Big Buyers Initiative

Working Group **Circular Construction Materials**

Dr. Deinhammer

Webinar 25-05-2020

Stadt Wien

"Most of all the circular building activities in Vienna." Den Haag

"I am interested in the way, Vienna combines CE with public procurement and city development." City of Toulouse

"Finding ways how we can influence the market in order to get a more sustainable construction." Den Haag

Q & A

DoTank Circular City 2020-2030 (DTCC30)

"Regulations for using bouwhub" Eindhoven

"Circular Building Materials" Gemeente Haarlem

Stadt Wien

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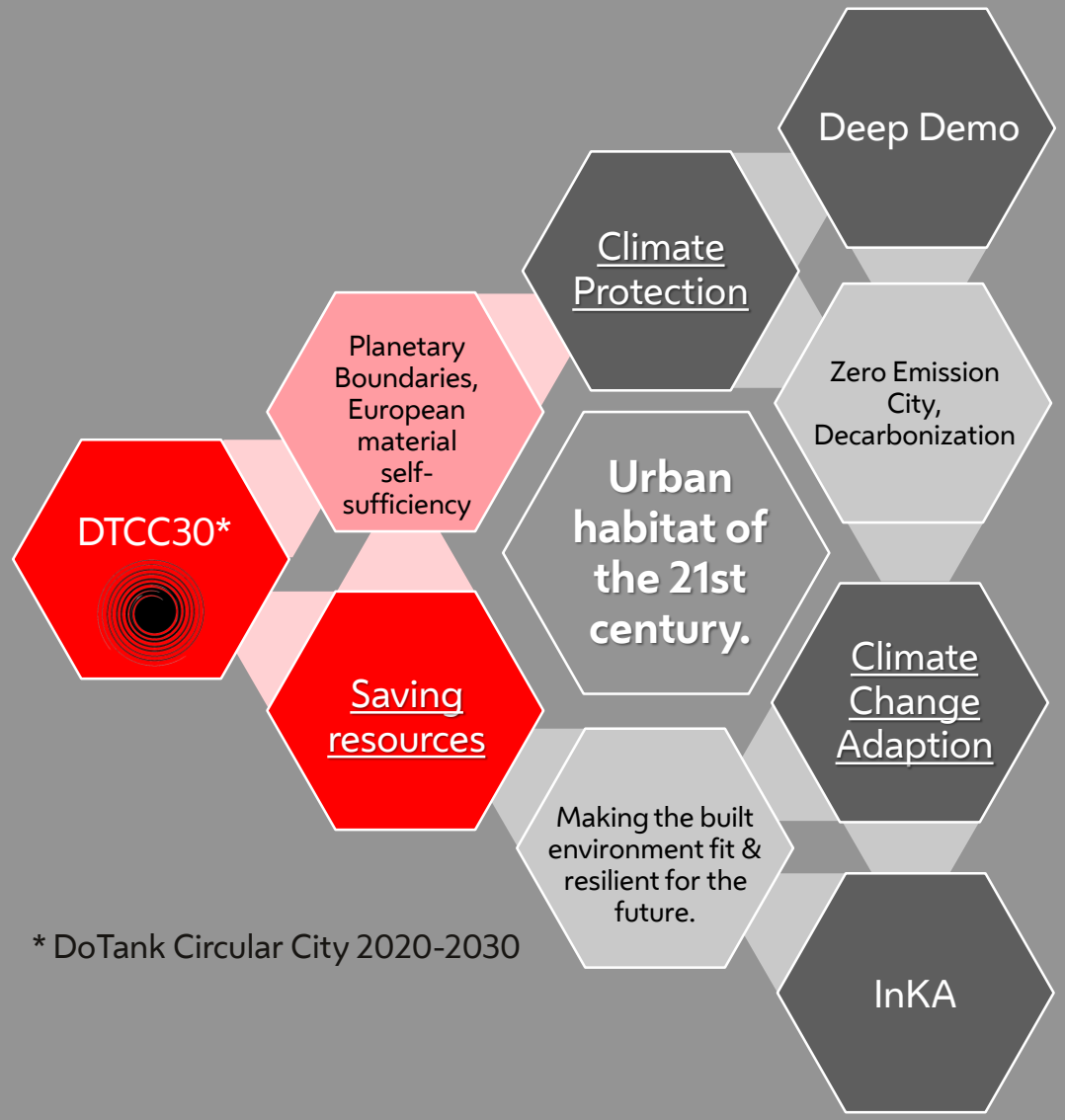
The Triumvirat Of Our Habitat.

As well as the necessary implementation of greenhouse gas reductions, lowering the consumption of raw materials is another equally important goal of the policy in order to protect our natural resources and act within planetary boundaries.



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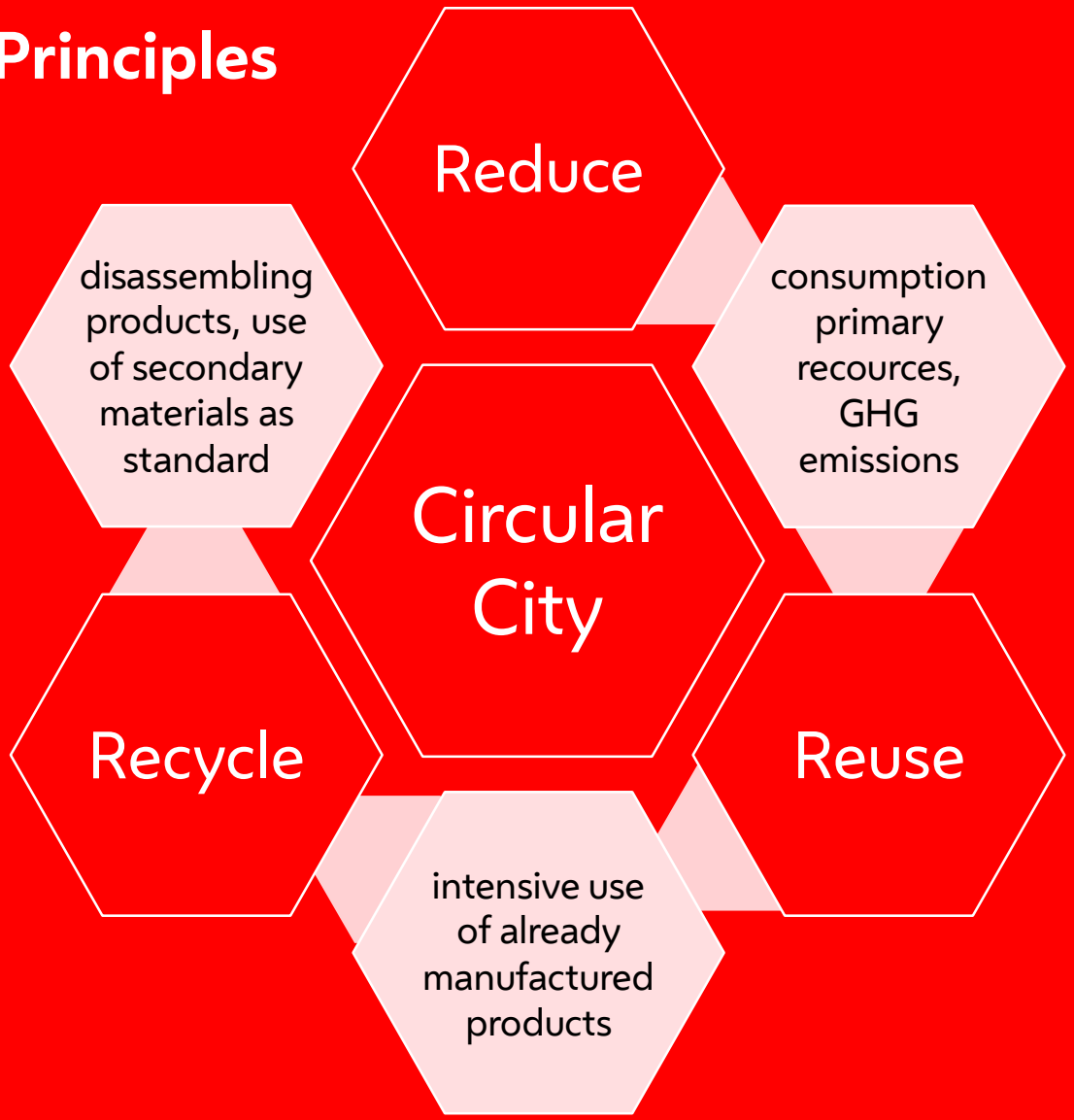
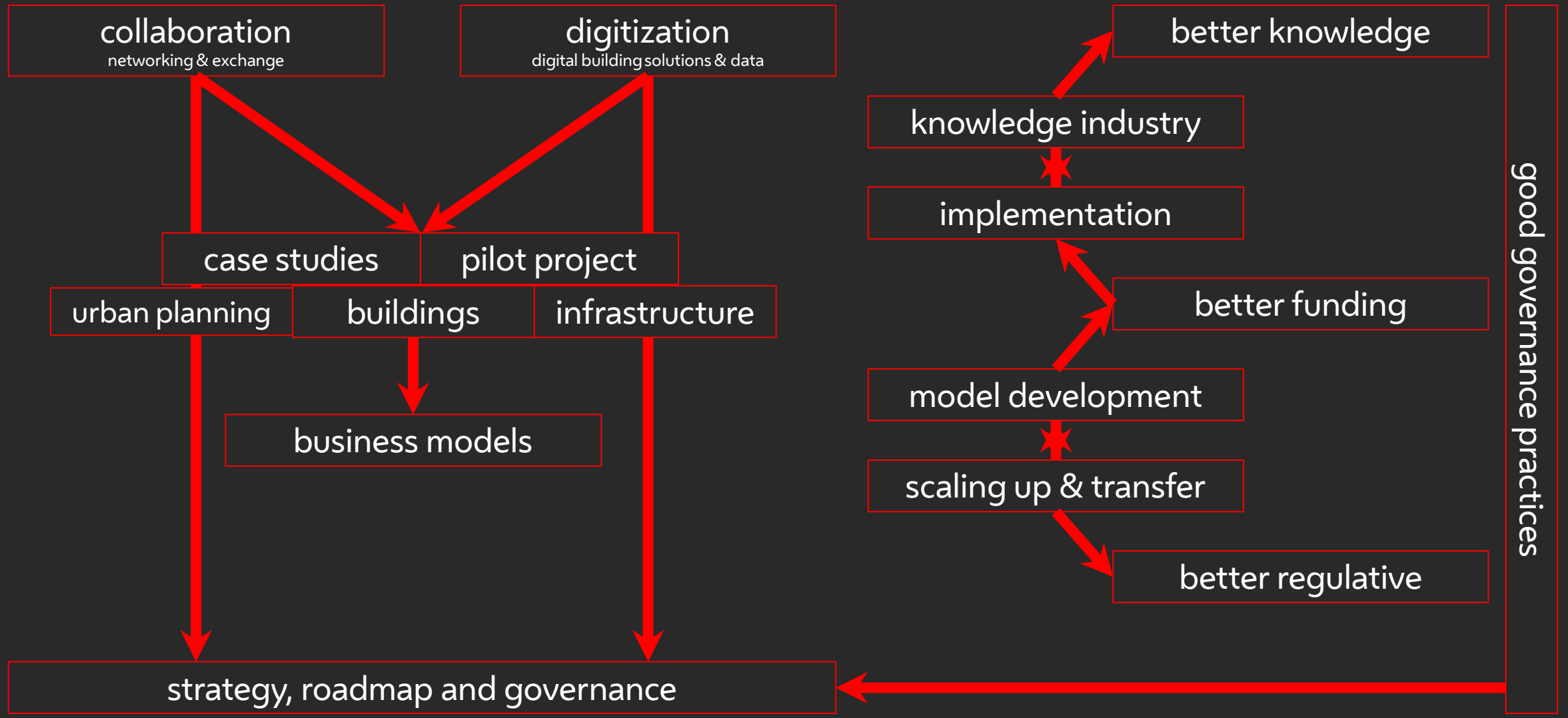
Principles



Stadt Wien



Program structure DoTank Circular City 2020-2030

"Finding ways how we can influence the market in order to get a more sustainable construction." Den Haag

Q & A

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1st Pilot Project „Recycled Concrete & Insulation Materials“

Level: structural engineering, innovative public procurement
Stage/Progress: initial, setting-up
Partner: Department for Solid Waste Management

- Which part of the building is suitable for recycled concrete? (appearance, design)
- How/in which way do we adjust our tender requirements?
- To which extend do we fulfil the updated strategic environmental audit with this pilot project?
- Comparative cost system – creating scenarios with/without recycled concrete, testing the leverage effect of public procurement

Timeline:

31-03-2020 End of conception stage, final discussion with partners/procurer

↓ final coordination with austria wirtschaftsservice (investment bank)

26-05-2020 Deadline for participation in the tender “innovative public procurement”

↓

23-06-2020 Selection committee / grant decision

↓ **01-07-2020** Project start

↓ **01-07-2021** End of Project, evaluation, Scale Up!

Stage 1: Unlearning and Change

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Findings of stage 1:

- „Unlearning and Change“ is needed to transition from linear to CE models
- Current „narrative approach“ to reducing environmental impacts
- **What are measurable environmental impact indicators?**

Defining measurable environmental impact indicators.

Setting up the calculation method.

Creating the form with respect to the strategic environmental audit.

Indicators of …

- **… direct reductions to new natural materials extraction,**
- **… direct reductions to energy use,**
- **… direct environmental improvements**

due to the adaptive reuse. As well as …

… Indicators of indirect reductions to energy use or pollution.

Ongoing activities:

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Peer reviewed and accompanied by Gillian Foster (Vienna University of Economics and Business)

See: Foster, Gillian, et.al: A review of environmental impact indicators of cultural heritage buildings: A circular economy perspective. In: Environmental Research Letters 2020 / 2020, 01, 1-27 (accepted manuscript)

A set of arguments for the use of recycled concrete and recycled insulation materials has been developed by using the experience and inspiration of the partner cities within this group.

(It is currently in German, but if there is demand, a translation can be made and shared in the next few days.)

Table of contents "Set of Arguments"

Recycled Concrete

- Definition – what is it?
- Which method can be used for producing the recycled material and subsequently the recycled concrete?
- What is the proportion of recycled gravel in the recycled concrete?
- Are there corresponding guidelines for this?
- Can I use recycled concrete to provide the same qualities as conventional concrete?

Ongoing activities:

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- For what purposes can recycled concrete of strength class C25/30 be used?
- Are there any restrictions on use?
- Is the recycled aggregate content of the concrete visible?
- Who are the suppliers of recycled concrete in Austria?
- Are there any production sites for recycled concrete near Vienna?
- Are there any projects where recycled concrete has already been used and what is the experience?
- Is the use of recycled concrete more ecological than conventional concrete?
- **How can recycled concrete be procured (tender criteria)?**
- Are there already examples of tenders with criteria for the use of recycled concrete?

A set of arguments for the use of recycled concrete and recycled insulation materials has been developed by using the experience and inspiration of the partner cities within this group.

(It is currently in German, but if there is demand, a translation can be made and shared in the next few days.)

Table of contents "Set of Arguments"

Recycled Insulation Materials

- Definition – what is it?
- How is recycled material and then recycled insulation material produced?
- Who are the suppliers of recycled insulation materials in Austria?
- For what purposes can recycled insulation materials be used?
- Are recycled insulation materials able to achieve the same qualities as conventional insulation materials?

Ongoing activities:

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- Are there projects where recycled insulation materials have been used and what is the experience?
- Are there examples of calls for tender with criteria for the use of recycled insulation materials?

Unfortunately not yet.

Compiling tender criteria by using the lessons learned

@ BBI capacity building regarding setting up innovative public procurement

Synopsis "tender criteria"

- Defining reference products with required characteristics
- For example: minimal amount/proportion of secondary material (gravel made of reused concrete)

Ongoing activities:

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- The reference product represents the ideal offer. Depending on how close the bidder approaches the reference product, the better the offer is ranked.
- It is envisaged that the offers must reach at least 70% of the reference product. (still under discussion)

Smarter Together 2.0

Synopsis

In order to prove that the circular economy is a cross-sectional matter, the proposed neighborhood will demonstrate various activities at different scales and phases of the life cycle:

- Value-oriented deconstruction, if a building is going to be dismantled.
- Implementation of the integral planning approach for renovations.

Stage 2: Scaling up on neighborhood level

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- Using the already defined innovative tender criteria for the use of secondary materials
- Visualization of the topic with an accompanying exhibition of CE activities for the citizens with the help of a "Re:USe Pop Up Container". This container is made of materials extracted from the buildings in the neighborhood. “Social Urban Mining”

DoTank Circular City 2020 - 2030 (DTCC30) is an activity of the Executive Group for Construction and Technology, a cooperation between

Dr. Anna-Vera Deinhammer anna-vera.deinhammer@wien.gv.at
Claudia Schrenk, Bsc. claudia.schrenk@wien.gv.at

under the responsibility of the
Competence Centre – building research, building regulations, engineering services, standards (KBI)

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Stadt Wien