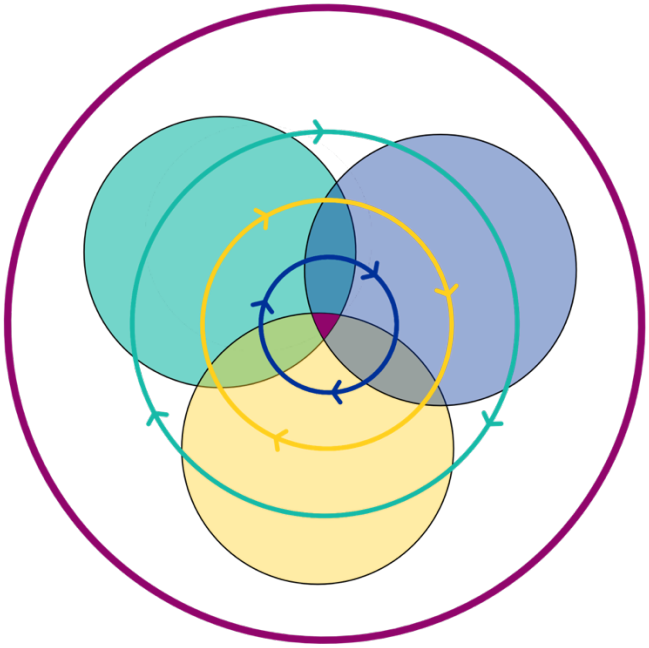
DECORATOR – Future for the Planet – Future for Mankind

Implementing a holistic design approach in the building construction industry in the Danube region by connecting the New European Bauhaus (NEB) with the Cradle-to-Cradle (C2C) principles.

The New European Bauhaus (NEB) initiative as the framework for DECORATOR is an overall design approach that is being developed in an understanding of “design” that goes beyond mere aesthetic solutions. It is a comprehensive design philosophy that addresses the responsibilities and duties necessary to tackle today's challenges. A central role in this approach is played by the Cradle-to-Cradle (C2C) concept, which serves as a consequent decision-making structure for the construction industry in the Danube region.

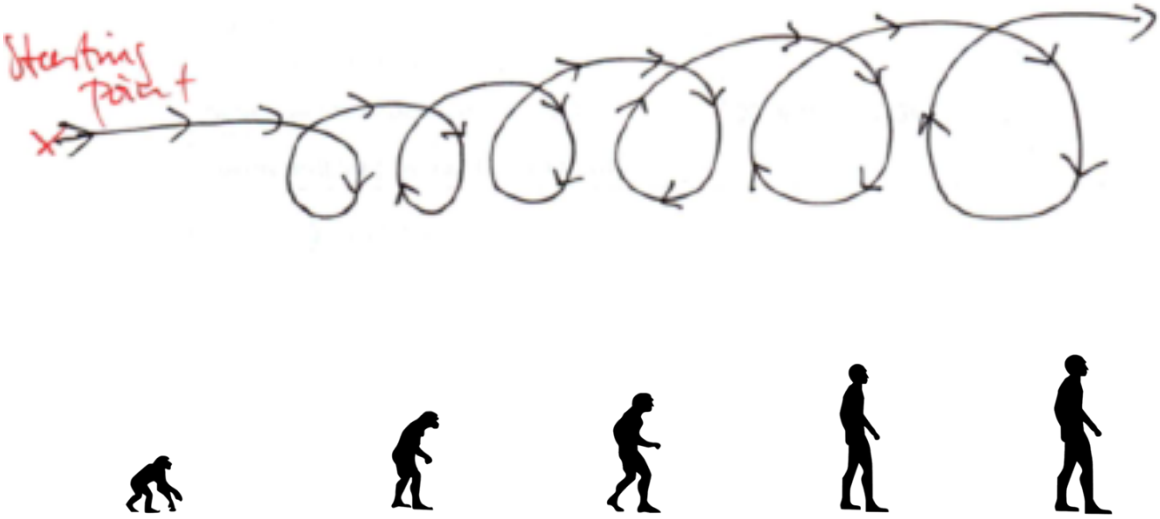
The goal is to create conditions for a good life for as many people as possible in the Danube region. Buildings—whether for living, learning, or working—are a central component of this vision. Moreover, sustainability must not only be a goal but also a desirable state. It is essential to highlight the "beauty of sustainability" to foster broader awareness and acceptance.

The NEB framework makes the C2C principle accessible and connectable. Here, cultural competence regarding climate issues is indispensable. Ultimately, it is about rethinking the issue of "sustainability": economic, ecological, and social aspects must be interconnected in a way that resonates with people's everyday realities: Ecological and economic solutions should be both meaningful and reasonable. Environmental and social solutions must be livable and life-serving. Additionally, economic and social solutions must be just and fair.



The DECORATOR model describes not a recipe, but a consistent decision-making chain aimed at implementing circularity in the construction sector. Cradle-to-Cradle does not mean achieving a slight improvement in sustainability; it demands a radical rethink where excuses are not an option. Therefore, the DECORATOR model is a tool that acts as a companion for decision-making in the construction industry, facilitating the circular economy by fostering the twin transition.

Regarding the development status on the path to C2C, we must understand that we are still in the preparatory phase. It is crucial to recognize this starting point clearly and to approach the first steps into genuine Cradle-to-Cradle metabolisms with humility. We need to identify where real progress can be made, and from these insights, we must continuously advance through iterations of learning and action. This development can be compared to the evolutionary step of upright walking in humans—it represents a next evolutionary step aimed solely at the survival of our planet.



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1 DECORATOR Framework

The DECORATOR framework aims to integrate sustainability into the construction sector within the Danube region by aligning with the New European Bauhaus (NEB) principles. It emphasizes a holistic approach that includes technical, aesthetic, and cultural considerations, while applying Cradle-to-Cradle (C2C) principles across three core metabolisms. Here's an overview of the framework:

A. Metabolisms in the Construction Sector

1. Building Construction Phase Metabolism

This phase encompasses the entire lifecycle of a building, from initial design to its end-of-life stages and – most important – re-purposing. Key aspects include:

- **Planning**: Evaluating the actual need for new buildings to avoid unnecessary construction.
- **Design**: Prioritizing materials that can be repurposed and avoiding those containing hazardous substances, using Alternative Raw Materials (ARM).
- **Components and Prefabrication**: Utilizing prefabricated elements to optimize resource consumption, bundle processes, create synergies and thus also reduce construction time. Above all, this is a precious field for innovation through co-creation of architecture and design, construction companies and demolition and re-purposing companies.
- **Material Sourcing**: Focusing on sustainable, local, and recycled materials. This also includes the question of transport and logistics in general.
- **Building Construction**: Implementing eco-friendly practices during construction and working in close and cooperative partnership with upstream and downstream areas.
- **Demolition**: Involving demolition companies as partners, promoting new business models around deconstruction and working closely together with designers and components manufacturers in order to identify (new) re-purposing possibilities. This also includes the question of storage space and deposition connecting with urban planning and logistics
- **Repurposing**: Redefining "waste" through practices like up-cycling, reusing, recycling, and down-cycling, taking into consideration the development of new sustainable business models.

2. Use and Operation Phase Metabolism

This phase focuses on the sustainable management and operation of buildings during their use, emphasizing energy efficiency and resource conservation. The consumer behavior of the users plays a decisive role here. Therefore, the question of awareness raising is crucial.

Key components include:

- **Energy**: Promoting the use of renewable energy sources, enhancing efficiency, and encouraging energy-saving behaviors.
- **Building Services**: Managing heating, cooling, ventilation, and water supply through advanced control systems.
- **Water Management**: Using rainwater, promoting infiltration, and treating wastewater, integrating blue-green infrastructure.
- **Interior Design**: Prioritizing sustainable furniture and appliances that are designed and manufactured according to the C2C-principles.

- **Outdoor Areas**: Enhancing biodiversity through façade greening, planting trees and shrubs and promoting biodiversity through sustainable gardening practices.
- **Human Behavior**: Frugal consumption, shared economies, and the use of common spaces.

3. Change of Needs in Human Lifespan Metabolism

This phase recognizes that human needs change over time, and buildings should adapt accordingly. Key considerations include:

- **Flexible and periodical Living Models**: Adaptable living spaces and room concepts (flexible, modular, hybrid, floating) that respond to changing family structures, living models or work needs.
- **Universal Design**: Designing spaces that are accessible and usable by all people, regardless of age, needs or ability.

B. The 5 Pilots

DECORATOR implements five pilots, each focusing on specific topics within the framework to test and refine strategies. Suggestions and thoughts on it:

- **Pilot 1: Materials and Techniques**: Emphasizes design, planning, and the use of innovative materials and prefabrication, while also considering human behavior.
- **Pilot 2: Business Models**: Focuses on developing new business approaches for components, construction, demolition, and repurposing, such as reuse, up-cycling, recycling and down-cycling.
- **Pilot 3: Demolition, Recycling, and Repurposing**: Aims to optimize the processes around building deconstruction and the reuse of materials.
- **Pilot 4: Design**: Integrates innovative design practices with up-cycling and explores the role of aesthetics in sustainable construction. Moreover, considering C2C as an overall design approach.
- **Pilot 5: New Vision**: Establishes a broader conceptual framework that connects all elements into a cohesive vision for sustainable construction in the NEB.

C. Aesthetics in the DECORATOR Framework

The emphasis on aesthetics within DECORATOR goes beyond functionality, aiming to create spaces that are both beautiful and sustainable. Aesthetics are specifically addressed in:

- **Design/Planning**: Ensuring that the visual appeal is integrated from the start.
- **Components and Prefabrication**: Balancing the aesthetic quality with sustainability.

- **Interior Design**: Choosing circular materials and arrangements that enhance both comfort and style.
- **Outdoor Areas**: Utilizing greenery and landscaping to create pleasant, biodiverse surroundings.
- **Up-cycling**: Transforming old materials into aesthetically appealing new and use- and meaningful products.

D. The Synapses: Cross-Disciplinary Connections

DECORATOR emphasizes the integration of various fields to enhance the holistic approach into connected areas to the construction sector:

- **IT, Embedded Software, AI, Robotics**: Applying advanced technologies in material classification, in prefabrication, in logistics, in construction, use and maintenance, demolition and repurposing.
- **Plant/Mechanical Engineering**: Improving the efficiency of building components, building construction and repurposing processes.
- **Finance and Ownership Models**: Developing innovative partnerships, like civic-public and private-public partnership and promoting co-housing models including co-operatives.
- **Urban Planning**: Encouraging blue-green infrastructure at neighborhood and city levels by establishing effective environment services. By fostering neighbourhoods in community space including room for appliences, co-working and shared guest rooms as well as an effective sharing economy, perspectivly less space is needed on household level. Common space should be established by consequently applying C2C. By experiencing C2C in shared surroundings, awareness raises for the added value of sustainability. This contains also the field of development of communities and social awareness around the question “What are our assets?” This will be translated and transmissioned into different social contexts.
- **Education**: Raising awareness of the value of sustainability in all areas of life and across all levels of society. This needs to be fundamental already in basic education.

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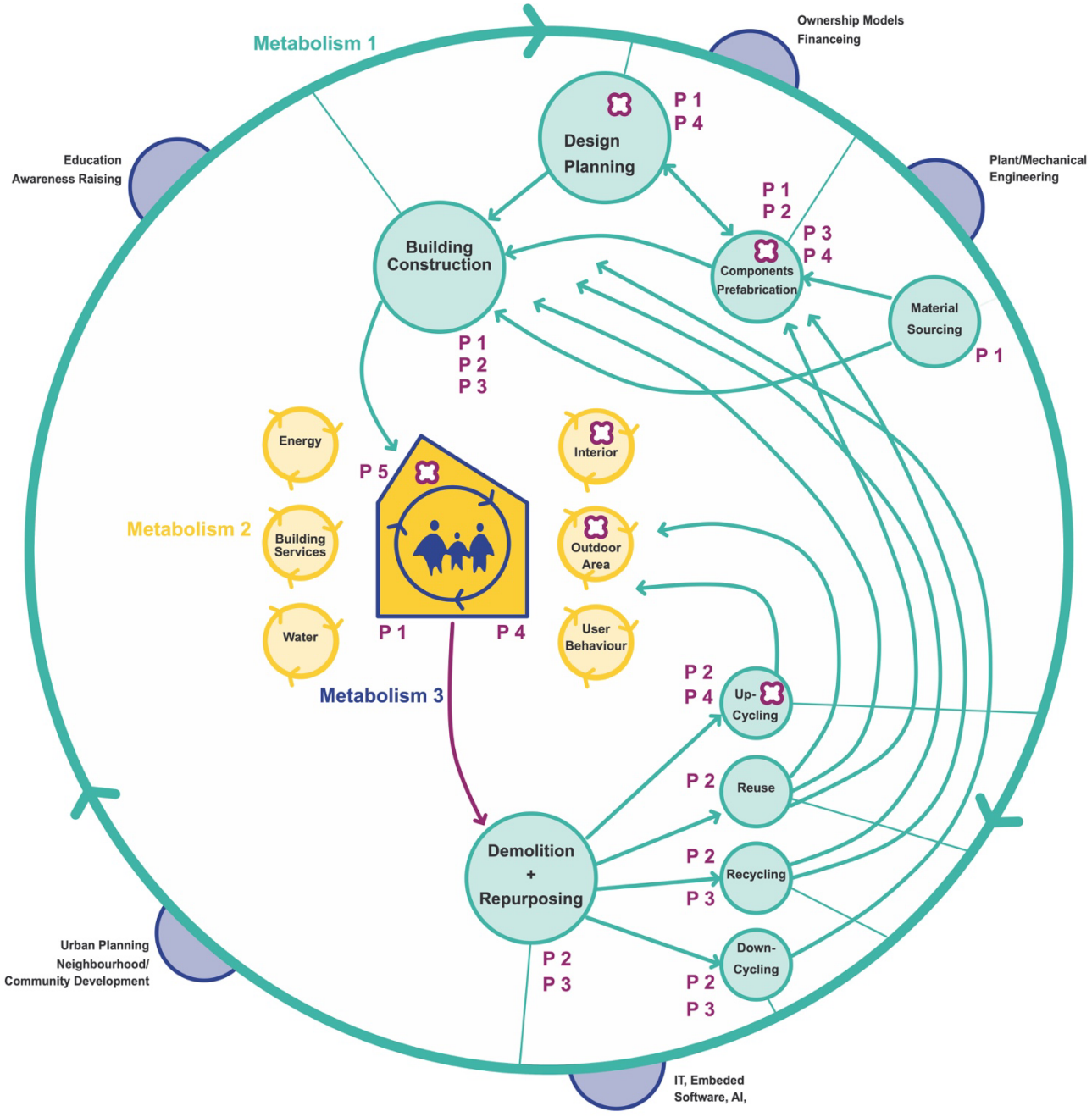

Cradle-to-Cradle Metabolisms

Metabolism 1: Building Construction over Building lifespan

Metabolism 2: Use and Consumption

Metabolism 3: Human being in lifespan

Aspects of Aesthetics

Cross-Disciplinary Connections

5 Pilots

P 1: Materials and Techniques

P 2: Business Models

P 3: Demolition and Repurposing

P 4: Design

P 5: New Vision

2 The DECORATOR model and how to apply

The DECORATOR model is a support frame tool encompassing a consistent decision-making chain aimed at facilitating circularity in the construction sector.

2.1 Identification of area concerned

To apply the DECORATOR model, begin by identifying the area of the respective concern, problem or question: Does is come out of the field of design, material sourcing, components or prefabrication, building construction, use or operation, or demolition and repurposing?

2.2 Identification of field concerned

Next, determine the specific field involved: materials, techniques, business models or demolition.

2.3 Definition of the specific task or question to address

- What exactly is the issue at hand?
- Concerning this issue: What is the existing gap in the circular economy that is associated?
- What is therefore the challenge arising from this gap in respect of finding a sustainable solution?

2.4 Pathfinder

Within the DECORATOR frame options for appropriate solutions can only be in consideration of the C2C-Principles. Never lose this out of sight!

Evaluate **existing solutions** for their utility and appropriateness. If a solution exists, proceed.

If the existing solution does not meet the problem, keep exploring options according the following pathway:

2.4.1 Do we get a solution by combining two existing solutions (or parts of them)?

Combine elements of existing solutions to find a better one, leveraging the synergy of collective efforts.

Solution finding through **COLLABORATION (1 + 1 > 2)**

Tools for **collaboration**: tbd

Methods for **collaboration**: tbd

2.4.2 Do we need a new design of products, service or process?

Design entirely new products, services, or processes by fostering innovation through open and cross-sector collaboration. These approaches emphasize a mindset of possibility and encourage the exploration of creative tools and methodologies, such as open and cross-innovation, to achieve sustainable and circular outcomes.

Solution finding through **CO-CREATION (1 + 1 = X)**

Tools for **co-creation**: tbd

Methods for **co-creation**:

- Open innovation
- Cross-innovation

2.4.3 Do we need to think completely new?

Develop groundbreaking ideas by shifting "impossible" thinking to "potentially possible". This includes alertness for disruptive innovation.

Solution finding through **CHOICE-CREATION (X + Y = Z)**