SmartCrete CRC

Annual Report

2025-26



SmartCrete CRC

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SmartCrete CRC acknowledges Australia's First Nations Peoples as the Traditional Custodians of the lands on which we collaborate and innovate. In particular, we acknowledge the Wallumattagal clan of the Dharug Nation, the Traditional Custodians of the land on which our office is located.

We pay our respects to Elders past and present, and recognise their continuing connection to land, waters, and culture.

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Published: October 2026
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Disclaimer
SmartCrete CRC has endeavoured to ensure that the information in this publication is correct. This report has been prepared to align with SmartCrete CRC's Commonwealth Agreement, referencing the outcomes, activities, participants and the other matters as at 30 June 2026, unless it is otherwise specified in the document.

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SmartCrete CRC is a cooperative research centre that empowers innovation collaborations to transition concrete for a sustainable Australia. Its activities are funded by its industry and university partners and an Australian Commonwealth Government grant.

Highlights



$72 million

of project investment (cash + in-kind) from Commonwealth, industry and universities



500+

people undertaking collaborative research in SmartCrete projects



67

research projects, 16 of which commenced during the reporting period



21

completed projects, 11 of which were completed in FY25-26



79

research publications in FY2025-26 alone



10

communities of practice



88

industry, government and research partners across Australia



53

PhD and masters degree students

Message from the Chair

"SmartCrete has always sought to do more than fund individual research projects.

We have worked to strengthen the innovation capacity of the concrete ecosystem itself; connecting organisations, building capability, generating new knowledge and demonstrating how collaborative research can solve complex industry challenges."



FY2025-26 has been a year of delivery, impact and growing confidence in the legacy SmartCrete CRC will leave for Australia's concrete ecosystem.

As we approach the final year of the CRC, our research portfolio is reaching maturity. Projects are moving beyond laboratory investigation into field trials, demonstration, adoption and commercialisation, providing increasingly tangible evidence of what can be achieved when industry and researchers work together around clearly defined challenges.

Importantly, SmartCrete CRC remains firmly on track against its commitments to the Commonwealth. The strength of our position reflects disciplined governance, careful portfolio management and the sustained contribution of our partners. It also provides us with the opportunity to focus our remaining time and resources where they matter most: maximising the impact of our research and ensuring that the knowledge, relationships and capabilities developed through the CRC endure beyond June 2027.

The Board has therefore placed considerable emphasis this year on legacy. SmartCrete has always sought to do more than fund individual research projects. We have worked to strengthen the innovation capacity of the concrete ecosystem itself; connecting organisations, building capability, generating new knowledge and demonstrating how collaborative research can solve complex industry challenges.

Our work has also reinforced an important lesson: technical innovation alone will not deliver the transition to a low-carbon built environment. Australia has extraordinary research capability and an industry increasingly willing to innovate. But promising technologies must also navigate market, regulatory, procurement and skills barriers before they can achieve impact at scale.

This understanding is informing our work with industry, government and research partners to explore how the collaborative capability built through SmartCrete can continue beyond the life of the CRC.

On behalf of the Board, I thank our partners for their commitment, expertise and willingness to collaborate. I also acknowledge our CEO Clare and the SmartCrete team, whose focus on quality, impact and purpose continues to position the CRC strongly for its final year.

We enter that year with much still to accomplish, but also with considerable confidence in what has already been built and in the contribution SmartCrete CRC will continue to make long after the program itself concludes.

Emeritus Professor Elizabeth Taylor AO FAICD
Independent Chair

Message from the CEO

"Great research is only the beginning. Impact occurs when researchers, manufacturers, asset owners, governments and the broader supply chain work together to turn knowledge into practice."



FY2025-26 has been one of the most rewarding years in SmartCrete CRC's journey.

After several years spent building a diverse portfolio of collaborative research, we are now seeing that work translate into tangible outcomes. Across our projects, researchers and industry partners are testing new low-carbon materials, deploying technologies in real-world environments, developing smarter approaches to infrastructure management and creating practical pathways for research to move towards adoption and commercialisation.

These outcomes reinforce something we have learned repeatedly through SmartCrete: great research is only the beginning. Impact occurs when researchers, manufacturers, asset owners, governments and the broader supply chain work together to turn knowledge into practice.

That philosophy has shaped our priorities throughout FY26. Alongside maintaining strong delivery across our research portfolio, we have increased our focus on understanding, measuring and communicating impact. We are capturing the stories, data and lessons emerging from our projects and sharing that knowledge more broadly through our communities of practice, industry engagement and thought-leadership activities. This reflects our FY26 commitment not simply to complete projects, but to amplify their impact.

As we look towards SmartCrete CRC's conclusion in June 2027, our attention is also increasingly turning to legacy.

Our experience has given us a unique view across Australia's concrete innovation ecosystem. We have seen extraordinary technical capability and a genuine appetite for change. We have also seen that many of the biggest obstacles to decarbonisation are no longer purely technical. Innovative products must overcome challenges associated with procurement, standards and regulation, commercial risk, market confidence and sector capability before they can be adopted at scale.

Addressing these interconnected barriers will require continued collaboration. That insight is informing our work to establish a future pathway that builds on SmartCrete's networks, knowledge and experience and maintains momentum towards a more productive, resilient and decarbonised concrete sector.

I am incredibly proud of what our small team has achieved this year. We have maintained a strong focus on project delivery and partner experience while simultaneously preparing for the responsible conclusion of the CRC and ensuring that its impact is captured and carried forward.

I would like to thank our research, industry and government partners for continuing to invest not only funding, but expertise, time and trust in our collaborations. I also thank the SmartCrete team and Board for approaching this important stage of our journey with the same ambition and energy that has characterised the CRC.

We have one year remaining. Our task now is clear: finish strong, maximise the impact of what we have built, and leave Australia's concrete innovation ecosystem stronger than we found it.

Clare Tubolets
Chief Executive Officer

Portfolio & Impact

The concrete industry is responsible for producing the world's most-used building material and some 6-8% of global emissions. To support the transition towards sustainability, enhancing productivity and ensuring the resiliency of our concrete industry and infrastructure, SmartCrete CRC invests in a portfolio of innovative and collaborative R&D projects led by industry thought-leaders and academic subject matter experts.

Portfolio composition

With 1 year remaining for SmartCrete CRC, all funding is fully allocated towards innovative research projects. Almost a third of our projects are already complete, and the final 12 months of operation will focus on the timely and successful delivery of our remaining projects.

17 new projects were added to the portfolio this financial year, while 11 projects were completed in the same period. This leaves 41 projects remaining to complete in our final financial year. Our projects have, to date, addressed 73 of 91 of our Commonwealth Milestones and we are on track to complete our program within the remaining term of the CRC.

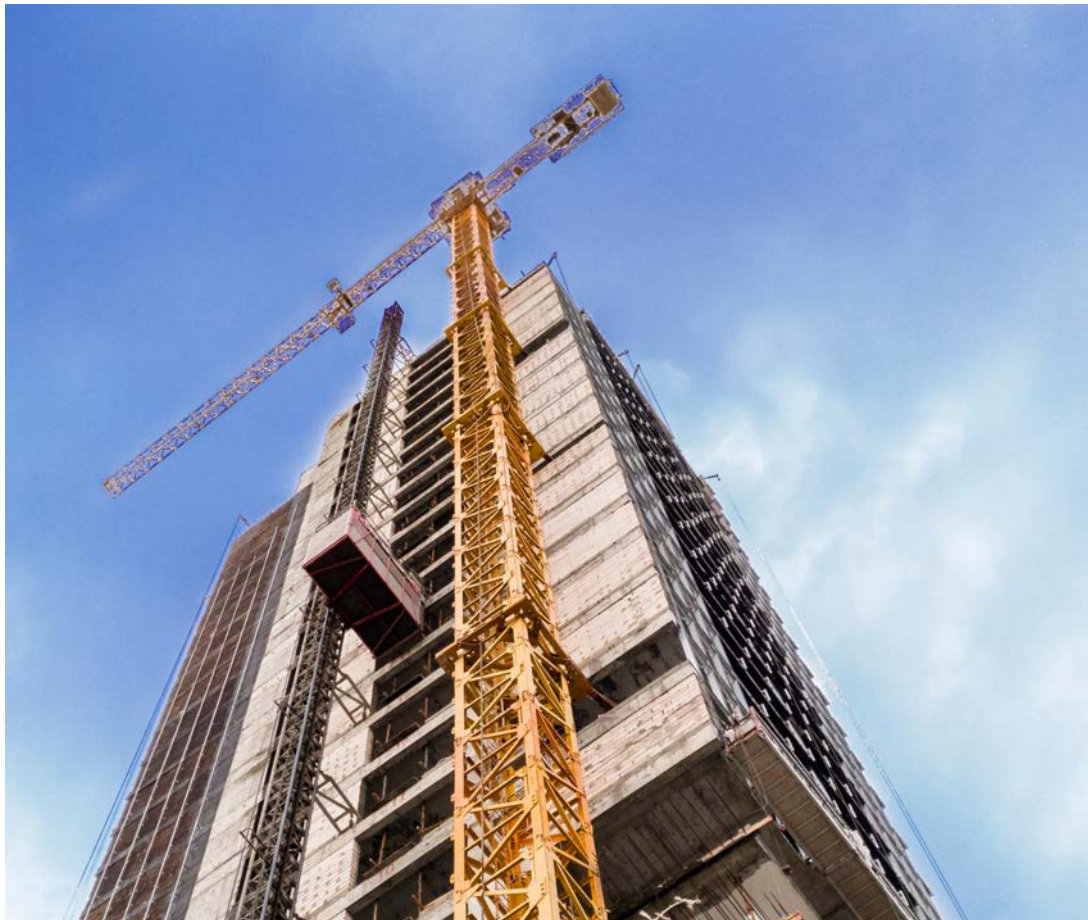
This year we have invested in new projects which focus on the dissemination and education of modern concrete methods, standards and sustainability knowledge. Through the leadership of concrete industry institutions like the Concrete Institute of Australia, Cement Concrete & Aggregates Australia, and National Precast Concrete Association Australia, these projects will result in updated and new educational content, courses and training materials.

SME Engagement

Recognising small and medium enterprises as vital drivers of innovation, the economy and jobs in Australia, SmartCrete CRC activity has, to date, supported the growth and sustainability of 39 SMEs through our projects.

We partner with bold, early-stage SMEs such as MCi Carbon, which has developed a cementitious material which absorbs waste CO_2 during its manufacture. As well as established SMEs innovating with digital technologies like Sunset Concrete, which has leveraged AI machine vision tools to visually inspect precast concrete sleepers for production quality control.

By supporting innovative product and service development, we support SMEs to gain access to new markets and continue supplying local jobs. Our supporting communications activities such as webinars and communities of practice also offer our SME partners valuable opportunities for knowledge transfer with industry peers.



Impact

As SmartCrete CRC enters its final phase, we are designing and implementing tools that measure the impact of the innovations in our research portfolio, to provide a powerful communication tool to the people who will carry it forward.

We are building an impact framework that draws on multiple dimensions including capitals thinking, economics, carbon and natural capital accounting, and innovation science to link research outputs to economic, environmental and social value across the concrete sector.

We are now applying the impact framework to our individual projects. This includes assessing the key enablers and barriers that project teams have addressed during their projects. Through this process, we are identifying the next steps needed to support translation of research outcomes into innovations that can be successfully scaled. We are building impact assessments in a repeatable and standardised way to support aggregation and portfolio reporting.

This work will culminate in a series of reports that give industry partners, investors and government a clear, evidence-based picture of where each innovation stands and its ongoing impact potential. Through our impact assessment process, we aim to support industry adoption decisions and help our research continue to create value after the CRC closes.



Where our research meets Australia's challenges



The concrete sector at a glance in Australia

30 million+
cubic metres of ready-mixed concrete produced a year[1]

9.6 Mt
cement produced, 2020-21[2]

12, 780
people employed in cement and ready-mixed concrete manufacturing, June 2025[3]

29%
increase in 32 MPa ready-mixed concrete prices, 2022 to 2025 (five-city unweighted average)[17]

0.9%
a year growth in Australia's population expected over the next 40 years[6]

>2x
Australia's economy is expected to be more than double its current size by 2065-66, in real terms[6]

55%
of cement CO_2 emissions come from limestone calcination[7]

500 Mt
of coal combustion products stockpiled, including fly ash[7]

463, 000
kilometres of paved road (2023)[4]

50, 000+
bridges[5]

RESEARCH PROGRAM

Sustainable Concrete

30
research projects

$11.0M
in cash

$15.3M
in kind

SmartCrete CRC's Sustainable Concrete program brings together material experts from industry, research and the wider construction sector to design, develop and test sustainable materials – new and recycled – to be used in a wide range of concrete applications.

The program drives research collaborations that:

- Accelerate decarbonisation
- Support the circular economy
- Drive the development of standards.

Highlights

- 5 new projects kicked off this financial year, investigating applications of sustainable concrete use in water infrastructure and municipal concrete assets.
- 7 projects completed this reporting period, delivering research into sustainable concrete input materials which included coal bottom ash, alum sludge and waste paint.
- Teams involved in completed research projects continue to drive the adoption of the knowledge and solutions, including changes to standards or engaging with impacted end users and supply chain participants.
- Several projects completed or had ongoing field trials during this period, including the use of recovered pond ash, crushed glass, plastics and calcined clay.



SUSTAINABLE CONCRETE CASE STUDY

Applications of Calcined Clay in Lower Carbon Concrete

The industry problem

To reduce emissions-intensive cement in concrete, industry has relied on two supplementary cementitious materials (SCM) that are expected to decline in availability.

As coal-fired power stations close, and steel-making practices change, the supply of their industrial by-products fly ash and granulated blast furnace slag will become increasingly constrained.

Concrete manufacturers will need an alternative material that can viably reduce the clinker factor of concrete while having sufficient volume and quality.

This project explored an alternative to these traditional SCMs—calcined clay, a treated form of a natural kaolin that is abundant in Australia.

To support the acceptance and scaling of calcined clay as a commercial product, researchers addressed industry questions regarding its performance, material properties and viability.

The solution

The project team conducted lab and field trials with various calcined clay concrete mixes including binary and ternary blends with general purpose cement, fly ash and slag.

The field trials showed that calcined clay concrete could be produced using commercial batching equipment and could be batched, transported and placed under normal site conditions.

Calcined clay concrete demonstrated comparable performance to typical commercial fly ash concrete across workability, strength, shrinkage, carbonation and chloride resistance.

The best performing mixes were the ternary blends featuring calcined clay, general purpose cement and fly ash or slag rather than binary blends with general purpose cement alone.

Calcined clay concrete blends easily met the Transport for New South Wales R53 specification while the ternary blend with slag met the B80 B2 exposure classification requirements.

The impact

Calcined clay concrete enables long-term growth in supply of low-carbon concrete to support decarbonisation of the building and construction industry.

Calcined clay concrete provides a practical solution to address the risk associated with expected decline in availability of slag and fly ash as the key supplementary cementitious materials used currently in Australia.

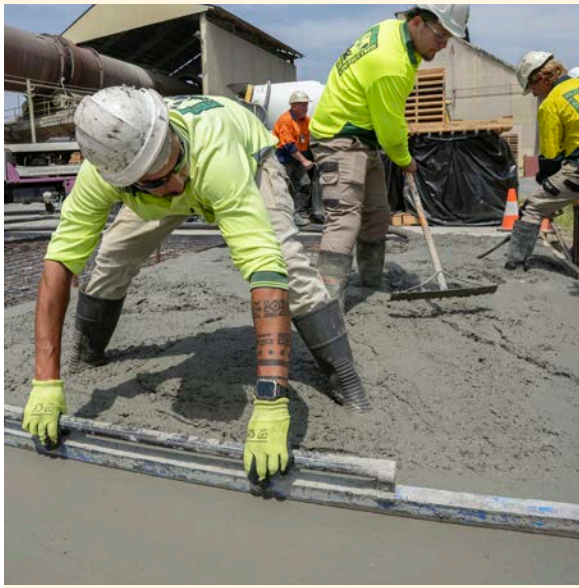
With service life assessments showing calcined clay concrete capable of delivering comparably durable structures to current SCM concretes, this novel material is suitable for long-lasting climate-resilient infrastructure.

What's next

In their final report, researchers provided recommendations for further testing to develop and optimise calcined clay concrete.

They also recommended progressing selected calcined clay mixes to larger-scale field trials to confirm production consistency, placement and long-term performance.

With industry partner Boral seeing potential in this product, the project partners are in discussions for future research collaboration.



Project partners

University of Technology Sydney, Calix, Boral

Duration

1 Feb 2024 - 31 Dec 2025

Value (cash & in kind)

$1,671,719

"The question that a company like Boral must ask is: which of the available alternatives to fly ash and slag are going to allow us to replace enough cement to appreciably reduce the clinker factor of concrete while also being available at the scale needed to meet demand for low-carbon concrete into the future? Clay is widely available, and calcined clay has been well-studied in the literature, demonstrating its viability as a supplementary cementitious material alongside our current SCMs."

-Camille Holt, Innovation Research Manager, Boral

RESEARCH PROGRAM

Engineered Solutions



17
research projects

$7.5M
in cash

$16.8M
in kind

The Engineered Solutions program taps into Australia's concrete and engineering expertise and invests in industry research collaboration that improves the productivity, design and applications of concrete.

The program aims to safeguard and future proof Australia's concrete building and infrastructure to:

- Drive sustainable design and construction
- Provide predictive service life modelling
- Optimise supply chains
- Support quality control and certification.

Highlights

- Two projects in this program were completed this period, leading to new design guidance for fastenings in innovative concretes, as well as innovating with digital tools to improve quality control using AI machine vision.
- Several projects continue to trial innovations in the field, include 3D concrete printing and innovative concrete footings solutions.
- These projects test the limits of innovative engineering techniques, such as novel precast panel connections and precast building cores through large scale physical tests to demonstrate their ability to replace existing solutions through data and validation.

ENGINEERED SOLUTIONS CASE STUDY

3D Concrete Printing for Housing Supply and Affordability

The industry problem

Australia faces an urgent need for more affordable housing, yet builders are struggling to meet demand.

A shortage of skilled trades, including carpenters, bricklayers and concreters, is driving up labour costs and delaying projects.

At the same time, rising costs of materials, transport and energy continue to push house prices higher, putting home ownership out of reach for many first home buyers.

Builders are also under growing pressure to deliver homes with a lower carbon footprint, minimal waste and superior energy efficiency.

Innovative methods such as 3D concrete printing offer a solution, but adoption has been held back by a lack of independent data demonstrating compliance with the National Construction Code.

The solution

Working with Dune Building Technologies, researchers at Swinburne University of Technology, supported by SmartCrete CRC, tested how 3D-printed concrete walls perform under real-world conditions.

Using Swinburne's testing facilities, the team measured the structural performance of Dune's printed wall system, assessing how well the walls carry the loads a home must safely withstand.

Researchers also measured the thermal performance of the wall system, including how the insulated cavity within the printed walls helps keep homes comfortable.

This testing generated the independent data Dune needs to pursue the certification to use the technology across multiple builds.

The impact

Dune Building Technologies has completed two 3D concrete printed homes in Ballarat, with a third currently under construction.

This has demonstrated 3D concrete printing as a new way of delivering affordable, high-performance homes faster with a smaller crew. That makes construction less reliant on scarce trades and helps lift productivity.

The benefits are likely to be greatest in regional areas, where shortages of skills and materials are most acute.

With low-carbon concrete mixes and better-insulated walls, these homes also support Australia's shift to more sustainable housing.

The technology is also creating new kinds of construction jobs, attracting young people who are being upskilled to operate the printer.

What's next

Dune Building Technologies and Swinburne researchers are contributing to industry working groups that are developing Australian Standards for 3D concrete printing.

Clear national standards would make it easier for other builders to adopt the technology with confidence.

Dune will open a display home to the public and continue delivering projects.

With townhouse developments currently in the pipeline, they will build on the performance data gathered through this collaboration.



Project partners

Dune Building Technologies (Oasis Building Group), Swinburne University of Technology

Duration

1 Dec 2024 - 31 Dec 2026

Value (cash & in kind)

$3,920,652

"We have got a real housing shortage in Australia right now. The population is growing and costs keep going up. 3D concrete printing allows us to build at scale, faster and with upskilled trades, and that is how we can get first home buyers back into the market."

- Ash Quiddington, Director Dune Building Technologies

RESEARCH PROGRAM

Asset Management

13
research projects

$7.94M
in cash

$12.7M
in kind

SmartCrete's Asset Management program connects asset owners and managers operating and maintaining concrete infrastructure with experts from different research disciplines to develop innovative, technology-focused solutions to better manage or extend the life of concrete structures.

To protect and maintain the health of Australia's infrastructure, the program:

- Supports concrete health monitoring and maintenance
- Fast-tracks sensor development and data analytics
- Develops digital twins and predictive modelling.

Highlights

- Several projects have completed field trials during this reporting period, with sensors deployed into roads, bridges and sewers to name a few.
- Two projects have focused on end user engagement to fine tune digital twin outputs to better tailor the data driven insights to support the kinds of decision-making asset managers would need.
- A number of robotics-focused projects are finalising their prototypes, advancing asset management systems and processes that would deliver significant cost reductions.



ASSET MANAGEMENT CASE STUDY

Embedded Sensing System for Continuous Crack Monitoring in Concrete Pavements

The industry problem

Concrete pavements deteriorate under traffic loads, temperature changes, moisture and other environmental conditions.

Maintenance has traditionally relied on reactive repairs and scheduled inspections, which can require road closures and cause disruption for asset owners and road users.

Existing methods mostly detect surface damage and earlier embedded sensors have been costly and prone to failure.

The solution

Macquarie University researchers developed an embedded sensing system that protects sensors from the environmental conditions that affected previous external monitoring technologies.

This system embeds strain, moisture and temperature sensors within concrete and transmits data wirelessly to a roadside unit, which feeds a cloud-based dashboard for remote monitoring and analysis.

Laboratory fatigue testing showed that the system could detect the onset of microcracking 7 to 8 load cycles before cracks became visible.

The system was also field tested on a plain concrete pavement and a continuously reinforced concrete pavement at two operational sites in the City of Ryde.

These tests demonstrated its ability to detect and separate pedestrian and vehicle loads, transmit wireless data and perform live monitoring.

The project overcame a major technical barrier through reliable wireless transmission from inside concrete while running on solar power with a cellular link.

The impact

If adopted, the technology would give asset owners visibility of pavement condition, supporting predictive rather than reactive maintenance and helping to reduce road failure costs and defer pavement renewal.

The analytics platform converts sensor data into actionable insights, making it easier for asset managers to interpret pavement condition across larger road networks.

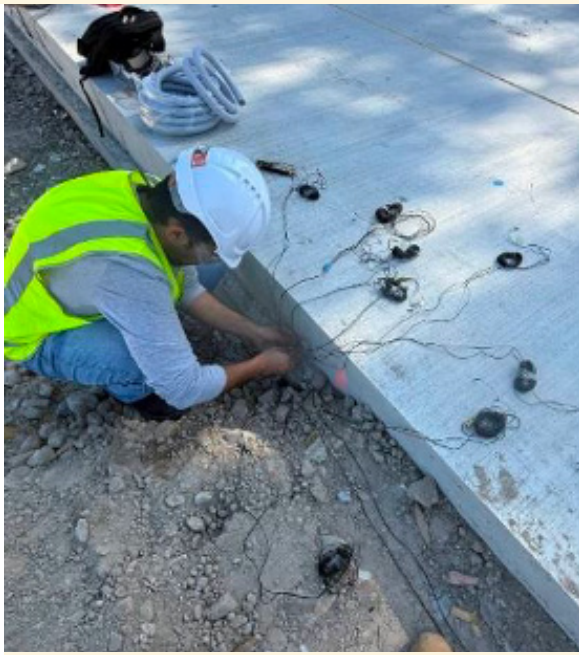
What's next

The sensing system remains in the field while researchers evaluate its performance under ongoing operational conditions.

Further research will assess the system's long-term durability, robustness and resistance to environmental and traffic-related noise.

As more data is collected, researchers will refine the system's ability to distinguish between different load types, temperature and moisture variations, and strain patterns that cause cracking.

Further work will also focus on the usability of the analytics platform and the durability and installation of field sensors.



Project partners

Macquarie University, Western Sydney University, Transport for NSW (TfNSW), City of Ryde Council

Duration

1 Apr 2022 - 31 Jul 2026

Value (cash & in kind)

$1,981,761

"This project showed that embedded sensing can be used to monitor internal behaviour in concrete pavements. The sensing system detected changes in strain inside concrete before surface damage appeared. Laboratory testing and early field trials showed that the system can work under realistic conditions."

- Sajad Abolpour Moshizi, Lead Researcher, Macquarie University

Stakeholder Engagement & Communications

This year, we deepened our engagement and communication with the wider concrete community, showcasing the impact of our innovations, connecting research with industry, and supporting adoption and capability building.

Community of practice

Our community of practice ran for its fourth season, meeting virtually on a monthly basis to discuss a topic inspired by a SmartCrete project. Each session, project leads from industry and research delivered short presentations about their work and engaged with the audience during Q&A discussions. The event totalled 958 registrations across its themes—Sustainable Concrete (487), Engineered Solutions (208), Asset Management (263) with about half of registrants attending live and half receiving recordings to their inboxes. Event recordings have been added to our website and YouTube channel as a repository of knowledge.

Social media and newsletter

This year our Linkedin community has grown by almost 1,000 followers to 3,625. We posted an average of 3 times per week, updating our community with graphic highlights of completed project, video reels capturing partner site visits and Innovation Insights profiles of concrete professionals. These posts were celebrated with likes, comments and re-posts, culminating in an engagement rate of 11.2% per post – well above the external average of 2-5%.

Our newsletter, *the smartcrete news*, reached inboxes on the first Tuesday of each month. It delivered project updates on kick-offs and wraps-ups, in-house and external events, and concrete innovation news.

Mailing list subscribers grew from 1949 to 2106, and had an average open rate of 32.3% – well above the external average of 25%.















Policy engagement

SmartCrete CRC continued to use its research as evidence to inform national policy. We submitted to 2 discussion papers as part of the Australian Government's Strategic Examination of R&D (SERD) including National Coordination for RD&I Impact and Scaling the System: A Proactive Approach to Scaling the RD&I System.

Our most significant policy contribution was our Pre-Budget Submission to The Treasury. This consisted of a proposal to launch the Concrete Sustainability Alliance following the closure of SmartCrete CRC, to continue the work of decarbonising concrete by addressing systemic barriers in the sector.

In the news

News about SmartCrete's impact has featured far and wide in both digital and print publications. We authored 4 original articles to our website news page and 3 for *Concrete in Australia*. Media coverage on our projects has appeared in 8 leading concrete trade magazines such as *CemNet* and *Quarry*. Meanwhile, articles about our CRC's work on concrete decarbonisation have appeared in 5 publications including Engineers Australia's *Create*, The Fifth Estate and a Building Council of Australia report. Our CEO Clare Tubolets was interviewed on podcasts for Innovation Aus and Concrete NZ.

Clinker Chat video series

This year we produced three additions to our long-running video series, Clinker Chat, in which Clare Tubolets interviews innovators from the SmartCrete community. The episodes featured Paintback, the Australian program upcycling used paint; Oasis Building Group, a small Ballarat residential builder which is pioneering 3D concrete printing; and MCi Carbon, a clean tech company turning captured CO_2 into products such as cement replacement. With better production value than ever before, these videos offer rare behind-the-scenes footage and insights into the people, laboratories, and construction sites behind concrete innovation.

Events

Our CEO Clare Tubolets, Research Director Vute Sirivivatnanon and Portfolio Director Hugh Ong represented SmartCrete CRC at more than 10 events. They presented at leading sustainability events such as Climate Smart Engineering (Engineers Australia), Greener Infrastructure Conference (EcologiQ) and ISC Connect (Infrastructure Sustainability Council). They also spoke at housing industry events such as Urban Density with Low-Carbon Materials (Middle Ground), National Festival of Design (BDAA) and I-SEE Virtual Sustainability and Energy Efficiency Summit (also BDAA).

The biggest event was the Concrete Institute of Australia's Concrete 25 Conference where a quarter of all technical presentations came from SmartCrete projects (see page 18 for the full recap). To raise our profile and support aligned industry discussions, we sponsored other CIA events beyond the conference, including seminars on

supplementary cementitious materials in Melbourne and Sydney and a tour of the University of Technology Sydney's Tech Lab.

SmartCrete leaders also spoke at international conferences including 24 Hours of Concrete Knowledge (American Concrete Institute), Concrete NZ and Annual Week & ICONS (RILEM).

Research workshops

Spearheaded by our Research Director Vute Sirivivatnanon, SmartCrete CRC held two research workshops at the University of Technology Sydney and Western Sydney University. Project leads presented completed and ongoing projects to key industry experts igniting discussion, learning and feedback. Swinburne University of Technology also held workshops showcasing 3D concrete printing, precast concrete construction research and screw pile innovations.

Peak industry body engagement

This year has also seen SmartCrete CRC supporting industry bodies the Concrete Institute of Australia, and Cement, Concretes and Aggregates Australia, to update key courses and content in documents, handbooks and guidelines. These updates will reflect the latest changes in standards and knowledge in sustainability. The CRC has also supported the National Precast Concrete Association of Australia to uplift its micro-credentials courses to TAFE level Certificate III courses to support employment and enhance quality and consistency in a rapidly growing sector.



Lifetime Achievement: Special Commendation awarded to Professor Vute Sirivivatnanon

Cooperative Research Australia's 2026 Lifetime Achievement Special Commendation went to SmartCrete CRC Research Director and UTS Professor Vute Sirivivatnanon.

The award was presented in May at the Collaborate Innovate conference gala dinner, in recognition of an outstanding lifelong contribution to innovation in Australia.

For 50 years, Professor Sirivivatnanon has faced down the challenge of making concrete more durable and sustainable through the innovative use of industrial byproducts and close collaboration with industry.

Professor Sirivivatnanon's career-long efforts have culminated in the impact that the sector is realising today as we begin to scale many of the innovations that he pioneered.

Congratulations to Professor Vute!

Concrete 2025

Concrete 2025; the Concrete Institute of Australia's biennial conference held in Adelaide and the biggest industry event of the year. Here, SmartCrete CRC's six years of impact was visible across every corner of the convention centre—as were our orange t-shirts.

Trade Fair

Greeting entrants through the door, our white and orange stand was a showstopper. Across 6 plinths we displayed standout projects in a form visitors could touch and feel—from a curved 3D concrete print sample to a robot designed to inspect sewer conditions. Visitors who tried our VR headset were able to marvel at the underside of a concrete bridge in a simulation of a tech-enhanced condition assessment. Behind the action, our brand video played on our big screen on loop, introducing passers-by to our CRC and cameo-starring many of the familiar faces around us.

Technical presentations

Despite being one of the smallest CRCs, our huge presence within our industry became evident when a quarter of all technical presentations spoke to our projects—some 40 out of 150. Conference rooms filled with delegates eager to hear from our researchers, including Professor Vute Sirivitatnanon who donned SmartCrete-orange under his suit jacket while presenting the latest in concrete durability. Besides our seasoned academics and industry partners, post-docs and PhDs bravely joined the fray, opening their research to questions and comment.

Feature sessions

Smartcrete demonstrated industry leadership right from the get-go, when our CEO Clare Tubolets participated in the opening plenary panel alongside leaders from our industry's most influential organisations. In another panel under the NEXGen banner, our Education Manager Estelle Clapham chaired a conversation with diverse voices on their experiences building their careers. For the Women in Concrete forum, the SmartCrete women were front row and centre, representing a women-majority team in a male-dominated industry.

NEXGen's Career Conversations

Education Manager Estelle Clapham ran Career Conversations, a series of professional development talks for people at different stages of their careers. Rather than focusing on traditional career pathways, speakers shared their experience in a specific area such as lifelong learning, winning in the residential market and keeping pace with regulatory change. The format provided attendees with practical insights while demonstrating the breadth of knowledge and capability required to build a successful career within an evolving sector.

Awards

With conference proceedings wrapped up and delegates winding down at the gala dinner, cheers erupted from the SmartCrete table as our friends and partners were announced as winners of CIA's Awards for Excellence in Concrete. Dr Nan Zhang won 'Best PhD' for his work developing waste paint into a concrete additive, and Dr Sanket Rawat won 'Best Young Professional Paper' for his work on calcined clay as a cement replacement.





Sectoral Capability Development

As SmartCrete moves towards its final year, the education program has increasingly focused on ensuring its legacy extends beyond individual activities or events. The connections created between academia and industry, the professional networks developed through NEXGen, and the platforms established for knowledge exchange provide an important foundation for continued collaboration and capability development across the sector.

Future Concrete Leaders

In partnership with the Concrete Institute of Australia's NEXGen network, we hosted the Future Concrete Leaders series, an in-person networking series connecting early career researchers with industry professionals. Hosted by local industry partners and prospective employers, it was delivered across Sydney (Lendlease), Melbourne (Arup), Brisbane (BG&E), Perth (GHD) and Adelaide (WSP). While supporting the professional development of the next generation remained central to the series, the events looked beyond individual careers and considered the next generation of the concrete industry itself – creating space for open discussion about the challenges facing the sector, what needs to change and how industry, academia and emerging professionals can move forward collectively.

Said in Concrete podcast

As part of another CIA NEXGen collaboration, we produced two seasons of *Said in Concrete*, providing a new platform for conversations between researchers, industry professionals and emerging leaders. Episodes delved into the ideas, innovations and challenges shaping concrete and the broader built environment. We also released a third special edition season recorded at the Concrete Institute of Australia's Concrete 2025 Conference. This captured NEXGen's live Career Conversations series and shared perspectives from across the concrete ecosystem.





NEXGen Mentorship Program

SmartCrete and NEXGen also teamed up to deliver their first mentorship program, reimagining the traditional senior-to-junior model through a peer-to-peer approach. The program connected higher degree by research students approaching the completion of their PhDs with early-to-mid-career industry professionals, recognising that both participants brought valuable but different experience to the relationship. The model encouraged reciprocal learning – providing researchers with greater exposure to industry while giving industry professionals greater insight into emerging research, ideas and expertise.



Student Profile



Anastasia Jesica

Anastasia Jesica is a PhD candidate in Civil Engineering at RMIT University, working on a SmartCrete CRC-funded project focused on developing low-carbon concrete. Her research addresses two key challenges facing the construction industry: the environmental impact of conventional concrete and the growing volume of waste materials requiring reuse or disposal. Anastasia is investigating how multiple waste streams--including recycled crushed glass, recycled concrete aggregate, fly ash and bottom ash--can be used together to replace conventional concrete materials while maintaining the strength and durability required for pavement applications.

Her work has already received significant recognition, including First Prize in the BMW Group's YourMelbourne 2024 Competition and the International Federation for Structural Concrete Social Media Challenge Award at the 7th fib Congress. Anastasia's research has also been published in the International Journal of Concrete Structures and Materials and presented at conferences in Australia (Concrete 2025) and internationally (fib & ACF), demonstrating the potential for multi-waste concrete solutions to reduce environmental impact without compromising engineering performance.

Future Plans & Transition

As SmartCrete CRC approaches the conclusion of its Commonwealth funding period in June 2027, our focus is not only on completing the CRC successfully, but on ensuring that the capability, relationships and momentum built through the program continue to benefit Australia's concrete and broader built environment sectors.

Over its life, SmartCrete CRC has demonstrated the value of bringing industry, researchers and government together around shared challenges. Our work has also highlighted that developing new technologies is only part of the innovation challenge. Achieving meaningful sector-wide decarbonisation will require coordinated action to overcome the market, regulatory, procurement and skills barriers that can prevent proven innovations from reaching widespread adoption. This systems perspective has increasingly shaped SmartCrete CRC's work and our thinking about the legacy the CRC can leave for the sector.

To build on this legacy, SmartCrete CRC has developed the **Concrete Sustainability Alliance (CSA)**, a proposed next-generation collaborative initiative designed to accelerate the transition to a productive, competitive and low-carbon concrete sector. CSA is intended to bring together participants from across the built environment ecosystem to tackle challenges that no individual organisation can effectively solve alone. Rather than simply extending the existing CRC model, the initiative is designed to complement the work of industry associations, research organisations, governments and businesses by providing a platform for coordinated, systems-based innovation.

The ambition is to help create the conditions in which Australian innovation can move more rapidly from research and demonstration into everyday practice, supporting the development and adoption of lower-carbon materials, strengthening demand for sustainable products, addressing regulatory and standards barriers, building sector capability, and helping Australian businesses respond to the opportunities and challenges of the net-zero transition. This builds directly on SmartCrete CRC's role as a catalyst for the concrete ecosystem and the knowledge and networks established through its research portfolio, Communities of Practice and sector-wide engagement.

Funding for the next phase remains under development, and SmartCrete CRC continues to engage with government, industry and other stakeholders to identify an appropriate pathway for CSA. In parallel, the CRC is preparing for a successful and impact-focused completion of the existing program. This includes completing all research and contractual commitments, documenting intellectual property and utilisation pathways, capturing project impact, preserving important knowledge and data, and developing legacy resources that will remain accessible to partners and the wider sector.



The SmartCrete CRC Team

Through open, honest and transparent conversations, SmartCrete CRC's management team and staff connect and collaborate with industry, research, government and the wider concrete ecosystem.



Clare Tubolets
Chief Executive Officer



James Tarrant
Chief Financial Officer & Company Secretary



Prof. Vute Sirivivatnanon
Research Director



Hugh Ong
Portfolio Director



Reiss McLeod
Impact Manager



Natalie Satakovski
Corporate Communications & Media Manager



Caitlin MacPhail
Digital Communications & Events Manager



Estelle Clapham
Education Manager



Lydia Gunawan
Portfolio Manager



Camila Jardim
Projects Coordinator



Rob Hamper
General Counsel

Board of Directors

SmartCrete CRC is governed by an independent board of directors that oversees the organisation's research portfolio and work to drive the transition of concrete for a sustainable Australia. The board represents a broad range of industry, research and government expertise.



Emeritus Prof. Elizabeth Taylor
Independent Director, Chair of the Board



Stephen Harmer
Independent Director, Deputy Chair of the Board



Dr Gunilla Burrowes
Independent Director, Chair of the Impact & Investment Committee



Dr Ross Harper
Independent Director Chair of the Legacy & CSA Committee



Elizabeth Whitelaw
Independent Director, Chair of the Finance, Audit & Risk Committee

Participants

Core

- Cement Concrete & Aggregates Australia
- NSW Government Transport for NSW
- paintback
- Macquarie University
- La Trobe University
- UTS
- The University of Sydney
- Western Sydney University

Research

- Adelaide University
- Curtin University
- RMIT University
- Swinburne University of Technology
- The University of Newcastle Australia
- The University of Queensland Australia

Industry & Government



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Australian Government
Department of Industry, Science and Resources

Cooperative Research Centres Program