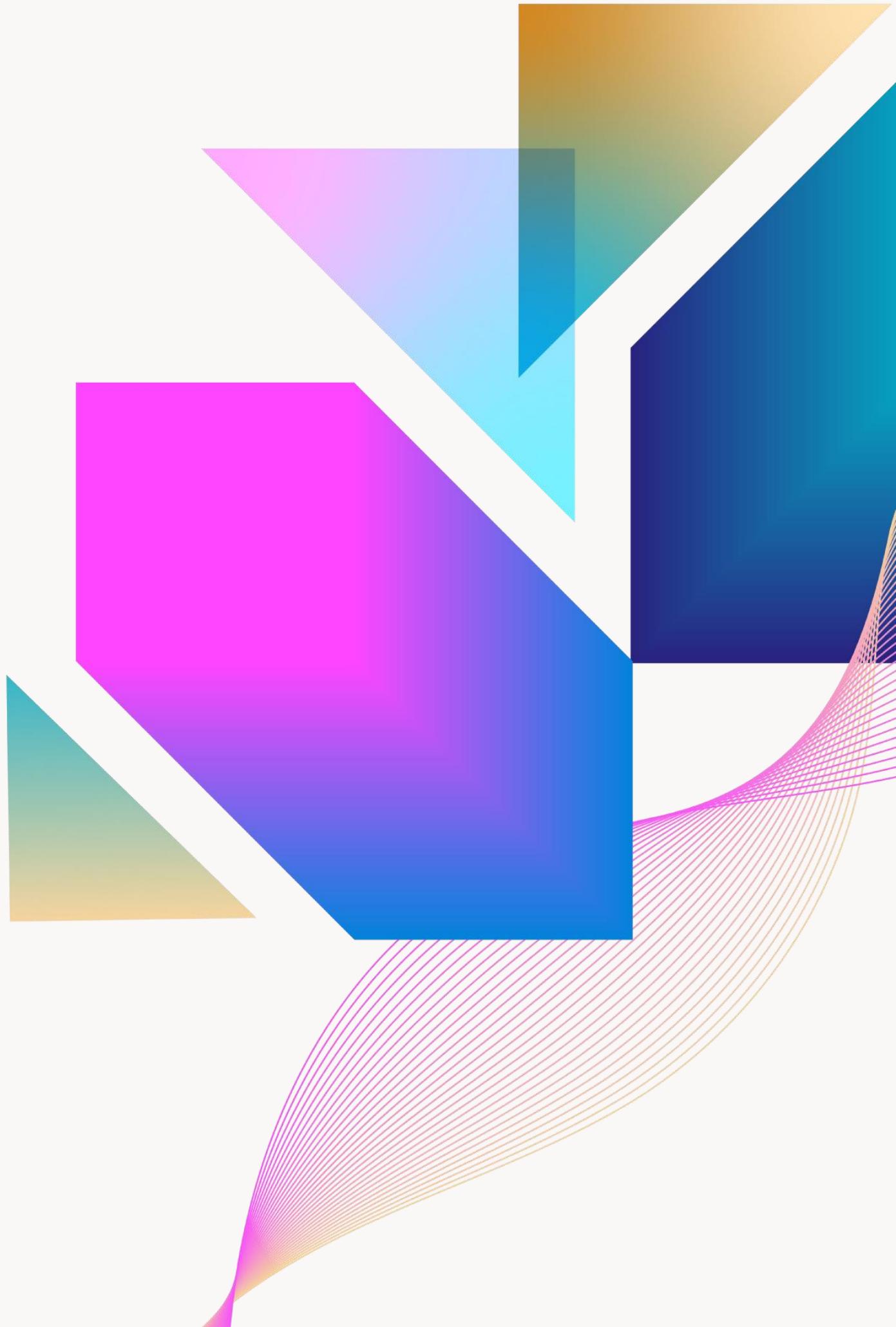




Data Meets the Built World Operational Intelligence Through Digital Twins

Dr. Jimmy Abualdenien, Head of Digital Twin Product, Nemetschek Group



NEMETSCHEK GROUP

PLANNING +DESIGN

Precise, innovative, and open planning and design workflows

ALLPLAN

GRAPHISOFT

IRISA

SOLIBRI

VECTORWORKS

BUILD +CONSTRUCT

Collaborative, efficient, and sustainable construction processes

BLUEBEAM

gocanvas

NEVARIS

OPERATE +MANAGE

Smart, intelligent and comprehensive building management

CREMSOLUTIONS

SPACEWELL

MEDIA +ENTERTAINMENT

Creative, intuitive and powerful 3D animation

MAXON

DIGITAL TWIN
business unit

dRofus

dTwin™
A NEMETSCHEK SOLUTION

Challenges of AEC/O Industry

Across design, construction, and operations of assets



No Transparency in available data



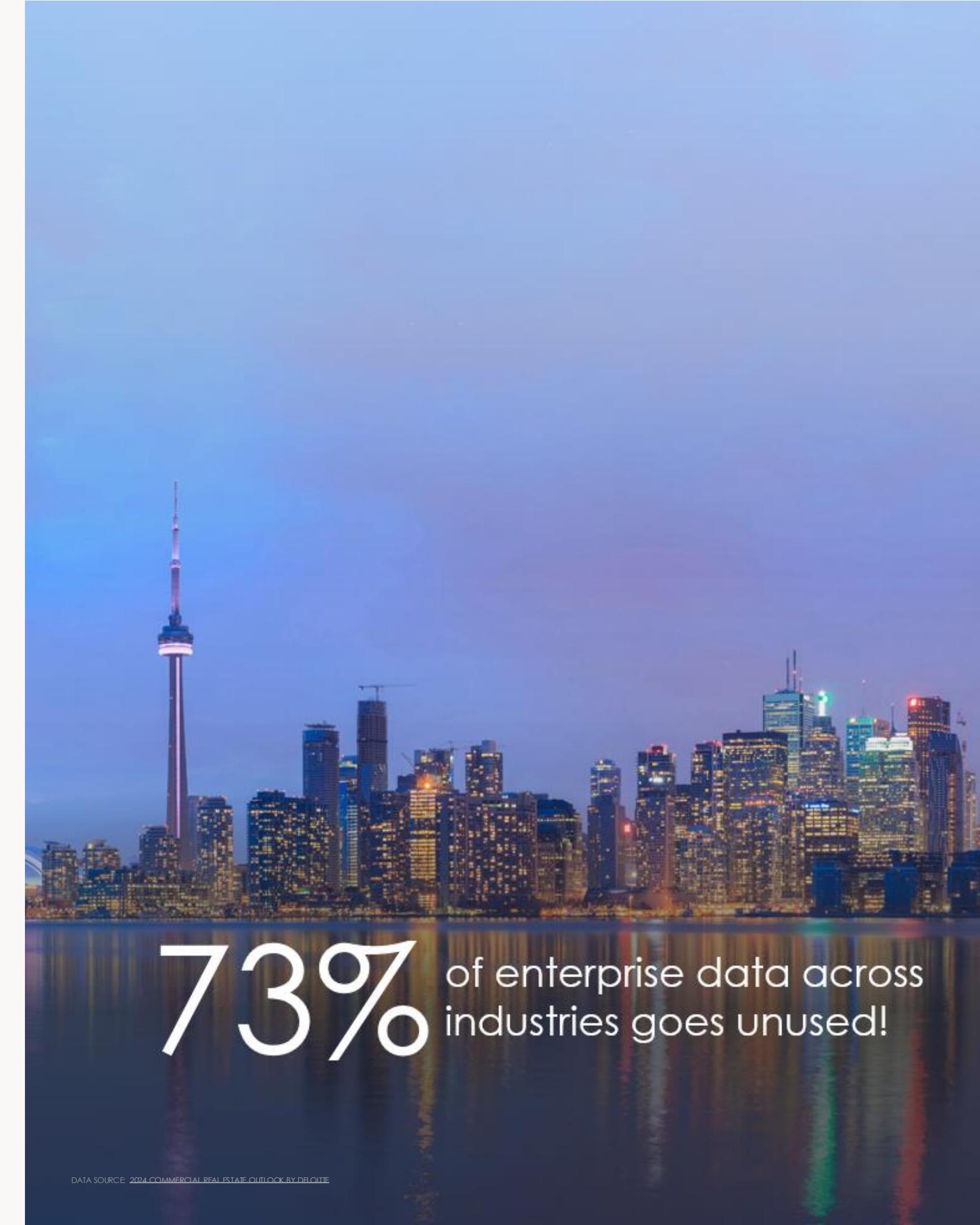
Outdated information



Disconnected systems – isolated information

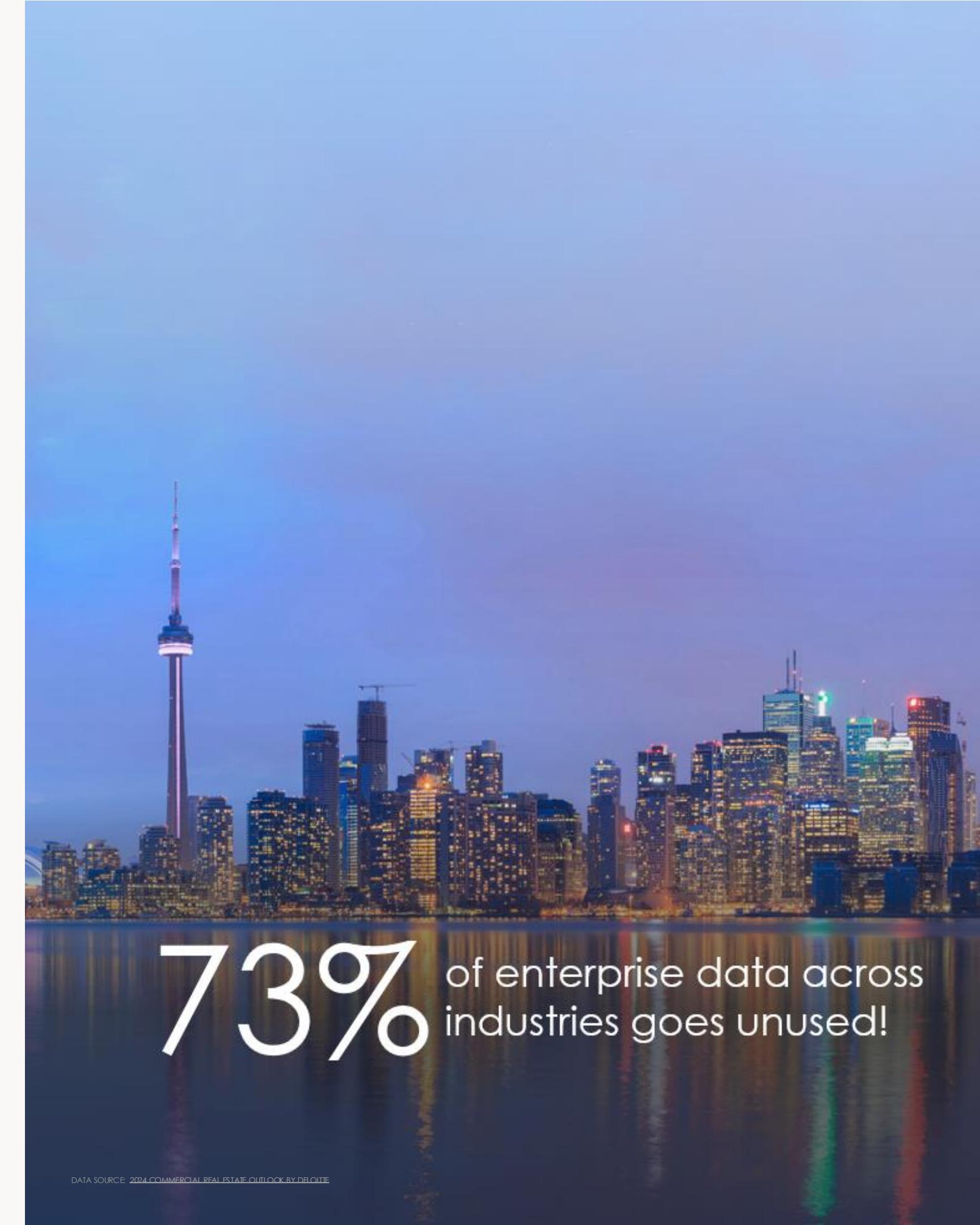
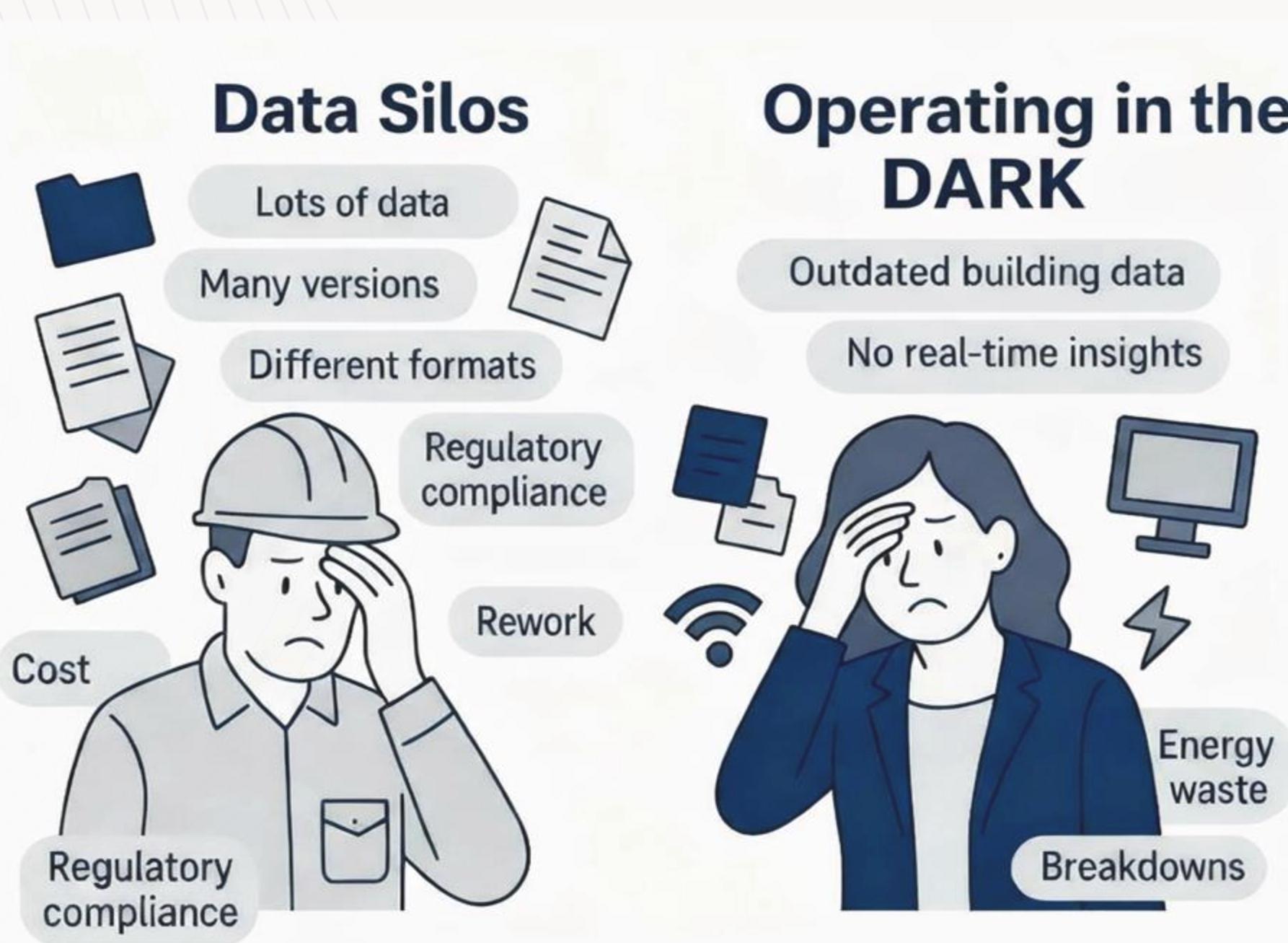


Lots of Data – little analysis



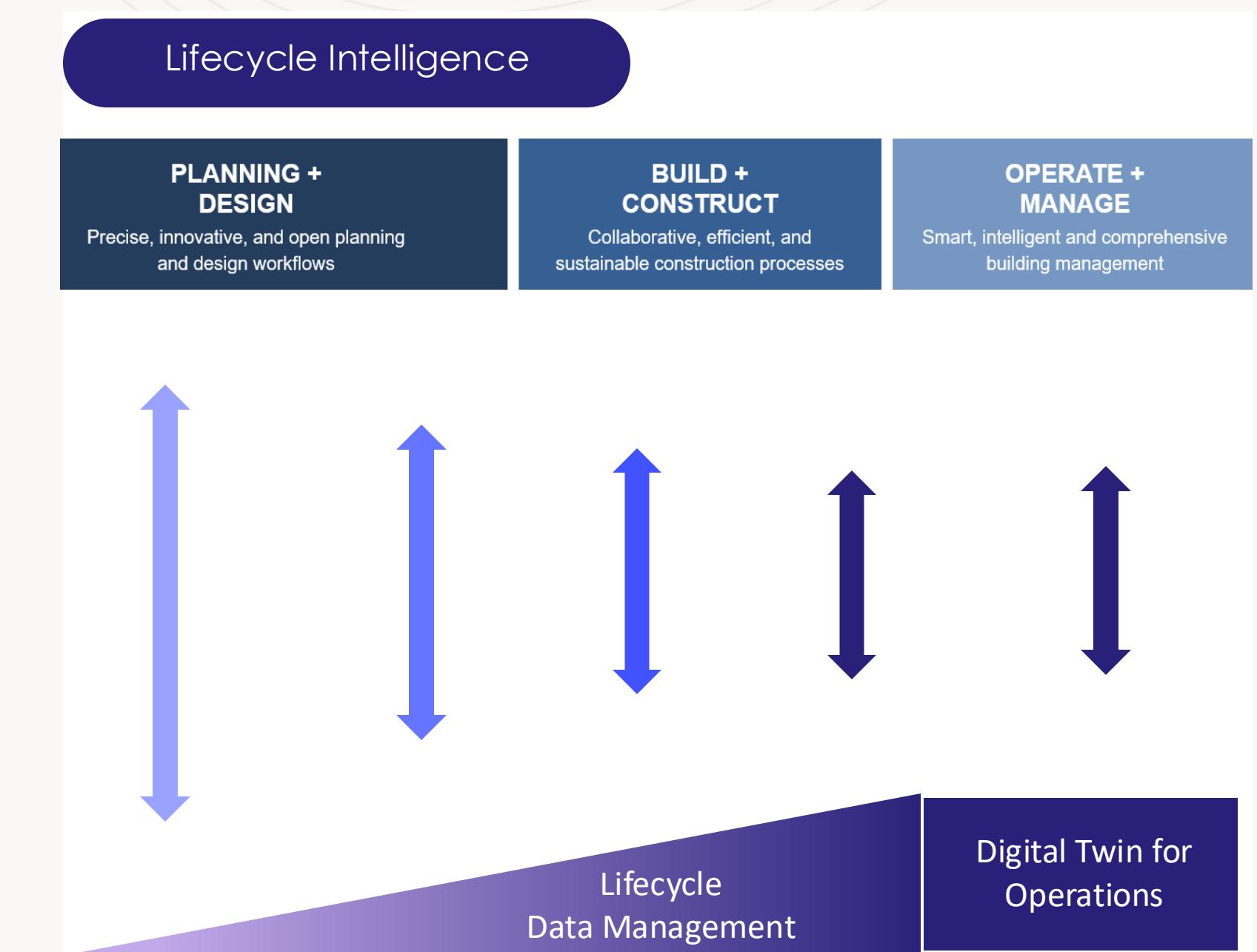
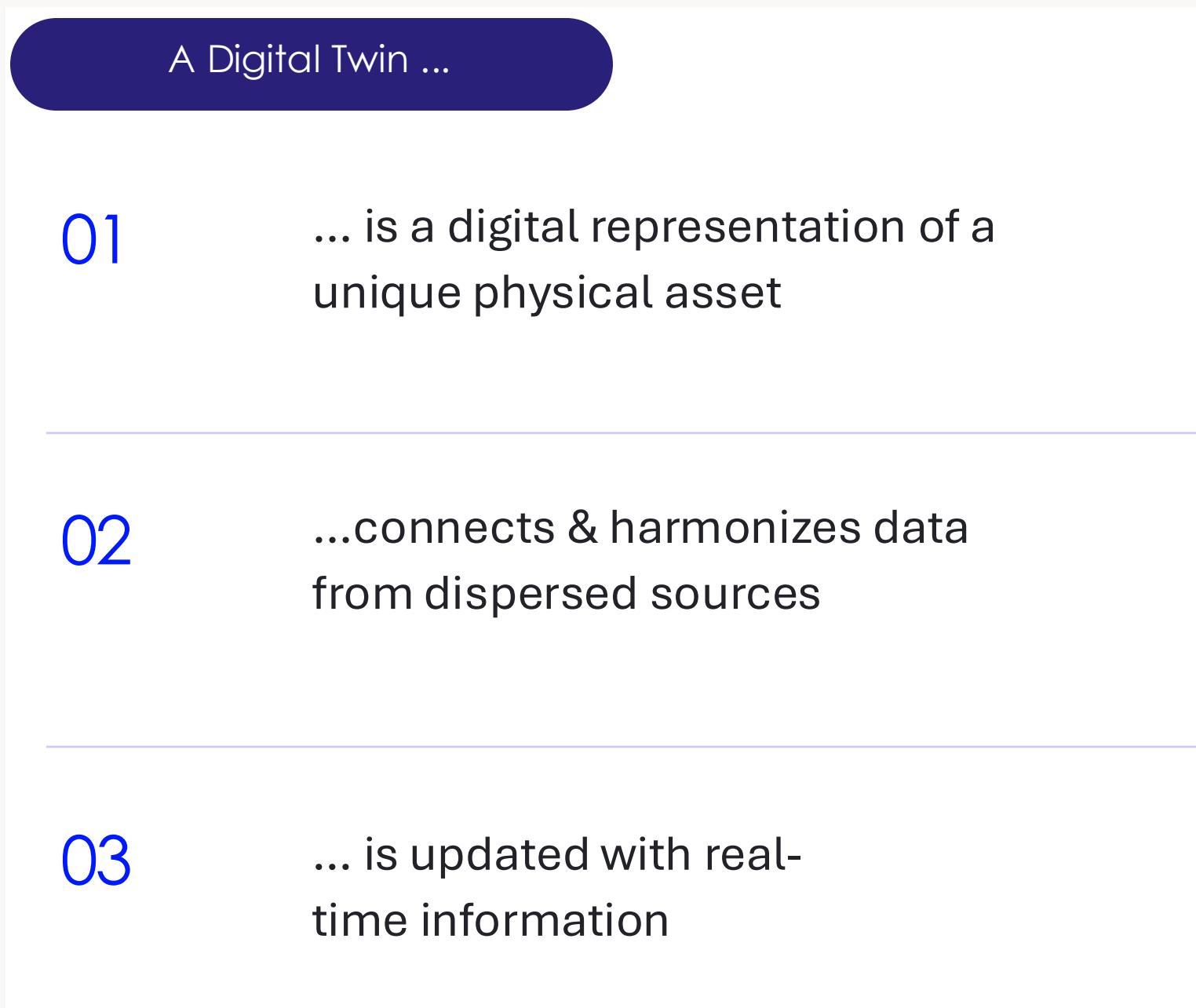
Challenges of AEC/O Industry

Across design, construction, and operations of assets



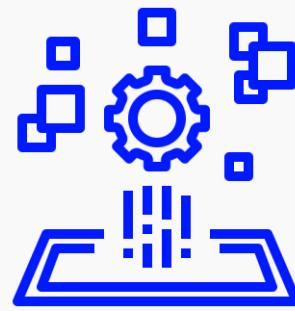
What is a Digital Twin?

Global consensus on the digital twin definition – interpretations still vary



dTwin connects the dots

One platform for all data across the lifecycle



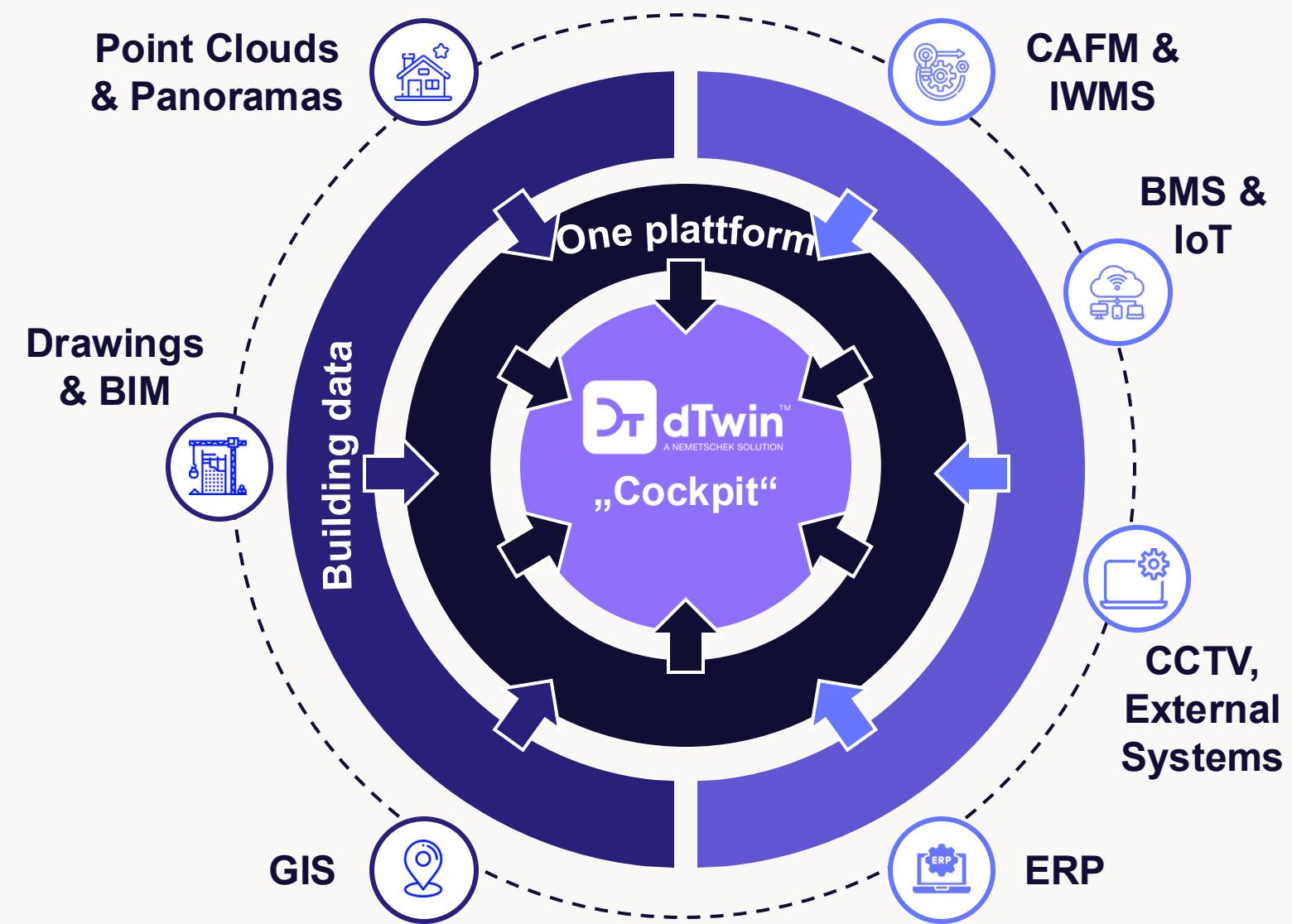
Unify your data in one platform

Maximize operational efficiency

Make smarter investment decisions

dTwin connects the dots

One platform for all data across the lifecycle



New Building Data

Design and construction inputs like BIM, point clouds, and GIS data.

Existing Building Data

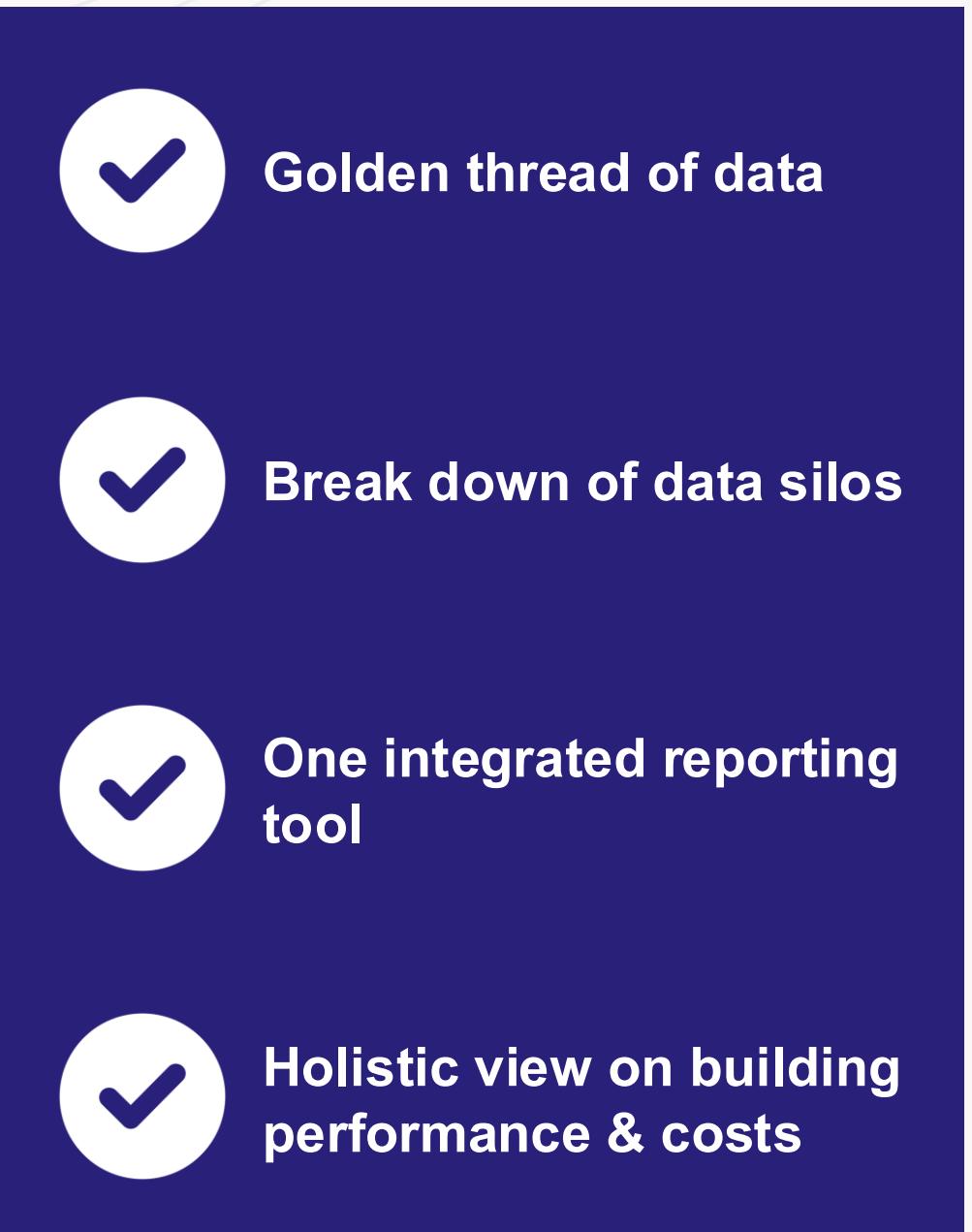
Operational data from IoT, CAFM, BMS, ERP, and more.

One Platform

All building data—past & present—consolidated in one place.

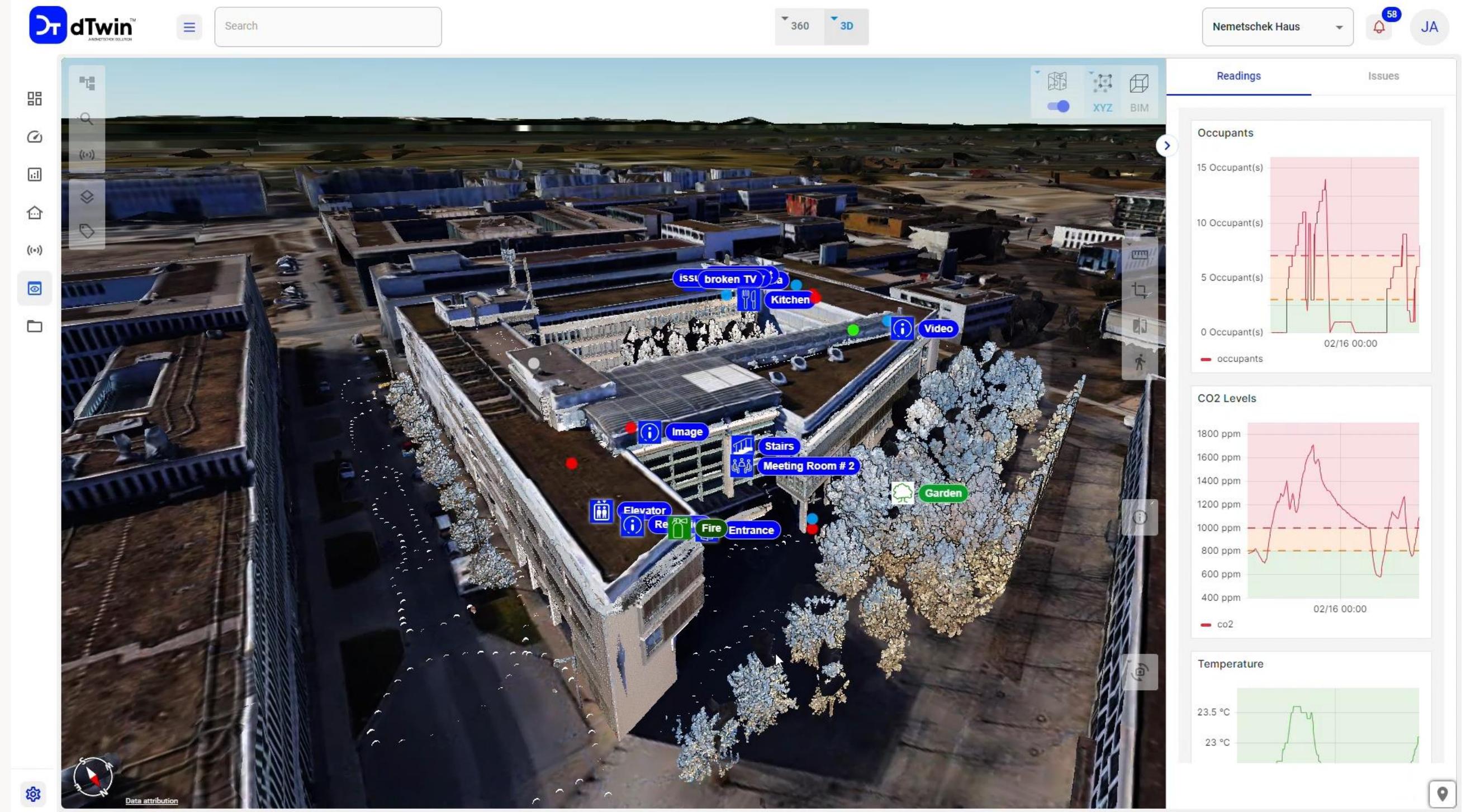
dTwin Cockpit

A visual interface that turns data into insights and smart actions.



dTwin connects the dots

One platform for all data across the lifecycle

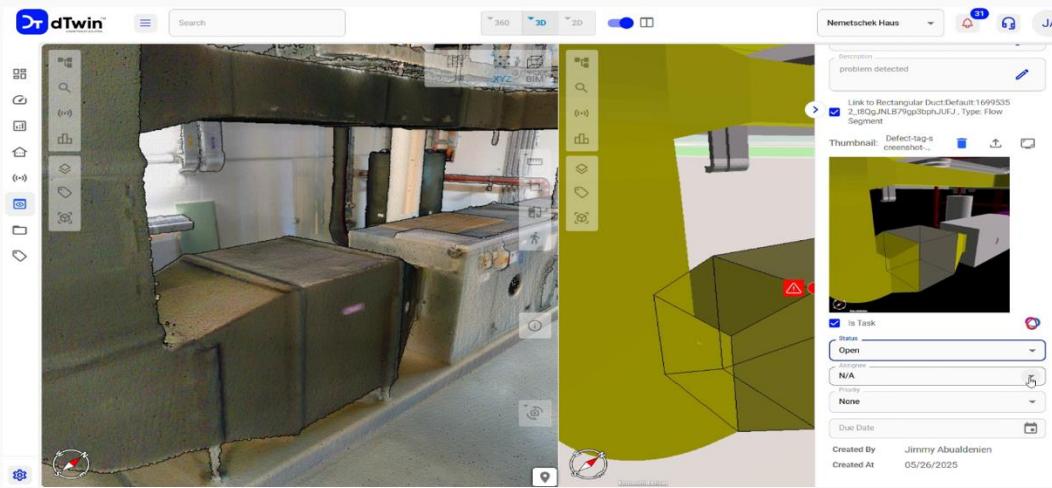


Maximize operational efficiency

From reactive to predictive – turning inefficiencies into savings up to 30%

Integrate

data management across all sources & workflows



Locate & manage assets

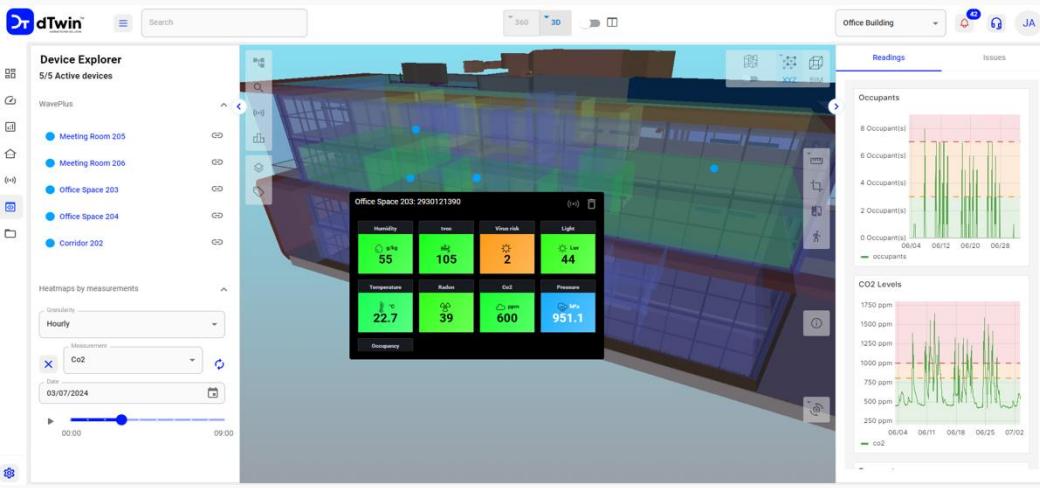
Visual analytics incl. heatmaps

Simplified wayfinding

Remote visual digital inspections

Enhance

building operations with a holistic & real time FM



Structured handover incl. BIM2FM

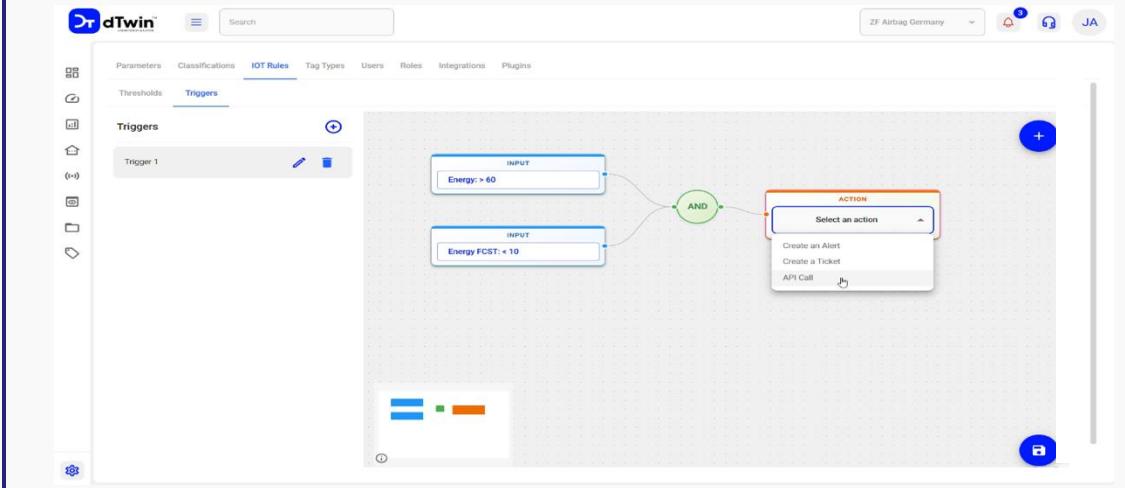
Reduce energy consumption

Optimize space utilization

Integrated issue & task management

Optimize

building performance with automated workflows



AI-based anomaly detection

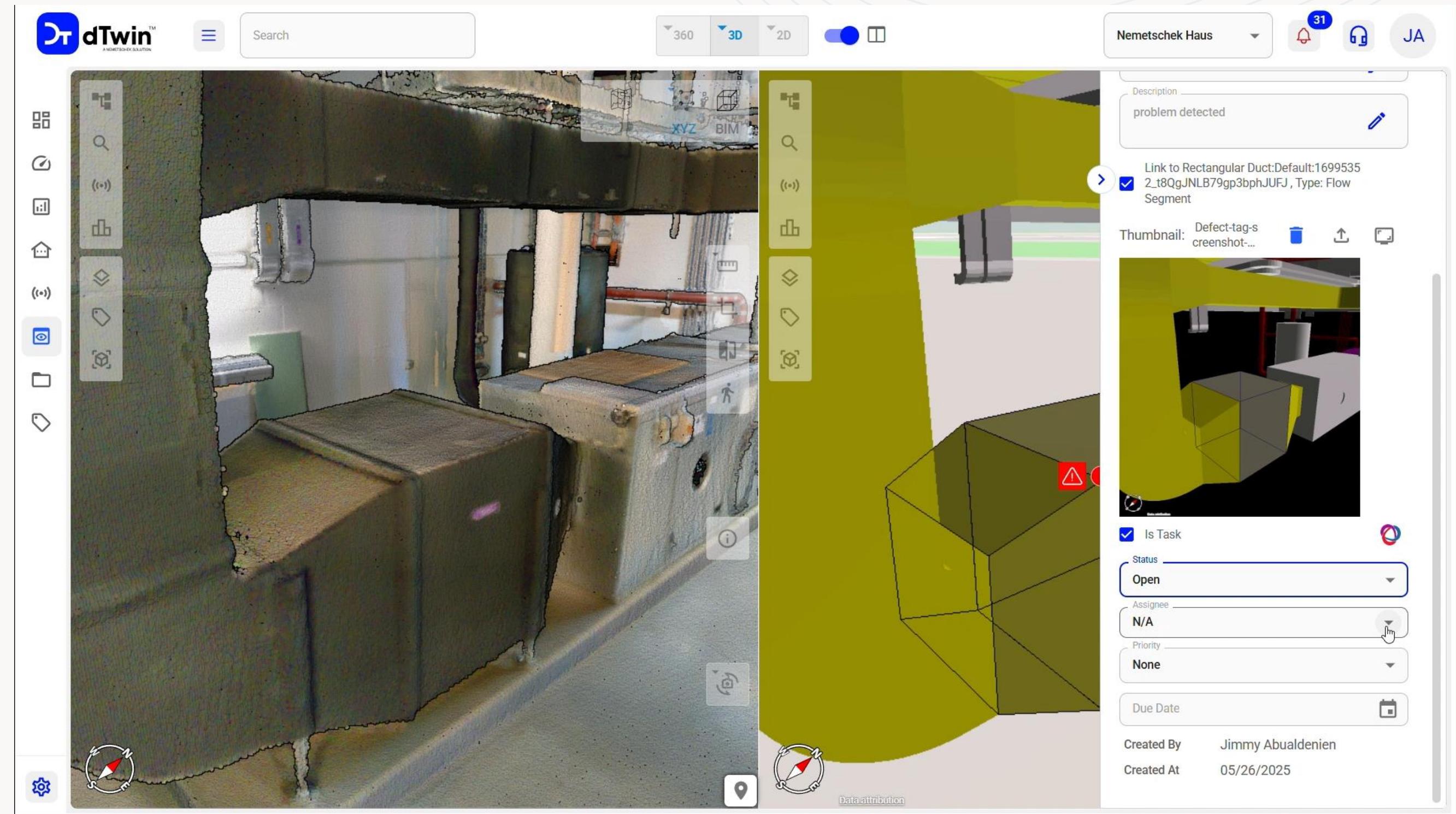
Predictive alarms

Real-time notifications

Automated trigger actions

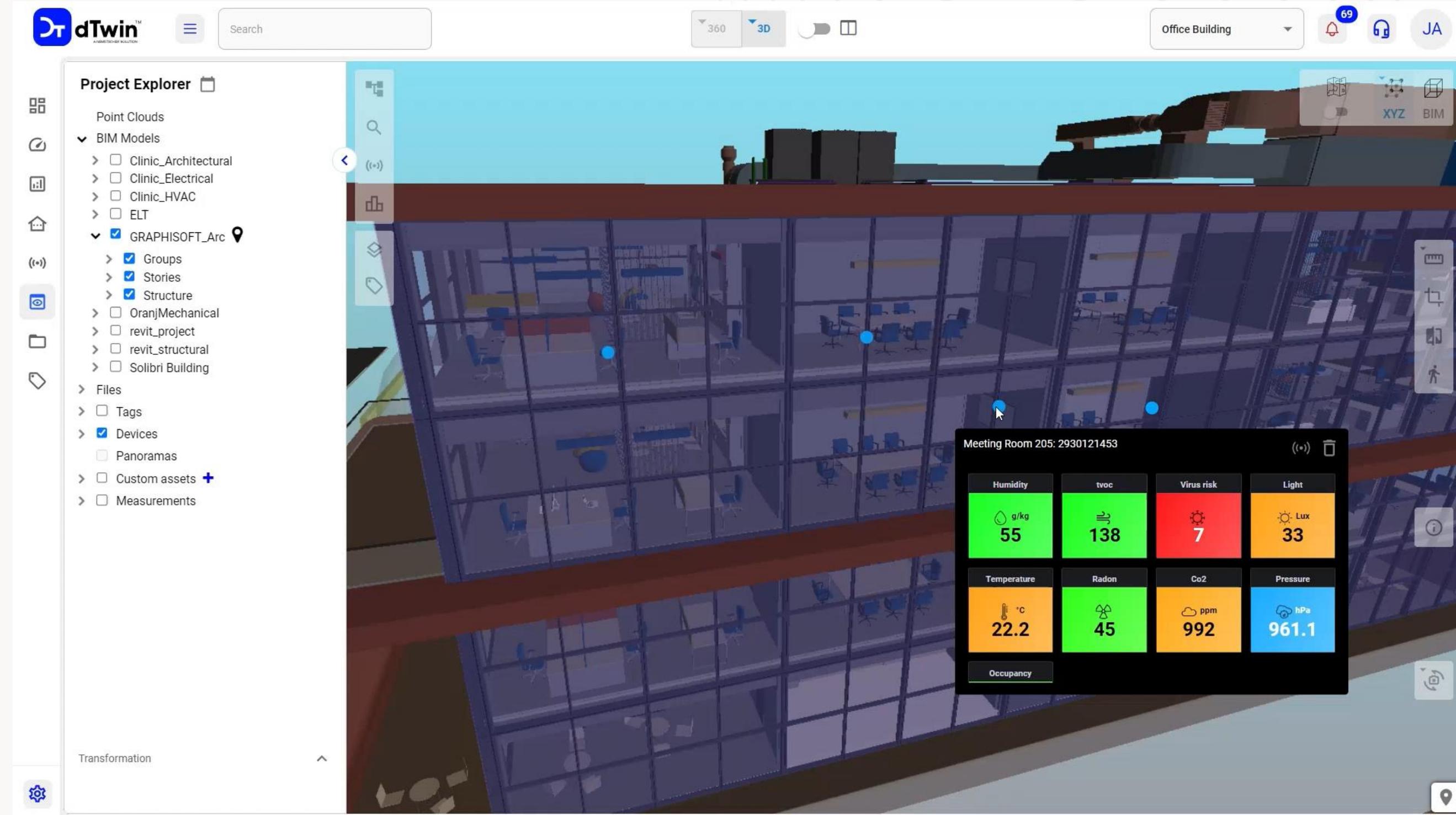
Maximize operational efficiency

Simplify building operations with visual digital inspections & maintenance processes



Maximize operational efficiency

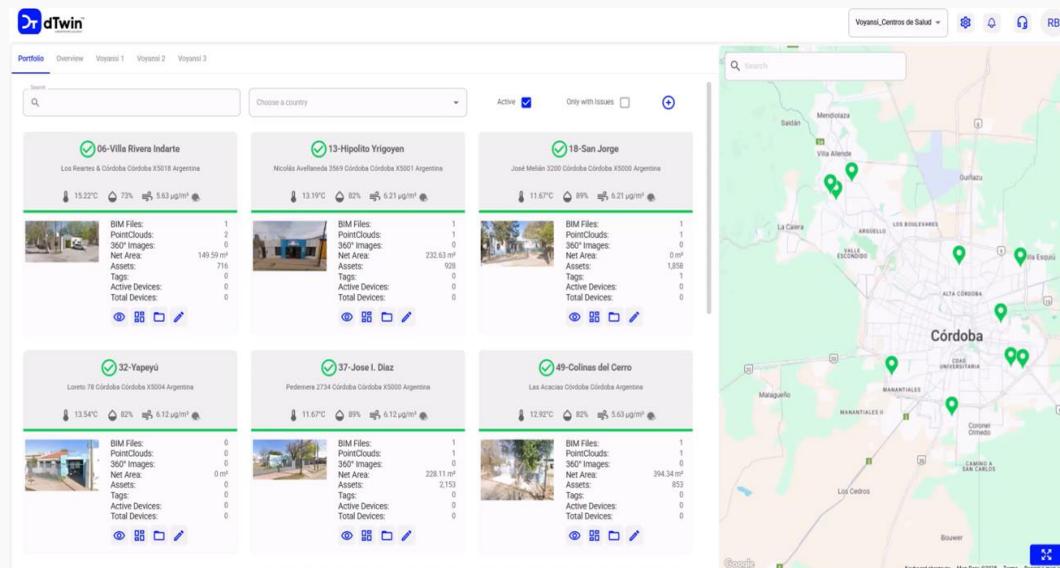
Connect your data across systems – in real time



Make data-driven decisions

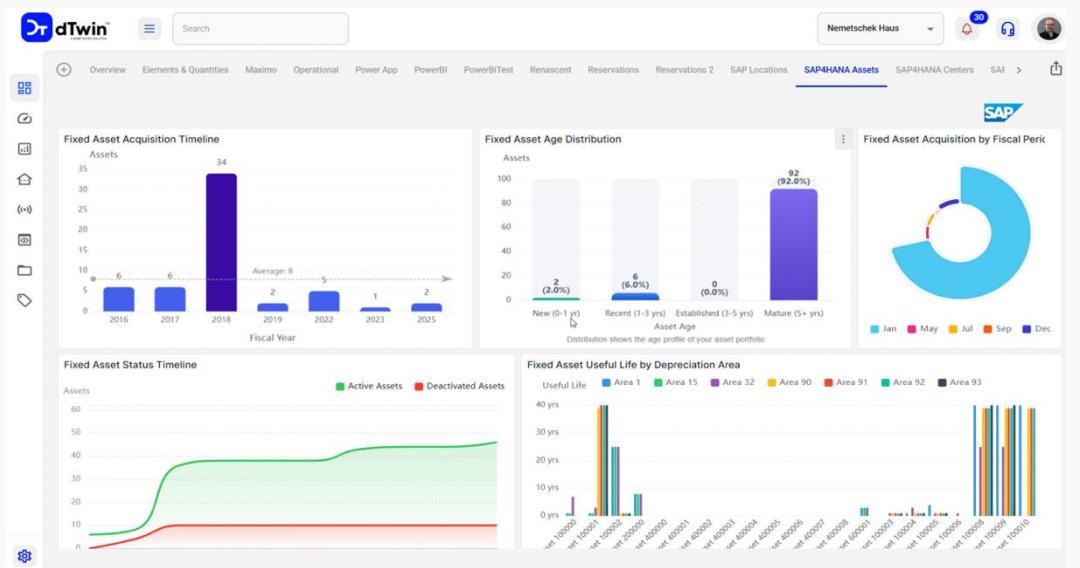
Save 2\$ per m² annually based on appropriate access to accurate information

One integrated reporting tool
on portfolio level



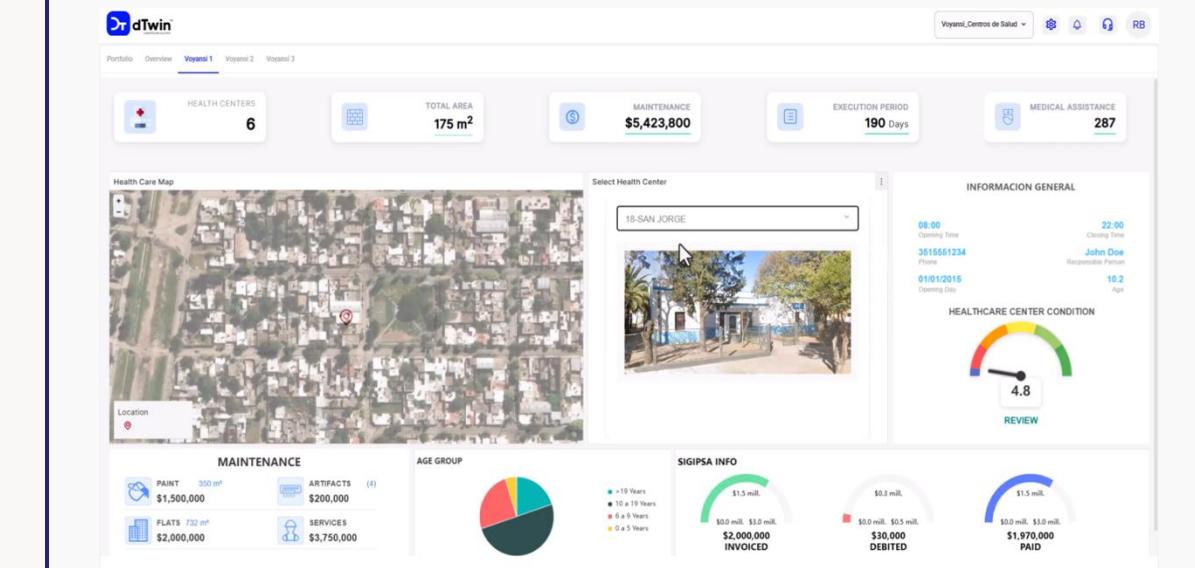
Gain insights that help reduce
OPEX and maximize ROI

Real-time reports &
customized dashboards



Fully customizable interface with
AI powered business analytics

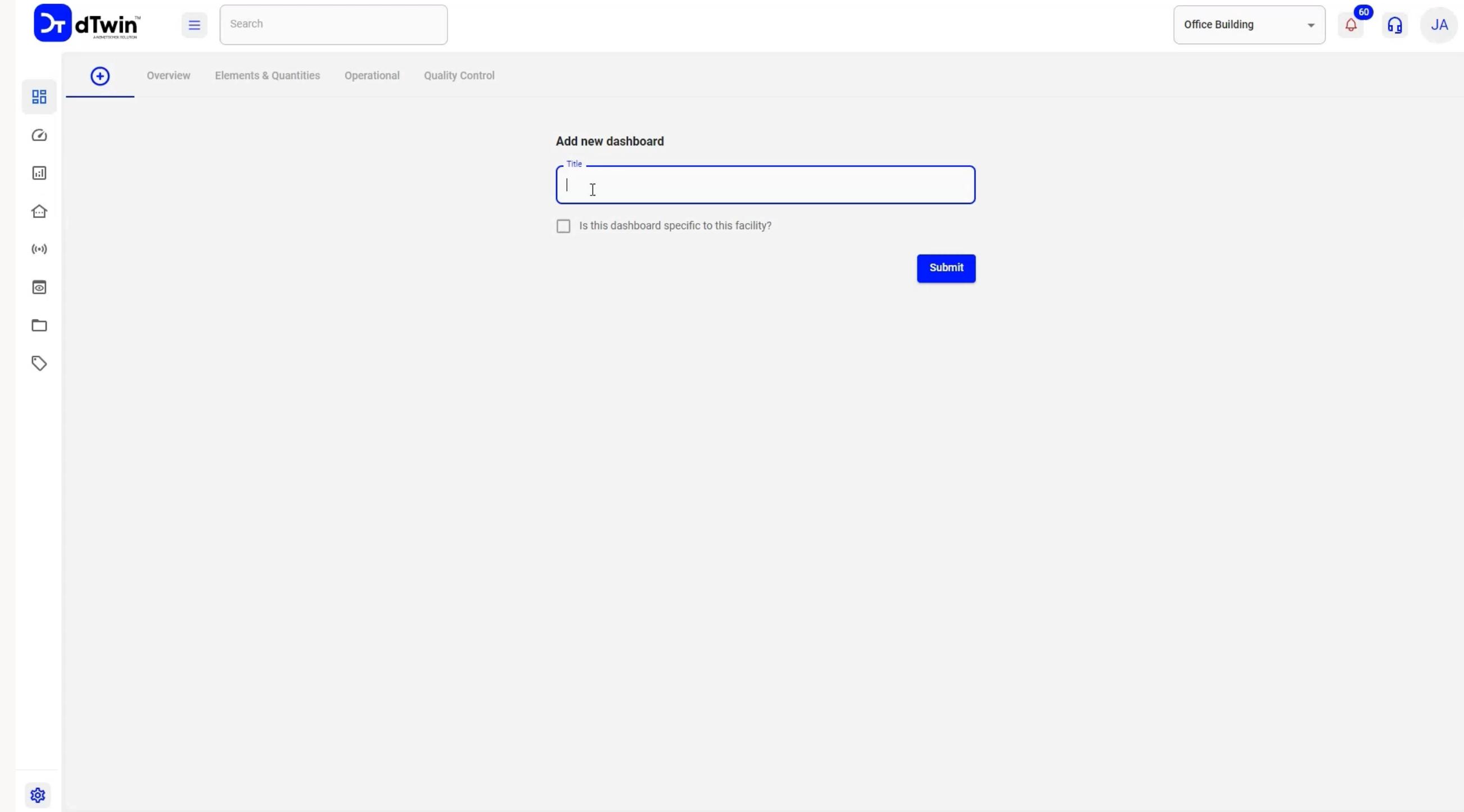
Efficient project &
progress tracking



Efficiently track ongoing
projects to ensure ROI

Make data-driven decisions

Dynamic & customizable data analytics correlating building and real-time information



The screenshot shows the dTwin software interface. At the top, there is a navigation bar with the dTwin logo, a search bar, and a dropdown menu set to 'Office Building'. To the right of the dropdown are three icons: a bell with a '60' notification, a lock, and a user profile labeled 'JA'. Below the navigation bar, there is a horizontal menu with tabs: Overview (selected), Elements & Quantities, Operational, and Quality Control. On the left side, there is a sidebar with various icons for navigation, including a plus sign, a list, a search, a facility, a gear, and a user. The main content area is titled 'Add new dashboard' and contains a 'Title' input field with a placeholder 'New Dashboard' and a 'Submit' button. There is also a checkbox labeled 'Is this dashboard specific to this facility?'.

Aeropuertos Argentina

Airport Operations Excellence

Challenge

Integrated lifecycle workflows across construction & operation systems

- ↗ Heterogeneous state of digitization of airport buildings, terminals, and landside operations
- ↗ Numerous siloed systems used during operations
- ↗ Tedious process to consolidate information for decision making

Realized Value

Unified data-lake of building data semantically linked across systems

- ↗ Unified and searchable representation of buildings, terminals, and infrastructure
- ↗ Single platform to access all relevant information across all systems

Smart workflow automation & facility management workflows

- ↗ Context-aware workorders management and analysis
- ↗ Automated workflows for efficient operations (e.g., cleaning orders, heating and cooling)

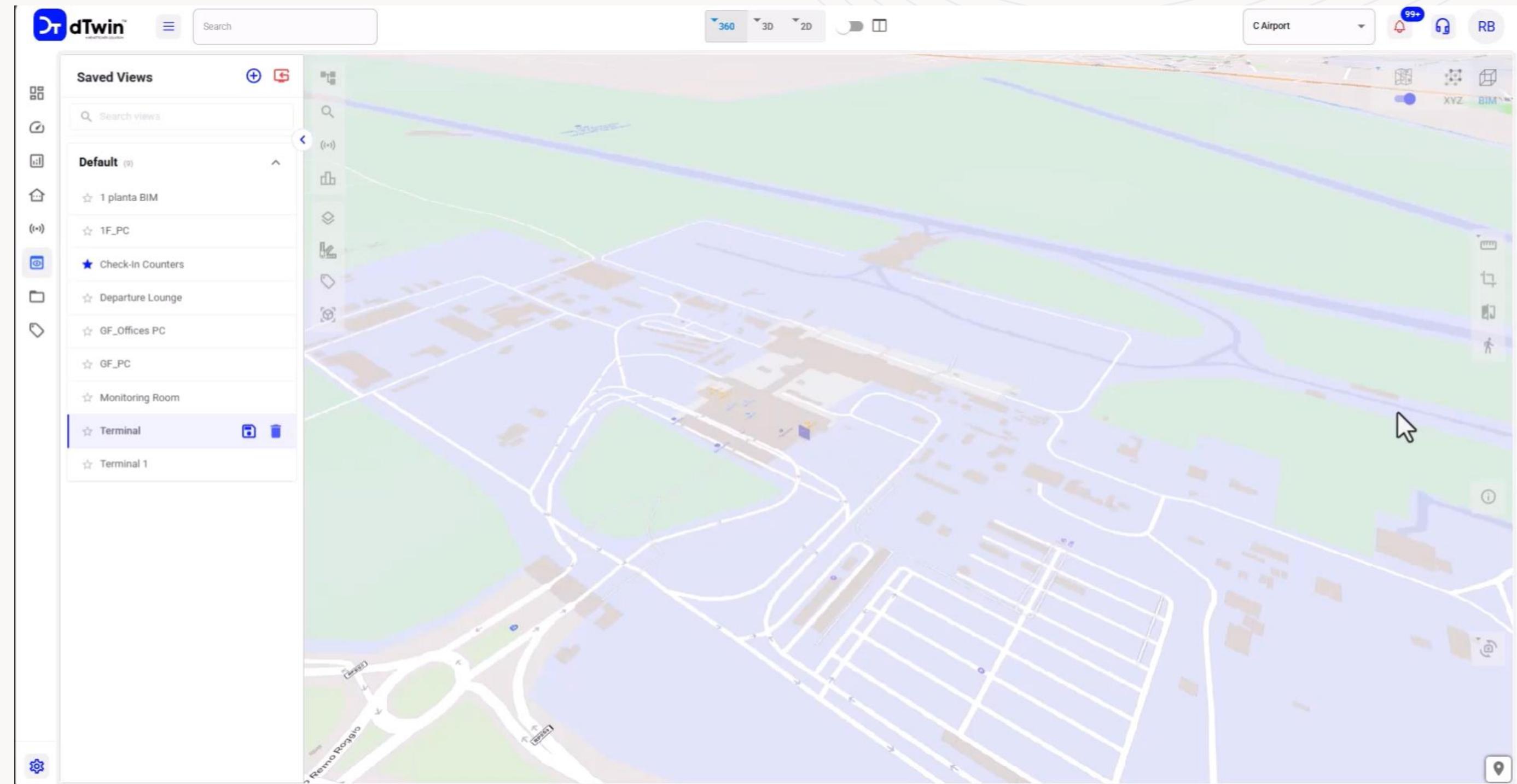
Optimization for better passenger experience

- ↗ Streamlined correlation of real-time operations (parking, baggage..etc), energy consumption, and flights boarding and deboarding
- ↗ Data-driven renovation planning through insights on asset utilization and performance



Airport Operations Excellence

Comprehensive information accessibility, real-time workflow automation, informed optimizations



John Sisk & Son Ltd.

Empowering Smart Offices Through Digital Twins

Challenge

Retrofitting new headquarter & transforming it into a smart building

- ↗ Integrating various data sources and systems to manage and link documentation, certificates, and maintenance information
- ↗ Gain a comprehensive overview of building usage and energy consumption

Realized Value

Optimized building performance

- ↗ Real-time insights into the usage and occupancy of workstations, meeting rooms, and communal areas
- ↗ Visual analytics of building utilization

Smarter energy management

- ↗ Optimization of energy consumption by linking occupancy and energy data, allowing targeted adjustments

Data-driven investment decisions

- ↗ Improved decision-making and strategic planning for future office spaces and work environments
- ↗ Efficiently track retrofitting projects to ensure ROI



Empowering Smart Offices Through Digital Twins



UMEX S.A.

Pioneering Innovations in Port Operations

Challenge

Enhance energy efficiency and cargo productivity

- ↗ Many complex and rapidly shifting activities happening simultaneously
- ↗ Need of a clear understanding of multiple data-driven metrics
- ↗ Monitoring the use to capacity of the cargo halls

Realized Value

Increased safety & productivity in cargo operations

- ↗ Tracking of the entire operational flow from vessel discharging to loading trucks, trains, and barges
- ↗ Real-time issue detection, notifications and trigger actions

Enhanced cost transparency

- ↗ Better understanding of costs-drivers
- ↗ Better solutions and tariffs for clients

Full visibility on energy drivers

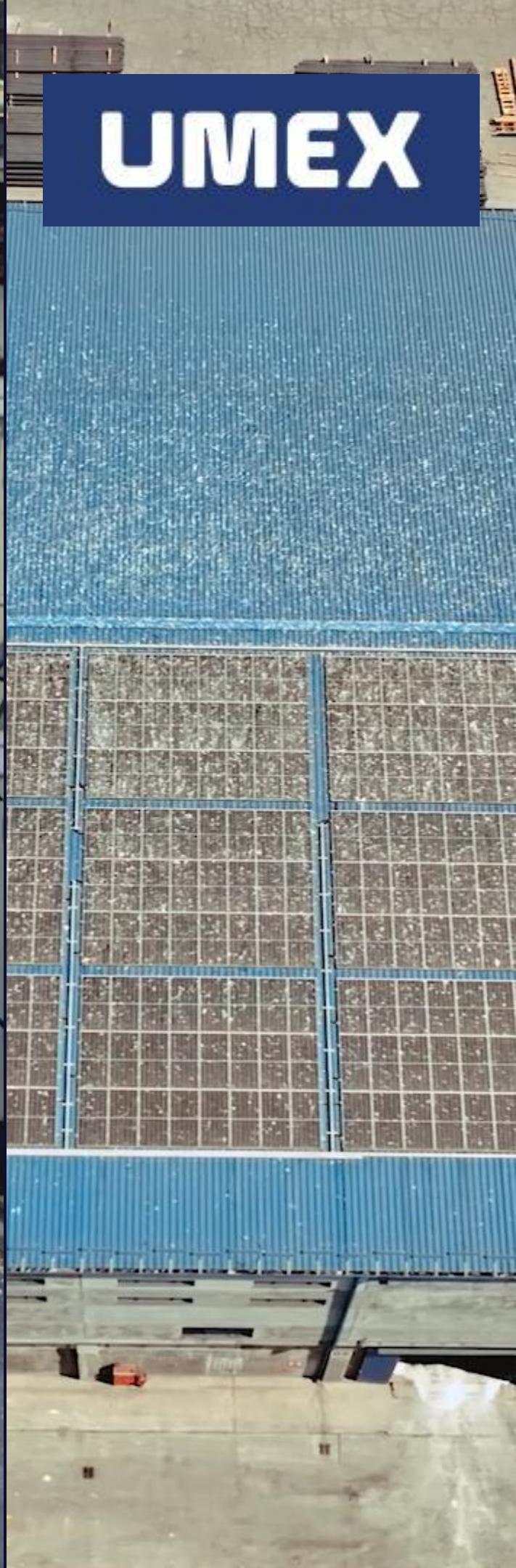
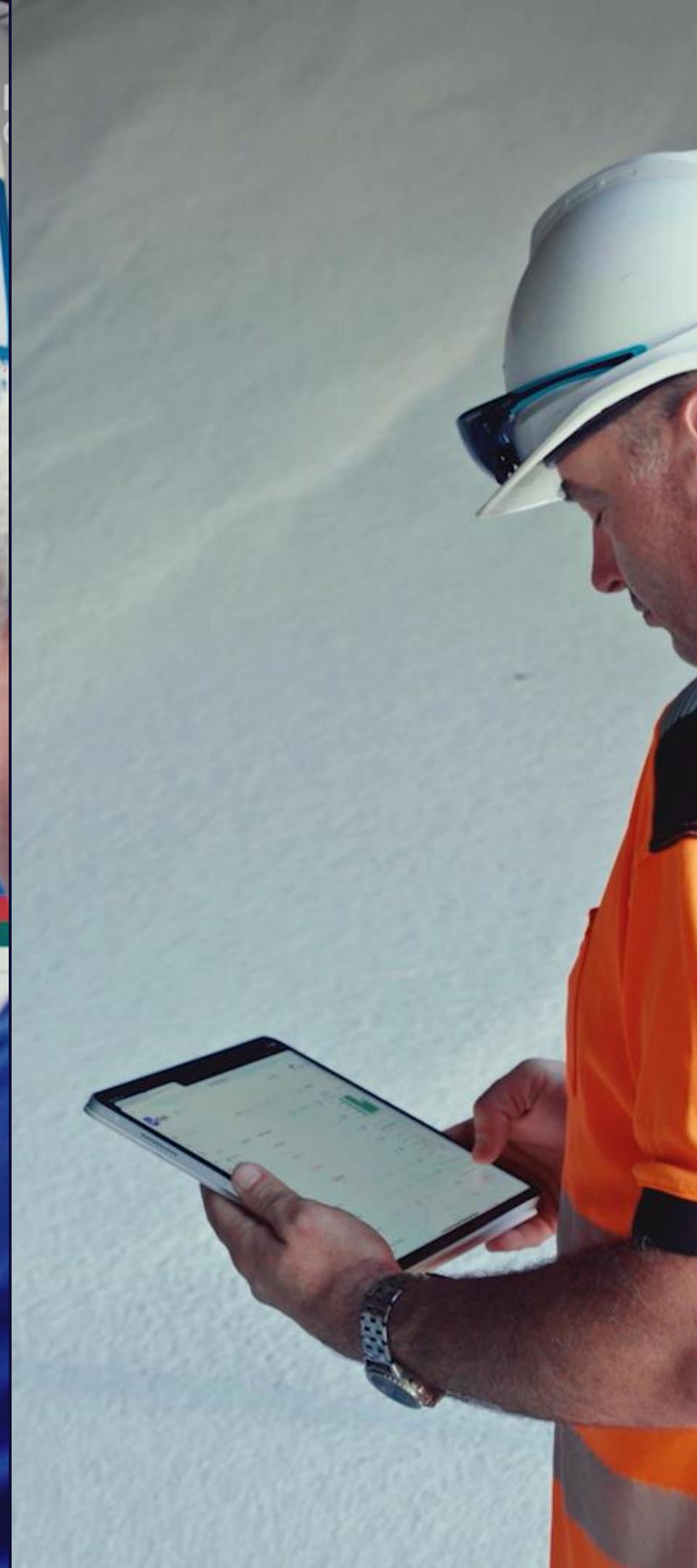
- ↗ Real time monitoring & linkage of energy consumers & producers
- ↗ AI-based anomaly detections



UMEX



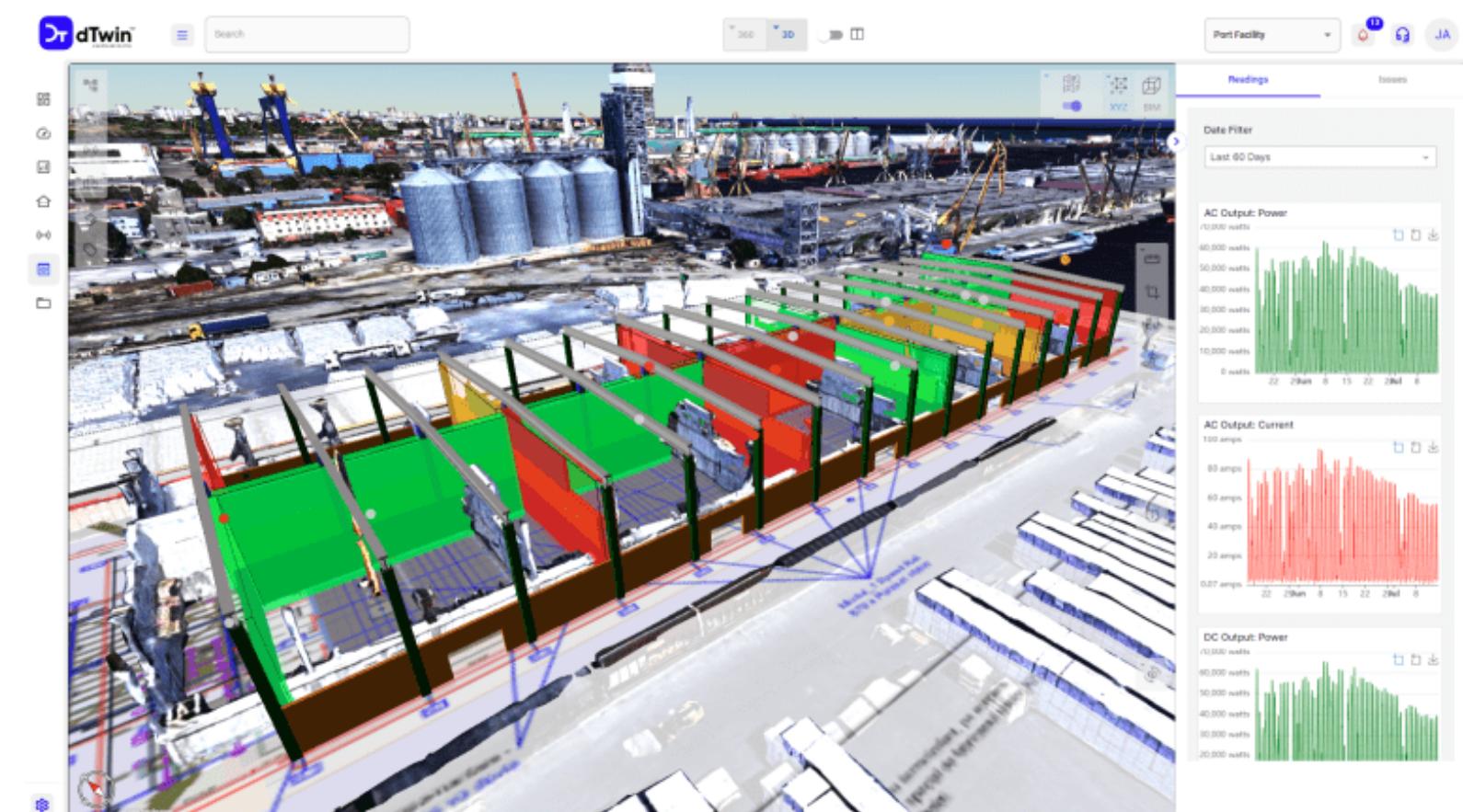
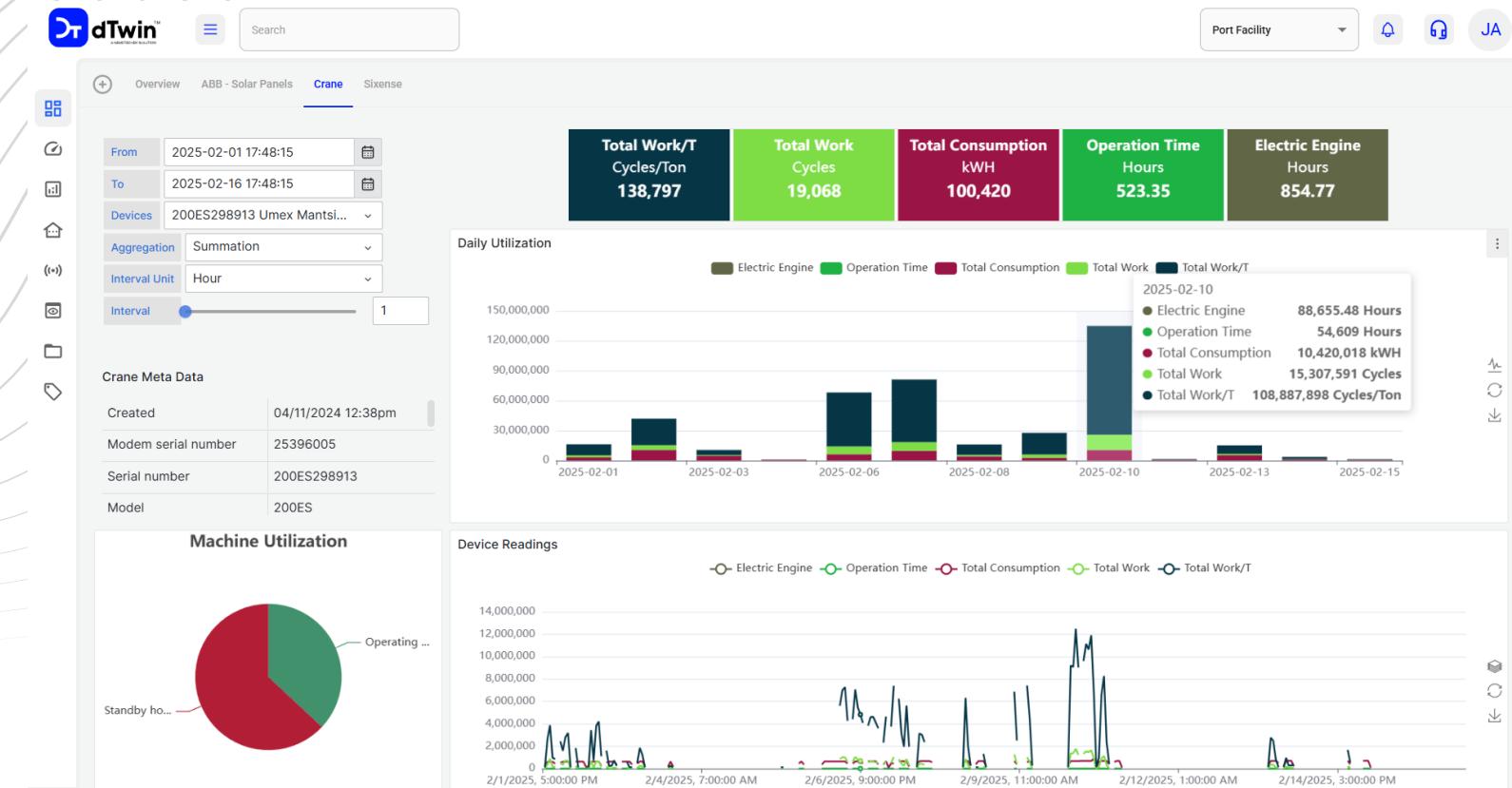
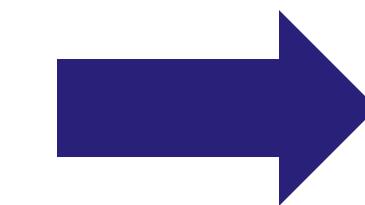
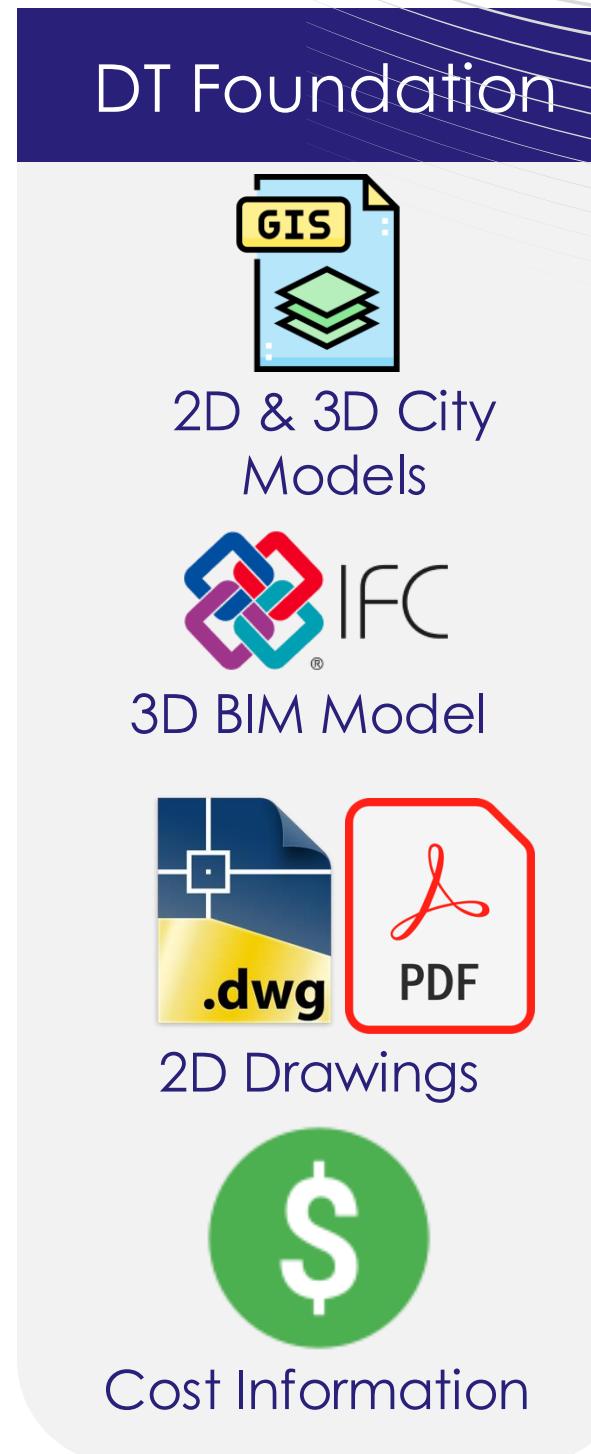
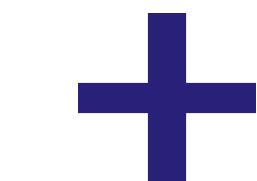
View full video
case study



**dTwin™**

Pioneering Innovations in Port Operations

Realtime Streams

ABB
Energy PV Panels**SIEMENS**
SCADAsixense
Compartments
DisplacementMANTSINEN
Operational Crane

BENO Group

More efficiency & sustainability portfolio

Challenge

Digitizing of portfolio to understand facility status & optimization potentials

- ↗ Management of dispersed properties, most of which were built in the last century
- ↗ Inefficiencies in maintenance, conversions & new letting workflows
- ↗ On-site appointments cost a lot of time and money

Realized Value

Comprehensive up-to-date portfolio representation

- ↗ Access to contextual information, asset information, documentation and real-time insights
- ↗ Easy tracking & management of building changes (e.g., renovation)

Transparency on portfolio level

- ↗ Holistic view on operational tasks, building performance & cost drivers
- ↗ Alerts & real time notifications ensure prompt issue management

Remote maintenance workflows

- ↗ Visual inspections, digital fire safety checks and maintenance planning
- ↗ Easily locate & manage assets in 3D in their spatial context.



BENO

SAVINGS (PER ASSET/YEAR):



288

Working hours



30k €

Travel costs & expenses



28k km

Driven distance



5,8k kg

CO2 emissions

Efficiency & Sustainable Portfolio Digital Twin

NEMETSCHEK
GROUP | dTwin™

BENO



Altenstadt
Usable Area: 7.000 m²
Net Annual Rent: 406 TEUR⁷
Market Value: 6,8 Mio. EUR⁷
WALT: 6,95



Dortmund - Fränkischer Friedhof
Usable Area: 5.000 m²
Net Annual Rent: 264 TEUR
Market Value: 3,4 Mio. EUR
WALT: 7,5



Dortmund - Planetenfeldstraße
Usable Area: 17.000 m²
Net Annual Rent: 884 TEUR
Market Value: 10,1 Mio. EUR
WALT: 0,00



Fröndenberg
Usable Area: 16.000 m²
Net Annual Rent: 472 TEUR
Market Value: 6,6 Mio. EUR
WALT: 5,87



Geretsried
Usable Area: 8.000 m²
Net Annual Rent: 529 TEUR
Market Value: 7,0 Mio. EUR
WALT: 3,25



Gernsheim
Usable Area: 7.500 m²
Net Annual Rent: 530 TEUR
Market Value: 7,6 Mio. EUR
WALT: 4,09



Grünhain
Usable Area: 23.000 m²
Net Annual Rent: 537 TEUR
Market Value: 4,5 Mio. EUR
WALT: 6,24



Kempen
Usable Area: 6.000 m²
Net Annual Rent: 280 TEUR
Market Value: 3,5 Mio. EUR
WALT: 2,67



Möckmühl
Usable Area: 2.000 m²
Net Annual Rent: 340 TEUR⁶
Market Value: 0,9 Mio. EUR
WALT: 0



Nottuln
Usable Area: 11.000 m²
Net Annual Rent: 294 TEUR
Market Value: 4,6 Mio. EUR
WALT: 7,96



Spaichingen
Usable Area: 27.000 m²
Net Annual Rent: 1.354 TEUR
Market Value: 12,2 Mio. EUR
WALT: 2,33



Weinsberg
Usable Area: 22.000 m²
Net Annual Rent: 1.094 TEUR
Market Value: 13,00 Mio. EUR
WALT: 5,36



Witten
Usable Area: 8.000 m²
Net Annual Rent: 387 TEUR
Market Value: 3,37 Mio. EUR
WALT: 2,39

Portfolio Overview

14.12°C 00% 0.70 µg/m³



BIM Files: 0
PointClouds: 0
360° Images: 0
Net Area: 0 m²
Assets: 346
Tags: 0
Active Devices: 0
Total Devices: 0

15.40°C 00% 1.00 µg/m³



BIM Files: 0
PointClouds: 0
360° Images: 0
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

16.02°C 00% 1.40 µg/m³



BIM Files: 1
PointClouds: 4
360° Images: 931
Net Area: 99,806.825 m²
Assets: 3,058
Tags: 379
Active Devices: 2
Total Devices: 19

 **BENO Fröndenberg**

Ardeyer Straße 15 Fröndenberg/Ruhr Nordrhein-Westfalen 58730 Germany

15.13°C 85% 1.35 µg/m³



BIM Files: 0
PointClouds: 0
360° Images: 0
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

 **BENO Geretsried**

Königsdorfer Weg 6 Geretsried Bayern 82538 Germany

16.08°C 74% 0.61 µg/m³



BIM Files: 0
PointClouds: 2
360° Images: 681
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

 **BENO Gernsheim**

Robert-Bunsen-Straße 50 Gernsheim Hessen 64579 Germany

15.95°C 95% 1.11 µg/m³



BIM Files: 0
PointClouds: 2
360° Images: 966
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

RFNO Grünhain-Reierfeld

14.12°C 00% 0.70 µg/m³



BIM Files: 0
PointClouds: 3
360° Images: 782
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

RFNO Kempen

15.40°C 00% 1.00 µg/m³



BIM Files: 0
PointClouds: 2
360° Images: 681
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

RFNO Möckmühl

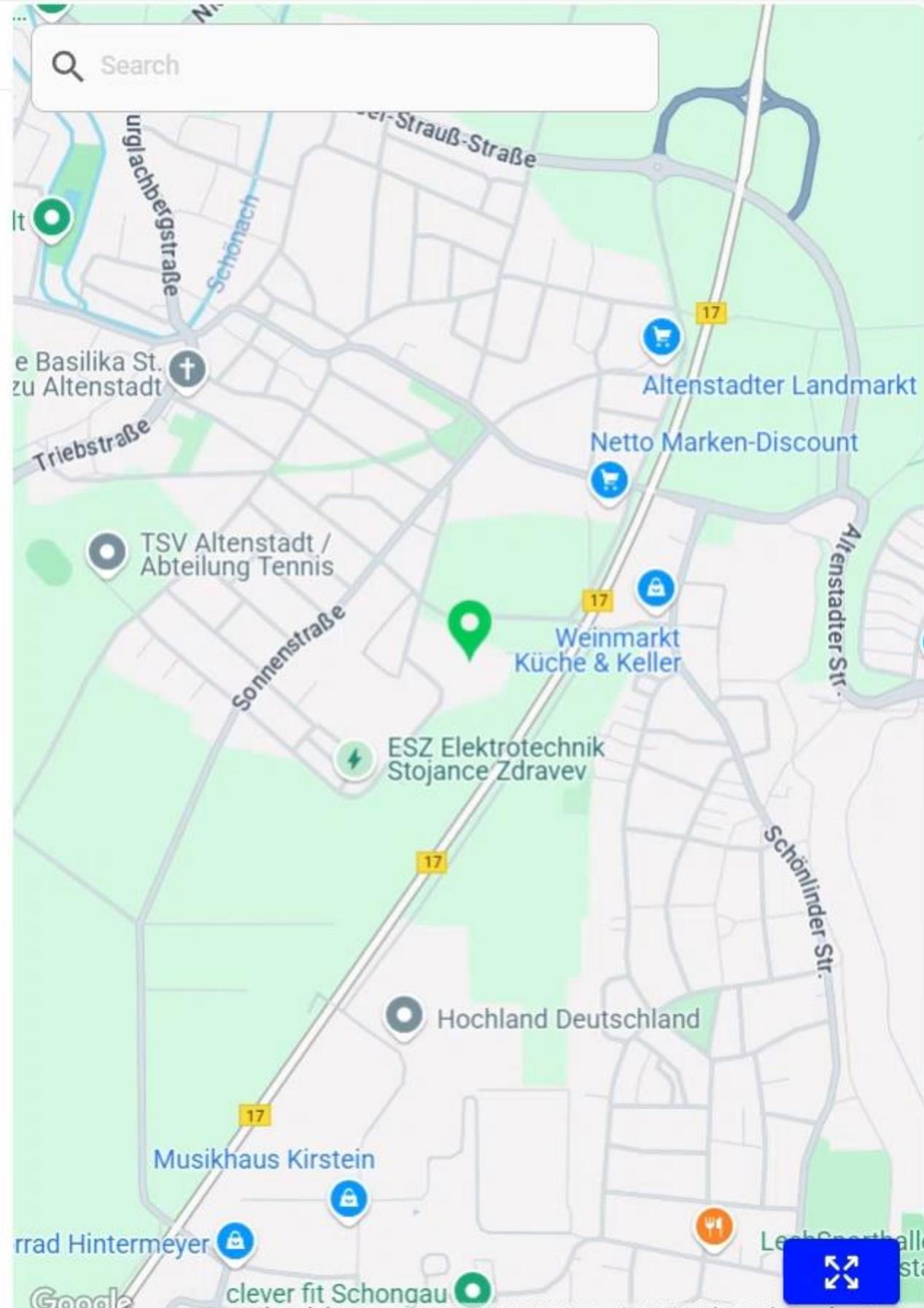
16.02°C 00% 1.40 µg/m³



BIM Files: 0
PointClouds: 2
360° Images: 966
Net Area: 0 m²
Assets: 0
Tags: 0
Active Devices: 0
Total Devices: 0

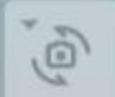
Search



Google

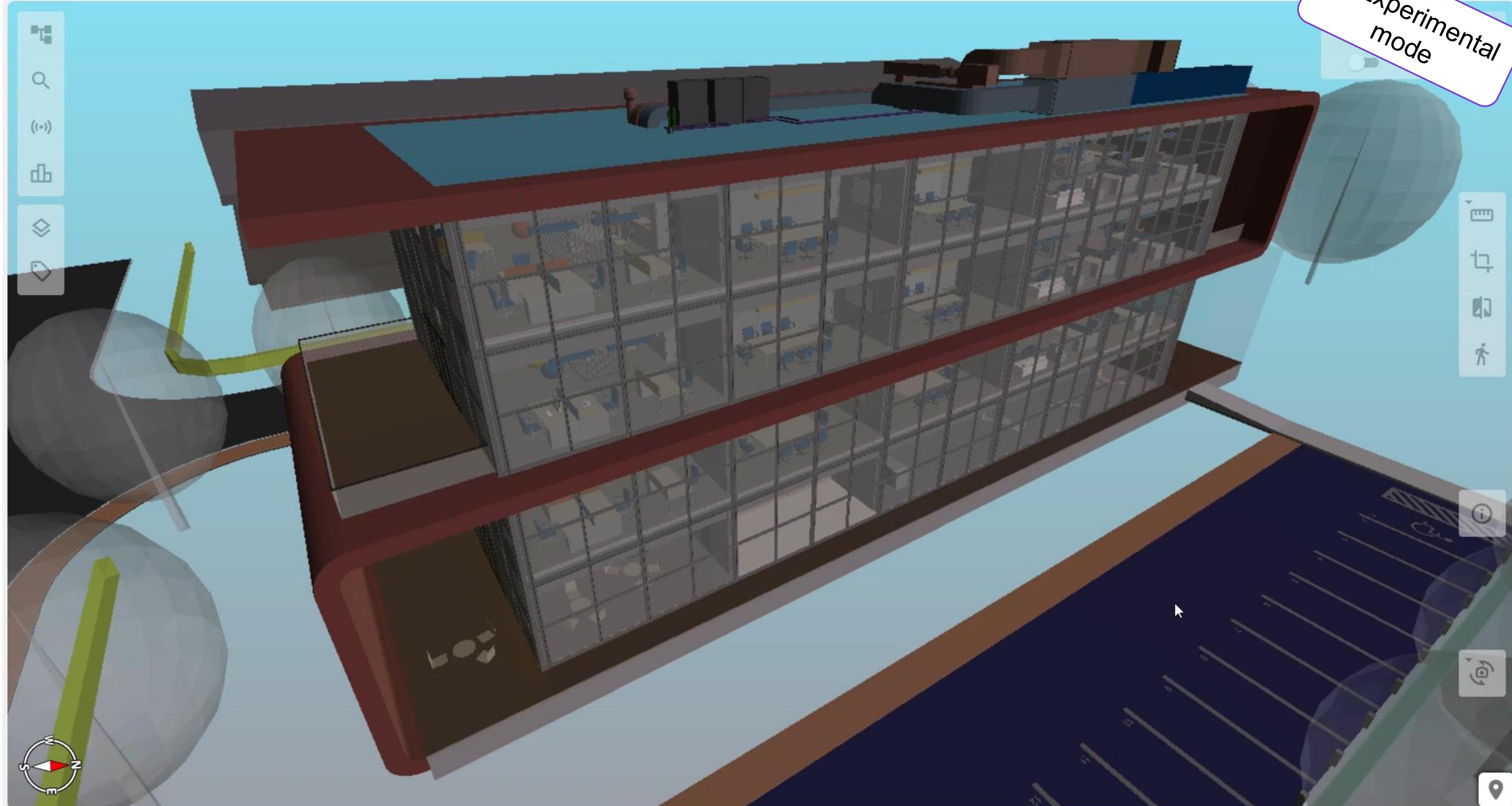
Keyboard shortcuts Map Data ©2025 GeoBasis-DE/BKG (©2009), Google Terms

In Experimental
mode





In Experimental
mode



What is different about the Digital Twin of dTwin?

Common digital twin solution

- *Closed solution only supporting no/few open standards.*
- *BIM is mandatory.*
- *Digital twin implementation consultant-driven & cumbersome project.*
- *Missing spatial context.*
- *Just showing stats and graphs.*



dTwin

- ✓ **Truly open** platform with many integrations from NGroup & 3rd parties.
- ✓ Start with **2D drawings, reality capture** or **GIS** for **building visualization**.
- ✓ **Get started in a matter of days** by using the data source of your choice.
- ✓ **GIS integration** gives full 2D & 3D spatial context.
- ✓ **Visualized actionable insights** for data-driven decision making.



NEMETSCHEK GROUP

dTwin™

Unlock the potential
of your data!



↗ Start with dTwin today!
www.nemetschek-dTwin.com