



### 03. Definition

#### Circular Economy and the Circular Built Environment

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##### *Circular Economy*

Ever since the 1970's a series of new theories proposed alternatives to the linear economy model and the environmental challenges it posed. They mainly focused on how the study of the living organisms' systems can help organize the man-made ones. Different schools of thought like *Regenerative Design, Performance Economy, Cradle to Cradle, Industrial Ecology and Biomimicry* emerged. All informed by *systems thinking*, they advocated for *building resilience through diversity, and relying on energy from renewable resources*. They further explored the notion of *waste being food*, while also elaborating on ways for *designing out waste*.

These principles now constitute the theoretical background Circular Economy (CE) was founded upon. CE conceptualizes the integration of economic activity and environmental well-being in a sustainable way. The *circularity* component of CE particularly pertains to material use, aiming to *narrow material flows (by using less), slow material flows (by using longer), and close material flows (by using again)*. In other words, it strives for *value retention rather than value destruction*.

There exist many different definitions for CE, the most prevailing and also succinct being that of the Ellen McArthur Foundation. The definition

summarizes the key points mentioned before. It reads:

*A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.*

##### *EU Action Plans*

For the past decade, the European Union has embraced CE principles and has since released two Action Plans. The first *Action Plan* was issued in 2015 and focused mainly on recycling and re-use. A sum of more than fifty actions were implemented: amongst which the establishment of a waste framework directive, and a strategy for managing plastics. A new *Action Plan* was issued in 2019 encouraging the redesign of products in ways that can improve their durability, reusability, and reparability. The plan also consolidated the EU intention to establish a well-functioning market for secondary raw materials. A new package of measures to make sustainable products the norm in the EU was issued in March 2022. The EU also increasingly focuses on policies that bond circularity with energy consumption, just like the recent launching of the EU Green Deal attests.

##### *Criticism*



## Circularity for Educators

CE has been extensively scrutinised for being *too vague, fragmented, dependent on other scientific concepts*, and for *downsizing conflicts, trade-offs*, or *the fact that even cyclical systems require energy and produce waste*. Moreover, many researchers claim that *CE is not politically neutral*, meaning that circular strategies - such as repair and remanufacturing - may *downplay the values of integrity, and care, as merely new forms of capitalist commodification*. In that regard, CE, is heavily criticized for rebooting and reforming capitalism where citizens are still considered predominantly as consumers. In fact, different frameworks for understanding the potential of CE have been developed: for some, CE is grounded on technology and entrepreneurship; for others, CE requires also the establishment of new practices of sharing and collaborating.

### *Potential*

So far, CE manifests both as an *operational scheme, and as a value system*. It can be as *pragmatic as it can be idealistic*. But what is perhaps more important is that *it is socially prevalent*: CE forges the recalibration of society whereas the shifts it calls for involve a wide range of actors as well as new types of exchange. Emergent terms like “sharing economy” and “degrowth” have been introduced to propagate systemic change by downscaling production, either by promoting *peer-to-peer consumption and platform economy* in the first case or through *community-based forms of production, exchange, and consumption* in the latter. For some, CE represents an “*imagined future*” that informs and motivates different areas of the social world through a range of activities.

### *CE and the built environment*

Implications of CE for the built environment remain

largely underexplored. Transitioning to a circular built environment requires that systemic processes related to the built environment such as extraction, manufacturing, construction, and maintenance all the way to deconstruction and reverse supply chain logistics need to be reconceptualised and designed anew.

For the past couple of years, members of the Circular Built Environment Hub have been systemizing the input of the research undertaken by the group as well as the research on CE in general. A tentative definition of what a Circular Built Environment is, emerged. The Hub now describes the Circular Built Environment (CBE) *as a human-made environment that operates according to circularity principles*:

*A circular built environment is a designed system aiming to close resource loops at different spatial-temporal scales to enable the society to thrive within the planetary boundaries.*

The Hub members argue that a CBE encompasses different scales, from materials to cities or even regions. This definition builds on the socio-technical aspects of CE where technology plays a key role; however, it further acknowledges that a CBE requires a transition of values as well:

*A transition towards a CBE involves changing cultural, environmental, economic and social values to promote and embed circular thinking and processes in architectural and city-making practice and everyday urban life. Thus, it is achieved through interrelating aspects of architectural and urban design, urban governance, technology, urban economy, resource management, and stakeholder engagement.*