A new evaluation method for the end-of-life phase of buildings

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BAMB BUILDINGAS MATERIAL BANKS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642384.

Driving question and objectives

How should the material composition of a building be designed so that it leaves
- as many recyclables as possible and
- as little problematic waste as possible

at the end of its life time?

Basic conditions

- appropriate as evaluation method for BNB system
- integrable in the existing LCA tool (“Bauteileditor”)
- based on the building elements approach

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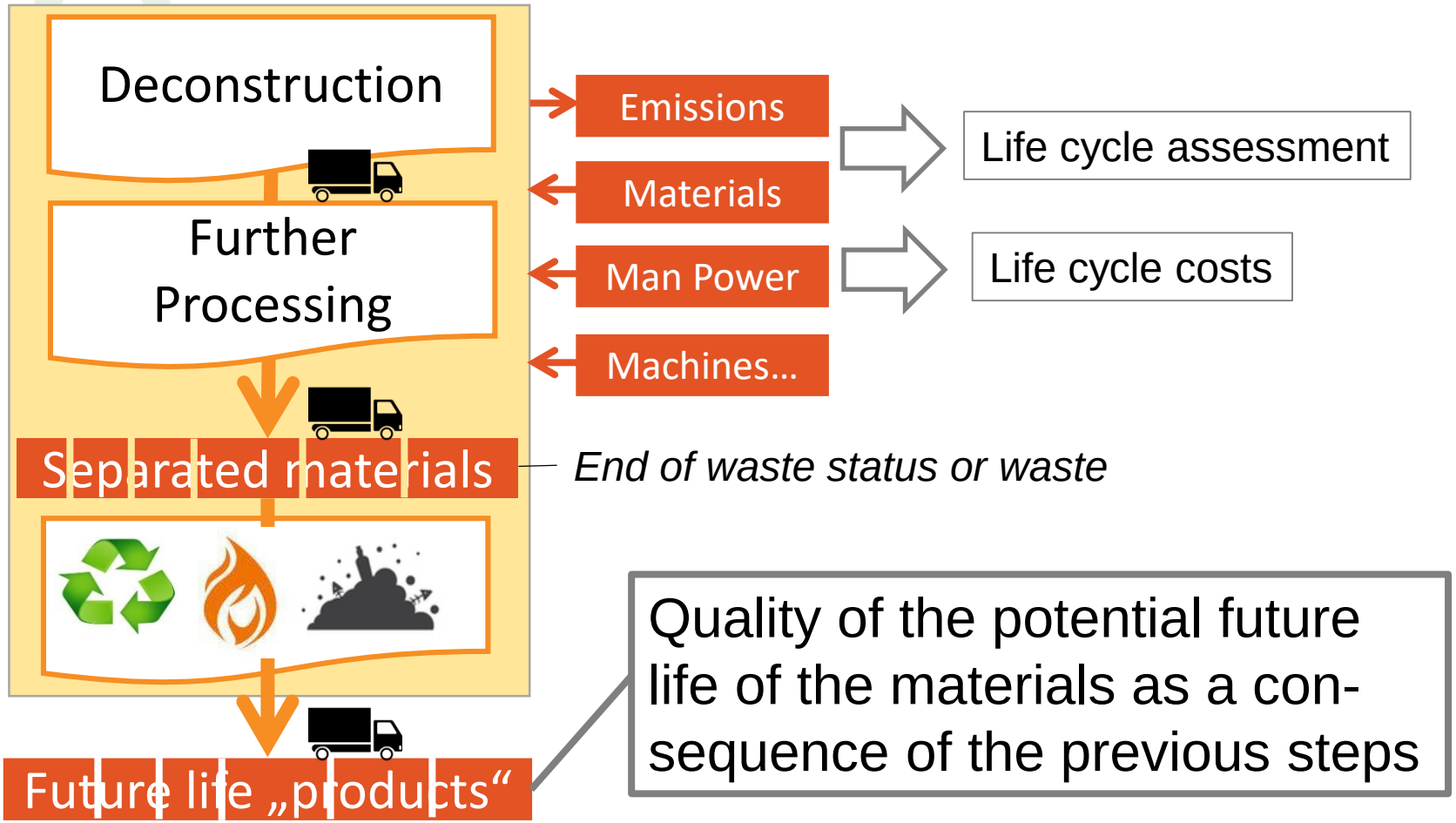
Qualitative assessment



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Grading of material output

1	2	3	4	5	6
Reuse	no preparation methods for reuse available				
Recycling				**no recycling**	
Closed loop (CL)	RC+	RC-	OU	noRec	
	Combustion				
	Fuel	EnRec+	EnRec-	ThDisp+	ThDisp-
				Landfill	
				Landfill	GFO

RC … Recycling OU … Other use
Fuel … Derived fuel EnRec … Energy recovery ThDisp … Thermal disposal
Landfill … class I, II and III GFO … Gypsum, Fibre, Organic

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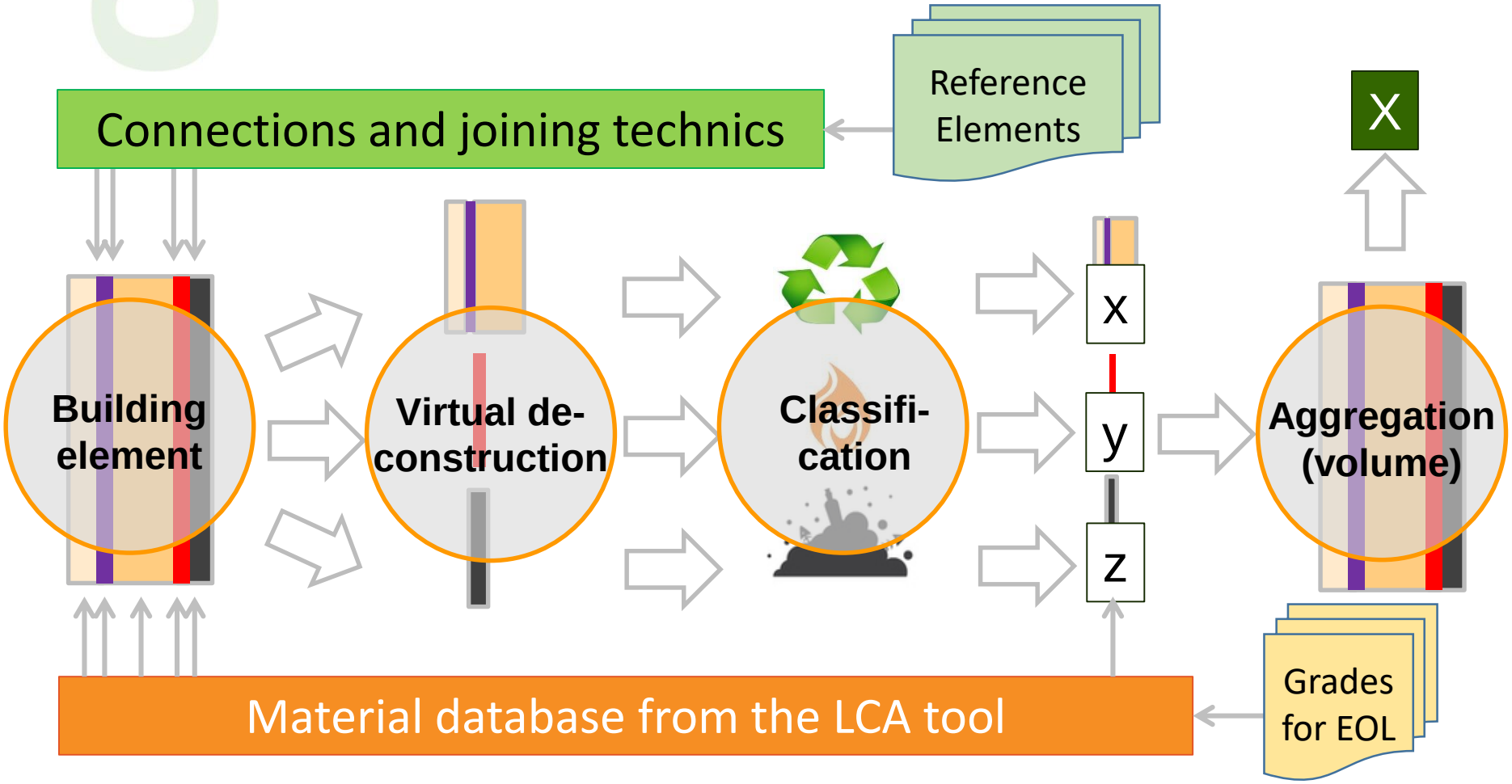
Procedure



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Technology factor

Technology description	Factor
Developed technology, but is usually not practiced in Germany yet due to lack of interest. *Example:* Separation of plaster from EPS in ETICS	**0,75**
Technology ready for the market, but not practiced widely in Germany yet; maybe used in other countries *Example:* Reclaiming of post-consumer mineralwool	**0,5**
Technology is in active development and tested on a small scale. *Example:* Regaining polystyrene from EPS (w/o HBCD)	**0,25**
The technology will lead to carryover of pollutants **Examples: Materials containing lead, SVHC**	**0**

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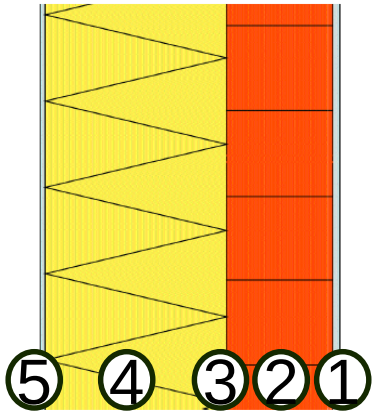
Example: Brick



① Lime cement plaster
② Brick (25 cm)
③ Adhesive, Dowel
④ EPS-F (32 cm)
⑤ Adhesive, Plaster

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Scenarios and grade for the brick

Present scenario	Grade
Brick, Mortar, Plaster, polluted with ETICS	5

Future scenario	Grade
Brick, Residues of Mortar & Plaster	3
Mortar, Plaster, Res of Brick and EPS	5

3,2

TF = 0,75

Total

3,7

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Conclusions and outlook

- Methodology is transparent, comprehensible and delivers the expected results.
  - Next steps (SWD 10.08.17.7–18.18)
    - Fine adjustment with stakeholders
    - Application to different buildings
    - Work out a scale on the building level for the assessment
- EOL-scenarios shall be used to improve the scenarios for LCA and LCC
- Shall encourage development from state of the art to front runner buildings

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