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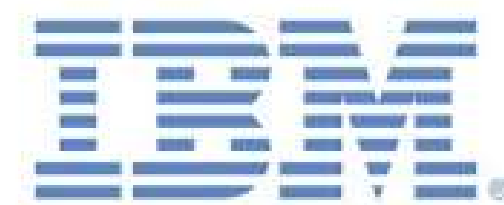
Buildings As Material Banks *Edifícios como Banco de Materials*

Ana Quintas BRE

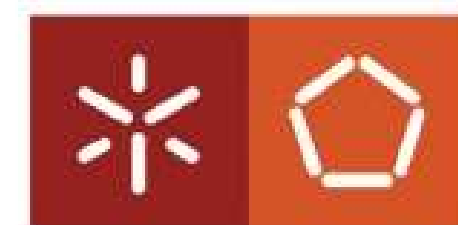
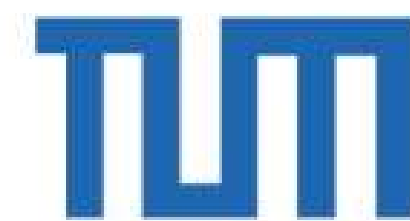
Ana Quintas | BRE



BUILDINGS AS MATERIALS BANKS – EU H2020 PROJECT



UNIVERSITEIT TWENTE.



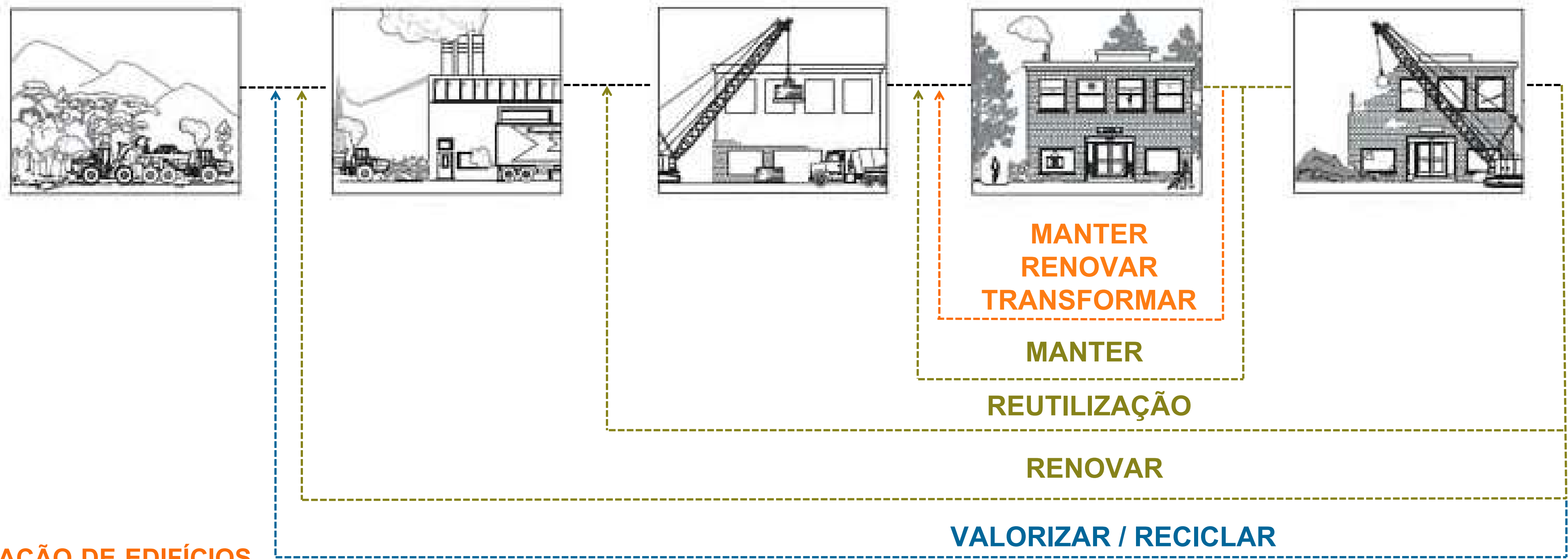
Universidade do Minho



MUDANDO DE UM AMBIENTE CONSTRUÍDO ESTÁTICO E LINEAR

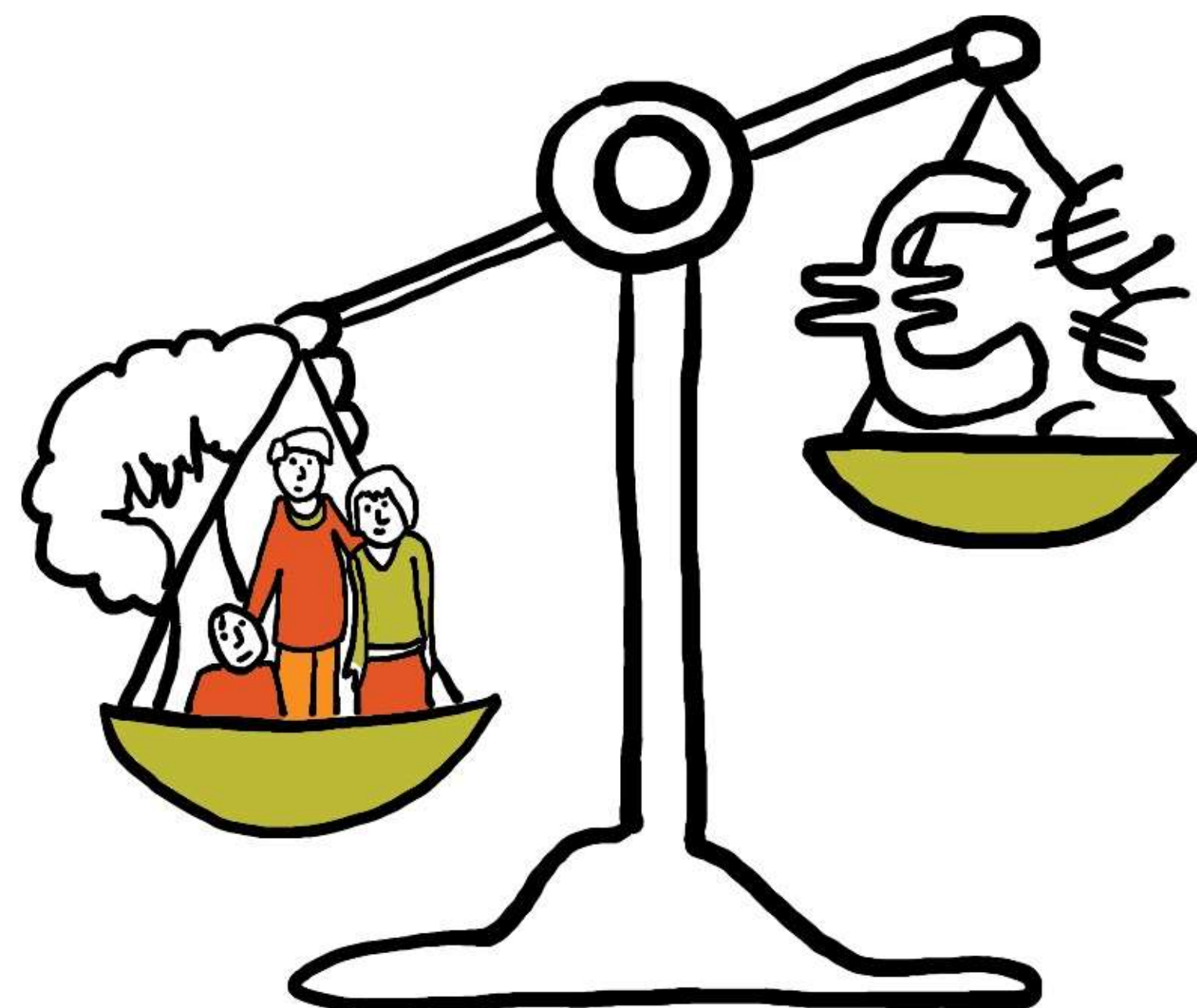
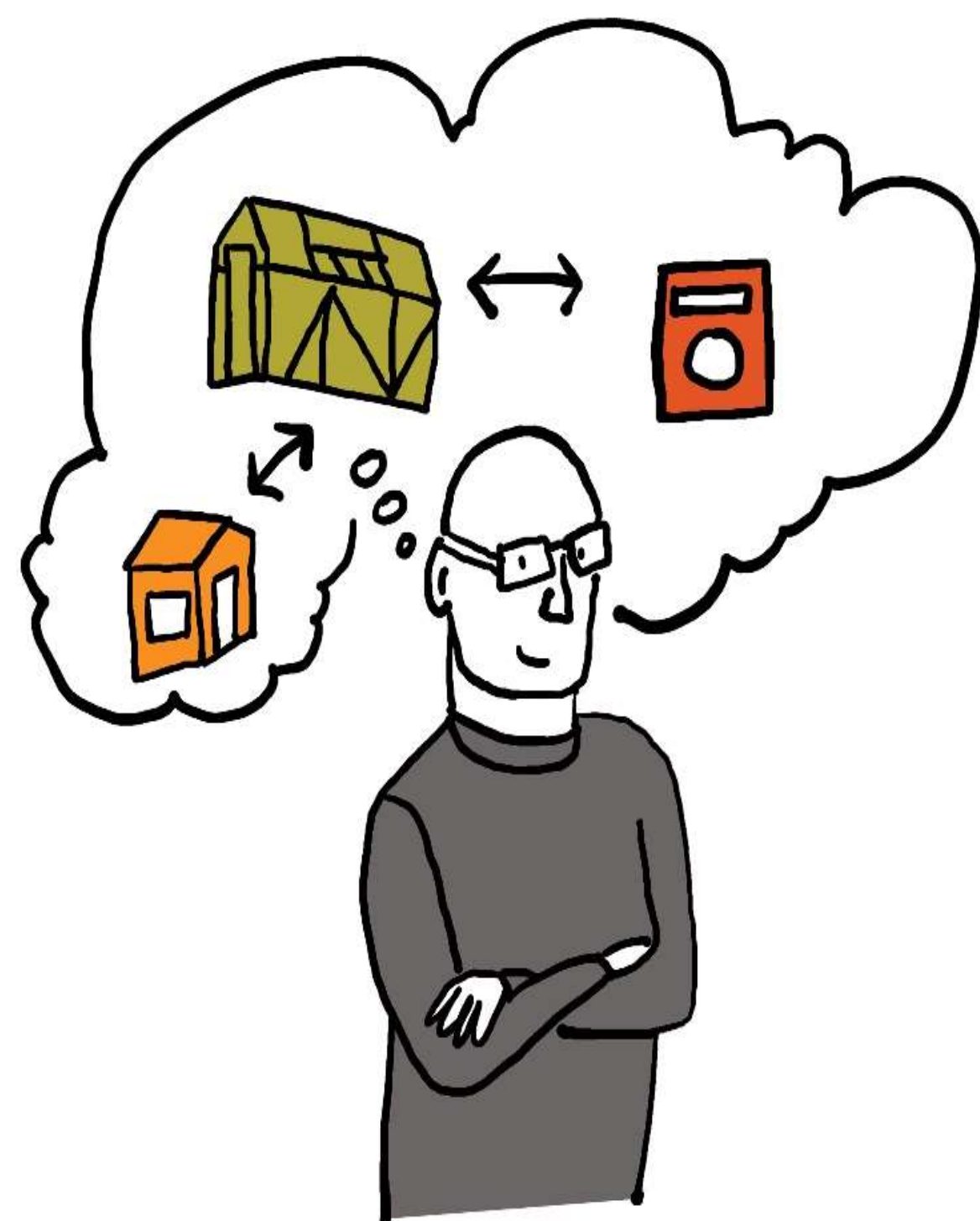


... RUMO A UM AMBIENTE CONSTRUÍDO CIRCULAR E DINÂMICO

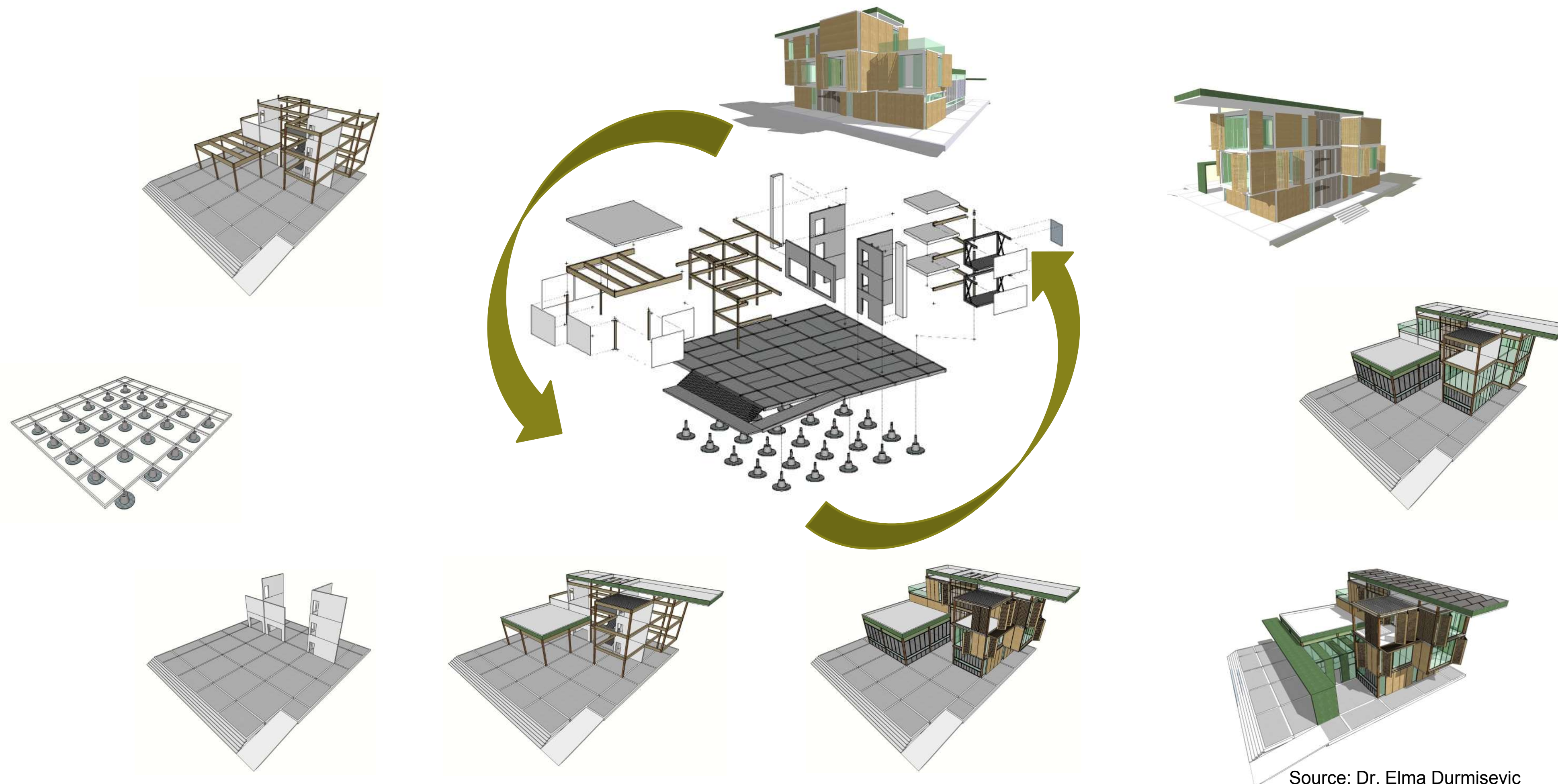


- **REUTILIZAÇÃO DE EDIFÍCIOS**
- **REUTILIZAÇÃO DE PRODUTOS & SISTEMAS DE CONSTRUÇÃO**
- **REUTILIZAÇÃO DE MATERIAIS**

APOIAR MUDANÇAS SISTÊMICAS



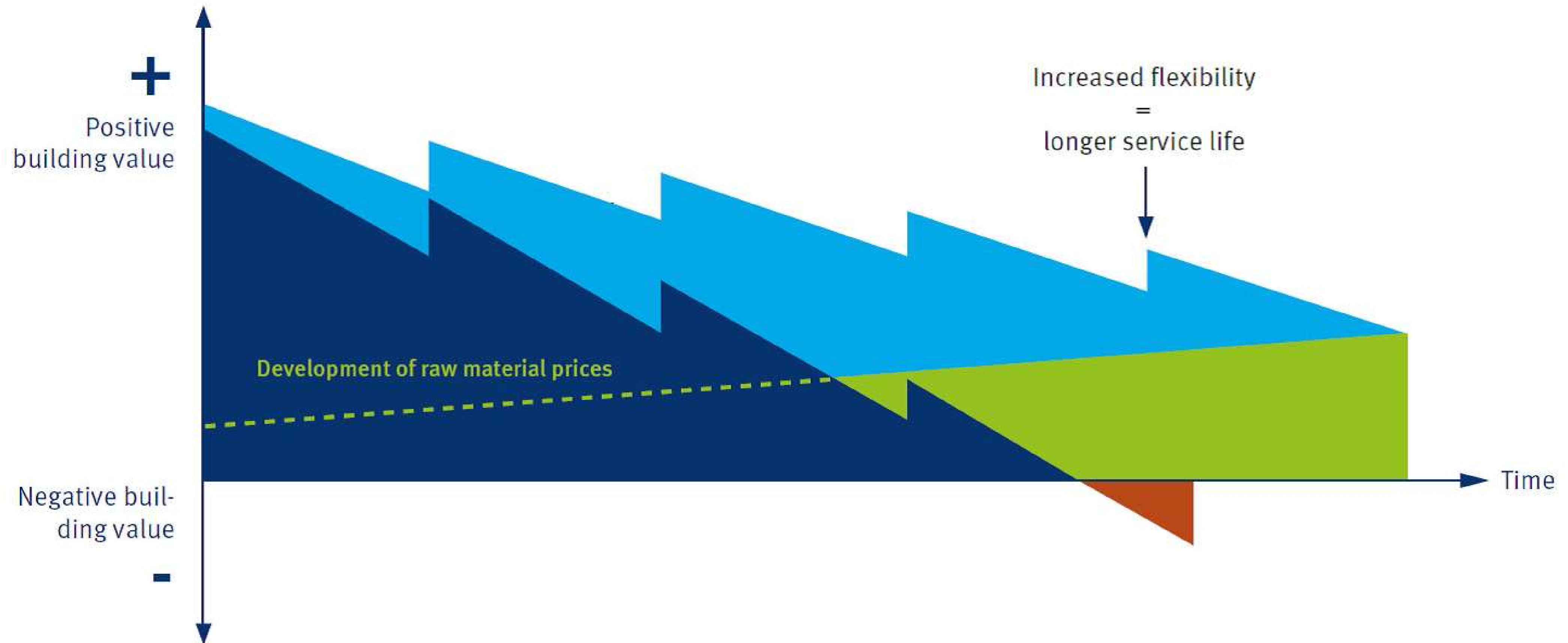
MUDANÇA NA CULTURA DE DESIGN/PROJETO



Source: Dr. Elma Durmisevic



MUDANÇA NA DEFINIÇÃO DE VALOR

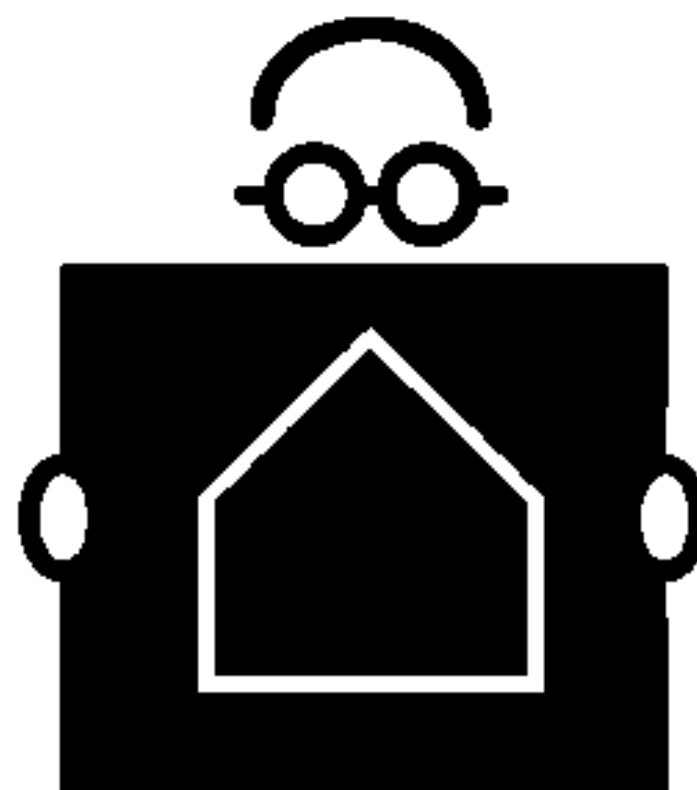


Source: Drees & Sommer – BAMB
August 2017

MUDANÇA NA COLABORAÇÃO ENTRE TODOS OS ATORES



Created by Wilson Joseph from Noun Project



Created by Joel Burke from Noun Project



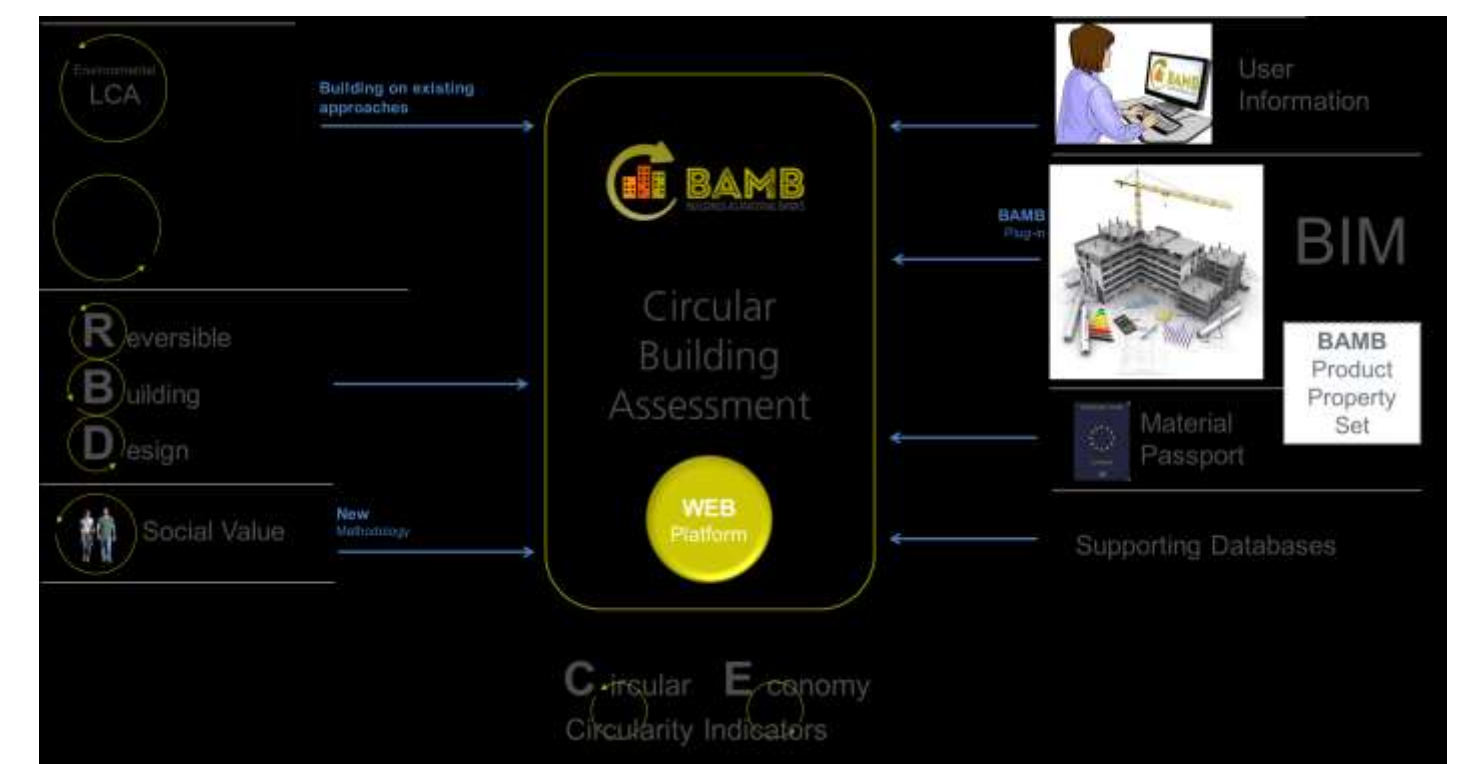
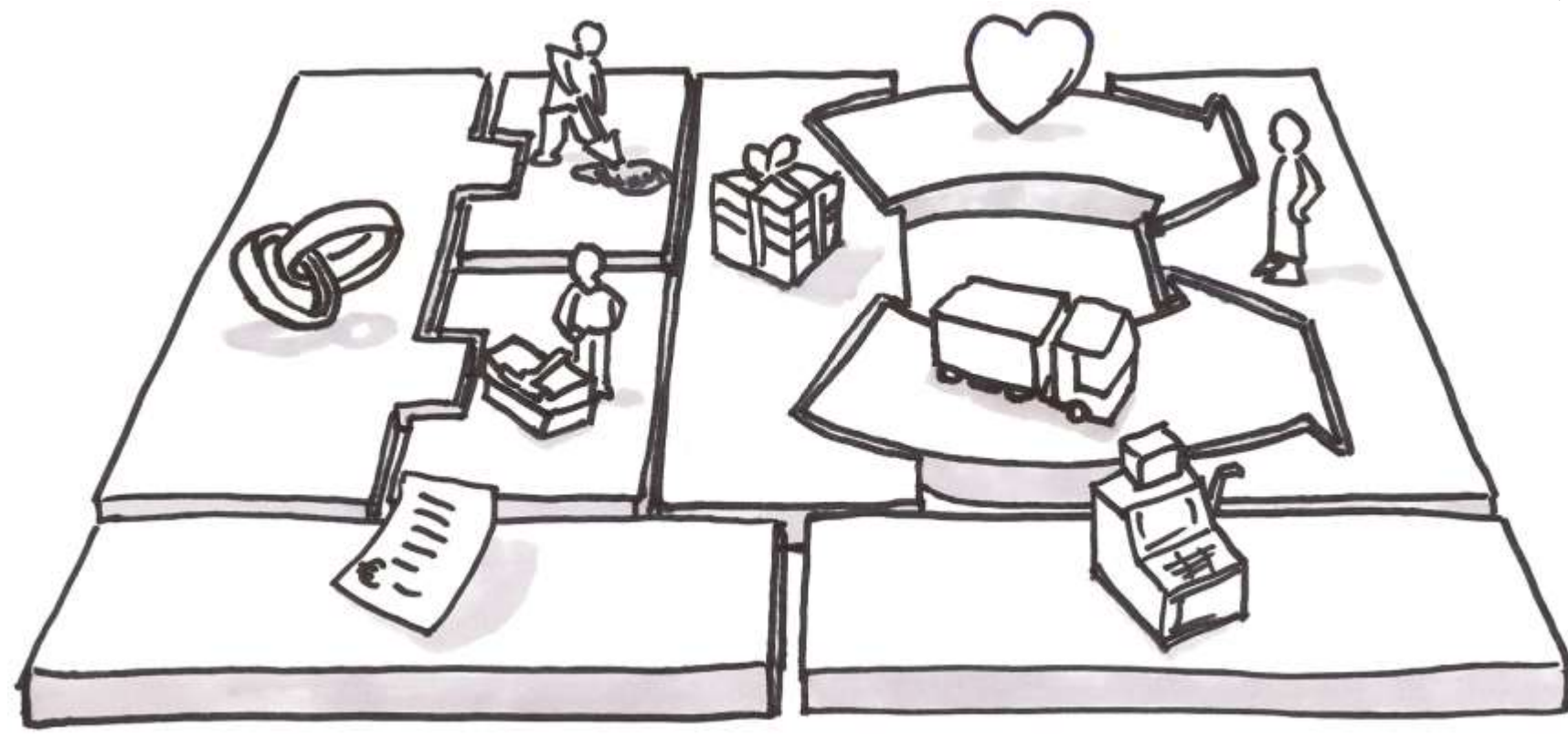
Created by Vector Market from Noun Project



Created by Gregor Črašnar from Noun Project



Created by Wilson Joseph from Noun Project



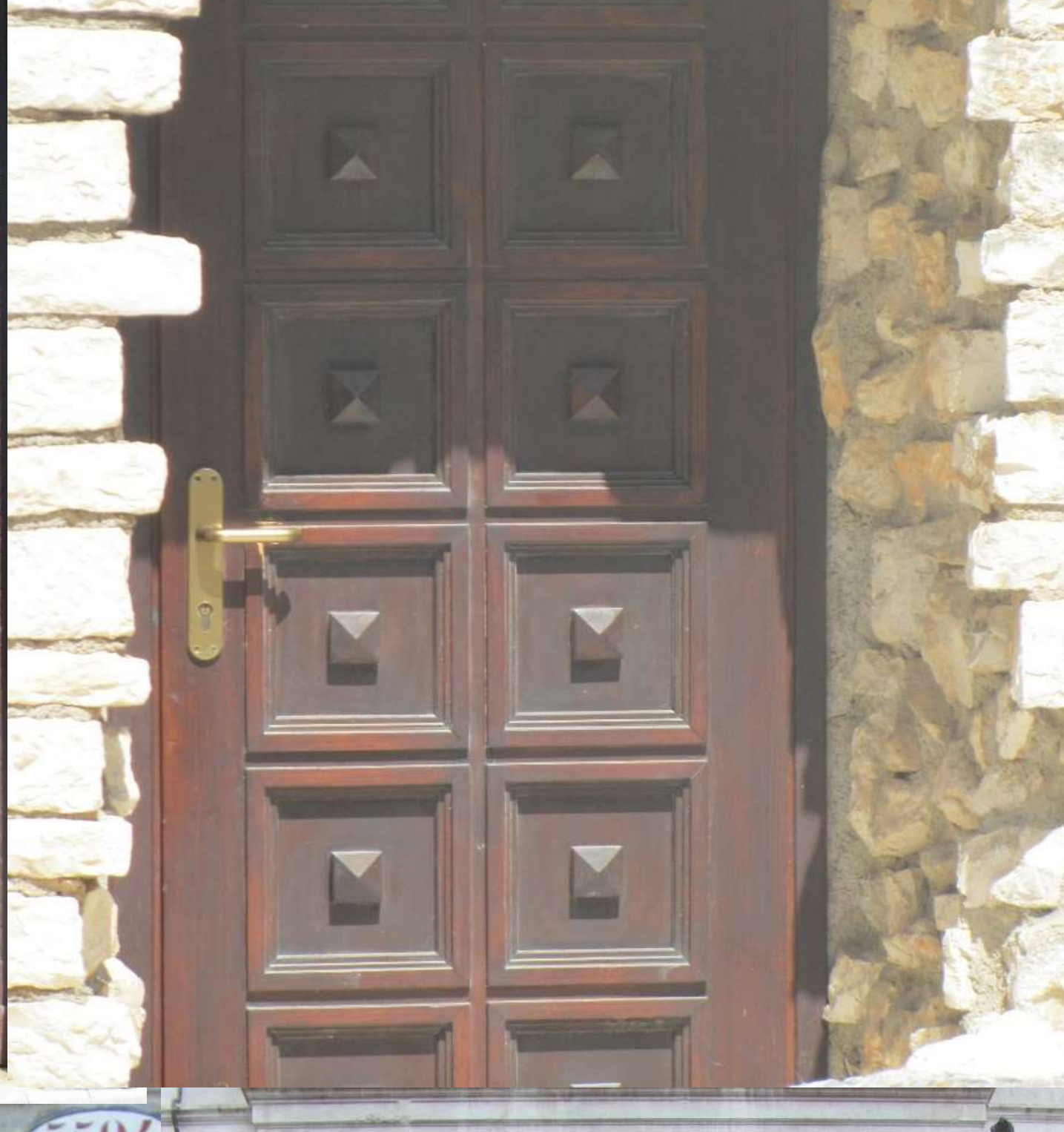


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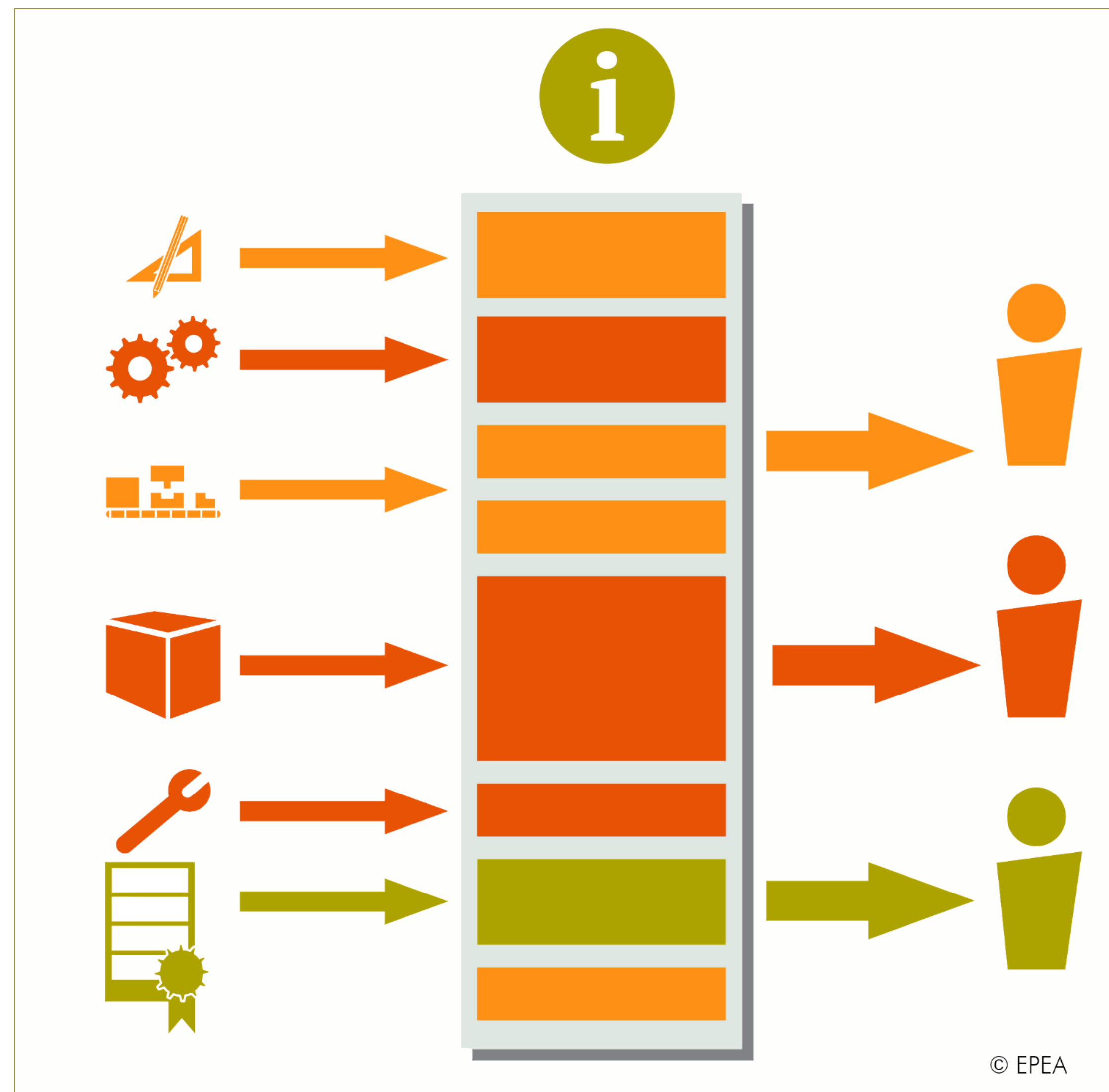


Passaportes de Materials





O QUE É?





+ Add Product

Products

Name ↓	Brand Name	Manufacturer	GTIN/EAN
Accoya® Wood	Accsys Technologies	Accsys Technologies	Unknown
Acrovyn® 4000 Wall Protection	Acrovyn® 4000	Construction Specialties Inc.	Unknown
airmaster	Desso	Desso	Unknown
Aluminium Door Furniture	AMI BV	AMI	Unknown
Axia 2.0 Office Chair	BMA Ergonomics	Flokk	
Balance Desk	Ahrend	Ahrend	Unknown
BB Light LEDpipe EVO	EVO/ BB Light Concepts	BB Light	Unknown
BERA GRAVEL FIX® PRO	Bera B.V.	Bera B.V. (NL office)	12345
BioFoam Biodegradable EPS	BioFoam	Synbra Technologies BV	unknown
Birch-multiplex board	FaberExposize	FaberExposize	Unknown

Product: HeartFelt® Ceiling System

Identifier Value for User **Installation** Residues Potentials Materials health

Components

Installation instructions:

yes

[view attachment](#)

Maintenance instruction and/or maintenance schedule

yes

[view attachment](#)

Defined use period

> 25 years

Period of available spare parts (years)

> 25 years



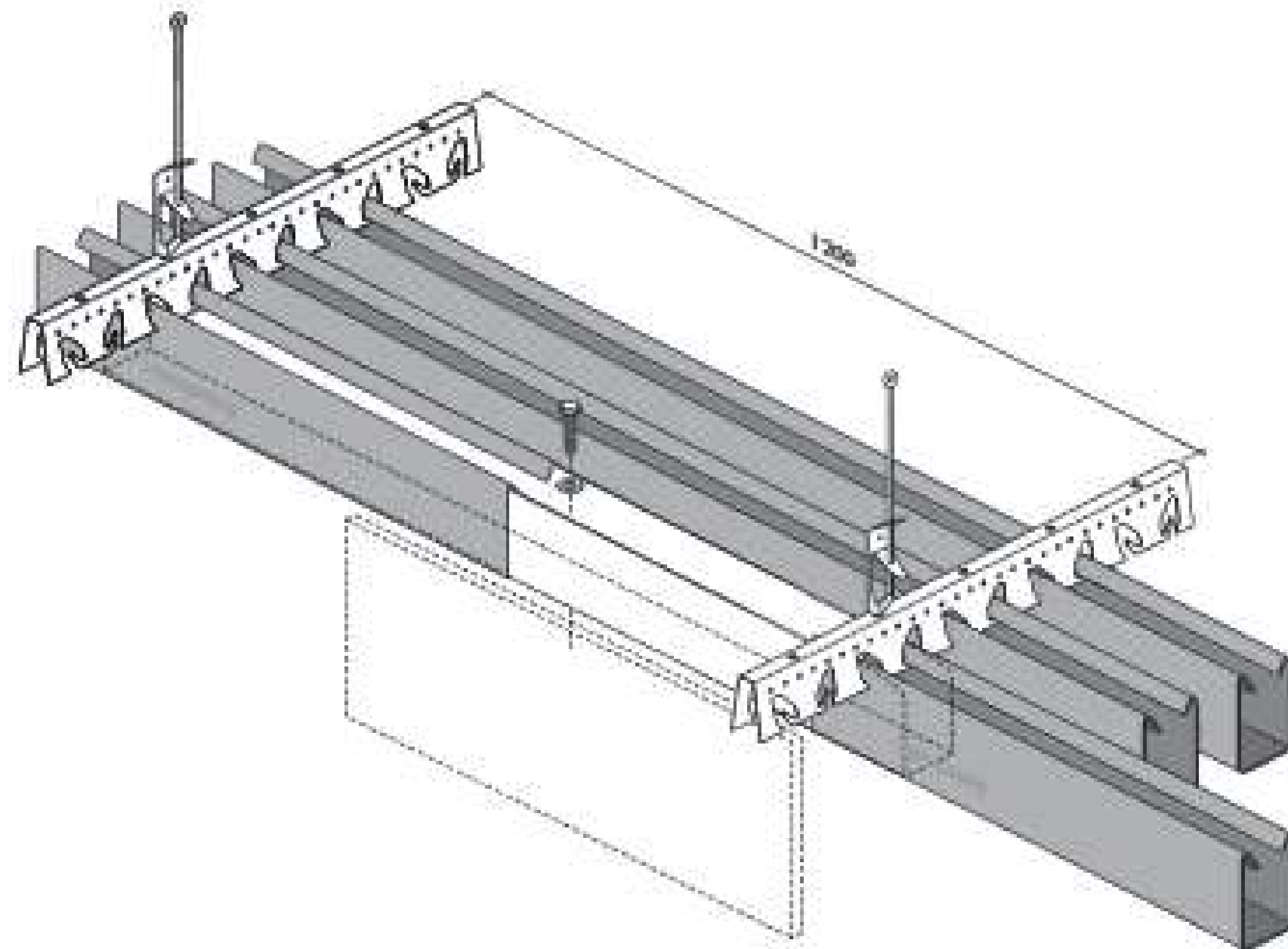
 Edit Product

 Create copy

 Mark As Old

 Create Instance

6 No reinforcements



Product complexity

- Basic Product comprised of components & materials that can be mostly disassembled by unskilled workers using tools. However, might include coatings or ingredients requiring further reprocessing. e.g. steel reinforcing, steel beams, framing wood.



MÓDULOS EXPERIMENTAIS REVERSÍVEIS

6-8 March – ecobuild London

13-27 March – BRE Innovation Park
Watford

17-19 April – Building Holland
Amsterdam

**October to December – Kamp C
Westerlo, Belgium**

<https://passports.bamb2020.eu/#!/login>

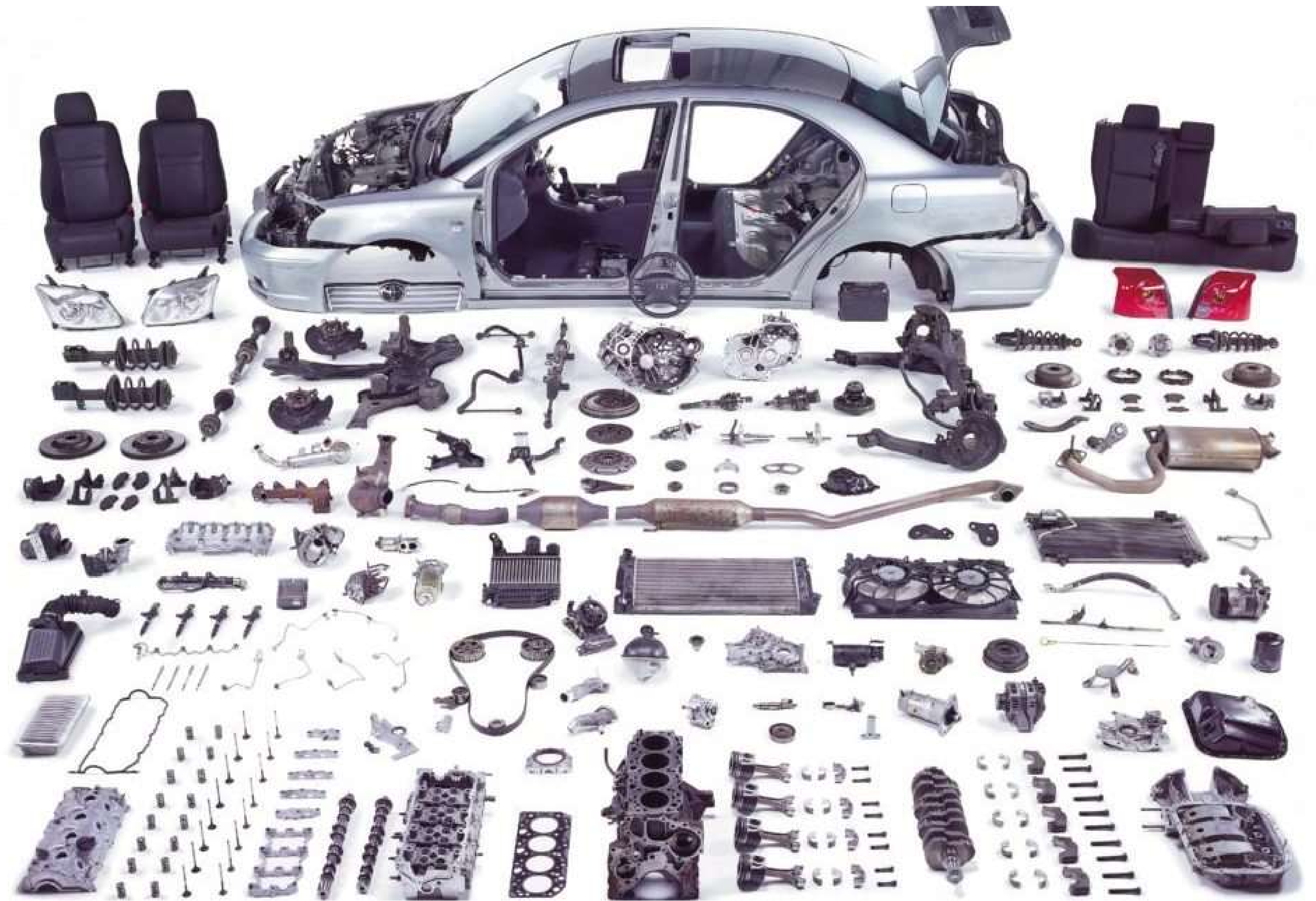
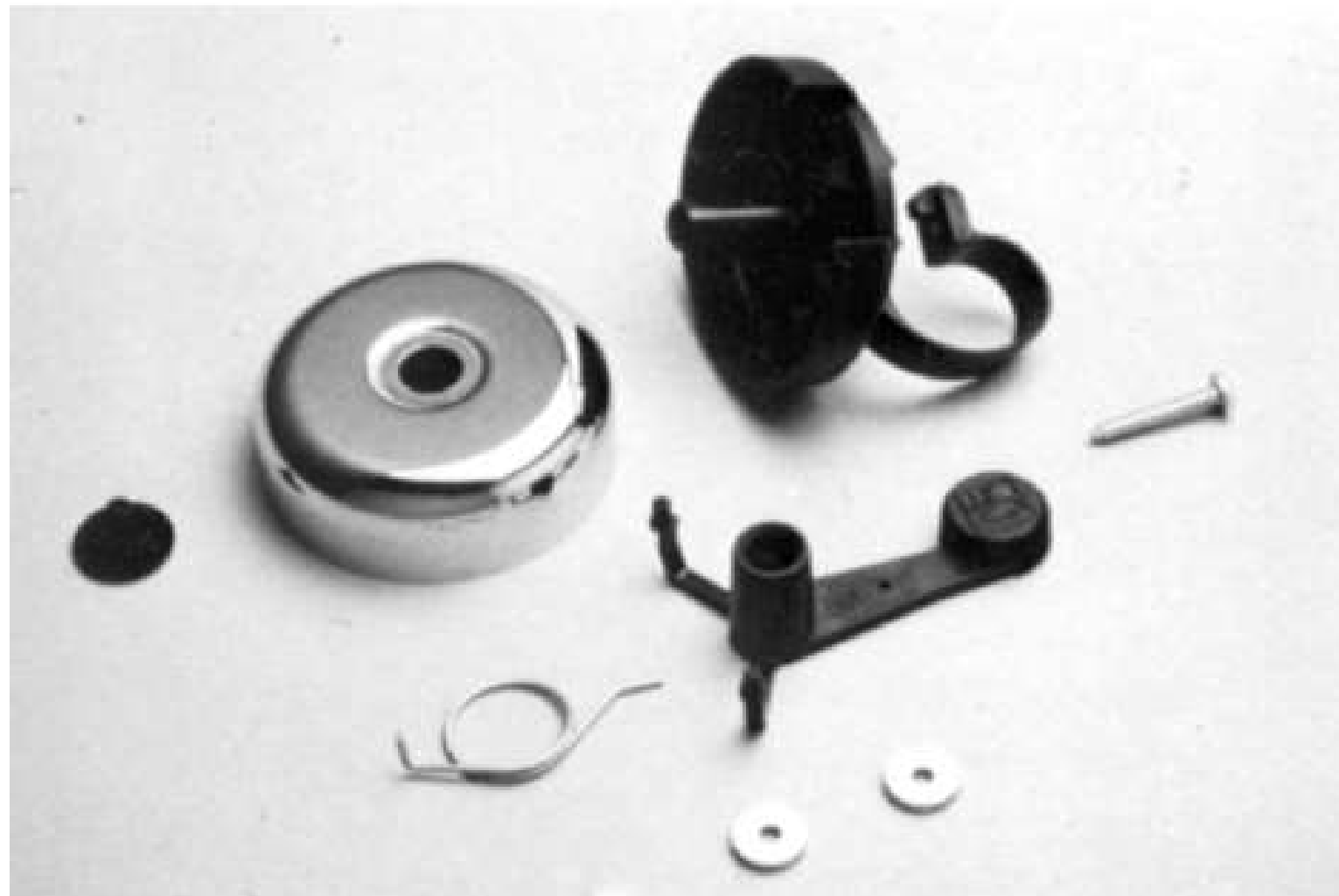
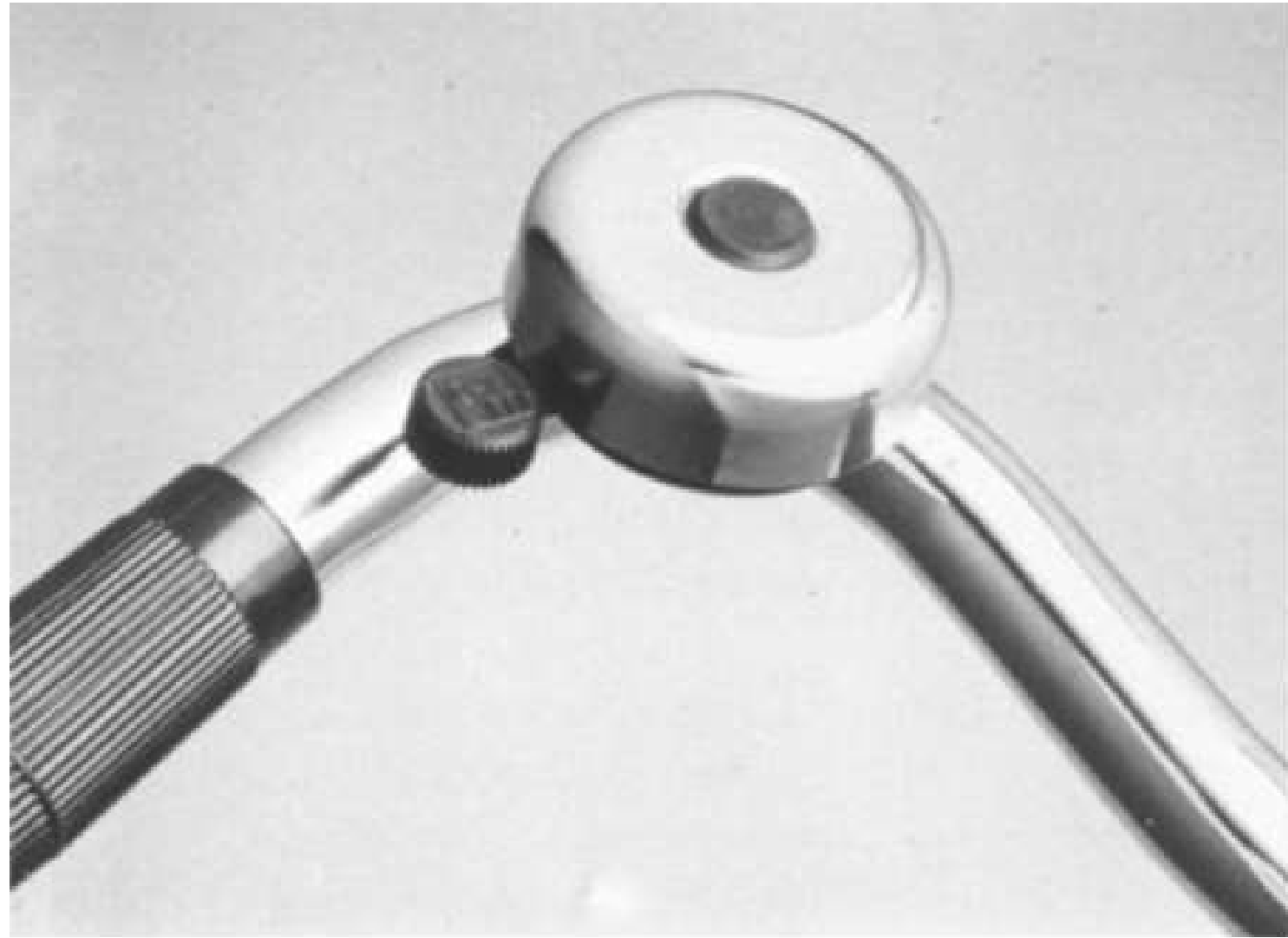


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Projetar/Design para a Reversibilidade





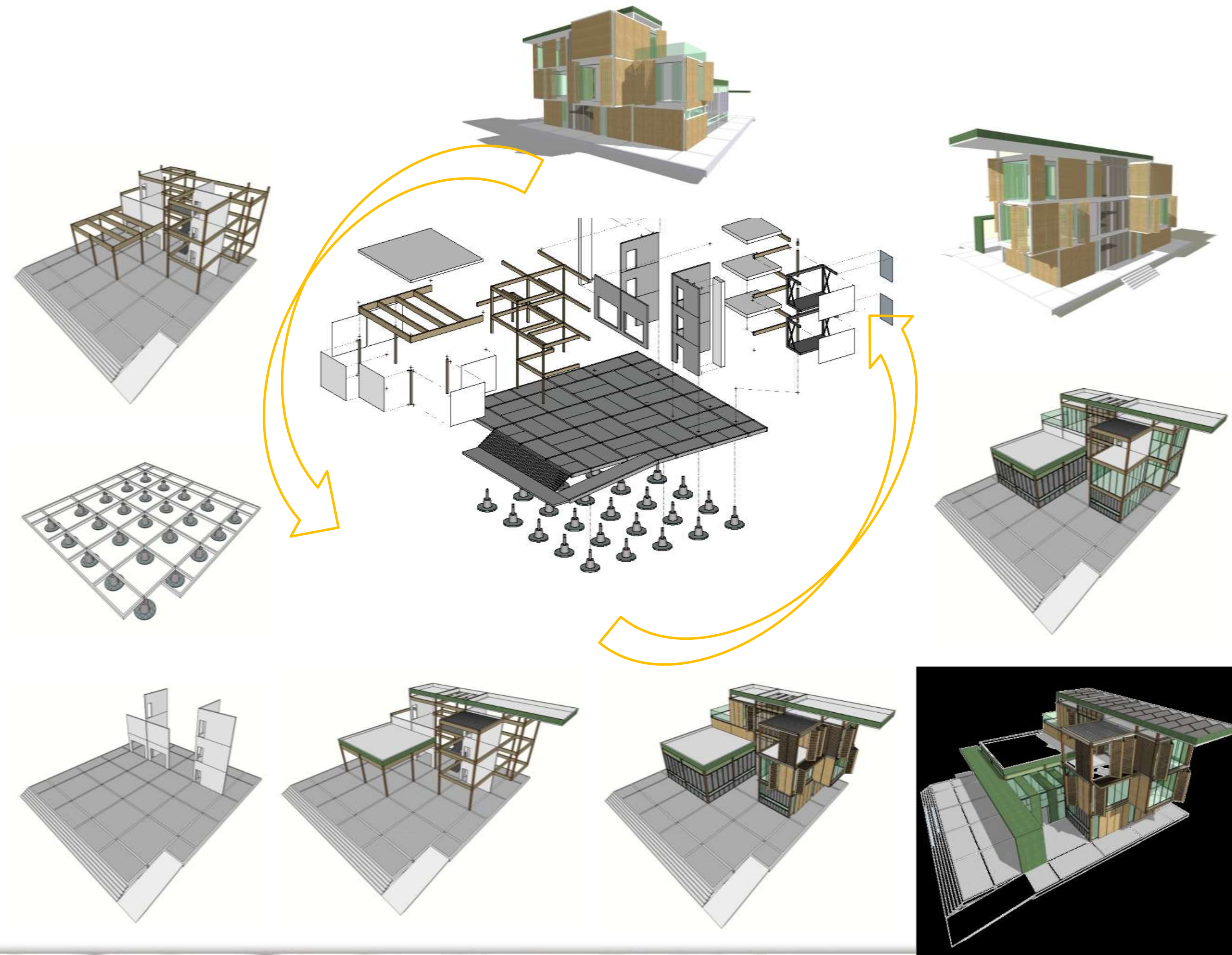


Value degradation of buildings
and building materials

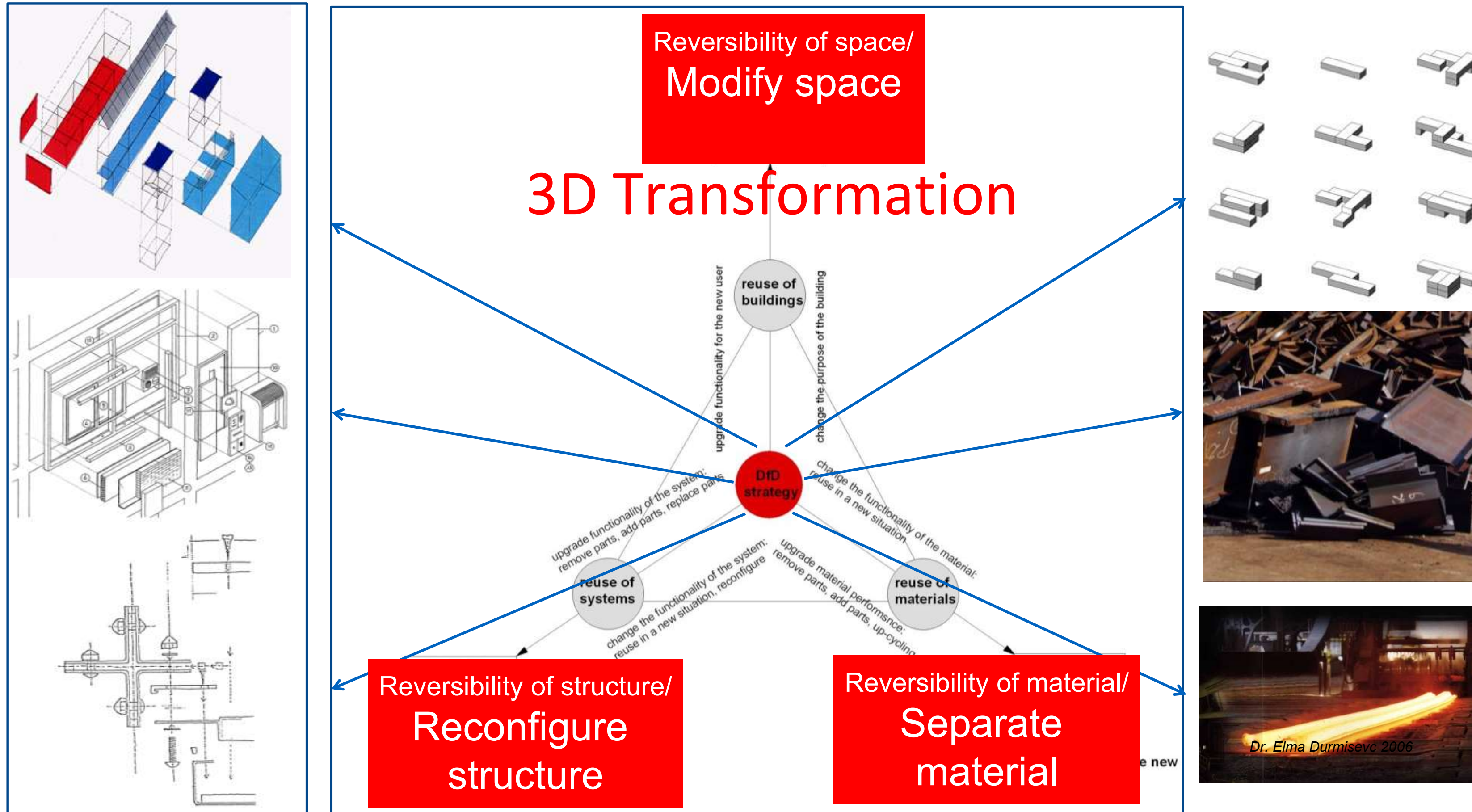


REVERSIBLE BUILDING DESIGN

Tools and Protocols



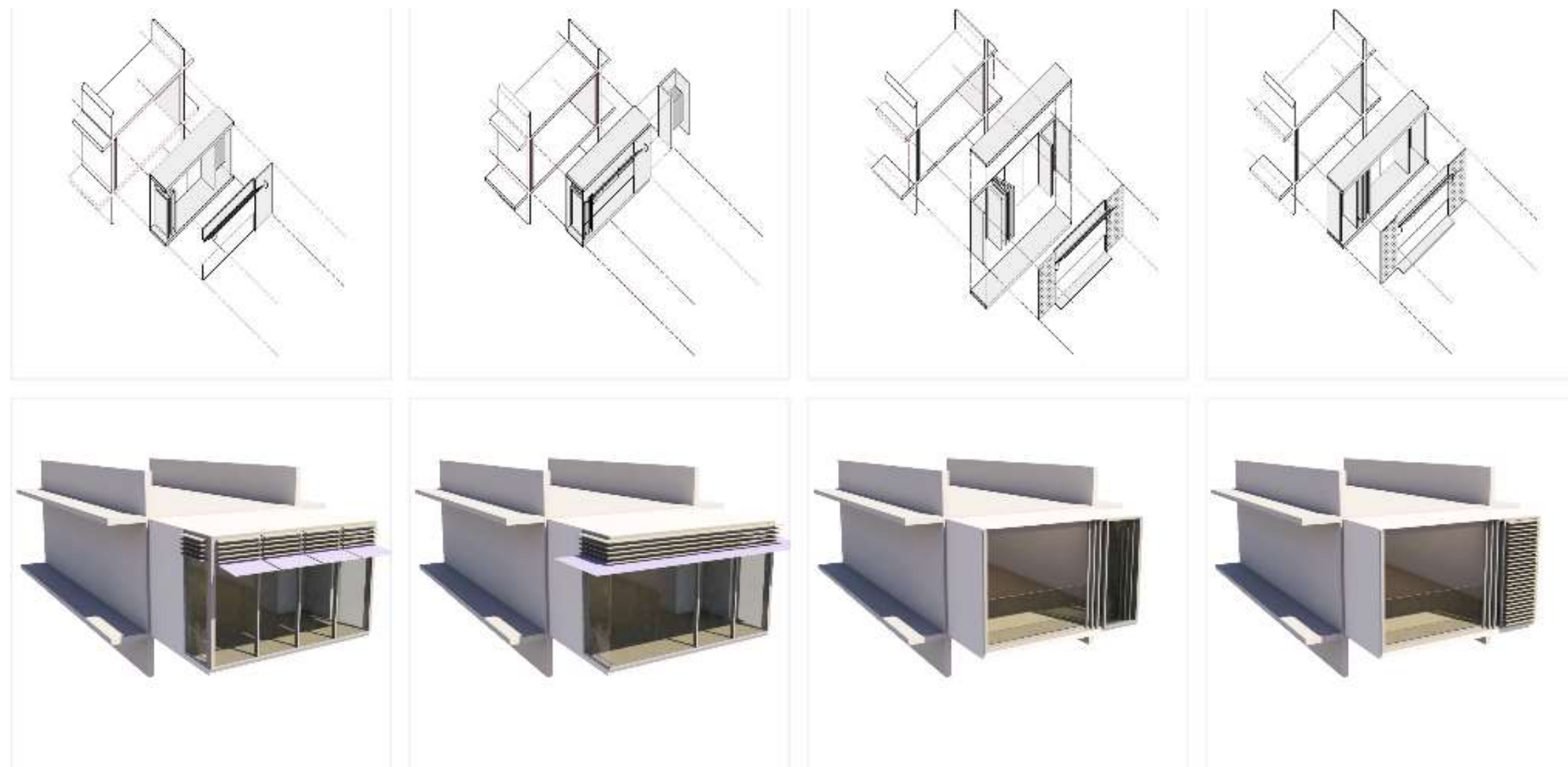
Criação de valor ao longo do tempo, através de múltiplas dimensões de transformações



REVERSIBLE BUILDING DESIGN

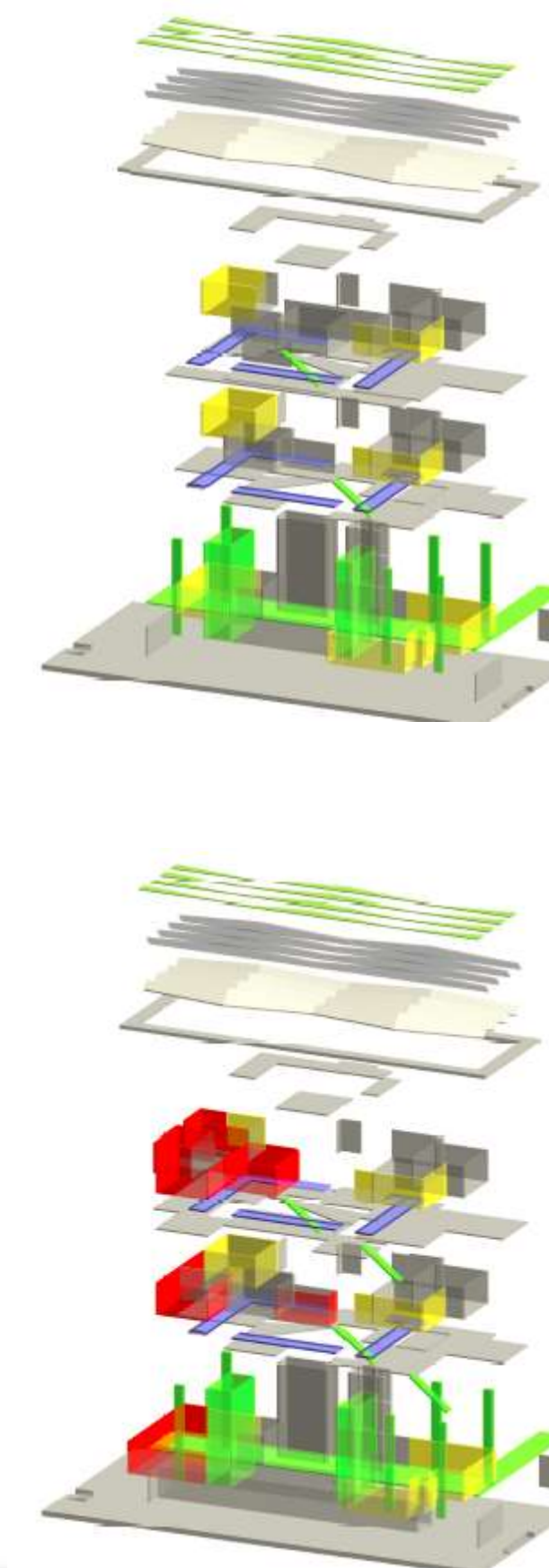
Reversibilidade Técnica

Reversibilidade Espacial



Reconfigure structure

Separate materials



Adaptacao do espaco



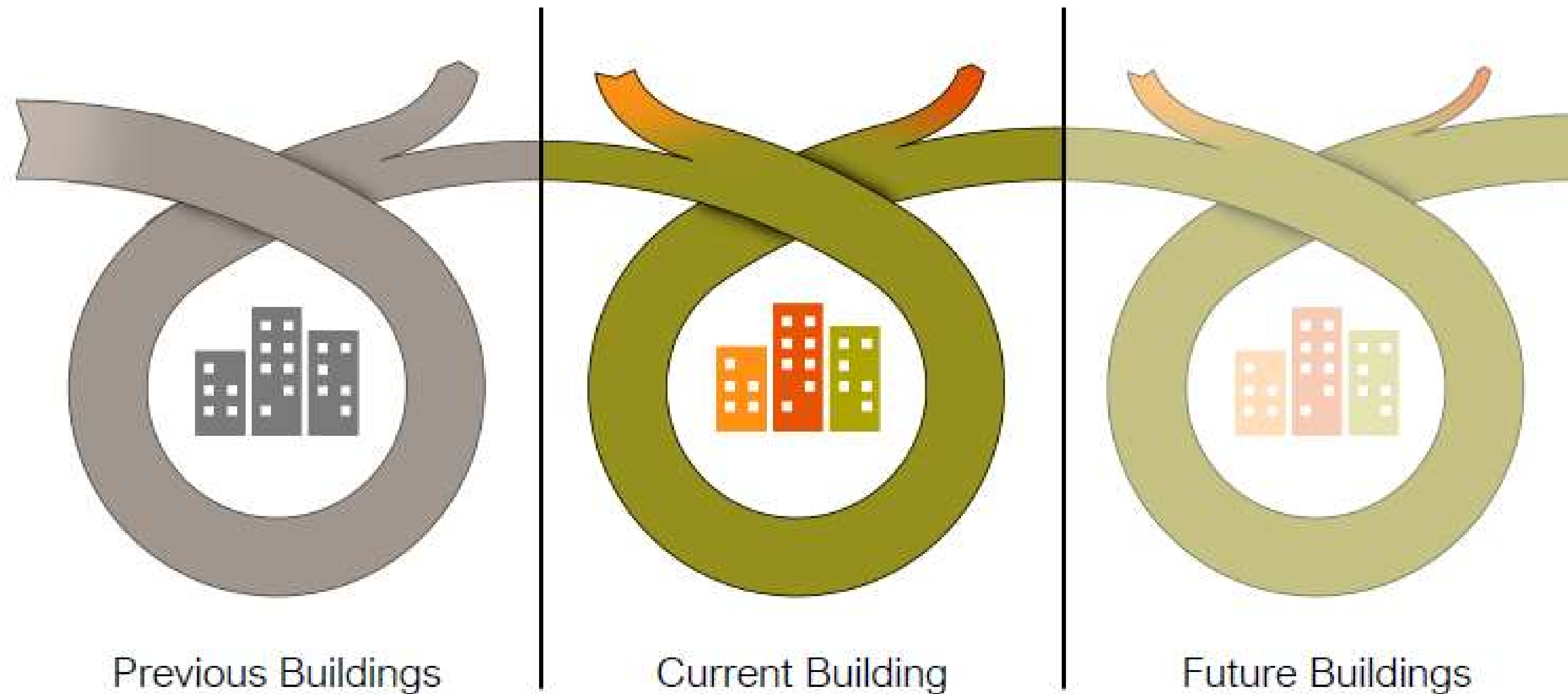
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Avaliação Circular de Edifícios



ÂMBITO E CENÁRIOS DA CONSTRUÇÃO CIRCULAR

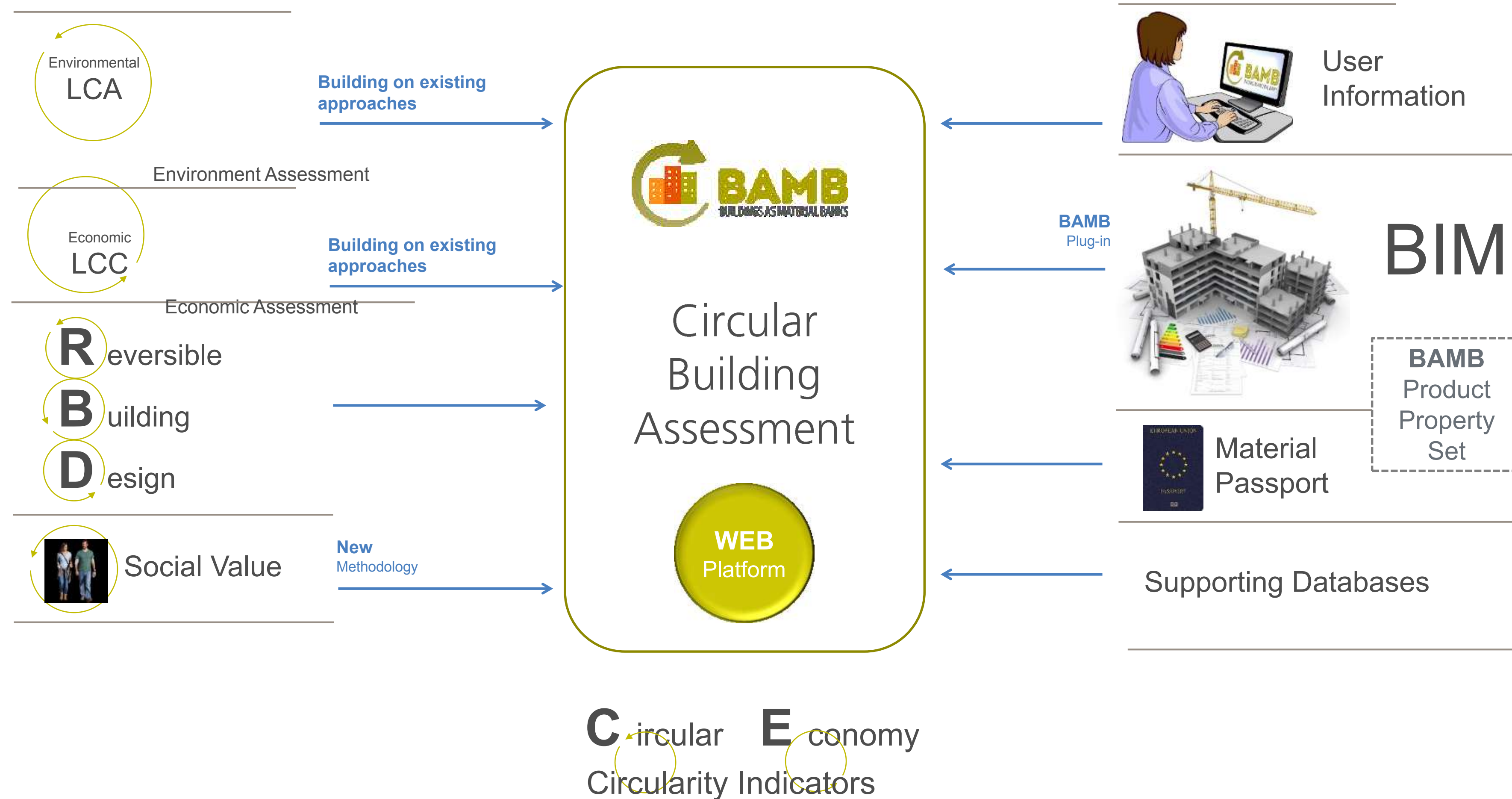


**Desperdício de novos
produtos & materiais**

**Capacidade de
transformação**

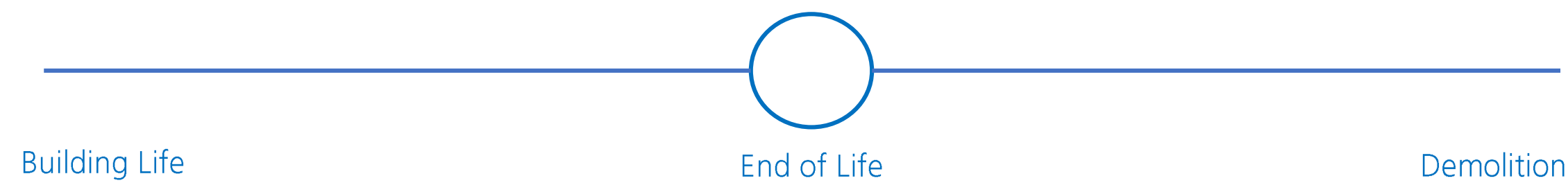
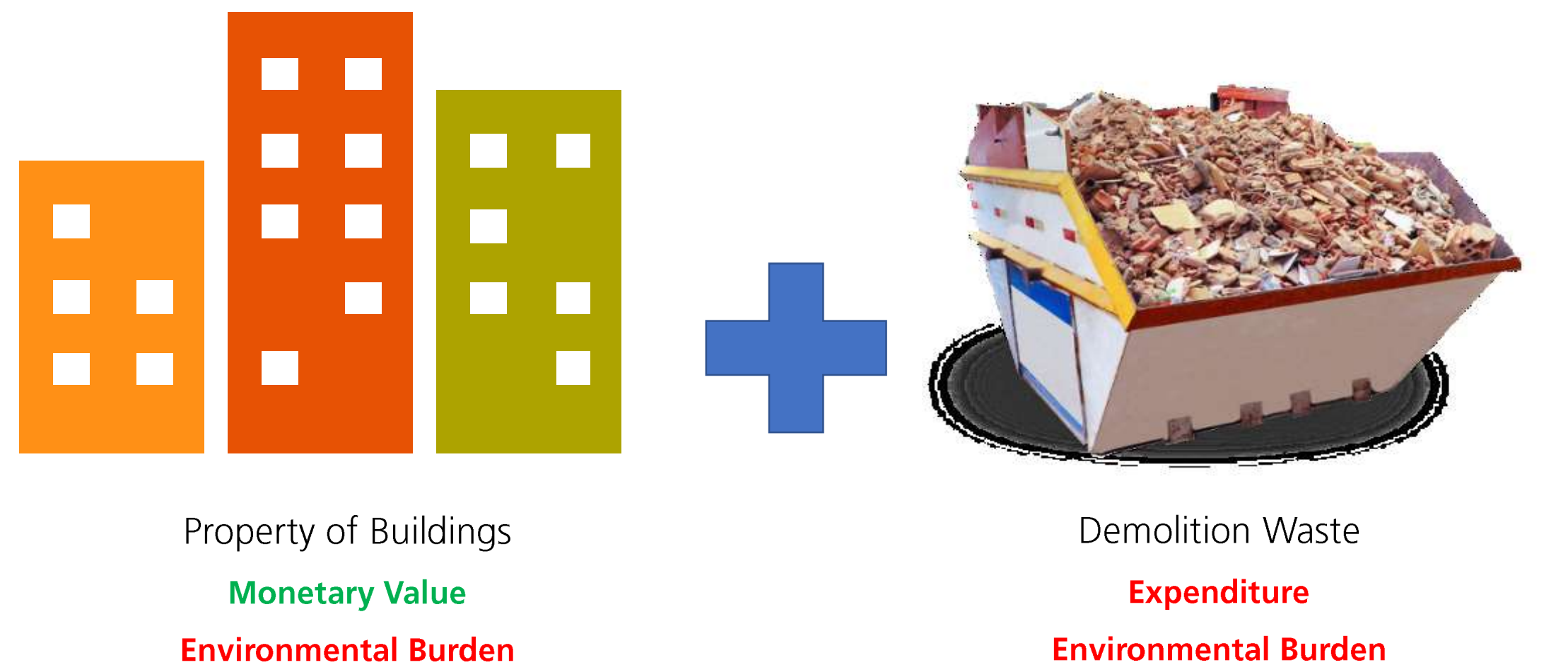
**Potencial
reutilização**

AVALIAÇÃO CIRCULAR DOS EDIFÍCIOS - VISÃO GERAL

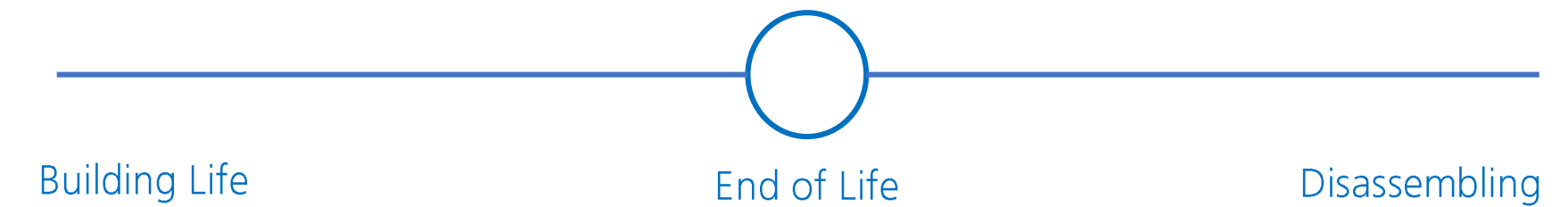
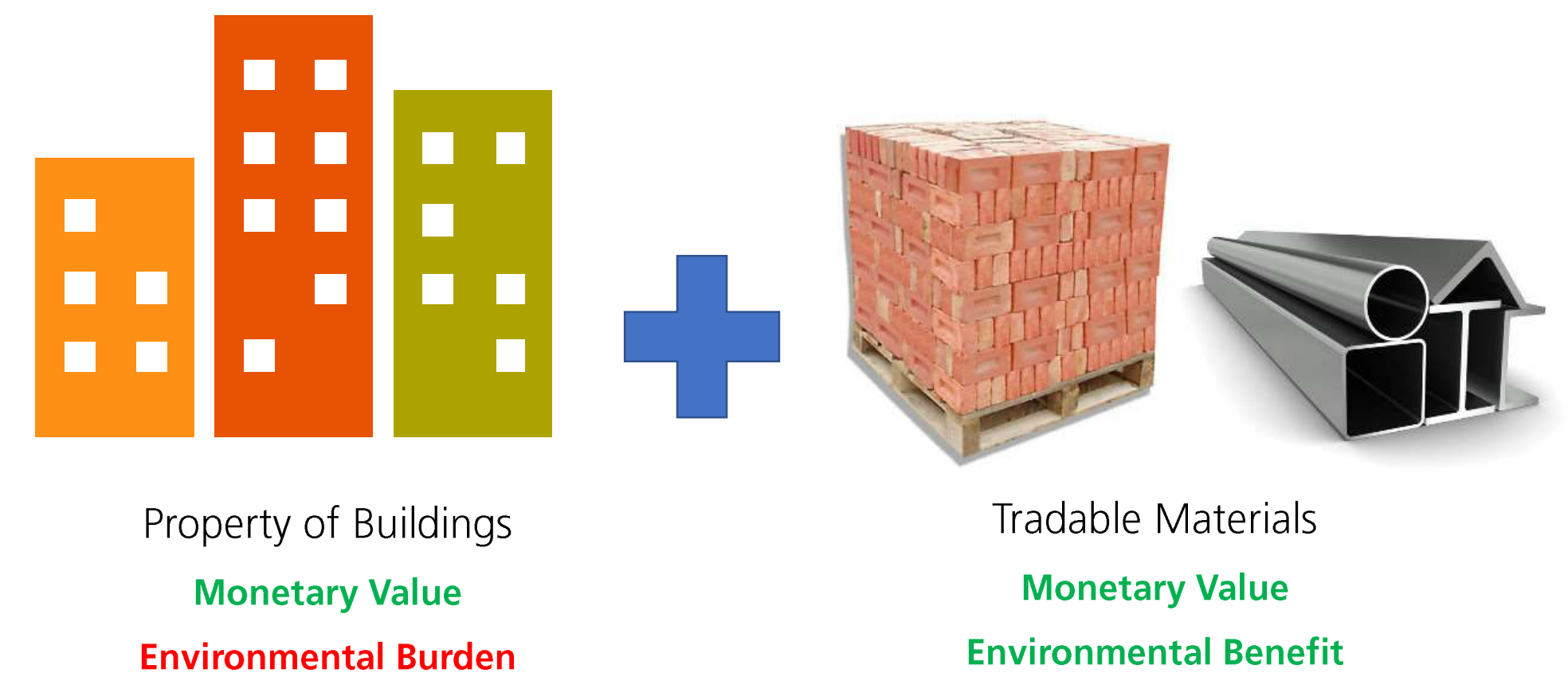


AVALIAÇÃO AMBIENTAL / ECONÔMICA

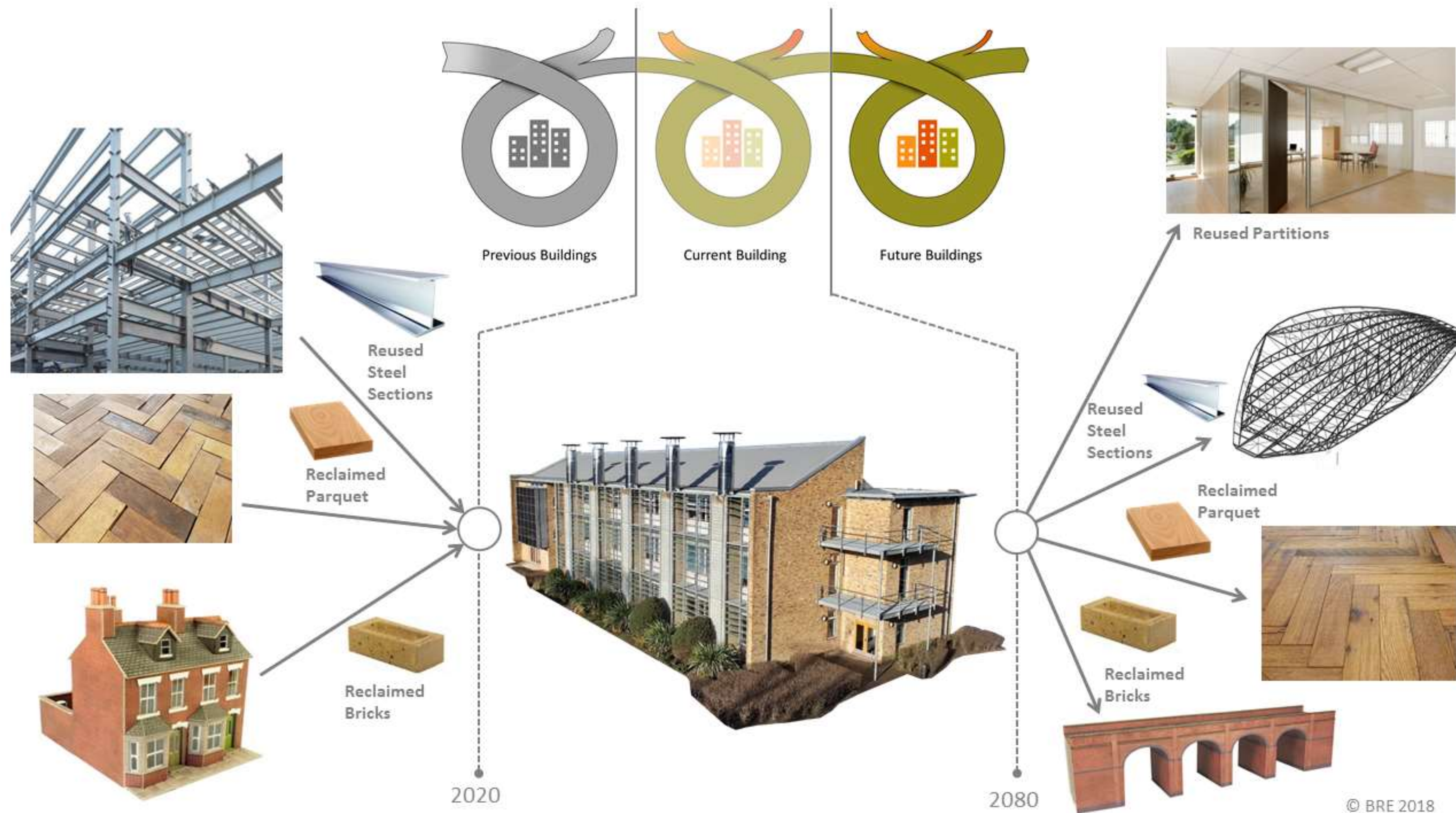
Cenário Atual



Cenário Futuro



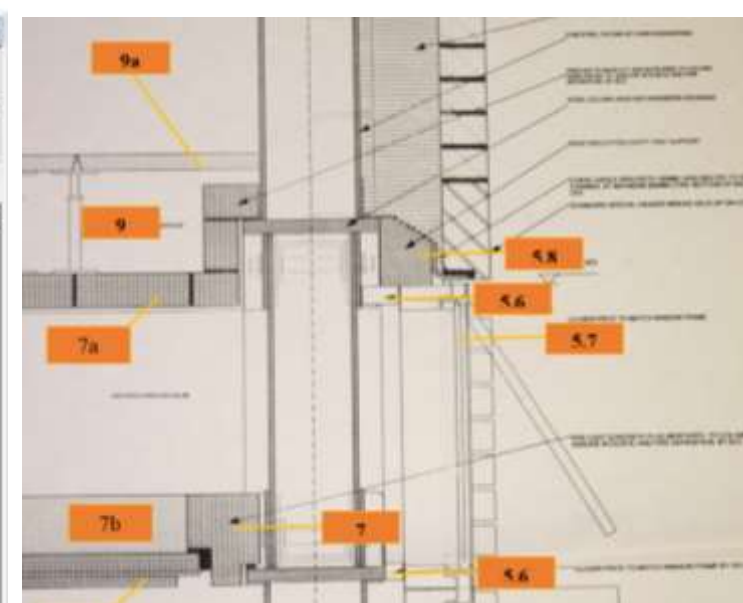
EXEMPLO DO EDIFÍCIO AMBIENTAL DO BRE



Cenários de EC modelados:

- 80 000 tijolos recuperados
- Futuro potencial da reutilização de tijolos (argamassa de cal)
- Estendendo o ciclo de vida do edifício
- Layout reconfigurável

PLATAFORMA AVALIAÇÃO CIRCULAR DE EDIFÍCIOS



Roof Structure

Roof Tiles

External Walls

Windows

Upper Floor Types

Internal Partitions

Ground Floors

Circularity Indicators

1,570.00	Cost
896	Embodied Carbon
896	Embodied Environmental Impact
52%	Reclaimed Content
41%	Virgin/primary resource indicator
67%	Recycled Content
7.24	Reuse Potential/ RBD score
60	Life cycle co-ordination
5.75	Transformation capacity
6.24	Recyclability

Coming soon!

AVALIAÇÃO CIRCULAR DE EDIFÍCIOS FASE DE PILOTOS

- **Registo de projetos para a fase de pilotos da plataforma CBA – Junho 18**
- **Versão Beta da plataforma CBA – Julho 2018**
- **Pilotos virtuais – Novembro 2018**
- **Teste do conceito final da plataforma CBA – Dezembro 2018**





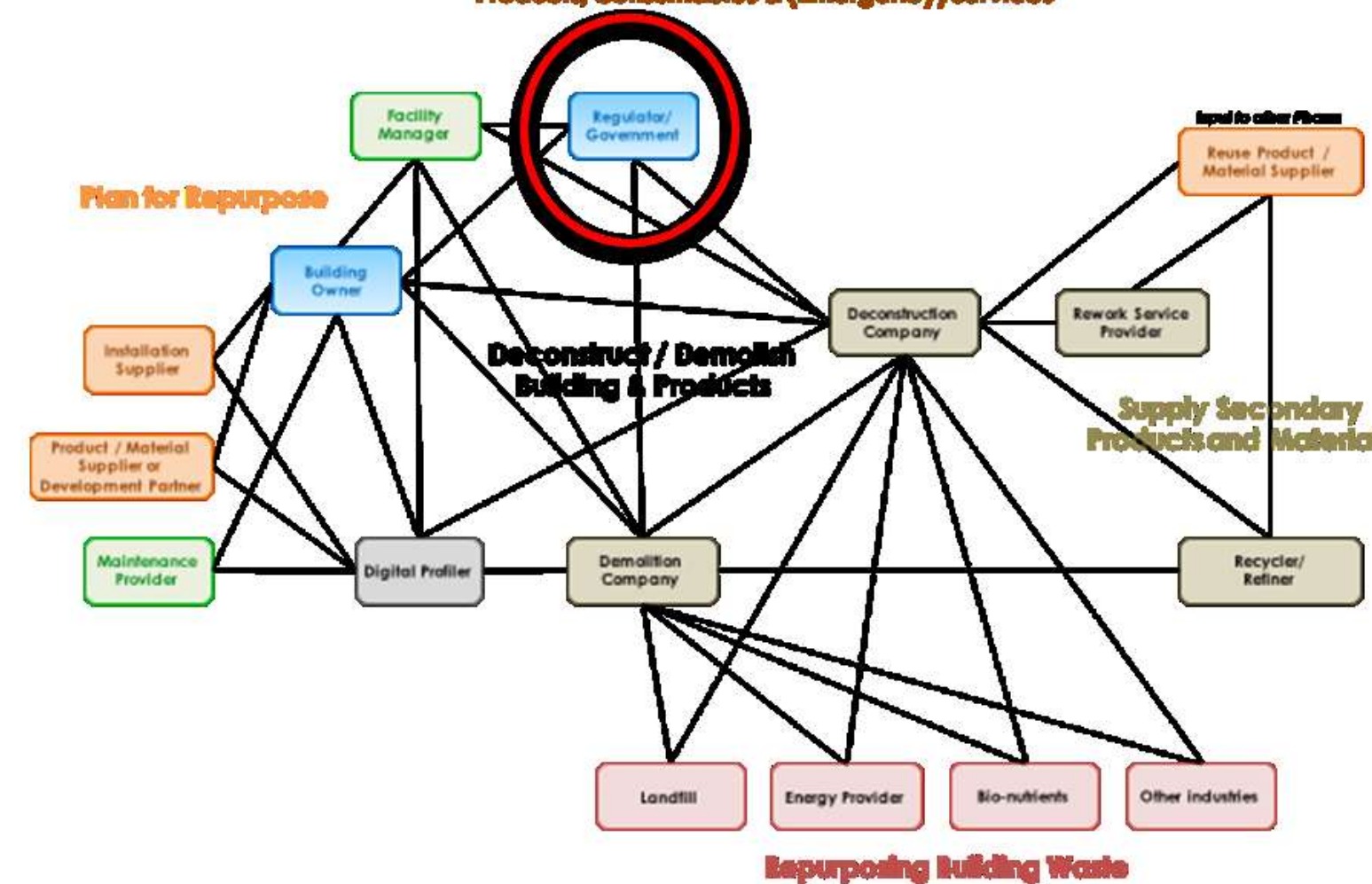
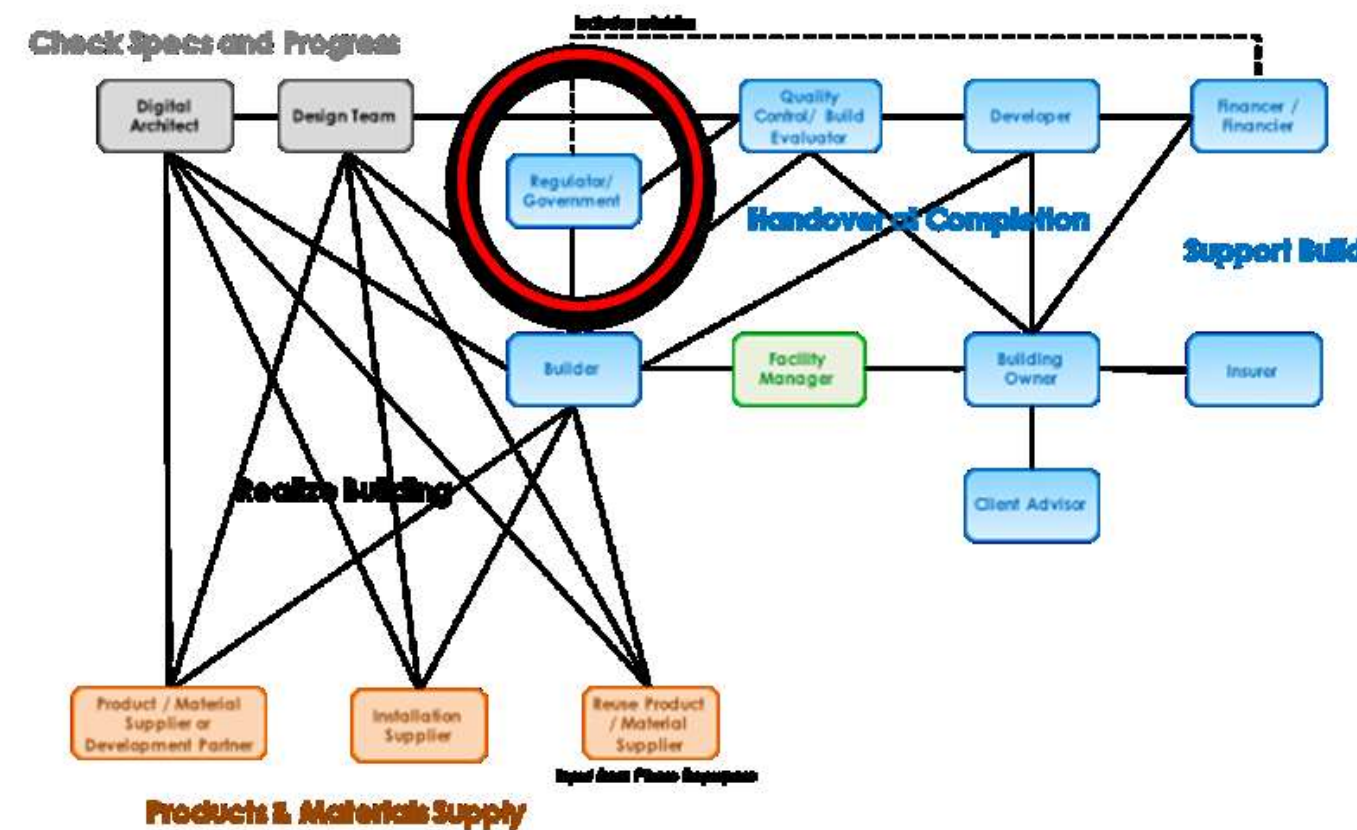
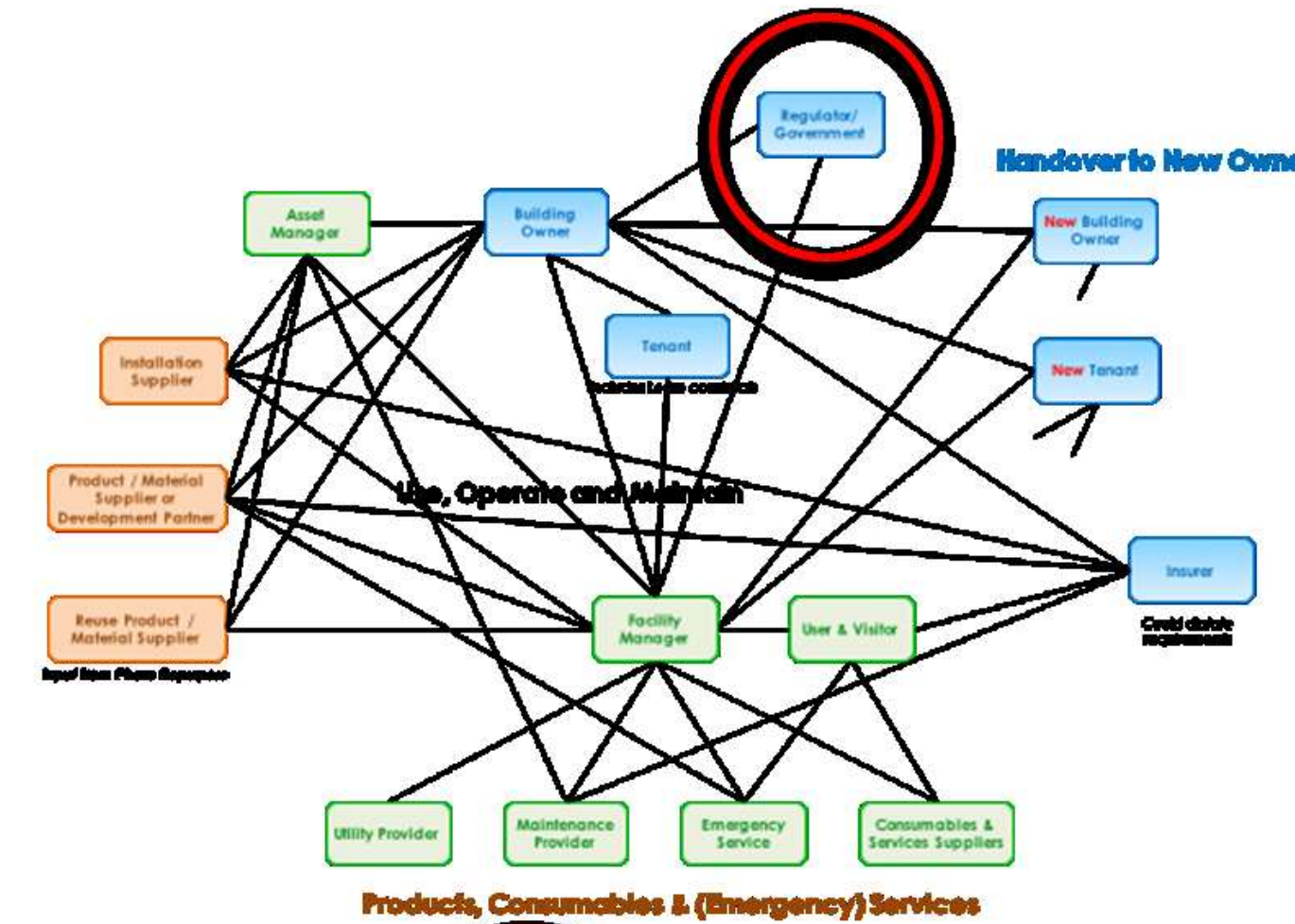
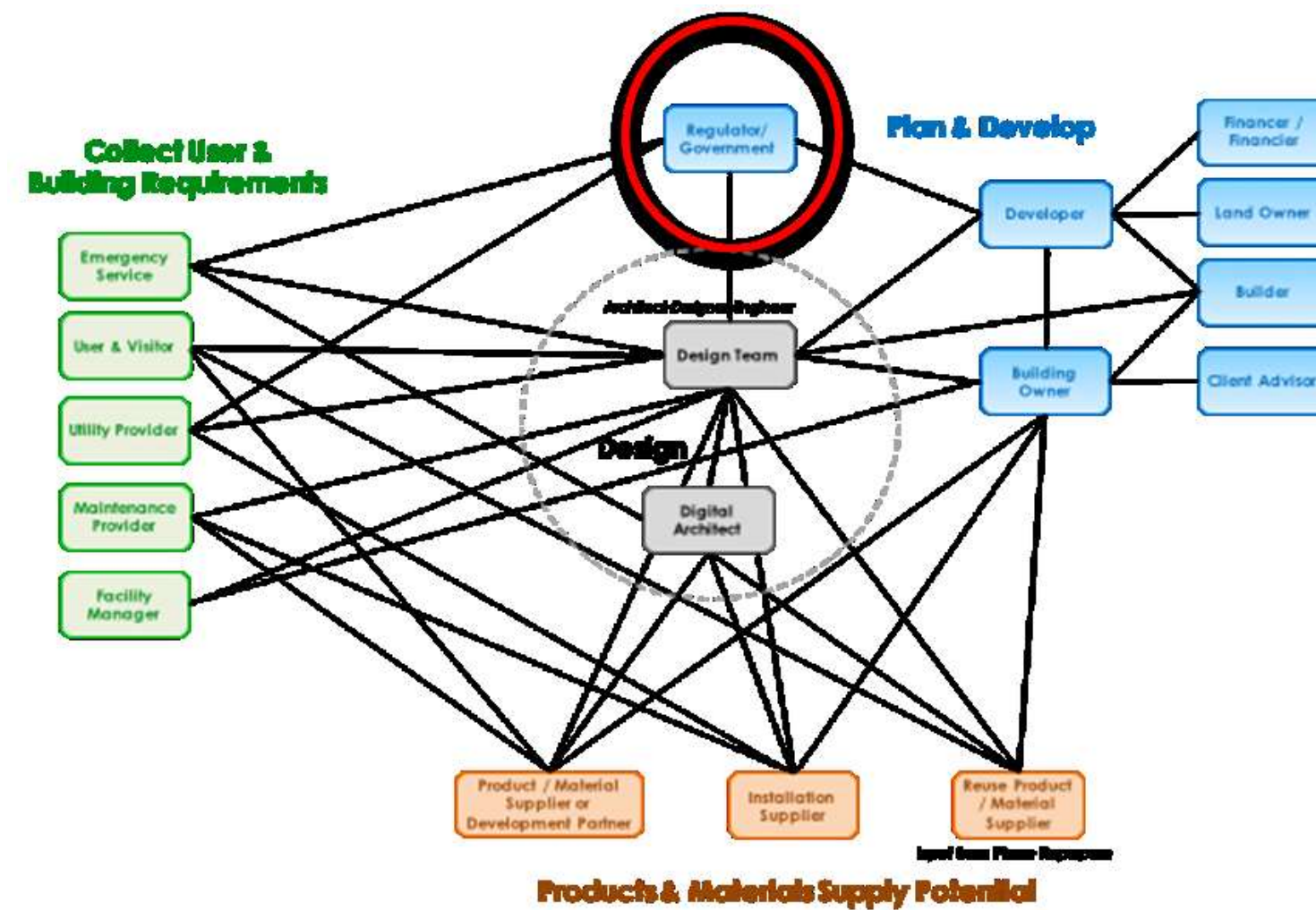
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Avaliação de Impacto de Normas e Políticas



O PAPEL DAS POLÍTICAS E NORMAS NA CADEIA DE VALOR



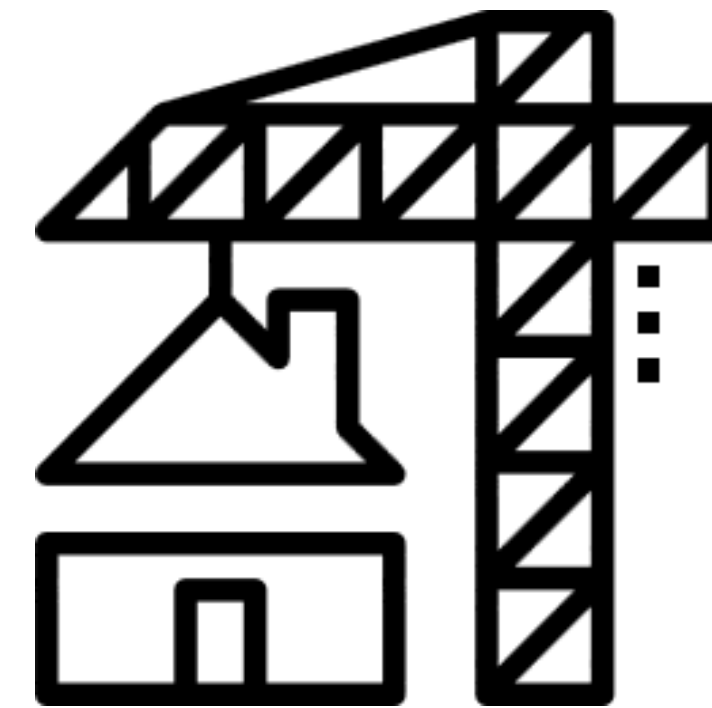
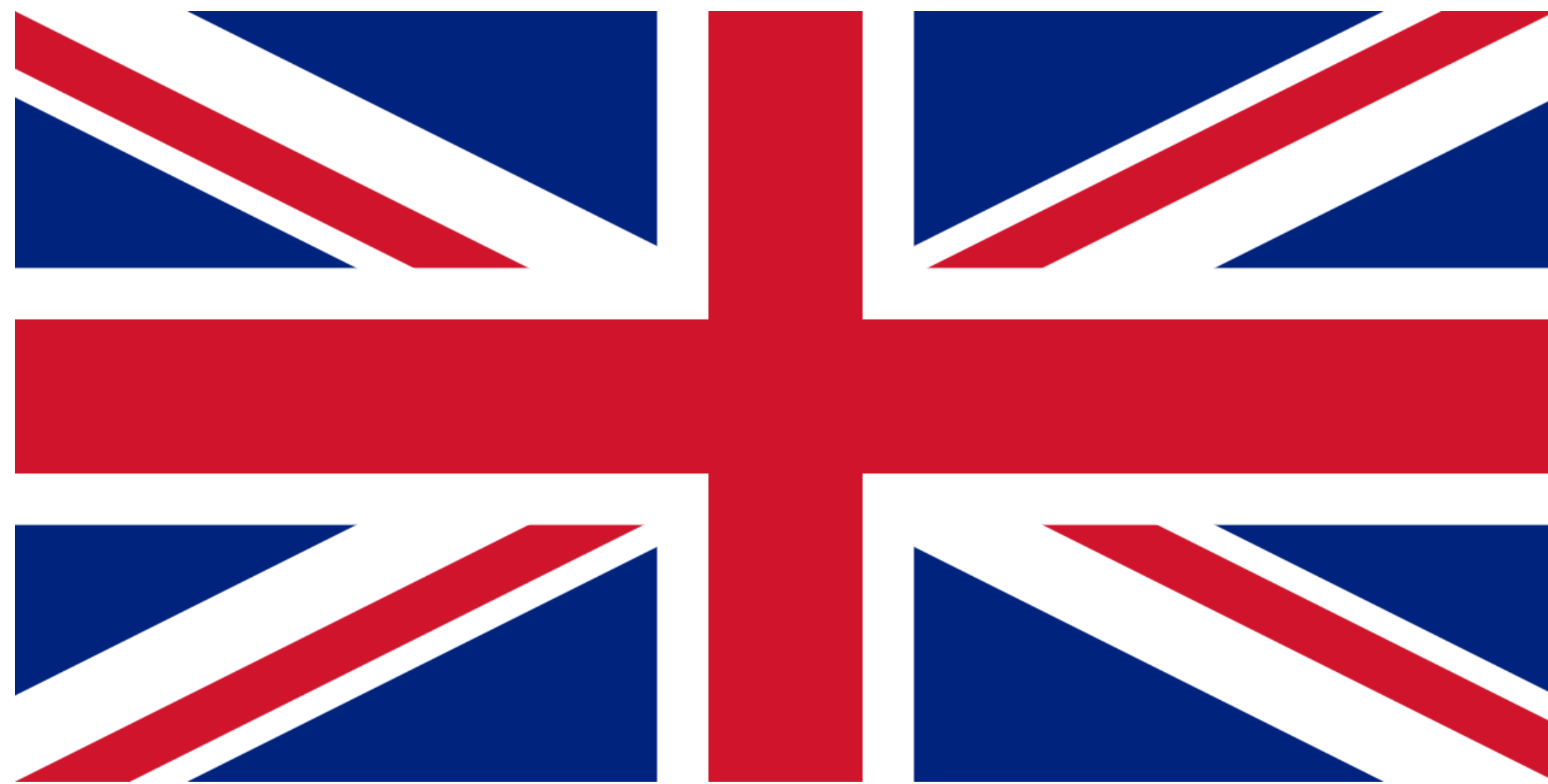
ENQUADRAMENTO PARA FUTUROS REGULAMENTOS E NORMAS



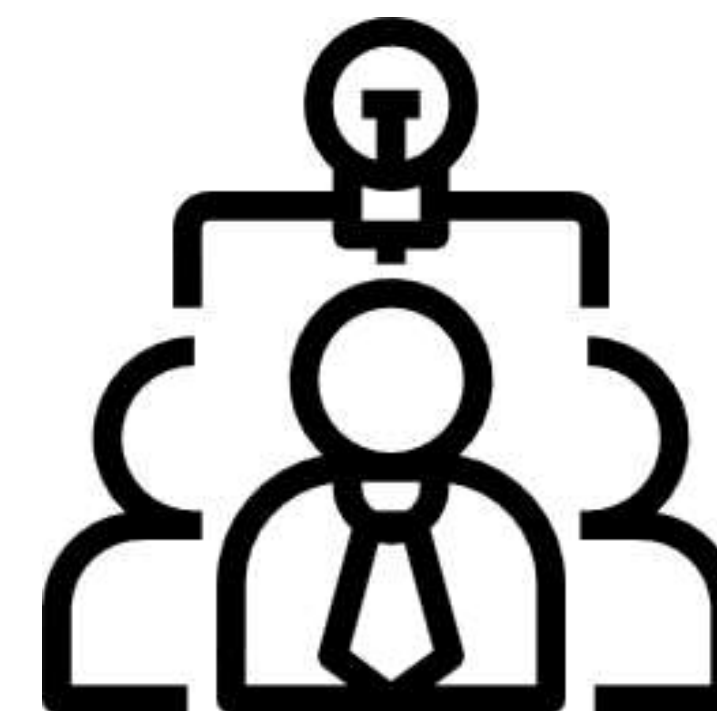
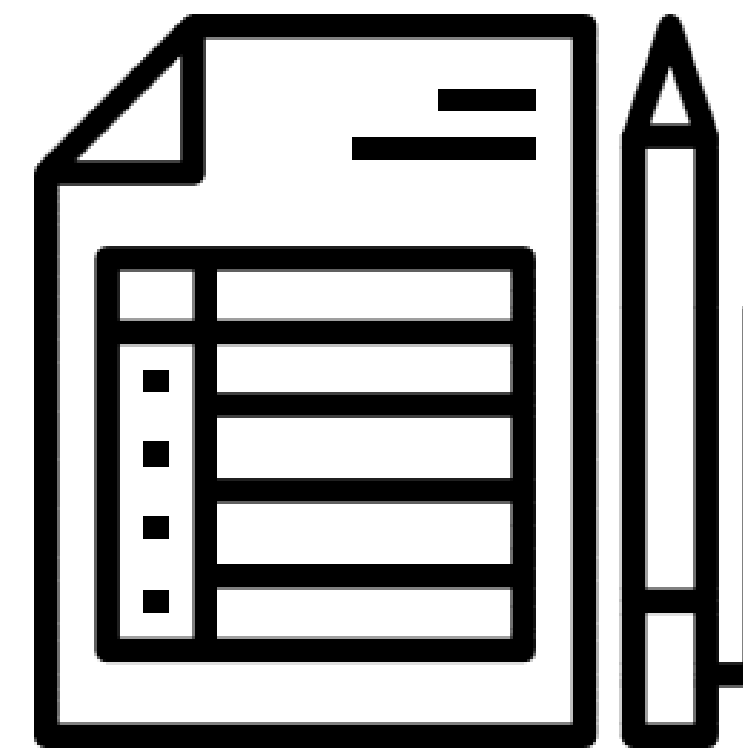
AVALIAÇÃO DE IMPACTO DE QUATRO POLÍTICAS



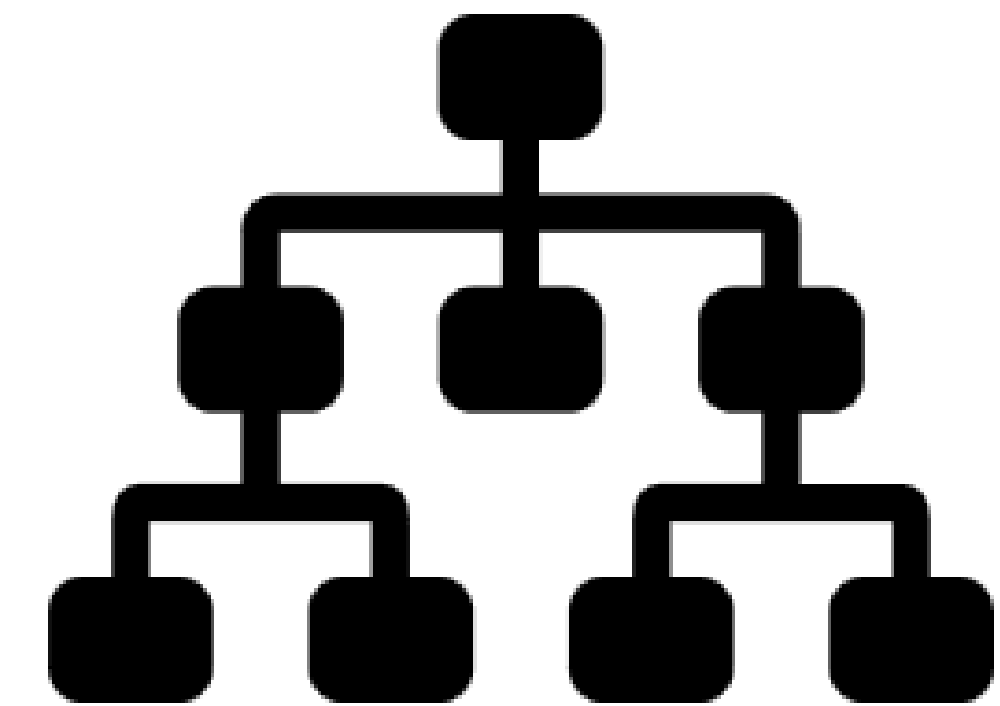
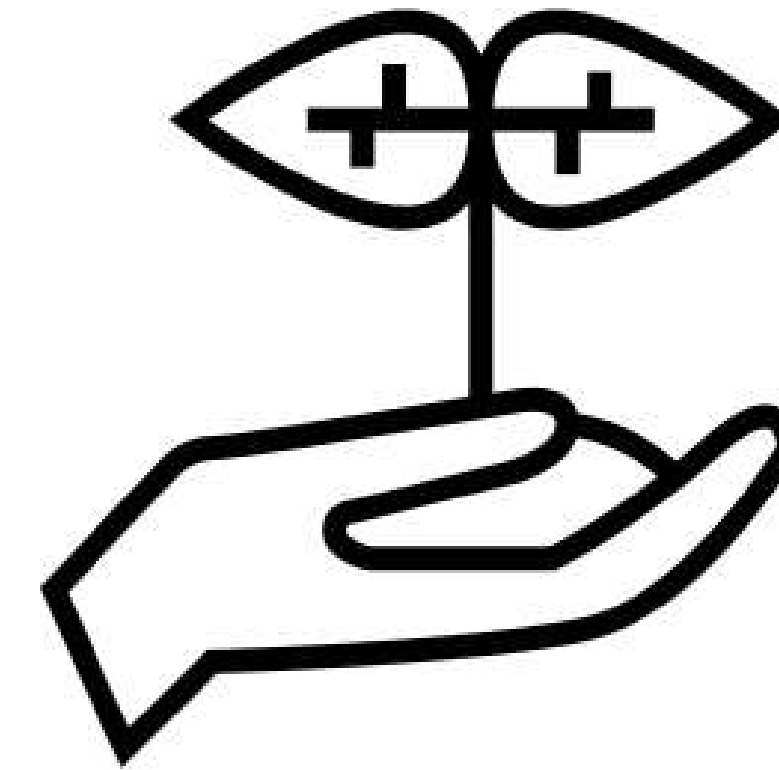
IMPACTO A LONGO PRAZO DOS PLANOS DE GESTÃO AMBIENTAL DE ESTALEIROS NA EFICIÊNCIA DE RECURSOS



PLANO DE ECONOMIA CIRCULAR REGIONAL DE BRUXELAS E REGISTO DE DADOS

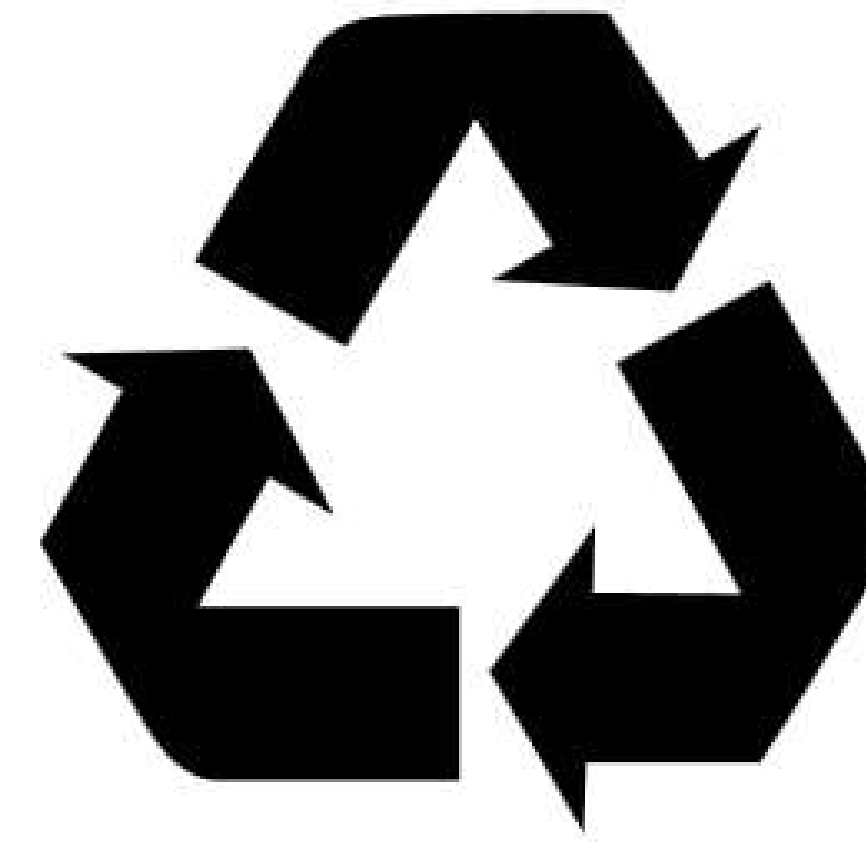


OBJETIVOS AMBIENTAIS DA SUÉCIA E A SUA EFICÁCIA NAS POLÍTICAS PÚBLICAS



Icons by Freepik and Gregor Cresnor from www.flaticon.com

UTILIZAÇÃO DE UM MÍNIMO DE 5% DE MATERIAIS RECICLADOS EM OBRAS PÚBLICAS



Icons by Freepik from www.flaticon.com

UTILIZAÇÃO DE UM MÍNIMO DE 5% DE MATERIAIS RECICLADOS EM OBRAS PÚBLICAS



Icon by Freepik from www.flaticon.com



<https://pt.surveymonkey.com/r/5MTG7B7>

DADOS PROVISÓRIOS DO QUESTIONÁRIO EFETUADO

Cerca de 35 respostas



29 % referiu que não têm conhecimento da medida

- 75% nunca ouviram falar da medida
- 25 % consideram não aplicável no seu trabalho

Medidas identificadas para reforçar a sua aplicação:

- Fiscalização e responsabilização
- Sensibilização/informação representantes DO
- Sensibilização/informação arquitetos e projetistas
- Formação para profissionais do sector



BAMB Evento Final

BAMB – A PATHWAY FOR A CIRCULAR FUTURE” (BAMB-CIRCPath)

5-7 Fevereiro 2019, Bruxelas, Bélgica



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Obrigada!

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Ana Quintas | BRE

