INSIGHT STRABAG

THEODOR SANSAKRIT STROHAL

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SOCIETAS EUROPAEA

1 **WHY BIM?**

2 **PROJECTS**

3 **NEXT LEVEL**

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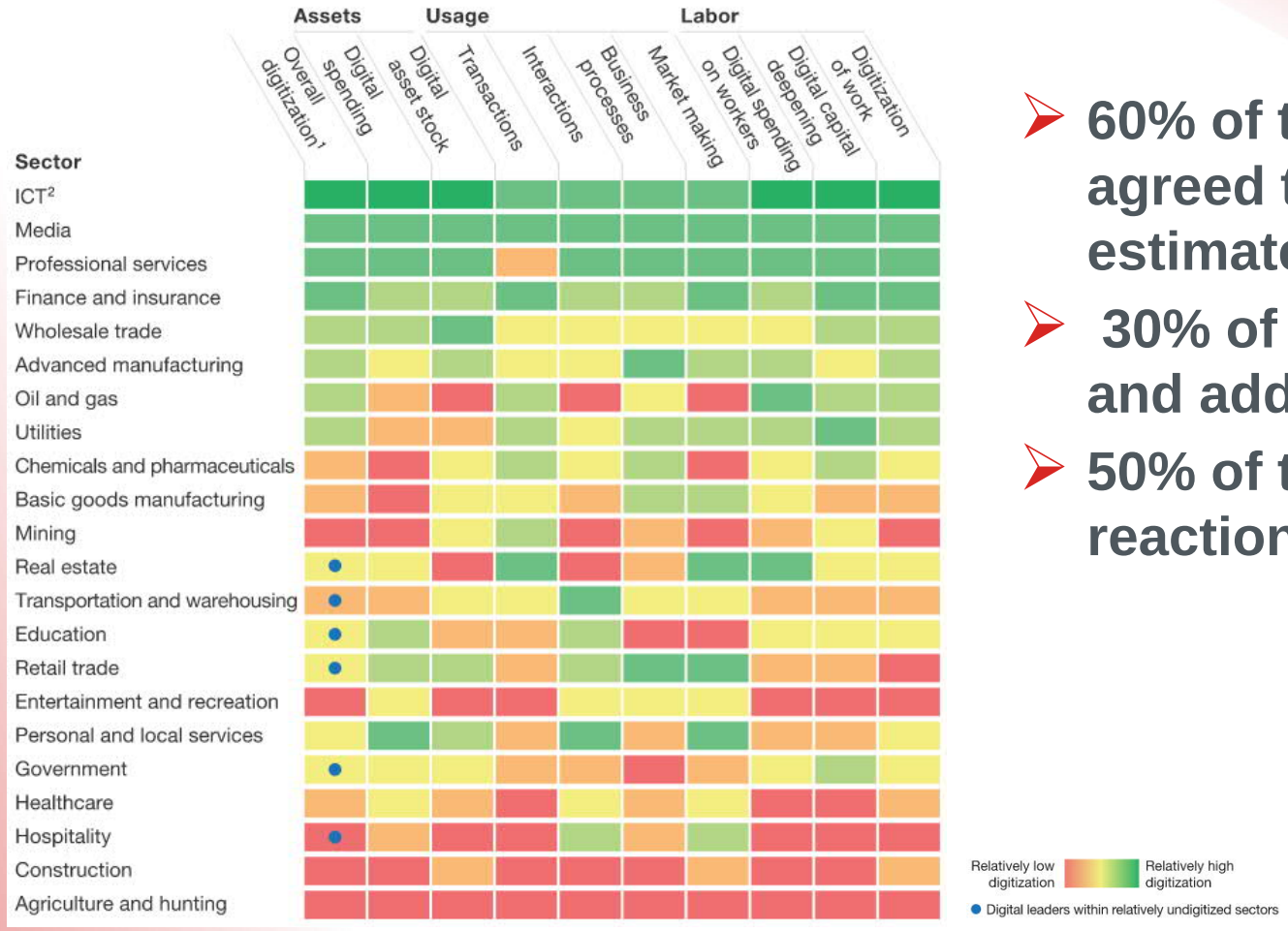
LEVEL OF DIGITALISATION WORLD WIDE ACCORDING TO BRANCHES



- 60% of the projects do not meet the agreed time schedule or the estimated costs
- 30% of the projects have claims and additional work.
- 50% of the measures are reactionary

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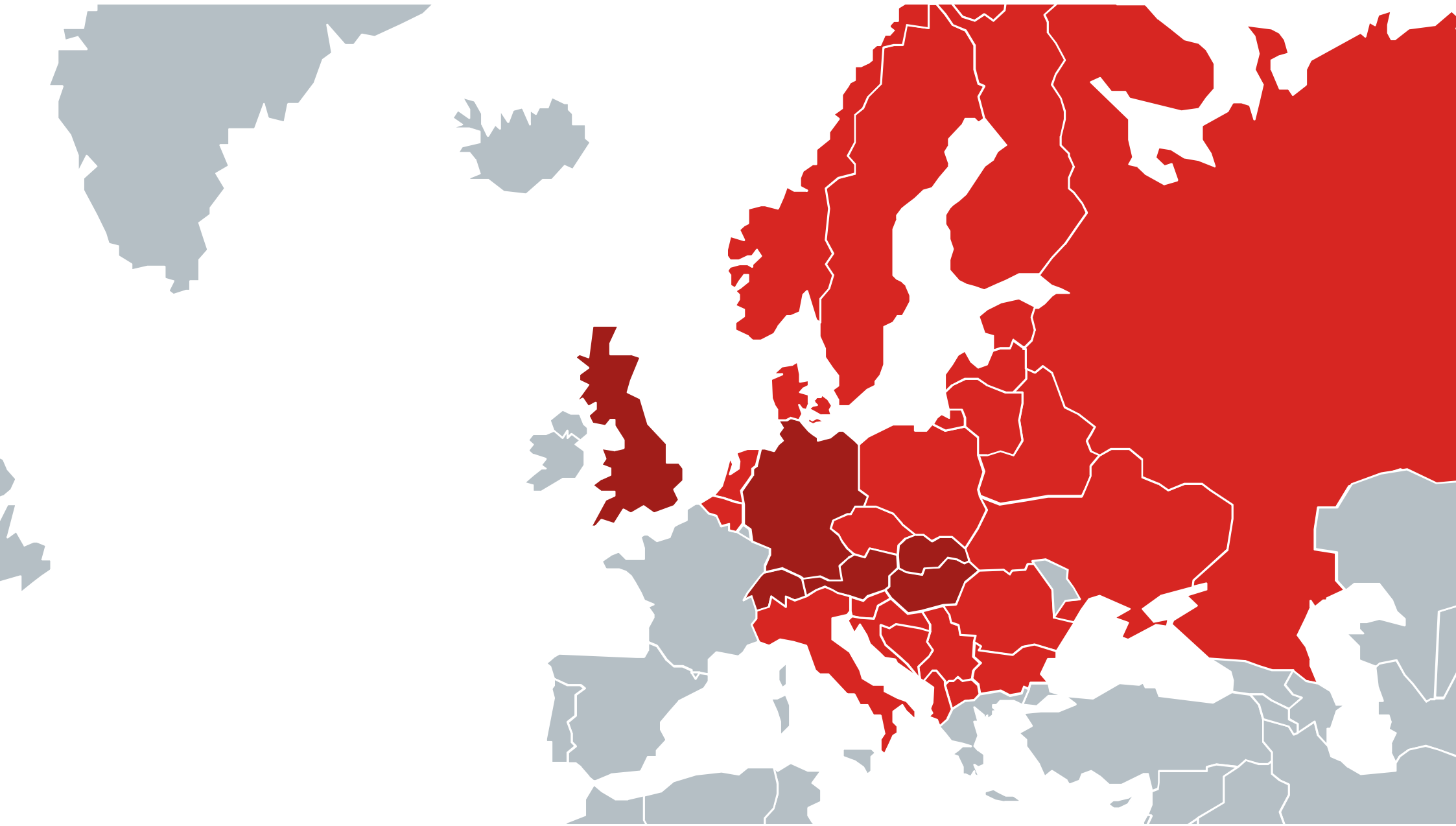
2018

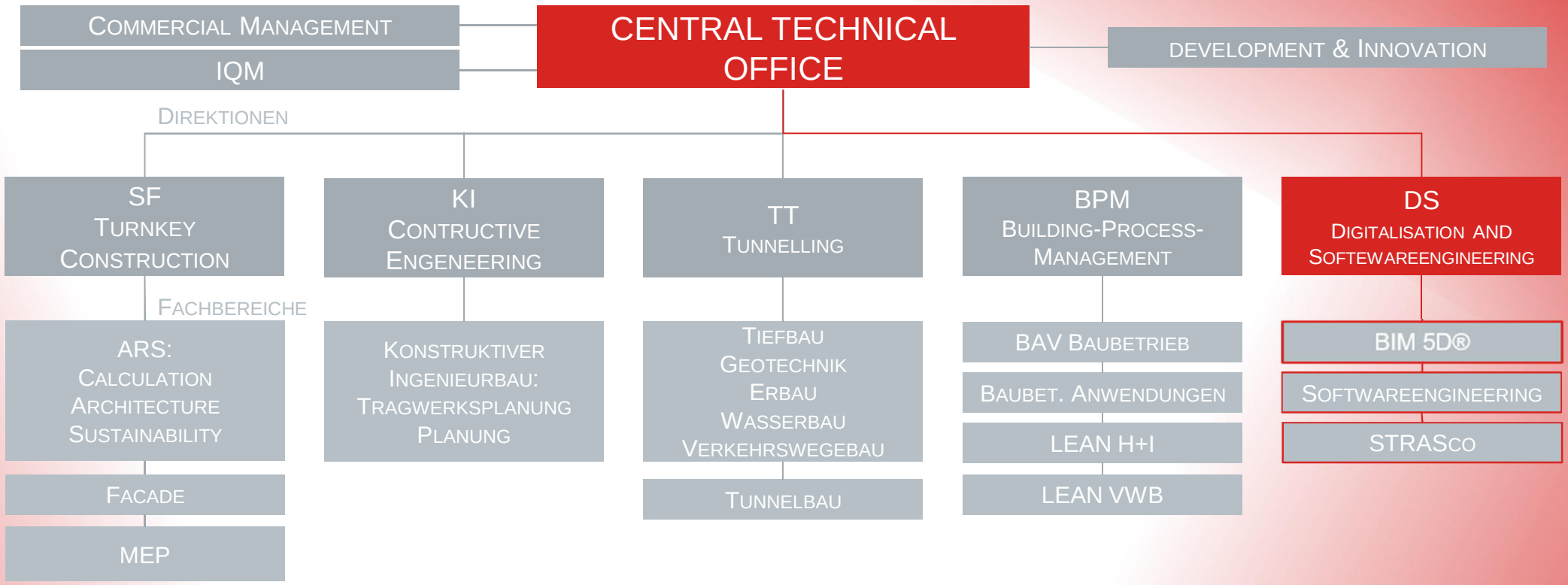
75,000
EMPLOYEES

EBIT MARGIN
≥3.3%

PERFORMANCE
16.4 BILLION

10,000
PROJECTS





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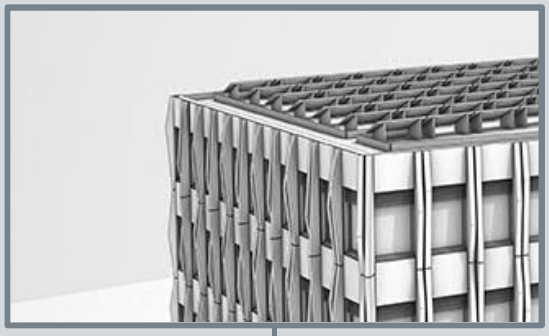
BIM 5D® TEAM

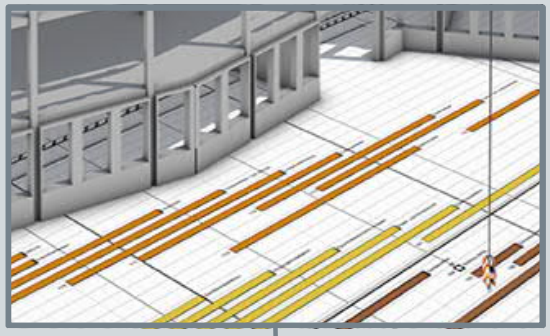
GEOMETRY



3D

SEE, WHAT IS TO BE BUILT

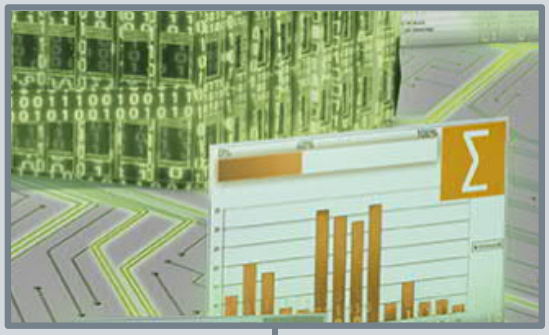
CONSTRUCTION WORKFLOW



4D

SEE, WHEN IS SOMETHING TO BE BUILT

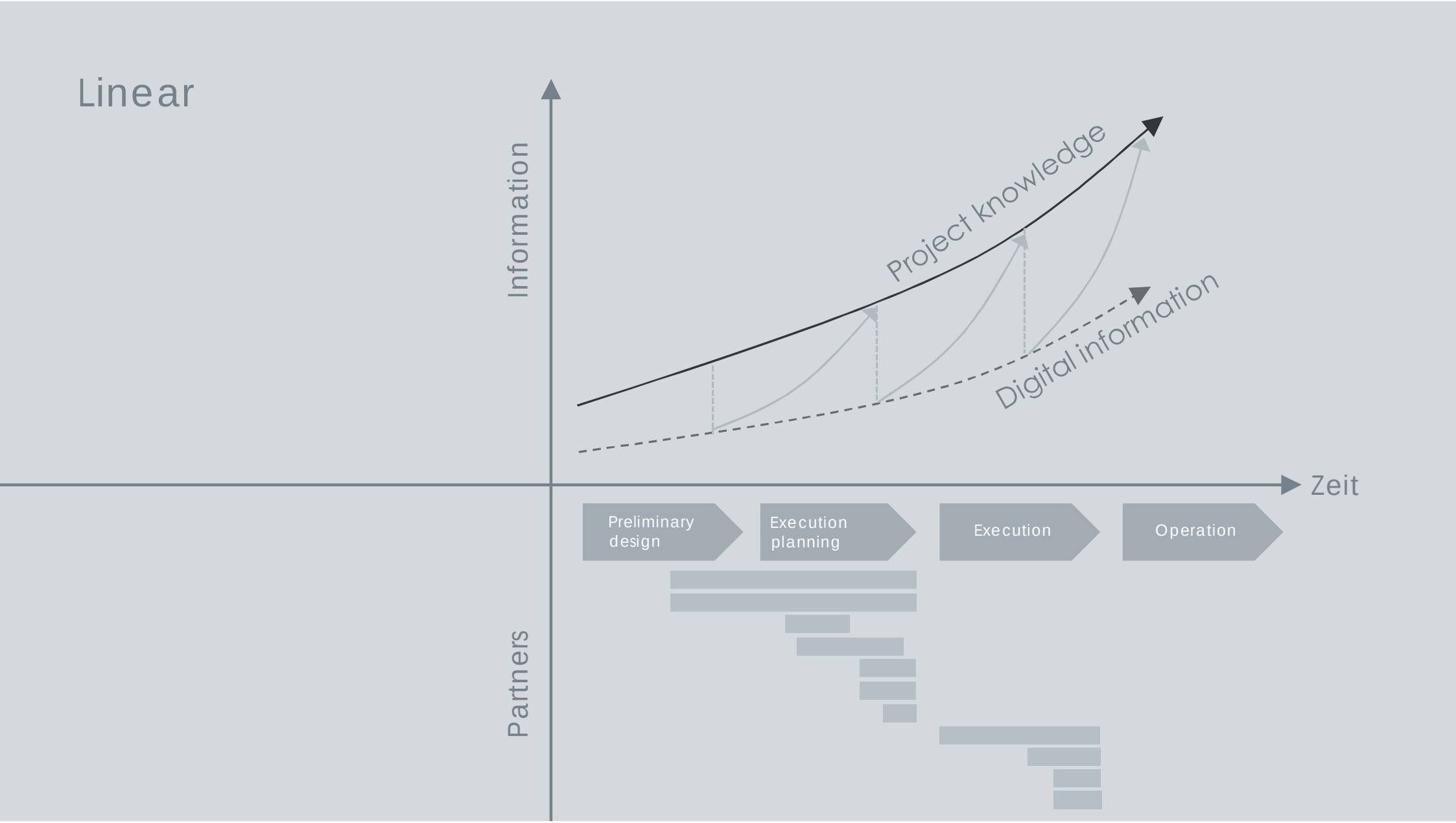
DATA AND PROCESS MANAGEMENT



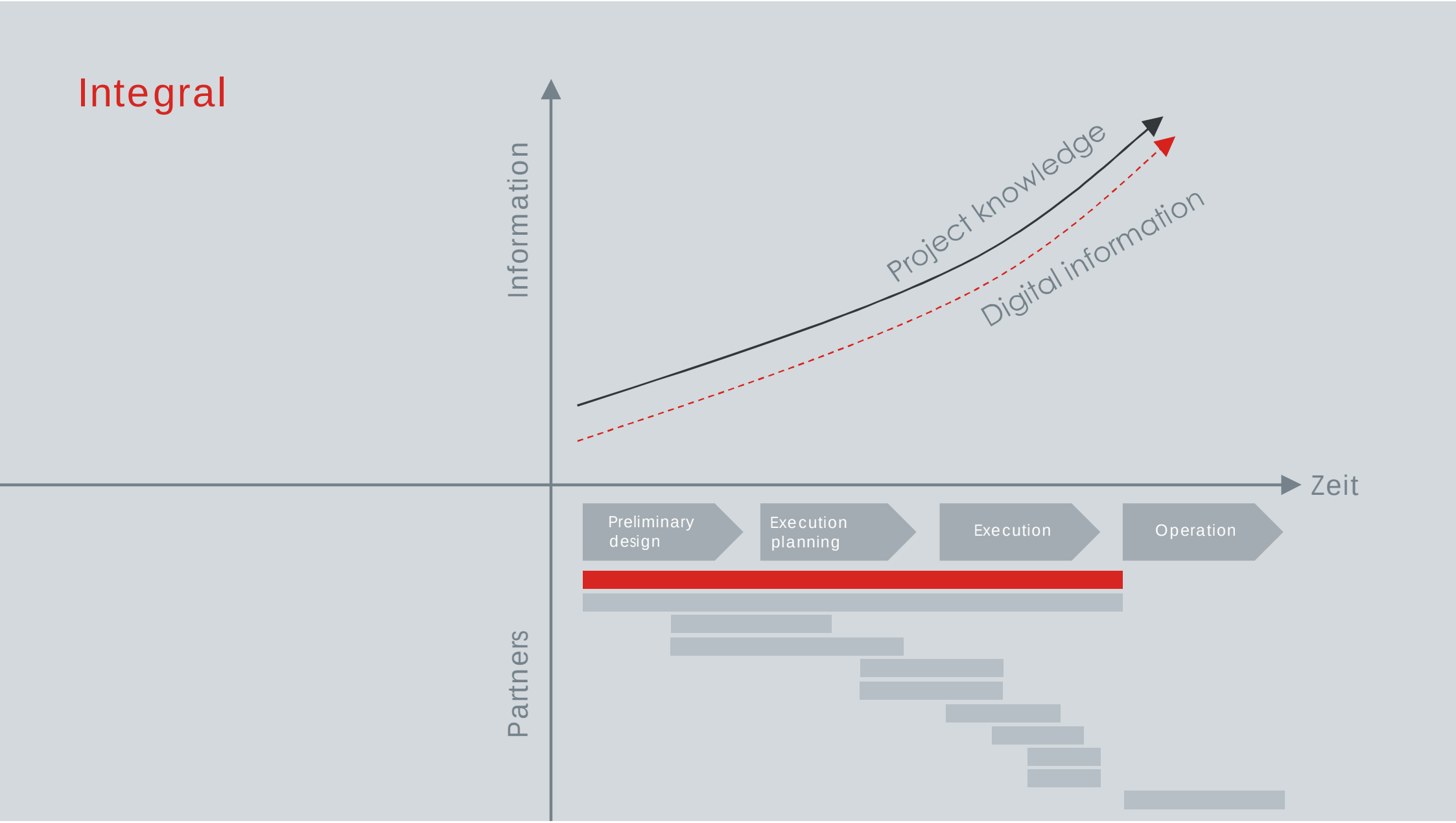
5D

SEE, HOW IS SOMETHING TO BE BUILT

Linear


Information
Project knowledge
Digital information
Zeit
Preliminary design
Execution planning
Execution
Operation
Partners

Integral


Information
Project knowledge
Digital information
Zeit
Preliminary design
Execution planning
Execution
Operation
Partners

WORKFLOW
Model
Catalogue
BOQ
Interface
Guidelines
Facility Management
As-built Model
Team concept
Virtual Project Space

MODEL

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ELEMENTS CATALOG

TEAMS WORK.

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BILL OG QUANTITY

TEAMS WORK.

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INTERFACES

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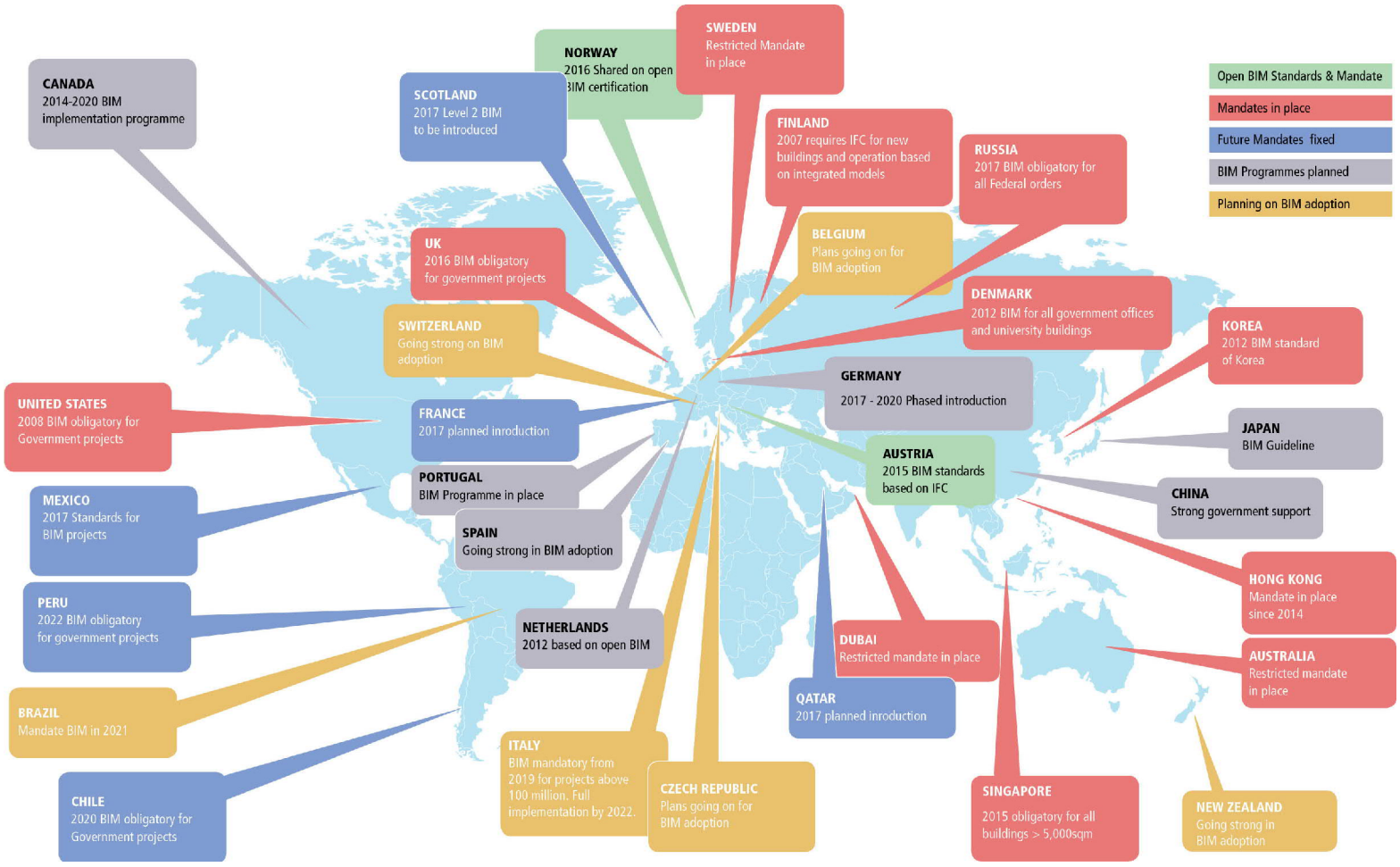
GUIDELINES



BIM ABROAD

Pionieers: Skandinavia,Benelux,GB,US; basis PAS

BIM IN AUSTRIA

ÖNORM A-6241-1&2 Property Server

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BESTANDSDATENMODELL

1 PROJEKT

10.000 PROJEKTE

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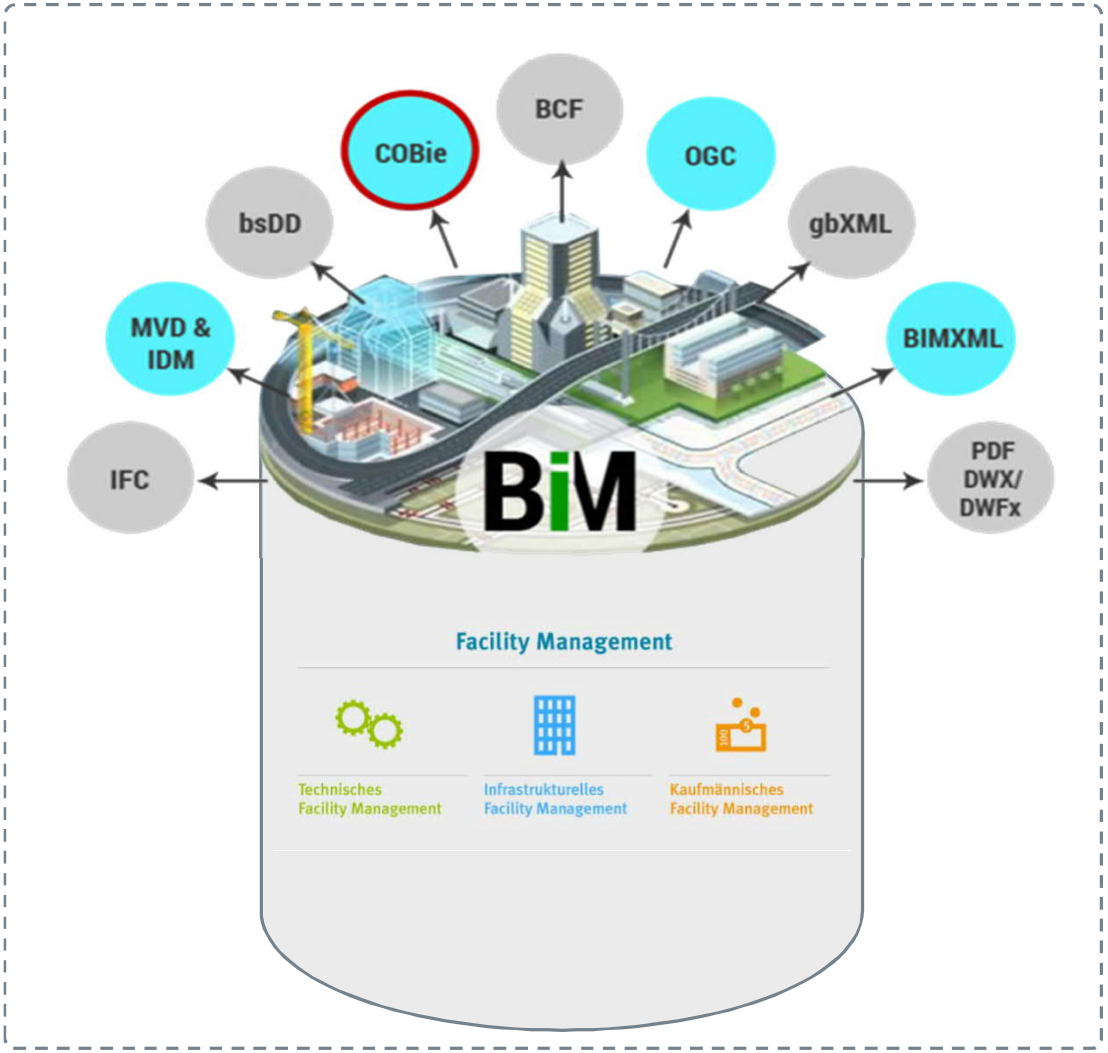
FACILITY MANAGEMENT



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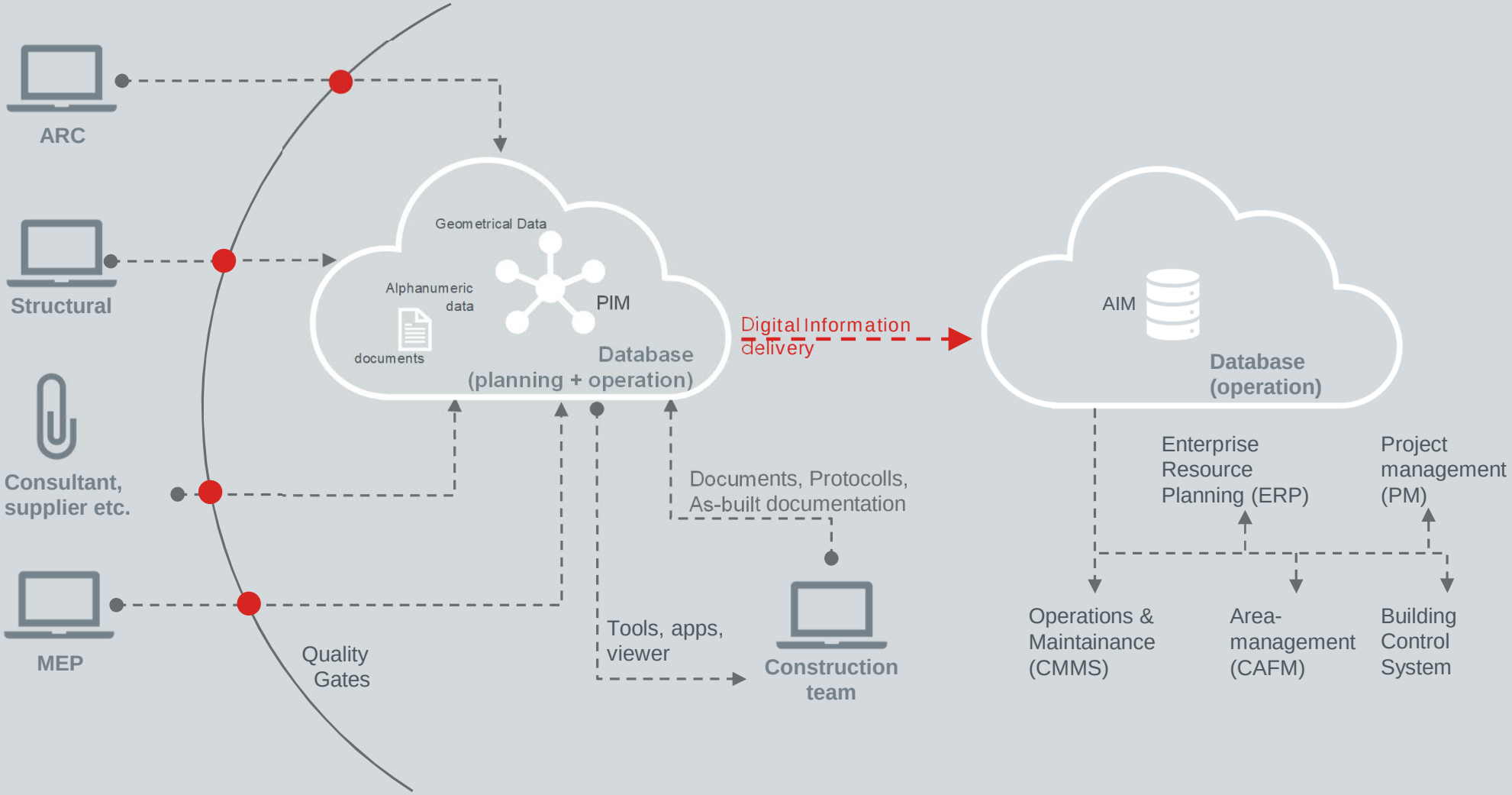
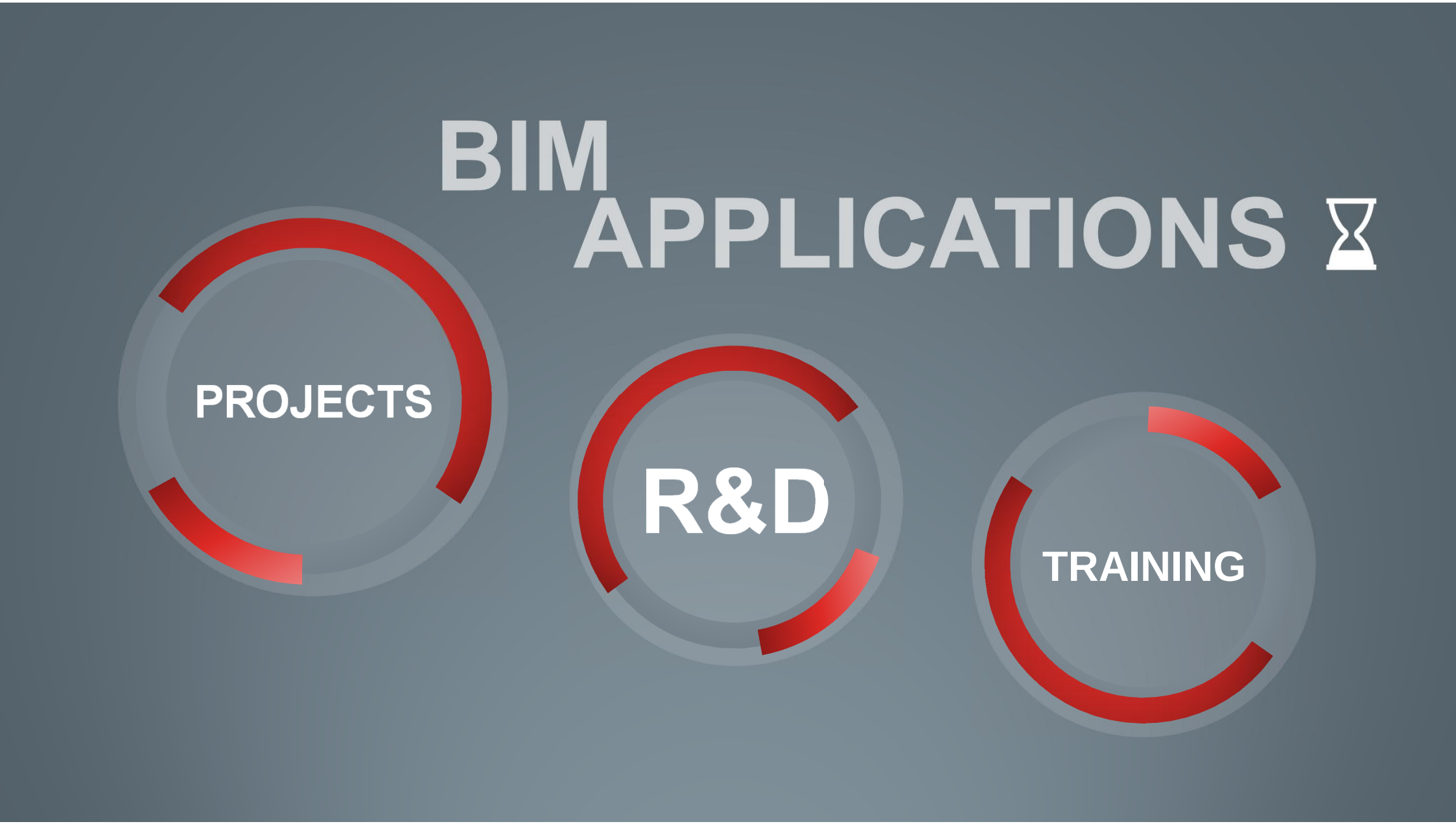
DATA IS THE NEW OIL



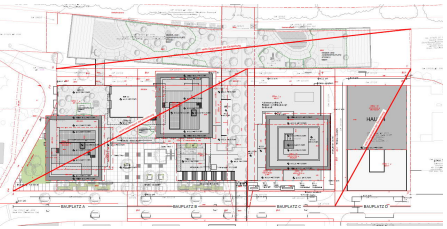
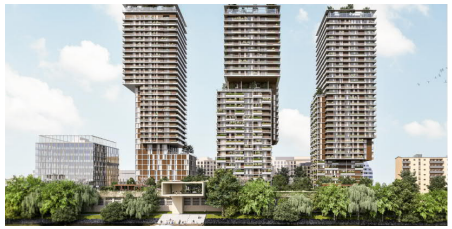
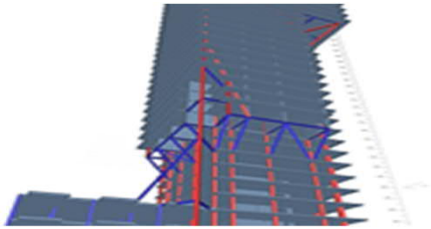
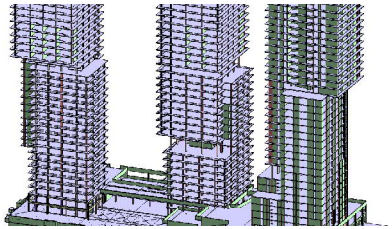
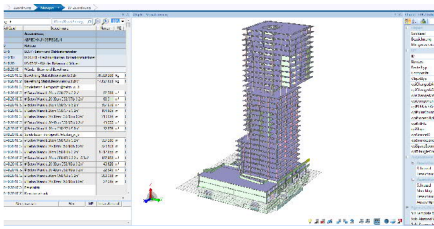

BIM
APPLICATIONS
PROJECTS
R&D
TRAINING

PROJECTS

BUILDING CONSTRUCTION

TRIIIPLE	CARREE ATZGERSDORF	CAPE 10	AXEL SPRINGER QUARTIER
SCHUL-BRÜDER	VIOA	ROEB	KARMELITER-HOF
GLASFASER-BAU	ALQ	A5.43	ASPJ

TRIIIPLE

GENERELLES

- Bauherr: ARE Development & SORAVIA
- AG der ZT: Dir. AP, Wien
- Auftragsvolumen: ~110 Mio €

BIM IM PROJEKT

Projektphasen: Ausführung

Besonderheiten:

- Modellierung des gesamten Rohbaus
- **BIM ist nicht Teil des Vertrages**
- **Modellierung Baustelleneinrichtung, Darstellung der vertikalen Baustellengeräte (Baukräne und Bauaufzüge) zur Veranschaulichung der Änderungen**
- Regelbasierte Verknüpfung von Modell und Leistungsverzeichnis in iTWO
- Verknüpfung von Modell und Taktplan für Regelgeschosse
- Erarbeitung von Workflows für den Einsatz der Modelle auf mobilen Endgeräten
- Koordination der Modellnutzung seitens PERI – modellbasierte Schalungsplanung
- Turm 1 Bewehrungsmodell vom Tragwerksplaner – evtl. AR Anwendung

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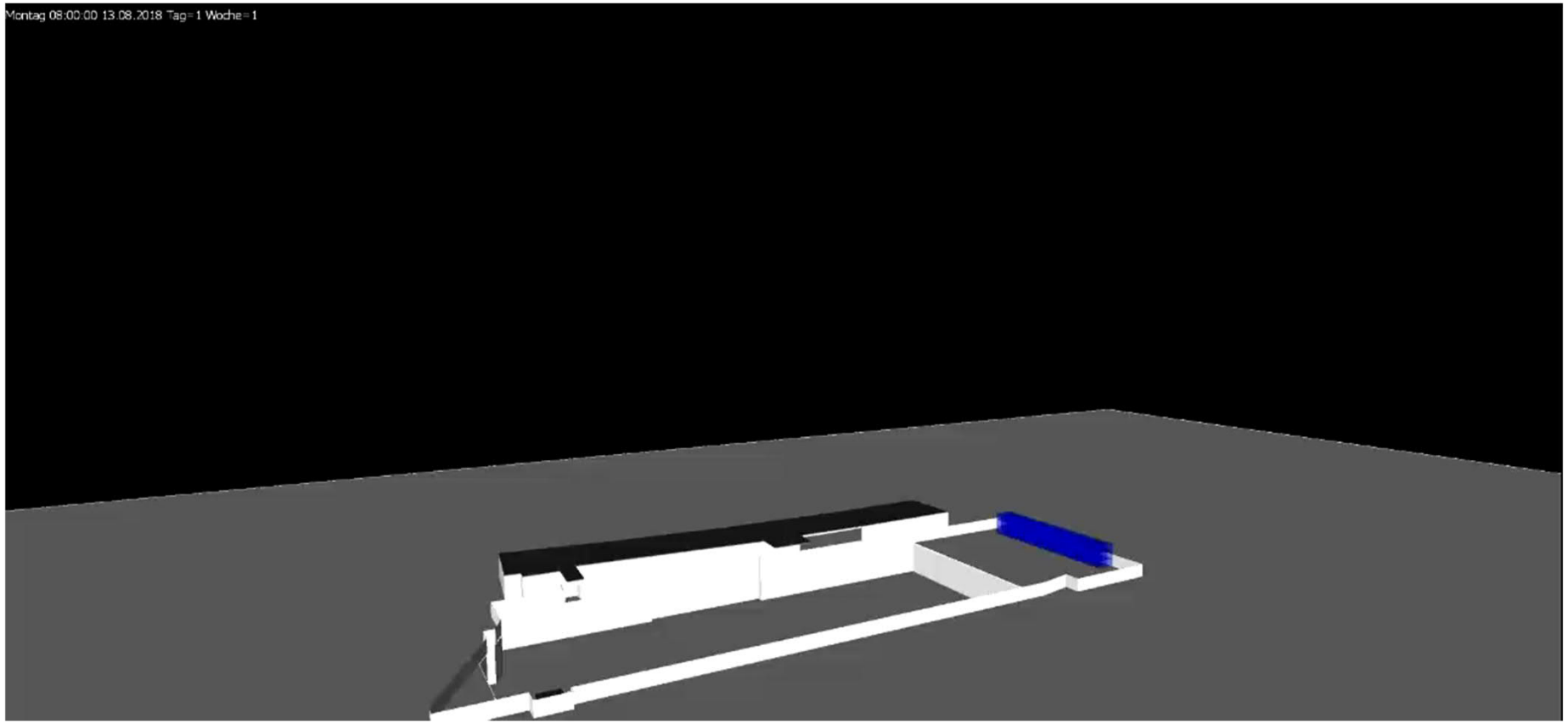
3D-MODELLIERUNG



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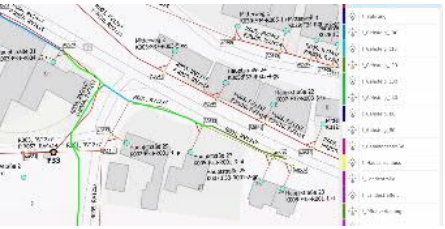
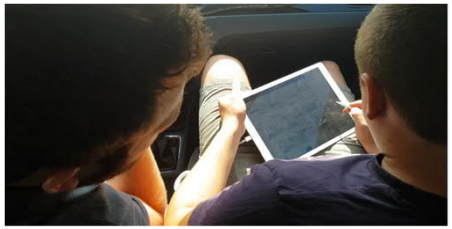
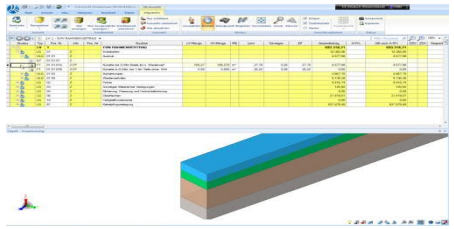
GLASFASERBAU, DIR. AH







GENERELLES

- Bauherr: UB4W
- AG der ZT: Dir. AH, Rastenfeld
- Prozessoptimierung in der Angebotsphase

BIM IM PROJEKT

Project phase: tender

Characteristics:

- 2D – 5D automated model creation based on polylines
- Agile project
- Data processing (GIS-CAD-Revit-ITWO)
- iTWO – creation of model-based BOQ
- Workshops & training Dir. AH

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GLASSFIBRE

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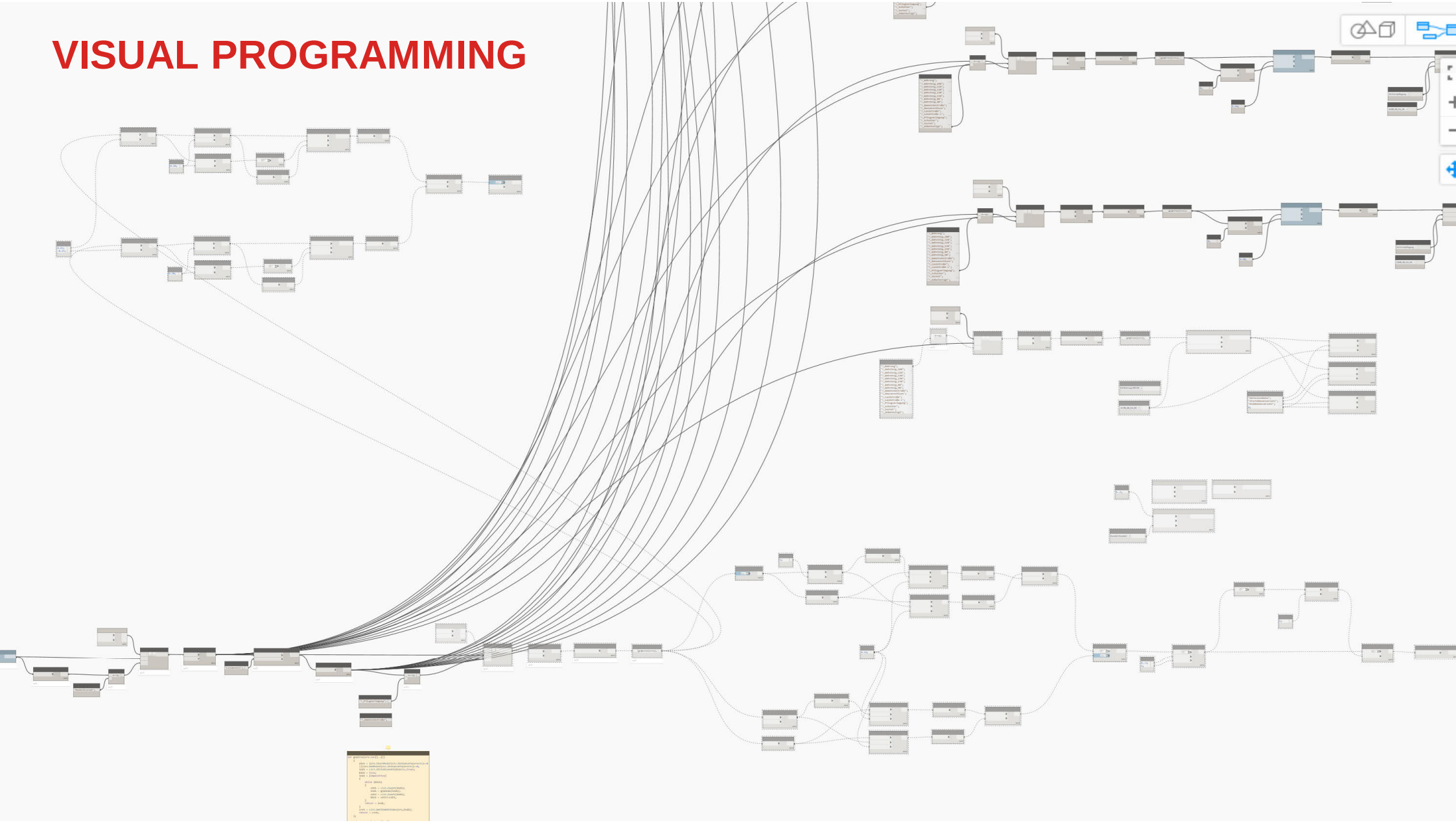
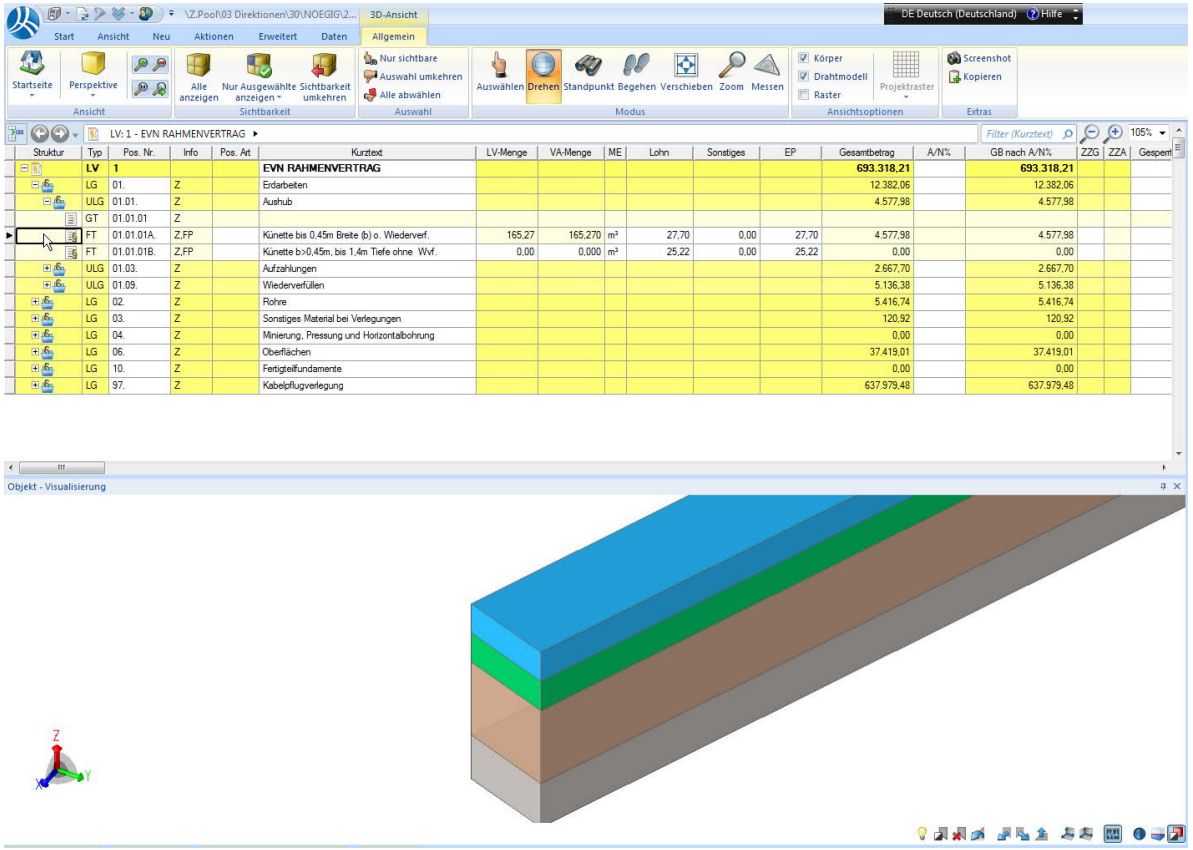
VISUAL PROGRAMMING



BOQ FROM THE 3D MODELL



Struktur	Typ	Pos. Nr.	Info	Pos. Art	Kurztext	LV-Menge	VA-Menge	ME	Lohn	Sonstiges	EP	Gesamtbetrag	A/N%	GB nach A/N%	ZZG	ZZA	Gesperrt
	LV	1			EVN RAHMENVERTRAG							693.318,21		693.318,21			
	LG	01.	Z		Erdarbeiten							12.382,06		12.382,06			
	ULG	01.01.	Z		Aushub							4.577,98		4.577,98			
	GT	01.01.01	Z														
	FT	01.01.01A.	Z,FP		Künette bis 0,45m Breite (b) o. Wiederverf.	165,27	165,270	m²	27,70	0,00	27,70	4.577,98		4.577,98			
	FT	01.01.01B.	Z,FP		Künette b>0,45m, bis 1,4m Tiefe ohne Wvf.	0,00	0,000	m²	25,22	0,00	25,22	0,00		0,00			
	ULG	01.03.	Z		Aufzahlungen							2.667,70		2.667,70			
	ULG	01.09.	Z		Wiederverfüllen							5.136,38		5.136,38			
	LG	02.	Z		Rohre							5.416,74		5.416,74			
	LG	03.	Z		Sonstiges Material bei Verlegungen							120,92		120,92			
	LG	04.	Z		Minierung, Pressung und Horizontalbohrung							0,00		0,00			
	LG	06.	Z		Oberflächen							37.419,01		37.419,01			
	LG	10.	Z		Fertigteilfundamente							0,00		0,00			
	LG	97.	Z		Kabelpflugverlegung							637.979,48		637.979,48			

AXEL SPRINGER QUARTIER, BERLIN

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RESEARCH & DEVELOPMENT

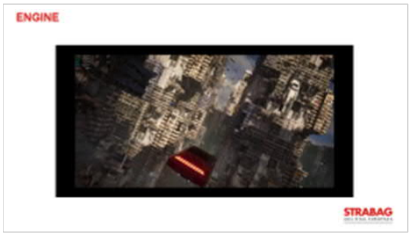
DIG UP

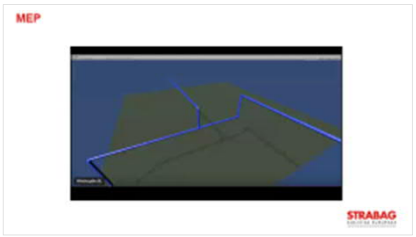
APPS

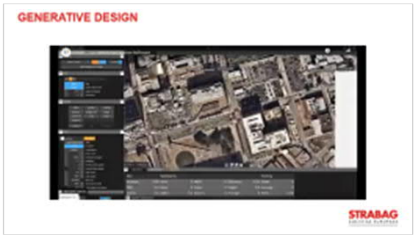
BEAM

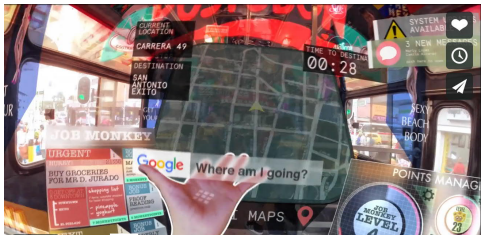
HBIM

WHAT COMES









NEXT

Model processing at game speed

Implementation of algorithms

Generative design

Ontology replacing standardisation

Hyper reality

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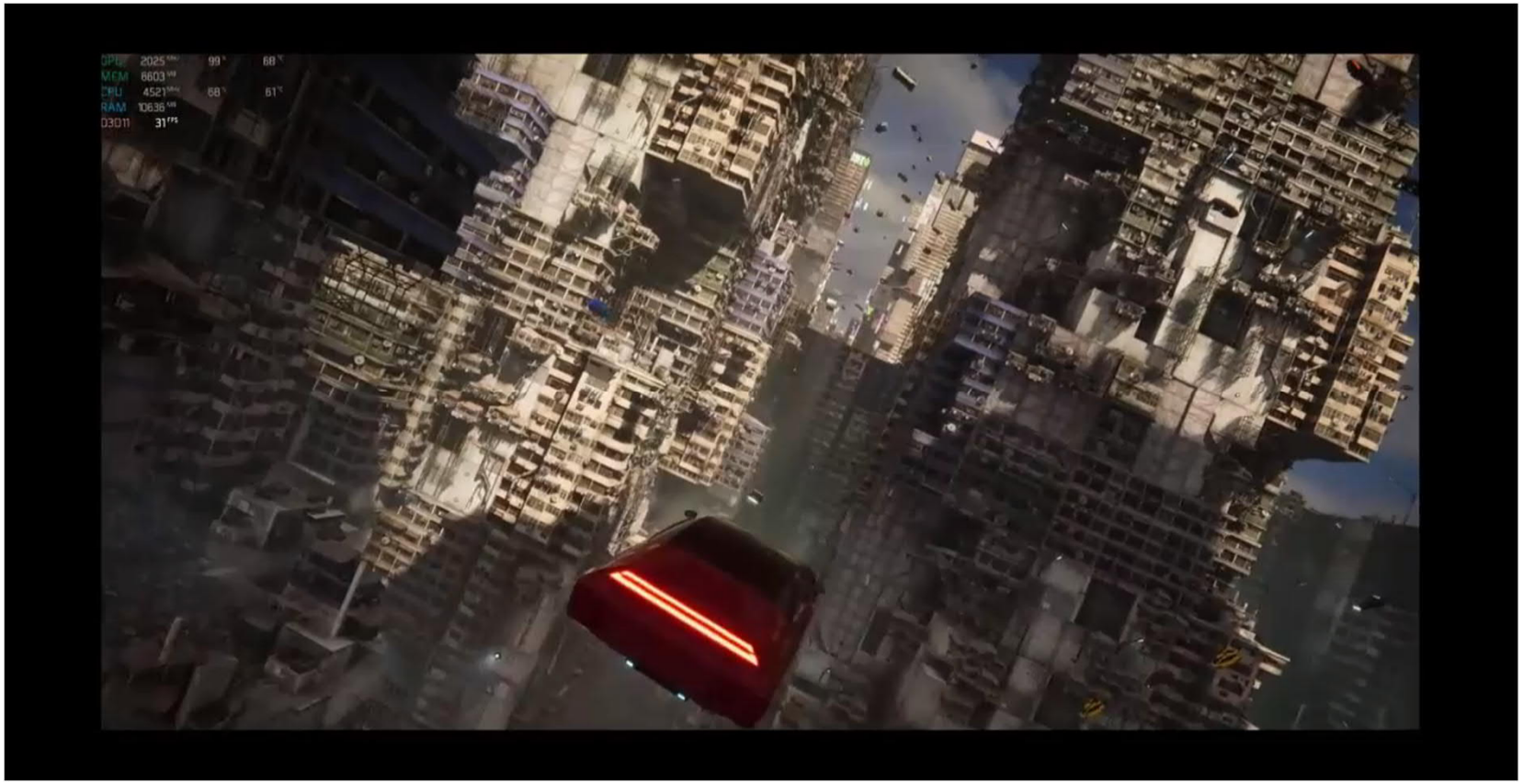
ENGINE



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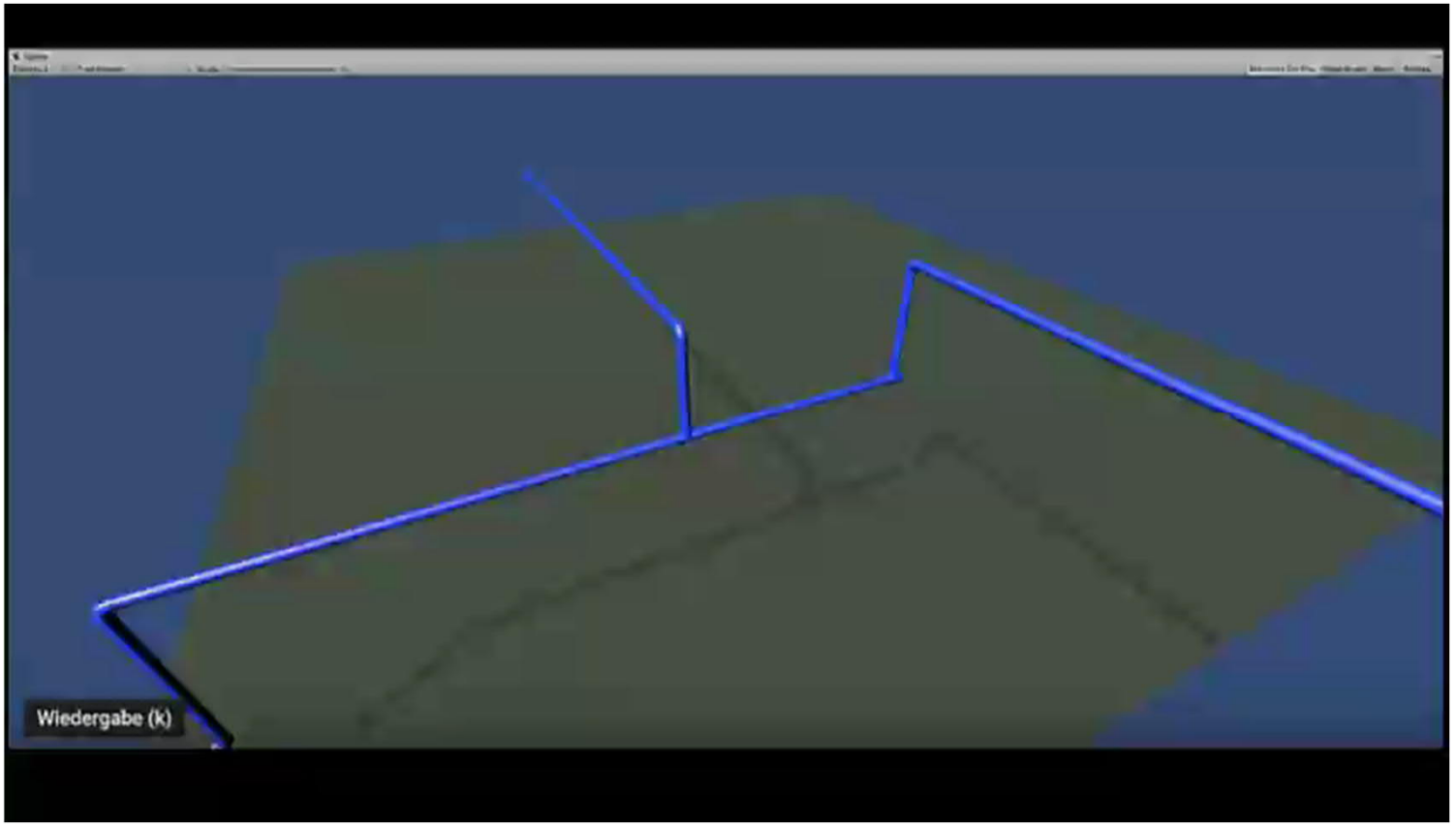
MEP



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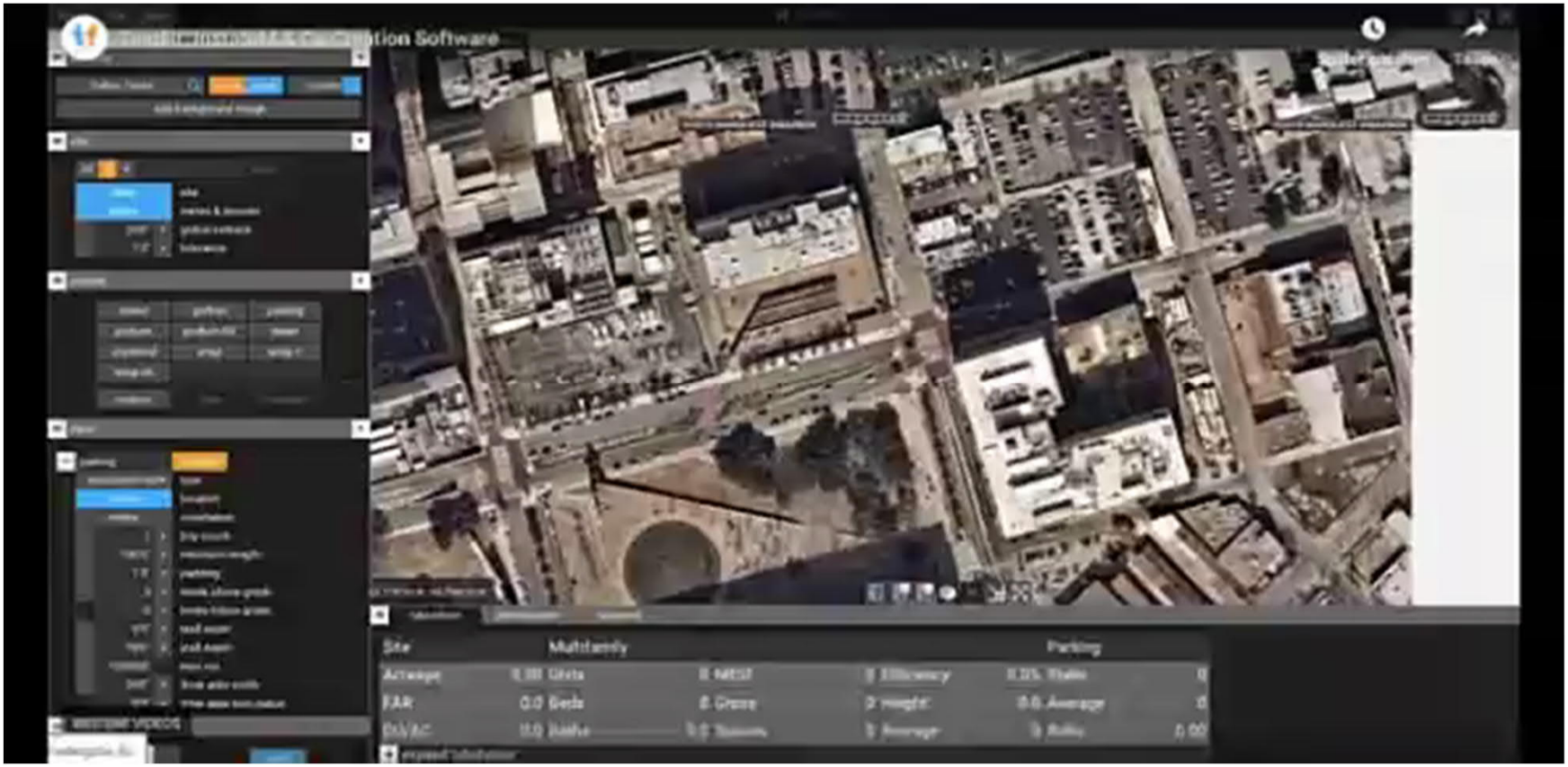
GENERATIVE DESIGN



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APPS

AUGMENTED REALITY

REINFORCEMENT REPORT

FACADE TRACKING

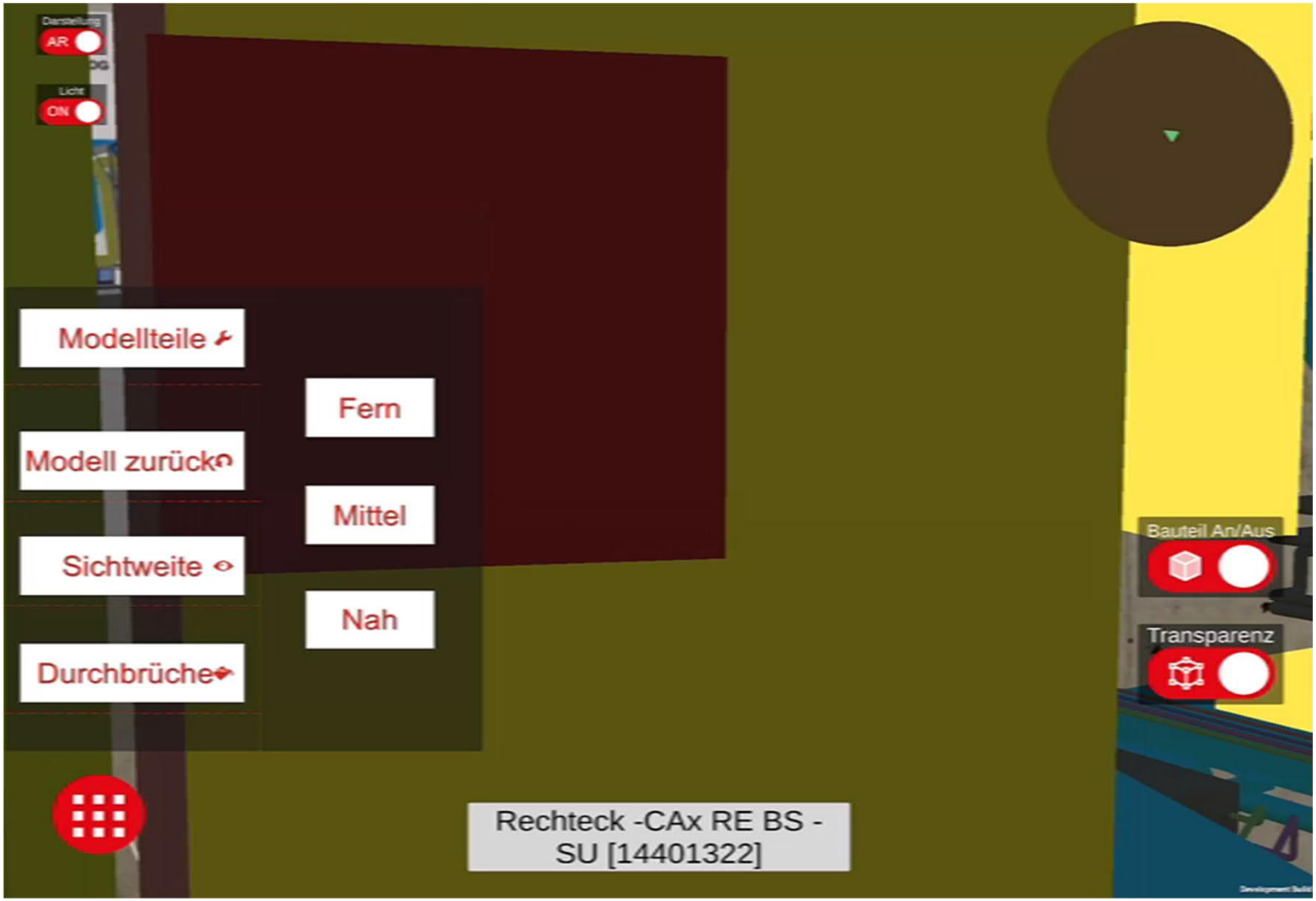
LEAN

PLAN ADMINISTRATION

FACILITY MANAGEMENT

FM CONTROL

AUGMENTED REALITY APP



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FACADE TRACKING

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FACILITY MANAGEMENT

ZÜBLIN STRABAG
TEAMS WORK.

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2 PARTNERING

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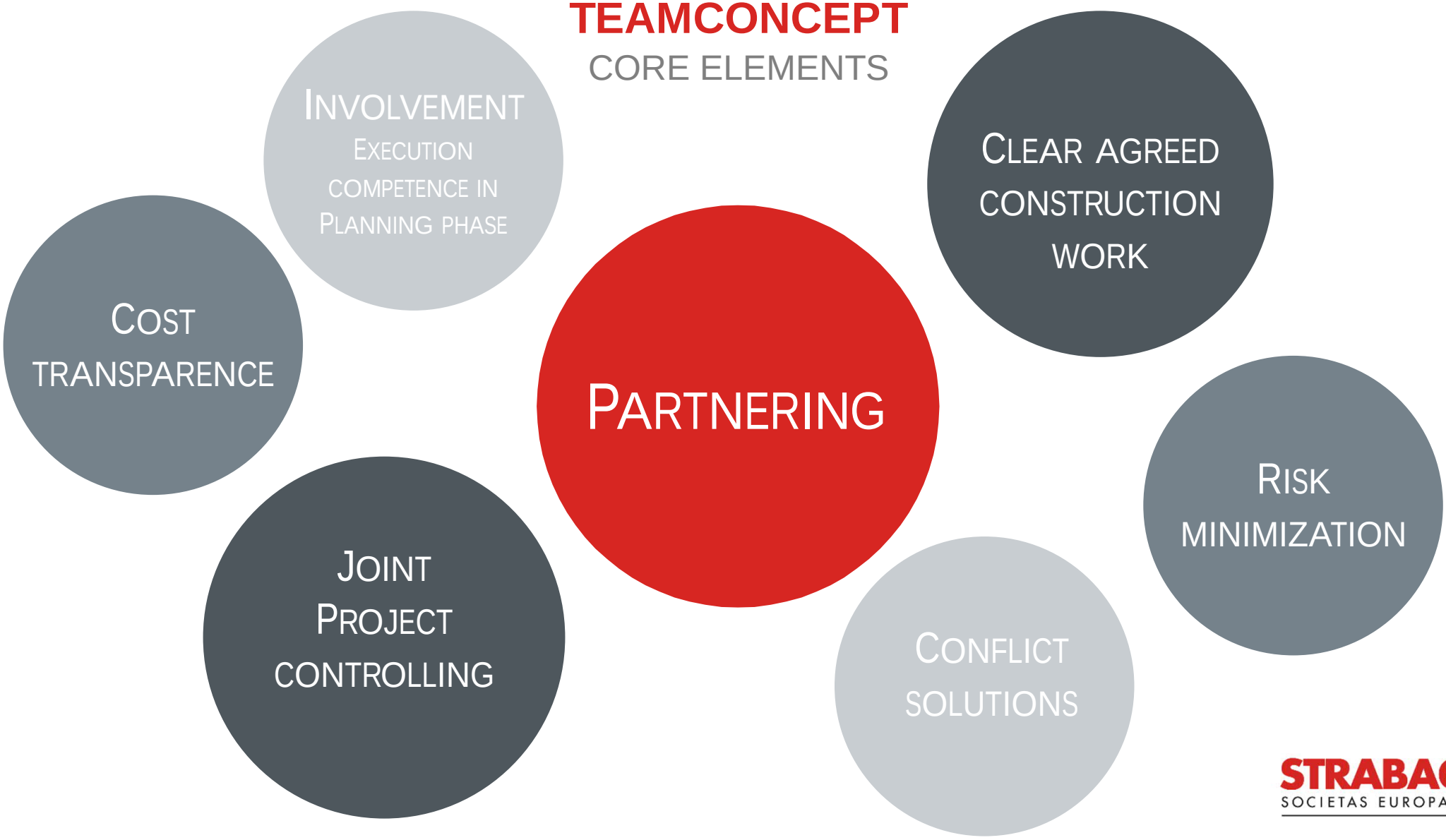
TEAMS WORK.

TEAMCONCEPT

CORE ELEMENTS



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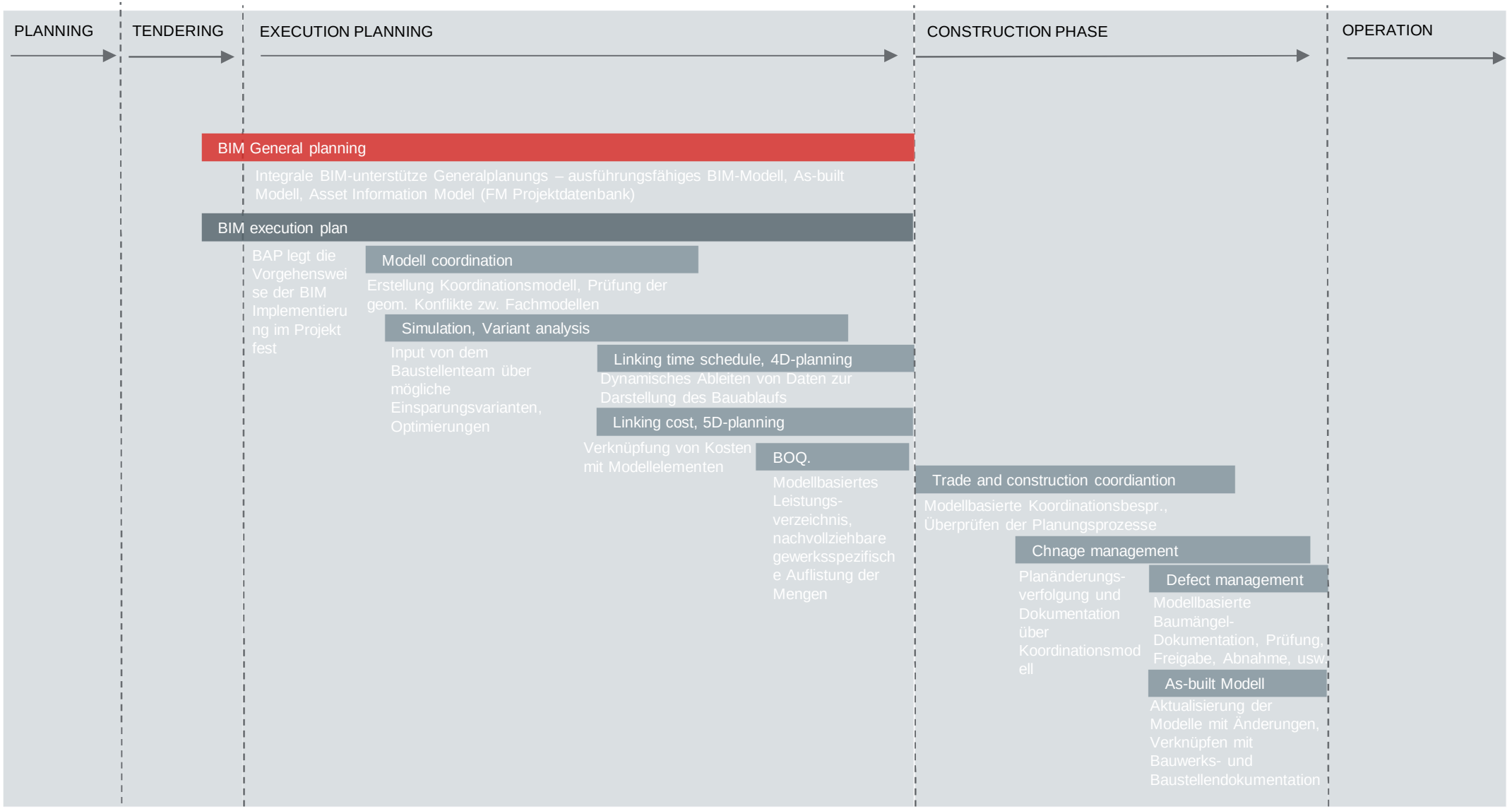
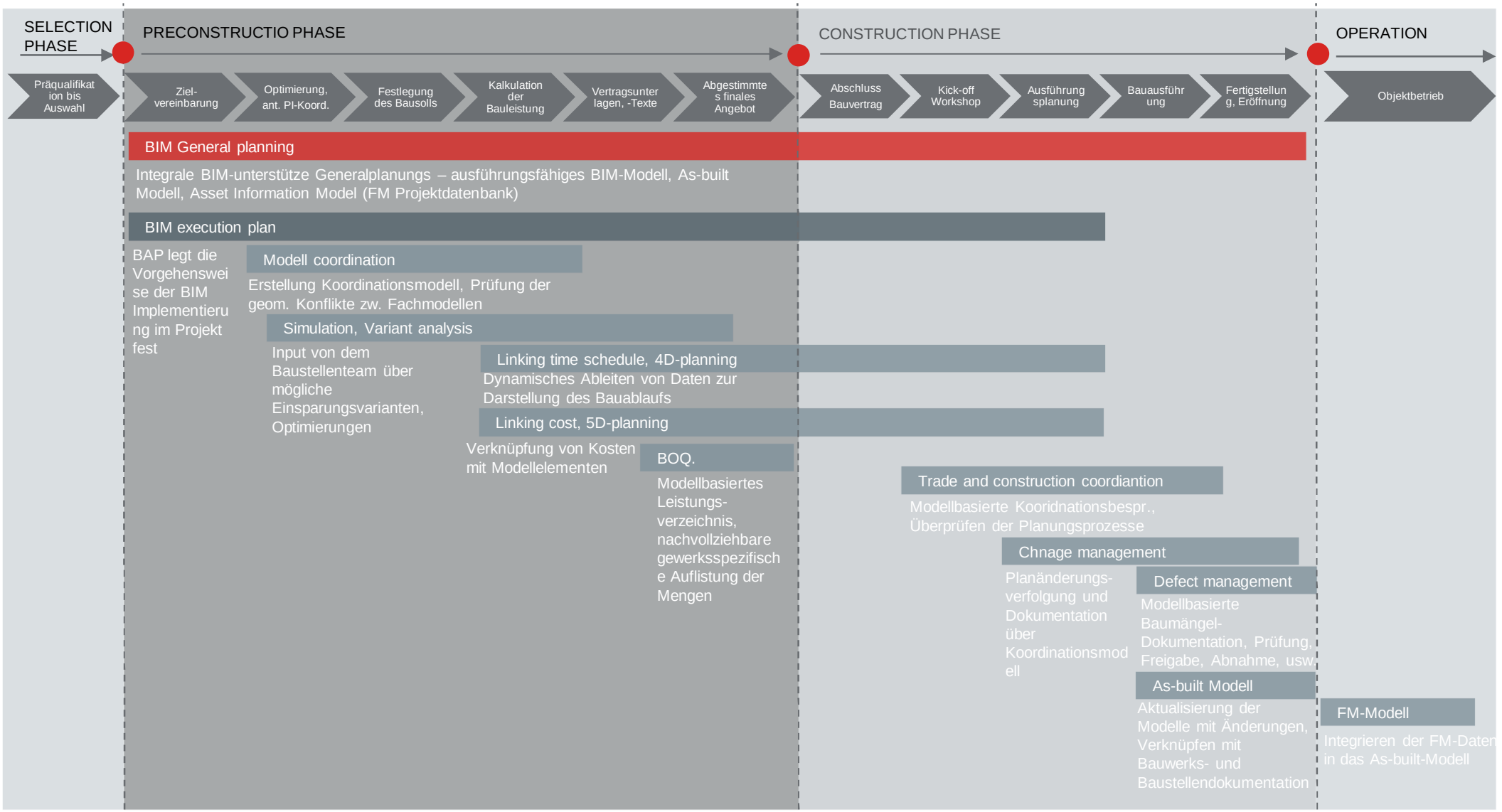
PARTNERING WITH BIM

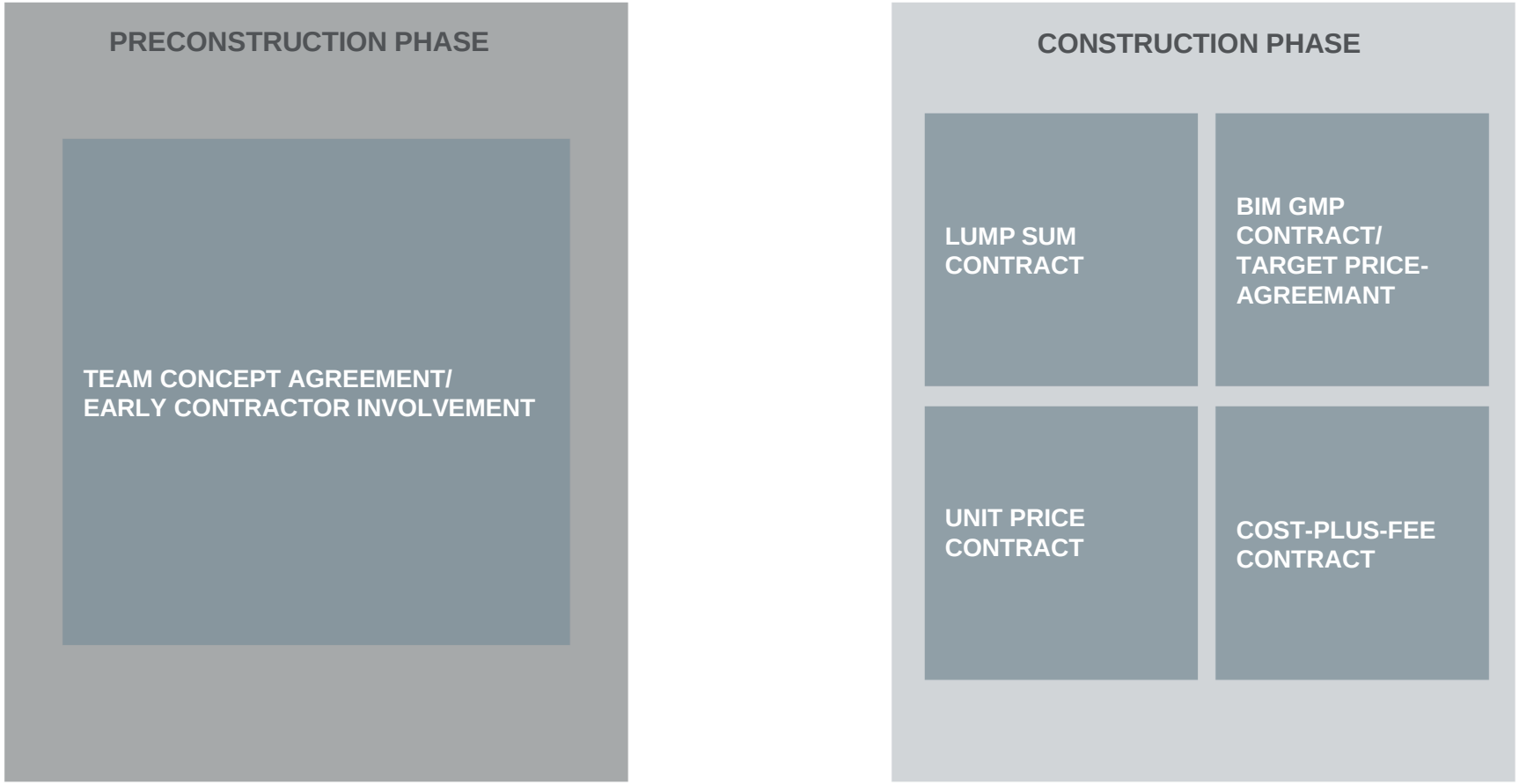


PARTNERING WITH BIM



PARTNERING WITH BIM

LEGAL BASES



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COLLABORATION

MIXED TEAMS

Operativ

ZT

© Zentrale Technik, 26.04.2019

3 CHANGE MANAGEMENT

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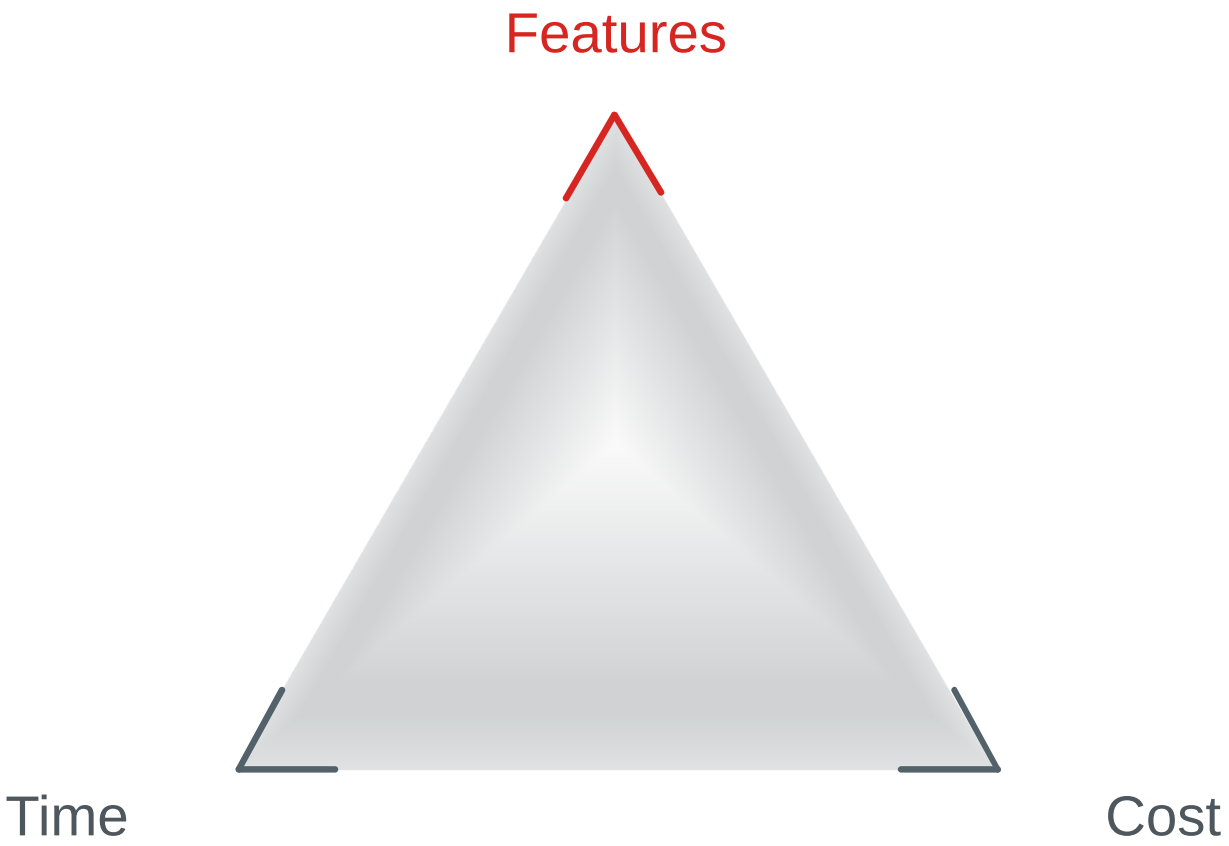
TEAMS WORK.

FIX



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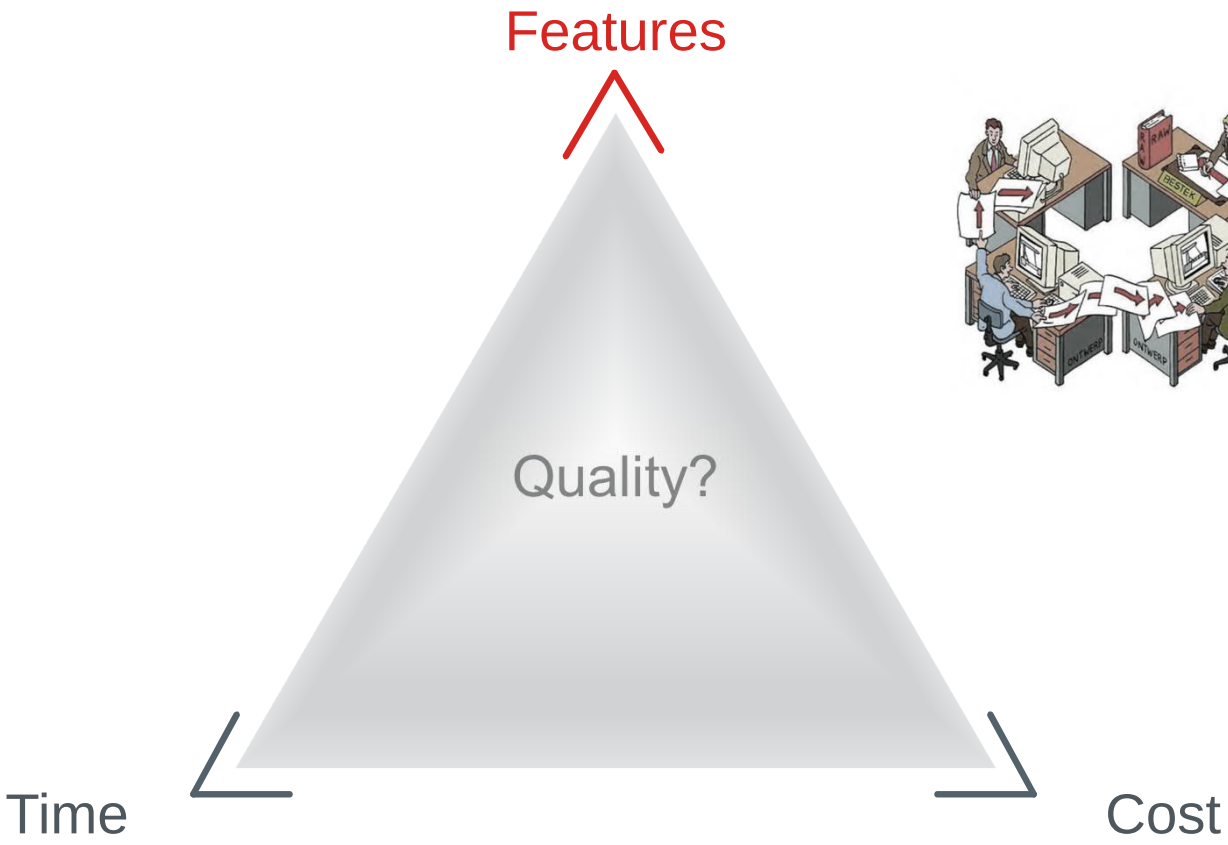
FIX



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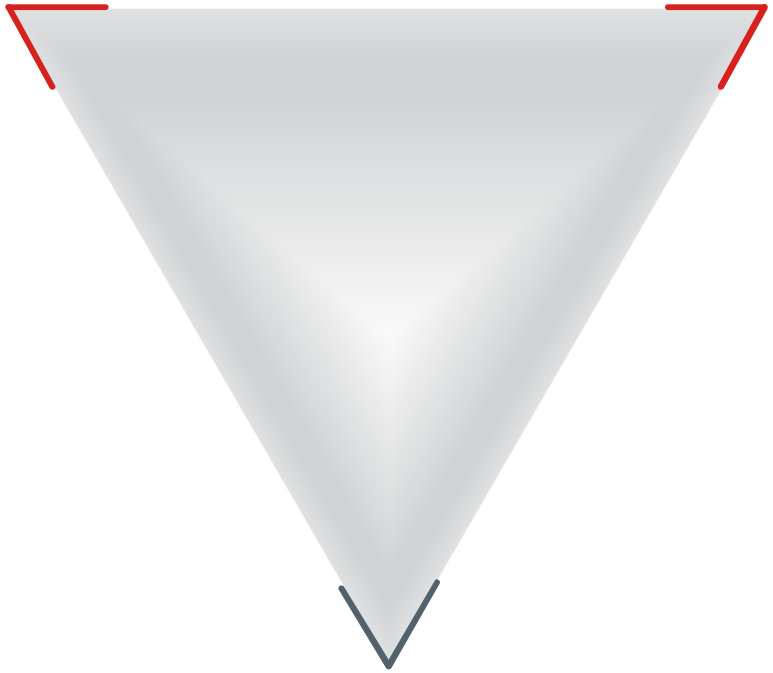
Time

Cost



Features

VARIABLE

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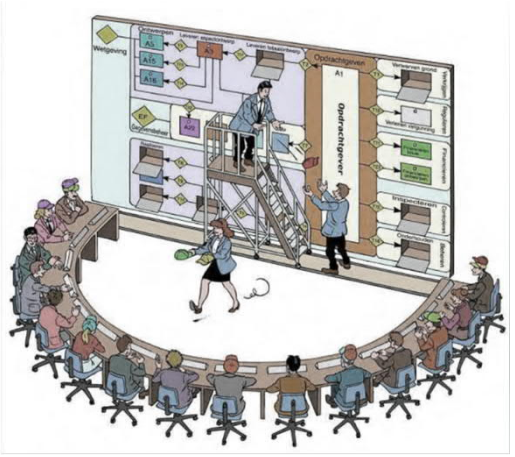
Time

Cost



Quality

Features

VARIABLE

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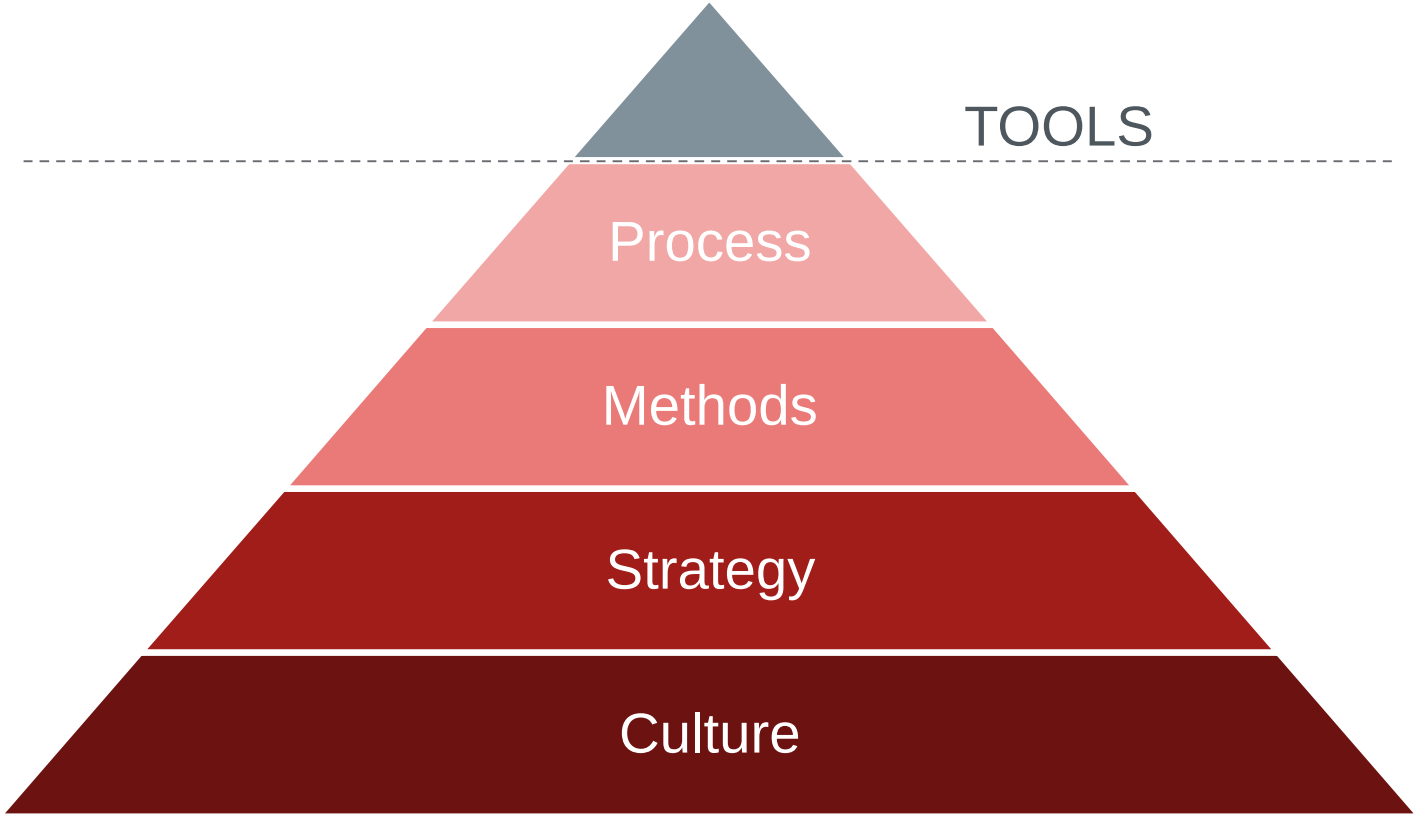
BIM OPERATION INFLUENCES DEEPLY IN COMPANY CULTURE



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CURRENT CHALLENGES

ECONOMIC

Continuing overcapacity

Claim- and anticlaim-management conflicts

Know-How loss through single phasing

1

CLIENT

Necessity of award safety

Staff shortage

Target-costs aren't achievable

2

CONTRACTOR

Late awarding due to resource shortages

Decrease of plan quality due to short lead time

3

CURRENT CHALLENGES

CONTRACTUAL

Little experience of project participants

Shifting costs

Cultural change: BIM requires rethinking on the current building process

4

TECHNICAL

Platform issues: Data generation, storage and utilization

AEC Software sucks

APPS: Mobile applications

FM: Model data compatibility, update, continuation

5

WHAT COMES NEXT

- Limitless data networking
- IoT, 5G, everything is online
- Abolition of Multiple data storage
- Model processing at game speed
- Minimization of standardization
- Implementation of algorithms
- Matching interaction and automation
- Generative design
- AI in Construction industry
- Machine learning

THANK YOU!

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