Capability Statement

Post-Carbon Research Centre





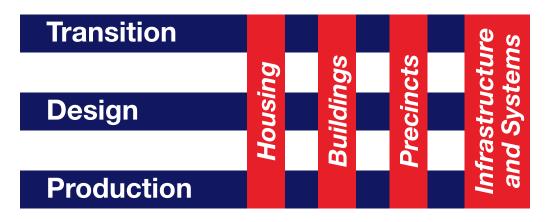


The Post-Carbon Research Centre tackles the complex challenges of decarbonising infrastructures and the built environment to transition to a sustainable, equitable and resilient future.

The Centre offers multi-disciplinary research capabilities across the built environment and infrastructure sectors, combining expertise from Design, Planning, Architecture, Engineering, Construction, Computer and Geospatial Science, and the Social Sciences. We co-produce research with industry and societal stakeholders to imagine, design, deliver and manage built environments free of intensive carbon emissions preparing for the post-fossil fuel era. Through design-led collaborations, we anticipate, explore and develop post-carbon solutions in housing, buildings, precincts, and infrastructure and systems. This includes:

- exploring system-wide enablers and constraints in scaling up low-carbon outcomes
- identifying sustainable design approaches and state of the art construction methods for the building industry
- developing industry tools and solutions for minimising carbon emissions
- co-designing sustainable and equitable solutions in housing design, construction and supply
- training the next generation workforce for making our built environment more resilient

The Centre's work is organised around three research themes: transition, design and production.



We proactively co-create projects that further and progress the UN Sustainable Development Goals.



















































Vision

That the Post-Carbon Research Centre is internationally recognised for its industry-applied research to eliminate carbon emissions in the built environment and address sustainable building challenges, catalysing an international research network including partners in Europe and the Asia-Pacific Region to pioneer novel approaches to regenerative built environments.

Research Clusters

Our research is organised within four clusters cross-cutting the Centre's key research themes, providing a collaborative research environment to support cross-disciplinary research. The clusters are interdependent and listed below:

Housing

Key Research Areas:

- Housing policy and market
- Housing quality, performance and health
- Social and affordable housing
- Home retrofitting
- Climate resilient housing
- Construction automation: Prefab, modular and robotics

Precincts

Key Research Areas:

- Placemaking and community experience
- Sustainable urban planning
- Adaptive reuse
- Sustainable mobility
- Urban greenery, air quality, and microclimate

Buildings

Key Research Areas:

- BIM/digital twins
- Fire and facade technologies
- Augmented reality/virtual reality/artificial intelligence
- Indoor environmental quality
- Smart senor technologies
- Biophilic design
- Energy-efficient lighting, heating, ventilation, and air-conditioning

Infrastructure and Systems

Key Research Areas:

- Intelligent monitoring and maintenance of civil infrastructure
- Smart grids
- Digital twins and big data analytics
- Net zero infrastructure
- Sustainable water and waste systems
- Roads, railways and bridges
- Renewable energy: Solar, wind, hydrogen, biofuels



The Post-Carbon Research Centre is located at RMIT University's city campus and has strong partnerships with industry, government, and advocacy groups as well as international research networks. We work with a diverse range of partners and collaborators in many different sectors in the built environment to create outcomes that are truly multidisciplinary. These include:

- Sustainability
- Digital technologies
- Design and innovation
- Manufacturing and production
- Governments

Collaborate with us

There are many ways you can collaborate or get involved with us at the Post-Carbon Research Centre. These include:

- Collaborative projects
- Industry partnerships
- Consultation services
- Research engagements and dissemination
- Industry PhD programs

Contact Us

Please get in touch if you'd like to find out more about our research, opportunities to study with our teaching programs or to partner with

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Website:



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