Enabling the Circular Economy in the Built Environment

The role of policymakers
How does a circular built environment look like?
Design for Deconstruction
Urban mining
Circular business models
How can policymakers enable the circular economy in the built environment?
Creating national and regional circular economy action plans to guide states and cities in their own programs and regulations.
Creating **educational campaigns** to raise public and stakeholders' awareness about the circular economy

Circular economy educational campaigns in Italian schools. 
Source: https://circulareconomy.europa.eu/

Circular economy illustration to educate stakeholders. Source: https://www.cisco.com/
Creating landfill diversion targets and zero waste policies that differentiate between reuse and recycling

Source: Amsterdam Circular Strategy

Source: Ellen MacArthur Foundation

Circular processing ladder

- **Refuse**: Make a product redundant by abandoning its function or by providing the same function in a different way.
- **Rethink**: Make product use more intensive by using (sharing) the product with more people or by giving the product more functions.
- **Reduce**: Increase the efficiency of the machines in the production process or use fewer raw materials for the same product.
- **Reuse**: Reuse of discarded, functioning product in the same function by a different user.
- **Repair**: Repair defective products so that the original function can be preserved.
- **Refurbish**: Refurbish old products to bring them up to date.
- **Remanufacture**: Reuse functioning components of the product to make comparable products.
- **Repurpose**: Reuse the product or components thereof in a new product with a different function.
- **Recycle**: Recycle the materials of the product for application in new products.
- **Recover**: Incinerate the materials with energy recovery.

Source: Amsterdam Circular Strategy
Incorporating circular economy principles into public procurement

<table>
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<tr>
<th>CIRCULAR PROCUREMENT MODELS</th>
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<td><strong>1. System level</strong></td>
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<tr>
<td>→ Product service system</td>
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<tr>
<td>→ Public Private Partnership</td>
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<tr>
<td>→ Cooperation with other organisations on sharing and reuse</td>
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<tr>
<td>→ Rent/lease</td>
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<tr>
<td>→ Supplier take-back systems including reuse, recycling, refurbishment and remanufacturing</td>
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| **2. Supplier Level** |
|→ Supplier take-back system |
|→ Design to disassembly |
|→ Reparability of standard products |
|→ External reuse/sale of products |
|→ Internal reuse of products |

| **3. Product** |
|→ Materials in the product can be identified |
|→ Products can be disassembled after use |
|→ Recyclable materials |
|→ Resource efficiency and Total Cost of Ownership |
|→ Recycled materials |

(Source: SPP Regions Best Practice Report)

Source: Public Procurement for a Circular Economy (European Commission)
Incorporating circular economy principles into public procurement

A circular road

Source: Amsterdam Circular Strategy
Establishing **targets for salvaged components** in new construction

10 building materials and products that can be reused. Source: ArchDaily

Resource Rows building in Copenhagen, Denmark. Source: ArchDaily
Allocating federal funding to research and development initiatives focused on circular economy

- Improving current environmental assessment methodologies to better address closed-loop systems
- Innovative biobased materials
- Innovative technologies to disassemble buildings
- Material passports technology
- Technologies and processes for testing salvaged materials
- Development of metrics and indicators
- Circular economy pilot projects
- Mapping material flows and building components stocks

Source: https://beta.nsf.gov/
Allocating federal funding for research and development initiatives focused on circular economy

Current estimated material stock for the City of Melbourne, for selected materials.
Promoting a **construction regulation reform** to incorporate circular economy strategies and eliminate burdens to material reuse

Source: https://archinect.com/
Creating fiscal incentives for circular economy

Other examples:

- Creating subsidies for companies engaging in circular economy practices
- Raising taxes on new construction
- Creating tax relief for building adaptive reuse
- Creating polluter-pays taxes for building’s embodied energy

Circular economy taxation framework

A final word: economies are for the people


Thank you!
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