

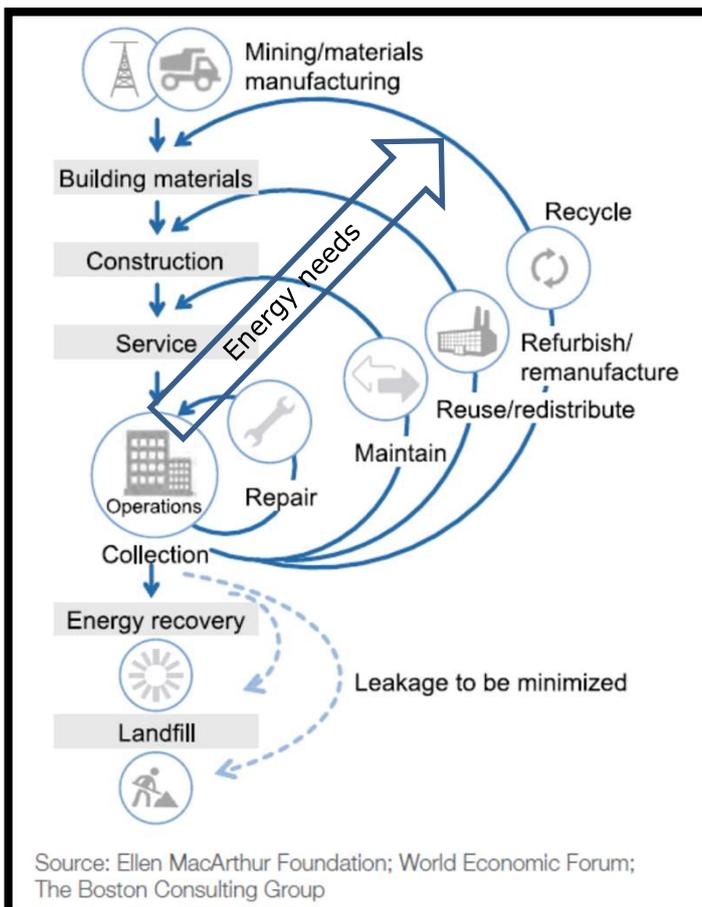


CIRCULAR ECONOMY The role of the concrete sector

The concrete sector, which is at the heart of sustainable construction, has a prominent role to play in applying the circular economy principles to the construction sector.

What does the circular economy mean for construction?

Buildings & infrastructure cannot be compared to the majority of products.



The circular economy is a whole life approach of industrial production aimed at securing societal development whilst preserving the environment. It aims to minimise virgin materials inflows and waste outflows using as little energy as possible.

The durability and efficient design of construction products are important for the construction sector to achieve these goals. The lifecycle of buildings and infrastructure is normally measured in decades or hundreds of years, rather than the years or months of the majority of other products, and days or weeks for packaging.

There are several means to minimising inflows (virgin materials) and outflows (wastes):

- repair and maintenance (low energy);
- re-use and redistribution (medium energy);
- recycling (high energy).

A building or infrastructure designed following the circular economy principles will favour a longer life span and low energy operations.



The assets of concrete as a circular construction material

Production	
Concrete is designed to last	➤ It is common for concrete to have a service life of over 100 years
Concrete is manufactured in closed-loop factories	➤ Nothing is lost in concrete plants, including water
Concrete is manufactured with specific recipes for specific projects	➤ Nothing more, nothing less than what is necessary
Concrete is locally sourced	➤ Mineral raw materials are locally available across Europe
Use	
Concrete is locally delivered	➤ The delivery radius is commonly below 50 km
Concrete is durable	➤ A longer life means a reduced need for resources
Concrete is easy to maintain and repair	➤ Operations which further extend the life of a structure
Concrete is resilient	➤ Concrete easily withstands predictable and unpredictable events such as fire or extreme weather
Waste management	
Concrete can be recycled and re-used locally	➤ There is almost always a local need for recycled aggregates
Concrete structures can be re-used	➤ Concrete structures can easily be reconverted with refurbishment operations
Concrete works can be deconstructed	➤ Separating concrete (for recycling) from contaminants is an easy operation
Waste to resources	
Concrete is 100% recyclable	➤ No concrete is lost at the end of its life!
Concrete products can be re-used	➤ Precast concrete elements can be designed for dismantling
The best application for recycled concrete are often unbound (e.g. geotechnical works)	➤ The use of recycled aggregates reduces the need for natural ones
However, recycled concrete can also easily be used in concrete!	➤ In case the access to natural aggregates is difficult in a specific region



The commitments of the concrete industry, through the whole value chain

Notwithstanding concrete's already excellent properties regarding the circular economy, the industry is committed to accelerating the trend through its whole value chain.

We commit to:



- Improve performance in plants/factories
- Communicate more effectively with users (contractors)
- Improve the logistics of all operations
- Develop new products with less material



- Provide durable structures and infrastructure, aimed at minimising repair to unexpected circumstances only (e.g. accidents)
- Provide structures that are easy to maintain and repair



- Use reclaimed (un-hardened) concrete in ready-mixed concrete production
- Increase and optimise recycling rates of concrete at the end-of-life stage



- Increase and optimise recycling rates of concrete at the end-of-life stage
- Use of recycled aggregates when environmentally and commercially sound



- Replace fossil fuels in the cement manufacturing process with fuels derived from wastes (known as co-processing). This is in fact both energy recovery and recycling, as the material content of the wastes also substitutes raw materials in the cement production.



ACHIEVING A SUPPORTIVE REGULATORY FRAMEWORK

The Concrete Initiative believes that European policies may contribute to the shift to a circular economy in the construction sector when:

1. They recognise the specificities of this sector, where the long life span of construction works increases the importance of durability, cost-effective maintenance and repair compared to the recycling and recovery operations;
2. They are integrated in the existing regulatory framework, in particular the Construction Products Regulation (Regulation EU 305/2011), which has been developed for application to products in construction works;
3. They call on the whole value chain to contribute, from the manufacturers of raw materials to demolition operators. Due to the long life of a construction work, each stakeholder should be actively responsible for their products and services.
4. Targets are defined "globally", i.e. at the level of the construction work and over its entire lifecycle;
5. They rely on standards for the construction sector, such as CEN/TC 350 standards.