



STRATEGIC PLAN 2024

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ABOUT SMARTCRETE CRC

We are a catalyst for change

Smartcrete is an independent, for-impact Cooperative Research Centre (CRC) that empowers innovation collaborations to transition concrete for a sustainable Australia.

Working with manufacturers, architects, engineers, developers, asset owners and government, we invest \$21m of Commonwealth funding in university-delivered research and development projects that spur sustainable design, use and management of concrete.

Our strength lies in connecting Australia's concrete ecosystem, creating research opportunities and setting up mutually beneficial partnerships that accelerate material change, develop new technologies and promote best practice to decarbonise concrete and achieve net zero by 2050.

\$21

MILLION IN
COMMONWEALTH
FUNDING

68

INDUSTRY AND
RESEARCH
PARTNERS

25

RESEARCH
PROJECTS

We believe in concrete innovation

OPEN COMMUNICATION

We are unapologetically bold. We are open, honest and transparent. By doing so, we remove barriers, build trust and create an environment for research collaboration. And, we are not afraid of hard conversations along the way.

COLLABORATION

We embrace diversity, equality and inclusivity and treat everyone with respect. We know that we are at our best when we work together, leveraging the “collective genius” of our stakeholders and the wider community.

INTEGRITY

We do what we say we will. We are industry-led, act from a well-informed position and embrace sustainable business practices to achieve outcomes that propel Australia’s concrete ecosystem forward. We don’t lose sight of what’s right for our innovation collaboration.

TRUE TO PURPOSE

Everything we do drives outcomes for community benefits – whether it’s new technology or a different approach to producing, using and/or re-using concrete. We are looking for innovative, sustainable ideas that help transform Australia’s built environment. Incremental won’t cut it.

SMART THINKING

We are inquisitive, question the status quo and bring together smart people, who use their skills and expertise to make a difference and bring about change for a better, sustainable Australia.

OUR MISSION

Empowering
Innovation
Collaboration to
transition concrete
for a sustainable
Australia.

OUR STRATEGIC OBJECTIVES

We are driven to achieve project outputs which are utilised by industry

Established in 2020 under the Australian Government's Cooperative Research Centre (CRC) Program, SmartCrete CRC aims to deliver material change, enable innovative solutions, improve asset management, supply chain sustainability, new export markets and standards, and a technology ready workforce.

Success will include consolidation of the current research; delivering tangible outcomes in reduced cost, improved construction methods, supply chain logistics, skills development, competitive procurement, improved asset durability and lower maintenance costs; improved confidence in the supply chain; provide alternative materials from waste stream; and lower CO2 emissions.

SmartCrete CRC's strategic objectives are

FINANCIAL

- Meet our financial targets for cash and in-kind
- Demonstrate value for public funding

IMPACT

- Create economic value
- Improve concrete productivity and environmental sustainability
- Create knowledge transfer and learning pathways to increase industry skills

GOVERNANCE

- Achieve all Commonwealth Milestones
- Create Return on Investment/Value for all investing partners
- Meet reporting obligations

SmartCrete CRC's activities will

- Propel Australia to a net zero future
- Create a step-change for Australian concrete
- Deliver ongoing commercial value for industry
- Establish lasting, collaborative industry - research relationships
- Leave a legacy

OUR OPERATING ENVIRONMENT

Ecosystem

Concrete is the cornerstone of Australia's built environment. With about 70 million tonnes of premixed concrete produced every year (CCAA, 2022), it is the most widely used building material in the country. Yet, concrete – due to its raw material acquisition, processing, transportation, and recycling – contributes significantly to Australia's CO₂ emissions.

SmartCrete CRC's partner engagement has confirmed that the concrete supply chain is highly complex. The material suppliers that were the original focus as core participants have little control of the procurement environment which is critical to the adoption of sustainable concrete mixes and engineered solutions. We need to seek full supply chain participation in cooperative research.

By building on our strong networks with State Government infrastructure owners, we will expand and engage with infrastructure investors and commercial asset owners. These may include financial institutions such as banks or superannuation firms, major corporations and the Tier 1 construction firms.

Network facilitators

SmartCrete CRC recognises that collaboration is key to the successful transition of the Australian concrete ecosystem. We have established strategic partnerships with organisations that will support network engagement and create impact pathway for project outputs:

Impact pathways and economic modelling



Knowledge transfer and capacity building



Industry uptake and risk mitigation



These partners have already provided valuable access to networks, knowledge, capabilities as well as external validation of SmartCrete CRC's research program. We will continue to build our connection with new network facilitators such as Austroads, the Australian Contractors Association and other industry bodies to promote the CRC and attract new project participants.

Legislative Landscape

The political and legislative landscape is changing rapidly as all levels of Australian government respond to the demands of international sustainability commitments such as those registered under the Paris Agreement.

Sustainability and the journey to net zero are core focus areas for the current government with legislation focused on the development of programs to help Australian industry to transition to net zero. Furthermore, major infrastructure initiatives such as the 2032 Olympics and Paralympics as well as plans for a National Housing Accord create increasing demand for material supply. The Australian concrete sector will need to both maintain (and possibly increase) concrete supply, while meeting net zero targets.

SmartCrete CRC is uniquely positioned to deliver a high impact sectoral decarbonisation transformation program with established deep networks both in the Australian concrete ecosystem and partnerships with major Australian research providers. Our existing portfolio of projects undertaking critical research towards unlocking net zero pathways demonstrates our capability and existing knowledge base in this space.

Our program has already uncovered major barriers to sectoral net zero transition through our tailored and facilitated sectoral-engagement challenge design process. As an independent government-funded entity, we have effective and well-established governance and compliance practices and processes ready to be immediately scaled up to deliver government innovation programs for the concrete sector.

Recent Government key initiatives include:

Safeguard Transformation Program

Clean Tech Capital Program: \$600m

- Administered through Business Grant Hub
- Match funding grants for heavy industries investing in clean technologies

Safeguard Transformation Program: \$400m

- Administered by ARENA
- Competitive grants program (CRCs are eligible to apply for projects)
- Projects to facilitate heavy industry transition

Powering the Regions Fund

Critical Inputs to Clean Tech

- Ensuring ongoing supply of critical steel (\$200m)
- Administered directly to the two steel companies in Australia
- Net Zero Transition for Cement, Concrete, Alumina and Aluminum (\$200m)
- No current administration agency
- Innovation funding to support heavy industry net zero transition
- Program currently in 'design' phase
- Likely to be designed and approved in the next 6 months with an estimated announcement in December 2023 or January 2024
- SmartCrete has proposed joint delivery by the SmartCrete and HILT CRC programs (\$100m each)

OUR APPROACH

SmartCrete CRC's strategic plan builds on the following three pillars:

Impact and Collaboration

Through innovation collaboration across three research programs, we create pathways to design, develop and commercialise innovative materials, technologies and processes that accelerate Australia's transition to net zero concrete.

KEY PRIORITIES

- Identify new investment opportunities for the remaining Commonwealth funds
- Invest in the right R&D projects that address emerging challenges of Australia's concrete industry
- Harness industry and research partnerships to deliver benefits and amplify SmartCrete CRC's impact

Stakeholder Engagement and Communications

Australia's built environment is complex. Effective stakeholder engagement and communications are essential to realise SmartCrete CRC's mission of transitioning concrete for a sustainable Australia.

KEY PRIORITIES

- Share knowledge to accelerate research translation/adoption and demonstrate the value of industry-led research collaborations
- Utilise collaborative networks that facilitate cross-sectoral engagement through networking events and activities
- Raise interest, build confidence and trust with potential future investors including Commonwealth Government, existing and new CRC partners

Capability and Capacity Development

At SmartCrete CRC, we are passionate about providing opportunities for young and seasoned researchers aspiring to transition concrete for a sustainable future, to learn, grow and collaborate with the brightest minds across Australia's concrete ecosystem.

KEY PRIORITIES

- Ensure effective dissemination and utilisation of knowledge generated within SmartCrete CRC research projects
- Support broader industry capacity building initiatives, working with key industry enablers such as CCAA and MECLA to ensure a future-ready workforce.
- Launch a Higher Degree Research (HDR) program delivering industry-scholarships to Masters and PhD students across our 11 universities.

OUR RESEARCH PROGRAMS



Sustainable Concrete

Designing and developing new, sustainable concrete mixes and products that meet industry standards and requirements.

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 developments of standards



Engineered Solutions

Engineering new solutions that improve the durability, longevity and sustainability of concrete buildings and infrastructure.

The Engineered Solutions program taps into Australia's concrete and engineering expertise and invests in industry-research collaboration that improve the cost, durability and applications of concrete.

The program aims to safeguard and future-proof Australia's concrete buildings and infrastructure by:

- Driving sustainable design and construction
- Providing predictive service life modelling
- Optimising supply chains
- Supporting quality control and certification



Asset Management

Developing new technologies and procedures to enhance the use and longevity of concrete assets.

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 mitigate concrete degradation.

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

- Supporting concrete health monitoring and maintenance
- Fast-tracking sensor development and data analytics
- Offering Digital Twin and predictive modelling

OUR FOCUS IN FY2024

Industry Involvement

Based on our learning over the last three years (industry maturity), we will transition our focus to the demand side of the supply chain as we have identified them as the levers of change. This will be primarily measured based on our ability to secure new industry investment.

Leveraging SmartCrete CRC to enhance Government Progress towards Net Zero

SmartCrete CRC is uniquely positioned to deliver additional Government funding towards sustainability in the Australian concrete sector. We have strong capabilities in innovation program delivery and deep sectoral networks. These will be showcased to key Ministers and Portfolios to attract additional program funding.

Education and Training

A key initiative in 2024 will be the establishment of a well-defined and structured education and training program focused on growing the future workforce as well as engaging industry to facilitate effective knowledge transfer and skills enhancement. This encompasses capability of industry to leverage embedded research expertise and implement research outcomes in operational environments.

Measuring Impact

SmartCrete CRC will launch its impact calculator, building on determined success metrics and backed by existing impact measurement science. We will engage with partners and key stakeholders to ensure our success metrics align with broader expectations for the CRC program, and we will build impact measurement into each project.

IP Management

We will clarify our IP management policy and processes to enhance the impact we are able to achieve through our research investments. Significant work has already been undertaken in this space. SmartCrete will build on this existing work to create greater clarity and clear implementation pathways.

Portfolio Management

SmartCrete CRC will continue to enhance our portfolio management practices, moving towards greater timely delivery of project activities and greater focus on measuring project progress and the implementation of outcomes into industry.

Planning for End of CRC Life

SmartCrete CRC will establish our End of CRC checklist, mapping out key activities and budgeting for the closure of the CRC on 30 June 2027.

This work will be based on the experience of previous CRCs and supported by Cooperative Research Australia.

We will continue our engagement with Industry and Government – noting the implications of not participating.

OUR PARTNERS

At SmartCrete CRC, we connect with industry, research and government partners to collaborate, share knowledge and resources and transition concrete for a sustainable Australia.

Core



Industry and Government





Research



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AusIndustry
Cooperative Research
Centres Program