EXCITE
CONNECTING ENGINEERING DESIGN AND BUILT ENVIRONMENT

WESTERN SYDNEY UNIVERSITY

News from the School of Engineering, Design and Built Environment. e-Newsletter | March 2024 | Issue 15

Message From The Dean

It has been just over three months since I commenced my role as your new Dean, and I would like to firstly take this opportunity to acknowledge my predecessor, Professor Mike Kagioglou, for the positive impact that he has made on the School during his tenure.
It is an honour and a privilege to serve as the Dean of the School of Engineering, Design, and Built Environment at one of Australia's most progressive universities! Situated in a rapidly evolving region of Sydney, we are uniquely positioned to leverage the vast potential of our young and culturally diverse communities. Western Sydney is increasingly attracting industries, ranging from multinational corporations to small and medium-sized enterprises (SMEs), creating a virtuous circle of opportunity. As the anchor university for the area, Western Sydney University (WSU), with the School playing an integral part, has been instrumental in driving positive change and fostering growth and prospects for young people in Western Sydney. Under my leadership, we will continue to grow and enhance our educational offerings, our impactful research, and our engagement with our communities, industry partners and government. Exciting times ahead!

Distinguished Professor Brian G. Falzon CEng MAICD FRAeS
Dean of Engineering, Design and Built Environment
Chair of Composite Materials and Aerospace Structures

The Buzz

The Western Sydney Solar Team showcased their innovative spirit and engineering prowess at the 2023 Bridgestone World Solar Challenge. Despite the challenge's severe winds and looming bush fires, the team's solar car, UNLIMITED 5.0, demonstrated remarkable resilience and efficiency. The team not only completed the gruelling 3022 km journey from Darwin to Adelaide but also achieved the distinction of being the first Australian team in their class to cross the finish line and placed 9th overall. Their performance is a testament to their dedication and the potential of renewable energy in transforming transportation.

Teaching and Learning

Autumn semester classes began on the 4 March and are in full swing. It is fantastic to see students back on campus and actively engaging in Learning as well as extra-curricular activities. Campuses are vibrant with face-to-face classes being reintroduced.

The School successfully hosted Orientation Day on 27 February, which saw more than 800 students and their families attend. The sessions provided program specific information to the commencing students with the principal aim of helping them succeed in their academic ventures. Current students from various disciplines promoted student clubs and extra-curricular activities that can help students to develop networks and get acculturated to the university life.

It's pleasing to see an increase in commencing numbers as well as the total student enrolment in the programs in the School. As of 12 March, the School has seen 11.7% increase in commencing student numbers whereas the increase in total student numbers is more modest

at 9.9%.

The School has developed various strategies to help retain these students and be successful in their chosen programs. As a part of the School's retention strategy, the Academic Program Advisors have started contacting students who require more guidance.

The School has also conducted an induction session for new sessional academics to make them aware of their roles and responsibilities in helping the students in their academic journey. The session was held on 12 March and was attended by 25 casual academics.

Research News

Aligned with our university's dedication to advancing impactful research and training in sustainable development, the School of Engineering, Design and Built Environment, is leading numerous major bids and initiatives focused on environmental sustainability in 2023-24. A recent achievement in this pursuit is the successful attainment of the Australian Research Council (ARC)-funded Mid-Career Industry Fellowship granted to Associate Professor Pejman Sharafi. The project, titled "A platform for multifaceted climate-adaptive building envelopes," secured $1,121,210 in funding, aiming to achieve research excellence in collaboration with industry partners. Associate Professor Sharafi will lead the development of innovative offsite manufacturing techniques for climate-adaptive building facades. The anticipated outcomes include creating commercial opportunities for Australian firms, reducing energy consumption and carbon emissions in construction, and fostering the construction of more climate-resilient structures – a crucial contemporary challenge centred on fostering inclusive, safe, resilient, and sustainable cities and human settlements. This achievement not only underscores our steadfast commitment to sustainable development but also solidifies our reputation as a partner of choice for industry.

At the end of February, we held a three-day writing workshop for HDR students and early career academics. The workshop covered training from writing a literature review to publishing with impact, as well as training on writing competitive CV and research proposals. Approximately 20 students and staff participated in the three days of intensive writing and enjoyed the inspiring experience. We hope this workshop, as part of our ongoing effort to promote research culture, can assist the attendees in achieve their research career aspirations, which underpins the school and university's sustaining success.

Engagement News

2024 International Women's Day Event

The School celebrated International Women's Day with the annual breakfast event on the 7 March. There were more than 120 participants consisting of external industry partners, professional organisations, colleagues and students.

This year the theme was "Inspire Inclusion" which signifies the importance of creating a world where all individuals, regardless of gender, race, ethnicity, sexual orientation, or any other characteristic, feel valued, respected, and included. It calls for breaking down barriers, biases, and stereotypes that have historically marginalised women and other underrepresented groups. This theme is in line with the Western Sydney University and the vision of Women of Wisdom (WoW) which is to emphasise the need to celebrate and uplift

the diverse experiences, perspectives, and contributions of women from all backgrounds. It encourages fostering environments where women can thrive professionally, socially, and personally without facing discrimination or exclusion in engineering and built environment field.

The event was sponsored by Lendlease and Richard Crookes Constructions. The acknowledgement of country was made by Sharidan Kearney followed by welcome speech by Distinguish Professor Brian Falzon, our Dean. The student panel discussion was moderated by Nicole Waterman from Laing O'Rourke who spoke with Alena Alanis (Construction Management), Genevieve Bryant (Industrial Design), Mary Anne Yosef (Architecture) and Rebecca Mickhail (Engineering). It was very well received, sparking many questions from the audience. The School would also like to congratulate Katrina Dos Anjos for being awarded the Rising Star Award which was presented by Jamie Burrage from Engineers Australia General Manager for Sydney Division.

International News

With 631 students, the School has recorded the biggest international cohort of the past five years.

171 international students joined us this autumn, which is 15% higher than 2023 Semester 1 commencements. DAPs and APAs were instrumental in this success. As we approach the census date, we conclude our recruitment activities for the first half of the year.

School's international leadership is working with the DAPs to develop a European mobility program to our UG students focusing on UNSDGs.

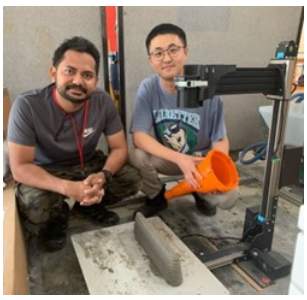
In March, the School hosted two delegations from France and Indonesia.

Student Success

Augustine Senanu Komla Kukah
Augustine is a second-year doctoral researcher at the Centre for Smart Modern Construction (c4SMC). He has a BSc in Quantity Surveying and Construction Economics, and an MPhil in Construction Management. His ongoing research focuses on developing a carbon trading system for the built environment. The findings of the work are expected to contribute to reduction in greenhouse gas emissions by the built environment. He is supervised by A/Prof. Xiaohua (Sean) Jin, Dr. Robert Osei-Kyei and Prof. Srinath Perera. Augustine is a member of the SoEDBE. He won bronze prize in the School's highly competitive HDR research poster competition in 2023.

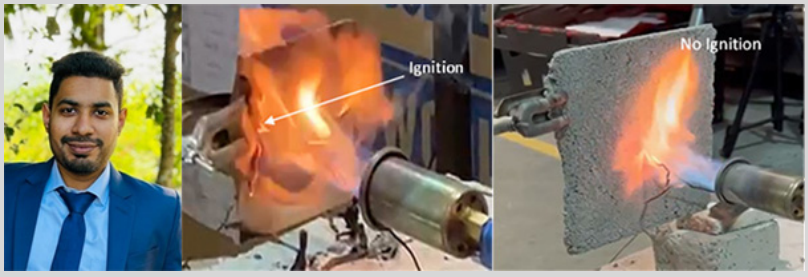
Babak Atashfaraz
Babak is pursuing his PhD on an industry-funded project titled "Super Prefabricated Prefinished Building Construction System Using a Novel Rocking Steel Interconnection." Under the supervision of Associate Professor Pejman Sharafi, the project aims to develop an efficient, sustainable, and reliable high-rise steel building system tailored to meet the demands of the Australian market. Significant progress has been made in analysing and testing the connection,

revealing its efficiency in terms of easy assembly, superior mechanical properties, and lower carbon footprint compared to counterparts. Consequently, the proposed innovative interconnection enables a building to improve its Life Cycle Assessment (LCA), facilitating rapid and high-quality installation.



Dong An
Dong, from China, is a PhD candidate of Professor Richard (Chunhui) Yang. His research focuses on the numerical simulation of 3D concrete printing (3DCP). Recently, with the aid of state-of-the-art equipment provided by the School and assistance from laboratory staff, he has successfully fabricated multi-layer structures using sustainable cementitious materials alongside his colleague. Additionally, he has published a journal paper titled "Numerical Modelling of 3D Concrete Printing: Material Models, Boundary Conditions, and Failure Identification in Engineering Structures" in Engineering Structures, a prestigious Q1 journal.

Md Rayhan Hasnat
Hasnat joined the School as a Doctoral Researcher in 2022. His research focuses on fire behaviour of the composite panels used in buildings.



Hasnat served as a mechanical engineer in a cement sheet manufacturing company for three years in Bangladesh. He also worked in an Australian company as a materials engineer for six months before joining as a PhD candidate at the University.

In his research, he is developing energy-efficient lightweight non-combustible composite cladding (ELNC) for high-rise buildings under the supervision of Dr Md Kamrul Hassan. The samples were tested under fire exposure of 1000℃ and showed remarkable properties.

Shanujah Mathuranayagam
Shanujah Mathuranayagam attained her MPhil at the University of Peradeniya, Sri Lanka, and worked as a lecturer at the University of Jaffna, Sri Lanka. Currently, she is a first-year Doctoral Researcher affiliated with the School. She completed her PhD confirmation last December under the guidance of her principal supervisor, Prof. Samanthika Liyanapathirana. Shanujah's doctoral research is focused on a critical aspect of geotechnical engineering: the foundation behaviour in unsaturated expansive soils. Presently, she is engaged in developing and implementing constitutive models to adequately predict the behaviour of unsaturated soils with her supervisor and an international research collaborator, Professor William Fuentes.

Shashini Jayakodi

Ms Shashini Jayakodi is a PhD researcher at the Centre for Smart Modern Construction (c4SMC). She obtained a BSc first-class honours degree in Facilities Management from the University of Moratuwa, Sri Lanka. Her doctoral research is focused on developing A Circular Economy Maturity Model For Construction Organisations under the supervision of A/Prof. Sepani Senaratne, Prof. Srinath Perera and Dr. Keivan Bamdad. Shashini holds the view that initiating her PhD in Circular Economy in Construction at the world's top university, dedicated to Sustainable Development Goals, has proven to be an exceptionally enriching experience. This experience has deepened her dedication to pioneering transformative solutions, aiming for a more sustainable construction industry.

Alumni Achievements

Md Delwar Hossain recently completed his PhD in Fire Safety Engineering at Western Sydney University (WSU), supported by a prestigious ARC postgraduate research scholarship. His doctoral research primarily focused on mitigating fire protection challenges associated with flammable cladding in high-rise structures, particularly the rapid-fire propagation facilitated by aluminum composite panel (ACP) cladding systems. Dr. Hossain recently developed a fire testing protocol and risk assessment criteria for cladding panels and systems under the supervision of Prof Swapan Saha, Dr. Md Kamrul Hassan, Dr. Anthony Chun Yin Yuen. Dr. Hossain significantly contributed to the field through the publication of 23 articles in reputable journals and conference papers. His research has garnered notable attention, evidenced by its citation count of 275 on Google Scholar, alongside an h-index of 8 and an i10-index of 7. Presently, he is actively involved in a research endeavour titled "Development of a Full-scale Fire Testing Program for Fire Retardant Materials," which has received substantial funding of $101,500 from the Australian Research Council (ARC). Dr Hossain is now working as Research Associate at WSU.

New Staff Corner

Dr. Mobarak Hossain

Dr. is excited to join the Western Sydney University's (WSU) Mechanical Engineering team. His research focuses on structural dynamics, vibrations, and advanced manufacturing. With eight years as a dedicated casual academic at WSU, UNSW, and UTS, he has actively contributed to over 20 Mechanical Engineering units. Possessing a notable publication record and hands-on experience in industrial projects, Dr. Hossain looks forward to enhancing our University's academic excellence.

Dr. Karthick Thiyagarajan

Dr. Karthick Thiyagarajan is a Lecturer in Mechatronics and Robotics Engineering at WSU. Previously, he was a Research Fellow at the UTS Robotics Institute. His research focuses on pioneering intelligent sensing and perception methods to advance robotic autonomy. With

research collaborations extending to over 30 industry partners worldwide, he successfully secured $1.4 million in research funds as Chief Investigator from the Australian Research Council, NBN Co., Sydney Water, etc. He received over seven prestigious awards from both industry and academia for his impactful research. He possesses significant experience in developing and delivering diverse mechatronics and robotics subjects, integrating contemporary pedagogical methodologies.

Dr. Zuhaib Siddiqui

Dr. Zuhaib Siddiqui is an Associate Lecturer in Environmental Engineering. Prior to joining Western Sydney University, he worked as an Associate Environmental Engineer at Capital Engineering Consultants. He also worked as Research Fellow in our School. His research focused on Resource Recoveries from Waste/Biosolids and Persistent Organic Pollutants Fate and Control. With research collaborations extending with industry partners worldwide, he successfully secured more than $2.5 million in research funds as chief-/co-Investigator. His recent project is funded by NSW Circular Economy and Industrial Partners. He acquires significant years of experience in developing and teaching in Environmental Engineering, focusing on work integrated learning.

Staff Awards

Dr. Maria Rashidi

In July 2023, Dr. Maria Rashidi was awarded the esteemed Western Ventures Impact Prize at Western Sydney University's Research Impact Competition. The Western Ventures Impact Prize is a recent initiative aimed at assisting ground-breaking projects with exceptional potential for commercialisation to advance to the next level of development. Her presentation related to her research Eye in The Sky Keeps Bridges Safe.

People Who Inspire

In the dynamic landscape of education institution, leadership plays a significant role in guiding school toward innovation, excellence, and societal impact. With immense pleasure and anticipation, we welcome **Distinguished Professor Brian Falzon** as the new dean of School of Engineering, Design and Built Environment.

Can you please tell us a little about yourself?

My academic journey commenced at the University of Sydney, where I earned a double degree in Aeronautical Engineering and Science (Physics and Maths), followed by a PhD in Aerostructures. After a brief stint as a researcher in Sydney, I accepted a postdoctoral fellowship at Imperial College London. This opportunity led to an academic appointment, and I subsequently spent 12 years living in London, advancing through the academic ranks to become an Associate Professor (Reader).

I returned to Australia to take up the Chair of Aerospace Engineering at Monash University, where I was also Deputy Head of the Department of Mechanical and Aerospace Engineering. After five years at Monash, I was offered a prestigious Royal Academy of Engineering Chair at Queen's University Belfast where I was to spend nine years, six of those as Head of the School of Mechanical and Aerospace Engineering. My journey brought me back to Australia a second time, for senior leadership roles at RMIT University, before moving to Sydney to take up my current role as Dean of this terrific School.

Can you share your vision for our school and your role in achieving it?

The School, in its revamped structure, is a recent initiative that merges multiple disciplines into a unified entity. This restructuring has already begun to yield fruitful outcomes, such as the formation of interdisciplinary research groups focused on tackling significant and pressing issues. I aim to foster even greater unity and to elevate our aspirations in spearheading major research projects. I want prospective students to view our School as their premier option for the diverse programs we provide, and to this end, I will be continuously evaluating and improving our educational offerings. Our research and educational efforts will bolster our connections with the business sector and establish strategic alliances with industry leaders. We will take full advantage of the opportunities that the new Western Sydney Airport and adjoining Bradfield City Centre will bring to our staff and students.

My role involves leading and managing efforts to achieve our vision, which encompasses many aspects. I am a firm believer in inclusive leadership and actively promote collaborative decision-making. Based on my experience, this approach is the most effective way to engage teams and guide them through this exciting journey.

What experiences or values do you bring to this role that you believe will positively impact our school?

Throughout my career, I've had the privilege of serving at various universities across the UK and Australia. This diverse experience has exposed me to a wide array of leadership styles, offering me insights into what approaches are effective and which ones fall short. Consequently, I've accumulated a rich repository of examples to draw upon in shaping my own leadership practices. If there is such a thing as a leadership style, mine is very much shaped by the belief that consensus-building fosters collaboration, enhances team cohesion and can deliver more innovative solutions than a top-down decision-making approach. There will be transparency in our decision-making and I am confident that this will quickly become apparent during School meetings.

What strategies do you have in mind for supporting the professional development and well-being of staff?

Staff will be encouraged to seek leadership skills development and other professional development opportunities. We need to have an active mentorship program in place where senior staff are paired with less experienced staff to offer support and guidance, advice on career progression, and work-life balance. I will follow up on actions that arise out of Institutional surveys, through anonymous school-based surveys, to achieve a greater level of granularity; the formation of time-limited working groups to address these actions; and 'town-hall' meetings. Achieving a satisfactory work-life balance is critical to the well-being of all of us. This is highly individualistic, but we will plan a seminar and information program so that we can all have better information on warning signs to protect our mental and physical health. I plan to hold several social functions throughout the year to bring us together as a community and remind each other that we're all human!

How do you plan to engage with and involve staff members in decision-making processes within the school?

To ensure staff members are actively involved in decision-making processes within the School, I will cultivate multiple avenues for engagement. Central to this approach is fostering a culture of openness and transparent communication, where every staff member feels comfortable and encouraged to express concerns, propose ideas, and participate in shaping the decisions that affect our collective work environment and objectives. I will prioritise keeping staff well-informed about upcoming decisions and matters that impact the School, providing ample opportunities for everyone to contribute their perspectives. This includes regular updates, forums for feedback, and dedicated sessions for discussion on key issues. Additionally, I am committed to revitalising our School meetings to become more interactive and discussion-oriented. These meetings will not only serve as a platform for disseminating information but also as a valuable space for lively and constructive debates, allowing us to harness the collective expertise and insights of our staff. By actively soliciting and valuing input from all staff members, we can ensure decisions are well-rounded, equitable, and supportive of our School's mission and goals.

Tell us about your hobbies or something you think colleagues who find interesting about you?

I have many hobbies and interests to allow me to recharge. One of my true passions, but one which I have scant time to devote to, is oil painting. I tend to paint realism and it is something I have done on and off for many years. I am an avid film buff, enjoy the theatre, a good novel, have eclectic tastes in music, and a general interest in most art forms. I can also get exceedingly geeky if you have the misfortune of asking me about my fountain pen collection. It is an interest of mine which has been nurtured since childhood and you will almost always find me scribbling with one of these from my ever-growing collection!

Thank you & Subscribe

View Newsletter in browser and subscribe

EXCITE
CONNECTING ENGINEERING