

TOTEM [Tool to **O**ptimise the **T**otal **E**nvironmental impact of **M**aterials **]** WEBINAIRE DU CONSEIL FÉDÉRAL DU DÉVELOPPEMENT DURABLE (CFDD)

CONSTRUCTION AND RENOVATION OF BUILDINGS : HOW TO STIMULATE THE CIRCULAR ECONOMY ?

1

2020 11 23

Magali Deproost SERVICE PUBLIC DE WALLONIE Direction du développement durable

magali.deproost@spw.wallonie.be





CONSTRUCTION SECTOR IN EUROPE ...





CONSTRUCTION SECTOR: IMPACT ON ENVIRONMENT

Maison neuve 4 façades





CONSTRUCTION SECTOR: IMPACT ON ENVIRONMENT

\rightarrow Often heard questions:

- └ What is the environmental impact of buildings?
- └ Which materials are (not) sustainable?
- \hdots How to make well-informed material choices?

∟ ..

➔ Request for

- / Objectivity and transparency
- / 1 common approach for Belgium





GENERAL AMBITIONS



National = 3 REGIONS + FEDERAL



CONSISTENT WITH THE EUROPEAN FRAMEWORK



RENOVATION – REVERSIBILITY - CIRCULARITY







AMBITIONS OF THE TOOL

Q ANALYSIS of the impact of materials in buildings

OPTIMISATION of a design : Senvironmental impacts







V TOTEM is...

 \rightarrow an <u>environmental assessment</u> tool for <u>buildings</u>

X TOTEM is NOT...

- \rightarrow a classification of ecological materials
- \rightarrow a tool for 'sustainable' buildings







CREATE | EVALUATE | INNOVATE

WHAT IS CALCULATED ?

→ Currently in TOTEM: impact assessment of materials

- ${\mbox{\sc L}}$ Based on LCA
- ightarrow 1 life cycle (60 years)
- ∟ Aligned with EN 15804+A1





12

LCA IN A BUILDING CONTEXT

$\rightarrow\,$ EN 15804 and EN 15978



TODAY in totem

CRADLE TO GRAVE



LCA IN A BUILDING CONTEXT

$\rightarrow\,$ EN 15804 and EN 15978

ALL ASPECTS OF CIRCULARITY material \Leftrightarrow element \Leftrightarrow building \Leftrightarrow district



LINK WITH CIRCULARITY?

- → Currently in TOTEM: impact assessment of materials
 - ∟ Based on LCA
 - ∟ 1 life cycle (60 years)
 - ∟ Aligned with EN 15804+A1
- → Future in TOTEM: inclusion of reversible design & potential for recycling and reuse in a next life cycle
 - ∟ First: qualitative approach
 - Later: **quantitative** approach, calculation with Module D
 - → Still "under construction"



tetem

CREATE | EVALUATE | INNOVATE

LINK WITH CIRCULARITY?

/!\ Under construction

tatem

CREATE | EVALUATE | INNOVATE

- Qualitative evaluation of reversibility potential of the connection:
 - ∟ Label for reversibility
 - └ 4 additional criteria (icons)
 - / Robustness
 - / Simplicity of disassembly
 - / Speed of disassembly
 - / Ease of manipulation





 \rightarrow Extension LIBRARY

 \rightarrow Link ENERGY CALCULATION

→ Extension methodology towards CIRCULARITY

totem

INNOVATE

CREATE | EVALUATE

→ Link with BIM (building information modelling)











THANK YOU FOR YOUR ATTENTION... QUESTIONS ?



MAGALI DEPROOST

SERVICE PUBLIC DE WALLONIE DÉPARTEMENT DU DÉVELOPPEMENT DURABLE magali.deproost@spw.wallonie.be



OVAM Afdeling afvalstoffen- & Materialenbeleid



BRUXELLES ENVIRONNEMENT DIVISION ENERGIE

