

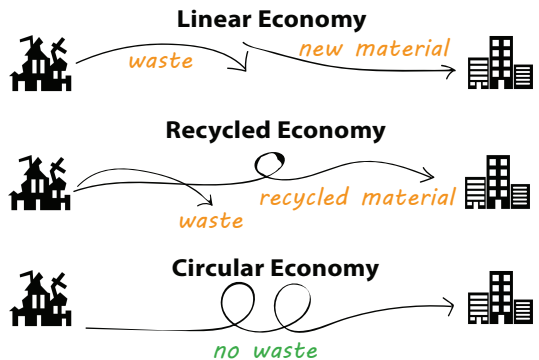


REuse and **RE**cycling of CDW materials and structures
in energy efficient **pRE**fabricated elements for building
REfurbishment and construction



CIRCULAR ECONOMY IS THE KEY.

Circular economy in 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, saving not only the environment but also money.



CDW ROBOTIC SORTING SYSTEM



It all starts with the sorting of the CDW. To properly select 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 can be now 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!**

Several sustainable building materials and components incorporating up to 100% of CDW (such as mineral aggregate of various size fractions, wood fibres, rigid plastic particles, bricks & tiles particles as well as large pieces of timber) were validated on lab scale:

CDW DERIVED MATERIALS

RE⁴ MATERIALS

RE⁴ COMPONENTS*

Mineral fractions



Mineral CDW aggregates



RE⁴ self-compacting and vibrated concretes



RE⁴ Concrete building blocks

Lightweight fractions



Plastic CDW



RE⁴ lightweight concrete



RE⁴ Rigid plastic (RP) insulating panels



Mixed plastic and wood CDW



RE⁴ lightweight concrete



Wood fibres



RE⁴ Insulation panels

Brick & tiles



Bricks & tiles



RE⁴ Reconstituted roof tiles

Timber



CDW timber slats



RE⁴ Weatherboarding

* Other load bearing and non-load bearing components are under development.



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