

CICMa – Circular Industrialised Construction Materials

Who is involved?

CICMa is a joint project between COWI's Buildings and Industry division and Aalborg University, Department of Materials and Production. The project brings together academic research and industry expertise to address one of the construction sector's most pressing challenges: how to reduce material waste and environmental impact through circular practices.

What is the project about?

The construction industry is responsible for a significant share of global CO₂ emissions and resource consumption. CICMa focuses on industrial buildings, such as factories and warehouses, and explores how materials used in these buildings can be reused, remanufactured, or recycled instead of being discarded. A key aspect of CICMa is its focus on cross-sectoral integration: connecting the manufacturing sector, which produces and supplies building materials, with the construction sector, which uses and potentially returns these materials. The project aims to develop shared strategies, tools, and concepts that support circularity across the entire value chain.

When and where does the project take place?

The project runs from September 2025 to February 2026. It focuses on industrial buildings due to their frequent renovations and shorter material life cycles, which offer ideal conditions for studying and testing circular strategies.

How will the project be carried out?

Within the project, the team will collaborate on the following tasks:

- Map material flows and waste streams in selected industrial buildings.
- Map state-of-the-art related to circular economy adoption and methods in industrial buildings.
- Identify barriers to circular practices through interviews with stakeholders from the building sector.
- Develop and simulate design concepts that support circular use of materials.
- Share findings through reports and a webinar to engage industry professionals.

Why is this important?

Circular construction requires more than recycling, it demands new ways of thinking and working across sectors. CICMa addresses this by fostering collaboration between

manufacturers and builders, enabling better material choices, shorter reuse loops, and reduced environmental impact. The project also supports COWI's strategic goal of delivering 100% sustainability-related projects.

What comes next?

This is Phase 1 of a multi-phase initiative. Future phases will build on the findings by testing concepts in real-world settings and developing scalable solutions. The long-term goal is to influence how industrial buildings are designed and built, making circularity a practical and integrated part of both manufacturing and construction processes.