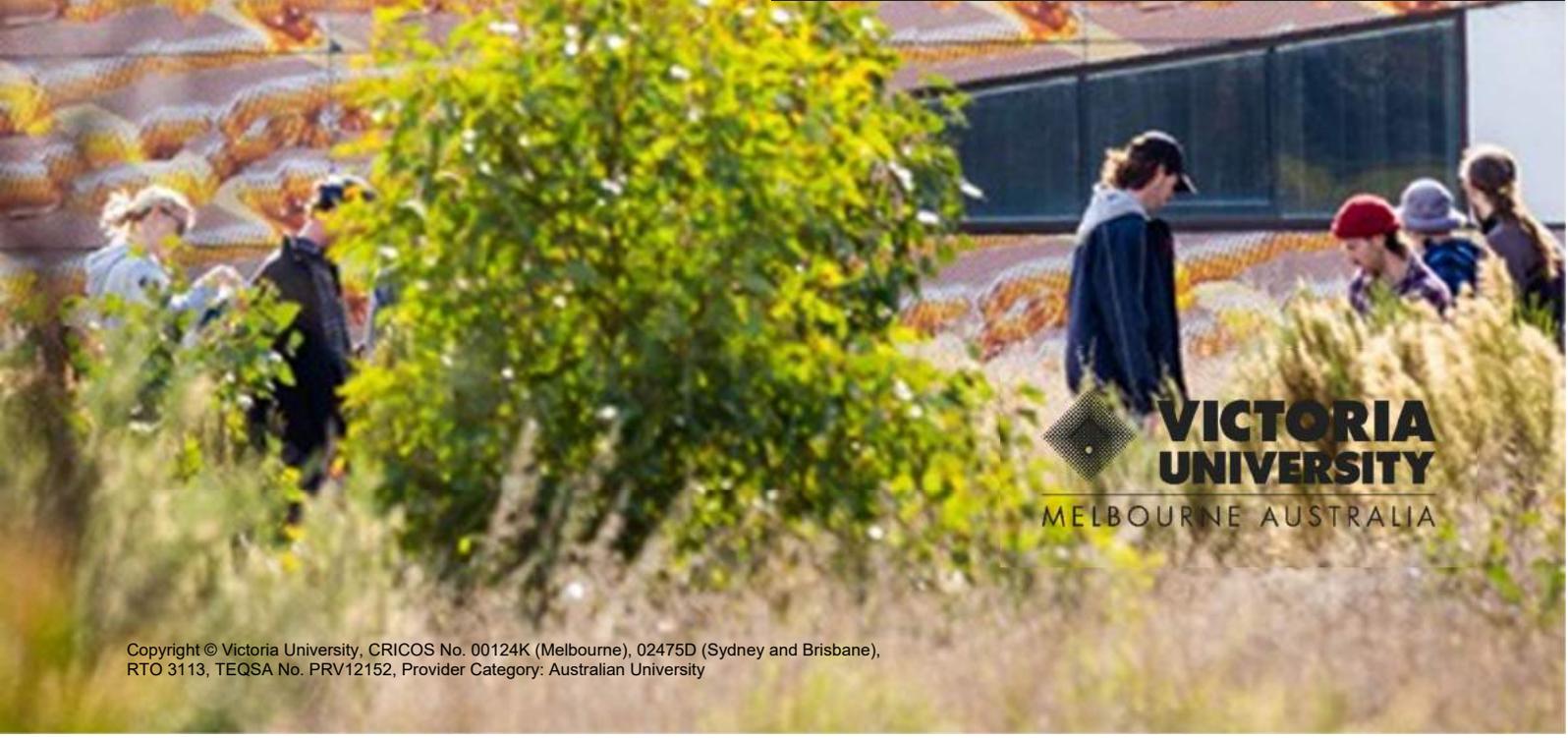




PROTECTING COUNTRY

SUSTAINABILITY
REPORT 2022



ACKNOWLEDGEMENT OF COUNTRY

Victoria University acknowledges, recognises and respects the Ancestors, Elders and families of the Bunurong/Boonwurrung, Wadawurrung and Wurunderjeri/Woiwurrung of the Kulin who are the traditional owners of University land in Victoria, the Gadigal and Guring-gai of the Eora Nation who are the traditional owners of University land in Sydney, and the Yulara/Yugarapul people and Turrbal people living in Meanjin (Brisbane).



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VICE- CHANCELLOR'S STATEMENT

In the ever-evolving landscape of higher education, 2022 marked a year of rejuvenation for Victoria University. Our resilient community of staff and students safely returned to campus after years of disruption, forging connections and reimagining the essence of space and place in this new world.

As we reflect upon our journey, we are acutely aware of the persistent urgency of climate change. In the face of this monumental challenge, universities have a pivotal role to play. We must lead the way by educating the next generation, engaging in groundbreaking research, and transforming our own practices to exemplify sustainability.

I am immensely proud to share that in the first year of our Net Zero Plan, Victoria University achieved significant reductions in carbon emissions. This tangible progress underscores our unwavering commitment to a sustainable future.

However, as we celebrate our accomplishments, we must remember that there is always more to be done. The path to sustainability is an ongoing journey and it is a vital one.

Together, we will continue to innovate, inspire, and to instigate change. The 2022 Sustainability Report encapsulates our collective efforts and reaffirms our commitment to forging a greener, more sustainable path for all.

Professor Adam Shoemaker

Vice-Chancellor and President



2022 HIGHLIGHTS



RETURN TO CAMPUS &
OPENING OF NEW CITY
TOWER FOR DUAL-
SECTOR LEARNING



#3 LEARNER
ENGAGEMENT IN
AUSTRALIA
(QILT STUDENT EXPERIENCE
SURVEY)



NET ZERO 80%
REDUCTION IN
CARBON EMISSIONS
(COMPARED TO 2019)



VU POLYTECHNIC
INCLUSIVE TRAINING
PROVIDER AWARD
(VICTORIAN TRAINING
AWARDS)



RESEARCH AND
IMPACT PLAN, 2023-
2028 LAUNCH
A GLOBAL SOLUTIONS HUB
FOR SUSTAINABLE
DEVELOPMENT



#7 SPORTS SCIENCE
IN THE WORLD
(ARWU/SHANGHAI RANKINGS)



CAMPUS MASTER
PLAN
FOR COMMUNITY ORIENTED,
INDUSTRY CONNECTED
CAMPUSES, COMMITTED TO
PROTECTING COUNTRY



EMPLOYER OF CHOICE
FOR GENDER EQUALITY
CITATION
(WORKPLACE GENDER
EQUALITY AGENCY)



NEW SUSTAINABILITY
POLICY
UNIVERSITY-WIDE
COMMITMENT TO
PROTECTING COUNTRY &
INDIGENOUS-LED SOLUTIONS



FIRST GENERATION
STUDENTS AWARD
HIGHEST PROPORTION OF
FIRST IN FAMILY STUDENTS
FOR METRO BASED UNI (GOOD
UNIVERSITIES GUIDE)

**START WELL
FINISH
BRILLIANTLY**

YEAR ONE OF VICTORIA UNIVERSITY'S STRATEGIC PLAN, 2022-2028

Our achievements in the first year:

- ◆ Strategic industry partners for the benefit of students, research and community outreach at each campus.
- ◆ VU Polytechnic awarded Inclusive Training Provider of the Year at the Victorian Training Awards
- ◆ Redesign of Higher Education and Research to align with the strategic plan and to enable greater opportunity for interdisciplinary, industry-engaged teaching and research.
- ◆ Development of the *Research and Impact Plan 2023 – 2028* to build on our current strengths and to enhance our global outlook and performance.

**OUR VISION:
TO BE A GLOBAL
LEADER IN DUAL-
SECTOR LEARNING
AND RESEARCH BY
2028**

STRATEGIC DRIVERS

We are guided by five strategic drivers to achieve our ambitious – but achievable – vision.



LEARNING BUILDING BLOCKS

THE DUAL-SECTOR ADVANTAGE

VU is one of only six universities in Australia to offer courses in both TAFE and higher education. This enables VU to offer flexible pathways between vocational education certificates and diplomas to degrees and postgraduate study, for each person's learning journey. VU graduates have started in an English language certificate and progressed right through to complete a doctorate, showing the potential that can be unlocked when given the opportunity.

GRADUATE CAPABILITIES

VU's graduate capabilities are reflected in the learnings for all courses, to equip students with the skills and attributes for lifelong success, to instil a commitment to sustainability, and to solving critical global issues.

VU EMPOWERS STUDENTS TO CONTRIBUTE TO AN **EQUITABLE AND SUSTAINABLE WORLD.**



GRADUATE CAPABILITIES

GC1



Adaptable and capable 21st century citizens who can communicate effectively, work collaboratively, think critically and solve complex problems

GC2



Confident, creative lifelong learners who can use their understanding of themselves and others to achieve their goals in work and learning

GC3



Responsible and ethical citizens who use their inter-cultural understanding to contribute to their local and global communities.

LEARNING THAT CHANGES LIVES

VU extended education for the UN SDGs to new courses and specialisations, for learners to acquire the knowledge and skills to contribute to sustainable development.

<p>BACHELOR OF EARLY CHILDHOOD EDUCATION TEACHING</p>	<ul style="list-style-type: none"> • Designed to address a chronic shortage of early childhood teachers, the course is for Diploma of Early Childhood Education and Care holders to pathway and qualify for early childhood teaching in two years. • Students can continue to work courtesy of online study combined with weekend intensives, delivered in students' local areas. • The course is free by virtue of the Victorian Government scholarships.
<p>MASTER OF MENTAL HEALTH</p>	<ul style="list-style-type: none"> • Online contemporary curriculum for allied health and social care professionals to assess, support and provide effective recovery solutions for people experiencing mental illness. • Designed to apply to a variety of therapeutic, community and clinical mental health settings. • Students undertake important research to contribute to the field.
<p>MASTER OF MENTAL HEALTH NURSING</p>	<ul style="list-style-type: none"> • Online specialisation for registered nurses in mental health, to build on nursing practice, to work successfully within multidisciplinary teams to enable better health outcomes for people experiencing mental health conditions. • Learnings for mental health care coordination and leadership roles. • Fulfills the requirements of the Australian College of Mental Health Nurses credential.
<p>MASTER OF CHILD AND ADOLESCENT MENTAL HEALTH</p>	<ul style="list-style-type: none"> • To provide interventions and therapies for children and adolescents, from diverse and vulnerable backgrounds, in educational, therapeutic, community and clinical settings, and engage with families, carers and clinicians. • Enables work for better mental health outcomes for children and adolescents. • Undertakes research on issues relating to child and adolescent mental health.
<p>MASTER OF GLOBAL PUBLIC HEALTH</p>	<ul style="list-style-type: none"> • To contribute to health improvements worldwide, providing the knowledge and skills needed to find solutions to current and emerging health challenges for sustainable development. • Ability to assess public health evidence and contribute to collaborative, inclusive programs and policies, ensuring Indigenous views are heard. • Provides work-based learning, for problem solving and professional skills.
<p>MASTER OF CRIMINOLOGY</p>	<ul style="list-style-type: none"> • Contemporary approaches in criminological theory and practice for legal professionals, including a deeper critical understanding of how societies conceptualise and respond to crime. • Specialisation in global criminology on the issues of crime in a global context. • Specialisation in crime prevention to understand the theoretical, political and practical dimensions of crime prevention.



PROTECTING COUNTRY

Students were invited to engage in Aboriginal landscape and ceremony, workshops, research and reflective writing, and discussion to gain an understanding of Country, the Traditional Owners, and the diversity of Aboriginal people in Victoria. The program was part of the VU Extra Transcript to provide students with transcript of eligible voluntary and extra-curricular activities.

VU TAX CLINIC

VU opened a tax clinic to offer free advice, representation and advocacy to community members on taxation matters. Services are free and provided by VU's TAFE and higher education accounting students under supervision of tax practitioners.

ASPECT, ORYGEN AND LIFELINE PARTNERSHIPS

VU commenced partnerships with three not-for-profit organisations, co-locating with us to deliver community services from VU campuses:

- ◆ Autism Spectrum Australia (Aspect) support services
- ◆ Orygen youth mental health services
- ◆ Lifeline Western Melbourne crisis support and suicide prevention.

VU students in relevant disciplines are undertaking placements as part of their courses in the service centres for practical, work-based learning (see Partnerships section page 17).



REGENERATIVE CITY LIVING LAB

The Regenerative City Living Lab connected students to place and to sustainable urban-based food production through:

- ◆ delivery of two human-centred design initiatives for students at VU.
- ◆ co-design and installation of an edible and Indigenous community garden in the centre of the Footscray Park Campus.
- ◆ Instagram account with educational stories.
- ◆ work with Footscray High School students at 'The Farm', a 1-acre edible and Indigenous garden for experiential learning about the environment, horticulture, and sustainability.

See VU RISE, Stronger Communities section page 48 for more information on activities.



AI DOCTORAL RESEARCH TO IMPROVE AGED CARE

Five VU PhD projects were initiated to look at using AI and wearables to improve the quality of life and wellbeing of those living in aged care. CSIRO awarded over a million dollars to fund the research. Partnering with aged-care service provider Fronditha Care, the projects examined how to:

- ◆ minimise risk of injuries and falls in aged care
- ◆ stimulate memories
- ◆ predict early-onset dementia, using computer vision
- ◆ mine data in health records to predict adverse events in aged care
- ◆ process high-dimension biological signatures to predict disease and ageing factors.





EDUCATING FOR EQUALITY

VU partnered with Our Watch, and its Educating for Equality program, to address systemic issues of gender inequality and violence against women on campus. Our Watch is a national leader in the prevention of violence against women and children.

The partnership will:

- ◆ implement Educating for Equality and Respect and Equality in TAFE programs
- ◆ monitor and evaluate program outcomes and share evidence and learnings across the higher education and vocational education sectors
- ◆ take an approach to prevention that recognises the multiple forms of women's disadvantage, with a particular focus on violence experienced by women and girls with a disability and the LGBTIQ+ community.
- ◆ collaborate with Indigenous students and staff to prevent violence against First Nations people and communities.



The partnership will build on the work undertaken by VU to implement a range of initiatives to address sexual harassment and violence, including the VU 2022 Action Plan in response to issues identified by the National Student Safety Survey, VU Gender Equality Action Plan, Building Respectful Futures Strategy, and receiving the WGEA Employer of Choice, Gender Equality Citation.

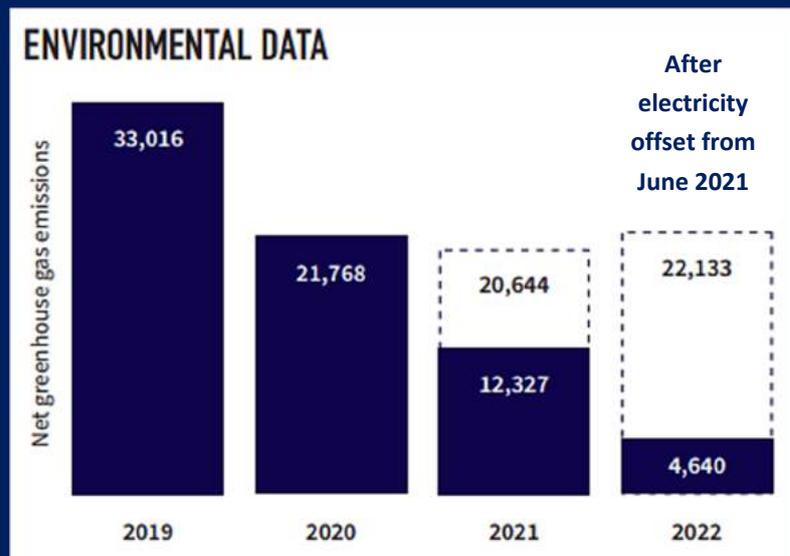
PROTECTING COUNTRY

TO BE RESPECTED GLOBALLY FOR THE EXCELLENCE OF INDIGENOUS-LED CULTURAL, SOCIAL AND CLIMATE SOLUTIONS.

2022 SUSTAINABILITY PRACTICE – HIGHLIGHTS NET ZERO

VU is working for a more sustainable future to reduce our carbon emissions to zero by 2025. We are actively extending our influence and challenge our partners to join the journey to net zero. In 2022, the first year of the Net Zero Plan, VU reduced carbon emissions by 80% compared to 2019. Key initiatives were:

- ◆ continuing the shift to renewable energy with the installation of solar panels and replacing gas boilers
- ◆ efficiency upgrades for plant, equipment, and lighting
- ◆ reducing the impact of travel, mandatory carbon offsetting and the refurbishment of bike hubs
- ◆ changing practises and campaigns for waste reduction.



VU's renewable energy use reached almost 50% of total energy usage in 2022 with 67,660,159 MJ out of the total 136,249,000 MJ from renewable sources, including solar panel installations on our campuses.



PROGRESSIVE INCLUSIVITY

VU continued to progress our inclusivity agenda, with significant advancements and awards:

- ◆ VU received a coveted, 2022 Employer of Choice for Gender Equality (EOCGE) citation from the Workplace Gender Equality Agency (WGEA), achieved by only 120 organisations in Australia.
- ◆ Launch of the Gender Equality Action Plan 2022-2025, and a review of systems, processes and practices to remove systemic barriers, including to improve gender outcomes in Academic Promotions.
- ◆ Adoption of the WGEA pay gap methodology with a pay gap of 6.25% in December 2022.
- ◆ Introduction of a new Anti-Racism Policy
- ◆ Awarded Silver in the 2022 LGBTQ Inclusion Awards, based on our results from the Australian Workplace Equality Index (AWEI).
- ◆ Establishment of a Disability Employee Network (DEN) to share knowledge, best practice, resources and to advocate for disability inclusion.
- ◆ VU Polytechnic TAFE division was awarded Inclusive Training Provider of the Year in the 2022 Victorian Training Awards.



GREENING THE WEST

VU is helping create a cooler, greener west of Melbourne, which has only 5.5% green cover, compared to 25.9% in Melbourne's east. Over 5,000 native trees were planted at the Werribee Campus with the help of 170 volunteers – students, staff and the community. The new urban forest will help to reduce urban temperatures, filter pollution, improve the community's health and biodiversity habitat. VU worked with Wyndham City Council, the Koala Clancy Foundation and the Victorian Department of Environment, Land, Water and Planning to ensure the most sustainable approach. The Werribee Campus Master Plan commits VU to the creation of an urban forest for the location. The planting was funded by the Victorian Government's More Trees for a Cooler, Greener West program.

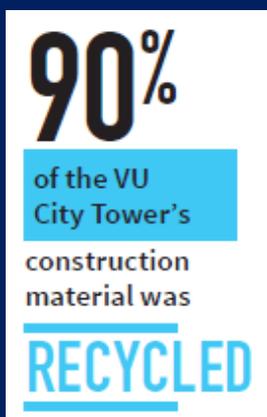


WATER HARVESTING

VU will continue to care for the urban forest planting of over 5000 native trees at Werribee, ensuring the trees are given the best opportunity to flourish in the next few years. As part of this project, to ensure the trees thrive, VU implemented a new stormwater harvesting system to irrigate and maintain the trees.



NEW CITY TOWER

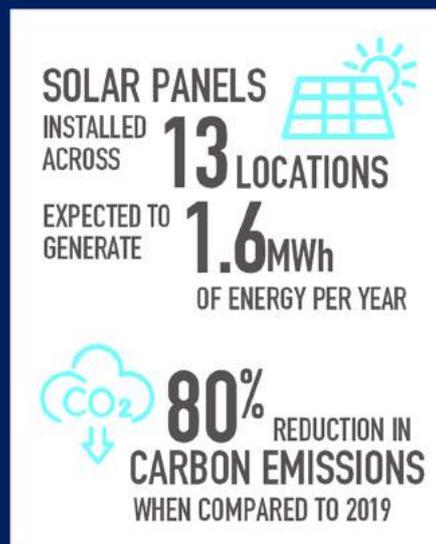


VU's new City Tower, the tallest vertical campus in Australia, achieved a five-star green rating. The City Tower was built using sustainable practices, with 90% of construction waste recycled, and eco-friendly finishes and fittings used in the design.



SOLAR POWER

An extensive installation of new solar panels was completed on VU campus rooftops in the west of Melbourne. The solar panels cover over 9,000 m² of rooftop space and will generate 4,648 KWh of solar energy, about 8% of our electricity consumption. This will reduce VU's carbon footprint by over 1,660 tonnes of CO₂e each year.



SUSTAINABLE PRACTISES

VU's Procurement Department is central to efforts to attain net zero by 2025 and for socially and environmentally responsible operations. Building on previous achievements, their efforts to protect country continued with:

- ◆ lighting LED replacement roll out.
- ◆ campus retail plan to be plastic free by Jan 2025.
- ◆ reducing e-waste by replacing computer peripherals only at end of life.
- ◆ Travel policies to use ride share options and public transport in preference to VU vehicles and that vehicles must be hybrid or electric.
- ◆ Go Paperless Campaign and BYO cup.
- ◆ engaged Orana, an Indigenous company, as the relocation contractor for the City Tower.
- ◆ Partnering with Green My Plate at student events.

ENACTUS VU

Enactus VU is a student organisation that empowers students to work for the attainment of the United Nations' Sustainable Development Goals, for a better and more sustainable future for all. Enactus VU had three projects:

- ◆ Regenerative Edible Garden (REGEN) to develop urban agriculture – edible gardens – using permaculture and hydroponic technology suited to compact city spaces. The REGEN team organises excursions for high school students to engage with the work and technology behind the edible gardens.
- ◆ Pulp n' Paper (PnP) collects used paper from VU campuses and provides creative ways to recycle the paper on-campus into useful products, instead of ending up in landfill. Students learn how to make recycled paper and can apply these skills to making recycled paper products at home.

- ◆ Plastic Solution Project has the dual goals of – processing and repurposing HDPE, LDPE and PP types plastics into useful and sustainable products, and educating young people about plastic, its role in the world, and the importance of recycling. The team has repurposed over 50kg of waste plastics into over 200 different-coloured plant pots. A partnership with TAFE institutions allows the team to hold plastic sorting workshops with vocational education students.



AUGMENTED REALITY TOUR

A new VU Explore feature was introduced to the award-winning Victoria University App to enable students and visitors to use augmented reality on their mobile phones to explore the Footscray Park Campus.

With this latest feature, users can scan decals located on the ground around the campus and watch videos that help them familiarise themselves with key services and points of interest.

At the same time, they activate moving three-dimensional holograms of plants indigenous to the Maribyrnong region.

The unique feature allows users to learn more about native plants as they collect a full series of native flowers with charming names such as Bidgee Widgee, Gold Dust Wattle and Minnie Daisy.

The app developers worked with staff from IT, marketing, the plant nursery, and Moondani Balluk Indigenous Unit to create the augmented reality experience. Each of the flowers was created as a 3-D digital model over many hours by VU digital designer Khuyen Phung and resident Indigenous digital artist Elijah McDonald.

To celebrate the launch of the VU Explore feature, VU gave away seedlings from the Iramoo Grassland Centre and Nursery to students who collected the virtual flowers featured on VU Explore.

VU Explore was the latest in a series of innovations developed by the VU Hive Lab. Their VU App has won seven awards for digital design, innovation and entrepreneurship since launched in 2018.



PARTNERSHIPS FOR EQUITABLE DEVELOPMENT

WE ARE 'FLIPPING' OUR CAMPUSES TO WORK WITH PARTNER ORGANISATIONS FOR LEARNING, RESEARCH AND COMMUNITY ENGAGEMENT.



ON-CAMPUS PARTNERSHIPS

Our on-campus alliances, where partner organisations are co-located on a VU campus, create significant benefits for VU teaching and research, partner organisations, and the communities we serve. In 2022, these benefits included:

- ◆ collaborative research to improve programs and practice
- ◆ student placements for work-based learning in in-demand industries
- ◆ graduate opportunities for VU students.



St Albans Campus
Autism Spectrum Australia
 – **Aspect**, Australia's largest autism service provider

St Albans Campus
Lifeline Western Melbourne
 Crisis support and suicide prevention centre.



Werribee Campus
Orygen Youth Mental Health
 for young people, families and carers. The alliance is actioning findings from Victoria's Royal Commission into mental health.

Sunshine Campus
Ambulance Victoria signed an agreement to establish a skills hub for their regional workforce, with \$10m in state funding to build a Centre of Excellence in Paramedicine.





City Campus

Industry Capability Network Victoria connects small/medium enterprises with government projects and provides opportunities for student placements, Indigenous student employment and new social procurement initiatives.

City Campus

Sharpe and Abel is a Melbourne law firm, co-located with VU's College of Law and Justice on Queen Street.



Footscray Nicholson

Western Chances provides educational scholarships and support to young people in Melbourne's west. They connect with secondary school students, offering scholarships for VU TAFE courses, and link Western Chances alumni with career and industry networks and internships.

INDUSTRY PARTNERSHIPS

VU established the Major Alliance Framework to align VU's major partnerships with the new strategy for learning, research and development.

WESTERN HEALTH

Four priority areas are identified in the *Western Health and VU 2025 Alliance Plan* to optimise our joint expertise and efforts for the benefit the Melbourne's west:

1. **Workforce:** providing graduates productive employment in a skilled and capable workforce.
2. **Research:** extending research through measurable, applied outcomes.
3. **Precincts:** to maximise the vibrancy of our joint precincts.
4. **Synergies:** to work for sustainable innovation and social impact in the Melbourne's west.

As our main health partner, VU is working with Western Health to ensure industry-engaged education and a co-designed curriculum addresses workforce needs into the future.

The alliance was a finalist in the 2022 Australian Financial Review's Higher Education Awards for Industry Engagement.

MELBOURNE VICTORY

VU invested in Melbourne Victory FC (MVFC) Afghan Women's team, who will compete in the Football Victoria's State League while they prepared for a chance to play in the 2023 FIFA Women's World Cup. VU hosted over 100 multicultural and disadvantaged youth at the Footscray Park Campus through the MVFC Community Program.



GREATER WESTERN WATER

VU continued our research engagement with Greater Western Water, with projects to develop intelligent water networks and stormwater sampling in Werribee.

The research on intelligent water networks developed a smart system for the monitoring and prediction of bursts and leakages in the water network. Using an algorithm and an integrated control and data system of sensors and flow metres, the intelligent system can address management and operational challenges associated with water pressure and flow variations in the network and reduce time for identification of pipe bursts and leakages.

The stormwater sampling is directed to developing Water Sensitive Urban Design (WSUD) to harvest stormwater for urban water supply. Stormwater harvesting is currently impractical due to variable flow rates and the transfer of contaminants to the runoff water. Stormwater harvesting would assist to mitigate the impacts climate change and rapid urban expansion and to improve the liveability of urban areas. The research provided a realistic assessment of the potential WSUD to enable the development appropriate designs, budgets, and maintenance regimes.

WESTERN BULLDOGS COMMUNITY FOUNDATION

VU partners with the Western Bulldogs Community Foundation to offer the Sons (SOTW) and Daughters of the West (DOTW) programs on how to improve positive health habits, increase mental resilience, and levels of sustainable connectedness to community. In 2022, in addition to the annual cycle of design, delivery and assessment, VU worked with the Foundation to adapt the SOTW and DOTW programs to the needs of new culturally and linguistically diverse communities – East African DOTW and Indian-Australian SOTW.

VU also joined the Foundation and Brimbank Youth Services in offering a weekly after-school sports program for young people in Sunshine at the VU Sunshine Campus.





COMMUNITY PARTNERSHIPS

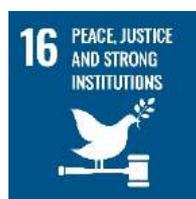
Victoria University works with regional councils and community organisations to provide outreach and engagement with the diverse communities of Melbourne's west.

A key highlight was the Victoria Police Diversity Recruitment Program receiving the award for 'Excellence in Community Engagement' at the Engagement Australia Excellence Awards 2022. The program is funded by the Victorian Department of Education and Training, delivered in partnership with Jesuit Social Services and Victoria Police, and is supported by Africause, Matchworks, AMES Australia, and Maurice Blackburn lawyers.

The program is one of its kind in Australia and addresses barriers to recruitment into the Victoria Police for under-represented culturally and linguistically diverse and Aboriginal communities by preparing them to apply. A committed team at VU has worked tirelessly to develop and deliver the successful program that has now seen more than 130 participants.

2022 highlights included:

- ◆ Hume City Council sponsored 52 Hume Multiversity Tertiary Scholarships for residents to study at VU.
- ◆ Skills and careers programs for women to navigate career pathways and to address local workforce needs in Hume and Melton.
- ◆ Work-integrated learning opportunities with Brimbank City Council for community service and screen media students.
- ◆ Picturing Footscray photography competition and exhibition with the City of Maribyrnong (after two years of virtual delivery due to COVID-19 restrictions).
- ◆ Footscray Foodie, a mobile local restaurant and café review app, created by VU's Hive Lab, promoted by VU to reinvigorate the local economy post-COVID-19.



RESEARCH SOLUTIONS

RESEARCH AND IMPACT PLAN

Victoria University released the Research and Impact Plan 2023–2028, as a framework for the pursuit of ethical knowledge, in collaboration with community and industry, to find solutions for people, place and planet.

The Plan identifies five areas for world-leading research.

- 1. Health, sport and wellness**
Interdisciplinary approaches to transform health, sport, social inclusion, and community wellbeing, in particular building on core strengths in translational health research, by leveraging key assets such as the co-location with the new Footscray Hospital.
- 2. First Nations knowledge**
Connecting the deep knowledge, insights, and perspectives of Aboriginal and Torres Strait Islander Peoples to solve contemporary challenges.
- 3. New generation skills and workforce impact**
Creating solutions for developing the skills of the future to impact advanced manufacturing and service industries.
- 4. Green research translation**
Developing translational sustainable solutions to challenges in the natural environment.
- 5. New frontiers in policy, advocacy and justice**
Improving education, health, law, social inclusion, and the economy by developing policy and thought leadership locally, nationally, and internationally.

TOGETHER, IN PARTNERSHIP WITH COMMUNITY AND INDUSTRY, FOR THE BENEFIT OF PEOPLE, PLACE AND PLANET.



HEALTH, ACTIVE LIVING AND WELLBEING



BRIDGING THE GAP FOR HEALTH INEQUALITY

Victoria University works with community and industry partners to remove barriers to better health, wellbeing and active living for communities in our region, Australia and the world.

SAFEGUARDING - VIOLENCE IN CHILDREN'S SPORT

Dr Mary Woessner and Dr Aurélie Pankowiak conducted the largest Australian study on experiences of violence in children's sport. The research found more than 80% of children experience violence – psychological, physical or sexual – while participating in community sport. The results will inform VU's Graduate Certificate in Sport Integrity course.

It has also led to co-founding International Research Network on Violence and Integrity in Sport (IRNOVIS), contributions to the National Office of Child Safety, speaking engagements with the Australian Sports Commission, and a ministerial briefing for the then Victorian Minister for the Prevention of Family Violence, the Hon. Ros Spence MP.

IRNOVIS, founded by VU researchers, Dr Woessner, Dr Pankowiak and Professor Ramón Spaaij, aims to develop an international research agenda to study violence and integrity in sport by producing position statements, disseminating research findings, and actively engaging in international public debates on sport integrity and the protection of sport participants and athletes.



UNIFORMS AND WOMENS' PARTICIPATION IN SPORT

A landmark study led by VU Susan Alberti Women in Sport Chair, Professor Clare Hanlon, confirmed that a key strategy to keep girls and women involved in community sport is to let them choose their uniform.

As a result of the study, many sporting organisations across Australia have made significant modifications to their uniforms. The study identified that women and girls are seeking function over fashion and having a choice of sports uniform was vital to encourage participation, especially for teenagers. Australian Rules Football and Netball Australia updated their uniform policies, while other sporting bodies changed their requirements, such as Cricket Victoria, who modified rules for its Youth Premier League players.



Professor Hanlon and her team completed the second phase of the study, funded through the Victorian Government's Change Our Game initiative, to increase the number of women and girls participating in sport and active recreation.

The second part of the study focused on case studies across netball, swimming and cricket. It found flexible uniform policies and regulations improved girls' and women's comfort, readiness, and desire to play by:

- ◆ encouraging ongoing participation in the sport (48% agreed)
- ◆ making them feel more confident (41% increase), happier (34% increase) and less self-conscious (30% reduction)
- ◆ providing more freedom (28% agreed) and allowing them to perform at their best (20% agreed).

A key driver of the research project was to explore the evidence that body image plays a key role in whether girls are physically active, and that physical activity declines significantly for girls once they hit adolescence.



BUSHFIRE RECOVERY AND RESILIENCE

Dr Fiona McDonald is part of Future Proof: Young People, Disaster Recovery and (Re)building Communities, funded by an Australian Government Black Summer Bushfire Recovery Grant for community development and research. Led by Victoria's peak youth advocacy body, Youth Affairs Council Victoria (YACVic), the project involves 10 Local Councils, NGOs and the Aboriginal Community Controlled Organisation, Moogji, as well as Local Learning and Employment Networks. The program will develop youth-led activities across the bushfire-impacted areas of East Gippsland, including:

- ◆ Qualification pathways for local young people to kick-start careers in emergency management and community services.
- ◆ The creation of local youth advisory groups (YAGs) leading local projects.
- ◆ Training for young people and youth workers.

Future Proof is place-based and applies youth work principles to support young people in youth-led recovery projects and community decision-making.

SUPPORTING ACTIVE LIVING

Victoria University's Professor Melinda Craike wrote a policy brief on addressing physically inactive populations. Professor Craike's brief recommended that Chronic Disease Management Plans should include counselling by exercise professionals for physically inactive populations. This recommendation was highlighted in the NHMRC 2022 Effective Treatments and Therapies Grant Opportunity Guidelines. Public Health Scotland also cited Professor Craike's research to inform its Public Health Physical Activity Framework.

PHYSICAL ACTIVITY LEVELS OF CHILDREN AND ADOLESCENTS

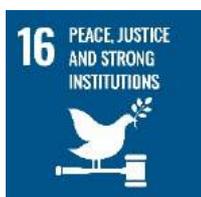
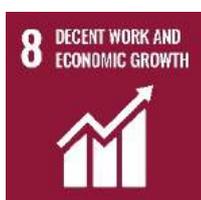
Professor Željko Pedišić collaborated with researchers around the world on the Global Matrix 4.0 Physical Activity Report Card Grades for Children and Adolescents, the largest compilation of children's and adolescents' physical activity indicators to date, comparing 57 countries. The initiative highlighted low physical activity levels in children and adolescents globally on average across 10 common indicators of physical activity, a situation that was worsened by the pandemic. The report highlighted multiple factors that threaten to further promote sedentary behaviours.

Australia scored a D- and a C- average across all physical activity indicators for children and young people.

While overall grades around the world are low, the initiative highlighted effective initiatives in countries around the world, showing opportunities to reverse low activity levels amongst young people.



INFORMING PUBLIC POLICY



WORLD LEADING POLICY AND ECONOMICS RESEARCH

VU's policy and economic modelling institutes and centres deliver world-leading research in policy, advocacy and justice.

WORLD HEALTH ORGANISATION FUNDING MODEL

Professor Bruce Rasmussen and VU's Victoria Institute of Economic Studies (VISES) team delivered a report for the World Health Organisation (WHO), which quantified the return on investment of the WHO's measures to support member states' actions on health issues.

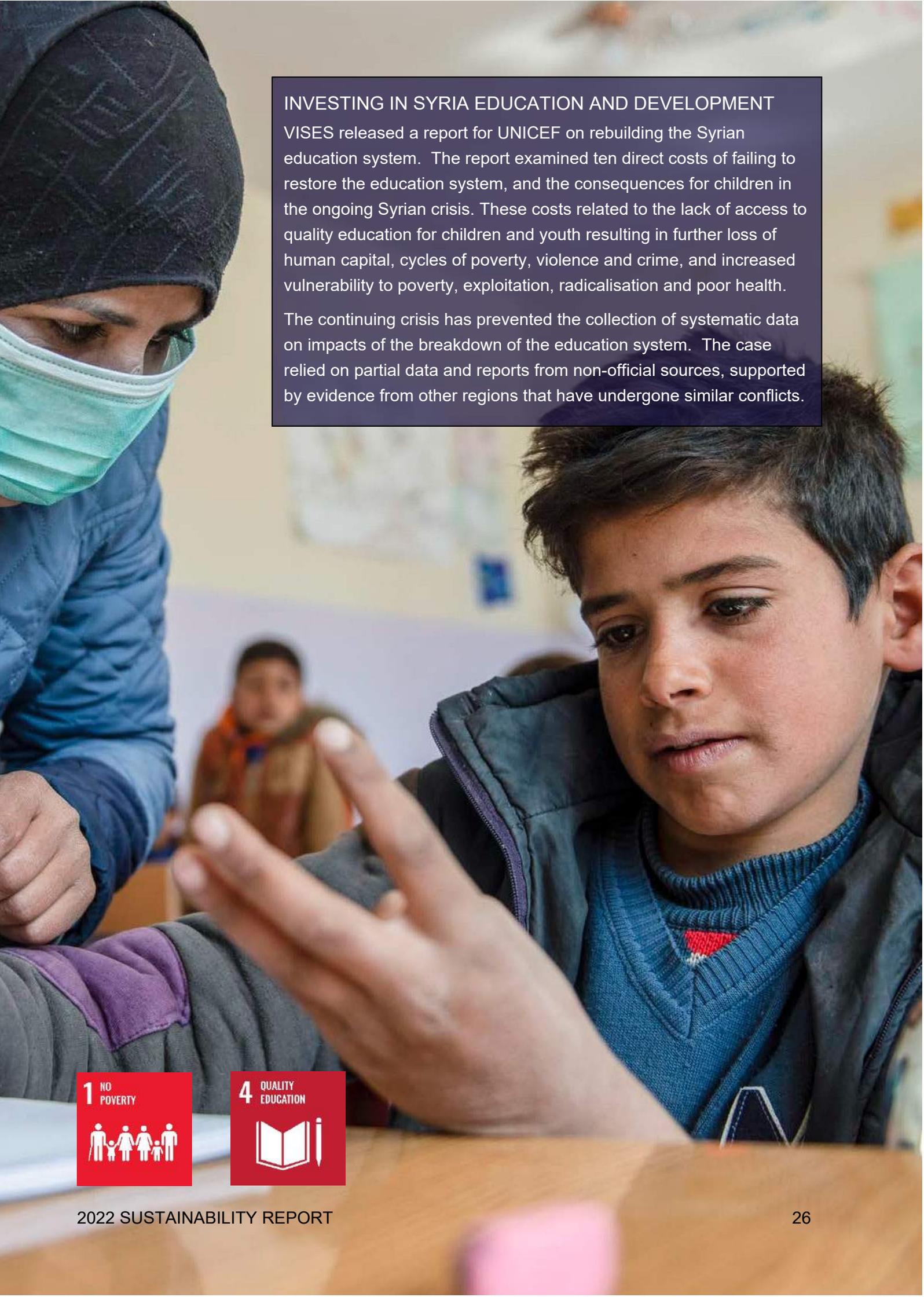
WHO is the cornerstone of the global health framework, through its organisation of global health programs and authoritative advice. However, in contrast to its member countries, the WHO does not deliver health programs directly.

The VISES report, which was the first-of-its-kind, estimated the WHO's influence on health outcomes and calculated the economic benefits of the WHO activities.

The modelling indicated a return-on-investment case for over 100 WHO direct interventions for a 10-year-period from 2022 to 2031, they found for every US\$1 invested in the WHO, the value created is at least US\$35.

In response to the modelling, in May 2022 member states agreed to improve WHO's financing model and increase their percentage contribution to WHO's core budget, year-on-year, from 16% to 50%, by 2030.





INVESTING IN SYRIA EDUCATION AND DEVELOPMENT

VISES released a report for UNICEF on rebuilding the Syrian education system. The report examined ten direct costs of failing to restore the education system, and the consequences for children in the ongoing Syrian crisis. These costs related to the lack of access to quality education for children and youth resulting in further loss of human capital, cycles of poverty, violence and crime, and increased vulnerability to poverty, exploitation, radicalisation and poor health.

The continuing crisis has prevented the collection of systematic data on impacts of the breakdown of the education system. The case relied on partial data and reports from non-official sources, supported by evidence from other regions that have undergone similar conflicts.

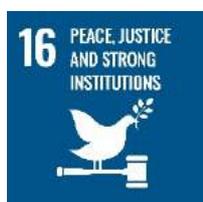


BEING EQUALLY WELL

People with a serious mental illness in Australia are more likely to die 14 to 23 years earlier than the rest of the population, mostly due to preventable chronic diseases (Australian Department of Health and Aged Care).

In response, VU's Mitchell Institute and Equally Well Australia established a roadmap in 2021 for policy and system change to improve physical health care for people with serious mental illness.

The Mitchell Institute and Equally Well Australia worked with a range of experts and organisations to develop the **implementation action plan** for the roadmap. The action plan guides practitioners, service providers and policy makers on how to make the changes to patient care, funding arrangements and use of health data presented in the roadmap.



PREVENTATIVE HEALTH NATIONAL STRATEGY

The Federal Department of Health and Aged Care commissioned the Mitchell Institute to develop a National Consumer Engagement Strategy for Preventive Health. This work included wide and in-depth consultations with policymakers, consumers, and other stakeholders to develop and test the strategy. Three policy evidence briefs were then submitted to the Department of Health and Aged Care, including a brief on tobacco that Federal Health Minister, the Hon. Mark Butler referenced when announcing Reignite Tobacco Reforms.

GROWING BRIMBANK

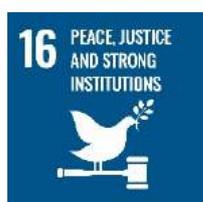
Growing Brimbank is a long-standing partnership between VU's Mitchell Institute and Brimbank City Council, in Melbourne's inner west, to understand disadvantage within the Brimbank communities for program implementation. Brimbank includes some of the most socioeconomically disadvantaged and culturally diverse population groups in Victoria.

A Mitchell Institute report looked at the change in health and education outcomes for the Brimbank area showed a positive increase over 10 years to 2016. The number of young people in the workforce or education had increased from 72.3% to 84.1%. There had also been a large decline in the number of children with mothers who have low educational attainment, which is linked to greater risk of poor educational and work attainment.

BETTER ENERGY INVESTMENTS

The Victoria Energy Policy Centre (VEPC) led by Professor Bruce Mountain has been active in policy analysis and advice to state and federal governments, since 2018. VEPC advises on the economic regulation of network monopolies, the analysis of retail energy markets, and the design of emission reduction and renewable energy policies.

VEPC was key to establishing energy policy nationally, for Victoria and other states. Nationally, VEPC's 2021 report on storage policy led to the commitment in 2022 to implement a storage procurement scheme. In Victoria, VEPC's analysis and policy advice has played a significant role in several developments and in 2022 included the establishment of VicGrid and the creation of the Storage Target.



TRUSTED ECONOMIC MODELLING

VU's Centre of Policy Studies (CoPS) produces economic-modelling research for governments and businesses in many parts of the world. The centre has created Australia's best known large-scale economic models, with versions developed for over 25 countries, including the United States, Indonesia, China and Vietnam. CoPS commenced development of a 500-industry dynamic computable general equilibrium model of the US economy in collaboration with the US International Trade Commission.

In Australia, the Centre's VURMTAX model, a bottom-up, multi-regional computable general equilibrium model of Australia's states and territories, is used by state governments to test the economic impacts and risks of policy commitments. For example, VURMTAX was used by New South Wales for the modelling for the 2022-23 State Budget. VURMTAX was also used for the 2022 Victorian Economic and Fiscal Update to model a scenario in which a new vaccine-resistant COVID-19 variant emerged that sets back global growth.

As the ramifications of COVID-19 continued to be felt in 2022, Professor Philip Adams and team produced research that showed the vaccine roll-out saved the national economy \$18 billion. The modelling, co-produced by VU and biopharmaceutical strategy and commercialisation company, Biointelect also estimated the availability of the vaccines saved 142,000 jobs and prevented the pandemic losing \$395 billion off gross domestic product. The rollout also added \$28 billion to tourism and \$26 billion into education exports in Australia.

ACHIEVING NET ZERO

VU's Centre of Policy Studies examined the impact of policy in reducing greenhouse gas emissions, and meeting emissions targets, both in Australia and Europe:

- ◆ Working with Nordregio Research Institute in Stockholm to examine the effects of selected policies on the Nordic economies from 2019 to 2030 for: increased shares of biofuels in motor fuels; increased shares of electric vehicles in passenger-car fleets; and phasing-out of remaining coal-fired electricity.
- ◆ In collaboration with the German Government, modelling of alternative transport-related initiatives in Jordan for the expansion of subsidies for the use of electric vehicles and public transport infrastructure in major urban areas.
- ◆ For an Australian State Treasury, the economic costs and benefits of achieving zero net emissions by 2050, with varying firm targets by 2030 with and without the Commonwealth Government's Emissions Safeguard Mechanism.



GREEN DESIGN FOR A CLEAN WORLD



SUSTAINABLE INDUSTRIES AND LIVEABLE CITIES

VU undertakes applied and translational research to create smarter, more-sustainable communities in Melbourne's west and beyond. We do this in collaboration with industry and the community, with the goal of enhancing wellbeing and life quality.

SEAWEED-BASED ALTERNATIVES FOR PLASTICS

Dr Jianhua Zhang and his research team are making seaweed-based polymers to make plastics, as biodegradable alternatives to fossil fuel derived plastics, and to alter the polymers to suit specific products. This project will also look at more environmentally friendly chemicals for making specific types of polymers.

The project is supported by the National Foundation for Australia-China Relations. The team has joined colleagues in three major universities across Shandong, China, where seaweed is farmed for polymer production and used to make products like clothing. This expertise makes China a crucial partner in the research. Victoria University researchers know how to modify the polymers for packaging purposes, and the Chinese researchers have expertise in extracting the polymer from seaweed and making the materials fit the requirements for processing.



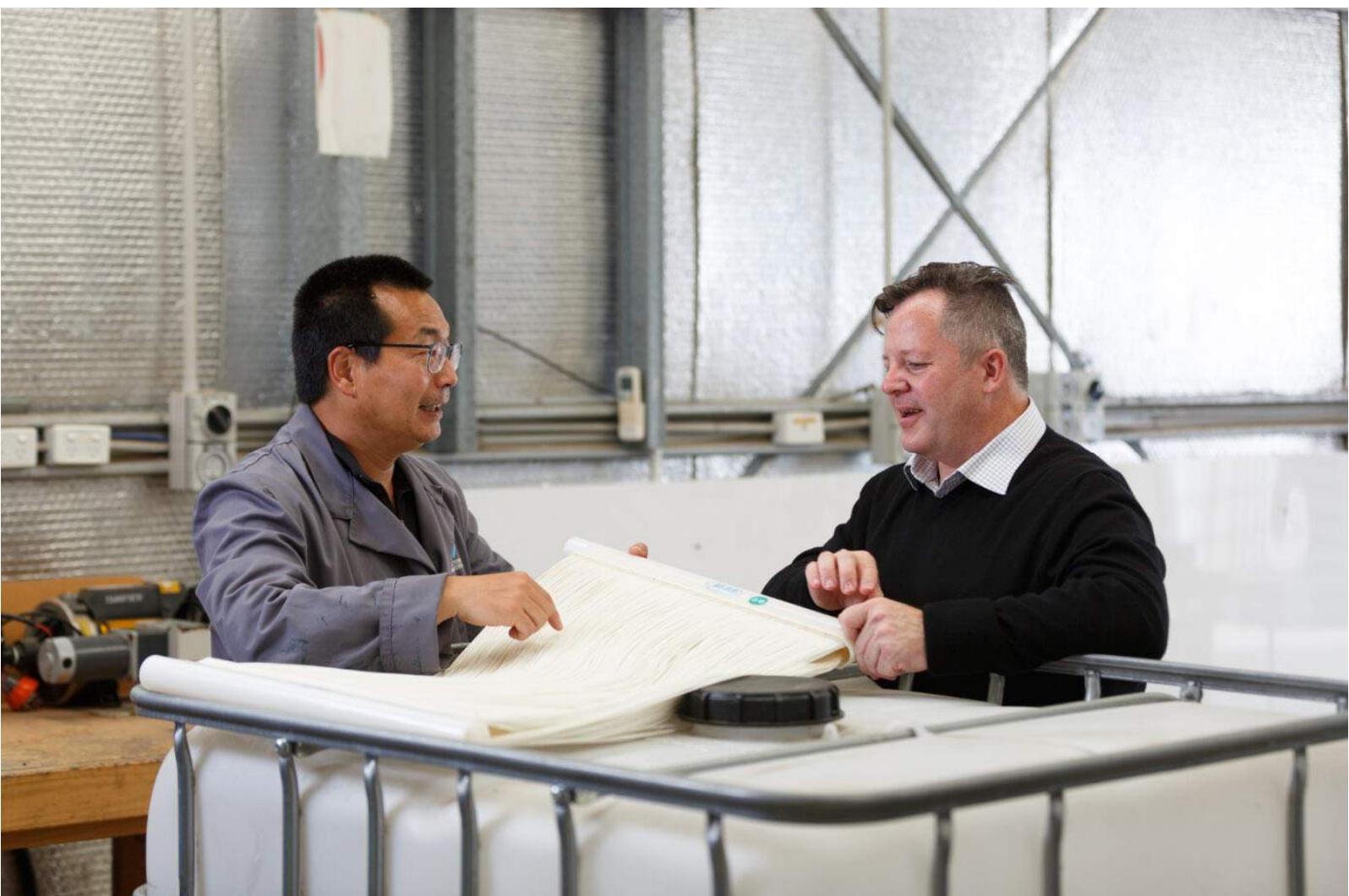
WE CAN'T LIVE WITHOUT PLASTIC. IT'S IN OUR CLOTHES, LAPTOPS, NEARLY EVERY MAN-MADE ORGANIC PRODUCT, BECAUSE CRUDE OIL WILL DISAPPEAR SOMEDAY AND IT'S NOT SUSTAINABLE, WE HAVE TO FIND SOMETHING TO REPLACE IT.



Dr Jianhua Zhang

Plastics produce methane as they break down, which traps about 27 to 30 times as much heat as CO2 emissions. Dr Zhang believes seaweed-based products could help tackle climate change by reducing reliance on fossil fuels, and by seaweed farms absorbing CO2 gases from the atmosphere.

There is still some way to go before seaweed-based plastics will be commercially viable; production costs are currently too high, so a key aim is to reduce costs.



REMOVING TOXIC PFAS CONTAMINATION

VU is the research partner for Environmental Group Limited's EGL Water, an Australian leader in water treatment innovations, to test pioneering technology designed to remove harmful chemicals from contaminated soil, wastewater, and groundwater. Per and polyfluoroalkyl substances (PFAS) are a group of more than 4000 man-made chemicals that have a proven effectiveness in resisting heat, stains and grease. This makes them useful for a range of applications, particularly in fire-fighting foams. However, governments around the world have now recognised they are harmful for the environment and human exposure, as they do not break down and accumulate over time.

EGL Water undertook pilot trials at Reclaim Waste to concentrate PFAS from contaminated soil, and had a patent granted on VU-developed technology.

During testing, VU water and wastewater researchers found the EGL Water technology cost effectively eliminates 87% of the PFAS from contaminated soil and water, providing a breakthrough in responding to this environmental challenge. Unlike previous technologies which removes the PFAS for incineration, the EGL Water PFAS remediation technology destroys the PFAS by transforming it into a non-toxic chemical.



THE PATENT IS THE PRODUCT OF VIGOROUS RESEARCH AND DEVELOPMENT ADVANCES MADE WITH THE SUPPORT, OVERSIGHT AND TECHNICAL GUIDANCE FROM VICTORIA UNIVERSITY IN MELBOURNE.



EGL Water Patent Application Announcement to the ASX



EDUCATION FOR A BRIGHTER FUTURE

EDUCATION MATTERS

VU contributes nationally and internationally to education policy and program development, improving access to quality education.

CHILDCARE DESERTS AND OASES

The Mitchell Institute attracted policy and media attention with the *Childcare Deserts and Oases Report*. The report generated over 500 unique media stories reaching a potential 10.3 million people in the first three days after its release.

The report *Deserts and Oases: How accessible is childcare in Australia* found that for access to childcare, where you live matters. A childcare desert is a populated area where childcare access is most scarce, with more than three children per childcare place. The report found there were deserts in all Australian states and territories, and in all capital cities.

The research team provided briefings to the Federal, Victorian, NSW and South Australian Governments, as well as the SA Royal Commission into three-year-old preschool and other early learning stakeholders on the report findings. The research featured prominently in the Victorian and NSW Governments announcements of over \$15 billion extra funding to expand the early learning sector. The impact of this vital research is ongoing as it continues to be referenced widely in the media and drives the objectives of The Minderoo Foundation's Thrive By Five campaign.





CLIMATE CHANGE SCHOOL EDUCATION IN ISRAEL

VU climate change education expert, Associate Professor Efrat Eilam was part of a large international multidisciplinary team to develop a mandatory Foundation to Year 12 climate change curriculum, being rolled out in schools across Israel. The team established learning outcomes for the climate change curriculum:

- ◆ Develop knowledge skills and values as an outcome of direct student engagement with climate change education.
- ◆ Develop system and multi-system conceptualisation of climate change locally and globally.
- ◆ Develop student agency through participation in innovative projects addressing climate change challenges, with the aim of contributing positively to the society and the environment.
- ◆ Develop personal and social resilience.
- ◆ Apply authentic learning addressing big ideas and the application of real-world solutions.
- ◆ Develop climate change-related disaster risk reduction preparedness.



EDUCATION SYSTEMS

Mitchell Institute's Centre for International Research on Education Systems developed a position paper for the Victorian Department of Education, *Benefits of Victoria's pre-accredited training*, which identified knowledge gaps and mapped out a new research program into pre-accredited training in Victoria.

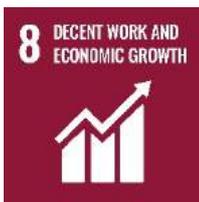
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The Review of Remote and Online Learning Experiences During COVID-19 for the Australian Education Research Organisation (AERO) and the Australian Government in 2022, examined system, school and classroom-level approaches proven to engage students in online and remote delivery, and considered wellbeing effects and student achievement. This work is an important contribution to the national conversation about the future of learning.



JUSTICE AND PROSPERITY FOR ALL



REDUCING INEQUALITY

VU works to enhance opportunities and to ensure that justice is fair for all people in Australia, the Asia-Pacific region and around the world.

COUNTERING VIOLENT EXTREMISM

A specialised team within VU's Institute for Sustainable Industries & Liveable Cities expanded the Applied Security Science Partnership (ASSP) project, providing guidance on ways to counter violent extremism. The Queensland Police implemented the National Security Prioritisation Assessment Tool (NS-PAT) developed jointly by the ASSP team and the Victoria Police. NS-PAT includes supporting products such as an eLearn and a handbook to support counter terrorism decision making.

ASSP and the Board of Imams joint submission was cited in the Parliament of Victoria's Inquiry into Extremism in Victoria, on the attacks by right wing extremism on the Islamic people's safety and wellbeing.

AUSTRALIA-ASEAN VISITOR ECONOMY SUPPLY CHAIN NETWORK

Australia-ASEAN New Normal for the Visitor Economy Supply Chain project developed collaborative networks between ASEAN countries, to create a sustainable 'new normal' for the visitor economy supply chain through a collaborative network.

Funded by the Australian Department of Foreign Affairs and Trade, Australia-ASEAN Council (AAC) and the Victorian Government, two virtual events were held in 2022 and a planning was undertaken for a 2023 face-to-face event in Malaysia. These events strengthened international collaboration between Australia and ASEAN countries, including Malaysia, Thailand and Vietnam and Indonesia, and provided an opportunity to discuss the impacts of COVID-19 on industry recovery and resilience building strategies.

SETTING THE RECORD STRAIGHT

The Aboriginal History Archive is built around the Foley Collection. It houses items arising out of the Aboriginal Black Power, Land Rights and Self-Determination movements. It spans a century of activism from the 1920s onwards.

In 2022, the Aboriginal History Archive was awarded a major philanthropic grant for its project 'Resetting the Record: Indigenous history, truth and justice.' The grant funds opportunities for Aboriginal and Torres Strait Islander undergraduate or post graduate students and post-doctoral scholars to work within the Archives. The funding provides opportunities to further unearth the history and stories contained within the Archives, to engage communities, and to contribute to public debate.

TRANSNATIONAL DATA FLOWS REGULATION

Dr Robert Walters finalised the UK data project on the role of regulation of data flows with India, South Africa and Kenya. The research concluded there is a need to internationalise the law regulating transnational data flows to support the role of the digital economy in international trade. The project helped establish a framework for legal convergence and data adequacy, to improve trade and investment in the digital economy, and to inform future interactions and negotiations at a country-to-country level.



VU RISE

VU RISE (Recover, Innovate, Sustain and Evolve), was a series of projects, funded by the Victorian Higher Education State Investment Fund (VHESIF). VU created four Innovation Hubs – Education, Jobs and Skills, Stronger Communities, and Sustainable Futures – as a framework for partnership development and to engage in action research solutions. The project teams worked with industry, community and government in Melbourne’s west, to create solutions for recovery from COVID-19 disruptions and, in the longer term, to respond to the challenges of today’s world.

The Innovation Hubs were sites for development, accelerator, and incubator programs, to foster innovation and entrepreneurial capabilities in VU staff, students and community partners.

Research within the Hubs was place-based to ensure direct impact for Melbourne’s west. The research has both immediate and long-term potential impact, including educational opportunities, policy development and application.

RECOVER,
INNOVATE
SUSTAIN,
EVOLVE.



EDUCATION

VU IS DEVELOPING PROGRAMS TO OFFER GREATER FLEXIBILITY FOR INDIVIDUAL CONTEXT AND LEARNING NEEDS THAN CURRENTLY PROVIDED BY A LINEAR EDUCATION SYSTEM .



REMOVING BARRIERS TO LIFELONG LEARNING

The aim of the Education Innovation Hub was to remove transition barriers that prevent students from progressing in their education, which carries the personal and social costs of underemployment and the regional economic costs of skill shortages. The Education Innovation Hub research streams addressed transition barriers for lifelong learning from secondary to vocational and higher education using co-designed micro-credentials, ‘stackable blocking’ of qualifications across higher and vocational education, and workplace-integrated learning.

EDUCATIONAL TRANSITIONS – SUMMER GAP

The Summer Gap project was designed as an innovative collaboration between Victoria University (VU), the Hellenic Museum, AVID Australia, and youth collaborators. Using a Youth Participatory Action Research model, researchers and young people co-designed, piloted and evaluated a prototype program ‘Becoming You’, to build young people’s agency and capabilities to negotiate post-secondary life choices, including pathways to further education and employment.

Further opportunities to expand Summer Gap are being explored such as licencing for implementation in secondary schools and sponsorship to offer the program more widely.

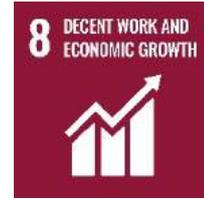


GRADUATE EMPLOYABILITY – CAREER READY

Skills such as communication, teamwork, problem-solving and digital literacy are in high demand by employers across all industry sectors. While there is a broad consensus on elements of these skill sets, there are significant differences in context and application across industries and work types.

This research examined these differences and complexities to inform industry, institutions and students/graduates of the graduate attributes valued by employers across a range of industry sectors. Using the learnings of a pilot program, evaluated in conjunction with industry, the Career Ready Award was established for VU students. The Award involves an extended series of extracurricular developmental activities to build the employability, career development and confidence.

The findings are relevant for refining curriculum and learning activities for development of communication, problem solving and help-seeking skills. The research learnings have been incorporated into the curriculum and learning design for VU's Bachelor of Business.



In the longer term, the research will be used to develop micro-credentials for in-demand skills and to enhance postgraduate curricula.

The team developed and aim to commercialise a Chatbot co-designed by students, to guide students to the extensive VU Employ services available and links to the Career Ready Award.



Chatbot sticker with QR code (student artwork).

Further work is needed to streamline input from employers, to attract more students to the program, the use of chatbots to advise students, and to integrate into curriculum.



Stages of the Career Ready Award

JOBS AND SKILLS

VU IS BRIDGING THE GAP FOR SKILLS NEEDS IN MELBOURNE'S WEST FOR GREATER REGIONAL ECONOMIC GROWTH AND EMPLOYMENT.

WORK AND SKILLS OF THE FUTURE

The Jobs and Skills Innovation Hub focused on the development and implementation of solutions to support skills and job growth, as well as safe and inclusive work environments in Melbourne's west.

REGIONAL GROWTH – SKILLS AND JOBS FOR MELBOURNE'S WEST

Skills and Jobs for Melbourne's west mapped skills and investigated the challenges in meeting future jobs needs of employers in four key industries: infrastructure, digital economy and social services and care and manufacturing.

The project identified three key impediments to sustained employment growth – fragile networks between employers and education and training providers, impediments to skill development by residents, and insufficient local jobs.

The project then co-designed a set of strategic directions encompassing focal enablers and strategies for sustainable growth in Melbourne's west. The strategy was developed through employers' insights and collaboration with education and government for a future skilled workforce and greater prosperity. Together, the strategic directions will provide a supply of skills for the western suburbs and strong connections to ensure employer skill needs are met into the future. A common thread is to strengthen the collaboration of industry and education and training for skill development.





The strategic directions proposed were:

- ◆ Creating a local skill ecosystem where skill formation occurs in place-based settings with employers, through enhanced relationships between industry, education providers, and individuals.
- ◆ Facilitating a culture of innovation across employers and education providers, who are looking to collaboratively redesign jobs, course content and how training is delivered.
- ◆ Enhancing engagement between education providers and industry, ensuring that students are instilled with the skills and capabilities employers need.

- ◆ Building capacity for educational institutions to be the hub of industry collaboration, responding to industry need, sparking innovation and providing initial and continuing training through robust partnerships.

In addition, it was determined that an initial stimulus is required to recalibrate the labour market, by stabilising the level of commuting to jobs outside the western suburbs.



STRONGER COMMUNITIES

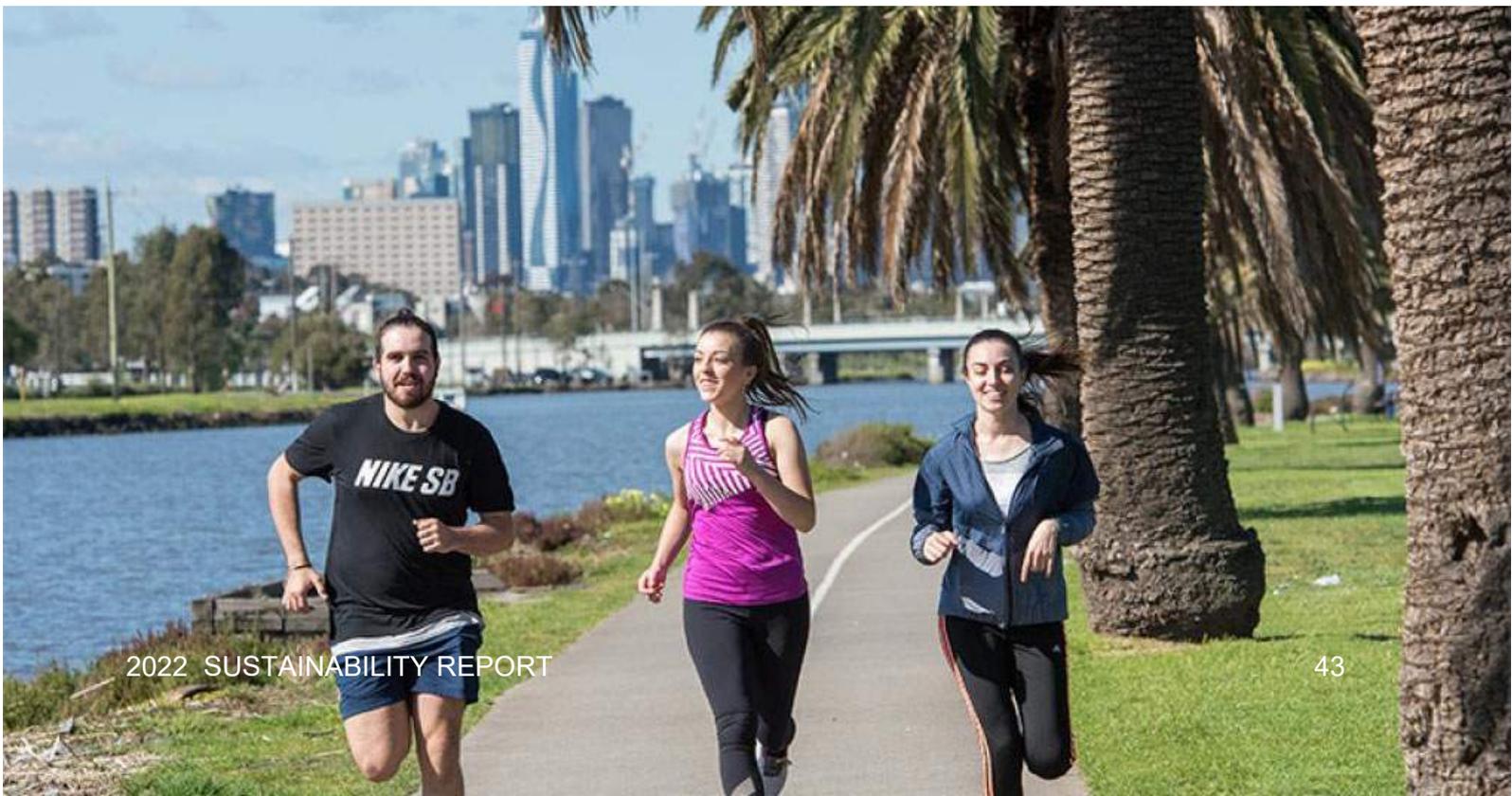
VU IS WORKING WITH WESTERN HEALTH AND COMMUNITY ORGANISATIONS TO DEVELOP EFFECTIVE INTERVENTIONS AND WELLBEING PROGRAMS TO ADDRESS HEALTH ISSUES.

PROMOTING HEALTHY AND ACTIVE LIVING

The Stronger Communities Innovation Hub aimed to improve the health, wellbeing and resilience of communities in Melbourne's west. The western region of Melbourne has one of the fastest growing and culturally and linguistically diverse populations in Australia, with pronounced socioeconomic disparities in access to healthcare, nutrition and engaging in preventative care.

Lifestyle factors such as sedentary behaviour, unhealthy diets, and stress – which are linked to urban growth – are contributing to an increase in chronic diseases such as obesity, diabetes, cardiovascular diseases, and mental health issues in the region.

These trends are also seen nationally, with increasing chronic diseases and demand for health services, driven by ageing populations and lifestyle factors – which are significantly impacting the Australian health care budget. This growing demand also presents a challenge to health services in their ability to provide timely access, safe and effective patient care, to an ever-expanding population with complex health needs.





HEALTH AND WELLBEING – THE WAITLIST PROJECT

The Waitlist Project, undertaken in conjunction with Western Health, seeks to address the chronic pain and mental health issues facing people who find themselves on a surgery waitlist for debilitating hip and knee osteoarthritis. Western Health is the leading healthcare provider in one of the most socioeconomically disadvantaged regions of Victoria, and has over 4,500 patients waiting up to 3 to 4 years to receive specialised care.

The aim of the Waitlist Project was to improve waitlist patients' quality of life by managing symptoms and improving physical and mental wellbeing. The team delivered an online health program, Why-Wait, which includes information, videos, exercises, recipes and mindfulness activities.

The health intervention was developed by engaging with waitlist patients, carers, clinicians, academic experts and hospital staff.

Preliminary results indicated the program has potential to overcome the need for surgery for some people, as it enables them to self-manage their condition.



THIS IS A GREAT, GREAT THING AND HAS ALREADY GOT ME MOVING. [I AM] REALLY HAPPY PEOPLE ARE MAKING SOMETHING LIKE THIS...I HAVE BEEN ON THE WAITLIST A YEAR AND I WISH I HAD IT BACK THEN. I MAY NOT EVEN NEED THE APPOINTMENT AFTER THIS AND BY THE TIME I MAY BE ACTIVE AND IT [OA] MAY BE FIXED.



Why-Wait Program participant

The project also supported 10 student placements from diverse disciplines, strengthening connections between VU teaching and research, and building the professional capability of future health professionals. Together, VU and Western Health are working together to provide the best care to Melbourne's west.



ACTIVE LIVING – ENGAGING CALD COMMUNITIES

VU partnered with the Western Bulldogs Community Foundation (WB Community Foundation) to expand the Sons and Daughters of the West programs to better engage and improve the health of culturally and linguistically diverse communities in Melbourne’s west. The tailored, community-informed health intervention programs were focused on creating greater connection with community organisations, local government associations, education and health providers, and sustainable change.

The delivery of the program at the participant level focused on how to improve positive health habits, increase mental resilience, and levels of sustainable connectedness to community. At the end of the 10-week programs, participants and families attended graduations where they celebrated their achievement.



The research team completed pre and post program consultations with diverse communities of women for the Daughters of the West program (DOTW) and men for Sons of the West (SOTW), the Vietnamese DOTW 2021, Vietnamese SOTW 2022, East African DOTW 2022 and African-Australian SOTW 2021 and Indian-Australian SOTW 2022.



2022 SUSTAINABILITY REPORT



Quantitative and qualitative data were collected from surveys and focus groups, before and after the program, to determine participants' health and wellbeing status, and to understand their expectations and specific needs from the program and their subsequent experiences of the program.

The project involved local governments, Brimbank and Maribyrnong City Councils, and not-for-profit organisations including the Multicultural Centre for Women's Health and the East African Women's Foundation, to engage participants in active living and healthy habits.

Findings from the projects will be used to scale and diversify the programs into the future to tackle health and wellbeing challenges as relevant to different communities.



COMMUNITY ACTION PROJECT – ADDRESSING ABORIGINAL DISADVANTAGE

Moondani Balluk Indigenous Academic Unit championed the Addressing Aboriginal Disadvantage Project, implementing and evaluating community-based, community-controlled models to renew and nurture Aboriginal cultures in Melbourne’s west.

The project strengthened partnerships and expanded Aboriginal expertise within Aboriginal Community Controlled Organisations – Aboriginal Wellness Foundation, Kirrip Aboriginal Corporation and Koling wada-ngal Aboriginal Corporation. It also enabled the creation of Aboriginal small to medium enterprises in Melbourne’s west, by connecting to relevant vocational education training and community-based models of advocacy and social change. The team created a space where Aboriginal voices and concerns could be expressed and heard, and enabled equal participation through a community-led project of self-determined actions to strengthen prosperity.

The team worked with Aboriginal businesses and individuals who wanted to develop small to medium enterprise to understand their training needs and aspirations. To increase skills, a series of workshops and 1:1 support was provided over a 10-month period. The topics covered were tax, branding, website design, costing, finances, marketing, training and short courses, business plans and research with Aboriginal Community Controlled Organisations.

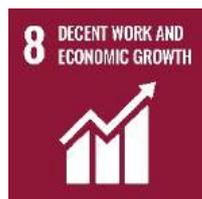
To inform future practice, the research:

- ◆ collated and analysed data on Aboriginal disadvantage related to Melbourne’s west.
- ◆ documented the development and implementation of Aboriginal Community Controlled Organisations.
- ◆ with the Aboriginal community, design and develop a model for advocacy and social change through community control specific to Melbourne’s west.

The Aboriginal community control focus of the project identified five areas to strengthen and empower Aboriginal communities in Melbourne’s west:

- ◆ to strengthen collaboration
- ◆ create political advocacy and community mobilisation
- ◆ refine governance
- ◆ clarify community decision-making
- ◆ to develop intergenerational leadership and grow from paternalism to community control.

Each theme informs the work of Moondani Balluk in engaging in Indigenous community-led, place-based Aboriginal research projects with Aboriginal entities. The recommendations also complement those proposed in the Western Metropolitan Regional Aboriginal Justice Advisory Committee Departmental Secretaries project, which came from the Aboriginal Community Forum in June 2022, agreeing to create dedicated Aboriginal community spaces, build community capacity within Aboriginal Community Controlled Organisations, and support Aboriginal community governance.



RESILIENCE – REGENERATIVE CITY LIVING LAB

The Regenerative City Living Lab project equipped students with skills to become future innovators and empower them to contribute to environmental action.

The project collaborated with STREAT, an award-winning food system social enterprise, dedicated to helping young people through education, and the Footscray High School Farm Sustainability Hub to deliver environmental and social action workshops. From VU, the REGEN team worked with Moondani Balluk Indigenous Academic Unit, Iramoo Native Plant Nursery and built environment discipline staff and students.

Through collaboration and co-design with students, the REGEN team created a dynamic learning and community action program on key environmental challenges. The team established five key areas – Open Sauce to work with social enterprises to prevent and repurpose café and restaurant food and packaging waste, Urban Agriculture, Re-greening and Edible Gardens, Community Tables and Planetary Health – and invited students to start developing their own projects and concepts. The framework enabled students to take innovative eco/social action by:

- ◆ immersing themselves in community-based experiential learning in a thriving social enterprise environment.
- ◆ undertaking action research and knowledge generation in environmental education and initiatives.
- ◆ increasing their knowledge, awareness, and connection to place, through engagement with Indigenous and cultural foodscapes and environmental action.
- ◆ developing systemic resilience for young people in the local area.
- ◆ delivery of two human-centred design initiatives for students at VU.

In 2022, students were able to return to campus and get hands-on with REGEN projects. The program engaged students in the:

- ◆ co-design and installation of an edible and Indigenous community garden in the heart of our Footscray Park Campus.
- ◆ development of an Instagram account with educative stories.
- ◆ connect with The Farm at Footscray High School, to observe and learn about caring for Country, educative program design and getting their hands dirty with The Farm's edible garden development.

The REGEN team conducted research throughout the project, to inform and improve the REGEN approach, detailed in *A Toolkit for Youth Eco-Action*.



The Student Club, Enactus VU, established a REGEN team to continue the work maintaining the community gardens and developing urban agriculture to connect students and the community with the land on which we reside.



2 ZERO HUNGER



4 QUALITY EDUCATION



11 SUSTAINABLE CITIES AND COMMUNITIES



SUSTAINABLE FUTURES

VU IS PARTNERING WITH KEY REGIONAL INDUSTRIES, TO RETHINK THE WAYS WE USE WASTE, AND TO REVOLUTIONISE MATERIAL USE.

RESPONSIBLE CONSUMPTION AND PRODUCTION

VU's Sustainable Futures Innovation Hub delivered research that aligns with Recycling Victoria's strategy to reduce waste by and reuse precious resources by transitioning to a circular economy. The benefits and potential to recycle materials and provide sustainable alternatives is immense.

In Australia, finding ways to rethink the use of non-renewable resources is a particularly pressing challenge:

- ◆ Australia is the driest populated continent with a variable climate, made worse by climate change, arguably making water our most precious resource.
- ◆ Australia uses around 3.5 million tonnes of plastics of which about 60% is imported, 1 million tonnes is single-use plastic and 84% is sent to landfill each year, costing \$419 million in lost recyclable plastics¹.
- ◆ Concrete production is responsible for an estimated 8% of global greenhouse gas emissions caused by humans. The global construction industry produces around 20.4 million tonnes of waste each year of which 6.7 million tonnes is sent to landfill.

WATER SECURITY – NEXT GENERATION WATER MANAGEMENT IN THE WERRIBEE RIVER CATCHMENT

The Werribee River catchment, spanning 2,715km², is being placed under increasing pressure from competing demands on its use by agriculture, industry and housing, threatening the water quality. Population in the region is expected to increase from 575,000 residents in 2018 to 1,350,000 in 2040. Better guidance is needed for planning by authorities and land developers to manage these competing demands and preserve the river for future generations.

¹ *National Plastics Plan 2021*, Department of Agriculture, Water and the Environment, Commonwealth of Australia 2021, p.2.

Research into water security in Werribee was conducted in partnership with Greater Western Water, using a multidisciplinary team, with the dual objectives: to provide a greater voice to the Traditional Owners and local communities, alongside industry, in water management decisions; and, to seek alternative water sources from storm water harvesting, while reducing water loss from supply pipes.

During the course of the project, the team engaged with the Werribee River Association, Australian Water Association and the Tropical Water Research Alliance, leading to new, longer-term partnerships working for regional, national and global water security.

A vision emerged to free up natural water flows in the catchment for sustainable growth and for the better enjoyment and wellbeing of its communities.

The research findings will inform a series of changes to the management of the Werribee River Catchment:

- ◆ Local stormwater harvesting and reuse to reduce demand on freshwater resources (potable water supply) in the Werribee River catchment.
- ◆ More efficient leak management practices adopted by the water corporations for the Werribee River catchment.
- ◆ Traditional Owner Knowledge and consultation incorporated into guiding water corporations' operation.
- ◆ Community values identified through the project incorporated into guiding water corporations' operations.
- ◆ Increase in water security, through alternative sources identified by this project, used for greening the west activities in support of community health and wellbeing.





WASTE REDUCTION – SUSTAINABLE PACKAGING SOLUTIONS

Plastic packaging has substantial environmental and social costs. Six percent of global oil production is used to make plastic packaging. Plastic pollution is a major environmental threat and when plastic breakdowns it emits harmful greenhouse gases.



An alternative to plastic packaging is bio-based food packaging made from biomass residues such as agricultural plant waste and by-products.

With the support of the industry partner, Velisha Farms, the research team developed renewable bio-packaging that can be composted and regrown anew using minimal resources and is biodegradable – promoting the circular economy.

The project also sought to reduce the need for protective packaging by developing an algorithm to detect and classify the shocks that occur in road transport that can cause damage to products and an open-access database, for use in research around the globe, of vibration data from vehicle types, routes, road surfaces and payload.

BIO-PACKAGING SOLUTIONS

FILMS	BOARDS & FILLER MATERIALS	NEW TYPES OF MATERIALS
Waste crude pea starch, a processing by-product, was used to develop a film that could potentially store dried foods.	Fibrous waste vegetables from Velisha Farms were converted into rigid boards, films, and filler materials as potential plastic substitutes.	Mycelium is the root structure of mushrooms/ fungi and is emerging as the basis of a range of new materials.

SMART AND SUSTAINABLE BUILDING – RECYCLED CONSTRUCTION PRODUCTS

The world’s largest basaltic plain is in the western suburbs of Melbourne. The seasonal shrink-swell movements of these highly reactive soils impose stresses on residential and road structures, detrimentally impacting the life span. Engineering researchers, Professor Sam Fragomeni and Dr Ehsan Yaghoubi seek to counter this by developing materials with superior performance for road infrastructure and house slabs that use recycled glass, plastic and demolition waste.

Artificial intelligence (AI) techniques were first used to assess the subsurface reactive soils more reliably and efficiently for improved and more economical designs of infrastructures. For example, AI was able to predict more accurately shrink-swell indices for sites which is a critical design factor.



Laboratory testing was conducted to investigate the physical and mechanical properties of pavement structures and house foundations made using recycled materials when built on highly reactive soils. The laboratory tests revealed that pavement mixtures using recycled concrete, glass and reclaimed asphalt have superior strength, resilience and moisture susceptibility. This was used to inform the design of on-site trials.

The on-site testing was conducted on two newly constructed foundation infrastructures and a full-scale road. The full-scale trial road includes three sections of different pavement profiles with a:

- ◆ control section of conventional materials.
- ◆ a test section with a conventional substructure layer under recycled material asphalt.
- ◆ a test section with a recycled material asphalt layer and one section of the base/subbase made of recycled materials, with one section using conventional polystyrene.





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