



Rialtas na hÉireann
Government of Ireland

Circular Construction

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11 May 2023 – Housing Practitioners Conference

What is the Circular Economy?



An alternative to today's 'take > make > waste' linear economy

Aim to keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of life

A systematically circular economy would be one in which waste and resource use are minimized by default, in which good design preserves product value for as long as possible, via durability and repair and where, when a product has reached the end of its life, its parts can be readily used again and again to create further useful products

Why is the Circular Economy Important?

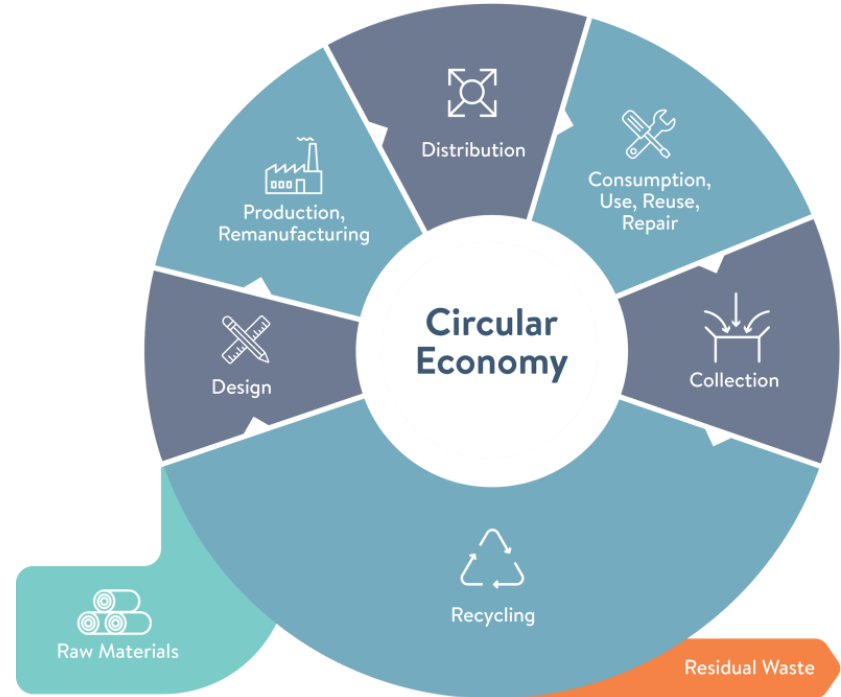


Circular Economy (CE) transition is an essential part of climate action

Emissions arising from materials management account for 55% - 65% of national emissions

Resource consumption is already exceeding planetary boundaries

Increased competition for scarce resources will be an economic and strategic challenge as an environmental one



What Activities Do Highly Circular Economy Feature?



Design for circularity (design for repair, durability, deconstruction)

Re-use (product used again for same purpose or another purpose which preserves value)

Remanufacturing (returning a used product to 'like new' standard)

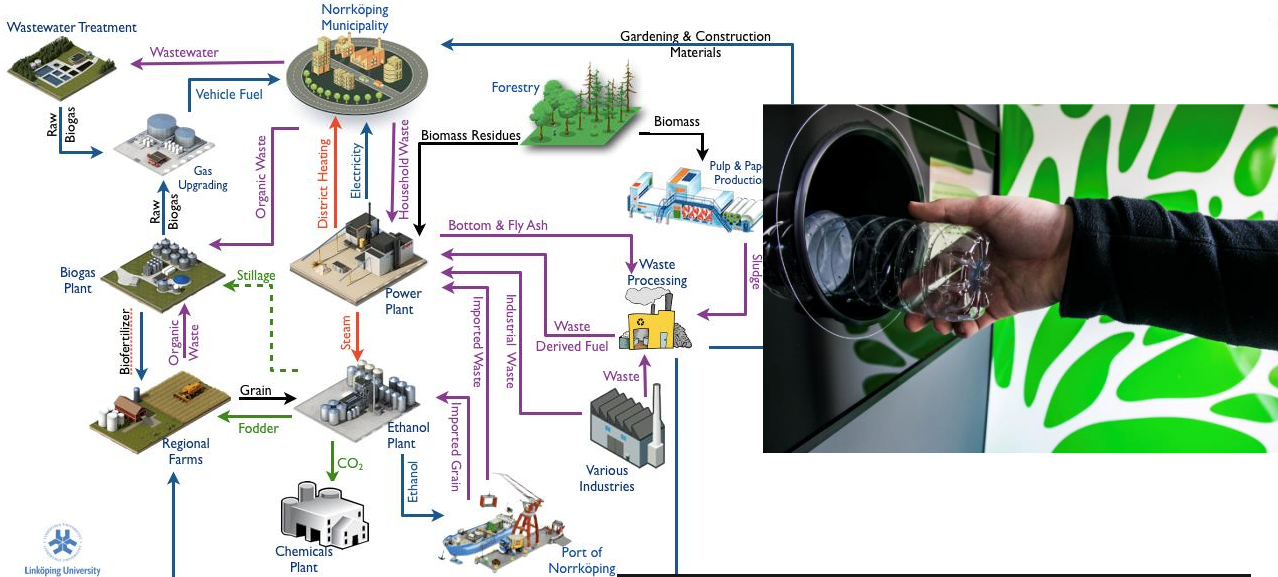
Repair and refurbishment and retrofit (returned to good condition)

Take-back / reverse logistics (facilitates a closed loop for products and materials)

Advanced recycling (for example product of secondary raw materials)

All of these activities can be applied to the Built Environment if the right mix of financial incentives and regulatory requirements are in place.

Circular Economy – some examples



siopaella



authenticated
pre-owned
luxury



Potential Gains from Circular Construction



- C&D sector represents the largest sectoral waste stream in Ireland – approx. 8m tonnes, of which around 80% uncontaminated soil / stone
- Vast majority (by tonnage) of this material is not currently re-used or recycled
- Ireland's Circularity Rate at the moment is low, at around 2%
- Best estimate is that if bulk of C&D waste could be diverted into re-use or recycling then that could double or even treble our national rate
- Even greater gains are achievable by incorporating circular design at commissioning phase of projects
- For the sector, greater availability of secondary raw materials would deliver savings, as would design which facilitated ease of repair and maintenance during the building's operational lifespan

Bottom line – lower construction costs, avoided C&D waste charges, reduced emissions from construction sector, reduced demand for virgin aggregates.

Applying Circular Principles to C&D



As consumers we're familiar with 'Reduce, Re-Use, Recycle' message

Similar cascading approach can be applied to C&D

Focus should be first on preserving and extending the life of our existing building stock, whether through renovation and retrofitting, or through adaptation to new use

New capital investment will always be needed but we should do so in a way that a) conserves as much as possible and b) maximises the (re-) use of recycled materials

At the decommissioning stage, we should prioritise 'deconstruction' over demolition

Potential Enablers of Circular Construction



Life Cycle Analysis (LCA) at project commissioning stage can identify benefits of circular design

Digital Product Passports (DPP's) can provide traceability of material inputs used to construct buildings, turning structures into 'Banks of Material' (BAMs), materials which can later be recovered and reused

Excess Material Exchanges (EMEs) can facilitate efficient transfer of surplus materials or C&D waste into productive re-use

End-of-Waste and Re-use Product Processes provide a pathway to divert C&D material away from waste stream entirely

Establishing standards/certification for product re-use can also provide commissioners and tenderers with greater comfort in using such products in projects

National CE Policy Framework

Whole-of-Government Circular Economy Strategy – Published Q4 2021

Provides a national policy framework to make sure Ireland has the right mix of regulatory measures and financial incentives to promote circularity

2nd Version to be published by end-2023, will introduce new sectoral targets including for C&D

New National Green Public Procurement Framework – to be published by Summer 023

Will introduce mandatory environmental criteria for all public sector procurement

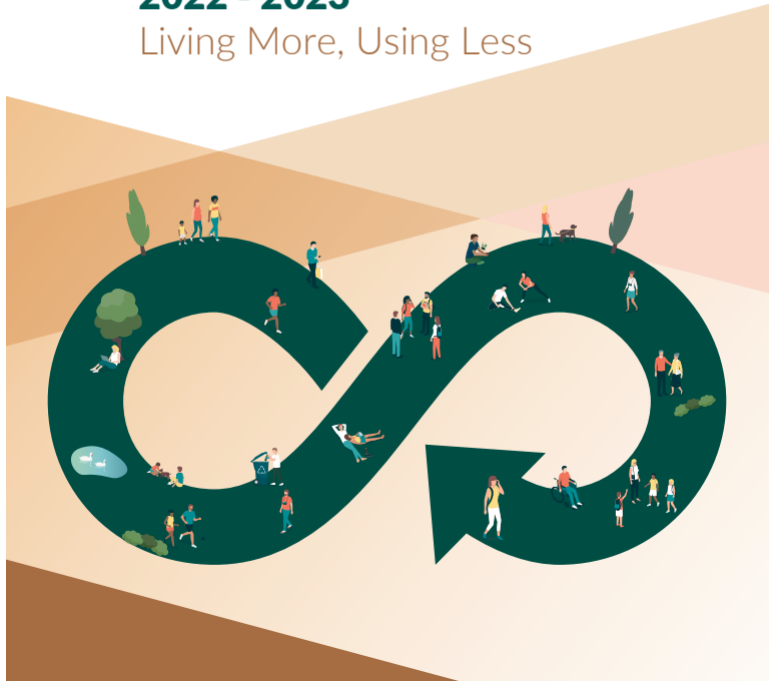


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Whole of Government Circular Economy Strategy 2022 - 2023

Living More, Using Less



Prioritising Circular Construction



- DECC is working with C&D sector to develop the first sectoral circular transition roadmap
- C&D has the biggest potential to deliver circular gains, that's why it's been selected for the first roadmap
- Innovative approach involving Government working directly with practitioners, industry groups and researchers to prepare the draft roadmap
- Intention is to produce a document that can deliver practical guidance to people working in the sector and highlight to the policy makers the regulatory and financial barriers to circular construction
- Policy will go to public consultation before publication at the end of the year



Thank you

