

BIM empowered digital twin as part of energy transition

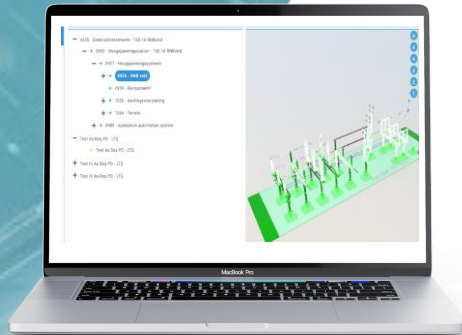
Mathias Everaert

ORGANIZED BY:



Revolutionize

the built environment



Construction technology for asset owners
& builders

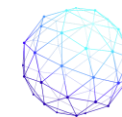
Data Platform for Operational Excellence
& Sustainability in AECO Industry



≡ neanex *Helping the industry to open, connect and centralize asset data.*

Involved in research project: DigiChecks & Sphere

- Consortium : 13 entities from 5 countries
- Purpose:
 - Developing a digital framework that focuses on the permitting processes in construction projects.
 - A more streamlined approach
 - Using individual tools and services (that each excel in a specific step of the permitting process)
 - With an integrated and interoperable approach
- Neanex within DigiChecks
 - Is focusing on interoperability and the semantic model of the framework
 - Share knowledge of ontologies and Linked Data
 - Share knowledge and expertise about how to apply ontologies in construction projects (Fundamend)
 - Share knowledge and expertise from research project: Sphere - Digital asset register



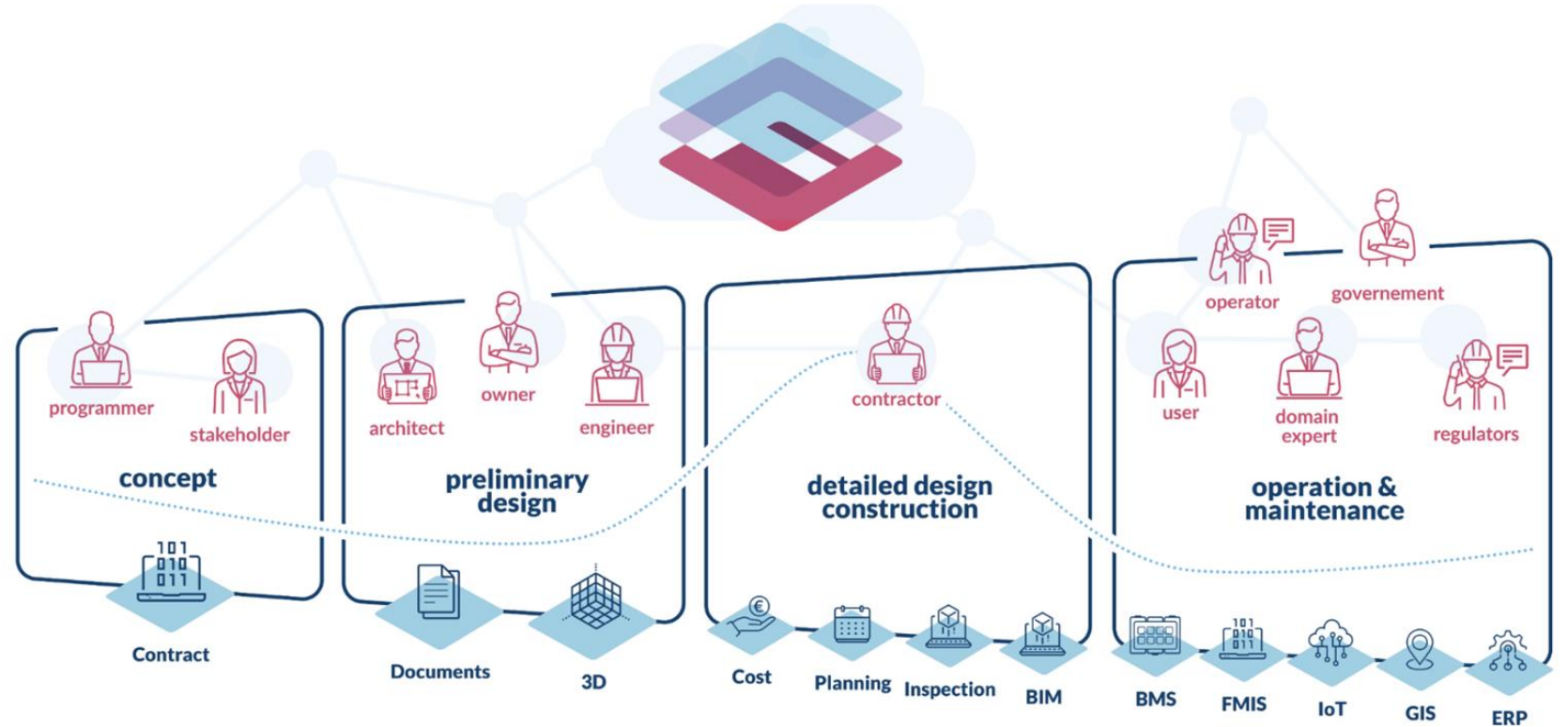
SPHERE
BIM DIGITAL TWIN PLATFORM



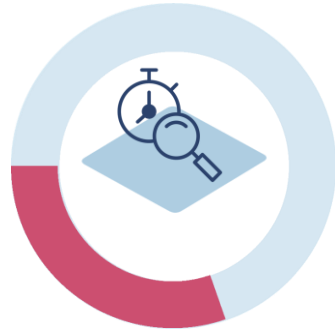
Information is scattered in tools, teams & data formats

Challenges

- Interoperability
- Data migration & re-engineering
- High Cost of data mapping
- Error prone
- Data Loss



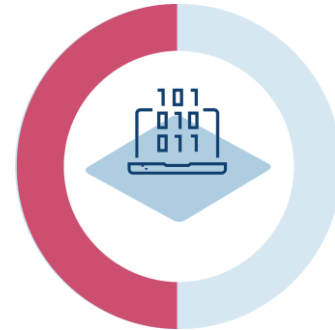
Risks of scattered information



30%
Search

**30% of project staff
time is lost**

because they are looking
for data or information



50%
Lost data

**50% of relevant
information is lost**

before the asset is becoming
operational



90%
locked in to
legacy systems

**90% of companies claim to be
locked into legacy systems**

and find it difficult
to re-use their information



Bad

maintenance

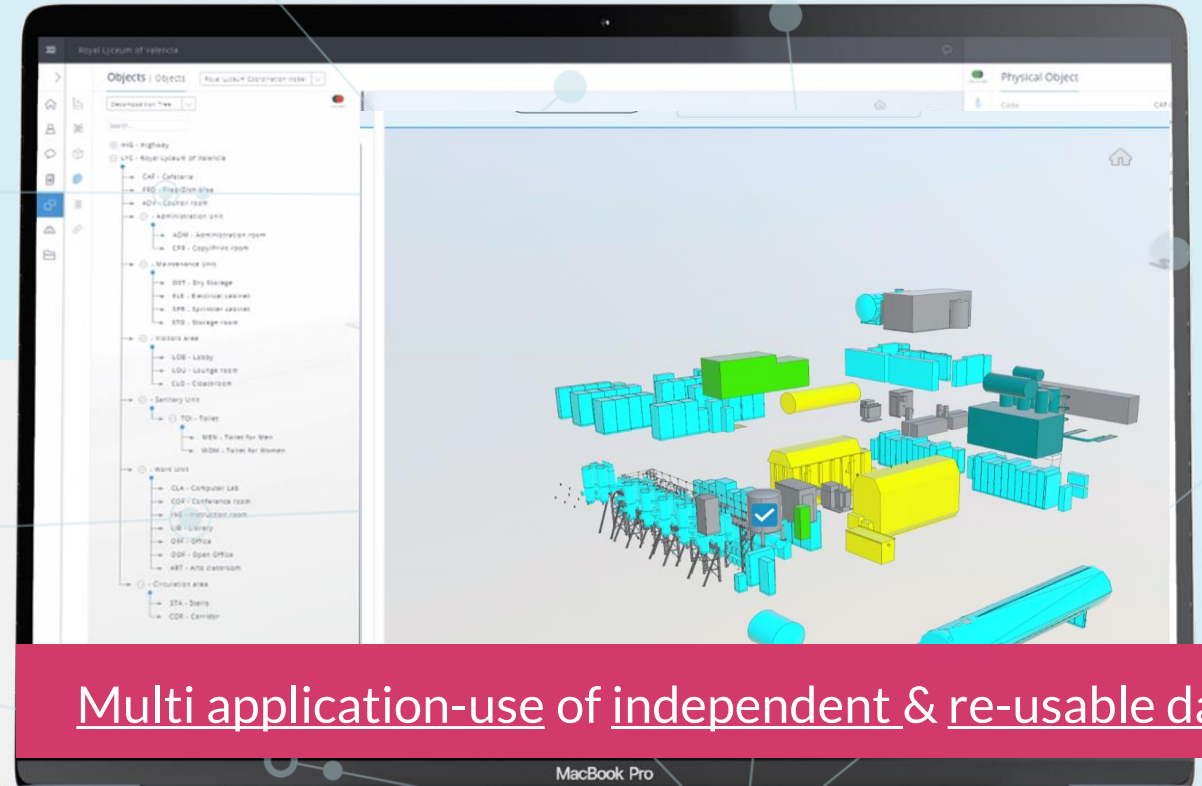
Web Based 3D driven Digital Twin Solution for Critical Asset Data



Lower costs in Operations

Speed up delivery

Get control back



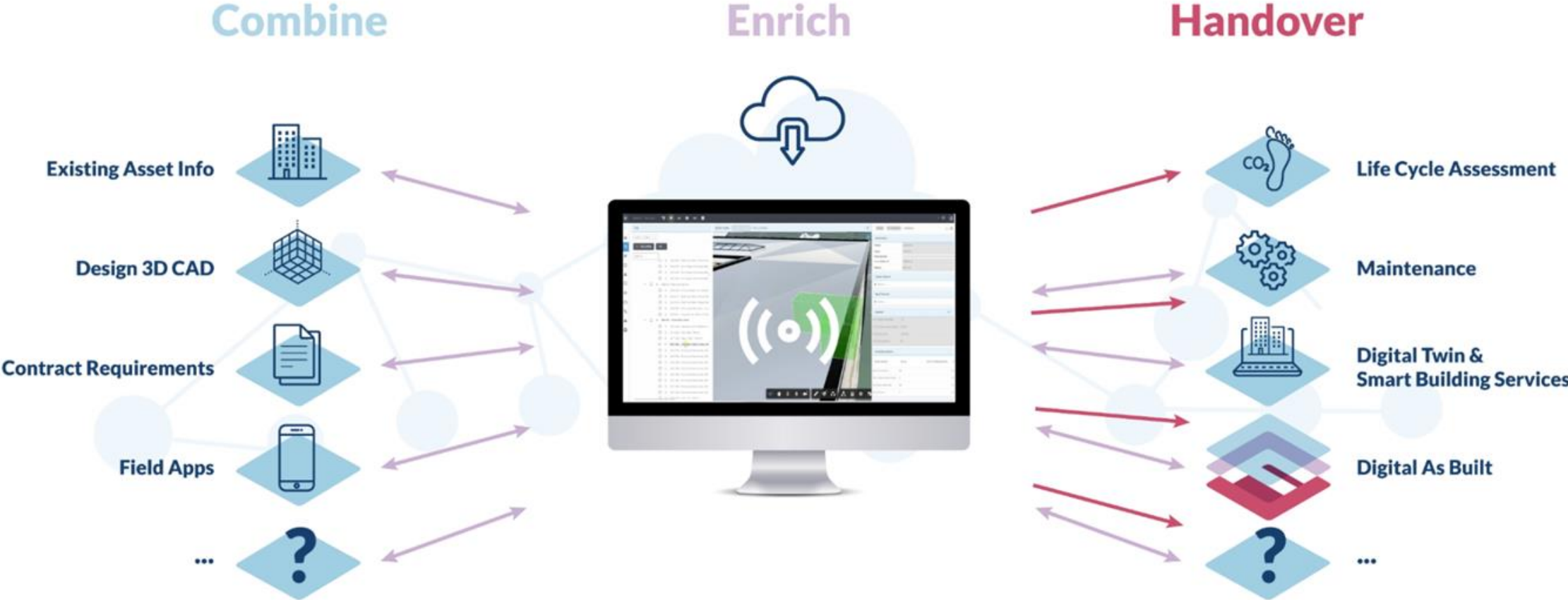
Multi application-use of independent & re-usable data

Centralized info collection, across lifecycles, tools & teams

Linked Data Standards & W3C

Combine, enrich, handover

without disrupting your way of working



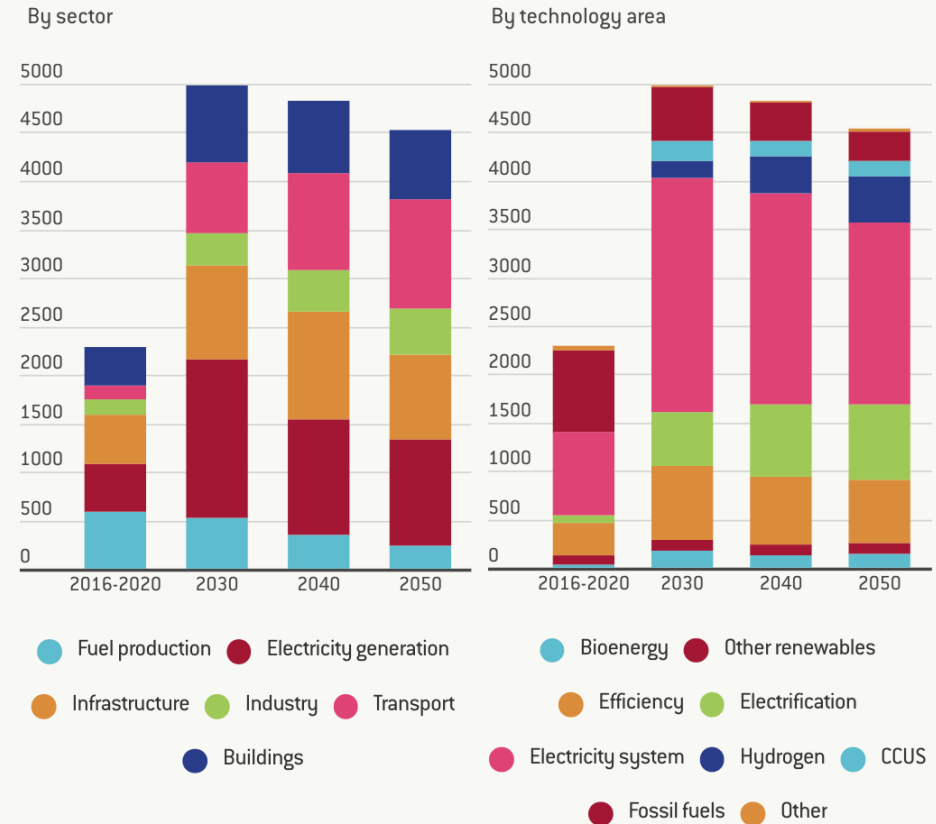
Add or enhance data
Apply domain standards, ontologies and OTL's

The background image shows an offshore oil rig on the right side, silhouetted against a bright sunset sky. The sun is low on the horizon, creating a golden glow and reflecting on the water. In the distance, a line of wind turbines stretches across the horizon. The overall scene is a mix of traditional fossil fuel extraction and modern renewable energy.

Critical Assets Energy market

Europe (& the world) has a huge challenge in keeping up with delivering physical assets & infrastructure to support the (fast) energy transition

Figure 1: Annual average capital investments worldwide to reach net zero CO2 emissions by 2050 (USD billion, 2019 prices)

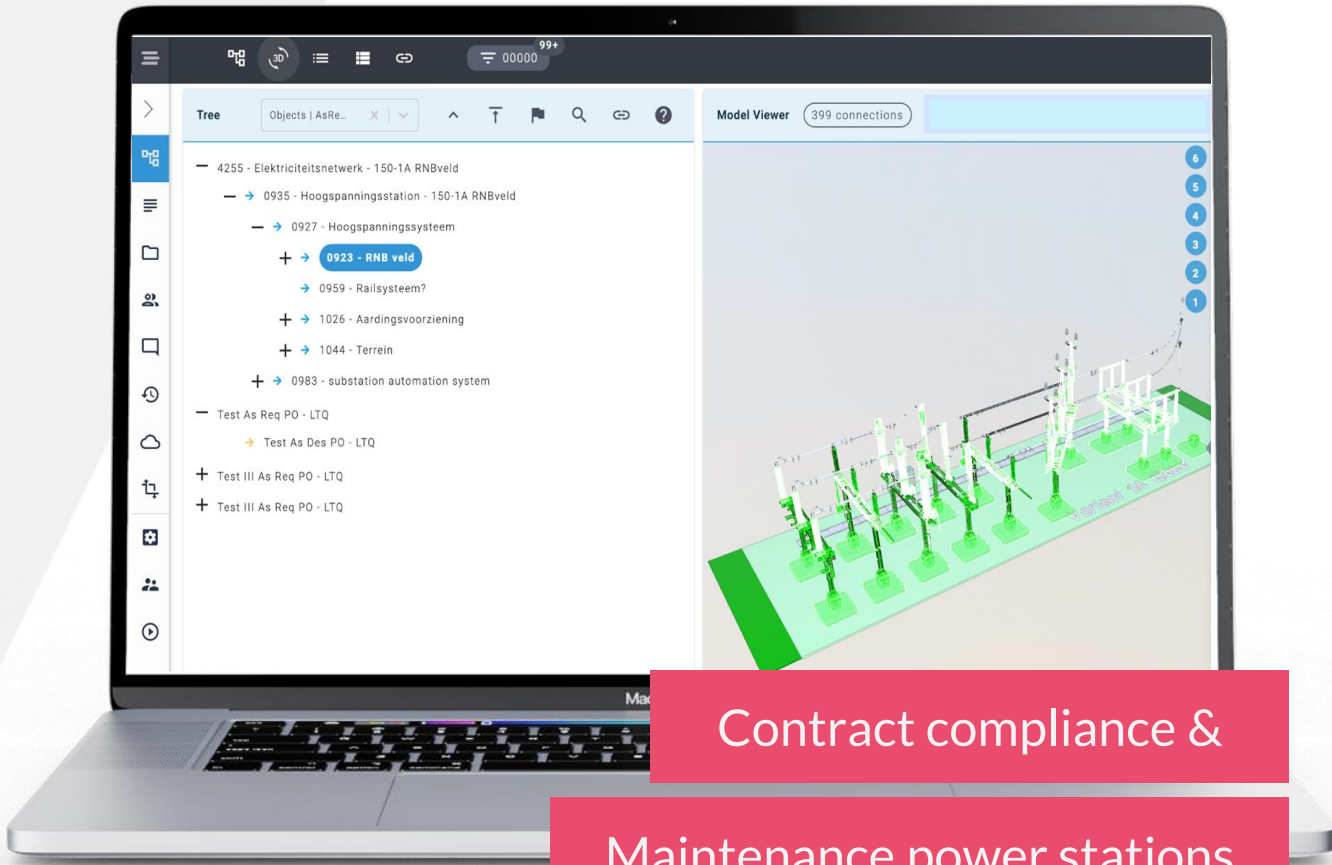


Source: International Energy Agency (2021), Net Zero by 2050, IEA, Paris

Faster project delivery



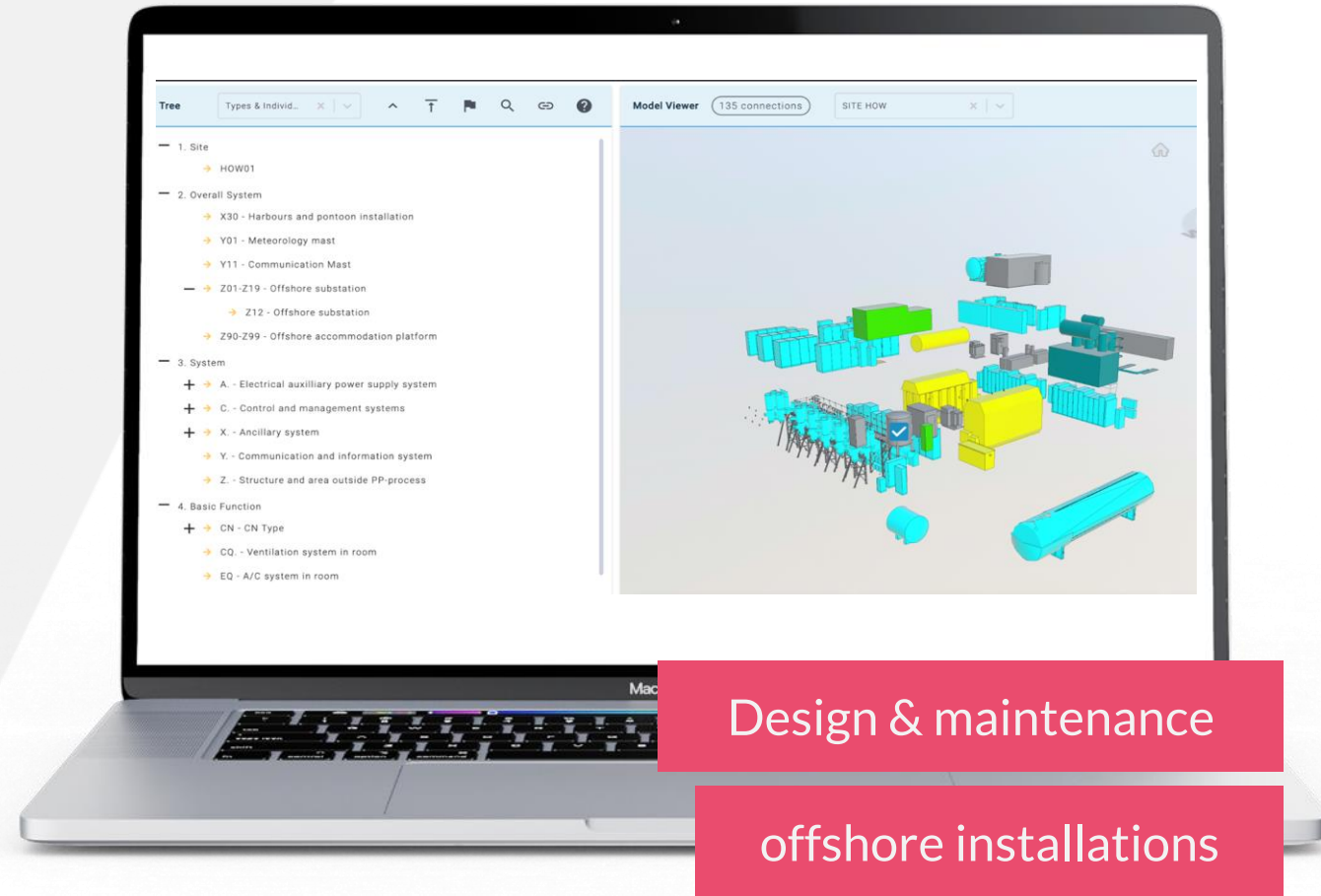
25%
Faster delivery



Save time from design into operations



30%
Time saving



Design review

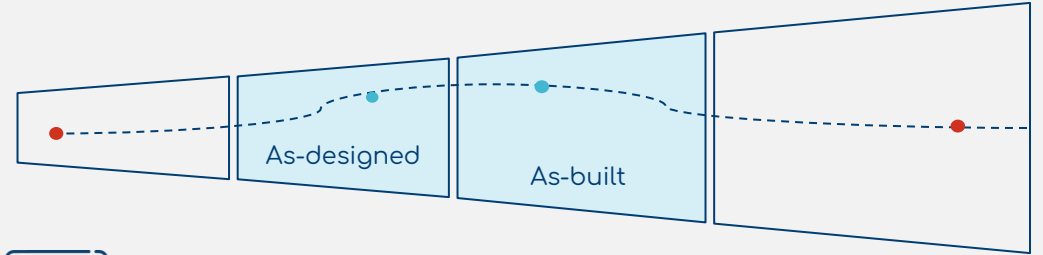
Project Engineer

Contract Compliance

Contract manager

Data Quality

Information manager



(Object Type) Library



OPERATOR



CLIENT



CONTRACTOR

COMMUNICATION



DATA



MODEL

The screenshot shows the Tennet software interface. On the left, a tree view lists objects under 'Station Haaksbergen (Portal Demo)', including various disconnectors and earthing switches. The main area displays a 3D CAD model of the substation with a green highlight on a specific component. A search bar is visible in the top left of the object list.

This screenshot shows the detailed view for 'Disconnecter 1'. It includes a metadata table, a progress gauge, and several charts.

Code	Description	Is a result of	Status
AR-0025			ACTIVE

Aspects Filled out of Required: 24 / 33

Individual Products & Aspects:

ID	Maintenance Category	Maintenanc	Order level	System name, system number	Type name
04313902a34710a	Conditioning and Ventilation	M.06			
04A4648B06a47	Conditioning and Ventilation	M.06	60		
188444040a47	Conditioning and Ventilation	M.06	60	VEN-SUR_20	Ventilation duct
044421a099603	Conditioning and Ventilation	M.06	60		
711a184a4820	Conditioning and Ventilation	M.06	60		
0470a0a7a4a47	Conditioning and Ventilation	M.06	60		
57a0f020a2718	Conditioning and Ventilation	M.06	60		
33a20f05a4a03	Conditioning and Ventilation	M.06	60		
44a02a031a033	Conditioning and Ventilation	M.06	60		
9a061a1000514	Conditioning and Ventilation	M.06	60		

Filed & Required per Aspect:

Maintenance Category	Filed	Required
Maintenance Code	2	2
Noise level	2	2
System name, system number	1	1
Type name	3	3

Products by Aspect values:

VEN-SUR_20: 4.17%
 Noise level: 14.29%
 Maintenance Code: 27.27%
 Type name: 37.5%







Trusted By



One Platform - many solutions

Fundamend Insight

All that data needs the right checks, reports and ways to access the right information.

-  BIM Quality
-  Checks
-  Quantity take off
-  Data Management
-  BI Module
-  RDF Compliant








Fundamend Twin

Fundamend Twin offers the backbone of your digital twin as a Digital Twin Register.

-  CAD Connector
-  Building Assembly
-  Digital Handover
-  API
-  Data delivery
-  Integration platform
-  IoT Connect

Fundamend Control

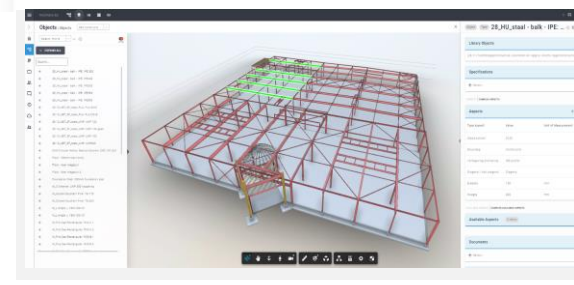
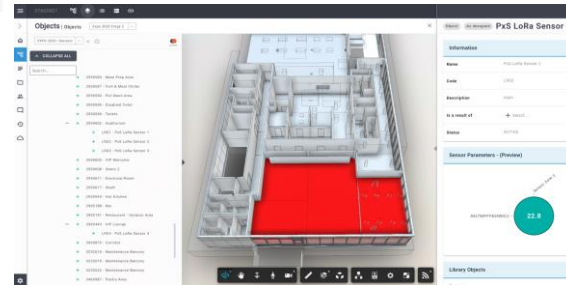
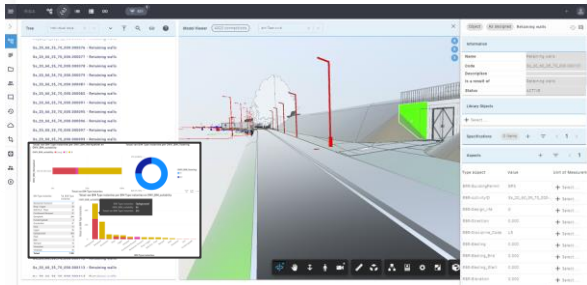
Control Quality, Completeness & Progress of your information.

-  Automated data delivery
-  Apply standards
-  Contract compliance
-  Checks
-  Dashboards
-  BIM Quality
-  CAD Connector

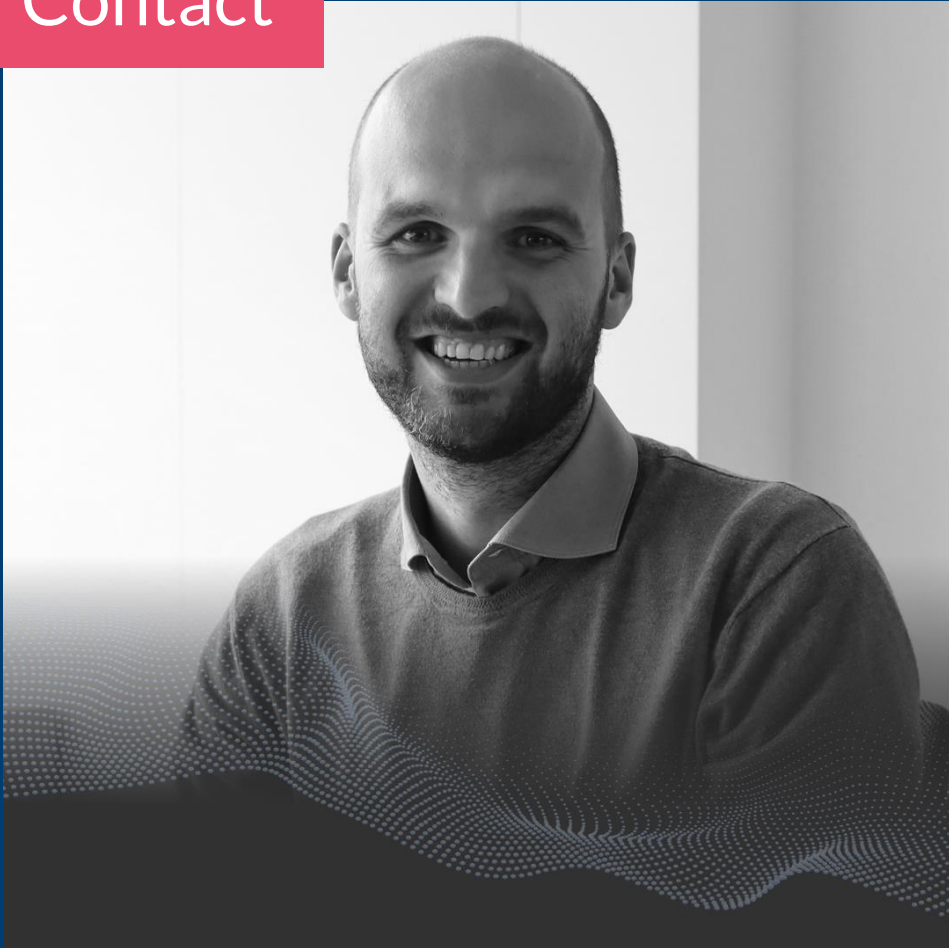
Fundamend Passport

Fundamend builds a digital representations of your asset. Like an assembly of assets, material, carbon, cost, ...

-  BI Module
-  Carbon Insights
-  Dashboards
-  Material Assembly
-  Building Assembly
-  Digital Handover



Contact



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3rd BUILDING DIGITAL TWIN
International Congress

ORGANIZED BY:



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