

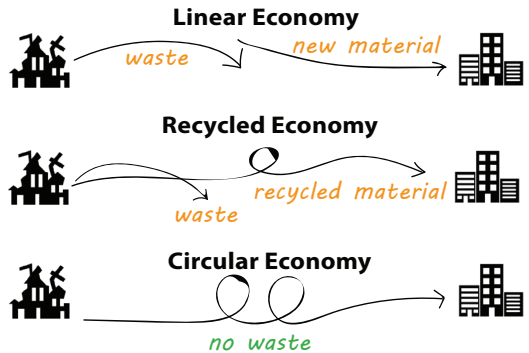


REuse and **RE**cycling of CDW materials and structures
in energy efficient **pRE**fabricated elements for building
REfurbishment and construction

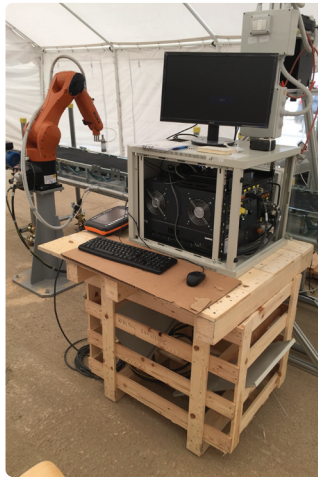


CIRCULAR ECONOMY IS THE KEY.

Circular economy in the construction sector is about reducing the demand for non-renewable materials, reducing the production of waste, and maximising the value of recovered materials. These materials can be later used in brand new buildings, protecting the environment and also saving money.



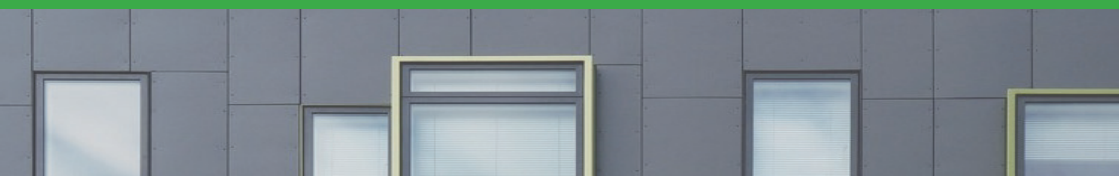
CDW ROBOTIC SORTING SYSTEM



It all starts with the sorting of the CDW. To properly separate a suitable material for the recycling, RE⁴ partners developed a **mobile CDW robotic sorting system** that allows to sort the construction waste directly on site.

Bricks, tiles, stone, glass, wood, and plastic from CDW will be properly sorted paving the way for the use of high quality mineral and lightweight aggregates into eco-sustainable prefabricated elements.

◀ *Mobile CDW robotic sorting system*



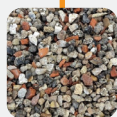
BUILD A FULLY RECYCLED HOUSE? **YES, YOU CAN!**

Sustainable, high performing, RE⁴ prefabricated building elements incorporating up to 100% of CDW (such as mineral aggregates, wood fibres and timber, bricks and tiles) and with an easy assembling and disassembling processes for future reuse have been industrially manufactured and validated at TRL 7.

CDW DERIVED MATERIALS

RE⁴ ELEMENTS

MINERAL FRACTIONS



Mineral CDW aggregates



RE⁴ structural elements

100% reusable
(reversible connections)

Self-compacting & vibrated concretes, 50-100% CDW



RE⁴ non-structural sandwich panels

100% reusable
(reversible connections)

HPC & SCC, 50-90% CDW aggregates

TIMBER



RE⁴ timber elements
75% CDW
100% reusable

CDW timber slats



LIGHTWEIGHT FRACTIONS



Wood fibres



RE⁴ ventilated façade
100% CDW

RE⁴ Insulation panels



BRICKS & TILES



Bricks & tiles



85% CDW
100% reusable

RE⁴ Extruded concrete tiles