

MAÚT30

**R&D and Innovation in the
Construction Industry from
a socially responsible
Perspective**



**WE DO GREAT
TECHNICAL THINGS.**



**R67 expressway section
(Kaposvár to M7 highway)**

2019



**Modernizing the discharge system
of Lake Balaton**

2023



**Paper mill and service facilities
in Dunaföldvár**

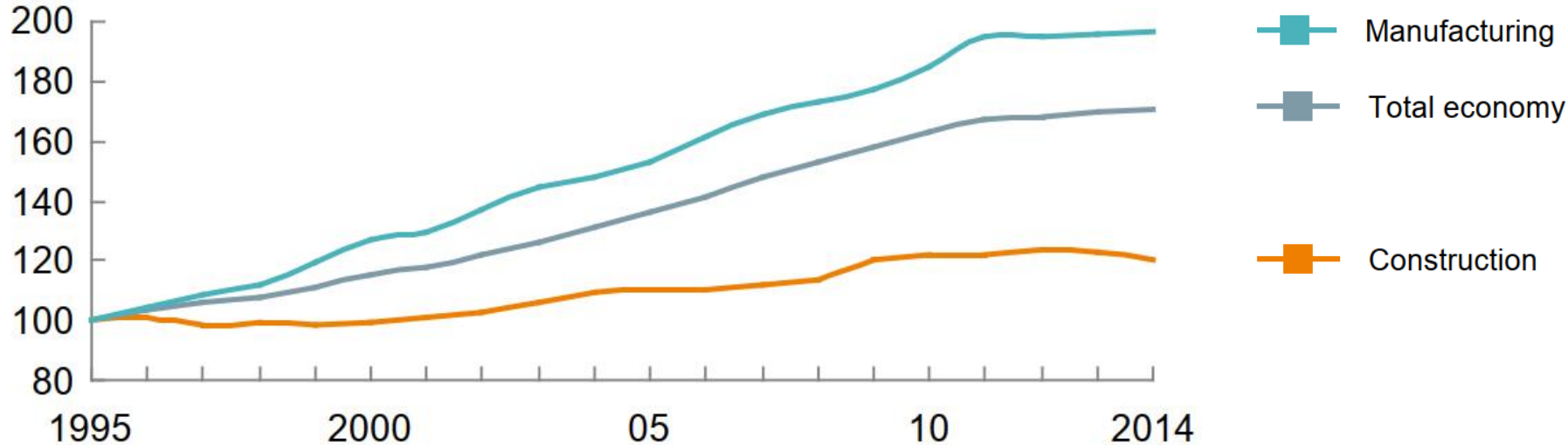
2022

**WE NEED TO BE
MORE UP-TO-DATE.**

Global productivity growth trends

Real gross value added per hour worked by persons engaged, 2005 \$

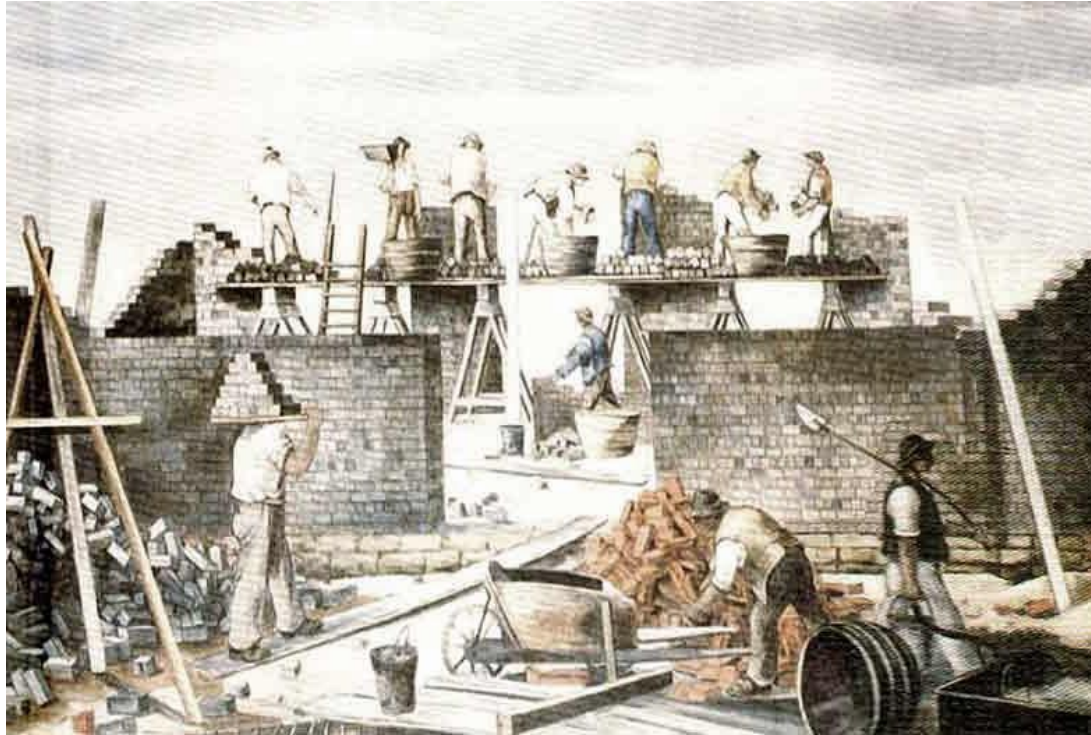
Index: 100 = 1995



ased on a sample of 41 countries that generate 96% of global GDP.

SOURCE: OECD; WIOD; GGCD-10, World Bank; BEA; BLS; national statistical agencies of Turkey, Malaysia, and Singapore; Rosstat; McKinsey Global Institute analysis

Construction works like it did 100 years ago...



The house building, painting 1934 E. Viegener

<https://wiki.genealogy.net/Datei:Maurer-Viegener1935.jpg>



Brickwork construction today

Shortage of skilled labour

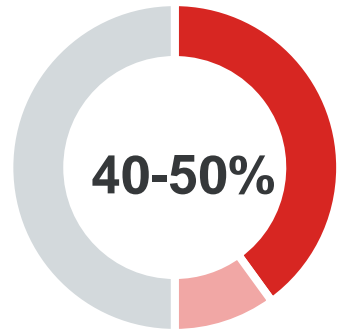
58% of all German construction companies have a lack of construction site personnel.

19% of all open vacancies in Austria are in construction related skilled trades and professions.

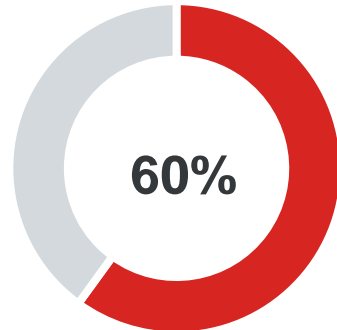


**CONSTRUCTION IS
DIRTY AND WASTEFUL.**

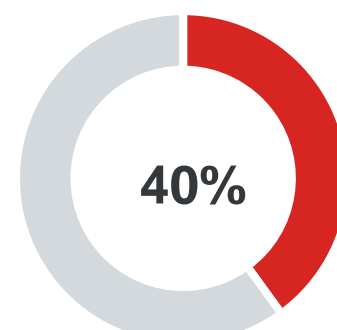
Today, the AEC industry is responsible for



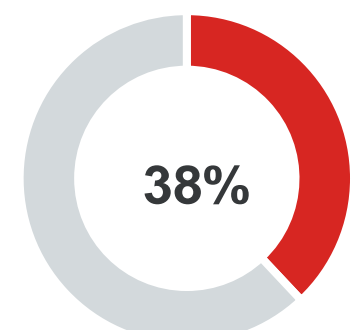
**energy and resource
consumption**



worldwide transport



waste generation



**energy-related
greenhouse gas emissions**



WE HAVE A SOCIAL RESPONSIBILITY.

- To our employees
- To our communities
- To our society

**WE NEED TO
CHANGE.**

European regulatory developments



- The revision of the EU Building Directive provides for an obligation to achieve a **climate-neutral building stock by 2050**.
- **By 2030**, half of today's European building stock must be renovated to **zero energy standard**.
- The **EU Circular Economy Package** and the **EU Taxonomy Regulation** call for material recovery of existing buildings and sustainability of construction projects.

Germany

According to the Climate Protection Act, the building sector must **reduce CO₂ emissions** from the current 118 to 67 million tons by 2030 and be **climate-neutral by 2045**.

Austria

Increasing the **renovation rate** towards the **target value of 3%***, high subsidies for the phase-out plan for oil and gas in existing buildings, expansion of renewables (EAG**), ...

* Source: Government plan of the republic of Austria 2020-2024

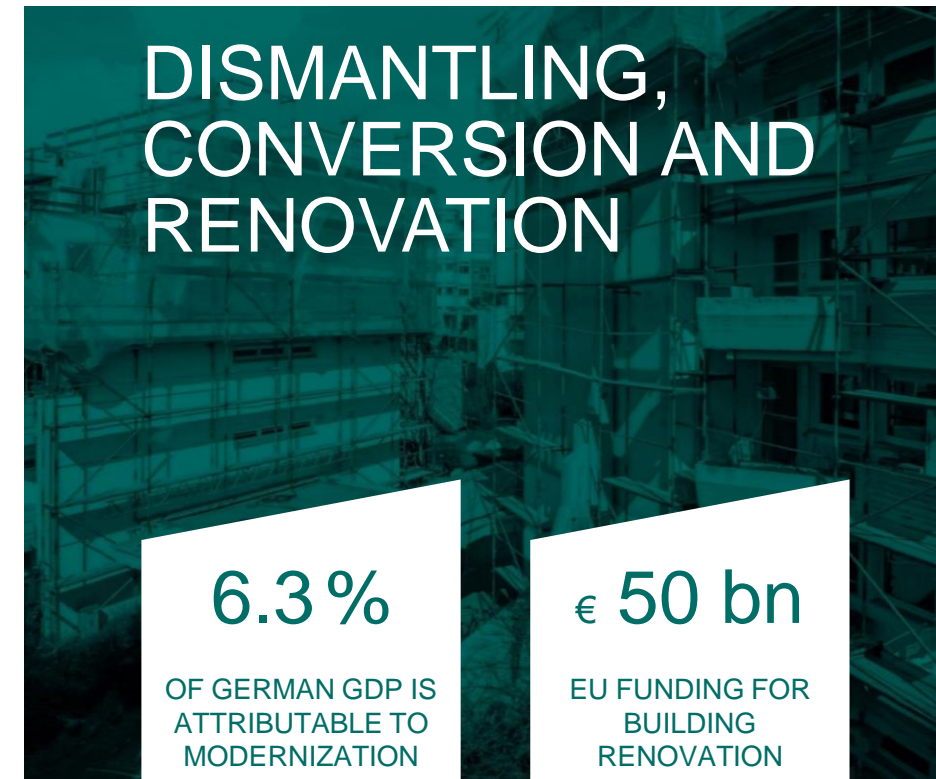
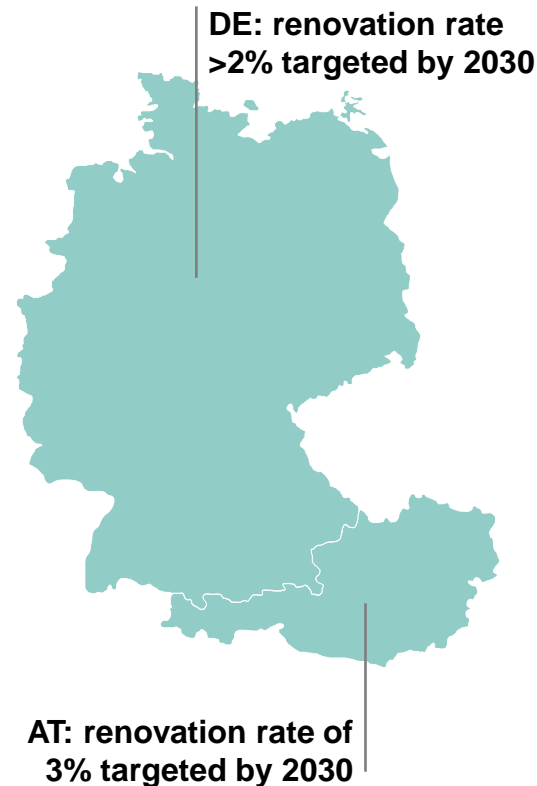
** EAG: Erneuerbaren-Ausbau-Gesetz

Building in existing structures as an important lever in the climate crisis

→ Building stock in Europe is severely outdated

→ Increasing scarcity of resources and increasing land consumption

→ **EU climate targets cannot be achieved without building in existing structures!**



OUR BIGGEST CONSTRUCTION SITE: **THE FUTURE.**



We will be climate neutral by 2040.
Let's shake on it!

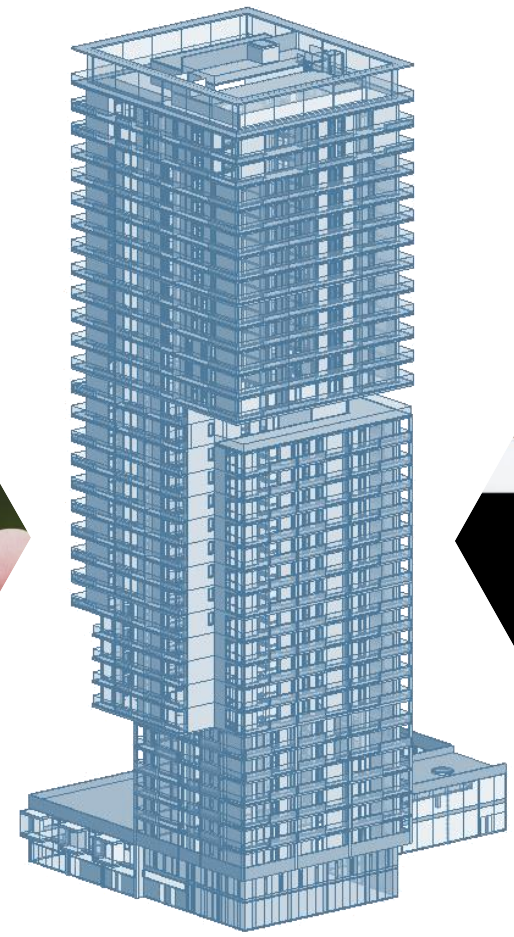
STRABAG
WORK ON PROGRESS

THE ABILITY TO CHANGE IS IN OUR OWN HANDS.

- Innovation and digitalisation are powerful tools of change



CLIMATE CHANGE ► SUSTAINABILITY

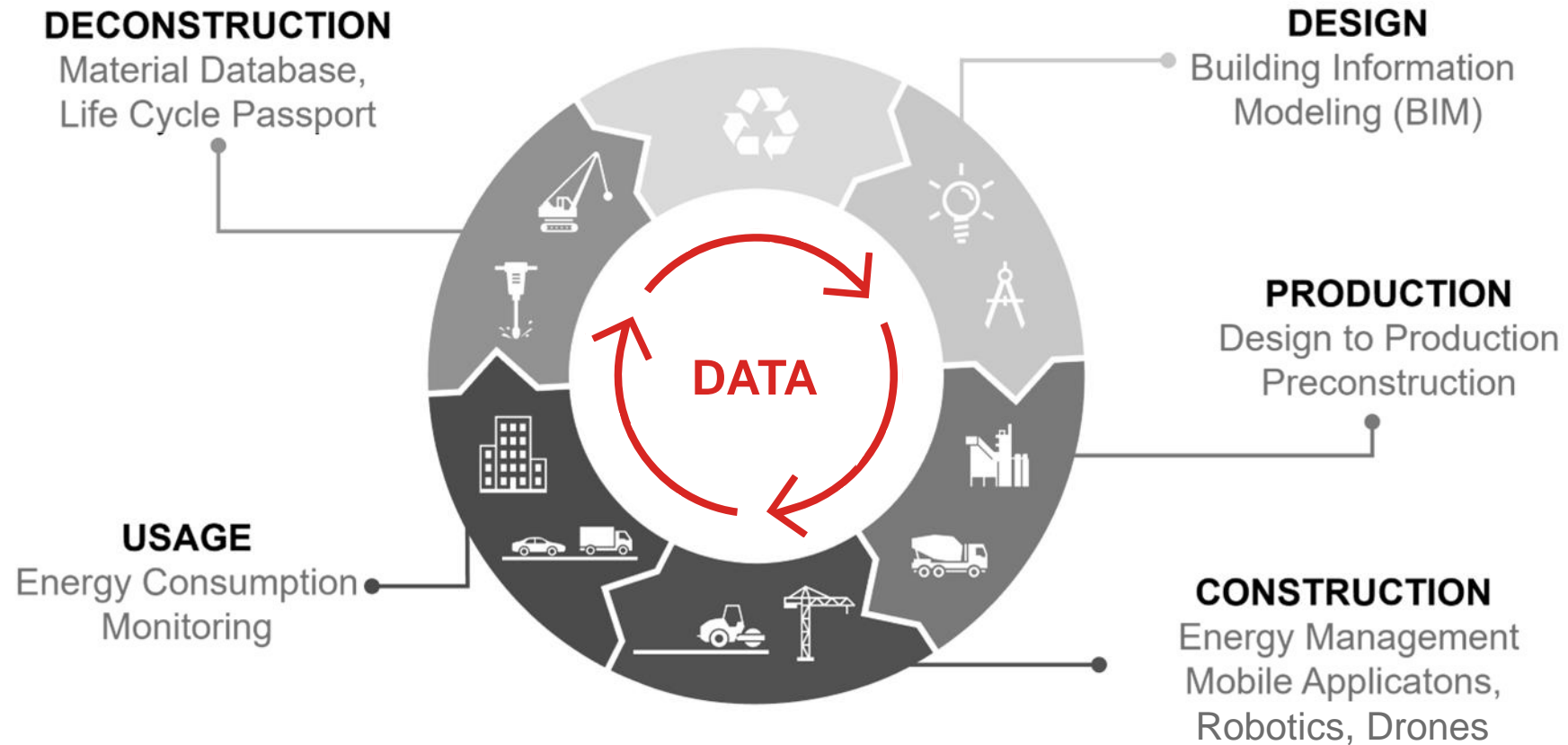


► DATA ◀



TECHNOLOGICAL CHANGE ◀ DIGITALISATION

Construction Life Cycle



Involve the People



Company-wide systematic idea management
Employee ideas add value to our sites

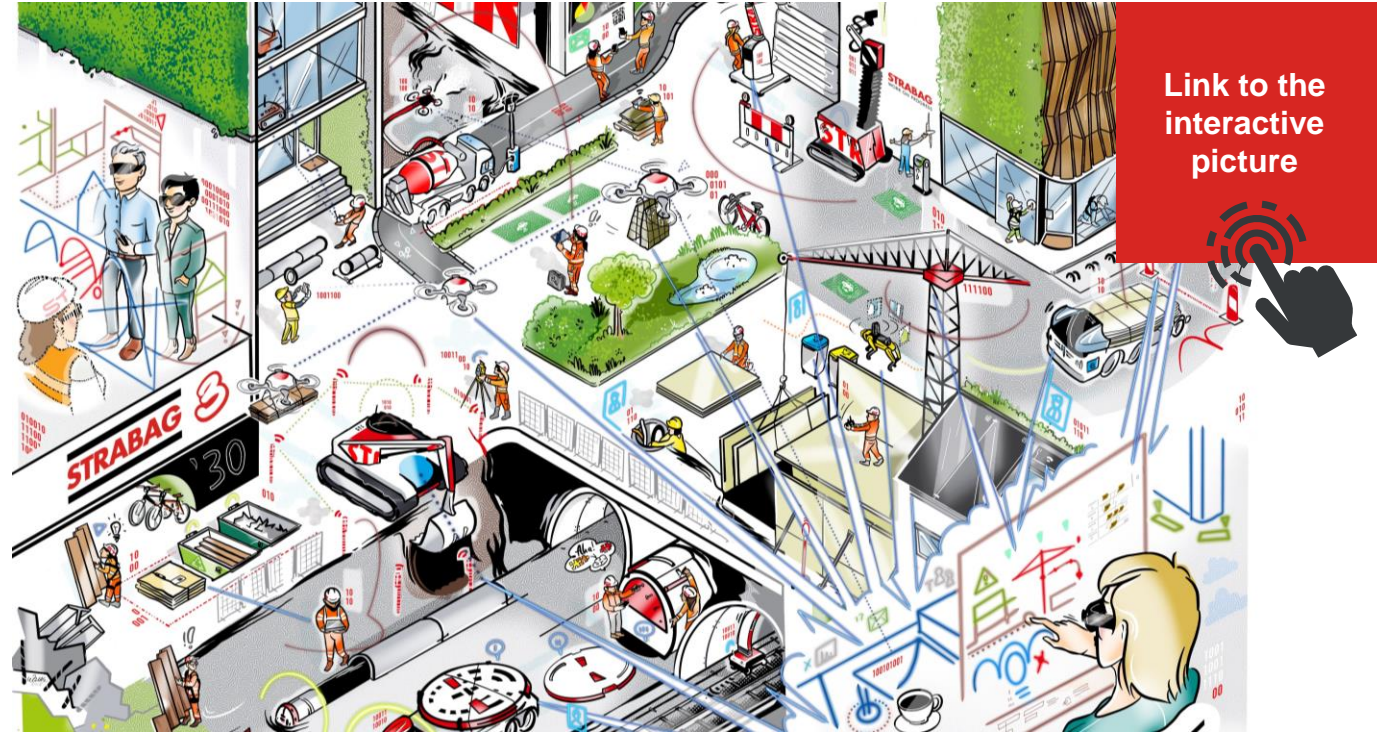


Company-wide entrepreneurship program
team to a business model

Shared Vision for the Future



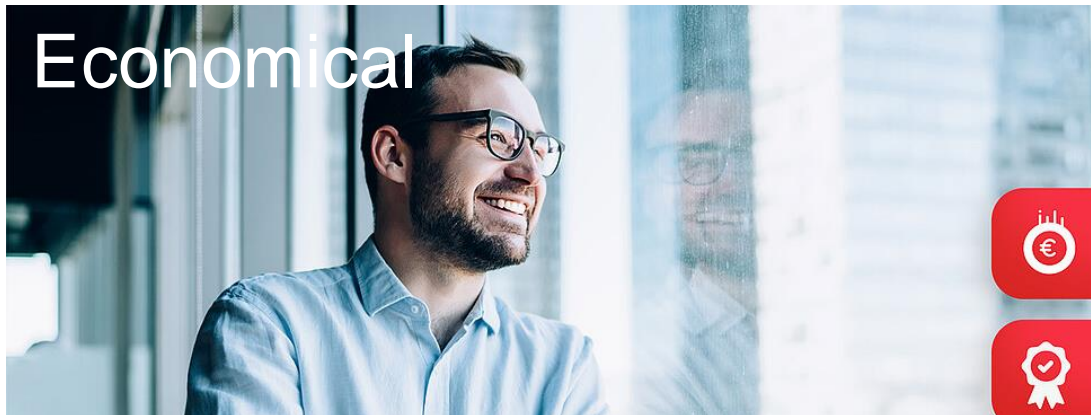
2022



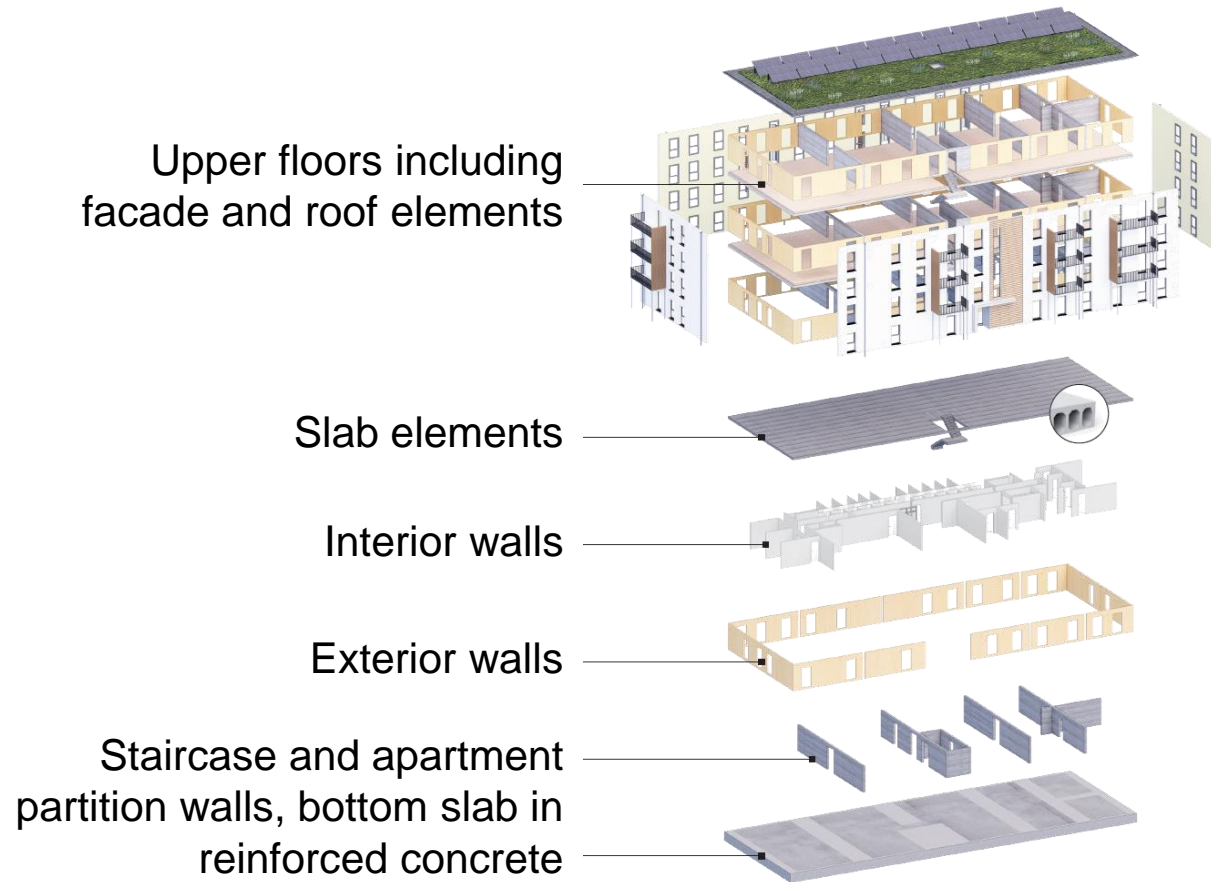
2030

PREFABRICATED CONSTRUCTION

Advantages of prefab construction



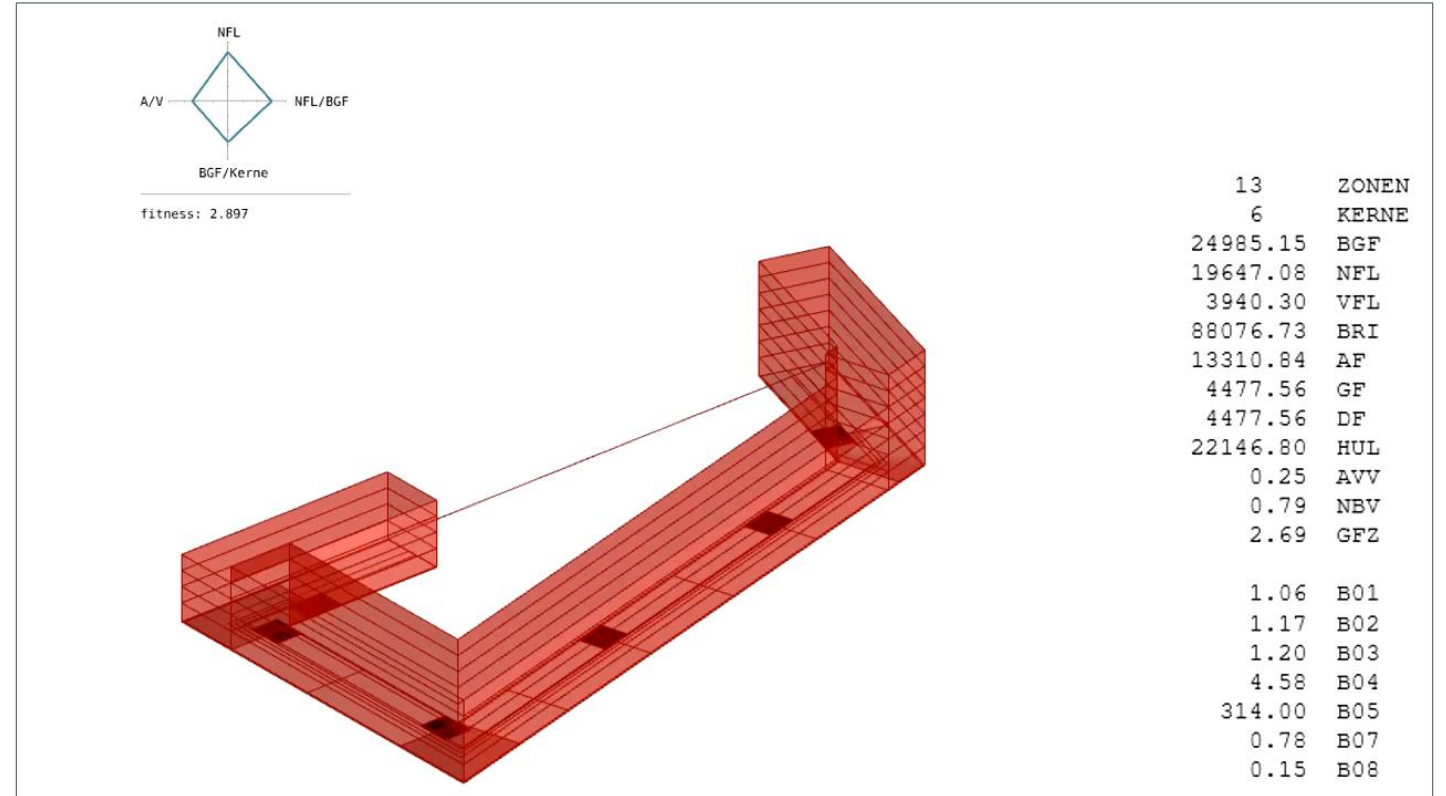
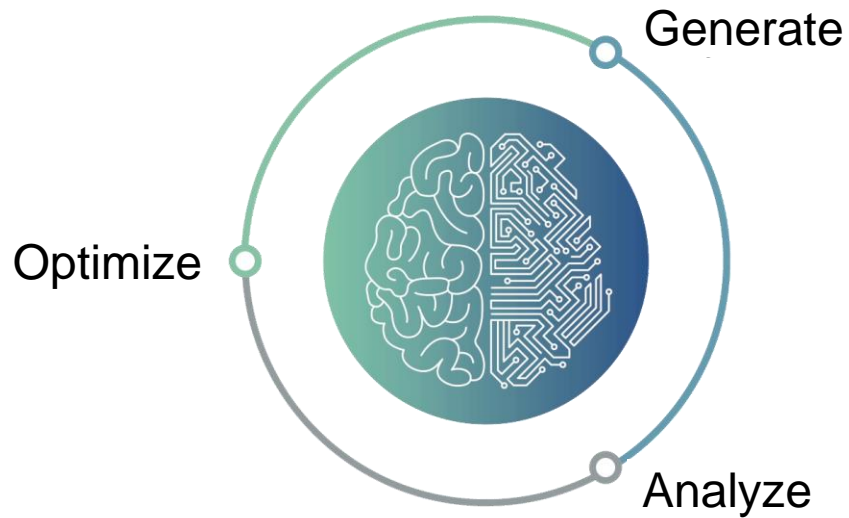
Components – Example of housing construction



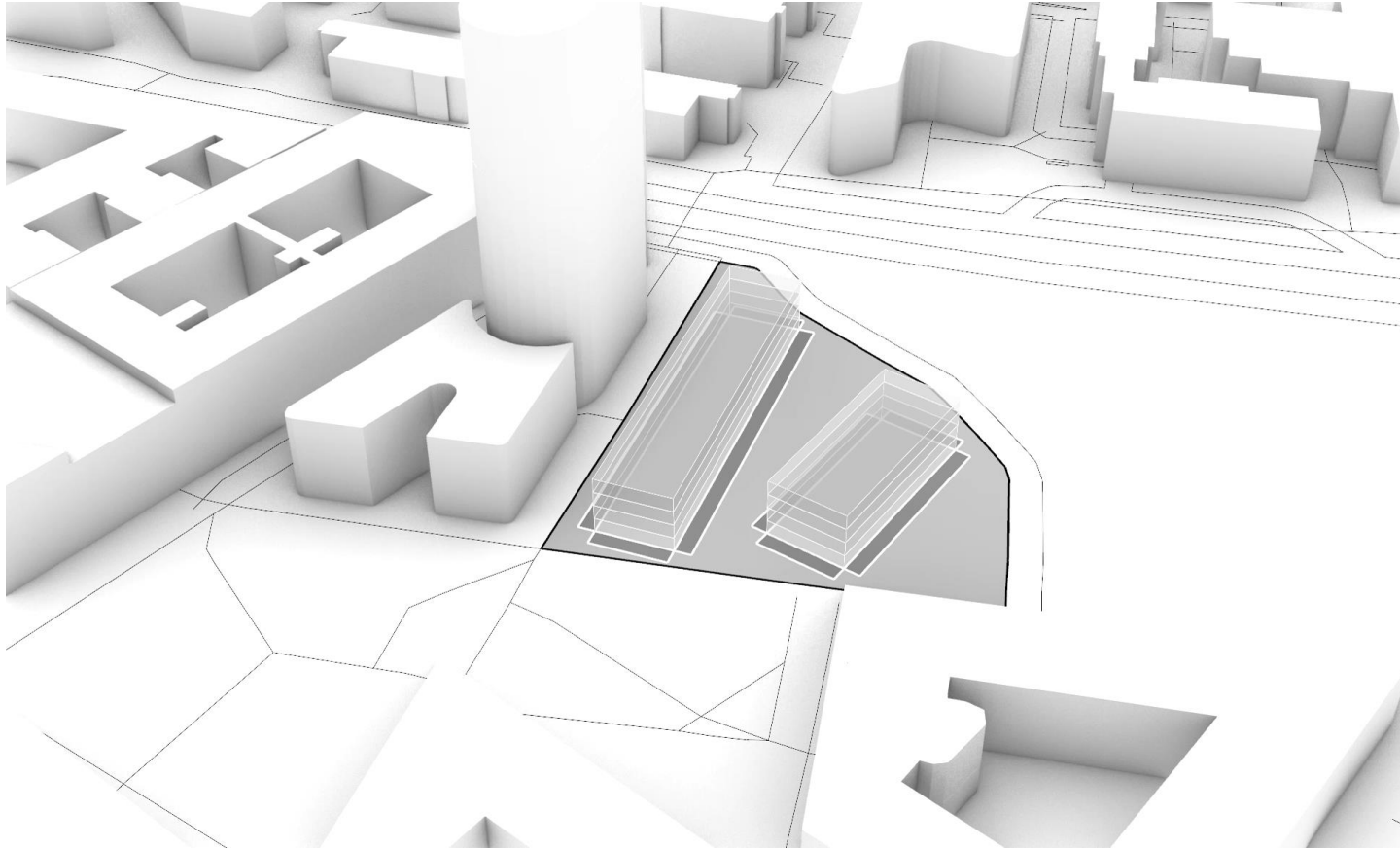


So
far
nothing
new...

AI based individuality



Generative Design - Refinement



Urban context

- Contour plot and dynamic building parameters

Building typology

- Representation of apartment mix
- Structural analysis

Apartment types

- Based on datasets of sample floor plans

Building components

- Basis for estimation and work preparation
- Design drawings

3D Rendering - Exterior View



Facade Options



Thank you!

**TIMES
CHANGE.
SO DO WE.**



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STRABAG
WORK ON PROGRESS