

Riga, 09 2023

# iTwin Powered MicroStation

*Innovation*

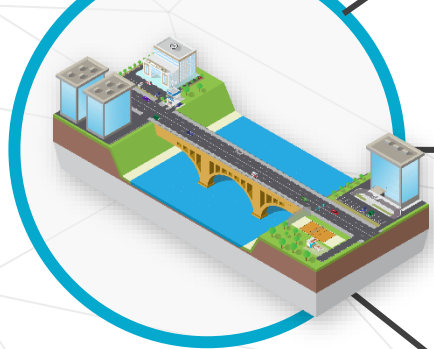
*Bartłomiej Cymerman*



# What is a digital twin

An iTwin enables you to visualize the asset, track change, and perform analysis to better understand and optimize asset performance.

## Physical Asset



### Engineering

- Specs
- Drawings
- Documents
- Models
- Analyses
- Geotech
- OEM specs

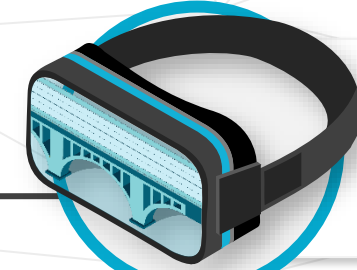
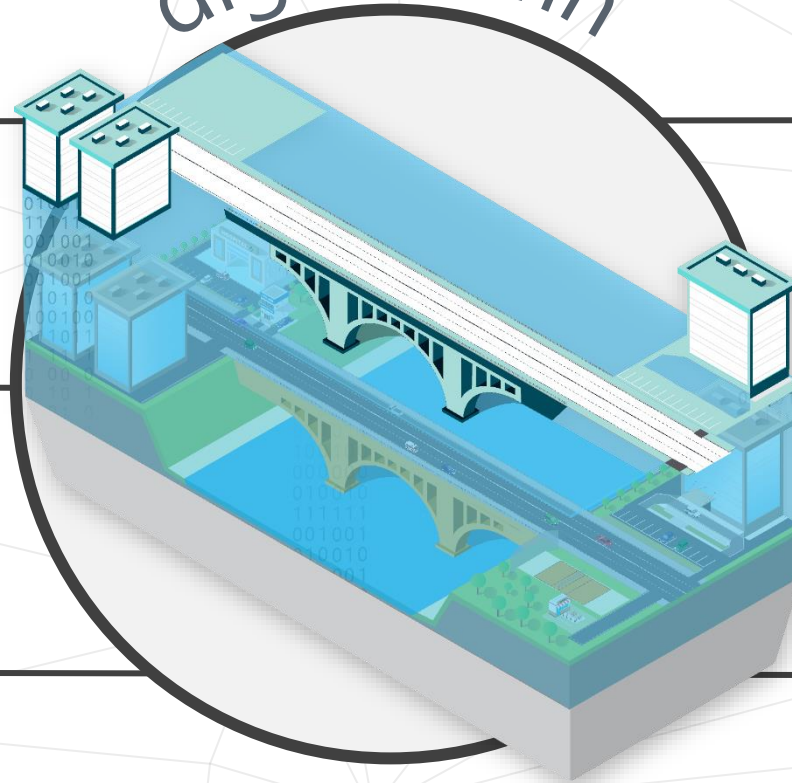
### Operations

- IoT feeds
- Sensors
- Drones
- Cameras
- LiDAR
- Point clouds

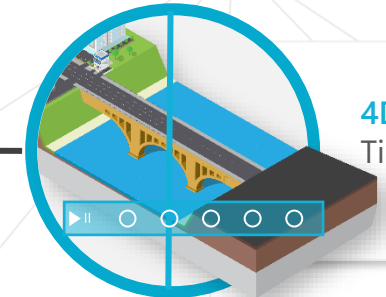
### Information

- Asset tags
- Work orders
- Maintenance records
- Inspection records

## digital twin



**3D/XR**  
Immersive  
Visualization



**4D**  
Timeline of  
Change



**AI/ML**  
Analytics  
Visibility

iTwins are continuously updated with data from the physical asset. This data is used to understand and model the asset's performance.

# Are our users saying that they....

- Don't know how to get started in creating a digital twin?
- Do not know what applications to use?
- Do not understand the benefit of a digital twin compared to what they are doing already?
- Know if they are using at the latest revision of the file(s)?
- A digital twin looks to complicated for their business?





# Addressing these questions is simple...



Digital Twin



Open Modeling Environment



# Solution



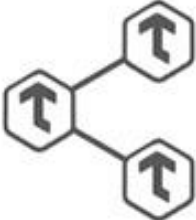
## Step 1

Set up your iTwin  
(Team Coordinator)



## Step 2

Synchronize your  
design changes  
(Team Members)



## Step 3

Share your iTwin with project  
participants and stakeholders  
(Team Members)



# To get the most out of digital twins...

- Easy to push the changes to the iModel within the desktop product
- Synchronize often – Accurate, up to date digital twin
- Latest updates in the digital twin is key to maintaining an accurate digital twin

# Demo – Part 1 – Project Setup and Synchronization



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### Get Started...

- Project Insights
- Upgrade
- Share Content
- Find Training

AR

# Project Setup

Hello, Alicia!  
How are you CONNECTED?

#### CONNECT Center

Learn

Nominating your project provides great recognition, exciting rewards, and chance to win a sponsored trip to London!

[Learn more](#)

- Recommended
- COVID-19 Resources
- Project Insights
- Share
- Stay Informed

#### ProjectWise Projects

|                         |   |
|-------------------------|---|
| ★ 3132020 LondonRD      |   |
| ProjectWise Connections | 0 |
| ContextShare            | 0 |
| SharePoint Connections  | 1 |
| Shared Files            | 4 |
| Open Forms              | 0 |
| Open Issues             | 0 |
| iModels                 | 0 |

#### Recommended Events

| DATE       | Event                        | Time     | Language        |
|------------|------------------------------|----------|-----------------|
| MAY 11 WED | Coffee Corner: Bentley O...  | 4:00 pm  | English Webinar |
| MAY 11 WED | iTwin for developer: Brin... | 4:00 pm  | English Webinar |
| MAY 11 WED | Coffee Corner: OpenRoa...    | 7:00 pm  | English Webinar |
| MAY 13 FRI | Coffee Corner: OpenBul...    | 11:00 am | German Webi...  |
| MAY 17 TUE | Coffee Corner: BCDE - B...   | 12:30 pm | English Webi... |

[View All Events](#)

#### Featured Projects

- Jiujiang Smart Water Management Platform
- Technology Application in Miluo Western 220kV Substation Project
- Chase Center Development
- Digital Application in Heilongjiang Construction Industry
- Sulfuric Acid Plant in the DRC



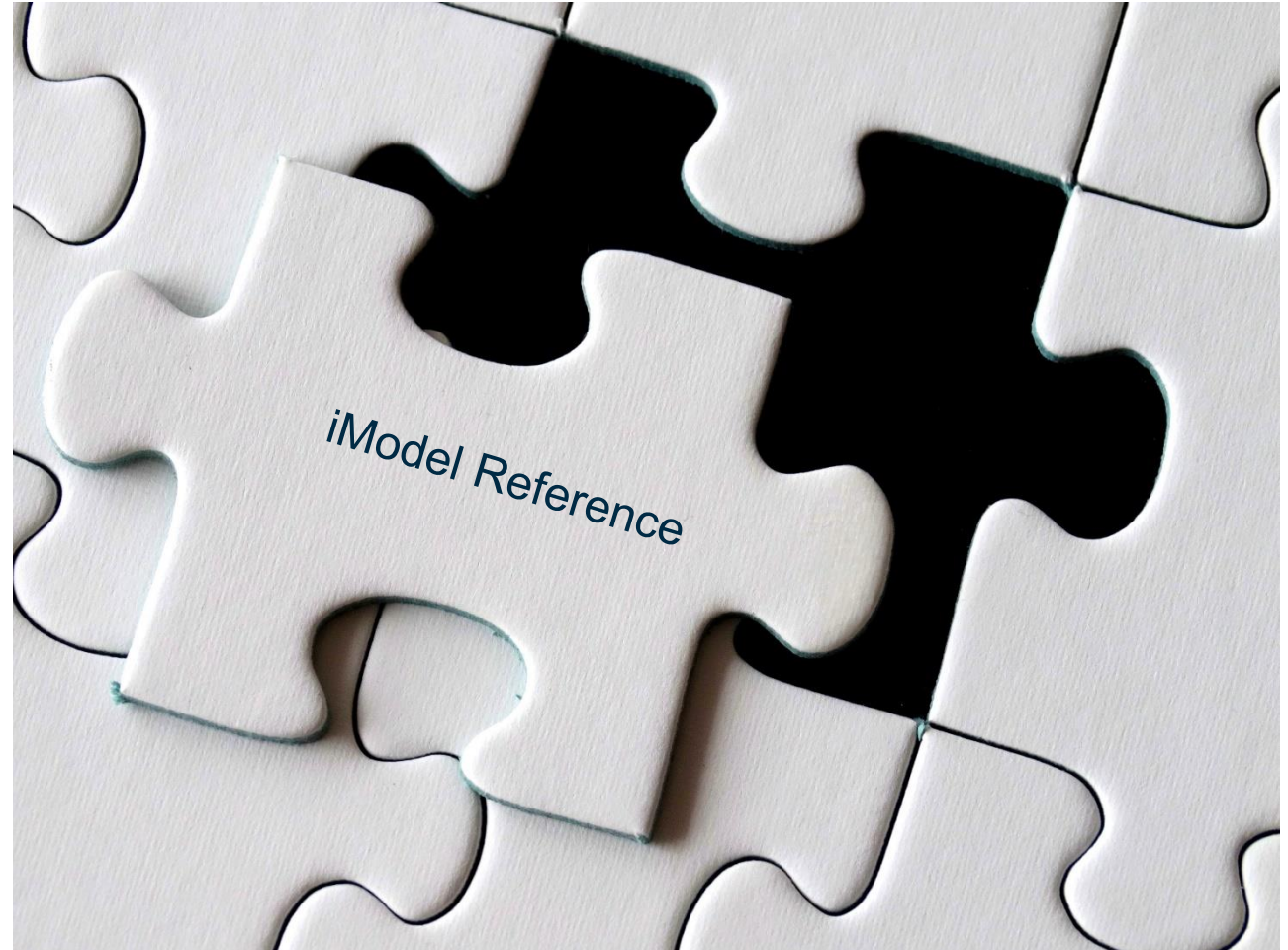
# Value Add

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- digital twin workflow integrated into MicroStation
- Up to date, latest revisions
- Normalizes data – Business data from other sources can be viewed
- Attach (reference) the iModel into MicroStation to set context
- Extension of the data that already exists in the files now

# Referencing of the iModel into MicroStation

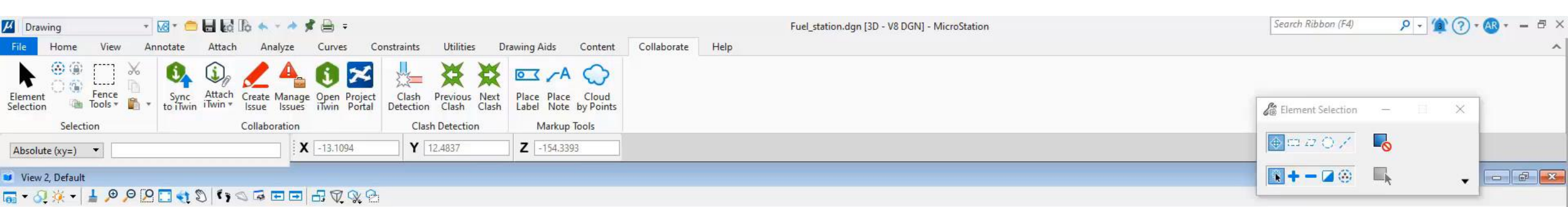
- Utilize iModel that contains all of the information into MicroStation or OpenX products
- Always view in context, the latest information
- Normalized Data from all disparate files
- Contains all the Business Data (Properties of elements)



# Demo – Part 2 – iTwin Attach



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Gas Station in MicroStation to be synchronized to an iModel



# Benefits of digital twins



INTEGRATE DISPARATE  
FILE FORMATS



EASILY SHARE LARGE,  
MULTI-DISCIPLINE DATA  
SETS



CAPTURE, REVIEW AND  
COLLABORATE ON  
PROJECT DATA



ACCELERATE PROJECT  
STARTUP

# All of the pieces for the digital twin are put together.

## Key Take-Aways



**MicroStation**  
CONNECT Edition

- Easy to get started
- Use the existing data
- Integrated Workflow





## Examples of implementation

<https://www.bentley.com/events/going-digital-awards/>

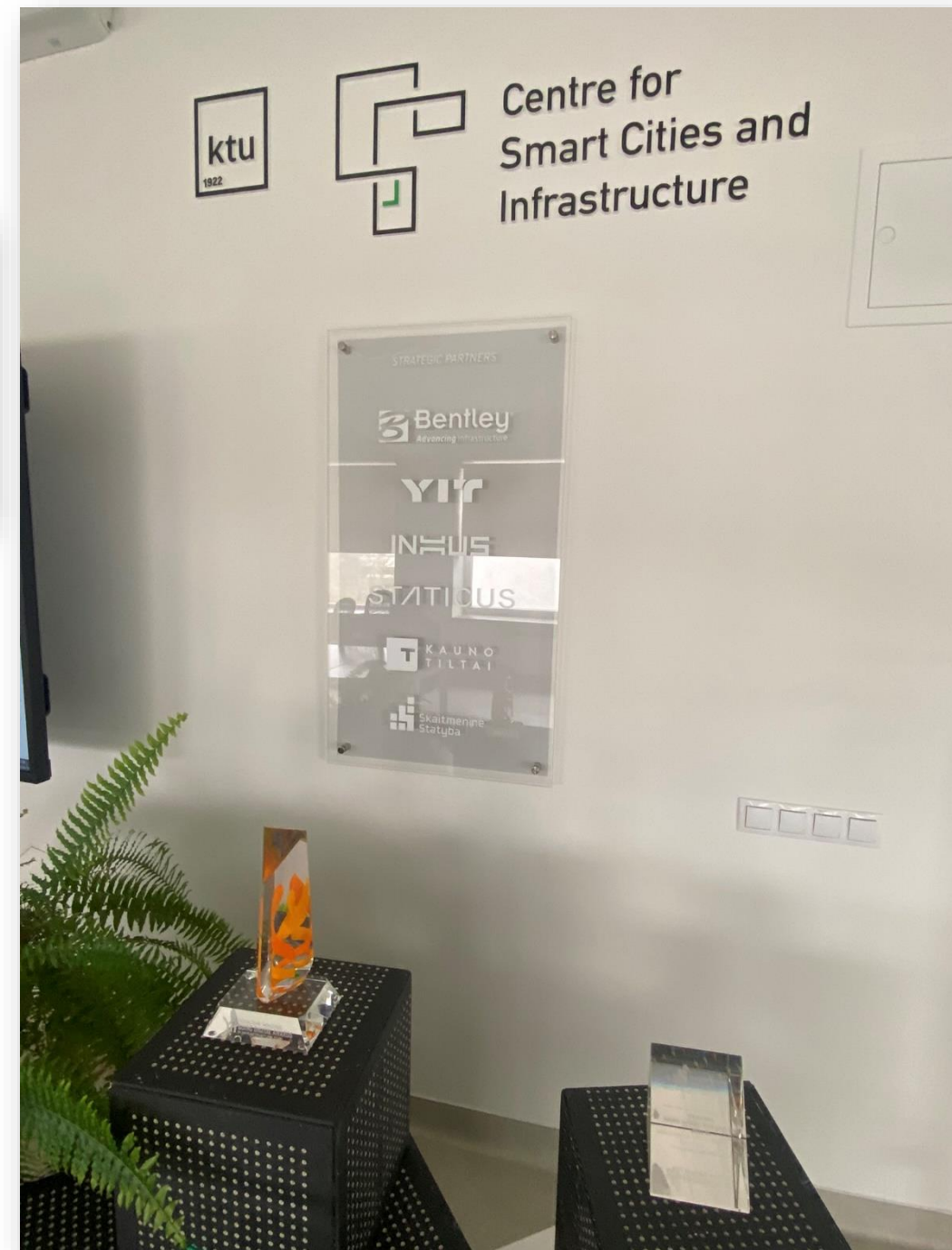
- Year in Infrastructure and Going Digital Awards - Founders' Honors keynote**  
Thursday, October 12, 2023, 8:00 AM SGT
- Year in Infrastructure and Going Digital Awards - Product and Technology keynote**  
Thursday, October 12, 2023, 9:15 AM SGT
- Year in Infrastructure and Going Digital Awards - Industry Breakout Session – Construction**  
Thursday, October 12, 2023, 10:15 AM SGT
- Year in Infrastructure and Going Digital Awards - Industry Breakout Session – Energy**  
Thursday, October 12, 2023, 10:15 AM SGT
- Year in Infrastructure and Going Digital Awards - Industry Breakout Session – Transportation**  
Thursday, October 12, 2023, 11:15 AM SGT
- Year in Infrastructure and Going Digital Awards - Industry Breakout Session – Water/Utilities**  
Thursdav. October 12. 2023. 11:15 AM SGT



# KAUNAS DIGITAL TWIN

<https://imic.ktu.edu/digitaltwin-kaunas/>

- ✓ Especial focus to the university campus
- ✓ Developed within OpenCities Planner



Bentley

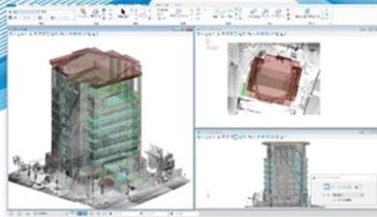
The Year in  
**INFRASTRUCTURE**  
and GOING DIGITAL AWARDS

FINALISTS

**2022 Going Digital Award**  
Facilities, Campuses, and Cities



**Kaunas University of Technology**  
Kaunas, Lithuania



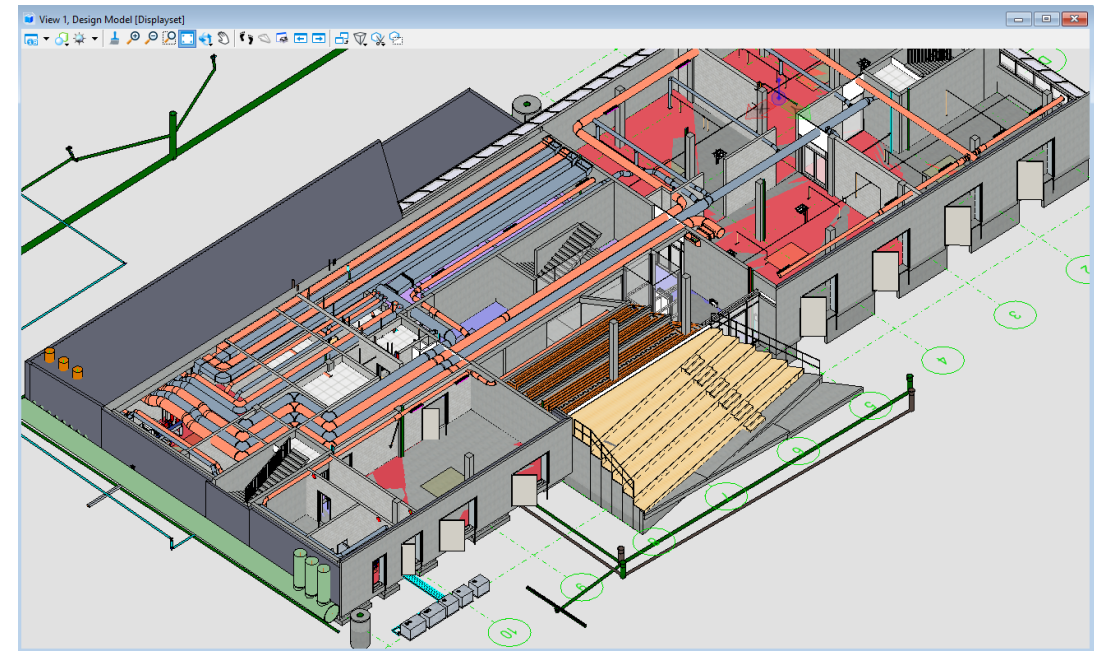
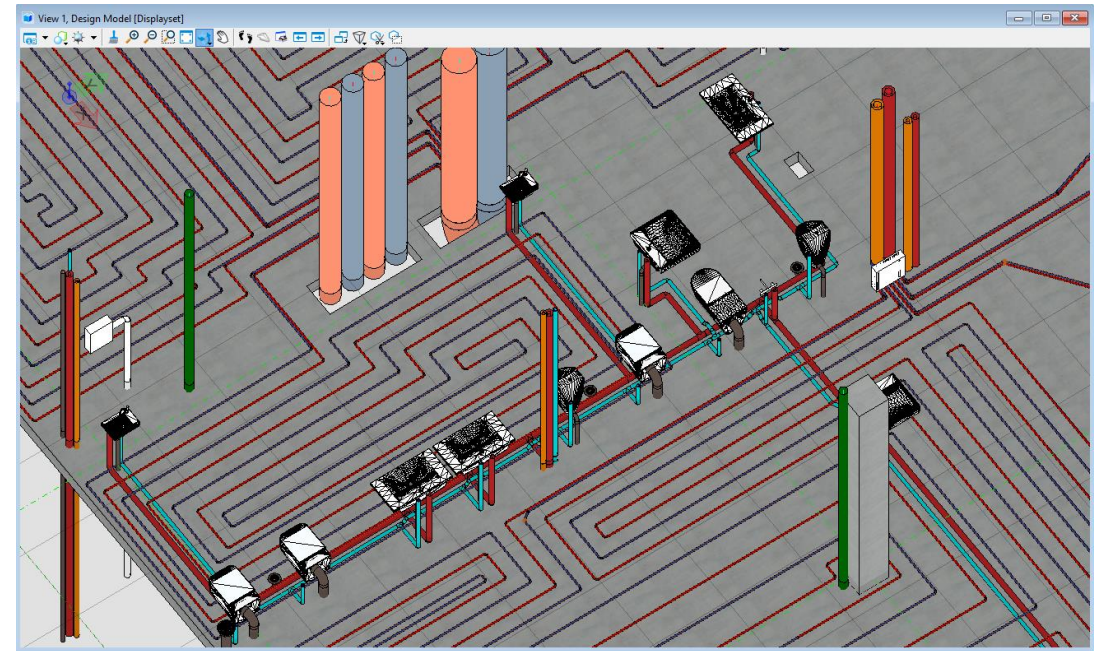
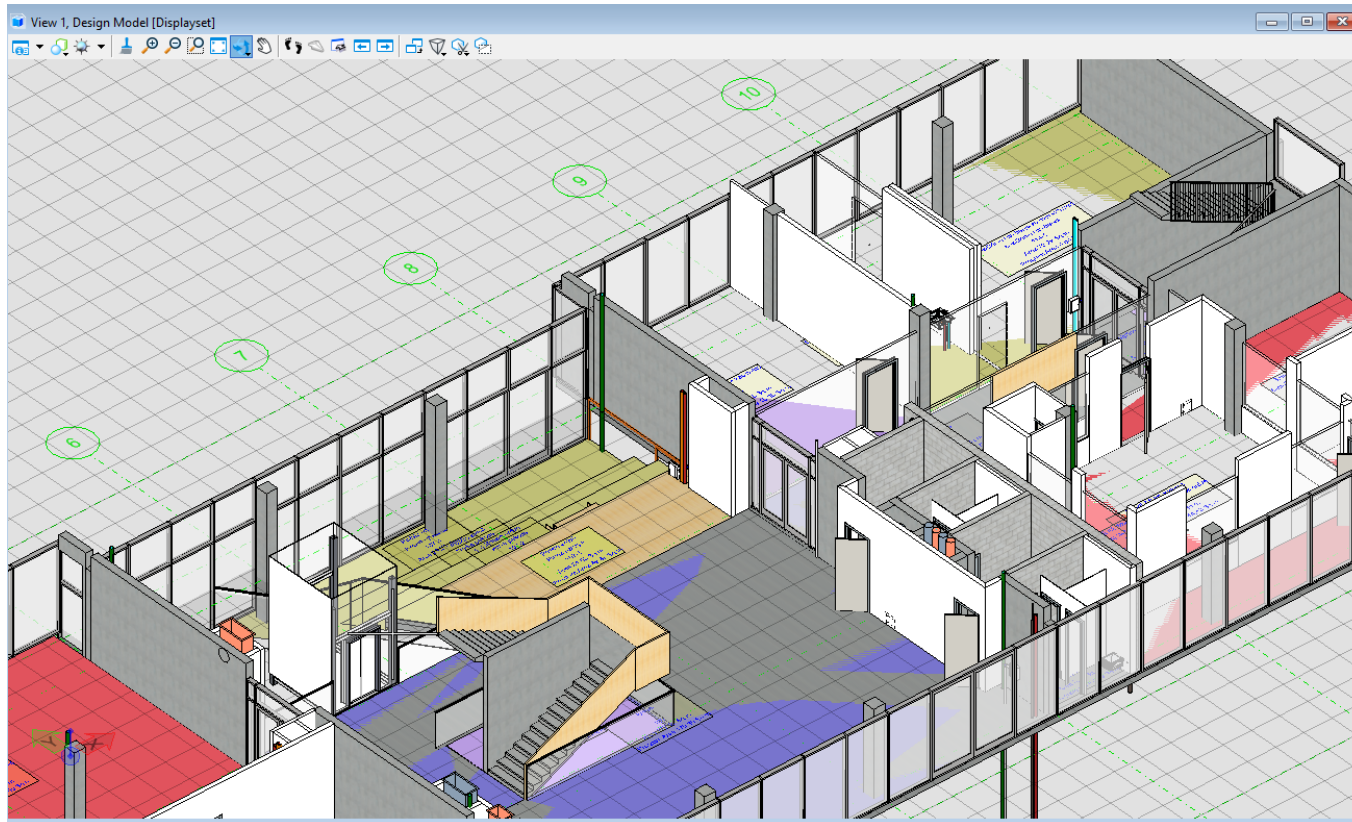
**Kokusai Kogyo Co., Ltd.**  
Numazu, Shizuoka and Kaga,  
Ishikawa, Japan



**Sydney Airport**  
Sydney, New South Wales, Australia

# DIGITAL TWIN OF MLAB BUILDING

- ✓ Building is still in construction phase
- ✓ **Detailed Digital Twin including BIM models**, created with OpenBuildings Designer
- ✓ Photogrammetry (created with ContextCapture) = as build review
- ✓ Sensors integrated in iTwin platform.





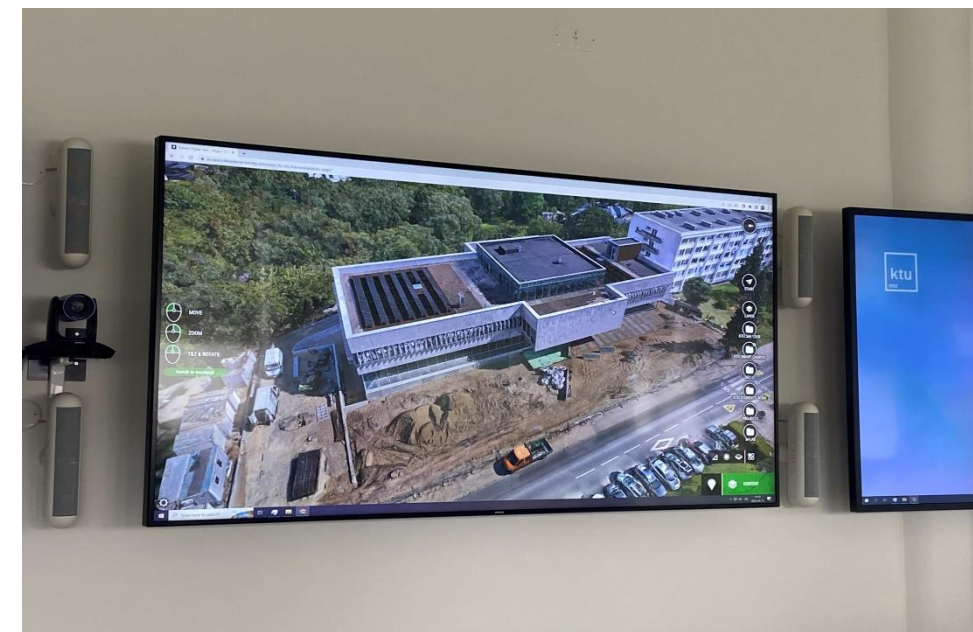
CREATION OF THE BIM MODEL WITH **OPENBUILDINGS DESIGNER**.  
IT WAS CREATED WITH DIFFERENT PARTIAL MODELS:  
ARCHITECTURE, STRUCTURES, HVAC, WATER PIPING  
**PERSON: IGNACIO VILLALON, CIVIL ENGINEER.**

CREATION OF THE PHOTOGRAMMETRY MODEL THROUGH ITWIN  
CAPTURE.

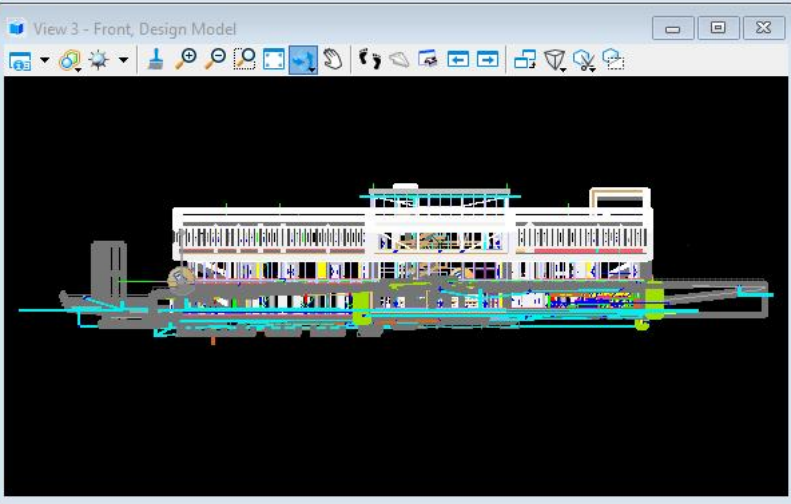
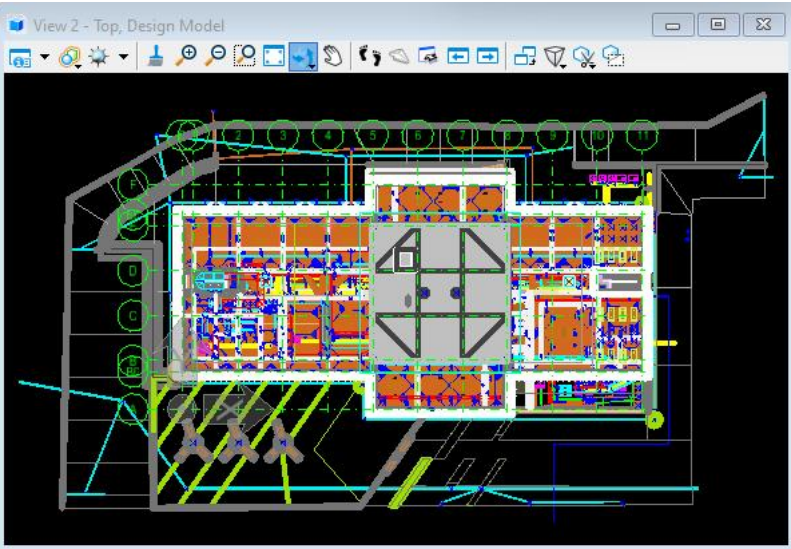
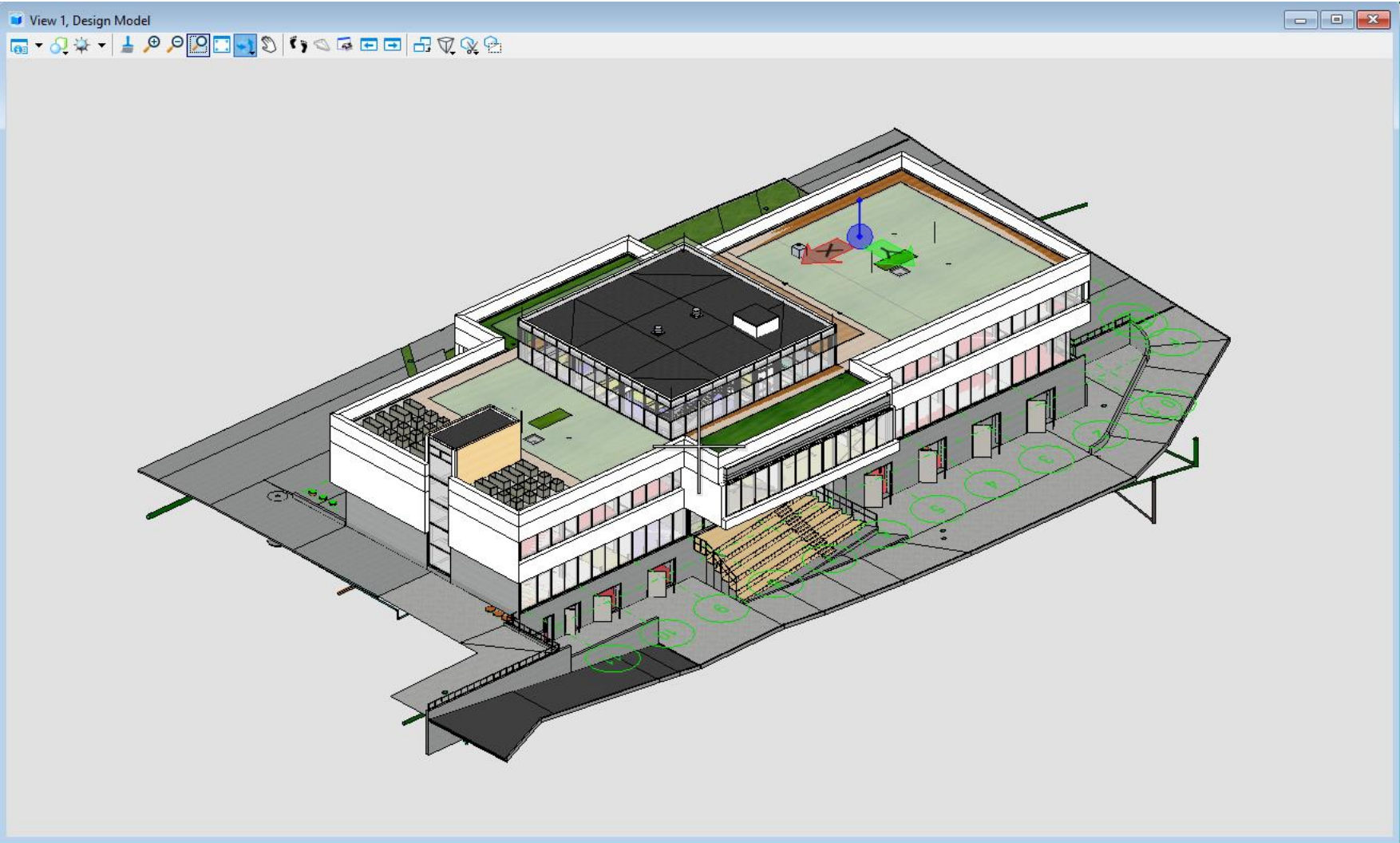
**PERSONS: RYTIS VENČAITIS (ELECTRONICS ENGINEER)  
VYTAUTAS BOCULLO (CIVIL ENGINEER)**

INSERTION OF SENSOR MEASUREMENTS TO ITWIN.  
PROGRAMING PROCESS IN ITWIN, TO SELECT WHAT INFORMATION  
TO DISPLAY ECT.

**PERSON: JUSTAS KARDOKA, IT ENGINEER**



# DIGITAL TWIN OF MLAB BUILDING



Riga, 09 2023

# Thank you!



**Bartłomiej Cymerman**  
Product Sales Engineer | EMEA |  
Building products

