



227

Social Media

## Union Housing Research Lab

**The Unison Housing Research Lab** is a collaboration between RMIT and Unison Housing – one of Victoria’s largest social housing providers. The Lab informs housing and homelessness best practice and policy, and is the largest program of its kind in Australia. The dedicated research team led by Professor Guy Johnson, undertakes innovative policy and practice-relevant housing research informed by the experiences of services, users and providers. The team’s focus is on what actions can be taken to develop social housing that creates vibrant communities, improves tenancy sustainability and satisfaction, and maximises their impact on tenants’ social, economic, and health outcomes. As well as, the effectiveness of homelessness program interventions, and approaches that help translate research into policy and practice. The course provides students with the knowledge and resources to support careers in the homelessness and housing sector. The Lab also delivers Australia’s first dedicated homelessness and housing course to provide students with the knowledge and resources to support careers in the homelessness and housing sector.

## Industry partnership delivers real-world training in homelessness

RMIT students are gaining a unique perspective through the first **homelessness and housing course** developed in collaboration with industry. RMIT and Unison Housing – one of Victoria’s largest social housing providers – have created an online course which covers homelessness from policy, practice and research perspectives. Deputy Director of the **Unison Housing Research Lab** at RMIT Dr Juliet Watson said the course breaks down myths about homelessness, how homelessness is defined, the ways people become homeless or are at risk of becoming homeless, and the experiences of different groups. The course provides a unique opportunity to have direct access to real life, data-based research and sector experts. Sharing this knowledge is essential to inform practices and service delivery across the sector, as well as government policy. A key aspect is visiting services and having a speaker from the Council to Homeless Persons’ Peer Education Support Program where people who have experienced homelessness have the opportunity to improve the service system by sharing their experiences. In February 2021, the Unison Housing Research Lab delivered the course for the fourth time.

## Decentralised finance makes poverty history

Decentralised finance (‘DeFi’) technologies is a suite of financial products built on open-source blockchains that offer enormous potential to overcome institutional disadvantages in many developing economies. DeFi allows individuals and communities open access to financial infrastructure that they may not have had before. Led by co-directors of the RMIT Blockchain Innovation Hub, Associate Professor Chris Berg, Principal Research Fellow at RMIT and Jason Potts, Distinguished Professor of Economics at RMIT, **the project** seeks to understand the barriers to adopting DeFi technology in developing economies and identify the possibilities that DeFi presents for poverty alleviation. Experimental economics methods will be used to conduct randomised control trials in two developing economies, Guatemala and Vietnam. Data collected will be analysed to inform a model simulating the interaction between financial literacy, financial access, and wealth dynamics. Together these methods will provide researchers, policymakers, and innovators with a greater understanding of the barriers and opportunities for DeFi.

## Research finds why some stay longer in social housing than others

In May 2021, RMIT in partnership with Unison Housing released a report titled **Sustaining Social Housing – Profiles and Patterns**. The report examined why some people stay longer in social housing than others. Lead researcher at RMIT Dr Sarah Taylor said social housing was fundamental to resolving homelessness and addressing chronic housing instability. Providers need to know why some households stay housed for a long time while others leave early, often leaving them without secure housing. Researchers examined the records of over 1,900 social housing tenancies and discovered five key indicators that can impact on how long tenants stay in social housing such as the type of property, age at which they start their tenancy, income type, type of housing they were living in prior to beginning their tenancy, and location of the social housing property. The research provides data-driven findings that can guide future decision making and help develop strategies to assist our tenants with staying in their homes for longer.

# SDG2



# Zero Hunger



74

Research Projects



6

International Partnerships



23

Course Units



50

Publications



2.1%

National Contribution



0.91

FWCI (Global Average 1.1)



74.0%

Publication in top 25% Journals (Global Average 57%)



2.4

Citations per Publication (Global Average 2.0)



54%

International Collaboration (Global Average 30.6%)



29%

Developing Country Collaboration

## Publication Impact



52

Media Highlights



0

Patents



24

Policy References



95

Social Media

## Free Meals Program

The RMIT University Student Union (RUSU) played an important role during the Coronavirus crisis in Australia supporting our community and helping to ease food insecurity amongst the student population. In 2021, RUSU provided over 9,995 healthy breakfast bags for students and 2,785 free lunches were served on campus. 4,500 healthy meals were also delivered to student housing and 1,445 meal vouchers were issued. RUSU runs regular **Free Food Events** such as the Chill N Grill and Free Health Breakfast at the Brunswick, Bundoora, Carlton and City campuses, VE event at the Carlton precinct and the Food With Friends and Welfare On Wheels events at the City campus.

## How a Vietnamese raw pork snack could help us keep food fresh naturally

Food waste is a global issue that costs around \$US680 billion annually in industrialised countries, contributing nearly a quarter of the water used in agriculture and producing 8% of global greenhouse emissions. Researchers at RMIT have shown how a natural bacteria-killing compound could be used to keep food fresh for longer. The fermented pork snack, Nem Chua, is eaten raw but does not cause food poisoning when prepared correctly. This is because friendly bacteria that thrive in the fermented meat make a special compound that destroys more dangerous bacteria. Professor Oliver Jones, Associate Dean of Biosciences and Food Technology at RMIT, said through this **new research** the team has identified the right growth conditions to make it in large amounts, potentially at industrial scales. With further development, this could be an effective, safe and all-natural solution for both food waste and food-borne disease. The team has begun experimenting with methods to further purify the compound and are planning to incorporate it into test food products.





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

### Fight Food Waste: Waste reduction of red meat

A study by the Australian Food Cold Chain Council suggests 3.5% of total meat production (155,000 tonnes), worth \$670 million, is wasted in the cold food chain, before even reaching households. An **RMIT research project** is increasing our understanding of why households waste red meat by exploring fridge performance and consumer behaviour, and how these domains interact in households. The project is funded by the Fight Food Waste Cooperate Research Centre, and Meat and Livestock Australia, and is led by RMIT researchers Associate Professor Cecily Maller, Dr Bhavna Middha, Dr Nooshin Torabi, Dr Simon Lockrey, Dr Peter Stasinopoulos and Dr Nirajan Shiwakoti. In reducing red meat wastage, the team will potentially contribute directly to substantial greenhouse gas savings, with multiple societal and environmental benefits. A potential second phase of the project would explore how the findings might be used to create education campaigns and easy-to-understand and effective interventions to engage consumers in reducing meat waste.

### Food Research and Innovation Centre

RMIT is the top provider of high-quality work-ready food technologists in Australia and our research capability is world standard. The University has a broad industry network and links with leading research organisations around the world. Building on these strengths, the \$15 million state-of-the-art **Food Research and Innovation Centre** brings together multidisciplinary research and development capabilities in all areas related to the post-farm gate food value-chain to stimulate innovation and fill the capability gaps that are critical for the future success of the Australian food industry in the global market place. Key services include innovation and development from idea generation to concept creation and process optimisation. Evaluation and testing includes analysis of health and nutritional values, shelf-life and consumer testing. As well as packaging and product design ensuring products are in the best position to sell with quality packaging design.

### Food Agility CRC

RMIT's **Food Agility Cooperative Research Centre** is a \$150 million+ innovation hub that is creating new digital technologies and services to benefit the Australian agrifood industry. The centre partners include agrifood businesses, technology companies, research institutions and government organisations. Together the CRC represents a broad cross-section of the food value system, bringing diverse perspectives to the table and approaching challenges with a system-wide lens. The RMIT team includes Professor Peter Fairbrother, Professor Harsharn Gill, Dr Madeline Mitchell, Professor Lauren Rickards, Professor Flora Salim, and Associate Professor Karli Verghese. The team is focused on innovation to create new digital technology and services that address challenges in the agrifood industry and increase digital literacy across the agrifood sector. Influencing and showcasing innovation methods and approaches to share data that can help Australian industries meet future challenges, and leading the conversation on how to stimulate digital transformation in the agrifood sector.

### First Nations help bring native foods safely to market

As Australia's native food industry develops, an RMIT researcher is working with local communities and government to help make it an Indigenous-led industry. Luke Williams, RMIT Indigenous Pre-Doctoral Research Fellow is evaluating the dietary safety of Australian native plants and collaborating with Food Standards Australia New Zealand (FSANZ). FSANZ is looking to **revamp regulatory frameworks** for assessing the safety of traditional food items as they are developed for commercial markets. Current frameworks do not acknowledge Aboriginal and Torres Strait Islander connection to native plants, including their knowledge, cultural connections and long history of use. Through the study, Luke is working with various Aboriginal groups to hear their stories, which will inform his safety studies in the lab and ultimately the bigger risk assessment which can be developed for FSANZ. Eventually, this work will go back to the Traditional-Owners, so that they can use this information to help get their food safely on the market or provide marketing opportunities. Luke hopes this will set the scene for future Indigenous businesses to successfully develop their traditional products with ease.

# SDG3



# Good Health and Well-Being



191

Research Projects



10

International Partnerships



249

Course Units



422

Publications



1.8%

National Contribution



1.84

FWCI (Global Average 1.3)



75.0%

Publication in top 25% Journals (Global Average 52.8%)



4.5

Citations per Publication (Global Average 2.5)



58.8%

International Collaboration (Global Average 22.4%)



31%

Developing Country Collaboration

## Publication Impact



236

Media Highlights



42

Patents



65

Policy References



3974

Social Media

## Mental Wellbeing Strategic Action Plan

RMIT is committed to promoting both student and staff mental wellbeing. Our approach is not designed as a short-term fix for risks or problems that are easily identified, remedied or removed. To carry our commitment from words into action, **RMIT's Mental Wellbeing Strategic Action Plan 2020-2025** (the Plan) was drafted by the Wellbeing Initiatives Team, with extensive internal and external consultation. This plan is a longitudinal, systematic and evidence-informed approach to creating a mentally healthy work and study culture. The plan is data-driven and evidence-based and so we track our performance each year against a formal evaluation framework. The dedicated team implements a range of evidence-based mental health promotion activities and produces an Annual Report to ensure these activities have desired outcomes and impacts over both the short and long term. The Plan's key action areas broadly map onto external frameworks of mental health promotion and prevention in Australia's university context. For students, it reinforces core principles of the **Australian University Mental Health Framework**, and for staff, it aligns with the **Blueprint for Mentally Healthy Workplaces**.

## RMIT Vietnam's partnership with Oxford University

Vietnamese handwritten text recognition is fundamentally more challenging than that of English, due to the presence of more character classes, complex vocals, and tonal symbols. Working closely with the Hospital of Tropical Disease (HTD) and Oxford University Clinical Research Unit (OUCRU), a team of RMIT academics and students led by Dr Ming Dinh, School of Science, Engineering and Technology, RMIT Vietnam, have successfully developed an end-to-end pipeline to recognise text on scanned Vietnamese medical records. This work potentially accelerates the digitisation of medical health records that the Vietnamese Government initiated in 2019. With the promising results in hand-writing recognition, health facilities could gradually shift to an electronic system without any sudden change in protocol. Such systems would also allow remote medical centres and/or field health workers, with limited access to computers, to continue with paper systems which could then be digitised easily.

RMIT Vietnam has signed an Aide Memoire with the OUCRU to continue to exchange expertise in computing technologies, and medical and clinical practices. RMIT Vietnam will continue to collaborate with OUCRU to develop digital health solutions across areas such as dengue outbreak forecasting and treatment, and electronic medical registry.

## Superbug killer: New nanotech destroys bacteria and fungal cells

RMIT researchers have developed a **new superbug-destroying coating** that could be used on wound dressings and implants to prevent and treat potentially deadly bacterial and fungal infections. The material is one of the thinnest antimicrobial coatings developed to date and is effective against a broad range of drug-resistant bacteria and fungal cells, while leaving human cells unharmed. Studies on black phosphorus (BP) have indicated it has some antibacterial and antifungal properties, but the material has never been methodically examined for potential clinical use. The study is co-led by Dr Aaron Elbourne a Postdoctoral Fellow in the School of Science, and Associate Professor Sumeet Walia from the School of Engineering, together with a wider team of RMIT researchers. The team has begun experimenting with different formulations to test the efficacy on a range of medically-relevant surfaces. Antibiotic resistance is a major global health threat, causing at least 700,000 deaths a year. Without the development of new antibacterial therapies, the death toll could rise to 10 million people a year by 2050, equating to \$US100 trillion in health care costs.

## Advanced care: Smart wound dressings with built-in healing sensors

Researchers have developed **smart wound dressings** with built-in nanosensors that glow to alert patients when a wound is not healing properly. The multifunctional, antimicrobial dressings feature fluorescent sensors that glow brightly under UV light if infection starts to set in and can be used to monitor healing progress. The smart dressings, developed by a team of RMIT scientists and engineers, harness the powerful antibacterial and antifungal properties of magnesium hydroxide. They are cheaper to produce than silver-based dressings but equally as effective in fighting bacteria and fungi, with their antimicrobial power lasting up to a week. Project leader Dr Vi Khanh Truong who is a Vice-Chancellor's Postdoctoral Fellow at RMIT said the development of cost-effective antimicrobial dressings with built-in healing sensors would be a significant advance in wound care. With further research, the team hopes multifunctional dressings could become part of a new generation of low-cost, magnesium-based technologies for advanced wound care.

## Smart diagnostics: AI tech can hear COVID in a cough

A ground-breaking advance in detecting COVID-19 from the way people cough could pave the way for a new generation of diagnostic mobile phone apps. **New research** by computer scientists at RMIT reveals an AI model that can hear the effects of COVID in the sound of a forced cough, even when people are asymptomatic. Study lead author and Research Fellow in RMIT's School of Computing Technologies Dr Hao Xue said with further development, their algorithm could power a diagnostic mobile phone app. The team has overcome a major hurdle in the development of a reliable, easily-accessible and contactless preliminary diagnosis tool for COVID-19. This could have significant benefits in slowing the spread of the virus by those who have no obvious symptoms. It could also make a significant difference in regions where medical supplies, testing experts and personal protective equipment are limited. The method the team has developed could also be extended for other respiratory diseases. This research is supported by the Australian Research Council (ARC) Discovery Project.

## New AI tech for early detection of prostate cancer

Researchers have developed a **diagnostic tool** that can spot prostate cancer before patients have any symptoms, using artificial intelligence to analyse CT scans in seconds. Prostate cancer is the most diagnosed cancer and a leading cause of death by cancer in Australian men. Early detection is key to successful treatment but men often dodge the doctor, avoiding diagnosis tests until it's too late. An artificial intelligence (AI) program developed at RMIT could catch the disease earlier, allowing for incidental detection through routine Computed Tomography (CT) scans. The tech, developed in collaboration with clinicians at St Vincent's Hospital Melbourne, works by analysing CT scans for tell-tale signs of prostate cancer, something even a well-trained human eye struggles to do. RMIT's Dr Ruwan Tennakoon said CT scans were great for detecting bone and joint problems but even radiologists struggled to spot prostate cancers on the images. The team has trained the software to see what the human eye can't, to spot prostate cancer through incidental detection.



# SDG4



# Quality Education



96

Research Projects



15

International Partnerships



475

Course Units



84

Publications



3.1%

National Contribution



1.31

FWCI (Global Average 1.0)



60.0%

Publication in top 25% Journals (Global Average 41.4%)



1.7

Citations per Publication (Global Average 1.1)



36.9%

International Collaboration (Global Average 17.5%)



15%

Developing Country Collaboration

## Publication Impact



15

Media Highlights



0

Patents



3

Policy References



321

Social Media

## RMIT Library, Open Resources and Learning Lab

**RMIT Library** has been an active participant in influencing the strategic direction of open education. Academic staff who have selected **open resources** for their courses have saved students a cumulative total of approximately \$270,000 at RMIT. Adopting an open textbook rather than a commercial textbook allows the materials to be reused, revised, remixed and redistributed, providing flexibility for teaching staff and helping transition their teaching practice to a blended approach. RMIT is committed to driving an enterprise-wide roadmap for progression toward open scholarships and has adopted a position statement to enrich communities by elevating educational, scientific and artistic knowledge underpinned by the SDGs. The enterprise-wide roadmap will see the implementation of an open scholarship policy that encompasses both **open research** and open educational practice. The **Learning Lab** is the RMIT Library's primary digital learning resource for facilitating student success. An open and freely available resource, it has been in active development for over 10 years under a variety of stewards. It's an RMIT success story in terms of open and free resources, now recording 1.3 million visits each year. The RMIT library website homepage had over 1.6 million online visits, over 4 million e-journals and 1.3 million e-books accessed.

## Global Citizenship SDG101

**Global Citizenship** is an online module that allows students to explore what it means to become a global citizen and the action they can take as individuals and contribute to a sustainable future. It provides students with the opportunity to deepen their understanding of world issues by deep diving into the United Nations Sustainable Development Goals. In 2021, 557 students started the module with a completion rate of 37%. Students use design thinking skills to research a specific goal, exchange ideas with peers from across RMIT locations and commit to creating sustainable change by taking action in their community. With a time commitment of six hours over three weeks, students:

- Understand the SDGs concept and framework
- Identify the application of SDGs in society
- Reflect on challenging preconceptions
- Analyse their own values and how to maintain integrity
- Investigate how to operate across hierarchies
- Commit to action on the SDGs students are passionate about

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

On completion of the module, students also gain an RMIT Cred, and are able to download the badge and certificate that can be shared across platforms, recognising their efforts, new skills and commitment. This module was created in partnership with Common Purpose, a not-for-profit organisation that strives to develop leaders who can cross boundaries, both at work and in society.

### Summit fosters Australia-Vietnam cooperation in digital education

The best innovative digital technologies for education were the focus of the **Digitally Enhanced Learning Summit**, delivered in partnership by RMIT and the Victorian Government's trade facilitation agency Global Victoria in November 2021. Close to 400 delegates from government and the higher education sectors in Australia and Vietnam shared insights at the summit, the flagship event in RMIT Vietnam's 20th anniversary 'Vietnam Leads' series. As Vietnam looks to leverage digital transformation for post-COVID-19 economic recovery, Victorian universities showcased the latest digital innovations for education including virtual laboratories, remote 3D printing and AI-powered learning personalisation. RMIT is committed to the relationship between Australia and Vietnam, and to the creation of ongoing platforms for policy engagement, collaboration and innovation. RMIT Vietnam Chairman Professor Peter Coloe said RMIT was honoured to continue its role as a coordinator, facilitator, and trusted partner for the Ministry of Education and Training (MOET) and peer universities.

### A new digital tech degree teaches skills for the future

A new **Associate Degree in Digital Technologies** (Advanced Manufacturing) at RMIT will teach students high-level specialist knowledge and skills to prepare them for industry jobs of the future. The qualification will cover emerging technology subjects including Industry 4.0, Industrial Internet of Things (IIoT), Additive Manufacturing, Digital Twinning, Supply Chain 4.0, Mindsphere, Smart Manufacturing, Robotics, Mechatronics, Automation and Process Control, Software Applications and Cyber Security for Industrial Network. Deputy Vice-Chancellor of RMIT's College of Vocational Education (VE) Mish Eastman said the pilot was another opportunity for students to learn highly specialised practical skills through RMIT's wider Vocational Education programs. The Associate Degree in Digital Technologies (Advanced Manufacturing) was launched at RMIT's Industry 4.0 Showcase. Participants also learned more about the new RMIT Siemens-FESTO Industrial Innovation Hub. Launched in 2020, the \$1.5 million **Hub** was established to help drive workforce transformation for Industry 4.0 in the Australasian region. The hub includes a significant hi-tech industrial software grant from Siemens, the largest industrial software company in the world.

### The power of creative practices to drive sustainable socio-ecological transformation

The **Creative Practices for Transformational Futures (CreaTures) Horizon 2020 project** explores how creative practices have the power to drive sustainable socio-ecological change. The project's main goal is to develop insights that will enable creative practitioners to focus their efforts more effectively and provide recommendations to policymakers and implementers. The RMIT CreaTures team includes Dr Jaz Hee-jeong Choi, RMIT lead for the CreaTures Project and Director of Care-full Design Lab, Professor Ralph Horne (Deputy Pro-Vice-Chancellor, Research and Innovation, College of Design and Social Context), and Ana Tiquia (PhD researcher, School of Design). The elevenstrong research consortium looks at creative projects that have had success in supporting sustainable transformations and seek to identify and examine the specific qualities that allowed the project to succeed in this way.

### Making cities healthier, more attractive and sustainable

RMIT Europe and the European Institute of Technology (EIT) Urban Mobility have joined forces to launch a **suite of online courses** on making cities healthier, more attractive and sustainable, in partnership with EIT Climate-KIC and EIT Food. RMIT Europe Executive Director, Marta Fernandez said the online courses – which are freely accessible on FutureLearn – are a vital step forward in delivering training for urban professionals to shape the cities of tomorrow. The world is undergoing a surge of urban population growth, with more than half of all people now living in towns and cities. Cities are expected to become bigger and more numerous, and as urbanisation accelerates, cities around the world are facing unprecedented challenges to maintain basic liveability. Urban professionals working in government, industry and community organisations face complex and urgent problems posed by climate change, unsustainable development and the global pandemic. The courses enable learners to understand the urban interventions that can make an immediate impact in their own cities, and build critical capability for innovation and transformation.

# SDG5



57

Research Projects



7

International Partnerships



41

Course Units



61

Publications



2.7%

National Contribution



1.14

FWCI (Global Average 0.9)



71.4%

Publication in top 25% Journals (Global Average 54.8%)



1.2

Citations per Publication (Global Average 1.3)



34.4%

International Collaboration (Global Average 23.8%)



13%

Developing Country Collaboration

## Publication Impact



53

Media Highlights



0

Patents



24

Policy References



431

Social Media

# Gender Equality

## Gender Equality

RMIT is committed to enabling and leading gender equality outcomes based on the Victorian Gender Equality Act 2020. RMIT's Gender Equality Action Plan 2022-2025 has been developed in consultation with RMIT workforce, student, and staff representatives, along with diversity and inclusion working groups and networks. Led by the Gender Equality Action Plan, RMIT continues to identify and address barriers to women's inclusion and career progression focusing on leadership and governance, employment conditions and women's career advancement. Important achievements in 2021 include: 44% of our leaders are women, up from 33.9% in 2015; results of our survey demonstrate that 84% strongly agree that 'My immediate supervisor/manager genuinely supports equality between genders', and 60% of managerial promotions go to women compared to 33% in 2017. Also, important to highlight, is that RMIT was recognised as an Employer of Choice for Gender Equality by the Workplace Gender Equality Agency (WGEA) in 2021 for the fourth consecutive year.

## Women Researcher's Network

The **Women Researchers' Network** (WRN) was established in 2013 to enable RMIT female academic staff and research fellows at all career stages to connect, share opportunities, access resources and participate fully in positive, active professional development. RMIT is committed to supporting gender equity, through the work of the WRN which aims to: advocate for change in gender equity policy, practice and behaviour; foster a flourishing and supportive environment for women researchers; connect the University to a wider community of practice in gender equity. The WRN provides opportunities to promote gender equality within the RMIT community and to the wider public; to identify barriers to women researchers' promotion, representation and retention at RMIT; to facilitate networking, mentoring and support, and to develop innovative and outcome-focused strategies for women researchers' careers. The Women Researchers' Network is open to all RMIT academic and research staff, and HDR students.



## **Women's justice reinvestment strategy vital to reform system in crisis**

A new **paper**, released in July 2021, by RMIT's Centre for Innovative Justice (CIJ) highlights the growing number of women in Victoria's justice system and provides pathways to solve this complex problem. Experts from CIJ found that a justice reinvestment strategy for women could help Victoria to reverse the rising rate of female incarceration, and meet its international obligations. The paper – *Leaving custody behind: Foundations for safer communities and gender-informed criminal justice systems* – proposes five foundations as the groundwork for change and details 17 opportunities to change the story about women and the justice system. CIJ Associate Director of Research, Advocacy and Policy, Elena Campbell said that most women charged with crimes needed support, rather than incarceration. She hopes the issues paper lays the foundation for reform and shows how it can and should be done in a holistic way that keeps the community safe, supports women and their children and reduces broader harm.

## **Affordable, compostable sanitary pads to address period poverty**

RMIT researchers will develop affordable and compostable sanitary pads to address period poverty in developing nations, thanks to new funding from Grand Challenges Explorations, an initiative of the Bill & Melinda Gates Foundation. Globally, it is estimated that 528 million women and girls lack what they need for basic menstrual health care. To make the fully sustainable eco-bio pads, the RMIT will use biopolymers and agricultural waste like cellulose, wheat gluten and jute. **The project**, a smart #CircularEconomy solution to a vital health and hygiene problem, was funded as part of the 'Innovations in Materials Science for a Transformative Menstrual Health and Hygiene Product' round. The important work was carried out by a team in RMIT's STEM College led by Professor Naba Dutta and including Professor Namita Choudhury, Dr Srinivas Mettu, Dr Rajkamal Balu, in collaboration with Professor Carol Sze Ki Lin (City University of Hong Kong).

## **Women's Economic Empowerment in Southeast Asia**

Investing in Women (IW), an initiative of the Australian Government that fosters inclusive economic growth through women's economic empowerment in Southeast Asia, has commissioned research to be conducted by the School of Communication and Design, RMIT Vietnam. This research, led by Dr Justin Battin, and including Dr Emma Duester, Dr Farida Kbar, Dr Abdul Rohman, Dr Minh Dinh and Ms Vo Thi Diem Trang, aims to explore the publicly available social media activities of a sample of the target audiences of IW-supported campaigns. The team will map out key target audiences and analyse their interactive practice within and beyond the social media networks specifically created for the campaigns. By addressing perceptions and practices of gender norms in Vietnam, the partnership between IW and RMIT aligns with SDG 5 – Gender Inequalities.

## **Systemic change is needed to increase women in construction**

A report for the Victorian Government has found women in trades and semi-skilled roles in construction experience high rates of discrimination and lack workplace support. Released in February 2021, **the report** revealed a lack of acceptance for women in the workplace, limited accountability or deterrents for inappropriate behaviour by males, and a 'culture of silence' that made women feel they couldn't speak out or were punished for doing so. Women working in a range of roles including labourers, carpenters, electricians, painters, crane operators, traffic controllers and plumbers participated in the study. Lead researcher, Associate Professor Sarah Holdsworth from RMIT's School of Property, Construction and Project Management, said there was ongoing resistance to creating a workplace culture that welcomed and supported female workers. The report, **Women in Construction: Exploring the Barriers and Supportive Enablers of Wellbeing in the Workplace**, was authored by RMIT's Sarah Holdsworth, Michelle Turner, Christina Scott-Young and Kara Sandri.

# SDG6



92

Research Projects



5

International Partnerships



22

Course Units



114

Publications



4.6%

National Contribution



1.64

FWCI (Global Average 1.2)



79.8%

Publication in top 25% Journals (Global Average 56.9%)



5.5

Citations per Publication (Global Average 3.0)



67.5%

International Collaboration (Global Average 26.9%)



37%

Developing Country Collaboration

## Publication Impact



65

Media Highlights



3

Patents



7

Policy References



305

Social Media

# Clean Water and Sanitation

## Operational water use

RMIT's commitment to **reducing water use** across the campuses, the **Sustainability Policy** provides guidance and direction to minimise resource consumption through good design, water efficiency, harvesting and reuse. The RMIT Design Standard, which applies to all new and refurbished buildings and construction projects across RMIT, helps to create sustainable facilities by providing clear performance criteria, while allowing room for innovative outcomes. The standard sets minimum standards for fixtures and fitting, encouraging water capture and storage and includes water sensitive urban design in landscaping. In 2021, RMIT consumed a total of 119,628 kilolitres of potable water in Australian operations (HE and VE), a decrease of 12% from 2020 (noting this decrease was influenced by the COVID-19). RMIT also installed a further 441 sensors to existing bathroom taps. This brings the total number of touchless, time-limited taps to 965, further reducing the consumption of potable water.

## Sustainable Events Guide

**RMIT Sustainable Events Guide** is a practical tool for in-house teams and external providers to create a successful, sustainable event. This guide aligns with RMIT's commitments and initiatives to positively influence our stakeholders and create a more sustainable campus. The guide is designed to apply to events of different scales and has specific suggestions on how sustainability can be improved, including the reduction of water consumption through the use of water refill stations. RMIT has 117 drinking fountains and an estimated 187 refill taps in kitchens and kitchenettes, providing students, staff and visitors with free drinking water. RMIT also actively encourages conscious water usage through messaging to the community including promoting reusable water bottles and advising students and staff to report leaking taps and toilets.



## Effective integration of nature-based water treatment in urban areas in Sri Lanka, the Philippines and Vietnam

In 2021, RMIT was awarded a project by the Asia-Pacific Network (APN) for Global Change Research, under its Collaborative Regional Research Programme (CRRP). One of the areas being addressed by the programme is the *Global Change and Sustainability in the COVID-19 Era: Pursuit of transformation to more resilient societies*. **The project** aims to analyse the experiences of an existing nature-based pilot and demonstration projects in six cities in Southeast Asia (two each from Sri Lanka, the Philippines and Vietnam). The team will develop and test a nature-based water treatment pathway methodology and guide that can be used to support the establishment, maintenance and scaling of nature-based water treatment through collaborative action-research and multi-stakeholder consultations. The project is led by Professor Veeriah Jegatheesan, Director of the Water: Effective Technologies and Tools (WETT) Research Centre at RMIT, together with Ms Nevelina Pachova (RMIT Europe) and Ms Perlie Velasco, PhD candidate and casual researcher at RMIT's School of Engineering.

## Addressing pollutants from industrial catchments

There is growing evidence that industrial areas contribute more pollutants to Melbourne's rivers, wetlands and bay than other land uses (Pettigrove, 2018). It is important to better understand the major pathways of industrial pollutants into waterways to enable the identification of efficient and effective ways of managing this pollution and preventing ecological and social impacts on local environments. **A project** is underway to identify effective and affordable opportunities for addressing pollutants from industrial catchments. Specifically, to identify key pollutants associated with industrial estates in the Melbourne Water region, current structural and non-structural treatment options for industrial pollution, and to trial the most promising industrial pollution treatment options in the laboratory and field. The RMIT team of researchers from the **Aquatic Environmental Stress (AQUEST) Research Group** includes Dr Claudette Kellar, Dr Ana Miranda, Dr Kathryn Hassell, Prof. Vincent Pettigrove, and Monica Tewman. A background literature review on industrial pollutants, their typical sources, and potential management actions has been completed.

## Impact of sediments on stream health

Fine sediments mobilised by the channelisation of rivers have been identified as a significant threat to environmental values in Western Port, particularly important seagrass habitats (Melbourne Water, 2018). The largest sediment sources are thought to be from the stream bank and gully erosion. Recent evidence suggests that changes in agricultural practices and urban development are also impacting catchment sources. Associated with sediments are pollutants which can have significant ecological impacts on the flora and fauna of the waterways and bays. This **case study project** aims to understand the concentrations and effects of pollutants attached to sediments generated from urbanising areas relative to existing urban and agricultural areas in the Westernport catchment. As well as determine if current sediment controls are sufficient and if not, recommend options for increasing the protection of waterway health during urban development. RMIT researchers Dr Claudette Kellar, Dr Kathryn Hassell, Prof. Vincent Pettigrove, Dan MacMahon, Dr James Oliver, Michael Clark, and Monica Tewman are collaborating with Melbourne Waterway Research-Practice Partnership (MWRPP) Project B2 on the project.

## Ecological impacts of untreated sewage in waterways

Untreated sewage may enter waterways through multiple sources, including dry weather spills from septic tanks or sewer leaks, and wet weather spills from engineered sewer Emergency Relief Structures (ERS). This is a potential risk to the ecological health of the receiving environments as well as to human health, due to the presence of pollutants (e.g. toxicants and ammonia) and pathogen indicators (e.g. E. coli). In 2020 RMIT researchers Dr Kathryn Hassell, Dr Claudette Kellar, Prof. Vincent Pettigrove, and Monica Tewman collaborated with Melbourne Waterway to propose a strategic process for prioritising the investigation and management of sewage inputs to waterways. **The literature review** found that multiple pesticides were detected in surface waters from 27 sites, across 7 land uses. Chemical signatures showed clear patterns with land-use. Suitable sewage indicators were investigated more thoroughly in 2020 to understand the likely contribution of untreated sewage to waterway pollution across Melbourne's streams.



# SDG7



# Affordable and Clean Energy



100

Research Projects



8

International Partnerships



39

Course Units



323

Publications



6.7%

National Contribution



1.86

FWCI (Global Average 1.4)



80.1%

Publication in top 25% Journals (Global Average 60.3%)



5.2

Citations per Publication (Global Average 3.1)



68.7%

International Collaboration (Global Average 25.3%)



38%

Developing Country Collaboration

## Publication Impact



155

Media Highlights



21

Patents



4

Policy References



1188

Social Media

## Melbourne Renewable Energy Project 1 and 2

RMIT joined the City of Melbourne in forming the first Melbourne Renewable Energy Project (MREP 1) in 2017. It was the first time in Australia that a group of local governments, cultural institutions, universities and corporations collectively purchased renewable energy from a newly built facility. The fourteen members of the buying group combined their purchasing power to support the construction of a 39-turbine, 80 MW windfarm at Crowlands, near Ararat in Victoria. Building on the success of the MREP 1, RMIT and six partners used their combined purchasing power to secure wind energy through Melbourne Renewable Energy Project 2 (MREP 2), this time led by RMIT. MREP2 sources approximately 113GWh of renewable electricity annually from additional providers. These projects have seen 22 RMIT buildings powered by 100% carbon neutral electricity from January 2021. As a result of these important partnerships, 75% of the electricity consumed by RMIT onsite in Australia is renewable. RMIT's existing renewable energy contracts provided 17,000 MWh of carbon-neutral electricity to the University in 2021. RMIT also has 603 kW of solar PV that generates 584 MWh of renewable electricity.

## Clean energy tech extracts twice the power from ocean waves

Researchers have developed **prototype technology** that can double the power harvested from ocean waves, in an advance that could finally make wave energy a viable renewable alternative. The untapped potential of ocean wave energy is vast – it has been estimated that the power of coastal waves around the world each year is equivalent to annual global electricity production. A research team led by RMIT has created a wave energy converter that is twice as efficient at harvesting power as any similar technologies developed to date. Lead researcher Professor Xu Wang said wave energy was one of the most promising sources of clean, reliable and renewable power. With over 35,000 km of coastline, Australia is ideally placed to tap into this power source. Analysis shows Australia could produce twice its current electricity output by harvesting just 17% of its wave energy. However, the challenges of developing technologies that can efficiently extract that natural power and withstand the harsh ocean environment have kept wave energy stuck at the experimental stage.

Ensure access to affordable, reliable, sustainable and modern energy

## Mapping culture and climatic energy drivers

A new online **GIS tool** is helping designers, researchers and policymakers to understand how different European climates and cultures can influence energy demand in buildings. Researchers from RMIT including Iván Luque Segura (RMIT Europe) and Professor Ralph Horne (RMIT's College of Design and Social Context), Eurac Research and University Ca' Foscari Venezia have launched an innovative GIS map with a difference: *The European Climate and Cultural Atlas for Plus Energy Building Design – the 2CAP-Energy Atlas*. The Atlas has been developed as part of the Cultural-E project which is funded by the European Union's Horizon 2020 research and innovation programme. The research focuses on Plus Energy Buildings (PEBs) – those which produce a surplus of energy thanks to renewable sources – and aims to show how culture and climate can influence the type and intensity of energy practices. The new platform combines expertise from the social sciences and building engineering and is expected to deliver insights to help building professionals achieve more successful PEB design.

## Energy Support as Health Care

In 2020-2021, RMIT researchers Dr Nicola Willand, Professor Ralph Horne, Dr Nooshin Torabi worked together on **a project** that aimed to inform capacity-building strategies for health organisations to mitigate energy poverty through integrated and collaborative service delivery and cross-sector policy development. Energy poverty is increasingly recognised as a health risk in Australia. Linking health care with energy support, which is traditionally not considered to be health-related, is an innovative approach. Although joined solutions to energy and health may improve wellbeing and promote energy justice, such interdisciplinary initiatives are rare. The team reviewed existing initiatives and evaluated householder experiences to increase understanding of how to reach 'hard to identify' people, connect them to energy support and promote health through cross-sector efforts. The project informed the cross-sector development of policies that aim for integrated and sustainable responses to energy poverty.

## Solar Energy Application Group

RMIT's **Solar Energy Application Group (SEAL)** undertakes applied research to enable the integration of solar energy in buildings and suburbs. The group, led by Dr Rebecca Yang leader of the Solar Energy Application Lab at RMIT, aims to support energy transformation towards higher solar adoption in the building sector and urban environment. Current projects undertaken by the multi-disciplinary team cover solar energy application at the building level: building and construction standards and regulations; building design modelling, simulation and optimisation; technical feasibility and economic viability; and decision making and data mining. As well as solar energy application at the urban level: smart distribution and optimisation; geospatial mapping and deep learning; and blockchain-enabled lifecycle asset management. Collaborative partnerships include NGOs, Government agencies and research institutions as well as private firms.

## RMIT investments go fossil-free

The launch of a new sustainable global fund enabled RMIT to take the final step in minimising investments with a material impact on climate change. In line with RMIT's Responsible Investment Principles, the University's philanthropic funds became **fossil-free** on 31 March 2021. The Chief Financial Officer and Chair of the RMIT Investment Committee, Clare Lezaja, said it was pleasing that the University had been able to influence the market to deliver a product which meets the sustainability expectations of the University community. "Students should be proud to know that their philanthropic funds, which are so important for supporting student outcomes, are not invested in fossil fuels," The RMIT Student Union (RUSU) said they were delighted that RMIT had taken such a significant step towards responsible, sustainable and future-focused investment.



# SDG8



# Decent Work and Economic Growth



**109**

Research Projects



**14**

International Partnerships



**181**

Course Units



**133**

Publications



**4.9%**

National Contribution



**1.27**

FWCI (Global Average 1.2)



**78.0%**

Publication in top 25% Journals (Global Average 49.9%)



**3.0**

Citations per Publication (Global Average 2.2)



**48.9%**

International Collaboration (Global Average 26.1%)



**23%**

Developing Country Collaboration

## Publication Impact



**155**

Media Highlights



**21**

Patents



**4**

Policy References



**1188**

Social Media

## Modern Slavery Act

RMIT submitted its first Modern Slavery Statement on 30 June 2021, in response to the Australian Modern Slavery Act 2018. The statement provides an overview of the University's commitments and actions to address the potential of modern slavery across the RMIT Group. The University's actions to date had not identified any instances of modern slavery. However, RMIT recognises that the current state reflects the start of modern slavery awareness and maturity, and that of partners, vendors and suppliers, in the establishment of their modern slavery due diligence.

To support the development of our Modern Slavery Statement, an internal process was undertaken across the RMIT Group, with an initial focus on RMIT Australia. A Modern Slavery Working Group, (which included controlled entity representatives) oversaw the research and discovery process and formulation of the 2020 Action Plan. This internal process identified operational activities which could expose the University to modern slavery risks and the findings continue to inform and guide the organisation's journey in addressing modern slavery.

## Trade Route

Powered by RMIT University and supported by the Aboriginal Economic Development Unit at the Victorian Government's Department of Jobs, Precincts and Regions, **Trade Routes** brings together expert knowledge, practical experience and an extensive network of connections to deliver a program that builds the foundations and capacity for international trade and global growth for each First Nations business. Co-designed with Aboriginal and Torres Strait Islander business consultants, Trade Routes takes a pragmatic, results-focused approach to your global market entry strategy, including capacity building (Identification and prioritisation of global growth opportunities), personalised support (A business model designed to give you clarity and focus using targeted market reports), networks (Build relationships that contribute to a strong business foundation) and accelerated growth (Development and personalisation of growth plan and trade routes). A key highlight in 2021 included securing funding from Global Victoria to expand the program to the end of 2022.

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

## **Data Innovation Hub to boost skills in data analytics and AI**

A new **Data Innovation Hub at RMIT** launched in November 2021, offers students opportunities to work with leading organisations that are using data analytics and AI to solve real-world problems and create value for their business. With the program expected to grow and be developed further it will prepare students for emerging jobs through practical bootcamps, industry mentoring, paid internships, on-the-job coaching and other exciting work integrated learning experiences. The program has been developed in partnership with our industry partners, including Deloitte, Commonwealth Bank, Amazon Web Services (AWS), EY, Latitude Financial Services, Macquarie Group, Pragma Partners, Slalom, Synergy Group and Transurban. Demand for skilled data analysts and data scientists is strong and is projected to increase, so the Data Innovation Hub will facilitate Work Integrated Learning at scale in the field of Data Analytics. Professor Aleks Subic, Deputy Vice-Chancellor STEM College and Vice-President Digital Innovation said that the Data Innovation Hub will prepare our graduates for a successful career in data analytics and AI in a wide range of industry sectors.

## **Roadmap to Recovery Program**

A new **Roadmap to Recovery Program**, launched in March 2021, will help Melbourne's CBD, Southbank and Docklands business communities gain the skills needed to get back on track and thrive post COVID-19. The free program delivered by RMIT's Activator in partnership with the City of Melbourne aims to help reinvigorate Melbourne and reactivate businesses. Twenty-one small businesses affected by the pandemic have jumped at the opportunity to build their skills, including yoga and meditation studios, migration and legal services and others from the retail, events, health and beauty, property and tourism sectors. Matt Salier, Director of RMIT Activator said the three-month program would provide small business owners with the innovative, entrepreneurial and agile skills needed to develop new market opportunities and re-engage their customer base.

## **Digital transformation for SMEs**

A new report on the **digital transformation of small and medium-sized enterprises** (SMEs) explores the opportunities, challenges and benefits that digitalisation presents. The report, *Digital transformation for SMEs: Key lessons from the pandemic*, published by RMIT Europe shares insights from industry leaders and international academics on the impact of COVID-19 on digital transformation and the importance of upskilling and reskilling for a successful transition. Report contributors include industry leaders such as the Director of International Development and Public Programmes at Eurecat, the largest technology centre in Catalonia, and the Business Director UK, Europe and MENA of BrandsEye, a global data technology business consultancy. Spearheaded by RMIT's Global Business Innovation Enabling Capability Director Professor Anne-Laure Mention and Associate Professor Andrey Molotnikov, the report showcases examples of SMEs adopting new technologies during the pandemic and the benefits associated with these innovations. It also highlights some of the key lessons SMEs can use to shift consumer behaviour.

## **New report reveals Australia's major digital skills gap**

New research has revealed a **major gap in digital skills** across Australia's workforce, with 87 per cent of jobs now requiring these skills, and a need for 156,000 new technology workers to keep pace with the rapid transformation of businesses. The findings highlight an urgent need to improve digital skills to ensure economic recovery from COVID-19 and to avoid jeopardising a \$10 billion growth in the technology, media and communications industries by 2025. The new report, *'Ready, Set, Upskill – Effective Training for the Jobs of Tomorrow'* was released by RMIT Online, in collaboration with Deloitte Access Economics, following surveys of 1,000 Australian working professionals and employers. The report also revealed that three out of four Australians want to learn about emerging technologies, such as cybersecurity and artificial intelligence, and that four in five Australian business leaders think that adopting new technologies is important to achieve business goals. RMIT Online CEO Helen Souness said responding to Australia's digital skills gap is a national imperative, and Australia's economic recovery will rely heavily on the availability of these skills to power business transformation.



# SDG9



# Industry, Innovation and Infrastructure



**137**

Research Projects



**18**

International Partnerships



**140**

Course Units



**343**

Publications



**9.7%**

National Contribution



**1.76**

FWCI (Global Average 1.3)



**78.3%**

Publication in top 25% Journals (Global Average 52.0%)



**4.8**

Citations per Publication (Global Average 2.6)



**58.9%**

International Collaboration (Global Average 24.3%)



**24%**

Developing Country Collaboration

## Publication Impact



**113**

Media Highlights



**60**

Patents



**8**

Policy References



**628**

Social Media

## CBD North Precinct

In 2021, the Victorian Government awarded RMIT \$44.6 million as part of the Victorian Higher Education State Investment Fund (VHESIF) to establish and expand industry-linked initiatives to ignite our economy and bring life back into the city of Melbourne. The investment funds 18 initiatives across four interrelated project areas: CBD North Precinct: Activation and Innovation Spine; Social Innovation: Health, Justice and Community Services; Digital and Business Transformation; and Future Industry Transformation. Grouped under these four areas, the VHESIF initiatives are collectively focused on the state's economic recovery, social inclusion, job creation and workforce transformation. The initiatives being delivered include: an innovation precinct in CBD North; new urban spaces such as the PlaceLabs and the Multifaith Centre; a scaled-up Higher Apprenticeship Program; innovative research into family violence and women in incarceration; industry-connected centres such as the AWS Cloud Supercomputing Facility; and new research hubs focused on the circular economy, digital technologies, advanced manufacturing, and the global space industry.

## Blockchain and Sustainable Future

As the world seeks to mitigate the impacts of climate change, could blockchain hold the answer to a more sustainable future? One example of blockchain innovation for climate change mitigation is how the technology could help hundreds of millions of people impacted by tropical storms. In emerging economies, people often suffer from tropical storms without adequate insurance protection, and even for those who are covered, many insurance claims are refused if the damage is caused by a natural disaster. The research, led by Dr Huy Pham, from the School of Business and Management, RMIT Vietnam, aims to develop a blockchain-based parametric insurance platform for tropical storms. The project will provide a weather-based technology that improves the coverage and quality of insurance for farmers and others, going well beyond current crop or livestock insurance. Global weather oracle and smart contracts (an application of blockchain) are used for the settlement of insurance claims. The premium is based on the short-term risk of bad weather and is tailored to the insurees. The platform will be piloted in Vietnam, where around 7.7 million people were impacted by typhoons last year.

## Build resilient infrastructure, promote sustainable industrialisation and foster innovation

### Researchers demonstrate the world's fastest 'brain-like' processor

An international team led by Swinburne in collaboration with RMIT and Monash universities has demonstrated the world's fastest and most powerful **optical neuromorphic processor** for artificial intelligence. This represents an enormous leap forward for neuromorphic processors, which operate more like a brain than a traditional computer processor. Led by Swinburne's Professor David Moss, Dr Xingyuan (Mike) Xu (Swinburne, Monash University) and Distinguished Professor Arnan Mitchell from RMIT, the team has achieved an exceptional feat in optical neural networks: dramatically accelerating their computing speed and processing power. Professor Arnan Mitchell said the new technology's applicability to all forms of processing and communications meant it would have a huge impact. Artificial neural networks like this are a key part of AI because they can 'learn' and perform complex operations from computer vision, natural language processing, facial recognition and speech translation to playing strategy games and diagnosing medical conditions. Moss and Mitchell are exploring real-world applications to promote ethical applications that benefit society.

### The research translation journey: Turning theory into real-world impact

The **OpenInnoTrain project** looks at how research can achieve real-world impact, by converting novel concepts and theory into positive changes and solutions that can help everyday people. The project focuses on open innovation as a means to succeed in this research translation journey to ensure that concepts are transformed into innovative ideas that address real societal needs and challenges. Improved cooperation between universities and industry is vital, and a new book by the European Union-funded project OpenInnoTrain aims to equip researchers and practitioners with the practical knowledge to support their collaborative journey. Edited by Professor Anne-Laure Mention, Director of RMIT's Global Business Innovation Enabling Capability Platform, and Dr Massimo Menichinelli, Research Fellow at RMIT Europe, *From Research to Innovation: Exploring the Translation Journey with OpenInnoTrain* reflects on the project's learnings during its first two years of implementation.

### Building railway infrastructure resilience through reliable data collection

Railway infrastructure operators face numerous obstacles when it comes to attaining the data needed for resilient asset management, according to RMIT and University of Sydney researchers. A research team, part of the **European-funded project SAFETY4RAILS**, is drawing on the knowledge behind RMIT's Central Asset Management System (CAMS) technology to design a comprehensive asset management system to assist rail operators. The system, which will include resilience modelling, is working to overcome the challenges across current data collection methods on railway infrastructure performance, which can result in a lack of consistent and accurate data as well as differing conventions and guidelines across railway operators. Dr Nader Naderpajouh from the University of Sydney and RMIT said the adequacy, accuracy, and consistency of available data is key in planning for unexpected future rail disruptions caused by cyber and/or physical attacks. Dr Mojtaba Mahmoodian from RMIT's School of Engineering said current means to collect data are mainly based on visual inspection and can be costly and risky. Experts say a comprehensive resilience plan and optimisation of efforts across railway infrastructure asset management require continuous availability and reliability of data. The project aims to realise this.

### Future-proofing mass transit infrastructure

The pandemic's flow-on consequences brought to the fore the need for more resilient and future-proofed infrastructure, according to RMIT academics. Dr Nader Naderpajouh from RMIT's School of Property, Construction and Project Management said we need to prepare for multi-hazard events, particularly when the effects of the pandemic may compound with the consequences of other disasters such as physical or cyber failures. The knowledge behind RMIT's Central Asset Management System (CAMS) – developed by RMIT researchers Professor Sujeeva Setunge and Professor Ron Wakefield, will be used in the design of the comprehensive asset management system for rail operators, which will be extended through resilience modelling developed by Naderpajouh along with input from railway operators. RMIT Europe's Dr Mauro Poliotti is involved in developing a framework to optimise the budget that rail operators allocate to improve resilience in their systems as part of the **Safety4Rails project**.

# SDG10



# Reduced Inequalities



**151**

Research Projects



**12**

International Partnerships



**146**

Course Units



**112**

Publications



**3.1%**

National Contribution



**1.28**

FWCI (Global Average 0.8)



**66.3%**

Publication in top 25% Journals  
(Global Average 50.5%)



**2.2**

Citations per Publication  
(Global Average 1.1)



**50.0%**

International Collaboration  
(Global Average 20.2%)



**24%**

Developing Country  
Collaboration

## Publication Impact



**21**

Media Highlights



**0**

Patents



**27**

Policy References



**1063**

Social Media

## Education for People Seeking Asylum

The RMIT program **Enabling Educational Opportunities for People Seeking Asylum** aims to support access to education and career opportunities for students from refugee and asylum-seeking backgrounds, who would otherwise be 'locked out' of access due to the need to pay international student fees. This program supports a number of key objectives within RMIT's strategic plan and reflects an ongoing commitment to diversity and inclusion as RMIT values.

The program comprises a holistic package of support for access, retention, success and graduate outcomes including:

- Full-fee waivers for VE and HE students, living allowance and ad-hoc financial assistance;
- English language support;
- Individualised advice and support on careers, education pathways and tertiary education applications;
- Dedicated jobs on campus and customised career development programs;
- Personalised engagement with industry and employers to facilitate employment and networking opportunities.

Since 2018, 32 students graduated and this program provided: 78 fee waivers, 56 living allowance, 143 student support appointments, 35 career support appointments, 42 counselling appointments and 200 student referrals to specialist support services.

## Close the gap in consent laws for major resource projects

A new report on **closing the gap in consent laws for major resource projects** highlights accountability shortfalls in major resource projects and calls for legislative reform to protect Indigenous people's rights. Reflecting on the behaviours of companies operating on the land of the Aboriginal and Torres Strait Islanders past and present, Director of the Business and Human Rights Centre at RMIT University, Associate Professor Shelley Marshall reflected on the case study findings, stating that they revealed a pattern of companies failing to meet international business and human rights norms, as well as a lack of respect for the fundamental principle of obtaining free, prior and informed consent from landholders on projects impacting them. The report also suggests that governments should break down the barrier that Indigenous people may encounter when going to court to challenge decisions that affect them. Professor Julie Cogin said the report aligned with RMIT's commitment to reconciliation and the new centre's mission.

## Going back to go forward

Community and collaboration are at the heart of Yalinguth, a new **First Nations augmented reality app** that takes users around Ngár-go/Fitzroy, Melbourne guided by stories from members of the Aboriginal and Torres Strait Islander communities. The app was developed in partnership with Dr Chris Barker, Kate Cawley and Max Piantoni from RMIT's Masters of Animation, Games and Interactivity (MAGI), and is designed to connect the next generation with place-based stories and history. Not only is Fitzroy the central point for a variety of services dedicated to Aboriginal people like the Victorian Aboriginal Health Service, but it has also been a place where Aboriginal people from all over Australia found their family and community. "The collaborative element of the app is its singular strength," said Dr Barker, who specialises in storytelling through space. The project team partnered with Fitzroy-based social enterprise Charcoal Lane to teach young Aboriginal people interviewing and story gathering skills to help gather these untold stories.

## Activating Social Connection in Australia

A research project from Associate Professor Andrew Butt and Dr Annette Kroen seeks to address the levels of high social isolation evident in Australia by developing an evidence-based, strengths-based approach and toolkit enabling both individuals and communities to activate social connections. **Activating social connection in Australia** offers social benefits by improving individuals' mental health and inclusion, and communities' cohesion, social capital and resilience. There is a focus on communities on the urban fringes of metropolitan Melbourne including specific vulnerable groups (new migrants, isolated youth, isolated older people and people with enduring psychosocial disability) in some of the fastest-growing Australian suburbs. The research includes a coalition of community and local government partners and focuses on co-designing a toolkit and guidelines for use by community partners and policymakers. A key aim of the project is to bring concepts of social isolation, largely derived from health community sector research and organisations, into an urban planning vernacular and its practices in making Australian suburbs.

## Social Innovation Hub

The **RMIT Social Innovation Hub** is an inclusive and collaborative co-working space where organisations, technology, research, innovators and ideas collide to co-create impactful solutions to wicked social challenges. It is where new ideas, new partnerships and dynamic new platforms that address our thorniest social needs are developed and accelerated through actuators, start-ups, social enterprises and robust collaboration. The Social Innovation Hubs throw open the doors to a collaborative, co-working community to help break down the silos that keep social organisations, technologies, research, industry, academics and innovators apart. They have become the connective fibre that catalyses social change in unexpected ways that could never be achieved in isolation. They are also connecting health, justice, economics, social services, urban design and education in an ecosystem of learning, innovation, and a cross-pollination of ideas. Their community currently includes Melbourne Innovation Districts, Health Transformation Lab, Centre for Innovative Justice and Law and Advocacy Centre for Women.

## A new report reveals disadvantage among social housing tenants

The first report of the **Maximising Impact study** has found that social housing tenants are more likely to have experienced chronic, often lifelong, disadvantage than other groups, revealing complex needs for which effective social housing is a crucial social safety net. The longitudinal study by RMIT's Unison Housing Research Lab, now in its second year, is following 170 social housing tenants to gain a better understanding of their unique characteristics and complex needs. The study aims to determine contributing factors behind how long tenants stay in housing, their satisfaction and participation in the wider community and economy. Lead researcher, RMIT's Dr Sarah Taylor, said despite numerous studies involving social housing tenants, existing research hadn't shed enough light on the characteristics and experiences of social housing tenants. From here, researchers will check how residents are faring and produce two more reports over the coming years – drawing on longitudinal data from follow-up interviews.



# SDG11



**185**

Research Projects



**18**

International Partnerships



**116**

Course Units



**187**

Publications



**5.6%**

National Contribution



**1.44**

FWCI (Global Average 1.1)



**75.0%**

Publication in top 25% Journals (Global Average 52.7%)



**3.2**

Citations per Publication (Global Average 1.9)



**52.9%**

International Collaboration (Global Average 23.3%)



**22%**

Developing Country Collaboration

## Publication Impact



**88**

Media Highlights



**1**

Patents



**26**

Policy References



**1096**

Social Media

# Sustainable Cities and Communities

## Sustainable Buildings on Campus

RMIT aims to create sustainable and inclusive spaces that enhance the experience and wellbeing of our people and have a positive impact on our surrounding environment and society. To ensure that industry best practice sustainable outcomes are achieved throughout the lifecycle of RMIT's new and existing spaces, the **RMIT Design Standards** are applied in all capital projects. **RMIT values the Green Star framework**, as a clear and consistent model to recognise sustainability achievements and targets a minimum 5-star Green Star As-Built certification for all applicable new developments and significant refurbishments. RMIT has eight Green Star rated projects, ensuring that capital projects are promoting the reduction of energy consumption, prioritising low toxicity, sustainably sourced, supply chain transparency, circular economy, sustainable transport, health and wellbeing.

## Pop-up bike lanes needed beyond the CBD needed to cope with the cycling rise

**Pop-up cycling infrastructure** is needed across Melbourne to cope with coronavirus-induced shifts in commuting habits, new modelling shows. As COVID-19 restrictions ease, many of us are moving towards private modes of transport, such as cycling, with bike sales increasing rapidly since lockdown. Urban researchers are developing city-scale simulation modes for cycling in Melbourne, to test the impact of behaviour and infrastructure changes on the transportation system. As part of the new project, benchmarking, monitoring, modelling and valuing the healthy liveable city, PhD candidate Afshin Jafari from the RMIT Centre for Urban Research has recreated the travel trips of a single workday in Melbourne for 25% of the city's population – roughly 1,160,000 people. Jafari says although there are long-term plans to improve our cycling infrastructure, such as Melbourne's Transport Strategy 2030 and Victoria's strategic cycling corridors, the impacts of coronavirus show they are needed immediately to protect Melbournians' health.



## **Joining impact models for sustainable cities**

Australian and UK urban experts have joined together to virtually model and test **the benefits of transport planning in creating healthier and sustainable cities across both countries.**

Growing evidence suggests how we plan our cities can affect preventable health risks such as physical inactivity, obesity, noise and air pollution and road trauma. Testing and estimating the health impacts of scenarios in urban and transport planning interventions in different contexts can inform city planners and public health practitioners about what scenarios have the greatest chance of promoting good health for future planning. The project is led by Distinguished Professor Billie Giles-Corti and Dr Belen Zapata-Diomedí at RMIT University and Dr James Woodcock at the University of Cambridge – involving 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).

## **RMIT collaborates with Ho Chi Minh City to shape smart cities in Vietnam**

RMIT and Ho Chi Minh City People's Committee have brought international and industry experts together to discuss **smart and sustainable cities.** Leaders from Australia, Singapore, Japan and Vietnam shared observations, inputs and successful case studies on urban futures which Vietnamese cities could apply. A key outcome was RMIT and the Ho Chi Minh City People's Committee signing a memorandum of understanding (MOU) to foster collaboration in key development areas for the city, with a population of more than eight million. RMIT Vietnam Chairman, Professor Peter Coloe, said the University was committed to making long-lasting impacts in Vietnam, not only through the lives of its graduates, but also through its knowledge and capabilities. Deputy Vice-Chancellor, College of Business and Law and Vice-President Professor Julie Cugin said the College and the University more broadly had become renowned for leadership in research and application of sustainable development techniques, including in smart city design.

## **Healthy Liveable Cities Lab**

**Creating healthy, liveable and sustainable cities** is a major challenge in the face of population growth, social inequalities, traffic congestion, increases in non-communicable diseases and climate change. Planning and delivering better cities are local, national, and global priorities. Healthy and liveable neighbourhoods provide the basis for social equity, harmony, economic resilience, and environmental and social sustainability. A team of researchers, led by Distinguished Professor Billie Giles-Corti, a Vice-Chancellor's Professorial Researcher at RMIT, are undertaking research aimed at contributing to academic scholarship, as well as informing policies and practices to create healthy and sustainable cities. The multidisciplinary team are drawn from a range of disciplines including architecture, behavioural science, econometrics, geography, geospatial and computer science, health economics, public health, social epidemiology, sociology, sociology ecology and transport and urban planning. The team's strong focus is research translation and engagement, collaborating with communities, government, non-government organisations and the private sector in health, urban planning, housing, and transport.

## **Building materials in a circular economy**

The **Building Materials in a Circular Economy** project uses a circular economy framing to investigate waste in material supply chains to contribute knowledge so that the housing construction sector can reduce, reuse, recycle and recover resources and rely much less on virgin material. The research is funded by the Australian Housing and Urban Research Institute (AHURI) with participation by researchers across several Australian universities. The project is organised in three work packages:

- a macro-scale assessment of housing material and energy stocks and flows will be modelled and tested;
- a micro-scale case study will analyse materials use, procurement and practices on an apartment construction site;
- a map of institutions, actors, demand and policy signals, and practices associated with housing materials supply, use, and end-of-use chains will be developed.

# SDG12



**187**  
Research Projects



**14**  
International Partnerships



**215**  
Course Units



**190**  
Publications



**7.8%**  
National Contribution



**2.32**  
FWCI (Global Average 1.3)



**83.3%**  
Publication in top 25% Journals  
(Global Average 56.7%)



**6.5**  
Citations per Publication  
(Global Average 2.8)



**56.8%**  
International Collaboration  
(Global Average 27.3%)



**29%**  
Developing Country  
Collaboration

## Publication Impact



**129**  
Media Highlights



**3**  
Patents



**7**  
Policy References



**406**  
Social Media

# Responsible Consumption and Production

## Waste Management

Guided by the Waste Management Plan, RMIT aims to improve waste management practices across all campuses. The plan aims to divert waste from landfill by following the waste hierarchy of avoidance, minimisation and recycling. In 2021, RMIT Australian operations produced a total of 538 tonnes of waste and had a diversion rate of 19 per cent. The overall waste profile was down 57 per cent on 2019 levels, primarily due to the impacts of COVID-19 and the move to remote learning. The landfill waste produced is equal to 10.9kg per student. Construction and demolition (C&D) waste data is provided by the principal contractor on each of RMIT's capital projects. In 2021, RMIT had 6 active capital development projects providing C&D waste data. From these projects, 1,554 tonnes of waste were produced and 97.6 per cent was diverted, with only 37kg of waste sent to landfill.

## Recycling face masks into roads to tackle COVID-generated waste

A new **road-making material** developed by RMIT University researchers is a mix of shredded single-use face masks and processed building rubble that meets civil engineering safety standards. Their study shows that using the recycled face mask material to make just one kilometre of a two-lane road would use up about 3 million masks, preventing 93 tonnes of waste from going to landfill. Analysis shows the face masks help to add stiffness and strength to the final product, designed to be used for base layers of roads and pavements. First author Dr Mohammad Saberian said multidisciplinary and collaborative approaches were now needed to tackle the environmental impact of COVID-19, particularly the risks associated with the disposal of used PPE. Professor Jie Li who leads the RMIT School of Engineering research team said, "If we can bring circular economy thinking to this massive waste problem, we can develop the smart and sustainable solutions we need."



## Ensure sustainable consumption and production patterns

### PPE made from aquatic weed

At a time when the huge turnover of medical personal protective equipment (PPE) is raising concerns about waste and recycling, RMIT students created an award-winning **PPE made from aquatic weed**. Created by a team of Master of Design Innovation and Technology students, the project won the “Best in Category Award in Student Design” at the Premier’s Design Awards. “Aegis” is a protective gown for hospital use made from a native Australian aquatic weed that has antimicrobial properties. Student Charlotte McCombe and recent graduates, Tanuj Kalra and Jui Deepak Apte, came up with the winning design during a studio that challenged students to find solutions to current environmental issues through biodesign. The team was researching different materials that could have starch extracted and turned into bioplastic and came across Combungi, also known as Bulrush, an aquatic weed that is fibrous and has an antimicrobial jelly in its leaves.

### Australian-first tech: next step in waste transformation innovation

The next iteration of **waste transformation innovation** is underway with the water industry, transforming biosolids headed for landfill into reusable products for farmers, thanks to RMIT developed technology. In an Australian first, the new technology uses high temperatures to destroy pathogens and microplastics in biosolids, creating high-value biochar. This makes biosolid management more environmentally sustainable and cost-effective and helps to reduce carbon emissions for water and agriculture industries. Currently, around 30 per cent of the world’s biosolids resource is stockpiled or sent to landfill, creating an environmental challenge. The technology’s development was supported by RMIT’s Enabling Capability Platforms funding, with the project led by Associate Professor Kalpit Shah, Deputy Director (Academic) of the ARC Training Centre for Transformation of Australia’s Biosolids Resource at RMIT. “Developing new ways to squeeze the full value from waste resources is critical in our transition to a circular economy, so we are thrilled this Australian-first technology has reached the full trial stage,” Shah said.

### Circular economy for Sustainable Housing

RMIT urban researchers will lead a pioneering project examining how Australia’s housing sector can transition to a **circular economy for more sustainable homes**. Every year, over 20 million tonnes of waste from the construction industry is sent to landfills. A new project led by RMIT University will investigate how the construction sector can transition to a circular economy – an approach that seeks to eliminate waste and keep resources in a continually flowing loop. RMIT’s Professor Ralph Horne will lead the Australian Housing and Urban Research Institute-funded Inquiry Programme to establish an evidence base and framework for housing in a circular economy, in collaboration with the University of South Australia, University of New South Wales, University of Wollongong and The University of Adelaide. “It will transform the housing sector, reducing waste and pollution through good design, facilitated by intelligent incentives and robust regulations,” Horne said.

### Biosolids resource management centre launches at RMIT

RMIT is training the next generation of biosolids researchers as a key focus of a new centre to transform the management of Australia’s biosolids resource. Biosolids are a by-product of the wastewater treatment process that can be used as fertiliser in land rehabilitation or as a construction material. However, around 30% of the by-product globally goes to landfill or are stockpiled. The \$14 million **Australian Research Council Training Centre for the Transformation of Australia’s Biosolids Resource** is based at RMIT’s Bundoora campus. RMIT Deputy Vice-Chancellor Research and Innovation and Vice-President, Professor Calum Drummond, said the centre represented a major investment in tackling the challenge. “This centre builds on RMIT’s strengths in solving complex problems through our research and innovation, our connections with industry and commitment to training the next generation of biosolids managers for the water sector,” Drummond said. Centre Director, Distinguished Professor Andrew Ball, said the research would provide new opportunities for a range of Australian industries. Partner universities include the Universities of New South Wales, Queensland, Western Australia, Imperial College London and the University of Arizona.



# SDG13



# Climate Action



85

Research Projects



9

International Partnerships



65

Course Units



145

Publications



4.0%

National Contribution



2.24

FWCI (Global Average 1.4)



78.9%

Publication in top 25% Journals (Global Average 64.9%)



5.3

Citations per Publication (Global Average 3.1)



62.1%

International Collaboration (Global Average 31.9%)



30%

Developing Country Collaboration

## Publication Impact



98

Media Highlights



1

Patents



30

Policy References



636

Social Media

## RMIT investments go fossil-free

The launch of a new sustainable global fund enabled RMIT to take the final step in minimising investments with a material impact on climate change. In line with RMIT's Responsible Investment Principles, the University's philanthropic funds became **fossil-free** on 31 March 2021. The Chief Financial Officer and Chair of the RMIT Investment Committee, Clare Lezaja, said it was pleasing that the University had been able to influence the market to deliver a product which meets the sustainability expectations of the University community. "Students should be proud to know that their philanthropic funds, which are so important for supporting student outcomes, are not invested in fossil fuels," The RMIT Student Union (RUSU) said they were delighted that RMIT had taken such a significant step towards responsible, sustainable and future-focused investment.

## Climate rewind: Scientists turn carbon dioxide back into coal

Researchers have used liquid metals to turn **carbon dioxide** back into solid coal, in a world-first breakthrough that could transform our approach to carbon capture and storage. RMIT researcher Dr Torben Daeneke said converting CO2 into a solid could be a more sustainable approach. To convert CO2, the researchers designed a liquid metal catalyst with specific surface properties that made it extremely efficient at conducting electricity while chemically activating the surface. The carbon dioxide is dissolved in a beaker filled with an electrolyte liquid and a small amount of the liquid metal, which is then charged with an electrical current. The CO2 slowly converts into solid flakes of carbon, which are naturally detached from the liquid metal surface, allowing the continuous production of carbonaceous solid. Lead author, Dr Dorna Esrafilzadeh, a Vice-Chancellor's Research Fellow in RMIT's School of Engineering, said the carbon produced could also be used as an electrode.



## Take urgent action to combat climate change and its impacts

### Report: Four ways to guide Australian business to net-zero

A new report says business needs more support to achieve **net-zero emissions**, including more stringent and consistent reporting, re-introducing carbon pricing, and reforming the carbon credit systems. Australian businesses are calling out for the Australian Government to give more clarity and guidance on how to reduce emissions. A new RMIT report shows how Government can support, regulate and incentivise businesses to effectively work towards net-zero carbon emissions by the 2035 target. The report highlights how the Australian Government could draw on the latest scientific expertise and existing knowledge to provide a clear path forward for businesses to reduce their emissions. Lead author of the report and climate change theme leader at RMIT's Business and Human Rights Centre, Dr Leanne Morrison, said that while many Australian businesses are developing their own policies, they would welcome clearer Government guidance and more consistent nationwide regulation. "Strong policies at the national level would actually be really helpful and help their bottom line too" – said Morrison.

### How well are we adapting?

**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. The project is the result of an extensive co-design process to develop a framework and attendant indicators with relevant service owners within council. The framework and indicators are supported by a web-based tool, with both internal and external reporting features. In 2018, WAGA and RMIT received a grant from the Victorian Government, pursuant to the 'Supporting Our Regions to Adapt' program, and additional funding from WAGA and non-WAGA Councils to undertake the expanded project. The project aims are to build capacity for monitoring, evaluation and reporting for climate change adaptation, embed climate change adaptation considerations across council service and asset portfolios, and enable council decision-makers to create an evidence base for informed decision-making. Allowing them to identify where services might be impacted in the future and ensuring residents most at risk to climate impacts will be protected. The Project Coordinator, Katrina Dunn represented RMIT in this project.

### Enhancing urban resilience

The **Enhancing urban resilience to climate change impacts and natural disasters: Honiara** project aims to enhance the resilience of the city and its inhabitants to current and future climate impacts and natural disasters. This project has a focus on pro-poor adaptation actions that involve and benefit the most vulnerable city communities with special emphasis on youths, women, girls, the elderly, and people with disabilities. Professor Darryn McEvoy leads the project and a large multi-disciplinary team of lecturers and researchers from six different schools at RMIT. The project also engages with multiple local partners, NGOs and consultants. The project is implemented locally by the Solomon Islands Ministry for the Environment, Climate Change and Disaster Management (MECCDM), the Ministry of Lands, Housing and Survey (MLHS), and the Honiara City Council (HCC). A team of RMIT University engineers, planners and designers have developing nature-based solutions for the adaptability and resilience of five highly vulnerable informal settlements in Honiara, since the project's commencement in 2019.

### The health and wellbeing of climate change

*Understanding and planning for the health and wellbeing impacts of climate change in the City of Greater Dandenong and the Mornington Peninsula Shire* – is a **project** which brings together researchers and practitioners planning for equitable health and wellbeing outcomes for all in the context of a changing climate. Climate change poses a significant threat to our public health and wellbeing and will have differential impacts across groups in our society. To avoid exacerbating health inequities, there is a need to better understand and plan for the health and wellbeing impacts of climate change. This involves integrating climate change adaptation into public health planning agendas. The City of Greater Dandenong and the Mornington Peninsula Shire have partnered with the Centre for Just Places (Jesuit Social Services) and the Australian Urban Observatory, (Centre for Urban Research, RMIT University), to investigate the interaction of climate change and health within their municipalities. Associate Professor Melanie Davern and Dr Susie Moloney from RMIT were a part of these investigations.

# SDG14



# Life Below Water



55

Research Projects



1

International Partnerships



23

Course Units



91

Publications



3.6%

National Contribution



1.05

FWCI (Global Average 0.8)



76.6%

Publication in top 25% Journals (Global Average 59.4%)



2.9

Citations per Publication (Global Average 1.6)



51.7%

International Collaboration (Global Average 27.3%)



28%

Developing Country Collaboration

## RMIT Vietnam plastic-free campaign

RMIT Vietnam's Zero Waste Campus strategy aims to minimise waste impacts on the environment by promoting the waste hierarchy of 'Avoid, Reduce, Reuse and Recycle'. This strategy was developed in partnership with key internal and external stakeholders to avoid waste and improve waste management practices at the Vietnam campuses. Key activities of this strategy include leadership commitment, waste audits, policies, waste segregation activities, an engagement and communication plan, a sustainable retail framework and on-campus composting site. RMIT Vietnam's Zero Waste Campus strategy addresses plastic use through specific initiatives, such as programs to increase awareness about the impacts of plastic use, single-use plastic bans on RMIT Vietnam's campuses and competitions to avoid the use of plastic.

## Urchin corals and underwater films

In many places around the world, human impacts on the environment are causing the **sea urchin population to soar** and seaweed habitats to disappear. In many parts of Port Phillip Bay, this has already happened. RMIT is working with scientists to improve the ecological outlook for Port Phillip Bay by discovering ways to remove the intrusive urchins. Chemists at RMIT, led by Professor Sylvia Urban from Applied Chemistry and Environmental Science, are looking into the chemical properties of the shells. Dr Pirjo Haikola, an Industry Fellow lecturer in Design Innovation and Technology, designer and SCUBA diving instructor, has created a 3D-printed coral structure installation – made from sea-urchin shells blended with biopolymers – which was displayed at the NGV Triennial 2020. The installation intended for reef restoration purposes is part of the Reef Restoration and Adaptation Program for the Great Barrier Reef.

### Publication Impact



21

Media Highlights



1

Patents



13

Policy References



246

Social Media



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

### Soft plastic packaging recycled into sustainable concrete

RMIT research has helped create concrete made with **soft plastic** in a redeveloped car park – the first time the circular-economy technology has been used in an Australian commercial project. An RMIT team of engineers have partnered with Victorian recycling organisations Replas, RED Group and SR Engineering to develop a concrete material made from lightweight recycled plastic. RMIT's lead researcher Dr Jonathan Tran and his team, research fellows, Dr Rajeev Roychand and Dr Thomas Loh, worked with industry to include Polyrok – a plastic aggregate made from soft plastics – which was used in the concreting of Coles Horsham's car park and a footpath in the City of Frankston. Tran said the opportunity to work with industry and create a considerable impact on society was a rewarding experience. "In the future, we're hoping to explore the production of sustainable concrete structures using a new large-scale concrete 3D printer at RMIT's Bundoora campus."

### Interdisciplinary Conservation Science Research Group

The **Interdisciplinary Conservation Science Research Group (ICON Science)** at RMIT is a team of researchers working to better understand and manage the interactions between society and our natural environment. Conserving biodiversity demands a multidisciplinary approach that reconciles ecological, social and economic dimensions. The ICON Science Research Group examines these diverse drivers of change, particularly in urban and semi-rural environments. Their aim is to address the gap between conservation theory and real-world practice in complex planning environments. Their current research focuses include planning for nature in cities, human behaviour and communication for biodiversity, resource allocation and decision-making to drive more efficient environmental management, policy evaluation and biodiversity offsetting and private land conservation.

### From recycling to upcycling: A smarter way of dealing with plastic

Researchers have developed a clean and cost-effective way to **upcycle used plastic**, transforming it into valuable nanomaterials and high-quality fuel. Globally only about 20% of waste plastics are recycled. Boosting that figure remains a challenge as recycling plastic cleanly can be expensive and usually produces lower-value products, often making it financially unviable. The new method from researchers at RMIT can produce high-value products from plastic – carbon nanotubes and clean liquid fuel – while simultaneously upcycling agricultural and organic waste. Lead researcher, Associate Professor Kalpit Shah said upcycling two massive waste streams through one circular economy approach could deliver significant financial and environmental benefits. "It's a smart solution for transforming both used plastic and organic waste – whether tonnes of biomass from a farm or food waste and garden clippings from household green bins. "We hope this technology could be used in future by local councils and municipal governments to help turn this waste into genuine revenue streams."

### Eliminating single-use plastic

Melbourne Convention Exhibition Centre (MCEC) is partnered with RMIT Activator in the Impact Academy program which mentors' students participating in a multidisciplinary sustainability project that aims to eliminate problematic and unnecessary single-use plastic from MCEC's events and onsite cafes by 2025. A key aspect of the challenge was to apply a circular economy approach to developing a solution, in that students had to re-think the system to design out waste and keep materials and products in use. Impact Academy is run by RMIT Activator, alongside our industry partners. It is a 12-week online program designed to include both individual and team-based challenges, with a focus on uncovering sustainable real-world business solutions.

# SDG15



# Life On Land



92

Research Projects



1

International Partnerships



26

Course Units



53

Publications



1.9%

National Contribution



1.39

FWCI (Global Average 1.0)



80.0%

Publication in top 25% Journals (Global Average 58.5%)



3.0

Citations per Publication (Global Average 1.9)



67.9%

International Collaboration (Global Average 32.0%)



26%

Developing Country Collaboration

## Publication Impact



45

Media Highlights



1

Patents



42

Policy References



922

Social Media

## Green areas and open spaces

RMIT is committed to providing a high-quality natural environment across all of its campuses, this includes maintaining open spaces. RMIT maintains approximately 8.6 hectares on the City campus, 4 hectares on the Brunswick campus, 39.7 hectares on the Bundoora West campus and 16 hectares on the Bundoora East campus.

RMIT undertakes an annual tree audit which identified 1,935 trees across the Australian Campuses in 2021, of which 87% of these were native species. RMIT's green areas and open spaces are actively maintained by contracted service providers whose responsibilities include:

- Providing and maintaining a planting register with plants and tree details (botanical name, planting date, common name and location);
- Removing weeds;
- Providing maintenance to improve tree health and vigour, safety of campus users and/or removal of vegetation that is impacting the grounds environment;
- Tree maintenance and pruning (arborist service);
- Ensuring that plants can take available nutrients to maintain healthy plant conditions;
- Maintain irrigation systems and plant watering;
- Branch and dead leaf removal from tufted plants;
- Applying mulch to the surface of garden beds;
- Defining specified plants and heritage zones that shall be planted with appropriate indigenous species only.

## Food and housing crisis for Melbourne's native bees

RMIT researchers have called on Melburnians to plant the right plants and create the right **homes for native pollinators**, for better tomato crops, more flowers and improved urban biodiversity. City gardeners rely on bees, butterflies and other insects to pollinate their plants, which is how flowering plants reproduce and grow fruit or seeds. But these gardens often don't have the right types of food and homes for these helpful native bees and flies, with knock-on effects for gardens and biodiversity. RMIT urban ecologist Katherine Berthon found that only 43% of flowers in the Melbourne gardens she studied were being used by bees and other pollinating insects. Native bees are vital to urban areas – they pollinate not only native flora but also our veggies. Even small garden spaces can offer really important homes and habitats, but good connections between gardens would help native insects thrive.



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

## Understanding 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. RMIT researchers Dr Sara Long, Dr Jackie Myers, Dan MacMahon, Prof Vincent Pettigrove and Monica Tewman are collaborating with Melbourne Water to undertake a contaminant risk assessment for each environmentally sensitive site based on existing management plans, historical sediment and water quality data, and maps of surrounding land use. **The project** aims to identify sites that are at the greatest risk from contamination that are a priority for contaminant screening using novel and traditional methods; and make recommendations to protect high risk environmentally sensitive sites.

## Biodiversity Planning

The **Interdisciplinary Conservation Science Research Group** at RMIT has an Australian Research Council (ARC) linkage grant seeking to improve conservation planning in urban fringe environments. Accelerating urbanisation in Australia is considered one of the greatest threats to biodiversity, with over 50% of threatened species occurring in urban fringe areas. At the same time, conservation planners in the urban fringe lack tools that can simultaneously prioritise multiple conservation actions by multiple actors and reconcile complicated tradeoffs. This project addresses the important gap between conservation theory and real-world practice, providing tools for managers to develop optimal strategies given real-world constraints. It will result in better theories and models for designing and evaluating conservation policies and plans to ensure good biodiversity outcomes. Results will be generalisable to any complex conservation planning scenario.

## Evaluation in the Lower Goulburn River

**Monitoring and evaluation of environmental watering on the Lower Goulburn River** is part of a large-scale program across the Murray- Darling Basin. The current program started in 2014 as a long-term intervention monitoring (LTIM) program and in 2019 became a monitoring, evaluation and reporting program, the MER Goulburn. RMIT worked in partnership with the University of Melbourne, Goulburn Broken CMA, Streamology, Arthur Rylah Institute, Monash University, DELWP, Jacobs, and Victorian Environmental Water Holder on this project. This program is of interest to individuals and organisations, including government bodies with environmental water allocations wishing to demonstrate the value of environmental water and to enable adaptive management of environmental flows. The aim is to understand ecological outcomes for waterbugs (macroinvertebrates), vegetation and fish, gather results that show shrimp and prawn populations vary over time and investigate whether population variation is natural or in response to flow. The expected completion date is 2024.

## Reimagining the Suburb

**The Reimagining the Suburb: Planning for biodiversity in the urban fringe** research project, supported by The Myer Foundation, aims to address incompatibilities between native grassland conservation and urban development in Melbourne in two ways. Firstly, by improving prospects for grassland conservation within housing developments; and secondly, by investigating alternative urban development scenarios that mitigate impacts on existing grasslands.



# SDG16



# Peace, Justice and Strong Institutions



92

Research Projects



6

International Partnerships



123

Course Units



107

Publications



3.5%

National Contribution



1.15

FWCI (Global Average 0.9)



61.8%

Publication in top 25% Journals (Global Average 49.1%)



1.60

Citations per Publication (Global Average 1.2)



37.4%

International Collaboration (Global Average 19.8%)



8%

Developing Country Collaboration

## Publication Impact



53

Media Highlights



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Patents



41

Policy References



742

Social Media

## Changing the course framework

RMIT recognises that sexual harm disproportionately affects women and fits within a spectrum of gendered violence. RMIT has developed and implemented the '**Changing the Course**' framework designed to build a community where every student and staff member is safe, respected, and free from sexual harm. Key activities in 2021 included: new governance arrangements for RMIT's gender-based violence initiatives ensuring strong representation from all stakeholder groups and direct lines of accountability to the Vice-Chancellor's Executive; progress in the development of a central repository for the collection, monitoring and reporting of data and reporting of data on gender-based violence across student and staff that will enable more effective analysis to inform future work; participation in the Universities Australia 2021 National Student Safety Survey on gender-based harm; delivery of Respectful Research training to HDR staff; development of a specialist training and decision-making resource to support senior officers in the hearing of student conduct matters involving gender-based violence; and revision and finalisation of the Sexual Harm Risk Assessment tool for Safer Community.

## Research Integrity

The **Research Ethics, Integrity, and Governance team** supported an independent and external review of research integrity at RMIT University to ensure RMIT's adherence to the principles and institutional responsibilities of the Australian Code. In 2021, the Research Ethics, Integrity, and Governance team ran 45 education sessions attended by more than 3,700 attendees and 2,917 staff and student researchers have completed the research integrity training and education online course.

To ensure RMIT's research training policies maintain best practice in line with other leading universities in Australia, the Higher Degree by Research (HDR) suite of policies undertook a comprehensive review and refresh. A review and revision of the RMIT Research Policy suite was conducted to reaffirm RMIT's commitment to research integrity, research ethics and the responsible conduct of research. The revision included related procedures for animal and human research ethics, authorship, centres, data management, dissemination, funding, management of research integrity breaches and research with genetically modified organisms.

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

### Close the gap in consent laws for major resource projects: report

In 2021, **a report** was released that highlights accountability shortfalls in major resource projects and calls for legislative reform to protect Indigenous people's rights. The First Peoples and Land Justice Issues in Australia report by researchers at RMIT's Business and Human Rights Centre (BHRIGHT), reveals the human rights impacts of companies operating on Aboriginal and Torres Strait Islander land. BHRIGHT Director, Associate Professor Shelley Marshall, said the case studies revealed a pattern of companies failing to meet international business and human rights norms, as well as a lack of respect for the fundamental principle of obtaining free, prior and informed consent from landholders on projects impacting them. "Our research reveals a legal framework and corporate behaviour that refuses to acknowledge lack of consent," Marshall said. Speaking at the launch, Deputy Vice-Chancellor of RMIT's College of Business and Law, Professor Julie Cogin, said the report aligned with RMIT's commitment to reconciliation and the new centre's mission.

### Woor-Dungin's Criminal Record Discrimination Project

RMIT researchers are **supporting community-led efforts** to change laws holding some Aboriginal Victorians back from employment. Collaboration with Aboriginal-led organisation Woor-Dungin has gathered evidence and case studies from around Victoria on minor convictions from many years ago impacting people when seeking employment. Victoria is the only state in Australia that does not have spent convictions legislation. This means that even minor offences from over 10 years ago can still appear on police checks when somebody applies for a job, even if irrelevant to the job being applied for. "This discrimination on the basis of an old or irrelevant criminal record disproportionately affects Aboriginal Victorians and compounds the disadvantage they already face," – Professor Bronwyn Naylor from RMIT's Graduate School of Business and Law said. Stan Winford, Associate Director at RMIT's Centre for Innovative Justice, has been consulting with Aboriginal legal services in other states and territories about spent convictions schemes to inform community consultations in Victoria.

### Lessons from Covid: the use of remand, bail and sentencing for women

As part of RMIT's continuing focus on the specific needs of women in the justice system, the Centre for Innovative Justice (CIJ) has embarked on a project developed in partnership with the Law and Advocacy Centre for Women, which explores women's experiences of criminal justice contact and legal outcomes since the emergence of the COVID-19 pandemic. The research seeks to find out more about trends in the use of remand, bail and community-based sentences for women in Victoria during COVID-19, as well as the impact of restricted access to support services in the community and prison. Funded under the Victorian Government's Higher Education State Investment Fund, the **Lessons from COVID-19: The use of remand, bail and sentencing for women** project will help build the evidence base for more appropriate responses to criminalised women that prioritise support in the community over imprisonment. RMIT researchers, Elena Campbell Associate Director of Research, Advocacy & Policy, and Catherine Caruana Senior Adviser, Research and Advocacy were involved in this project.

### Family violence workforce project

Since the Royal Commission into Family Violence delivered its recommendations in 2016, the family violence sector has undergone a period of significant change. Although a great deal of progress has been made, for workforce reform to continue, there needs to be a clear and consistent view of the jobs, roles and functions across the Victorian specialist family violence sector. The **Family Violence Workforce Project** involves extensive consultation to understand the current and future requirements of the family violence and sexual assault sectors. The project will develop a series of research products including generic role profiles, job descriptions, a selection and assessment template and a workforce forecasting model. The Workforce Innovation & Development Institute (WIDI) is collaborating with a range of partners on this project including Safe and Equal, No to Violence (NTV), Sexual Assault Services Victoria, the Australian Services Union (ASU) and Aboriginal Community Controlled Organisations. Including representatives from RMIT, Project Manager Jean Cameron and Project Officer Casey Hill.

# SDG17



137

Research Projects



29

International Partnerships



73

Course Units



153

Publications



4.3%

National Contribution



1.6

FWCI (Global Average 1.1)



75.0%

Publication in top 25% Journals (Global Average 54.0%)



3.63

Citations per Publication (Global Average 2.1)



53.0%

International Collaboration (Global Average 25.0%)



25%

Developing Country Collaboration

## Publication Impact



75

Media Highlights



8

Patents



23

Policy References



790

Social Media

# Partnerships for the Goals

## Climate Resilient Urbanisation in the Asia Pacific Region (CRU-AP)

Urbanisation and global environmental change drivers are two of the most significant challenges facing cities and societies in the Global South. These challenges are particularly acute in developing countries in the Asia Pacific region, where climate change will exaggerate the significant risks already posed by natural hazards, impacting towns and cities that are also rapidly urbanising. Responding to these critical sustainability challenges, the Climate Resilient Urbanisation in the Asia Pacific Region (CRUAP) research group was created. CRUAP is a group of RMIT researchers from across different schools and disciplines that collaborate on projects that offer scientific, technical, and capacity-strengthening solutions to some of the most critical sustainability challenges facing fast-growing towns and cities in the Asia Pacific region. Examples of CRUAP's projects in 2021 include:

- **Climate Resilient Honiara Project:** funded by the United Nations Framework Convention on Climate Change UNFCCC Adaptation Fund and administered by the United Nations Human Settlements Programme;
- **Inclusive and Disaster Resilient Shelter Guide: Urban Informal Settlements, Honiara, Solomon Islands:** funded by the Australian Humanitarian Partnership (AHP) Disaster Ready programme and administered by Habitat for Humanity;
- **Unlocking the potential of urban gardens as a mechanism for sustainable, climate resilient, livelihoods in Greater Honiara:** initial work funded by UNFCCC Adaptation Fund; new work funded by the South Pacific Commission (SPC).

## Circular Economy Hub

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 CE research across Australia and internationally. Their 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 RMIT's impact and expertise in circular economy. It also supports the emergence of a new capability-building platform across micro-credentials, executive training, and vocational/higher educational outcomes. Researchers and educators from the following schools are in the network, Property, Construction & Project Management, Science, Media & Communications, Fashion & Textiles, Law, Global, Design, Business, Engineering, Urban and Social Studies. The network has strong capabilities to demonstrate real-world outcomes through projects in the following five key thematic areas, waste recovery, construction, policy and governance, design, and science and engineering.

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

### RMIT University selected as an official partner of the New European Bauhaus

In 2021, RMIT was named a **partner of the New European Bauhaus** (NEB) – a creative and interdisciplinary initiative of the European Commission aimed at designing new ways of living to build a sustainable, inclusive and beautiful future for all. Inspired by the early 20th century Bauhaus modernist art school, the NEB brings the European Green Deal closer to people by creating inclusive and accessible living spaces, highlighting the value of simplicity, functionality and circularity of materials while recognising the importance of cultural and aesthetic values. RMIT Europe Executive Director Marta Fernandez said that the partnership will see collaboration with other NEB partners on projects and initiatives that promote and apply the principles of the NEB and drive positive social change. “RMIT Europe is already working with NEB principles on various initiatives – including a new offering of free online educational courses for professionals interested in learning how to transform our cities to make them more sustainable, inclusive, healthy and liveable”.

### Asia Society Australia and RMIT announce new strategic partnership

In 2021, **RMIT and Asia Society Australia** formed a partnership to advance Australia’s economic, education and people-to-people engagement with Asia and strengthen Victoria’s position as a centre of Asia insights and capabilities. The partnership will co-locate Asia Society Australia at RMIT, bringing together its global think-tank and convening capabilities with the University’s world-class research, teaching and infrastructure. Central to the agreement will be the creation of a new Asia Trade and Innovation Hub at RMIT’s City campus in the heart of Melbourne’s academic and innovation precinct.

RMIT interim Vice-Chancellor Dionne Higgins said, “The Asia Trade and Innovation Hub will leverage both partners’ expertise and networks to create new opportunities for Victorian economic and social engagement in Asia.” RMIT and Asia Society Australia will work collaboratively to build the Hub that has been funded by the Victorian Government through the Victorian Higher Education State Investment Fund (VHESIF).

### RMIT joins Asia’s thriving tech scene

In 2021, RMIT signed a **strategic partnership** with Infinite Learning in Nongsa Digital Park, a high-profile tech hub supported by the Indonesian and Singapore governments. The new partnership signals an expansion of RMIT’s presence in the Asia-Pacific region and builds on the RMIT’s reputation as a trusted partner that helps governments address critical workforce skills gaps. RMIT’s College of Vocational Education will initially deliver two intensive courses in Cyber Security to the local workforce as a way of addressing workforce skills gaps. Deputy Vice-Chancellor Global Professor, Peter Coloe said “RMIT had decades-long partnerships in the Asian region where it is a recognised leader in technology, design and enterprise”. “It’s exciting to know that students of our new Cyber Security courses will join a 50,000-strong alumni cohort in the region. RMIT’s College of Vocational Education Deputy Vice-Chancellor, Mish Eastman, said the University was a leader in lifelong learning and upskilling.

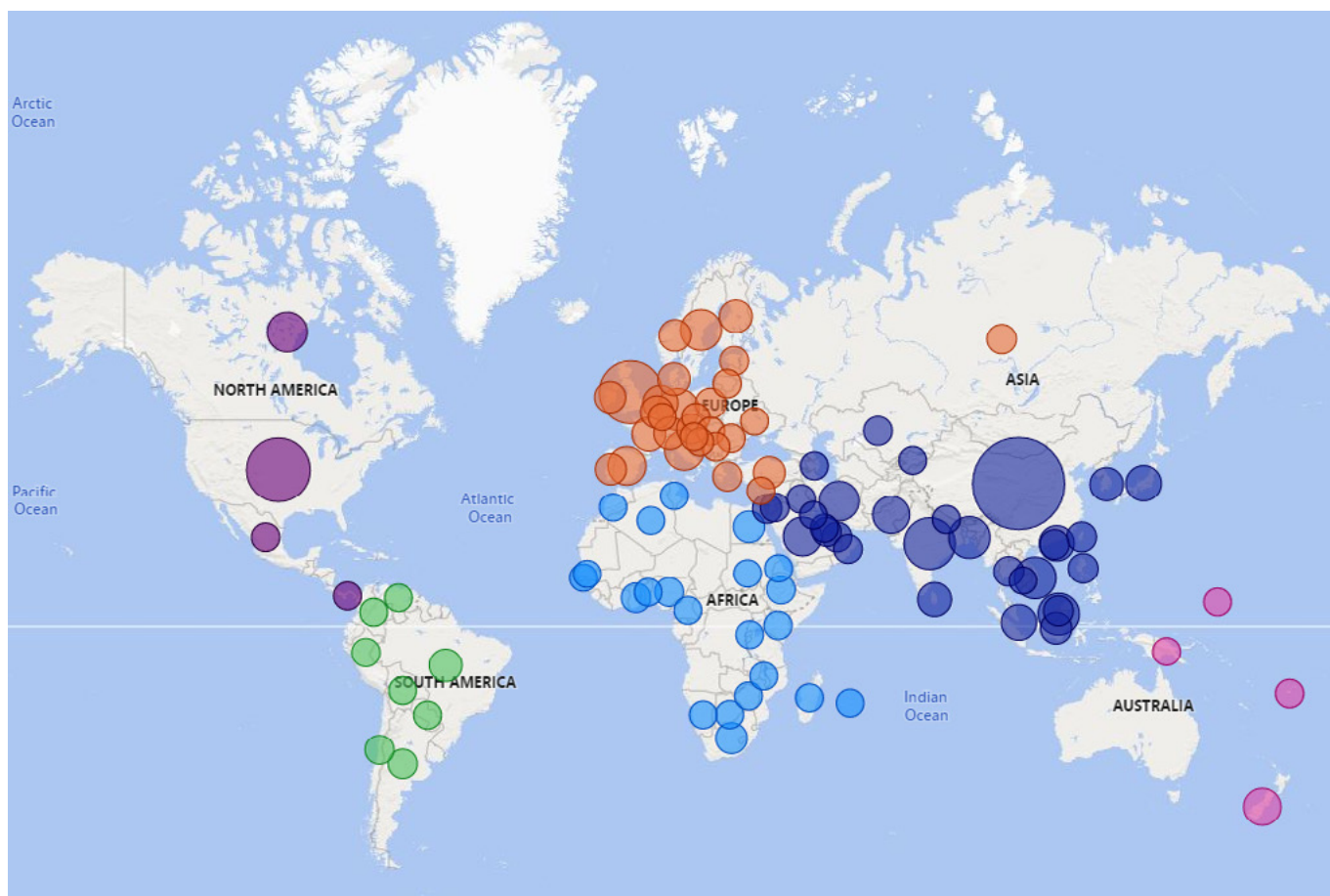
### Siemens Digital Energy TestLab launched at RMIT

In 2021, RMIT and Siemens announced a new **Digital Energy TestLab** that will allow students and researchers to simulate intelligent electrical systems for smart cities in a Victorian first. Harnessing the power of data analytics, Internet of Things (IoT), simulation and the same hardware and software used by new generation national networks, the future energy workforce can test and model real-world scenarios and optimise energy systems for smart cities, including national and local energy grids. Siemens and Festo signed in 2020 to drive industry and workforce transformation. Deputy Vice-Chancellor of RMIT’s STEM College and Vice-President of Digital Innovation, Professor Aleks Subic welcomed the strategic initiative, saying it opened new education and research pathways to one of the nation’s most critical topics – the future of energy for smarter and more sustainable cities. Engineers Australia CEO Dr Bronwyn Evans said engineering was at the heart of solving society’s greatest challenges, including the future of energy.



# Global Partnership for Sustainable Development

RMIT understands the importance of global partnerships to successfully implement and contribute to the achievement of the UN's 2030 sustainable development agenda. Delivering positive impact through collaboration and partnerships is at the very core of who we are. Our 2021 research projects and publications contributing to the achievement of the SDGs were conducted in partnership with 103 countries from Africa, the Americas, Europe, Asia and Oceania.



## International Collaboration by Continent in 2021









# Methodological Approach

This section presents the methodological approach used to identify RMIT's contributions to the advancement of the SDGs. Qualitative information (case studies) and quantitative metrics were used to demonstrate how diverse our contributions to sustainable development are. This report presents examples of how RMIT's research, curriculum, governance, operations and partnerships are contributing to the United Nations' 2030 sustainable development agenda. Qualitative and quantitative metrics cover only 2021 data and information.

## Case Studies

These case studies were selected based on an internal consultation process, including engagement with key portfolios, review of relevant university websites and reports and input from more than 80 professional staff and academics.

## Research Metrics

Research metrics were provided building on an internal research mapping process that started in 2018. The RMIT research mapping approach is based on a set of keywords and queries related to specific SDG targets and indicators. Keywords and queries were developed over the 5 years and are based on the United Nations' SDGs official documents. Over the years these keywords and queries have been reviewed, refined 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 and queries approach to validate the results of the mapping process.

## Publication Metrics

Publication metrics 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 queries related to each of the SDGs. Publication metrics used in this report were based on the Elsevier data source last updated in May 2021 and considers only articles published in 2021. Elsevier do not provide specific metrics for SDG 17 as this SDG explicitly relates to all other SDGs. SDG17 Publication Metrics provided in this report are based on the average of all other SDGs. Elsevier SDG mapping methodology details can be found [here](#).

## Publication Impact Metrics

Publication Impact Metrics were provided by a combination of information provided by two external organisations (Altmetric and Elsevier). RMIT decided to use Altmetric and Elsevier information to improve the independence and credibility of the SDGs mapping process. Patents, policy documents, mainstream media and social media included in this report are those mapped in 2021 by Altmetric that have cited at least one RMIT SDGs publication. RMIT SDGs publications are those mapped by Elsevier (Elsevier SDG mapping methodology details can be found [here](#)). Publication Impact Metrics used in this report were based on Altmetric and Elsevier data sources last updated in May 2021. Elsevier do not provide specific metrics for SDG 17 as this SDG explicitly relates to all other SDGs. SDG17 Publication Impact Metrics provided in this report are based on the average of all other SDGs.

## Curriculum Metric

Research metric was provided through an internal research mapping process. The RMIT curriculum mapping approach is based on a set of keywords and queries related to specific SDG targets and indicators. Keywords and queries were developed based on the United Nations SDG official documents. These keywords and queries have been reviewed, refined 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 and queries approach to validate the results of the mapping process.

RMIT welcomes your enquiries and feedback on this report. Please email: [sdgs@rmit.edu.au](mailto:sdgs@rmit.edu.au)



