A holistic approach on building portfolio management and carbon risk
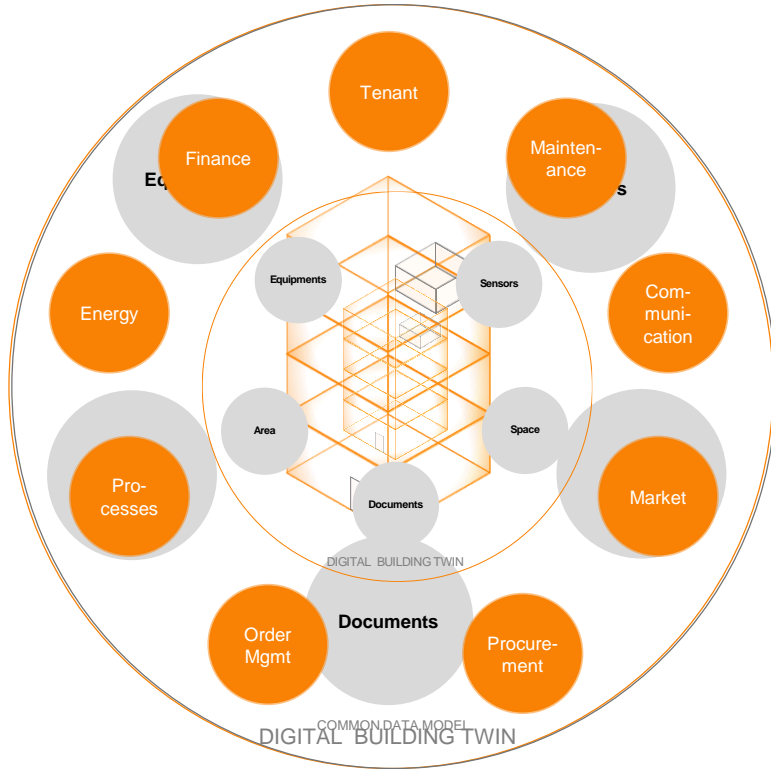
Dr. Jens Hirsch | BuildingMinds Domain Expert Sustainability
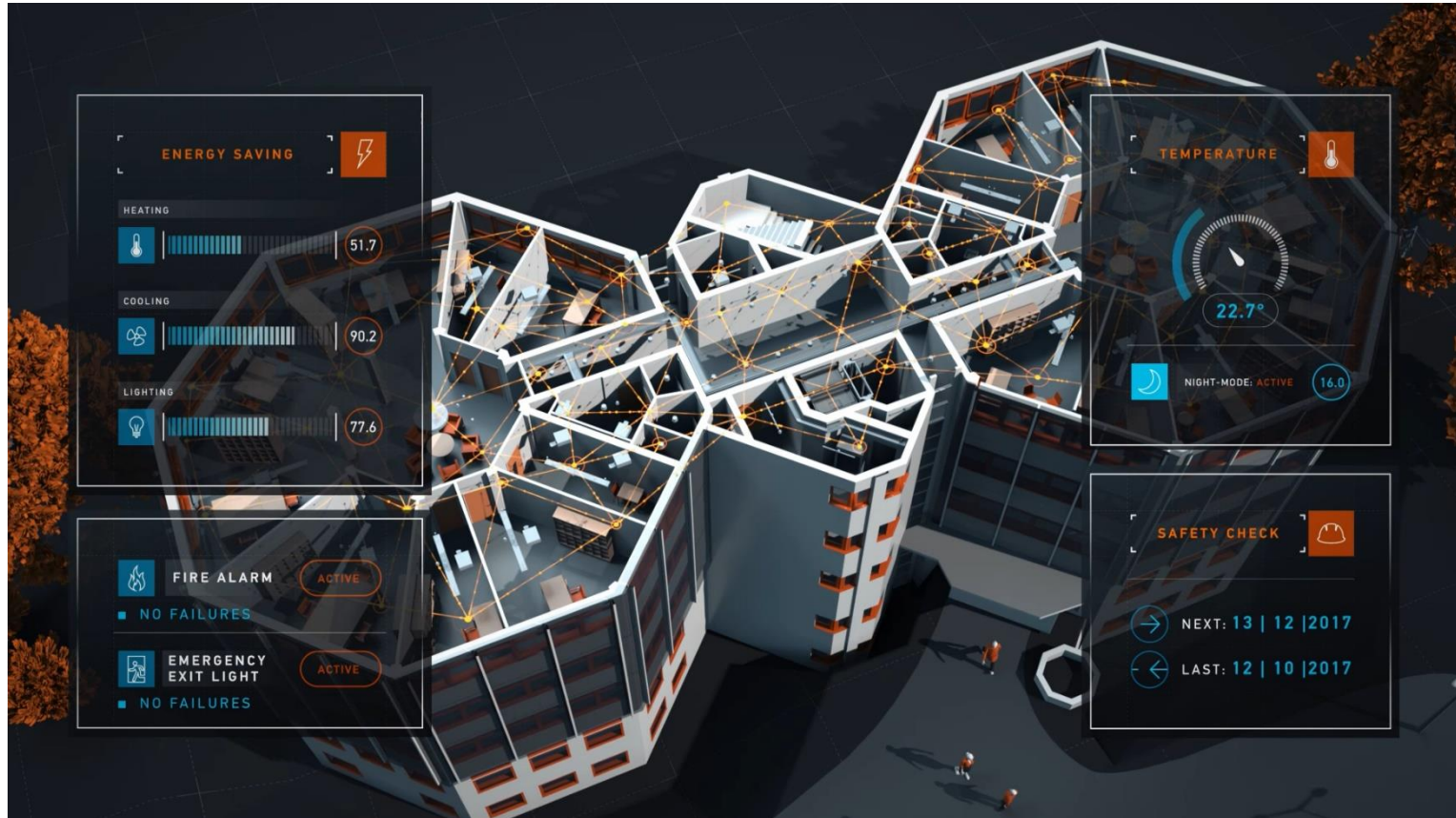
ERES-CRREM Industry Seminar 'Stranding Risk'
September 4, 2020

Status quo and upcoming challenges

BuildingMinds Digital Building Twin and The Common Data Model
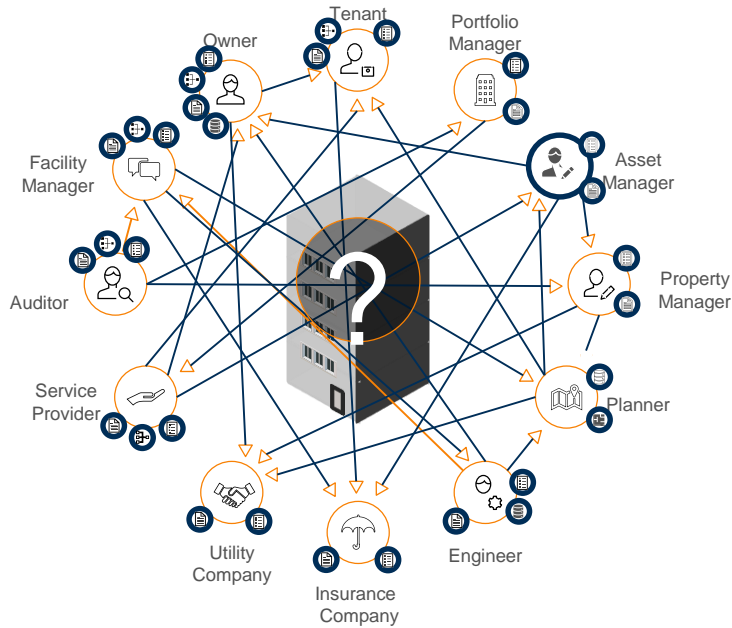

- Financial information
- Tenant information
- Energy consumption
- Contract information
- Service provider information
- Maintenance data
- Market information
- IoT (Internet of Things)
- Reporting / disclosure
- …

Digital Building Twin: Single Source of Truth fusing Physical & Digital

ENERGY SAVING
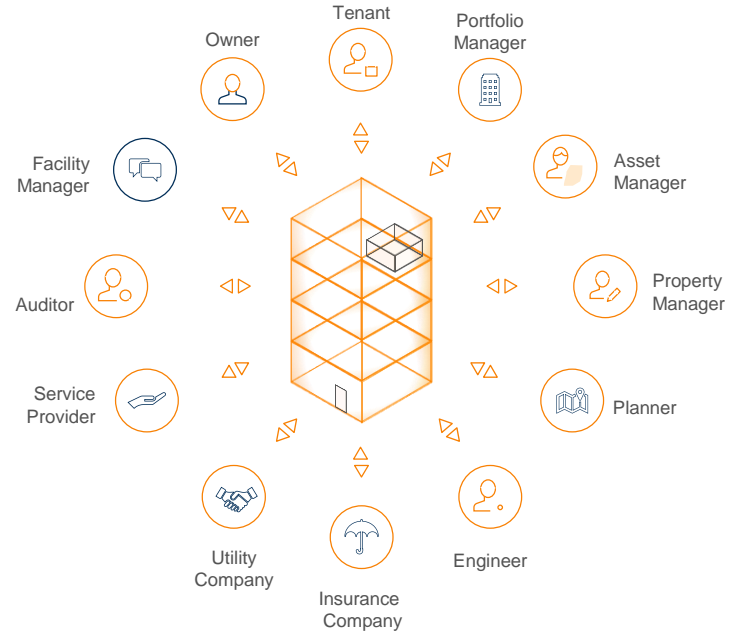
HEATING 51.7

COOLING 90.2

LIGHTING 77.6

FIRE ALARM — ACTIVE
■ NO FAILURES

EMERGENCY EXIT LIGHT — ACTIVE
■ NO FAILURES

TEMPERATURE

22.7°

NIGHT-MODE: ACTIVE 16.0

SAFETY CHECK

NEXT: 13 | 12 | 2017

LAST: 12 | 10 | 2017

BUILDINGMINDS

Digital Building Twin: Unleash the power of data

Without Digital Twin

Separate Data Silos

With Digital Twin

Integrated Solution

BUILDINGMINDS

INTEGRATED FULL-SCALE PERFORMANCE ANALYTICS

STANDARDIZED DASHBOARDS	CUSTOM DASHBOARDS	SMART ALGORITHMS / MACHINE LEARNING / ARTIFICIAL INTELLIGENCE

DIGITAL BUILDING TWIN

MANAGE PERFORMANCE FROM THE ENTIRE PORTFOLIO TO THE SINGLE BUILDING

COMMON DATA MODEL

BE THE MASTERMIND OF YOUR ASSETS

DATA NORMALIZATION AND AUGMENTATION

DATA INTEGRATION

ERP	CAFM	Technical Due Diligence	EXT. Service Provider	BMS	Market Data	...

BUILDINGMINDS

COMMON DATA MODEL

DIGITAL BUILDING TWIN

DATA-DRIVEN INSIGHTS

OPEN API & CONNECTORS

1 | Transparency

2 | Resource efficiency

3 | Resilience

Energy management

Water and waste management

Scope 1, 2 and 3 CO2e emissions tracking

Transition Risk management
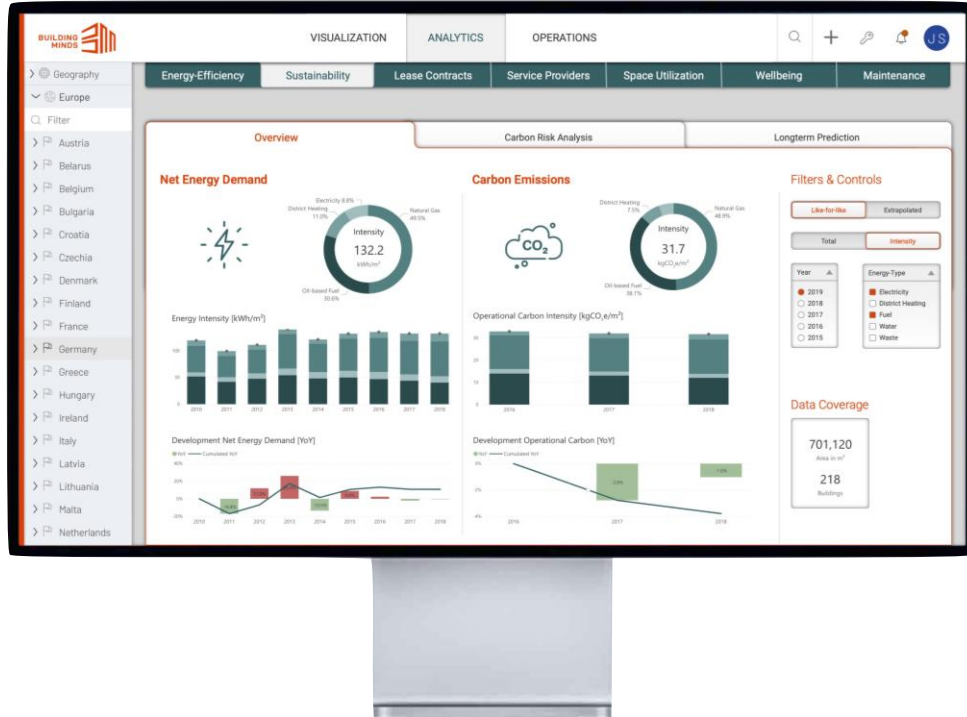
BUILDINGMINDS

Sustainability Cockpit

Product Roadmap

BuildingMinds Sustainability Cockpit

ENERGY CONSUMPTION & CARBON FOOTPRINT

Overview of Ressource Consumption
-   Aggregated consumption data from portfolio down to building-level for all types of energy, water & waste

Energy Consumption and Carbon Emission Details
-   Breakdown into different energy-types and sources
-   Intensity figures (per sqm) for portfolio, sub-portfolios, business-units, regions or individual buildings
-   Separation and reporting of scope 1, 2 & 3 emissions (from owner or tenant-perspective according to Greenhouse Gas Protocol)
-   Development of energy consumption over time

Overview of Operational Carbon Footprint
-   Total carbon emissions - from portfolio down to building-level for electricity, district heating, fuels, water & waste

Embodied Carbon Footprint
-   Estimation of embodied carbon from portfolio down to building level based on RICS Database
-   Option for detailed calculation of embodied carbon footprint based on digital building twin

BuildingMinds Sustainability Cockpit

CARBON RISK MONITORING

Stranded asset monitor (CRREM targets)

- Overview of energy-intensity and carbon-intensity in comparison to CRREM targets based on EU climate goals (max. +2°C)
- Building performance development over time based on energy mix and predicted consumption
- overview for entire portfolio, regions, business-units or individual buildings

Simulation of decarbonization paths*

- Calculation of operational carbon saving from transition to more sustainable energy sources or modernization efforts
- Estimation of carbon invest from modernization efforts (construction and materials) and break-even / „carbon ROI"

Simulation of carbon pricing

- setting individual carbon prices in €/tCO$_2$e to predict the impact on portfolio value and compare saving from modernization efforts
- Option to include carbon offset initiatives to carbon footprint calculation and carbon risk prediction

BUILDING THE FUTURE STANDARD

INTERNATIONAL BUILDING PERFORMANCE & DATA INITIATIVE

IBPDI

ADDRESSING TODAY'S CHALLENGES. AND TOMORROW'S.

Challenge: A fragmented market

Challenge: Ununified data

1+ 1 = ?

Challenge: Missing standards

"SPEAKING ONE DATA LANGUAGE. ADAPT JOINT INDUSTRY STANDARDS.
MAKE REAL ESTATE BUSINESSES TRUE MASTERMINDS OF THEIR ASSETS."

Solution: The initiative is a **collaboration hub** between all stakeholders, improving process efficiency and effectiveness.

Solution: A **Common Data Model for Real Estate** will enable to democratize and harmonize data to accelerate businesses

Solution: One common data language for the real estate industry will ensure seamless data exchange & accelerate the digitalization in the real estate industry.

IBPDI

FOUR STRONG, ENGAGED PARTNERS BUILD THE FOUNDATION.

BuildingMinds is a software company offering an integrated cloud platform, leveraging data-driven insights for advanced portfolio management.

www.buildingminds.com

RICS is a global organization with over 134,000 members and over 40 office locations all over the world.

www.rics.org

Microsoft Corporation is an American multinational technology company with head-quarters in Redmond, Washington.

www.microsoft.com

pom+ is a Swiss consulting company in the real estate industry.

www.pom.ch

THANK YOU

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