#EUCircularTalks

Session description

Kaitlyn Dietz, ICLEI

Circular procurement as an enabling tool for secondary material markets

Circular procurement refers to the strategic purchase of goods or services (such as buildings, infrastructure or construction works) in a way that considers whole life cycle impacts and costs, is energy- and resource-efficient, supports regeneration of natural systems, and that creates and maintains value and utility of goods and services as long as possible. Circular procurement approaches can include measures such as servicization, take-back schemes, or performance-based contracting, use of life-cycle analysis (LCA) or life-cycle costing (LCC) to award contracts, or requirements for certain characteristics like design for disassembly or minimum recycled content.

In support of burgeoning secondary material markets in the construction sector, public procurers can pilot innovative approaches to demolition, renovation or construction contracts, and incorporate circular principles into their procurement strategies. This can include both supply- and demand-side measures. Through pre-demolition audits and selective demolition procedures, secondary building components and materials can be recovered from existing assets as supply for further uses. Mainstreamed use of digital tools like material passports and certification schemes to ensure quality, in addition to designation of physical hubs for material transformation and logistics, can enable tracking of secondary materials and facilitate their inclusion for new uses. Through requirements for reused or recycled content in renovation or construction works, a larger scale and more reliable demand for secondary materials can be stabilised.

Given the important role of local and regional governments in management of the built environment, and as public procurement represents 14% of GDP in the EU, these actors can be leaders and allies in establishing and consolidating circular material markets. By showcasing experiences from the Big Buyers Initiative working group on circular construction materials, the session will show how circular procurement can be leveraged as a tool to close the loop for CDW and accelerate the circular transition in the construction sector.

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Construction & Infrastructure Value Chains & Market

ICLEI Local Governments for Sustainability EUROPE

Circular procurement as an enabling tool for secondary construction material markets

Kaitlyn Dietz

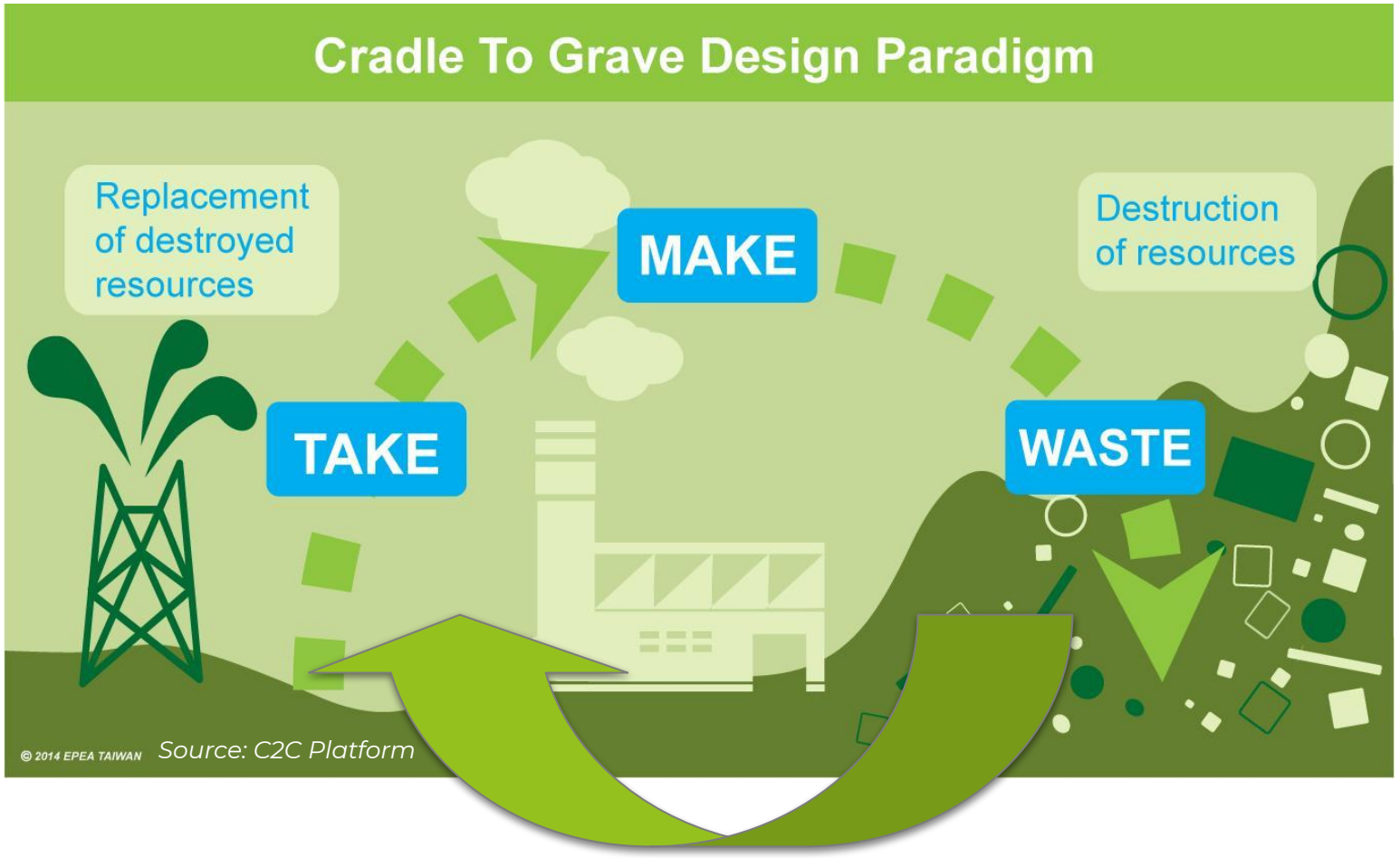
Circular Economy & Sustainable Construction Officer
Sustainable Economy & Procurement | ICLEI Europe

#EUCircularTalks
30 September 2021

bigbuyers for climate & environment

Why a *circular* economy?

There is a design flaw in our current system...



...and an opportunity to do better!

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Why a *circular* construction sector?

- Environmental impact of **raw material, water & energy demand** and **waste/pollution** linked to construction/ demolition works, and building use

- Role of construction sector in **local economy** (SMEs, Social enterprises)

Image source: Towards a greener construction products policy - ECOS

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The Power of Procurement

14% of GDP in Europe ~ €1.82 Trillion/yr

- Use public money for positive change: social, environmental, economic benefits
- Lead by example; give visibility and reliable demand
- Drive market innovation

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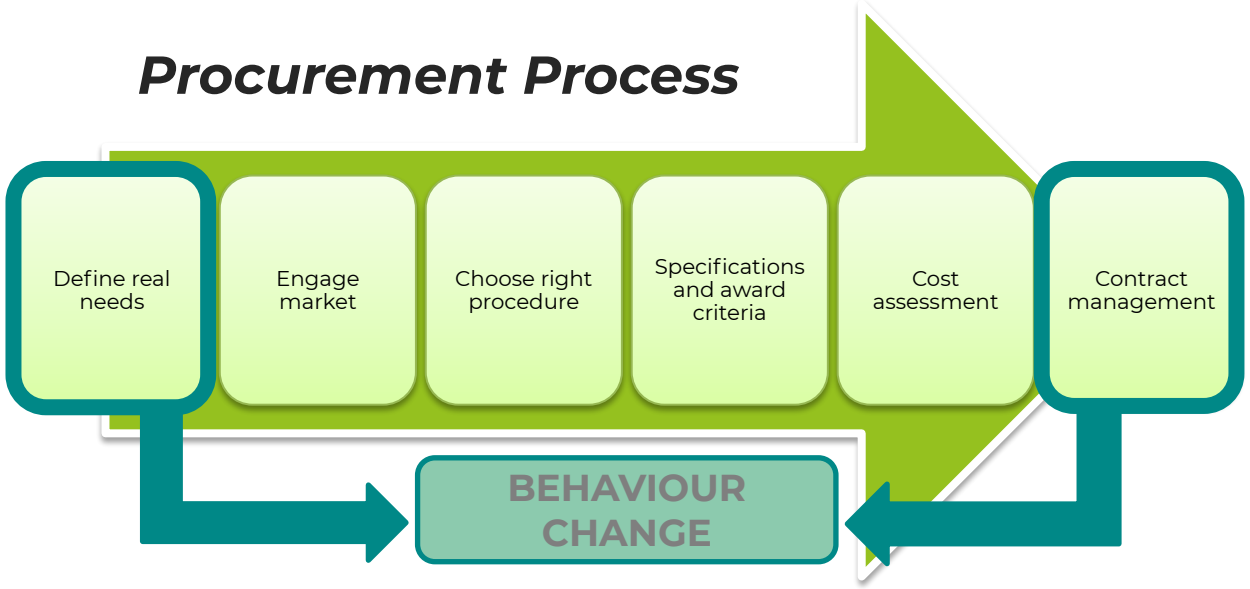
What is Circular Procurement?

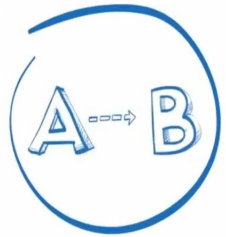
Purchase of goods and services in a way that **minimises material depreciation or waste**, maximises **life-cycle utility and value**, and contributes to **regeneration** of natural systems and achieving environmental and social goals.

May include measures such as **reparability**/reusability, **servicization**, **take-back schemes**, or performance-based contracting, use of **life-cycle analysis** (LCA) or life-cycle costing (LCC) to award contracts, or requirements for certain characteristics like design for disassembly or minimum recycled content.



Example – do you need to own a *vehicle*? Or do you need the service of *mobility*?

- Typical European car parked 92% of the time
- The utilisation rate of city owned cars is low (less than 3 hours a day).



Defining outcomes not products → innovation

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‘Big Buyers’

big buyers for climate & environment

2019 - 2020 | **2020-2022**

Collaboration between big buyers in Europe in **strategic public procurement** to help drive the market for **innovative** and **sustainable** goods and services

European Commission

An initiative of the European Commission, DG Grow

ICLEI Local Governments for Sustainability EUROPE

EUROCITIES

Managed by ICLEI and Eurocities

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Working group on **Circular Construction**

big buyers for climate & environment

Focus

To promote circular economy approaches to the construction sector, focussing on construction materials in civil and building works and covering the value chain from disassembly to material transformation and new construction

Participants

(2019-2020) Vienna, Haarlem, Amsterdam, Rotterdam, Paris, Oslo, Stavanger, Helsinki, Vantaa, Zurich, Lisbon, Porto, Brussels, Budapest

(2020-2022) Vienna, Haarlem, Rotterdam, Zurich, Brussels Mobility, Belgian Post, Madrid, Lisbon, Porto, Toulouse, Bordeaux, Sète, Neukölln (Berlin), Valladolid, Barcelona, Zeeland Province, Wallonie, Andalusian Housing Agency, Danish Building and Properties Agency, Motiva, Rijkswaterstaat, Circular Flanders

Activities

- ➔ Pilots on selective demolition: **Haarlem**, **Helsinki** and **Vantaa**
- ➔ Pilots including secondary and/or bio-based materials in new construction: **Helsinki, Oslo, Paris, Rotterdam, Zurich** and **Vienna**
- ➔ Local market dialogues: **Amsterdam, Budapest, Helsinki, Stavanger** and **Vienna**
- ➔ Tools and methods developed include:
  - LCA and carbon-footprinting for buildings and building materials,
  - Guidelines and checklists for pre-demolition material audits,
  - Tender criteria for inclusion of reused/ recycled content

Identified challenges

to procurement of circular construction

Do these resonate with you?

Can you think of any additional barriers?

- **Awareness of architects & engineers:** Need larger demand for inclusion of secondary materials from construction clients, and design education for whole lifecycle

- **Secondary materials:** Heterogeneous, limited in quantity, lack of reliable data on availability and certification of quality

- **Closing the loop: Demo ↦ new Construction value chain** Need for storage, new market actors to address logistics of matching and facilitating exchange of materials and management of risks

- **Digital tools:** Extra cost and time of material inventory/ passports hard to justify without proven business case for reuse - need more (and more accessible) data, and supporting governance

Circular Demolition

***Supply-side** for secondary materials market*

1. **Rethink & refuse**
   - Reduce demand for new construction and materials by *avoiding demolitions* → through *adaptive reuse / deep renovation of existing buildings*, e.g. by mandating carbon/ cost assessment of renovation vs. knock-down-rebuild scenarios

2. **Material inventory & documentation**
   - Contract a pre-demolition audit to inventory quantity and condition of contained components and materials
   - **Contract soft stripping and selective demolition to carefully deconstruct and separate materials on site, maximising value preservation and supplying the secondary materials market**

3. **Planning & partnerships**
   - Coordinate logistics with dedicated planning and involvement of market actors to avoid unnecessary transport and storage and maximise business opportunities

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Circular Renovation & Construction

**Demand-side* for secondary materials market

Local Governments for Sustainability EUROPE

1. Formulate ambition & engage market actors

- Set objectives and ideate the possible with partners from across project phases

2. Include circular principles by design

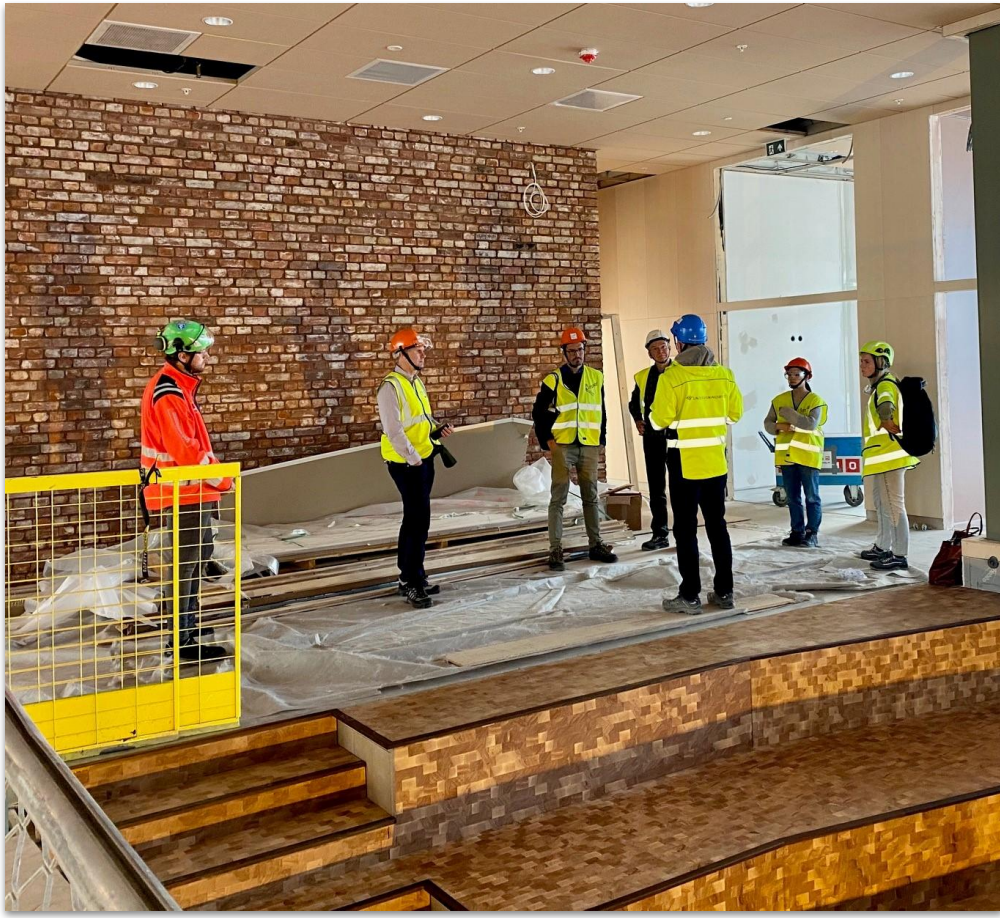
- Flexible programming: space sharing, change of fitout, and digital system integration with minimal future investment
- Material selection: Non-toxic, sustainably-sourced, durable, modular and dismountable. Use certificates to inform choices based on minimal whole life carbon (e.g. EPDs). **Where suitable, reused or recycled components, materials or content can supplant virgin materials.**
- Data for a long life: maintenance log and disassembly plan, product-level environmental footprint, digital material passport or BIM

→ → →

Circular Renovation & Construction

3. Procure circular buildings & neighbourhoods

- Move beyond the bottom line: Increased weight of environmental/ quality award criteria; Whole life cost (TCO/ LCC);
- Recalibrate roles and risks: Encourage innovation by tender criteria; Alternative use models (sharing, take-back schemes, servicisation, performance contracting);
- Require reporting of (/ Set standard minimum reqs for) holistic sustainability indicators & whole life carbon: Level(s) Framework, Life-cycle Assessment (LCAs), Environmental Product Declarations (EPDs)



Further enabling actions

1. **Set a common vision for the transition**
   - Strategy/ Road map with targets and action plan for consistently reducing whole life carbon and improving quality of the built environment
2. **Establish & facilitate supporting infrastructure**
   - Shared data on material stocks
   - Allocate ‘Hubs’ for logistics and storage
   - Framework contracts & innovation partnerships for trust and investment
3. **Refine regulatory & economic elements**
   - Economic incentives (competitions, innovation ecosystems) to secure investment for early adopter suppliers
   - Construction & demolition permits favouring circular practices
   - Financial incentives for secondary material use (e.g. reduced taxation)

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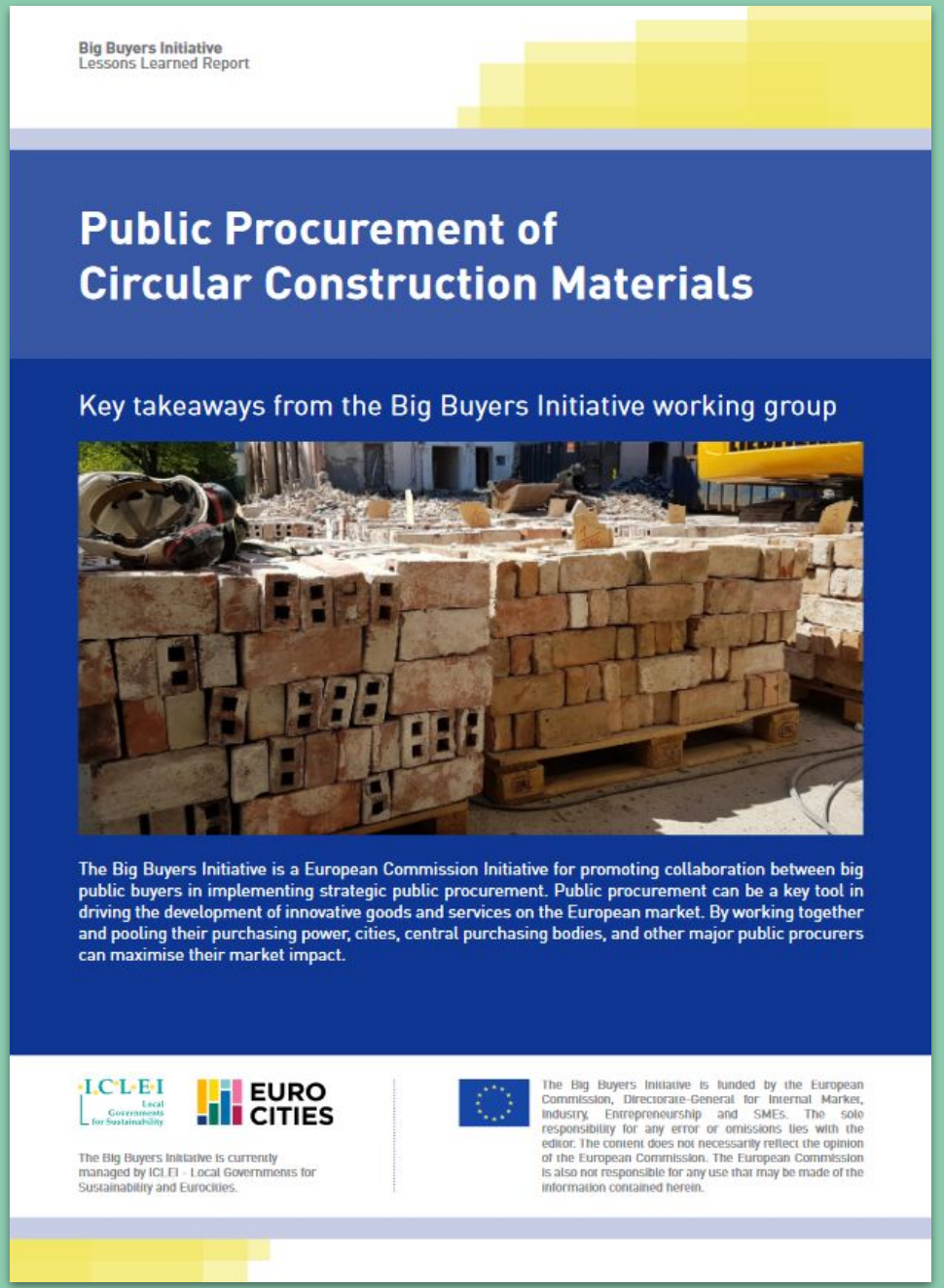
Find out more:

Lessons learned report, including:

- circular design considerations,
- example procurement criteria,
- explanation of pilots,
- municipal levers for enabling the market, and
- reflections on EU action towards a circular construction sector by the working group members.

Website: www.bigbuyers.eu



Thank you!

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big buyers for climate & environment

www.bigbuyers.eu

European Commission

The Big Buyers is a European Commission platform for promoting collaboration between big public buyers in implementing strategic public procurement for sustainable and innovative goods and services.

Further resources

- Agenda for Transition to a Circular Construction Economy by 2050 - Strategy, the Netherlands
- Bringing Embodied Carbon Upfront - Report, World Green Building Council
- CB'23 Platform & Core method for measuring circularity in the building sector - Website, CB'23 Association of construction sector actors in the Netherlands
- City Policy Framework for Dramatically Reducing Embodied Carbon - Report and webinar series, Carbon Neutral Cities Alliance and OneClick LCA
- Clean Construction Policy Explorer - Web tool; How to reduce embodied carbon in municipal construction projects - Article, C40 Clean Construction Programme
- FutureBuilt Norway; Design Criteria for Circular Buildings - Guides & Case studies, City of Oslo & partners
- Guide for facilitating the integration of reclaimed building materials in large-scale projects and public tenders - Guide, FCRBE Project
- Guideline for environmentally friendly construction site management for the areas of transport, construction & environmental supervision of works - Guide, ÖkoKauf Vienna
- Manual of Recycling - Buildings as sources of materials - Book, Wuppertal University
- Municipalities as drivers for circular economy in construction and refurbishment projects - Case studies, EIT Climate-KIC
- Pre-demolition Material Audit Guidance - Guide, EIT Raw Materials, VTT, VITO, VCB
- Public Procurement of Circular Construction - Lessons Learned Report from the Big Buyers Initiative working group
- Roadmap Circular Land Tendering: an introduction to circular building projects - Guide, City of Amsterdam
- Roadmap to Circular Procurement & Commissioning - Guide, Metropole Amsterdam
- Sustainable & Circular Re-use of Spaces and Buildings - Handbook, EU Urban Agenda Partnership
- Sustainability in Construction and Civil Works - Strategy, City of Copenhagen
- The challenges and potential for circular procurements in public construction projects - Case studies, EIT Climate KIC