

London Build, 23-24 Oct (stand H9)



Circular economy in the built environment

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The Alliance
for Sustainable
Building Products

Our mission

To accelerate the transformation to a sustainable built environment and society, by championing the understanding and use of demonstrably sustainable building products

Who are we?



The Alliance
for Sustainable
Building Products

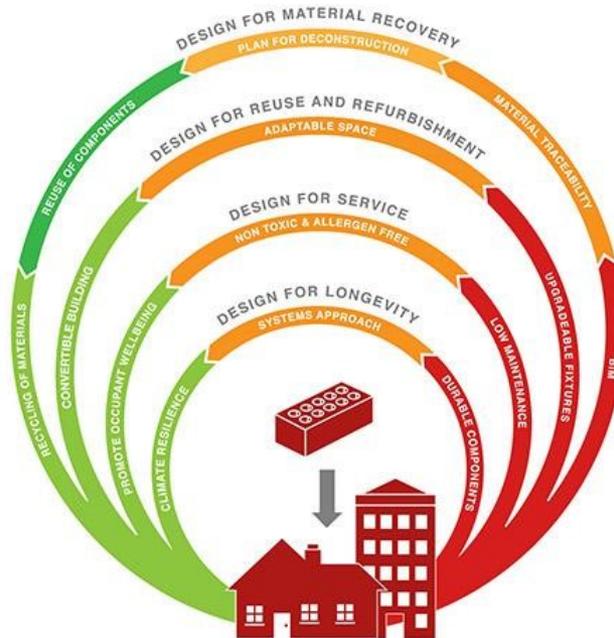
- ▶ Not for profit, mission led, membership organisation, based in London
- ▶ Public good with private money
- ▶ ASBP has three main themes:
 - Health and Wellbeing
 - Resource Efficiency
 - Product Sustainability
 - We want to develop a fourth around social value/natural capital
- ▶ Activities/knowledge exchange
- ▶ Events, Research, Standards, Policy

Over 60 members and partners

Including architects, product manufacturers, specifiers, suppliers, contractors, research institutions and more...



Circular economy in buildings



A CIRCULAR ECONOMY FOR THE BUILT ENVIRONMENT

<https://wienerberger.co.uk/about-us/a-circular-economy-for-the-built-environment>

Circular economy principles

Principles (developed from literature)

Increasing the **productivity** of materials, products and components by doing the same or more with less.

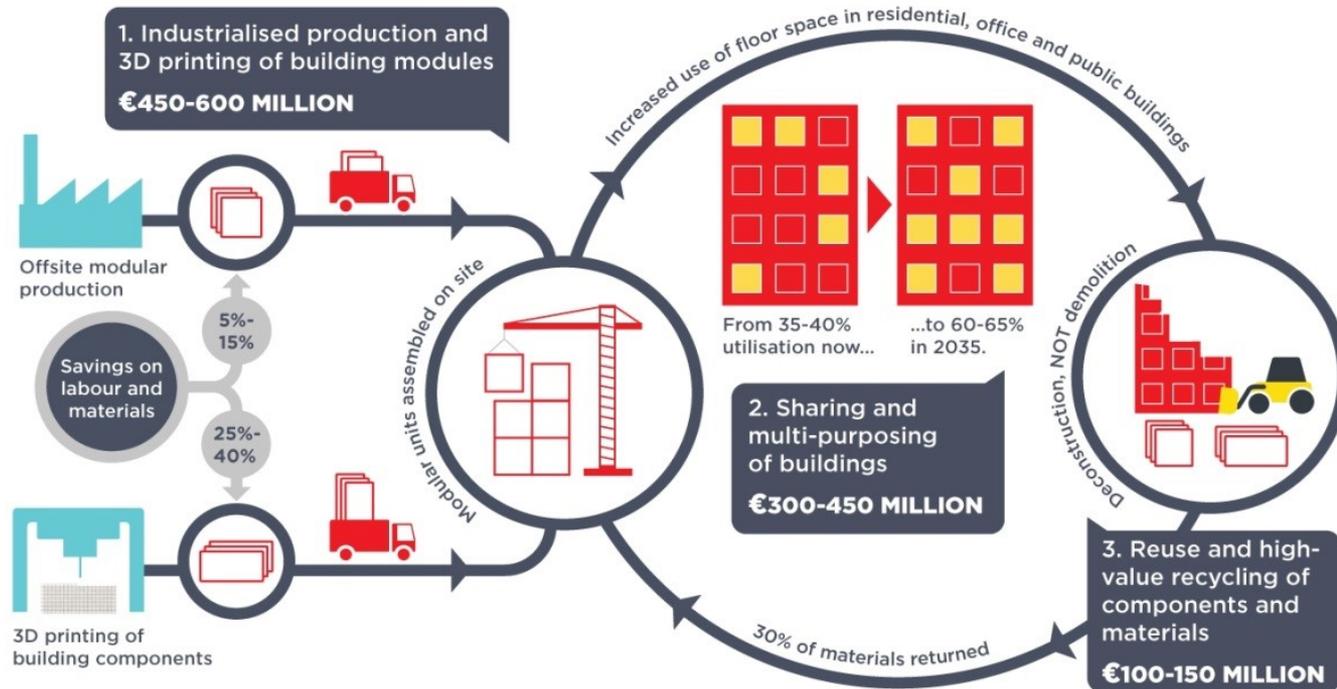
Eliminating waste by defining materials as either **technical** or **biological** nutrients enabling them to be within material loops

Maintaining or increasing the **value** of materials, environmentally and economically.

Thinking in systems by studying the flows of material through industrialised systems, understanding the links, how they influence each other and the consequences, enabling closed-loop processes where waste serves as an input.

Why?

CONSTRUCTION & REAL ESTATE OPPORTUNITIES IN DENMARK



1 Barriers

- Inadequately defined legal frameworks
- Immature technology
- Custom and habit
- Capabilities and skills in the industry

Policy options

- Augmented building codes
- Support for module production facilities
- Legal framework for 3D printing materials

2 Barriers

- Inadequately defined legal frameworks
- Unintended consequences of existing regulations

Policy options

- Clarifying the legislation
- Financial incentives or support
- Municipal access portals

3 Barriers

- Split incentives and lack of information across the value chain
- Custom and habit
- Capabilities and skills

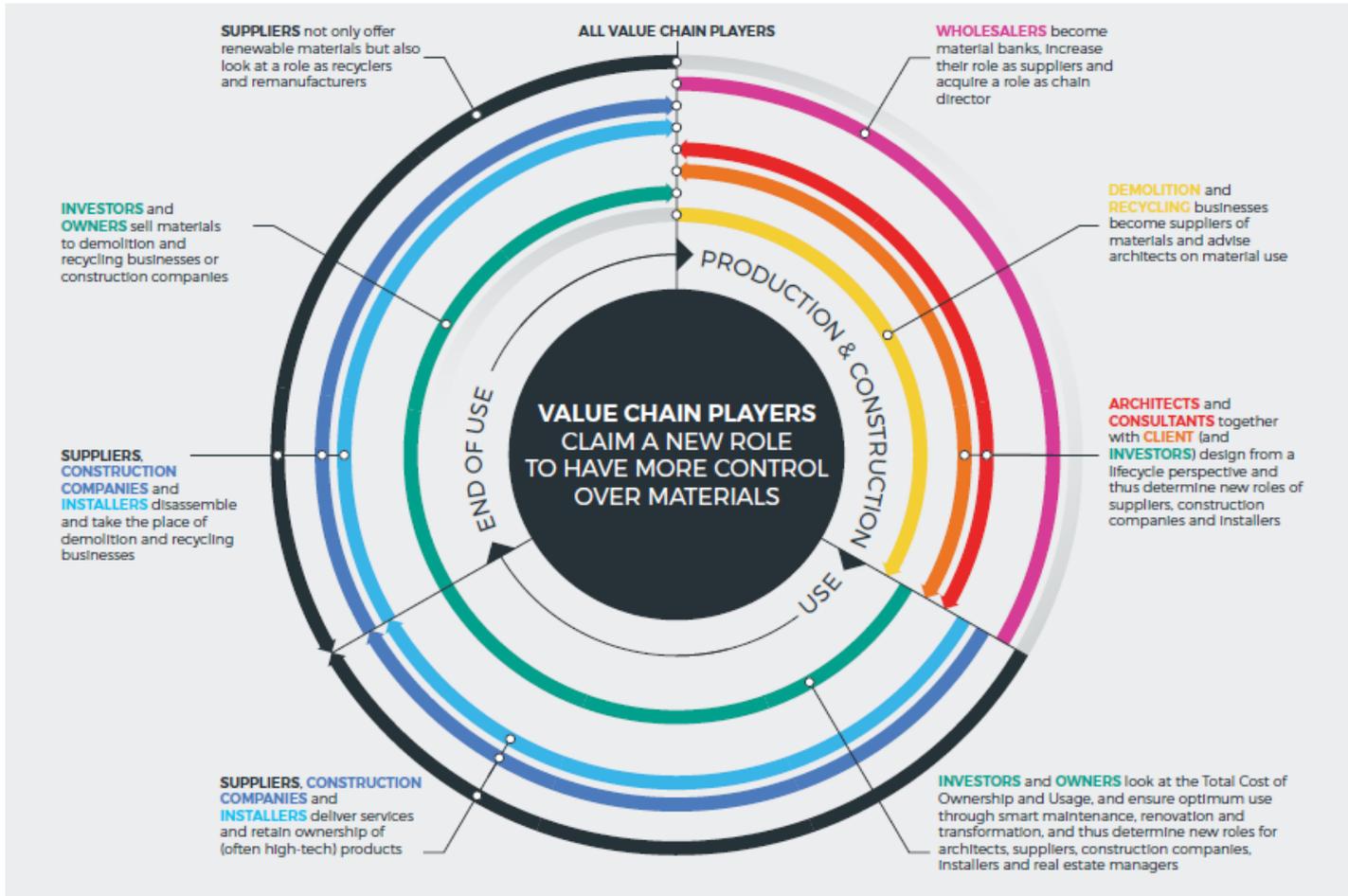
Policy options

- Augmented building codes
- Industry-wide training programmes
- Support for material inventory software

Circular economy aspects

Design	Manufacture and supply	Construction	In use	End of life
Design for deconstruction Design for adaptability and flexibility Design for standardisation Designing out waste Modularity Specifying reclaimed materials Specifying recycled materials	Ecodesign principles Using less materials/optimising material use Using less hazardous materials Increasing the life span Designing for disassembly Designing for standardisation Using more secondary materials Take back schemes Reverse logistics	Minimise construction waste Procuring reused materials Procuring recycled materials Off site construction	Minimise waste Minimal maintenance Easy repair and upgrade Adaptability Flexibility Utilising assets	Deconstruction Selective demolition Reuse of products and components Closed loop recycling Open loop recycling
Management of information including metrics and datasets				

The value chain



Circle Economy & ABN AMRO, 2017. A Future Proof Built Environment - Putting circular business models into practice.

Circular economy in the construction sector

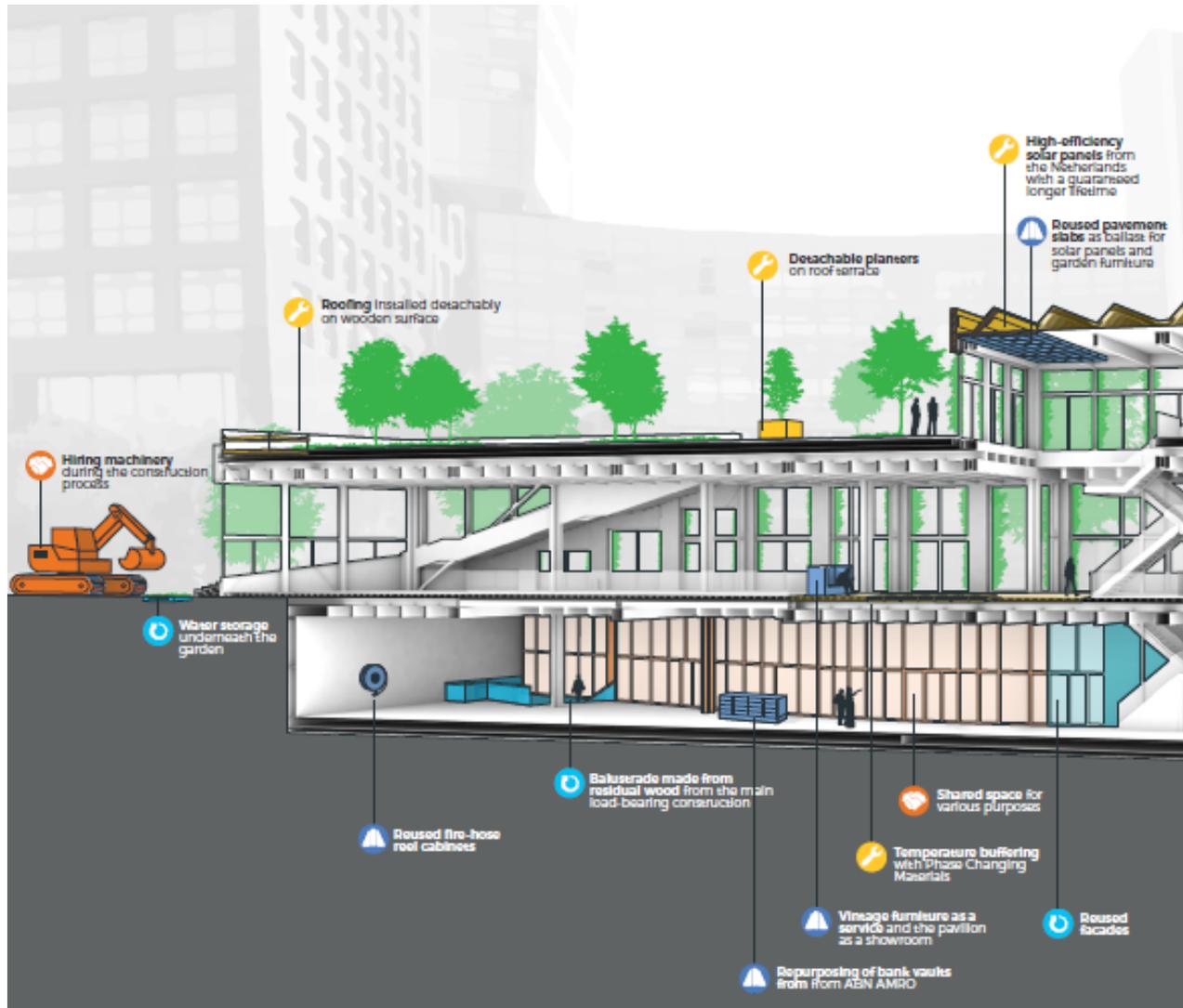
- ▶ Not one magic bullet
- ▶ Different approaches and solutions required:
 - ▶ Various types of buildings/infrastructure with different forms, functions, use patterns
 - ▶ Majority of assets are already built
 - ▶ Asset (building) level v product level approaches
 - ▶ Short lived v long lived construction products and buildings
 - ▶ Low value v high value products
 - ▶ Various developer/client approaches
 - ▶ Accountancy and budgets
 - ▶ Potential conflict of circular economy principles
 - ▶ How does circular economy relate to other 'hot topic' areas?
 - ▶ E.g. health and wellbeing, offsite, big data etc

Case study: Circular Pavilion (CIRCL), ABN Ambro, Amsterdam

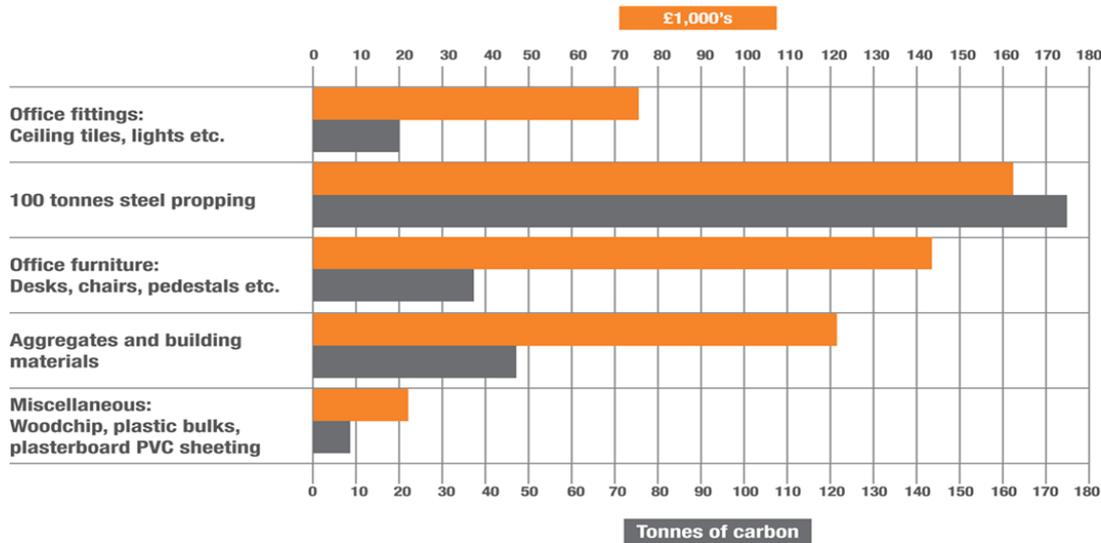
- ▶ Showcase their commitment to sustainability with circular principles embedded
- ▶ Use of knowledge and expertise from TU Delft
- ▶ Collaborative 'one team' approach
- ▶ Suppliers brought in during the design stages to co-create.
- ▶ Client attended supplier negotiations with the contractor
- ▶ Product as service e.g. Mitsubishi Lifts
- ▶ Circular inputs
- ▶ 'Right to Copy'; Living Lab



CIRCL Pavilion



Case study: reuse at MACE



In the last three years
Mace projects have
reused materials,
saving over...

£520,000

+

CO₂
287
tonnes

Sustainable Bio&Waste Resources for Construction (SB&WRC)

- **The Alliance for Sustainable Building Products (ASBP)** and its French and English partners are undertaking this project as part of the Interreg France (Channel) England programme.
- The aim is to develop prototypes of construction materials from bio-resources and recycled waste.
- University of Brighton is developing an insulation prototype from polyester and duck feathers sourced from waste bedding.
- ASBP is pleased to be co-leader for communication for the project and we will feed back all the latest project developments over the next two years through seminars and newsletters.

Find out more at www.asbp.org.uk/sbwrc

*This project is supported by the **INTERREG VA France (Channel) England** programme and receives financial support from the **European Regional Development Fund (ERDF)***



Many thanks

- ▶ Free monthly newsletter – sign up on our website
- ▶ **www.asbp.org.uk**

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- ▶ Next event:
- ▶ **[Delivering Healthy Buildings – Plastics, POE & Embodied Carbon](#)**
– 1 November, Bristol