

# Resource efficient buildings, infrastructures and building solutions

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Hubert Rhomberg

Ideen, die bestehen.  
**Rhomberg Bau**



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# A global challenge & huge responsibility of the building industry



Polluting &  
non-  
sustainable



Unproductive  
& wasteful



Fragmented &  
non-  
transparent

- **40%** of the world's CO2 emissions
- **35%** of global waste
- **30%** of the weight delivered on-site is waste

- **Inefficient** traditional project management
- **Prototyping** for every building
- **14%** of revenue spent on mistakes

- **100+** involved parties and new supply-chain every time
- **Non-transparent** value chains based on personal relationships and silo thinking
- **Little** economies of scale



# ...requires a new approach of thinking



Polluting &  
non-  
sustainable



## Sustainable Timber/Hybrid Buildings

- Ecological footprint with wood as focus component saving resources
- Health, well-being, hygiene & safety
- Life cycle perspective and flexible floor space for changeability



Unproductive &  
wasteful



## Efficient Modular Pre-Fabrication

- “Construction as a service” workflow → fast, reliable & repeatable results
- Off-site modular pre-fabrication
- Digital twins and BIM



Fragmented &  
non-  
transparent



## Scalable Platform

- Marketplace for pre-approved components, products and services
- User-driven collaborative network that collects and shares best practices & efficient communication tool

# ...how buildings can be designed & built

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**CFE**  
BUILDINGS



**WOOD<sup>®</sup>**  
**ROCKS**  
BY RHOMBERG



- AI – based optimization process considering thousands of scenarios & parameters
- Automatically generating different solutions which are simulated, evaluated and optimized



# ... to deal with complexitiy & find the best solution

Applying a new certificate provided by **RES SCORE**

climate-Score



Life cycle release of greenhouse gas in CO2 equivalents; calculation of „grey“ greenhouse gases as well as the green house gas emissions from operation

energy-Score



Assesses the energy efficiency classes awarded with „grey“ non renewable primary energy as well as the energy needed for the operation of the building

material-Score



Evaluates the life cycle consumption of non-renewable raw materials



Considering the **three** main parameters

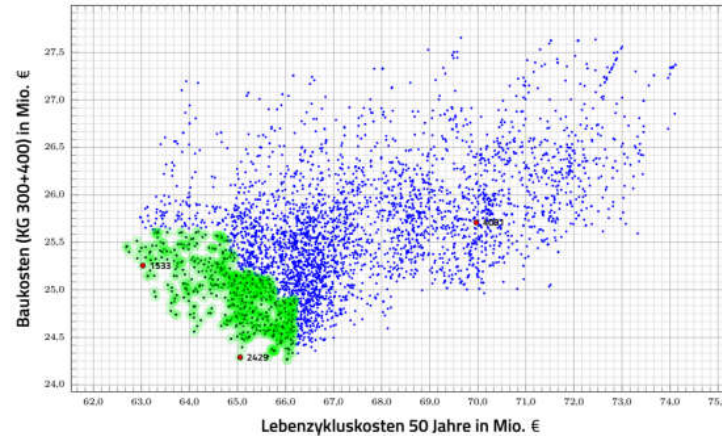


More than focussing on energy efficiency



Easy to handle and apply

AI – based analysis & optimization  
1,4 \* 10<sup>22</sup> Trillions of design options



Range of investment:  
2006 – 2032 €/m<sup>2</sup>



EU – Taxonomie Requirements



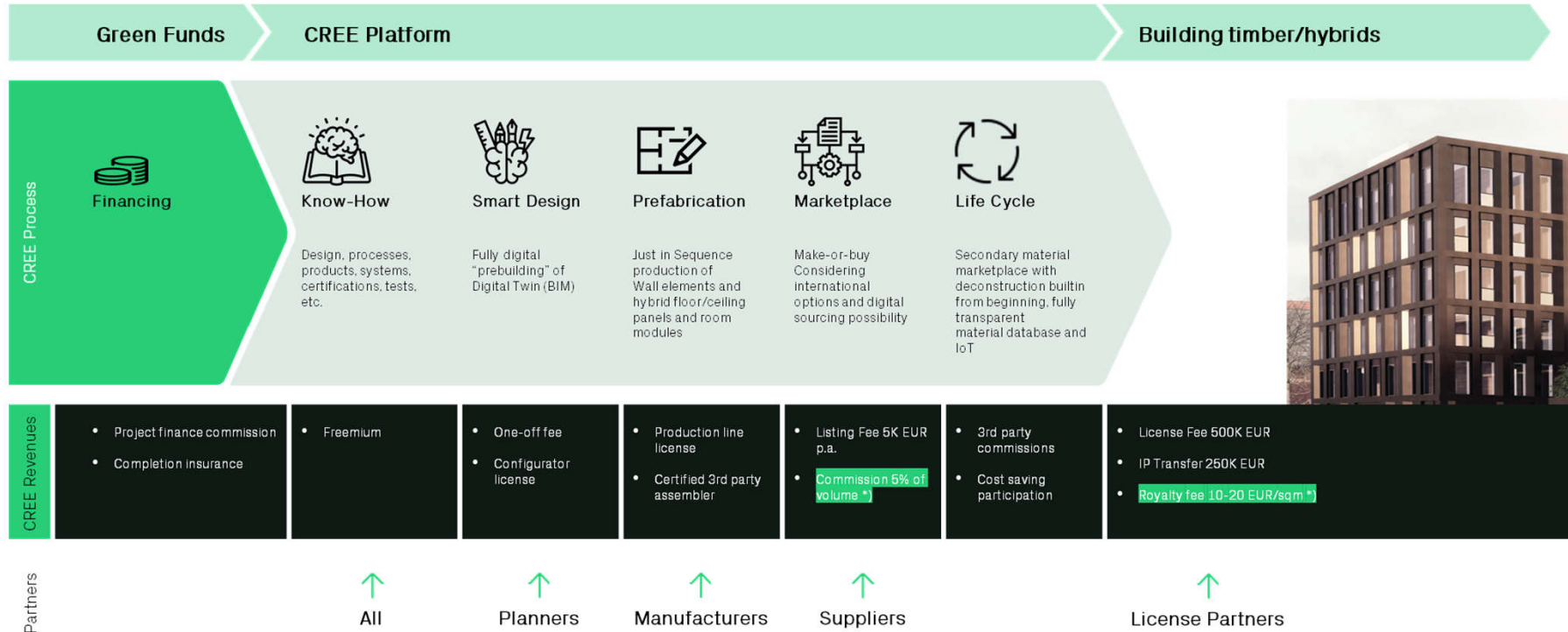
Life-Cycle-Costs - Requirements



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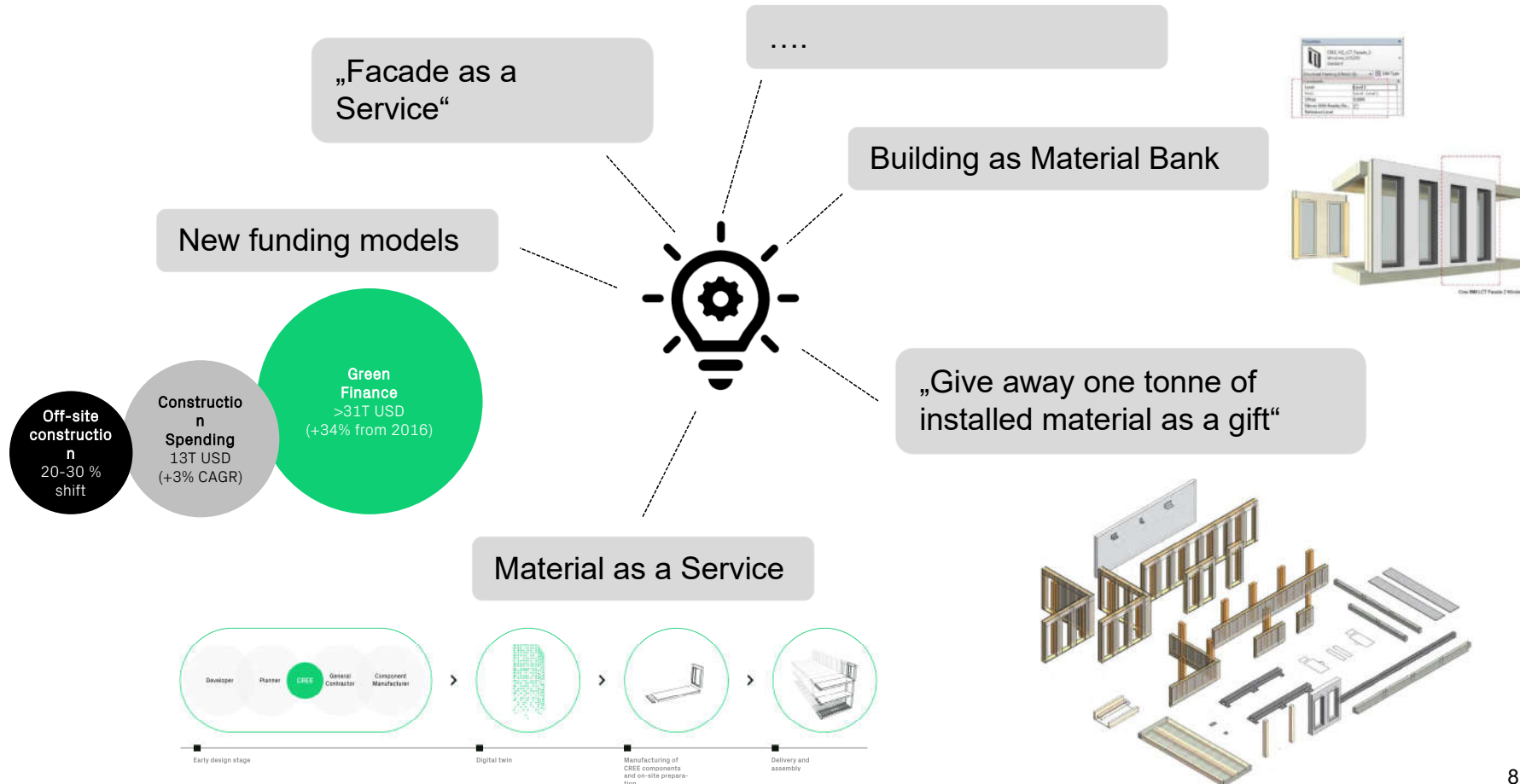
# Based on this, new business models emerge...

The CREE platform orchestrates independent construction stakeholders and enables them to develop sustainable modular timber / hybrid buildings globally



„We trust and share what we know“

# ... and new funding models can be created







# Thank you.

LinkedIn: Hubert Rhomberg

Twitter: @Hubert\_Rhomberg

[www.rhomberg.com](http://www.rhomberg.com)

<https://www.wood-rocks.com/>

<https://www.creebuildings.com/>

