

DfCO₂ Newsletter

September 2026 edition

Our Vision

To transform the Australian infrastructure workforce sector with the capability to measure carbon emissions uniformly and design carbon-neutral infrastructures throughout their lifespan.

Our Mission

To train future leaders in the methodologies, technologies, and implementation strategies for carbon-neutral infrastructure design.



Message from Centre Director

The past months have been a particularly productive period for DfCO₂. Our researchers, PhD students, and industry partners have continued to make valuable contributions across research, industry engagement and professional activities, with a range of strong academic outcomes and prestigious awards and recognitions. At the same time, the Centre has continued to expand its research activities, industry engagement and collaborations, reflecting the growing strength and reach of DfCO₂.

As the Centre develops, it is important that we continue to look beyond individual achievements and consider how our research can create meaningful benefit and value for industry and the wider community. Strong collaboration across disciplines, institutions and industry will remain central to this.

I look forward to bringing our Centre community together at the [Reflection & Production](#) workshop at the end of the year. It will be an opportunity to reflect on what we have achieved, share the value and benefits of our work, and consider how we can strengthen our collaborations and create greater impact in the next stage of DfCO₂.



Professor Chun-Qing Li
Centre Director

Awards and Recognitions

Professional Engineer of the Year – Victoria

Congratulations to **Professor Kate Nguyen** from RMIT's Department of Civil and Infrastructure Engineering, who has been named **Professional Engineer of the Year – Victoria 2026** at the Engineers Australia Excellence Awards.

Kate will now represent Victoria at the national finals in Melbourne in November. This prestigious recognition celebrates her outstanding contribution to the engineering profession and highlights her leadership, expertise and impact within the engineering community.



RMIT School of Engineering Alumni Award 2026

Dr. Yew-Chin Koay, Partner Investigator Major Road Projects Victoria, has received the **RMIT School of Engineering Alumni Award 2026** in recognition of his contribution to the engineering profession and his career spanning industry, academia and government across different countries and professional settings.

Reflecting on the award, Yew-Chin highlighted the importance of knowledge sharing, supporting others, building trust and creating opportunities for the next generation of engineers. He expressed his appreciation to the colleagues, mentors, collaborators, friends and fan who have supported him throughout his career.



RMIT Research Impact Award 2025

The Coffee Biochar Concrete Innovation Team, led by **Professor Jie Li** and including DfCo2 researchers **Dr Rajeev Roychand**, **Dr Mohammad Saberian**, **Professor Chun-Qing Li**, **Professor Kevin Guomin Zhang** and **Associate Professor Xiaoshan (Susanna) Lin**, has received the RMIT Award for Research Engagement and Impact (Team). The award recognises the team's success in translating innovative research into real-world impact through collaboration across disciplines and with industry, highlighting their contribution to sustainable construction and circular economy solutions.



Awards and Recognitions

DfCO2 Scaling Impact: [Professor Jian Zuo](#) publishes new photovoltaic waste recycling study in Nature - Aug 2026, Adelaide University

We are pleased to share that Professor Jian Zuo, Chief Investigator and Program 5 Co-Lead at the ARC Training Centre for Whole Life Design of Carbon Neutral Infrastructure (DfCO2), has published a new study in Nature as a co-first author.

Professor Zuo is Professor of Sustainable Construction at Adelaide University and an internationally recognised researcher in sustainable built environments. His research spans circular economy, construction and demolition waste management, sustainable construction, policy intervention and behavioural change. Within DfCO2, his work focuses on reducing carbon emissions from infrastructure through material circularity, sustainable procurement, stakeholder behaviour, and whole-life carbon thinking.

The new study, Towards an equitable future of global photovoltaic waste recycling, tackles a growing challenge of the clean energy transition: how to manage solar photovoltaic panels as they reach the end of their service life.

The international research team analysed 1,708 recycling scenarios across 32 regions and estimates that global PV waste could reach 297–402 million tonnes by 2060. The findings show that this growing waste stream could also become a major source of valuable materials, economic benefits and carbon reductions if recycling systems are planned effectively.

Importantly, the research highlights that the most economically efficient recycling pathway is not always the most equitable. It calls for investment in local recycling capacity, technology sharing and coordinated policy to ensure that the benefits of the circular solar economy can be shared across regions.

The study also reflects the broader scope of DfCO2's research agenda. The transition to carbon-neutral infrastructure is not only a technical or emissions-reduction challenge, it also requires consideration of environmental performance, economic viability, resource circularity and social equity across the full life cycle. By examining both the benefits and distributional implications of PV recycling, this research demonstrates how clean energy transition can be approached through a more integrated, equitable and whole-of-life perspective.

[Read More](#)



Professor Jian Zuo
Chief Investigator

Keynote at CRIOCM 2026

Distinguished Professor Sujeewa Setunge delivered a keynote at **CRIOCM 2026**, sharing insights into the transition from net zero towards carbon-positive infrastructure. Her keynote explored how the next generation of infrastructure can move beyond reducing emissions to actively creating positive environmental outcomes, with a focus on whole-of-life thinking, circular design and research translation.



US patent grant

Professor Flora Salim has shared the grant of a US patent for “**Methods, systems, devices and neural networks for forecasting a time series**”. The patent, US 12,688,375, was granted in July 2026, following a research journey that began during her time at RMIT. The patent recognises the development of innovative approaches to time-series forecasting using neural networks and highlights the continued impact of research developed through her work at RMIT.



Biochar Concrete: Research Impact and Media Recognition

Award-winning research from RMIT University’s Civil Engineering team on coffee biochar concrete continues to gain national and international recognition, including the Universities Australia Shaping Australia Awards and widespread global media coverage. Building on pioneering work led by **Dr Rajeev Roychand** and **Professor Jie Li**, which demonstrated that spent coffee grounds can be converted into biochar to produce concrete with up to 30% higher strength, subsequent research led by **Dr Jingxuan Zhang** and Dr Mohammad Saberian has assessed its environmental performance through life cycle assessment (LCA), showing carbon emission reductions of up to 26%. The research was recently featured in a CGTN radio interview, where Dr Jingxuan Zhang discussed the carbon footprint of conventional concrete, the potential of coffee waste for circular reuse, and the role of LCA in evaluating low-carbon construction materials. The study was also co-authored by Rajeev Roychand, Jie Li, **Chun-Qing Li**, **Kevin Guomin Zhang**, and Dilan Robert, bringing together expertise in sustainable construction materials, structural engineering and life cycle assessment.



Throughout the year, we host a series of webinars aimed at promoting the outcomes of the Centre's research and training programs.

June 2026 Webinar

10 June 2026 webinar - **Why Embodied Carbon Matters: The Role of EPDs in Sustainable Construction** delivered by **Barbara Nebel** and **Dr. Haoran Lei**, from **thinkstep-anz** for an insightful session on embodied carbon and sustainable construction.

EPDs are not just reporting tools - they are a foundation for better sustainability decisions across the built environment.

As the built environment sector moves toward net zero, embodied carbon is rapidly becoming a critical focus for buildings and infrastructure.

This webinar explored why embodied carbon now matters as much as operational carbon, and how Environmental Product Declarations (EPDs) are helping organisations make credible, data-driven sustainability decisions.

Through practical case studies and

real industry examples, we unpacked:

- Why embodied carbon matters
- The role of Life Cycle Assessment (LCA) and EPDs
- What is involved in developing an EPD
- How EPDs can support procurement, Scope 3, circular economy and broader sustainability goals

Featuring examples from organisations including Infrabuild, Dulux and BarChip, the session demonstrated how EPDs are shaping the future of low carbon construction across Australia and New Zealand.



Barbara Nebel
CEO



Haoran Lei
Senior Sustainability Specialist

Guest speaker nominations:

If you're interested in presenting in our upcoming webinar series, or would like to nominate an expert, we'd love to hear from you. Please email us at dfco2@rmit.edu.au to start the conversation!

Sep 2026 Webinar

17 September 2026 webinar - **Major Transport Infrastructure: Past, Present and Future — Lessons, Challenges and Opportunities** feature **Dr. Yew-Chin Koay**, Senior Specialist, Materials and Structural Engineering at VIDA Roads. He is a senior engineering professional with extensive experience in the planning, design, assessment, maintenance and delivery of major transport infrastructure.

Major transport infrastructure has evolved significantly over the past several decades, driven by advances in engineering, materials, technology and changing community expectations. Drawing on the experience in bridge and structural engineering, infrastructure assessment and maintenance, materials, asset management and major transport projects, this presentation reflected on the lessons from the past, challenges we face today, and opportunities for the future.

It explored how we can improve the way we design, deliver and maintain transport infrastructure, with greater consideration of durability, resilience, sustainability, whole-of-life performance and carbon reduction.

The presentation concluded with some thoughts on how engineers and the infrastructure industry can work together to deliver safer, more resilient, sustainable and lower-carbon transport infrastructure for future generations.



Dr. Yew-Chin Koay

**Senior Specialist, Materials and
Structural Engineering**

Past, Present, Future

Our responsibility is to connect all three

PAST

Learn

- What worked
- What failed
- What deteriorated

PRESENT

Understand

- Risk
- Performance
- Carbon
- Resilience

FUTURE

Design differently

- Durable
- Adaptable
- Digital
- Circular
- Low-carbon

Guest speaker nominations:

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Personnel Updates

DfCO2 Centre Management Update

After two and a half years of dedicated service, **Siew-Queen** has concluded her role as DfCO2 Centre Manager. During her tenure, she made valuable contributions to the Centre's operations, researcher and industry engagement, and the development of its broader activities and collaborations. We thank Siew-Queen for her commitment and contributions to DfCO2 and wish her every success in her next chapter!

We also acknowledge **Dr Jingxuan Zhang**, who served as Acting Centre Manager during Siew-Queen's leave, alongside her role as Research Fellow.

We are pleased to welcome **Dr Cheryl Zhao** as the new DfCO2 Centre Manager and look forward to her contribution to the Centre's continued development.



Cheryl Zhao

Centre Manager

Cheryl has completed her PhD in Marketing at Curtin University and brings experience across university administration, research, teaching and research services. She has worked as an administrator, research assistant and sessional tutor, and has experience in both the Pre-Award and research administration environments within the Curtin Research Office. Her work has given her an understanding of university operations, while also developing her capability in research funding, ARC schemes, research management systems, reporting, compliance and project delivery. Cheryl is particularly interested in connecting research, operations and industry to support effective research outcomes.



Bill (Bingcheng) Guo

Research Assistant

University: RMIT University

Supervisor: Prof. Chun-Qing Li

Bill is a Research Assistant working in ITTC DFCO2 under Program 5. He received his PhD and Master's degree from RMIT University and The University of Melbourne, respectively. His research focuses on time-dependent reliability analysis and stochastic process modelling.



Yiwei Chen

PhD student

University: RMIT University

Supervisors: Prof. Kevin Zhang, Prof. Chun Qing Li, and Dr Jingxuan Zhang

Yiwei Chen is a PhD researcher working on life cycle assessment, circular construction materials, and construction and demolition waste management. He received his Master's degree in Engineering Management from Chongqing University, China. His research focuses on the sustainable and circular management of construction materials, with particular interests in life cycle environmental assessment, and construction material reuse and recycling.

Research interests: Life cycle assessment, circular economy, circular construction materials, construction and demolition waste management.



- **Melbourne Water - 5 West Nutrient Removal Plant wins 2026 Project of the Year.** Melbourne Water's 5 West Nutrient Removal Plant at the Western Treatment Plant has been named Project of the Year at the 2026 Engineers Australia Victorian Excellence Awards. Delivered in partnership with Jacobs and BMD, the project combines innovative nutrient-removal technology with circular design, reducing carbon requirements by around 40%, operational energy demand by approximately 30%, and concrete use by around 50%. The project will now progress to the national Engineers Australia Excellence Awards in November. The project was also recognised with the **2026 Innovation Excellence Award** at the Infrastructure Partnerships Australia National Infrastructure Awards.
[Read further here:](#)
- **AECOM — Thrive appointed strategic five-year partner to Greater Western Water.** AECOM and Aurecon's Thrive joint venture has been appointed by Greater Western Water as a strategic planning partner for its five-year infrastructure planning and delivery program. The partnership will support long-term water infrastructure investment across Melbourne's west, with a focus on sustainable solutions, whole-of-life asset planning, climate resilience and future growth.
[Read further here:](#)
- **MECLA — Guide to Low Carbon Concrete in Australia Version 2**
MECLA releases Version 2 of the Guide to Low Carbon Concrete in Australia – The Materials & Embodied Carbon Leaders' Alliance (MECLA) has released the second version of its Guide to Low Carbon Concrete in Australia, providing state-based regional EPD data to support more informed specification of low-carbon concrete. The updated guide also adopts the Australian classification scheme developed by Cement Concrete & Aggregates Australia, providing practical guidance to accelerate embodied carbon reduction across the construction industry.
[Read further here:](#)

Welcome to 2026 Year End Centre Meeting and Workshop: Reflection & Production



2026 Year End Centre Meeting and Workshop: Reflection & Production

ARC Training Centre for
Whole Life Design of Carbon Neutral Infrastructure

Date: Friday, 30 October 2026
Time: 10:00 AM - 4:00 PM
Venue: Room 7212 - Manhari Room
(Map is attached) Level 7, Melbourne Connect
700 Swanston Street, Carlton VIC

10:00 AM - 10:30 AM	REGISTRATION AND MORNING TEA
10:30 AM - 10:45 AM	Welcome by Head of Department - Prof Guillermo Narsilio University of Melbourne
10:45 AM - 11:00 AM	Year in Review Presentation by Centre Director
11:00 AM - 12:50 PM	Program and Project Leaders Presentations (Session 1)
12:50 PM - 1:50 PM	LUNCH & NETWORKING
1:50 PM - 3:30 PM	Program and Project Leaders Presentations (Session 2)
3:30 PM - 3:50 PM	Industry Partner Feedback
3:50 PM - 4:00 PM	Strategic Outlook & Closing Remarks

-END-



Connect with Us

We are dedicated to keeping you informed about our Centre's activities. Please visit our website <https://dfco2.org.au> which is regularly updated to showcase the Centre's progress and opportunities to collaborate.

If you have any news stories, achievements, or exciting updates to share with us, please email dfco2@rmit.edu.au and Tag us on [LinkedIn](#)



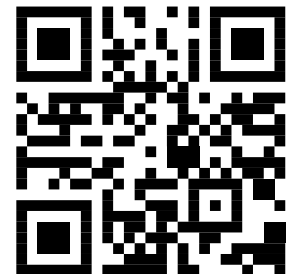
For inquiries and more information about Dfco2, contact us:

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LinkedIn: **DfCO2**



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The ARC Training Centre for Whole Life Design of Carbon Neutral Infrastructure is funded by the Australian Government through the Australian Research Council and in collaboration with institutional and industry partners.

We acknowledge the Traditional Owners of Country throughout Australia on whose unceded lands we conduct the business of the Centre. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past, present, and emerging. We also acknowledge the Traditional Custodians and their Ancestors of the lands and waters across Australia where we conduct our business.