

# GREENING OUR FUTURE



Since its establishment in 2000, SMU has been committed to the sustainable development of a clean, green and healthy environment for SMU students, faculty and staff as well as neighbouring communities, businesses, residents and visitors. Since the opening of the City Campus in 2005, conceived as a “campus in the park”, SMU has been winning awards and achieving major environmental certifications and standards.

In the University’s strategic plan SMU 2025, Sustainable Living has been identified as one of the three key priorities that SMU would develop as an area of particular cross-disciplinary strength. SMU’s ambitions in this strategic priority include driving solutions to manage climate change, promoting sustainable city living, and enhancing quality of life.

These goals will be achieved through SMU’s educational and research programmes, as well as engagement with its stakeholders and communities-at-large. In fact, SMU’s expertise in such cross-disciplinary research intersects with the future needs of Singapore, the region, and the world, and is also where its potential for impact is the greatest.



*Building new solutions for a  
Greener Future*

# SMU'S SUSTAINABILITY BLUEPRINT

SMU President Professor Lily Kong launched the Sustainability Blueprint in September 2022, with four key strategies:

- 01 **Cultivate A Greener University**
- 02 **Develop Change Agents Through Sustainability Education**
- 03 **Drive Impactful Research**
- 04 **Foster Resilient Communities**

This Blueprint is the way forward for the University, which has been growing its sustainability credentials since SMU was first formed.

Aligned to the principles of the 17 UN Sustainable Development Goals (SDGs), SMU's Sustainability Blueprint focuses not just on reducing environmental impact across its operations, but also in driving meaningful contributions towards national and regional sustainability agendas through transformative education and impactful research.



Nearly **50%** of the graduating cohort took at least one sustainability-focused course



SMU Associate Professor of Urban Climate **Winston Chow** was nominated by Singapore and elected as co-chair of the Working Group II in the United Nations' top climate-science body, the Intergovernmental Panel on Climate Change (IPCC) Bureau



More than **40** Sustainability-Focused Courses offered to adult learners for continuing education and professional development



SMU was the **MNC Award Winner for the Green Innovation: Buildings category** at the Singapore Environmental Achievement Awards 2023



SMU Connexion, opened in January 2020, was recognised for its contribution to the sustainability of its surrounding environment by earning the **2023 Urban Habitat Award** from the international Council on Tall Building and Urban Habitat (CTBUH)



**100%** of Campus Buildings achieved BCA Green Mark Platinum certification (since 2019)



An SMU sustainability-focused research paper titled "Digital Sustainability and Entrepreneurship: How Digital Innovations are Helping Tackle Climate Change and Sustainable Development", was commended at the **Financial Times Responsible Business Education Award 2023** for its real-world impact

## AY 2022/23 SUSTAINABILITY HIGHLIGHTS



SMU is the first university in Singapore to offer an inter-disciplinary summer programme focused on sustainability – **the Sustainable Futures Global Summer Programme** with students from all over the world.



More than **\$5million** has been secured in external funding for sustainability research



The University received the **Silver Ribbon Mental Health Award** for the third consecutive year since the Awards were inaugurated in 2020

# GREENER UNIVERSITY

SMU has constantly pushed the boundaries of green building standards, adopting numerous innovative building technologies and processes to shorten construction time, improve buildability and productivity, reduce carbon emissions and waste, and conserve water.



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Solar harvesting capacity was also expanded to 20 per cent in 2023, with rooftop solar panels covering the area of about 1.5 football fields. The solar farm on campus is the largest in the city, producing nearly 2 megawatts-peak of electricity and meeting about 12 per cent of the campus' overall energy consumption.

### Sustainable Construction and Refurbishment

SMU's new buildings, SMU Connexion and the School of Social Sciences/College of Integrative Studies building achieved Net Zero Energy and Super Low Energy

### Sustainable Energy Use

The University has reduced energy intensity by 48 per cent (baseline 2006). In addition to all the campus buildings having

attained Green Mark Platinum certification since 2019, SMU has upgraded all the lights on campus to LED, resulting in savings of more than 70 per cent in lighting energy.

2



1 Rooftop solar farm at SMU.

2 Sharing SMU's sustainability journey with Dr Wang Fu Jen from National Chin-Yi University of Technology and members from ASHRAE Singapore Chapter in June 2023.



3

status, respectively. To-date, SMU has won 16 awards for environmental performance. The University has hosted study visits from more than 100 organisations and overseas delegations in the past year (AY 2022/23) to explain how it brought these projects to fruition and to share SMU's sustainability journey.

The use of innovative engineering methodology and technologies, such as sustainably sourced mass engineered timber structure, reduced the embodied carbon of the School of Social Sciences/College of Integrative Studies by 16 per cent.

3 SMU representatives with Minister for Sustainability and the Environment Ms Grace Fu at the Singapore Environmental Achievement Awards 2023. SMU received the MNC Award Winner for the Green Innovation Buildings category.

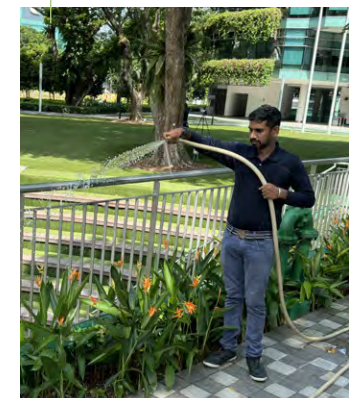
### Sustainable Water Management

Water use intensity has also been reduced by 46 per cent (baseline 2011). This has been achieved through several sustainable water management initiatives.

To minimise water wastage, smart water meters were installed across the campus. This system alerts the University's facilities management team to any spikes in water usage, indicative of a possible leak. Through prompt response to each alert, up to 10,000 litres of water can be saved.

Two underground water tanks that were originally installed as a drain-off for excess rainwater to prevent flooding, have now been converted to provide water for landscape irrigation on Campus Green. The tanks can harvest up to 100,000 litres of rainwater, equivalent to the water usage of an HDB three-room flat for about eight months. Condensate water from air-conditioning systems is also collected and reused to irrigate plants on campus grounds and on green walls.

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4 Gardener watering plants using harvested rainwater from the underground tanks.

# GREENER UNIVERSITY

## A Zero Waste Campus

SMU is also making progress towards becoming a zero-waste campus. It has begun phasing out single-use plastic and non-eco-friendly utensils and packaging in April 2022. Waste compactors have also been put in place, enabling a 30 per cent reduction in trips made by the waste disposal trucks.

## Sustainable Procurement

SMU will adopt sustainable procurement practices. This means planning and researching to meet requirements for goods and services from the finite resources of the world, environment, economies, society and the University. SMU will require suppliers to deliver services and

goods on a fair and ethical, transparent basis in alignment with its core principles of sustainability.

To help suppliers, it has developed and is in the process of communicating the Sustainable Procurement policy. This will make clear SMU's core principles, as well as preserve basic human rights and advance diversity, equity, and inclusion.

## Sustainable Investing

As part of its commitment to sustainable living, SMU is working towards a Sustainable Investment Policy. It will embrace opportunities to work with other institutions and organisations that engage with climate change, especially in addressing the challenges in finding short-term alternatives to fossil fuels in the developing world.

SMU also completed a substantial project in 2023 to estimate a baseline carbon footprint for the University's endowment. The next step will be to evaluate the obligations and commitments for SMU to become a signatory to the UN Principles for Responsible Investment.

# CHANGE AGENTS



Recognising the need to prepare students for the future green economy, a new Sustainability Education framework was developed and put in place. This framework provides opportunities for students to develop different levels of mastery of sustainability literacy according to their personal and professional interests.



## Embed Sustainability Education across the Curriculum

In pursuit of sustainability education, SMU's schools have made significant strides by expanding their offering of courses on sustainability. In AY 2023/2024, there are 36 sustainability focused undergraduate courses offered across all Schools. These courses provide undergraduates with an intermediate-level grasp of sustainability concepts and an understanding of the United Nations Sustainable Development Goals (UNSDGs). Through these courses, students also understand the need to respond to sustainability challenges by changing ways of doing things and to reflect on their roles as agents of change.

For students keen on deepening their understanding of sustainability, there are two sustainability-focused majors available – the Sustainability Management Second Major and the newly introduced Sustainable Societies Second Major launched in

AY 2023/2024. The latter will offer a social science centred sustainability curriculum built on inter-disciplinarity and problem-solving to develop skillsets for future green jobs. The Global Summer Programme 2023 also featured, for the first time, a Sustainable Futures track, where students took a deep dive into Singapore's green initiatives.

## Immersive Learning

Students are also able to strengthen their understanding of sustainability issues and create meaningful impact by solving real-world problems provided by industry as part of the SMU-X curriculum, with over 550 sustainability focused projects undertaken by students in AY 2022/23.



## Managing Food Waste

A student-led community service project focused on encouraging the reduction of food waste, is collaborating with the University's Office of Campus Infrastructure and Services and campus food and beverage (F&B) tenants to identify ways to reduce food waste throughout the food preparation process. The University has also installed seven biodigesters across the campus this year to help F&B tenants manage food waste. These will divert food waste from landfill and reduce methane emissions from decomposition in landfill.



5 SMU F&B tenants receiving training on the use of the food digesters.



## Remember. For. Me

Following the first nation-wide survey on dementia in Singapore in 2019, SMU partnered again with Dementia Singapore from January to March 2023 to delve into the shifting landscape of attitudes and awareness surrounding dementia post COVID. As part of the SMU-X course, a team of 72 undergraduates interviewed more than 3,000 people – persons with dementia, caregivers, and the general public – unveiling both progress and persistent challenges in the perceptions of persons with dementia, their caregivers, and the wider public.

The *Remember. For. Me* project underscores the need for continuous education, awareness, and advocacy to create a more compassionate and inclusive society.

## CHANGE AGENTS

### Integrate Sustainability into the Co-Curriculum

The Sustainability Education framework extends beyond core academic competencies and is integrated with SMU's co-curricular and extra-

curricular programmes, providing students with immersive educational experiences and varied pathways to acquire both theoretical and applied understanding of sustainability issues.



### SMU Pathfinders Sustainability Changemakers Overseas Programme

In a groundbreaking initiative, 12 students were selected to embark on the inaugural SMU Pathfinders Sustainability Changemakers Overseas Programme. Held in Bali from 7 to 14 December 2022, this transformative experience aimed to nurture student sustainability leaders through equipping them with advanced mastery of sustainability concepts.

Throughout their journey, participants delved into pressing environmental and socio-economic challenges faced by Balinese communities, such as coral reef degradation, degenerative agriculture and marginalisation. Inspired by their eye-opening experiences, participants have taken on sustainability-related projects, including co-organising SMU's first-ever Sustainability Forum, scheduled for 20 September 2023.

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### Community Service

SMU takes pride in preparing students to be responsible citizens who demonstrate leadership and integrity where they live and work. Community service has been an integral part of SMU's DNA since the University's inception in 2000 and is a graduation requirement. All undergraduates are required to complete a minimum of 80 hours of community service. As the first university in Singapore to make community service a graduation requirement for all students, SMU has devoted more than 3.7 million hours in service towards the community.

To enable all undergraduate students to acquire sustainability knowledge at the foundational level, a module entitled Sustainability and Sustainable Development was designed and launched as part of the mandatory Community Service Units (CSUs) in June 2023. This module ensures all undergraduate students are equipped with an understanding of key sustainability concepts and the UN SDGs, as an understanding of sustainability issues is instrumental to becoming engaged global citizens.

### starringSMU: 17 years of Supporting People with Disabilities

Established in 2007, starringSMU is the longest-running student-led community service project in SMU and has touched the lives of more than 10,000 people with disabilities. Through fun activities conducted during weekly engagement sessions, SMU student volunteers help to hone the motor and social skills of people with disabilities. starringSMU also regularly leverages social media and campus outreach activities to raise awareness of the challenges faced by people with disabilities and to foster empathy among the SMU community.



### Equip Workforce with Green Competencies through Continuing Education

SMU provides continuing and professional education opportunities to enable individual learners to thrive in the green economy and support organisations in building sustainability competencies.

More than 40 courses and programmes covering a wide range of sustainability topics, are currently offered through SMU Academy, SMU Executive Development, and the Singapore Green Finance Centre. Bespoke courses are also offered through SMU Executive Development to build sustainability leadership capability.

### IBF-STC Accredited Sustainable Finance Training Modules

In May 2023, the Singapore Green Finance Centre collaborated with the Investment Management Association of Singapore (IMAS) to offer a series of IBF-STC accredited sustainable finance training modules on the IMAS iLearn platform, allowing professionals to learn at their own pace. The Climate Change Management course has been rolled out, with more scheduled towards the end of the year.



# IMPACTFUL RESEARCH

SMU faculty have demonstrated strength and range in research on sustainability issues. Our research initiatives go beyond the environmental sustainability aspects and encompass the humanistic, social and management aspects.



## Develop High Quality Sustainability Research in areas of SMU's Strengths

With the aim of articulating and accelerating SMU's sustainable living research strategy and associated investments, five inter-disciplinary research pillars were identified, drawing on research capabilities across SMU's Schools:

-  **Sustainable Business Operations**
-  **Sustainable Urban Infrastructure**
-  **Sustainable Finance and Impact Assessment**
-  **Sustainable Agro-Businesses and Food Consumption**
-  **Sustainable Ageing and Wellness**

Ongoing and upcoming research examples of faculty-led efforts in each of the pillars were highlighted in a new e-booklet released by the Office of Research in January 2023.

### Nudging Acceptance of Alternative Proteins

The peer-reviewed journal, *Appetite*, published a study by Professor of Communication Management Mark Chong and Professor of Psychology Angela Leung titled "A cross-country investigation of social image motivation and acceptance of lab-grown meat in Singapore and the United States", which found that the Singaporean cultural trait of *kiasu-ism* (fear of missing out) has likely contributed to greater acceptance of lab-grown meat, compared to Americans.

The researchers plan to move forwards by initiating empirical studies involving food vendors on the SMU campus, in collaboration with Swiss non-animal dairy product company Formo, in the coming months after Formo receives the Singapore Food Agency's regulatory approval.

### Keeping Singapore Cool in a Warming Climate

Climate Change Winston Chow secured two notable grants addressing urban climate change and heating. The Cooling Singapore 2.0 project grant will utilise the previously developed Digital Urban Climate Twin model to examine the differentiated impacts of urban heat across Singapore from both physiological and behavioural perspectives.

Another project grant will study the impact of the use of novel building paints on the thermal comfort of multiple schools and their surroundings in Singapore.



8 SMU Cooling Singapore 2.0 researchers engage in walks around The Downtown Core to gather personal scale thermal sensation and perception data.

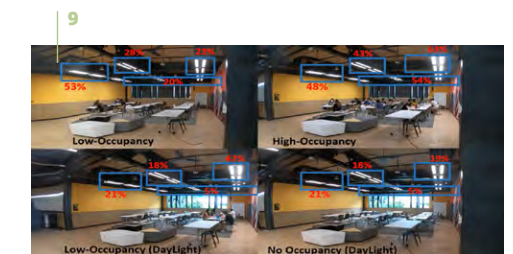
## Put Sustainability Ideas into Practice on Campus

As Singaporeans wrestle with sustainability challenges, the SMU campus provides fertile ground for faculty, staff and students to apply research to real-world buildings and systems within school grounds.

### AI and Smart Buildings

SMU Vice Provost (Research) and Professor of Computer Science Archan Misra's Smart Building project explored the use of AI and existing camera-sensing techniques to support energy-efficient operation of SMU Connexion (SMUC) as its Living Laboratory.

The team developed a fine-grained LED lighting-control technology which reduced lighting energy usage in the building by 30 to 40 per cent. Ambient temperatures of SMUC were also kept within +/- 0.2deg C range, regardless of occupancy and external weather through the piloting of the occupancy-aware Passive Displacement Cooling control technique.



9 Automated fine-grained control of individual LED luminaires.

## IMPACTFUL RESEARCH

### Develop Global and Local Research Partnerships

As part of its strategy to amplify research impact, SMU formalised joint five-year research partnerships with the University of Toronto (UofT) in May 2023 and with the Singapore University of Technology and Design (SUTD) in Oct 2022.

Two grants were awarded through a joint-grant call with UofT on the topic of “Migration, Thriving and Belonging”, where researchers from both institutions will jointly study sustainable ageing and wellness issues related to migrant populations across Singapore, Toronto, and Dubai.

In the partnership with SUTD, SMU has jointly developed three proposals that will focus on exploring urban mobility, electric vehicle adoption, and sustainability, all within the broader thematic area of urban sustainability and climate change.



### Asia-Pacific Research Alliance on Law and Sustainability

SMU, the University of Sydney and the University of Hong Kong have come together to spearhead the creation of the Research Alliance on Law & Sustainability. The Alliance is the first of its kind in the Asia-Pacific region, with the aim of driving law-focused research and teaching initiatives to envision new legal and governance systems that recognise the interconnectedness of multiple sectors to achieve harmony between people and nature in the region.

The Research Alliance was announced at the inaugural Law and Sustainability conference held at SMU on 13 and 14 July 2023 and it forms the starting point for the Alliance to advance its goals. The first of a three-part conference series, subsequent editions will take place in Australia and Hong Kong, in 2024 and 2025 respectively.



8 Guest of Honour Professor Tommy Koh, Ambassador-at-Large, Ministry of Foreign Affairs (6th from right) with Keynote Speaker and Guest, Dr Lena Chan, National Parks Board, Singapore (5th from left), and SMU President Professor Lily Kong (6th from left), together with representatives from the Yong Pung How School of Law at SMU, the Sydney Law School at USyd and the Faculty of Law at HKU.

## RESILIENT COMMUNITIES



Life will inevitably present its challenges – some big, some small; some expected, some unexpected. SMU is committed to helping students, faculty, and staff successfully adapt to uncertainty and adversity by providing useful resources and an enabling environment to foster individual and community resilience.

### Promote a Holistic Approach Towards the Wellbeing of the SMU Community

The SMU Resilience Framework was developed to guide the University's efforts in equipping the community with the appropriate knowledge, skills, and attitudes; authentic learning environments; and professional and peer support, needed to navigate and thrive in the face of life's challenges.



### SMU Resilience Framework Website and the Resilience@SMU Application

Launched at the start of the Mental Health Week in October 2022, the website has wellbeing resources and a self-check quiz to help students, faculty, and staff to identify the areas they can consider strengthening to increase their mental resilience. The application complements the resources on the website and utilises social engagement tools to empower the SMU community to assimilate positive habits and coping skills into daily life.



9 Amazing Race 2022, SMU's annual staff bonding and wellbeing event.

# RESILIENT COMMUNITIES

## Promote a Diverse and Inclusive Community on Campus

SMU strives to recognise and embrace diversity in its multiplicity, by respecting and appreciating human differences which encompass age, gender, ethnicity, nationality, religion, disability, sexual orientation, education,

socioeconomic background, and other characteristics and experiences. The University seeks to provide equal opportunities to people from a variety of backgrounds, and to create an inclusive environment where students, faculty, and staff feel valued, and have the space to explore, thrive and achieve their potential.

## Gender Equity

SMU has been a trailblazer in the Singaporean academic setting by appointing women both as Presidents of the University and Deans of two schools, in its brief two-decade history. Nevertheless, it recognises that female faculty representation is disproportionately low in

higher education, including in the faculty.

To provide greater support for female faculty members who are primary caregivers of young children and those with maternity-related conditions, SMU has put in place extensions of tenure clock and term contracts as well as enhanced teaching-load reductions.

recipients for SMU Access.

## Decent Work for All

The University is working on a range of other initiatives to reduce structural and systemic barriers and biases so as to create a more diverse, equitable, and inclusive community. It is reviewing

its HR policies, practices, and guidelines in the areas of recruitment, leave and benefits to ensure that the SMU community is given access to opportunities, support and resources they need to learn and perform at their best.



### Diverse-City 2022

Organised by SMU Student Success Centre (SSC) and students from SMU International Connections, "Diverse-City" is the university's annual fiesta celebrating cultural diversity and unity. The 2022 edition on 7 September 2022 was an in-person event, the first following two installments of virtual events due to the pandemic. Through a curated series of cultural learning programmes infused with both engaging and educational elements, the festival brought a cultural showcase of 14 countries to the University, giving students the opportunity to deepen their understanding of traditions and norms around the globe.

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10 Diverse-City 2022 transformed the SMU basement concourse and T-junction into a lively smorgasbord of cultural activities, food, games, and hands-on arts and craft workshops.

## Access to Education

No deserving student will be held back from pursuing a world-class education at SMU, regardless of financial circumstances. The University practices a "needs-blind" admission policy, with a large variety of financial assistance options ranging from bursaries, study awards, and loans to needs-based scholarships. 100 per cent of students who demonstrated financial need have received financial assistance.

The first of its kind by any university in Singapore, the SMU Access scheme also guarantees eligible full-time first-year Singaporean students from low-income families a financial assistance package equivalent to 100 per cent of tuition fees – there are no additional interviews or limits to the number of



### The Inclusive Organizing Playbook

Launched on 6 July 2023, *The Inclusive Organizing Playbook* is a practical guide to help organisations become more inclusive for people from disadvantaged groups – such as the differently-abled, single mothers, ex-offenders, or low-income households with significant care-giving responsibilities – whose complicated life circumstances often prohibit them from finding and holding down employment. Co-authored by Associate Professor Kenneth Goh, Assistant Professor Daniel Mack, and LKCSB PhD alumnus Dr Jovina Ang, this playbook draws on organisational design principles to offer a framework for rewiring work to turn inclusion into a reality.

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11 Capturing Moments of Inclusivity with Our Distinguished Panelists: (from left) SMU Provost Professor Timothy Clark, Boxgreen, Chief Tasting Officer Mr Andrew Lim, LKCSB Associate Professor Kenneth Goh, Scanteak, Chief Executive Officer Ms Jamie Lim, SMU-X Head Mr Kevin Koh, Ernst & Young Advisory, Partner, People Advisory Services Mr Jia Yong Goh and SMU University Librarian Ms Shameem Nilofar Maideen at the 'Inclusive Organizing Playbook' Book Launch.



# ENGAGING IN DIALOGUE



SMU is committed to engaging a broad range of stakeholders in open dialogues that facilitate and promote the exchange of knowledge and ideas, and which contribute to public-policy discussions and real-world solutions that address sustainability challenges in the region.



## Sustainability Series 2023

Through a series of events scheduled from July to October 2023, SMU will engage with its stakeholders and partners to further the discourse on sustainability and to showcase some of the key milestones the University has achieved as charted out in its Sustainability Blueprint. The SMU Sustainability Series 2023 kickstarted with the inaugural Law and Sustainability Conference, titled “Law in a Hyperconnected World – Joining the Dots for a Sustainable Future” from 13-14 Jul 2023 and will conclude on 12 Oct 2023 with the symposium organised by SMU’s Centre for Research on Successful Ageing (ROSA), titled “3<sup>rd</sup> ROSA Annual Symposium on Successful Ageing – Supporting active ageing in our communities”.



### *Inaugural International Conference on ESG and Climate Governance, 26-28 June 2023*

**B**ringing together academic experts, practitioners, and board directors across disciplines and industry sectors from six continents, the conference facilitated the exchange of ideas and practical solutions to address challenges to climate action. Topics included corporate governance, leadership, green finance, regulatory frameworks, corporate law, and boardroom obstacles to climate action.

This inaugural International Conference on ESG and Climate Governance is a global collaboration between the Centre for Climate Engagement and Climate Governance Initiative, based at Hughes Hall, University of Cambridge and SMU’s Sim Kee Boon Institute for Financial Economics, with support from the Singapore Green Finance Centre.

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