



## Message From The Dean

The School in partnership with Powerhouse Museum and Holdmark has organised the very successful inaugural Urban Transformation Summer School at Parramatta Engineering Innovation Hub from 17 to 23 February, with participants consisting of our academic staff, students, industry partners and local government organisations. The themes for the event are highly relevant to the challenges we are facing from "The role of arts and culture in the City", "Liveability and climate change", "Design excellence/Strategic approach", "Connective urban tissue/Role of public space", to "Parramatta River Interface".

The School of Engineering, Design and Built Environment welcomed our new cohort of students across Architecture, Construction Management, Engineering and Industrial Design programs in three Orientation sessions at Parramatta South, Parramatta Engineering Innovation Hub and Penrith campuses on 27<sup>th</sup> and 28<sup>th</sup> of February and 1<sup>st</sup> of March. Staff from the School, Library, Student Services, Solar Car Project Team, Teaching & Research Technical Services and Professional Associations have met the students and provided guidance and support to students on their exciting learning journey at WSU.

Our Associate Dean L&T, Associate Professor Surendra Shrestha, has been leading the School effort to work with our industry partners to co-design and co-assess our academic programs through the National Priorities and Industry Linkage Fund (NPILF) initiative since 2022. Staff from our School, University Learning Future

Team and industry partners have completed the Stage 1 and Stage 2 work on a range of identified key subjects to incorporate industry relevant contents and assessments across a number of undergraduate and postgraduate programs. We are about to launch the Stage 3 work for the project to incorporate WIL contents and assessments into more academic programs in our School.

## Associate Dean Learning and Teaching Report

Autumn semester classes have started with most of the lectures and tutorials being brought back on campus. Welcome week (27 Feb – 3 March) included information sessions at Kingswood, Parramatta City and Parramatta South campuses. All sessions were well attended by both students and staff.

The School is leading the co-design project under the federal government's Job Ready Graduates program supported by the National Priorities Industry Linkage Fund (NPILF). SoEDBE academics are collaborating with the colleagues from the PVC (A) to co-design significant proportion of its programs, with industry as partners. The ultimate beneficiaries will be the EDBE students.

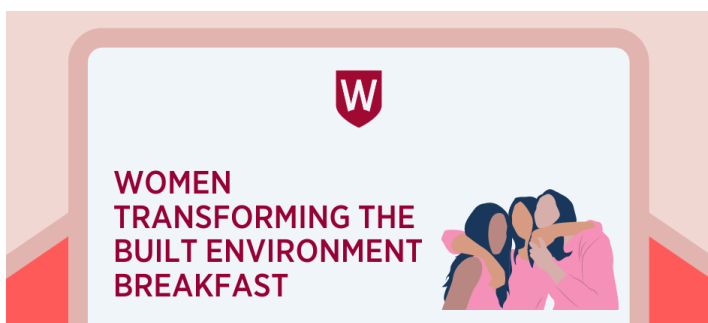
The School is involved in the University's Strategic Transition and Retention Project, again to benefit the students. The principal aim is to help students seamlessly transition to university life and succeed in their chosen career.



### The Buzz

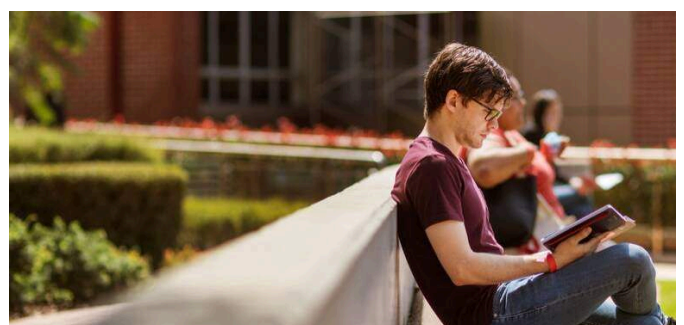
#### Lab design began to accommodate the National Facility for Physical Fire Simulation (NFPFS)

An ARC (Linkage Infrastructure Equipment and Facilities) project valued at \$1,213,351 was awarded to Professors Zhong Tao, Sarah Zhang, and Bijan Samali from the school along with their colleagues from other organisations in December 2021. This LIEF project aims to establish a ground breaking national facility for physical fire simulation (NFPFS) that will extend and upgrade existing research capacity in Australia to become world leading. A new lab on the Hawksbury campus will be built to house the NFPFS facility. The university has set up a project working group to coordinate with internal and external stakeholders. The lab design has started with a timeline to make the NFPFS facility fully operational in 2024.



## Celebrating International Women's Day

The Women Transforming the Built Environment Breakfast is a yearly fixture in our School's calendar and is an initiative to support our female students, staff and alumni, and celebrate their achievements. This year, we celebrated the theme [#EmbraceEquity](#), and acknowledged that not all people have the same starting point in their



## Learning & Teaching

Autumn semester classes have started with most of the lectures and tutorials being brought back on campus. Welcome week (27 Feb – 3 March) included information sessions at Kingswood, Parramatta City and Parramatta South campuses. All sessions were well attended by both students and staff.

The school is leading the co-design project under

journey. Therefore, it is imperative to allocate the correct resources according to their needs in order to achieve equality. We thank our Platinum Partner, Bechtel Australia and Gold Partner, Multiplex Constructions, for sponsoring the event and for their ongoing support.

The event started with Professor Michelle Trudgett Deputy Vice Chancellor Indigenous Leadership welcome to country and opening event, followed by Professor Deborah Sweeney PVC Research Enterprise International showcasing University successes. We also invited 2 keynote speakers Kim Boyd from Bechtel and Venessa Lesicnik from Multiplex. The highlight of the day was 4 female student panel Semandara Farhan from Engineering, Sawsan Rahmad from Construction Management, Amanda Eessa from Architecture and Alok Amin from Industrial Design with Nicole Waterman as moderator. We also presented the Rising Star Award for Tayla Chalfa from Construction Management for high performance student. Lastly, our Dean Professor Mike Kagioglou for closing the event.

the federal government's Job Ready Graduates program supported by the National Priorities Industry Linkage Fund (NPILF). SoEDBE academics are collaborating with the colleagues from the PVC (A) to co-design significant proportion of its programs, with industry as partners. The ultimate beneficiaries will be the EDBE students.

The school is involved in the University's Strategic Transition and Retention Project, again to benefit the students. The principal aim is to help students seamlessly transition to university life and succeed in their chosen career.

## Research News

In the past quarter we successfully continued securing research grants at different categories:

- ARC Discovery Project on Transforming Current Design Practice for Controlled Modulus Columns; Led by Prof Samanthika Liyanapathirana and Prof Chin Leo (\$340k)
- ARC Linkage on Transforming pastefill delivery system for next generation mining system; Led by Prof Richard Yang, Prof Sarah Zhang, A/Prof Kejun Dong, Dr. Zhongpu Zhang - (\$362k)
- A grant from Australian Coal Association Research Program via Central Queensland University, where Prof Zhong Tao lead the WSU part (\$277k)
- An industry funded research project on energy efficient facades for offsite construction of modular buildings; Led by A/Prof Pejman Sharafi and Prof Vivian Tam (\$303k)
- An industry funded research project on fire performance of PPVC systems via ARC Research Hub for Fire Resilience Infrastructure, Assets and Safety Advancements (FRIASA); Led by A/Prof Pejman Sharafi and Prof Bijan Samali (\$270k)

## Our HDR News

Visiting PhD student Mr Seungmin Yoo from Seoul National University (South Korea) presented his research on "Improved Bushfire Prediction Technique with Observation Dataset and Data Assimilation". He is invited by Dr Won Hee Kang and will collaborate on bushfire research.

The first well-being event for HDR students in 2023 was held on the first of March. Several HDR students from China introduced the Chinese Lunar New Year and Lantern Festival. Students and supervisors attended the event, enjoyed Chinese food and participated in colourful traditional festival activities.





**Thilini Piumali Kankanamge** is a PhD student in the School of Engineering, Design and Built Environment, Western Sydney University. She was awarded an International Postgraduate Scholarship from the university in 2023. The topic of her research study is mitigation of mud pumping in embankments supporting transport infrastructure under the supervision of Prof. Samanthika Liyanapathirana. Piumali graduated from University of Ruhuna, Sri Lanka in 2013 and served in the industry for more than 8 years as a Civil engineer. She completed MEng degree in civil engineering from Saitama University, Japan in 2018 and qualified as a chartered engineer in Sri Lanka in 2019.



**Sulaimaan Kaizer Hassan** is a new Doctoral Candidate at Western Sydney University, having received the International Postgraduate Scholarship Award. His research, under Professor Samanthika Liyanapathirana's supervision, focuses on the cyclic soil-structure interaction of integral bridges. Sulaimaan earned his bachelor's in civil engineering at Curtin University where he graduated in 2022 with First-Class Honours. During that time, his research involved the investigation of three-dimensional slope stability analyses of unsaturated soils, and he was recognized to be among the top 1% of undergraduate students. His current research interests include constitutive modelling, finite element modelling, soil-structure interactions, and cyclic thermal loading.



**Thishani Amarathunga** has recently joined as a Doctoral Researcher in the School of Engineering, Design and Built Environment at Western Sydney University. She has been awarded an International Postgraduate Scholarship from Western Sydney University in 2023. Currently, she is conducting her research focusing on smear zone around Controlled Modulus Columns (CMCs), under the supervision of Prof. Samanthika Liyanapathirana. Thishani graduated from the Asian Institute of Technology (AIT), Thailand with a BSc in Engineering and a MEng in Geotechnical and Earth Resources. Her research interest includes ground improvement, computational geomechanics, slope stability, deep foundation, climate change and sustainability in geotechnical engineering designs.



**Tharika Kahandawa Arachchi** is starting off as a Doctoral Researcher this Summer as one of our latest additions to the School of Engineering, Design and Built Environment. She has been awarded the Australian Government (Research Training Program) Stipend Scholarship and her doctoral research focus is on improving the fire performance of concrete structures using phase change materials. Tharika is currently working under the supervision of Professor Olivia Mirza, and she was working as a Lecturer in Civil Engineering in Sri Lanka before joining Western Sydney University. She is a published author of three journal articles, several conference papers, and a book chapter.



## International News

As of 17 March, the school recorded 154 enrolments that is 6 enrolment short of final 2022 semester 1 enrolments. Good news is that with 64.25 commencing EFTSL, we are 6.78 units ahead of EFTSL record for the same week in 2022. This means revenue-wise, we recorded our best performance since 2019. The articulation agreement with KDU covering our CM programs was signed in the DVC (Research, Enterprise and International) recent visit to Sri Lanka. We also finalised our agreement with ICBT (again Sri Lanka) aimed at increasing our intake to BEng. The final piece of news from international portfolio is the re-appointment of our ADIs (East Asia). Congratulations to Professor Vivian Tam, Professor Gu Fang and Dr Jeffery Zou for their renewal of their role.

## Facilities

### Lab design began to accommodate the National Facility for Physical Fire Simulation (NFPFS)

An ARC (Linkage Infrastructure Equipment and Facilities) project valued at \$1,213,351 was awarded to Professors Zhong Tao, Sarah Zhang, and Bijan Samali from the school along with their colleagues from other organisations in December 2021. This LIEF project aims to establish a ground breaking national facility for physical fire simulation (NFPFS) that will extend and upgrade existing research capacity in Australia to become world leading. A new lab on the Hawksbury campus will be built to house the NFPFS facility. The university has set up a project working group to coordinate with internal and external stakeholders. The lab design has started with a timeline to make the NFPFS facility fully operational in 2024.





### Staff Awards

The Chartered Institute of Building is the largest professional organisation in the world in the area of project and construction management with more than 47000 members in more than 100 countries. CIOB appointed Professor Mike Kagioglou as their Vice-President in 2022.

Mike will become the CIOB's Senior Vice-President in 2023 and then installed as its President in 2024. Professor Kagioglou's tenure will focus on professionalism in the sector and aim to bring closer Academic, industry and governmental institutions for public good benefits.

CIOB's existing focus on excellence and quality and its global presence and best practice as well as collegiate and collaborative approach provides the perfect platform for global collaborations and advancements in practice.



### Staff Awards

Engineers Australia Sydney Division (SDC) has a long-running history of connecting and uniting engineers to provide advancement in science and engineering for the betterment of our community.

Professor Olivia Mirza has been elected as President for Engineers Australia (EA) Sydney Division in 2023. Olivia will lead SDC to build industry connectedness, grow STEM education and drive job growth with skills training.

I am passionate about how EA can contribute to wider community growth while capturing innovation and local economic growth. My vision is to implement strategies where SDC can be the bridge between education, industries, and governments.

## School Engagement News

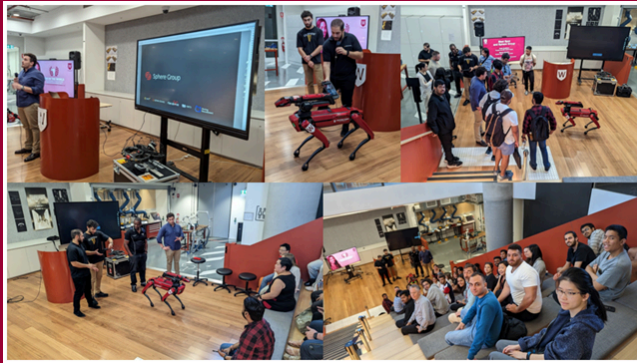
On the 16th of March we proudly introduced "Spot" to our students and staff at the Parramatta Engineering Innovation Hub. "Spot" is a highly agile, dog-like robot developed by Boston Dynamics and supplied in Australia by Sphere Group. Western purchased Spot late in 2022 and it will be used as a platform for conducting research into drone-based activities with industry relevance.

Our launch was joined by Paris Cockinos, CEO and Founder of Sphere Group, and Steven Kassiou, Solution Specialist at Sphere Group, who kindly provided us with an overview of Sphere Group's activities in the drone industry and gave an insight into the huge role that drones will play for industry in the near future. In addition to demonstrating the capabilities of Spot, we also saw a demonstration of Sphere Group's Helios drone that performs LIDAR scanning of interior spaces and cavities such as for underground mines.

We are very grateful to Paris and Steven for giving their time to visit us on this occasion. It was very informative and inspiration for our students and staff to hear their stories and see the latest example of

robotic technology at Western. For similar events in the future follow Advanced Engineering at Western

## Upcoming Event



In collaboration with Engineers Australia, WOW (women of wisdom) is hosting a speed networking event for SoEDBE students to connect with industry partners. This event will give students a unique opportunity to engage with up to 25 industry partners who will be in attendance, providing valuable insight into internships and graduate positions at their respective companies. With a focus on the future, this event will help students consider their next steps after university and connect with potential employers. By fostering these relationships, students can gain a better understanding of the opportunities available to them

in their field and prepare themselves for successful careers after graduation. Register here: <https://www.eventbrite.com.au/e/speed-networking-wow-engineers-australia-tickets-591894370997>

## People Who Inspire

### Why Engineering as a career, and why Civil Engineering?

Mathematics was my favourite subject in school, and I was good at it too. In Sri Lanka where I did my undergraduate degree, engineering is for those who score the highest marks in the maths stream. So, I got admission to do Engineering at Moratuwa University. The first female civil engineer in Sri Lanka was from my high school and she oversaw building our new science laboratories at the time I was in middle school. Seeing her work in that project every day for about a year when I was in the middle school inspired me to study civil engineering. Also, I like Civil Engineering due to the hands-on nature of the discipline. You design things and you can also see the finished product after construction is complete.



### What significant events influenced your career path?

I started my career in Sri Lanka as a university lecturer just after finishing my undergraduate studies. I enjoyed the research component associated with academic life as well as educating the younger generation. After completing my PhD at the University of Western Australia, my PhD supervisors encouraged me to stay in academia where I could be part of research instead of moving to industry. Also, I was very lucky enough to receive a postdoctoral position at the University Sydney after finishing my PhD. I think rather than events, the great researchers who are world leaders in their disciplines such as Professors Mark Randolph and Harry Poulos with whom I worked with during my doctoral and postdoctoral years inspired me to be where I stand today.

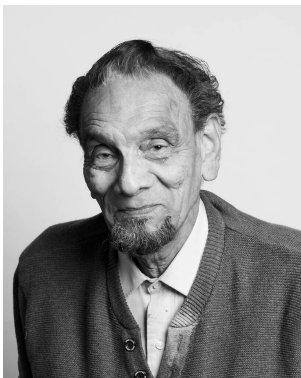
### Could you share with us your professional experience and challenges experienced as a female engineer?

It was challenging to be a female engineer. Especially at the beginning of my career, there were not many female academics around me. In one university my appointment was the first female academic appointment. In the next university I was the only female academic in the engineering faculty at that time. Also, I had to take maternity leave while meeting project deadlines and delivering outcomes, while working

as the only researcher for the projects. However, I received a lot of encouragement to return to work after leave during very challenging periods of my life by my academic supervisors at the time. I am grateful to them for where I stand today.

### What do you predict as the future of engineering as a whole and the role of women in it?

As for any other discipline, future of engineering also has challenges to deliver projects using sustainable materials, less carbon emissions and optimum designs while lowering project costs. Women are underrepresented in engineering. To move forward we need participation from both men and women. The way men and women approach problems is different. Also, social behaviour of men and women in a workplace is different. It is good to have people who think differently to bring variety and novelty to the ideas when solving problems. Future workplaces will be more inclusive, diverse, tolerant and productive.



### Tribute to Dr Ragbir Bhathal

Dr Ragbir Bhathal had been an invaluable member of our academic team for over quarter of a century, having joined Western Sydney University on 26 March 1994. He received his PhD in magnetism from The University of Queensland. Recipient of multiple teaching and research awards, Dr Bhathal was a humble human being who believed in equality and was a strong advocate for the First Nations People and Women in Engineering education. He published 15 books that included 2 in aboriginal astronomy and 1 on Australian women scientists. He also authored many more scholarly publications attracting over 2500 citations.

Dr Bhathal was a true 'student-centred' professional who was always willing and available to guide our students. Recipient of the national award for Outstanding Contributions to Student Learning, he put his work above himself. Those who know him will always remember the sentence he used repeatedly, *"My work is my hobby, my hobby is my work. How can I get tired of my work?"*

Dr Bhathal was instrumental in setting up the WSU's Campbelltown Observatory. His sense of public service motivated him to develop Sydney's First Science Playground with the Campbelltown City Council. He was the Foundation Director of the Singapore of Science Centre, Honorary Fellow of the Singapore Association for the Advancement of Science, Fellow of the Royal Astronomical Society (London), Project Director for Sydney Observatory Restoration Building Program, and the Deputy Director of the Museum of Applied Arts and Sciences in Sydney. He was also a member of the committee set up to establish the National Science and Technology Centre (Questacon) at Canberra. He had served as an adviser to the Federal Minister for Science in Australia, Dr Barry Jones, as well as once advised the Singapore Minister for Science and Technology, Dr Toh Chin Chye.

Dr Ragbir Bhathal passed away suddenly on 30 November 2022. The School is saddened by this irreplaceable loss and wishes his soul to rest in peace.

**Thank you & Subscribe**

