

Introduction – VITO and CRIB



As a science-to-technology partner, VITO (Flemish Institute for Technological Research) and its 1,300 employees support companies, governments, and society in their sustainability transition. With our multidisciplinary approach and unique lab, scale-up, and testing infrastructure, we create practical technological innovations. As such, we accelerate progress towards a regenerative economy that reinforces planetary boundaries, smart climate solutions for resilient and secure ecosystems, and a healthy living environment harmonising humans, industry, agriculture, and nature.

Within VITO, the group for Construction Robotics and Innovative Building envelopes (CRIB) is an interdisciplinary team dedicated to advancing sustainable construction. Our primary objective is to develop next-generation building envelope systems for new build and renovation, supported by innovative design methodologies, robotic and automated construction solutions. These are aimed to be robust, low cost and in compliance with stringent performance standards, while positively impacting natural ecosystems. The integration of renewable materials and the minimization of greenhouse gas emissions are at the forefront.

CRIB's active involvement in both EU- and Flemish-funded projects, and strategic collaborations with key industry partners, contributes to a more climate-resilient construction industry, affordability and shift towards a circular economy in the built environment.

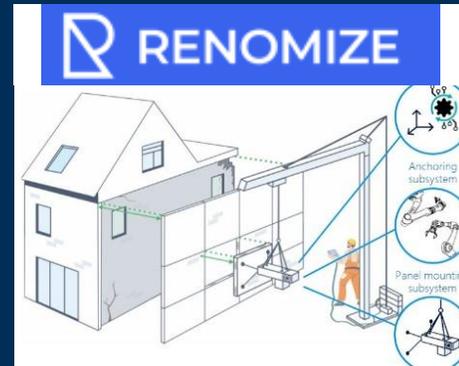
More info: <https://vito.be/>

Key Assets – HEU Projects & Network

Our primary assets are our capabilities in building & construction, energy, materials integration, and digital domains (AI, ML, BIM), as well as our vast experience with Horizon Europe funding program, R&I project coordination, innovation development, demonstration activities and upscaling.

Additionally, VITO can help provide a unique demonstration site through a multitude of contacts with building stock management companies (social housing, educational, healthcare, property investment funds), and leveraging its broad network with complementary renovation facilitators (Flemish city municipalities, residential energy advise companies).

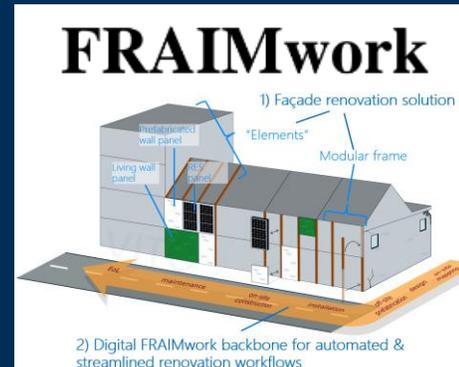
CRIB brings extensive experience in the topic domain, notably through our participation and technical developments in Horizon Europe projects such as [oPEN Lab](#) (20+ M€) and [Solmate](#) (7.5 M€) which are coordinated by CRIB. Additional projects being carried out by the group include [Renomize](#) (6+ M€) and [Framwork](#) (7.9 M€). These experiences underscore our high success rate, as well as our commitment and capability to drive innovation in construction robotics and building envelope advancements.



[Renomize](#)



[Solmate](#)



[Framwork](#)



[oPEN Lab](#)

Key Assets - Infrastructure

THOREAQ Facilities

One of our pivotal assets is the THOREAQ infrastructure that encompasses a robotic workshop for system development and prefabrication process innovation, twin buildings with swappable envelope elements as demonstrator & living lab, and an outdoor construction lab for deploying automated systems on-site. More info: [THOREAQ | Open Thor](#)

Two identical test houses

- A/B testing
- Virtual residents (controlled emission of heat, CO2, humidity)
- Various types of HVAC installations, plug & play expandable
- Modular construction of façades and roof, interchangeable building envelope, prefabricated renovation solutions
- Control systems
- Advanced monitoring: energy, temperature, humidity, air speed, air quality, etc.

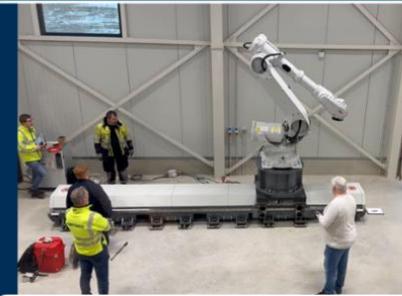
Robotic workshop

- Testing & prototyping of construction robotics
- Digital fabrication of innovative building envelopes
- Robot arm on motion track
- Multi-material 3D printing

Outdoor construction lab

- Steel-frame construction template
- Testing of on-site robotic construction innovation

Robotic Workshop



Demonstrator & Living Lab



Outdoor Construction Lab

