

SD473691 - Forge Road Map: Visual Insights—Visualizing Data in Your Models

Aradhana Vaidya

Sr. Product Manager | @aradhanav

Jessica Di Zio

Sr. Product Manager | @jdizio



About the speaker

Aradhana Vaidya

Aradhana Vaidya is a Sr. Product Manager for Forge Graphics at Autodesk, where she is responsible for shared graphics components for desktop, web & cloud that are used by multiple Autodesk products.



<http://www.linkedin.com/in/aradhanavaidya>



@aradhanav



About the speaker

Jessica Di Zio

Jessy is a Sr. Product Manager responsible for the Forge Viewer and its new advanced extensions. Looking to solve user problems within the Forge ecosystem.



<http://linkedin.com/in/jdizio>



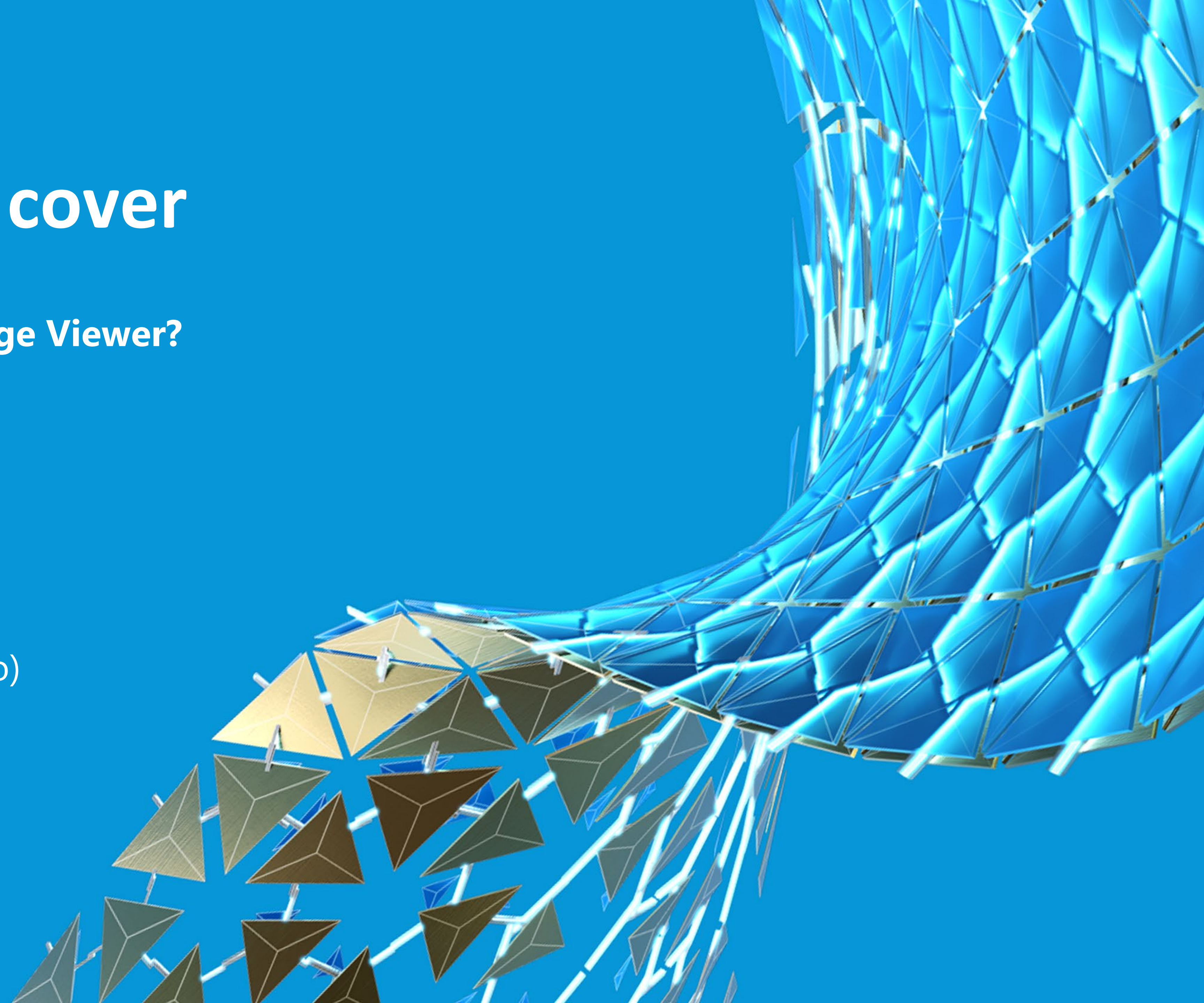
@jdizio

The presentations today may contain forward-looking statements about our strategies, products, future results, performance or achievements, financial, operational and otherwise, including statements about our strategic priorities, business model transition, and guidance for the fiscal year 2021 and beyond; our long term financial and operational goals; our M&A strategy; and our capital allocation initiatives. These statements reflect management's current expectations, estimates and assumptions based on the information currently available to us. These forward-looking statements are not guarantees of future performance and involve significant risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from results, performance or achievements expressed or implied by the forward-looking statements contained in these presentations, such as a failure to successfully integrate acquired businesses; developments in the COVID-19 pandemic and the resulting impact on our business and operations; general market, political, economic, and business conditions; complete transitions to new business model and markets; failure of the construction industry to grow as anticipated; failure to develop new products; failure to successfully expand adoption of our products; and failure of product changes to have the desired benefits.

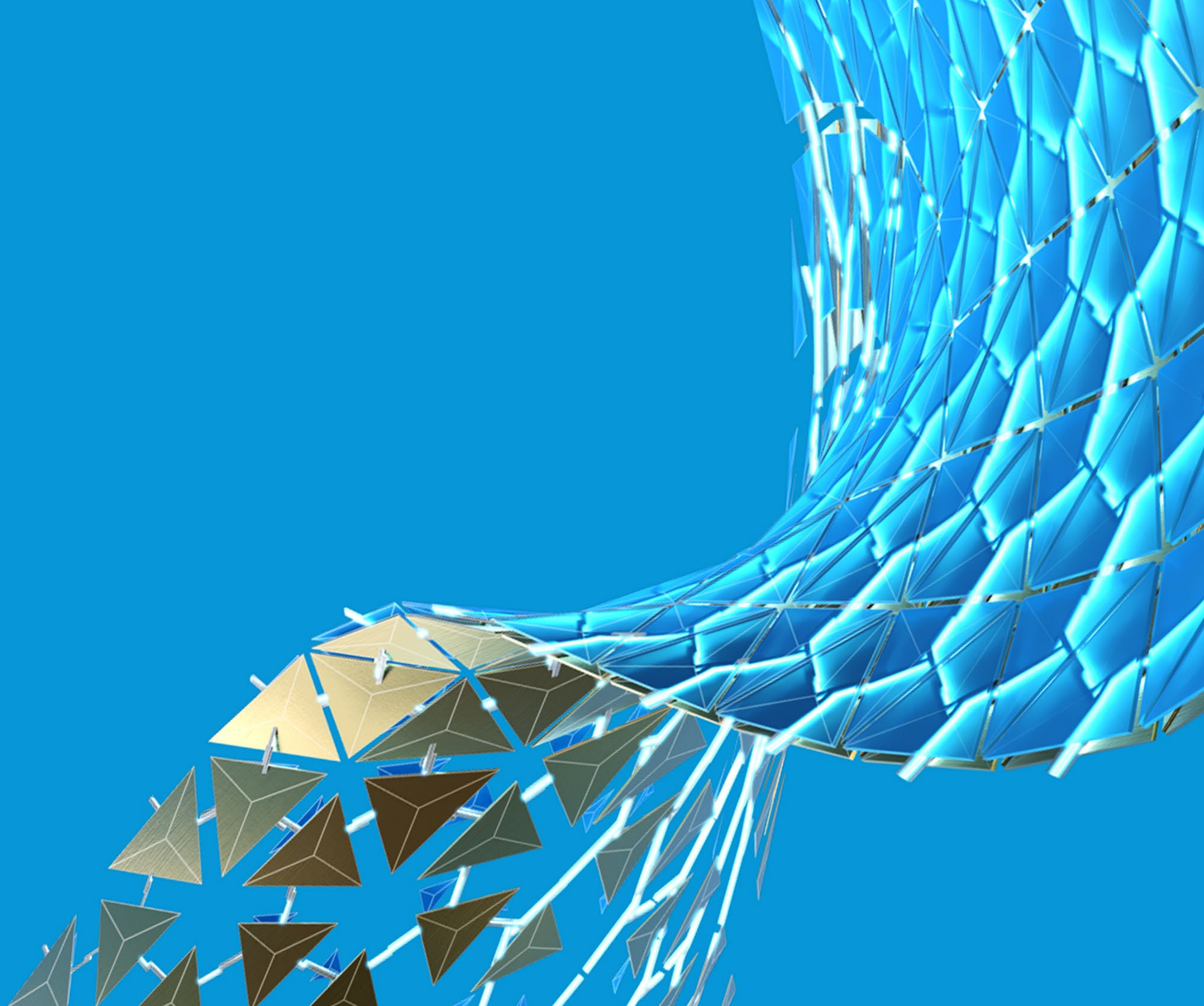
A discussion of factors that may affect future results is contained in our most recent Form 10-K and Form 10-Q filings available at www.sec.gov, including descriptions of the risk factors that may impact us and the forward-looking statements made in these presentations. The forward-looking statements made in these presentations are being made as of the time and date of their live presentation. If these presentations are reviewed after the time and date of their live presentation, even if subsequently made available by us, on our website or otherwise, these presentations may not contain current or accurate information. We disclaim any obligation to update or revise any forward-looking statement based on new information, future events or otherwise.

What we will cover

- **What is Forge and Forge Viewer?**
- **What's possible**
- **Viewer Examples**
- **Viewer Roadmap**
- **What's coming?**
 - IoT Extension (demo)



Forge Viewer



What is Forge?

A cloud-based developer
platform from Autodesk

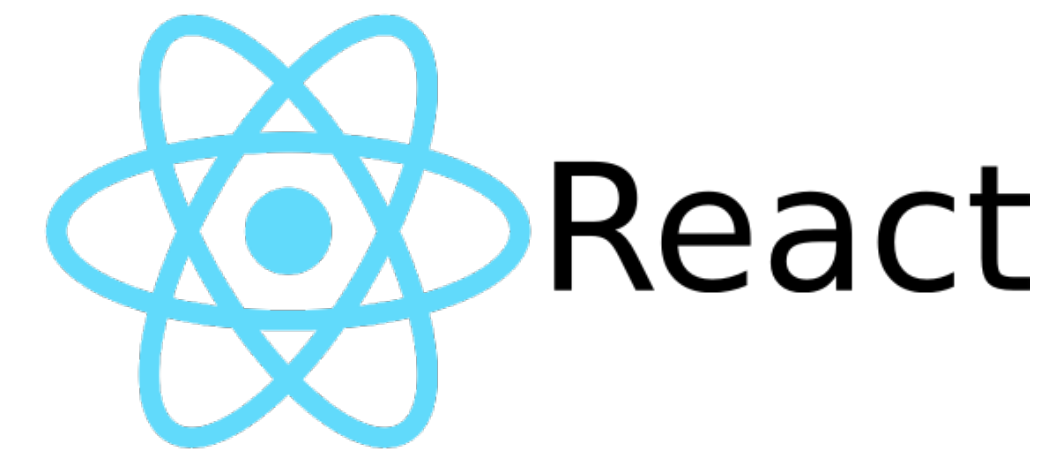


FORGE

A set of web service APIs



RESTful API
GET PUT POST DELETE



What's possible



**Data Visualization &
Analysis**



Digital Twin



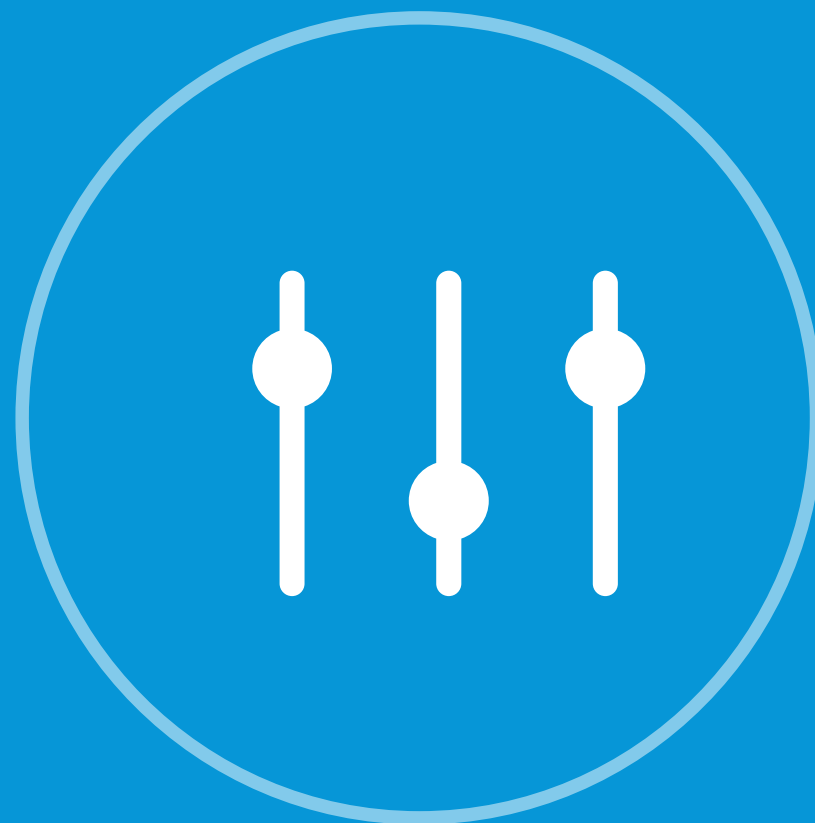
**Augmented & Virtual
Reality**



SaaS Integration



Catalogs



Configurators

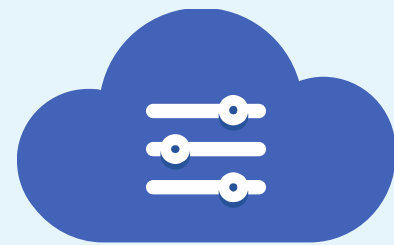


Design Automation



Photo to 3D

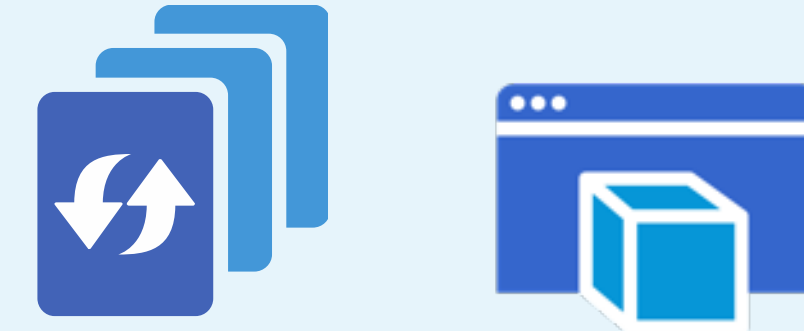
Forge is APIs



Data Management API
Access and manage files
and data



Design Automation API
Automate design and editing



Model Derivative API & Viewer
Convert files, extract data and
view 2D and 3D models



Reality Capture API
Create 3D models from
photos



BIM 360 API
Build apps and custom
integrations for the
AEC industry



Webhooks API
Receive event notifications
from Autodesk Web Services

What is Forge Viewer?

API to visualize 2D & 3D
models on the web

webGL based client-side Javascript library

FORGE VIEWER

INTERNAL PRODUCTS

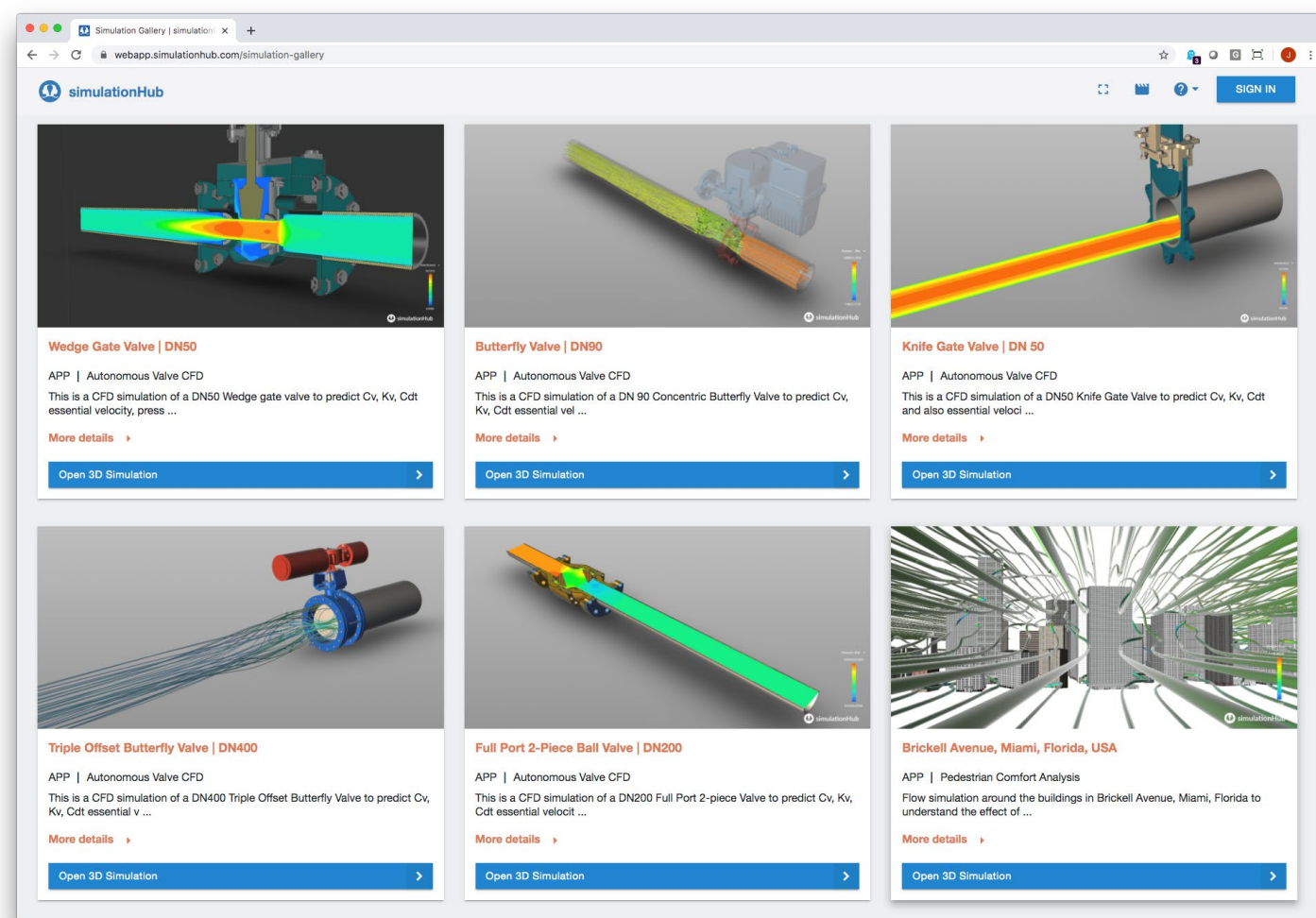


CUSTOMERS



Viewer Examples

External applications



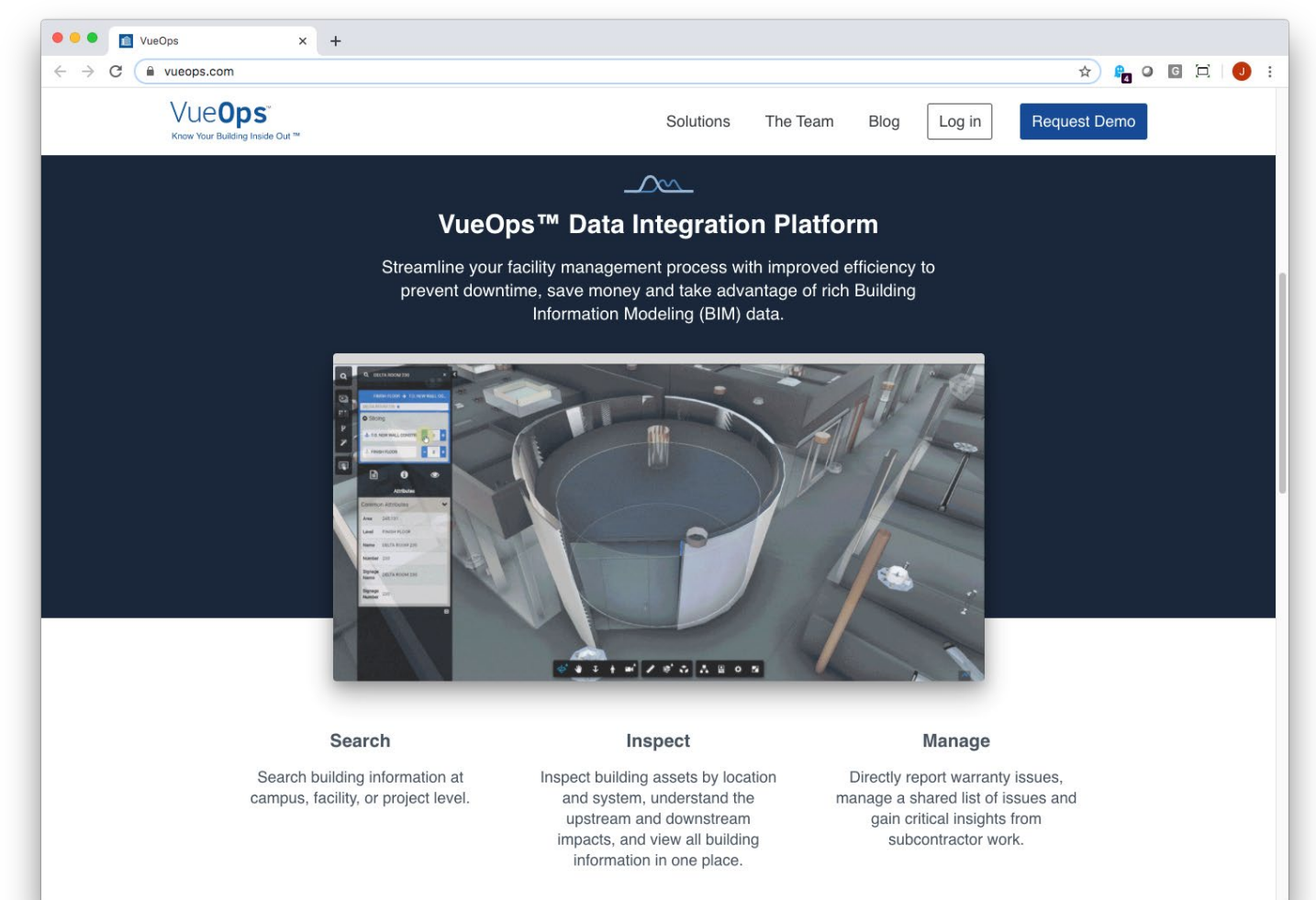
Simulation Hub

<https://www.simulationhub.com/>



EarthCam

<https://www.earthcam.com/>



Vue Ops

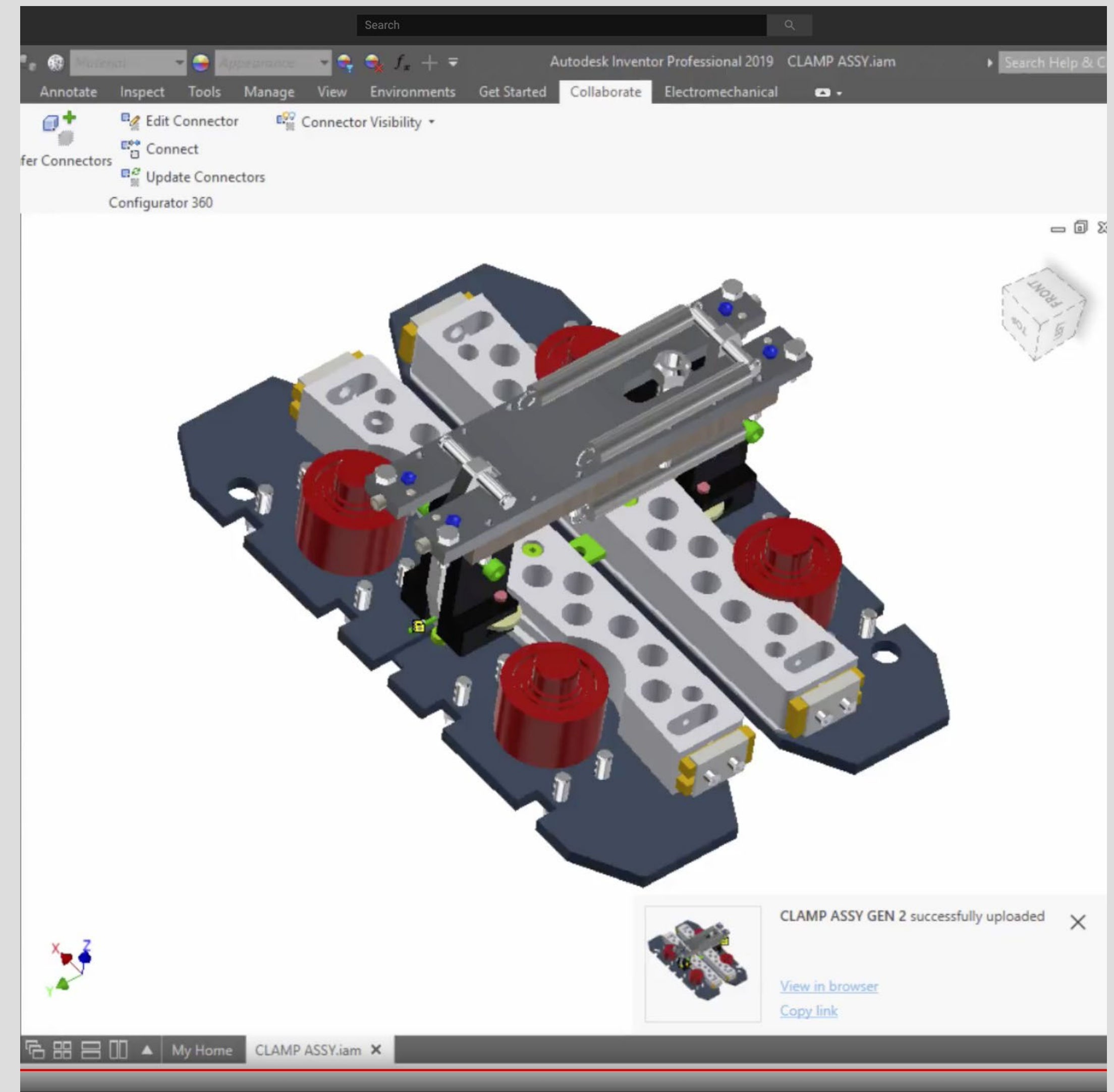
<https://www.vueops.com/>

<https://forge.autodesk.com/customers>

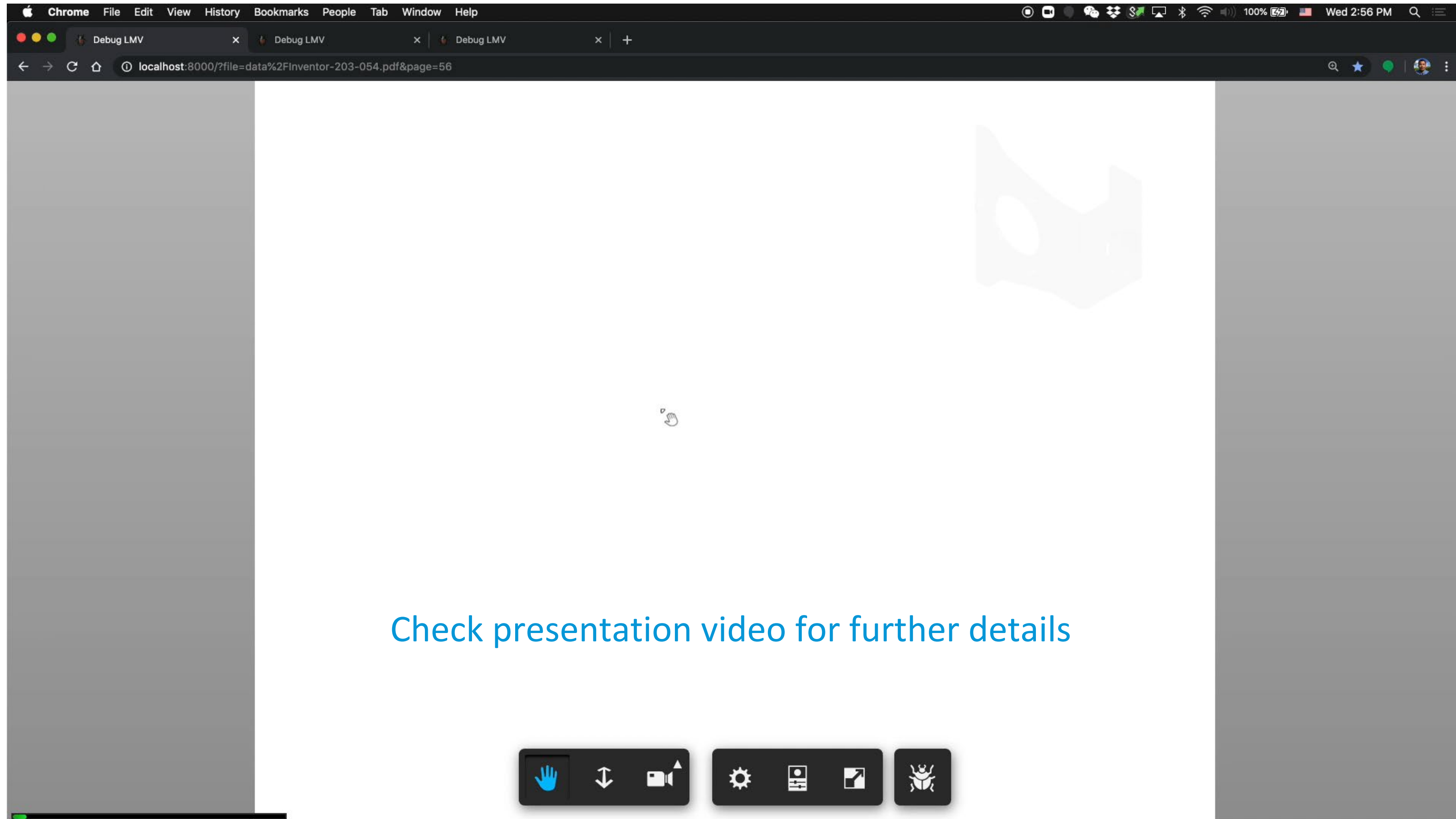
Roadmap – Forge Viewer

What was done this year:

- Native vector PDF
- Enhanced materials from 3DS Max models to Shared views (LMV)
- Scene builder API
- Ability to view DWF files natively

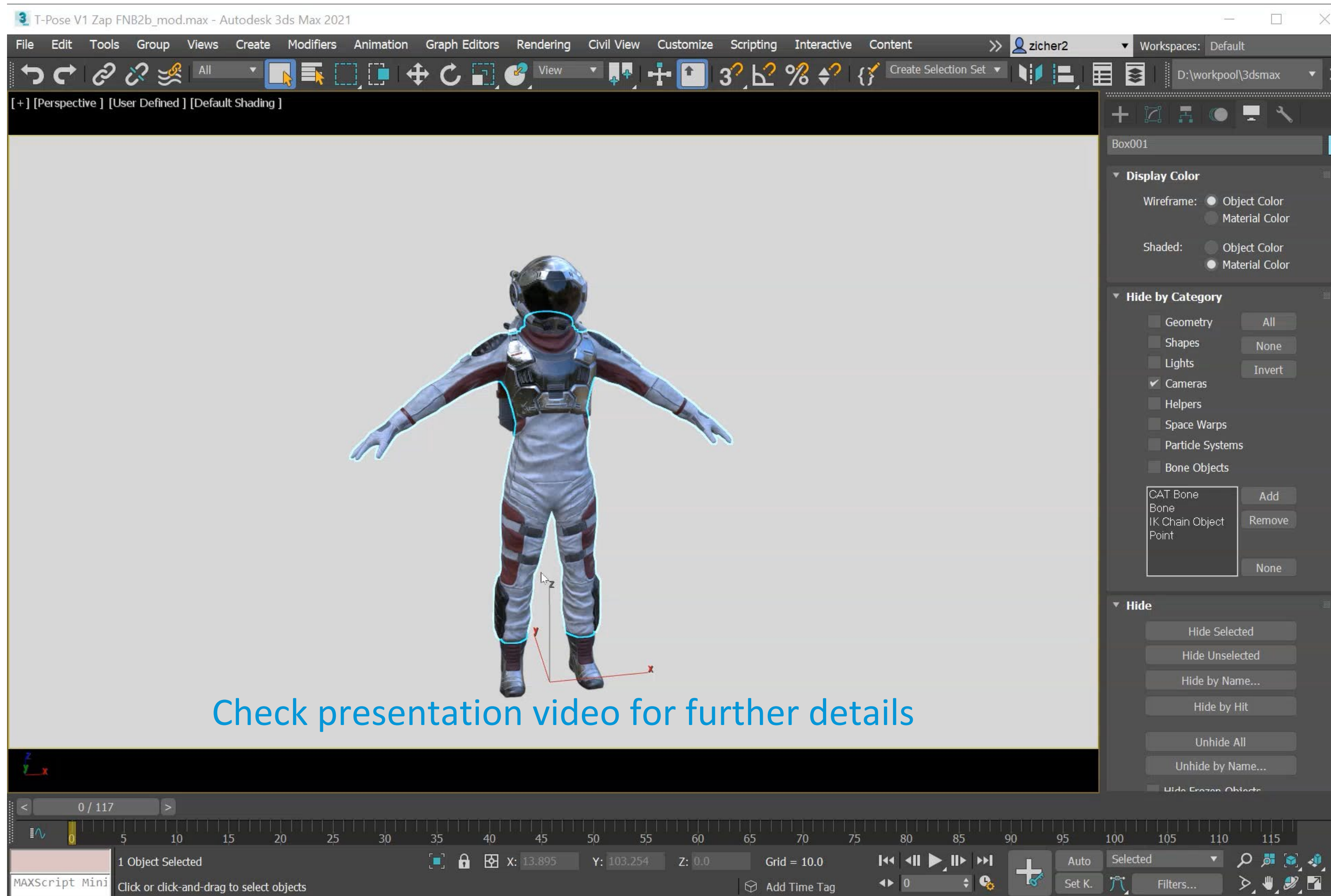


Native vector PDF



Check presentation video for further details

Enhanced materials in 3DSMax to Shared Views



Upcoming enhancements

LARGE MODEL HANDLING

- Faster loading & viewing of large models (SVF2)
- Viewing rebar geometry
- Support for point clouds
- Querying, slicing, filtering of data

SUPPORT OPEN STANDARDS

- Support for emerging open standards – glTF, USDZ, MaterialX, etc.

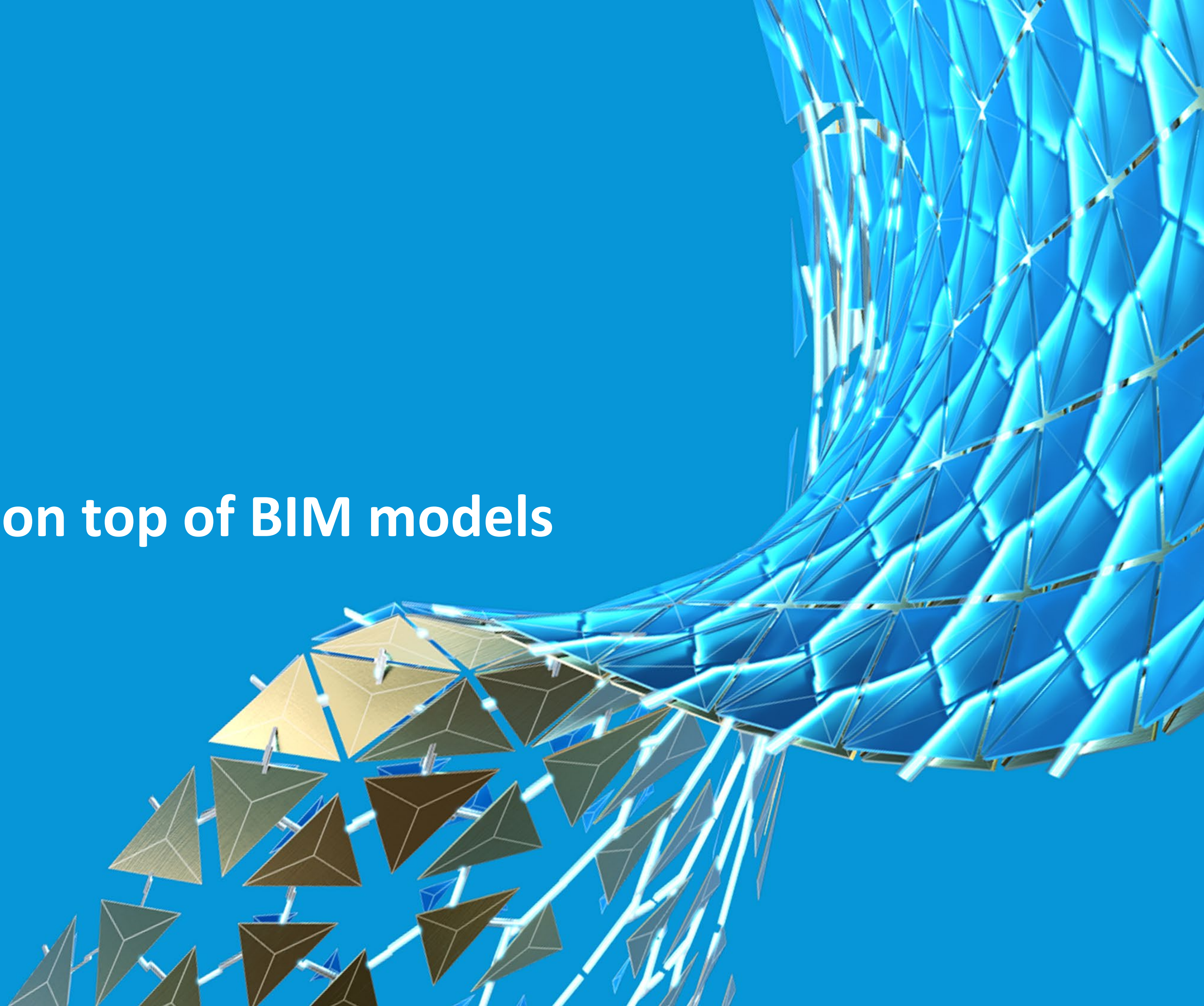
NEW EXTENSIONS

- Aerial mini-map
- Depth of field
- Quick measure

ENHANCED DEV EXPERIENCE

- Advanced features to build custom visual experiences
- Improved documentation

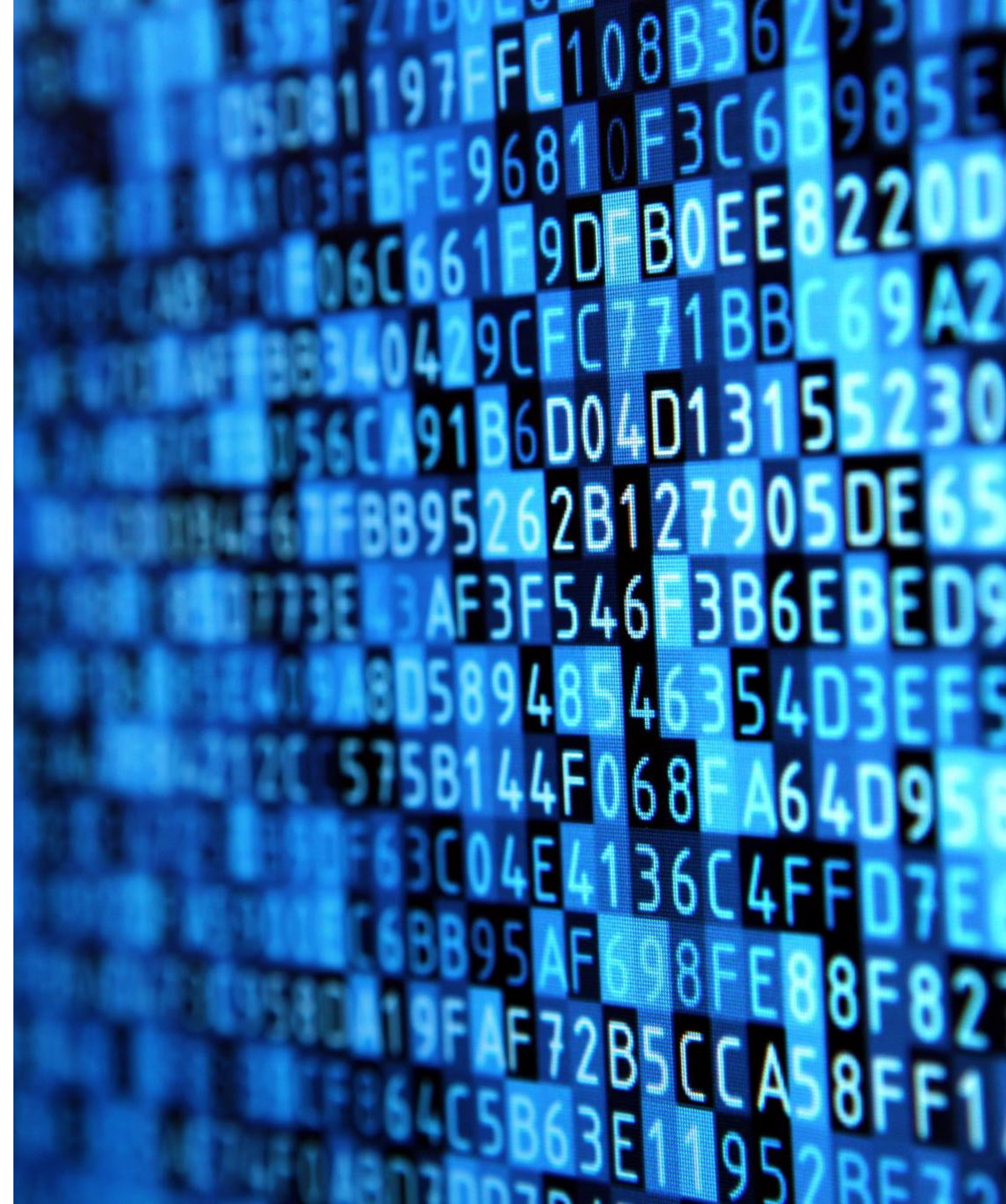
Advanced Features: Visualizing IoT data on top of BIM models



Data Today

We generate about 2.5 quintillion bytes of data each day*

Data is useful when we get insights from it.

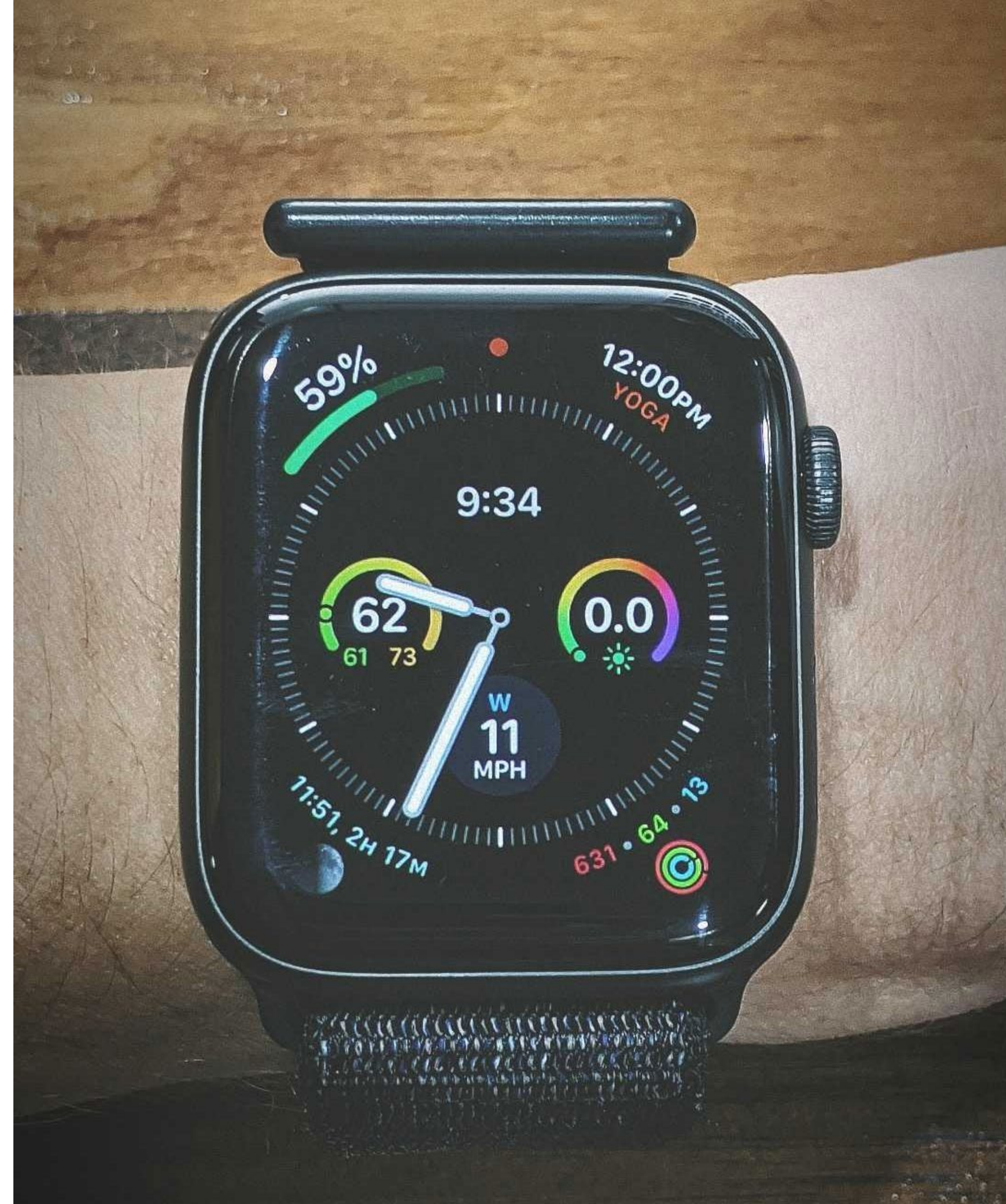


Data Today

We generate about 2.5 quintillion bytes of data each day*

Data is useful when we get insights from it.

- Smart Watches 



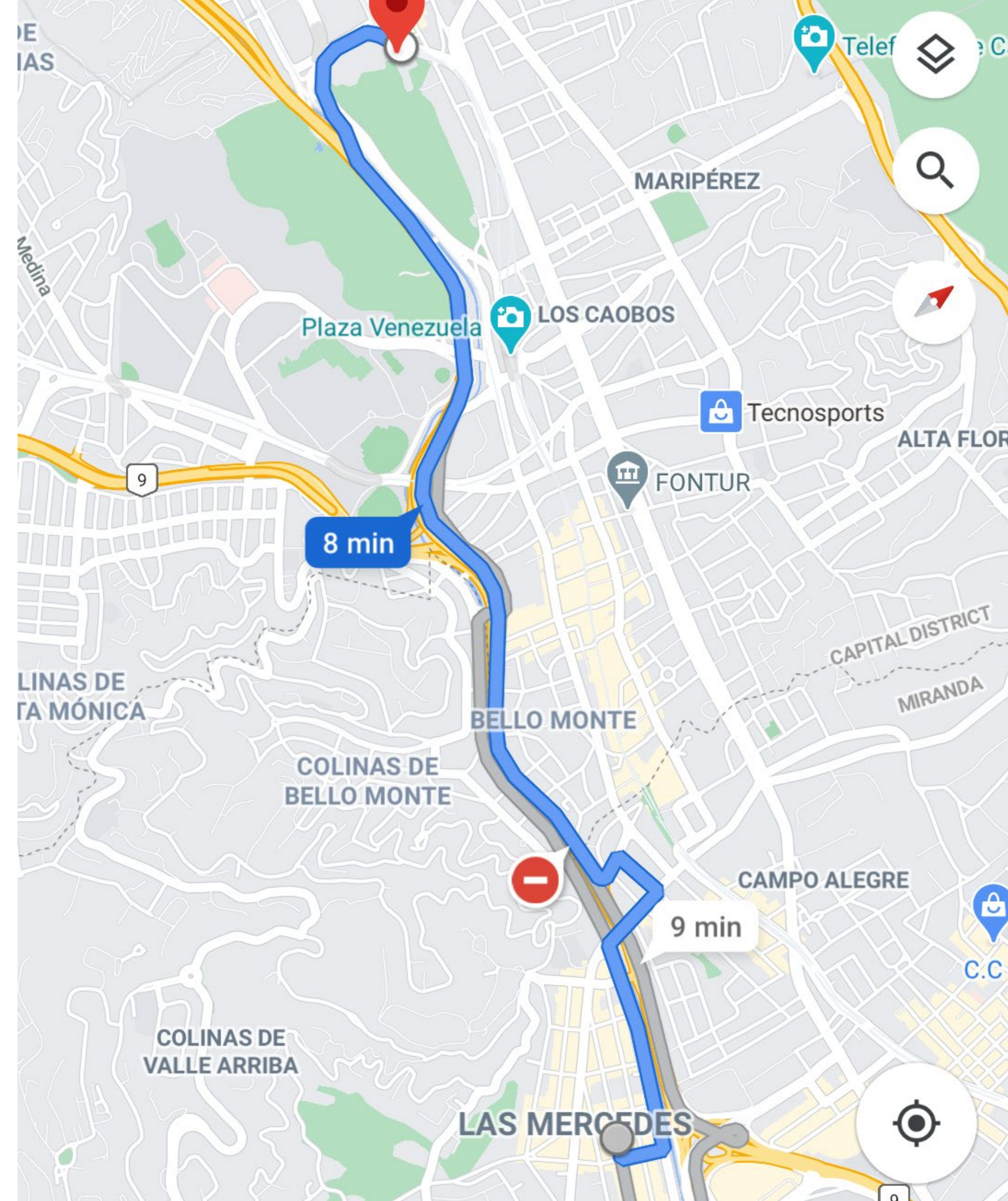
Data Today

We generate about 2.5 quintillion bytes of data each day*

Data is useful when we get insights from it.

- Smart Watches 🕒
- Maps with traffic / point of interest data 📍

*Domo: <https://www.domo.com/learn/data-never-sleeps-5>

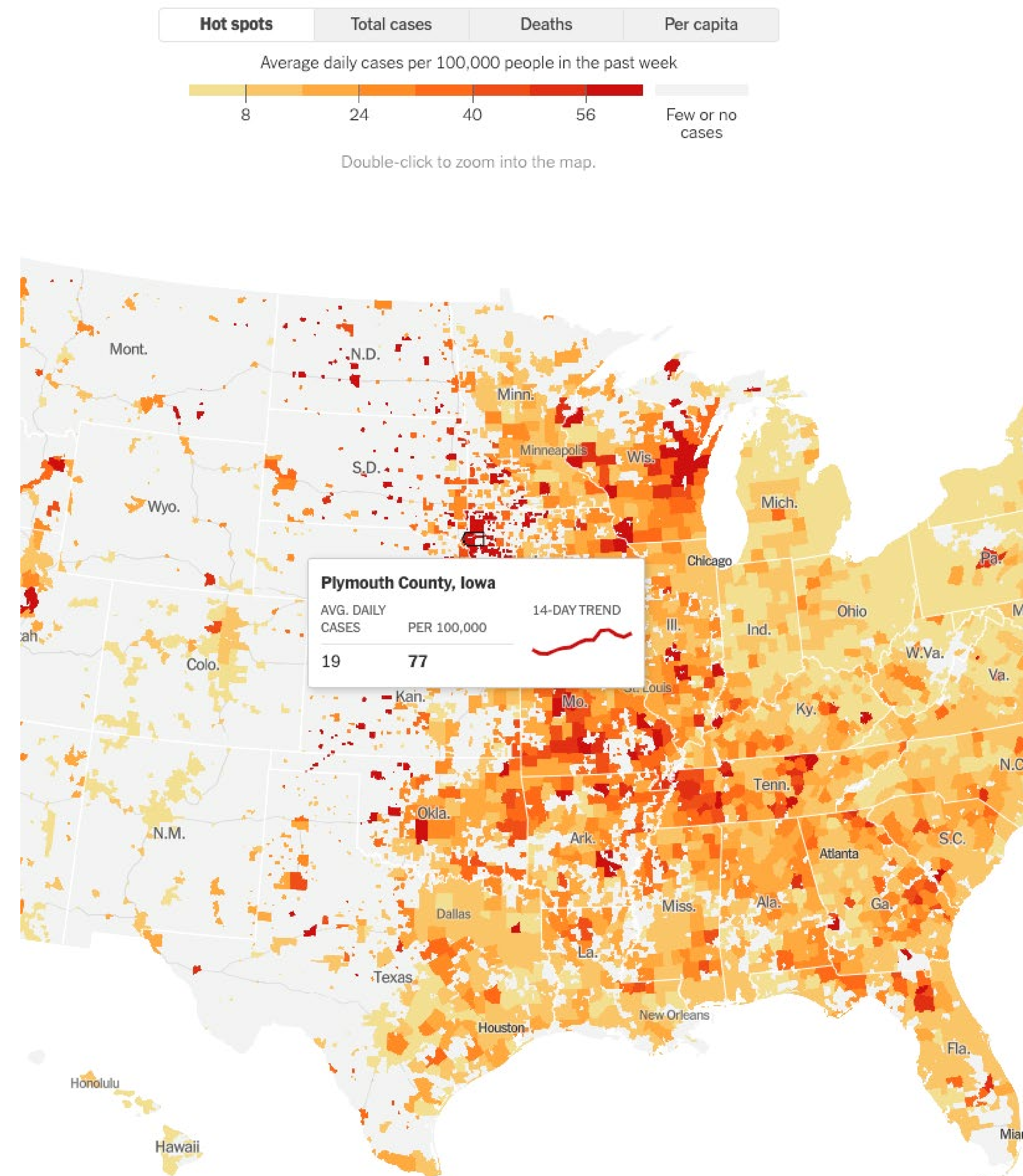


Data Today

We generate about 2.5 quintillion bytes of data each day*

Data is useful when we get insights from it.

- Smart Watches 🕒
- Maps with traffic / point of interest data 📍
- Spread of COVID 🦠





Autodesk Blog: <https://constructionblog.autodesk.com/digital-twin/>

At Autodesk, we are striving to bridge physical and digital

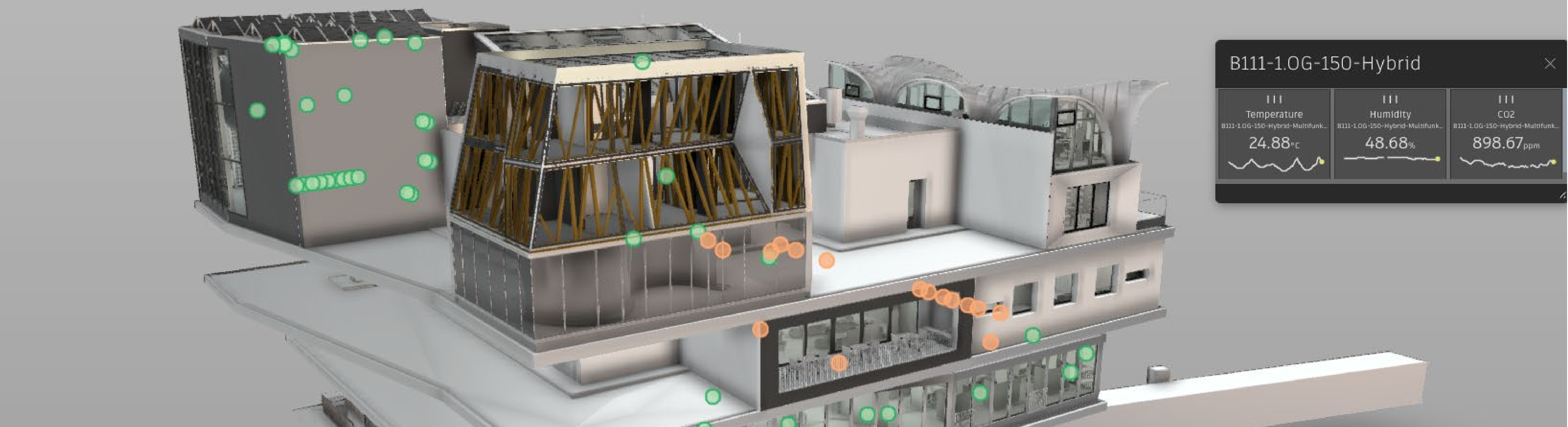


Autodesk Blog: <https://constructionblog.autodesk.com/digital-twin/>

At Autodesk, we are striving to bridge physical and digital

This is why we are working on converging Digital Twins data with business data sources.

A digital representation
of a physical entity



At Autodesk, we are striving to bridge physical and digital

This is why we are working on converging Digital Twins data with business data sources.

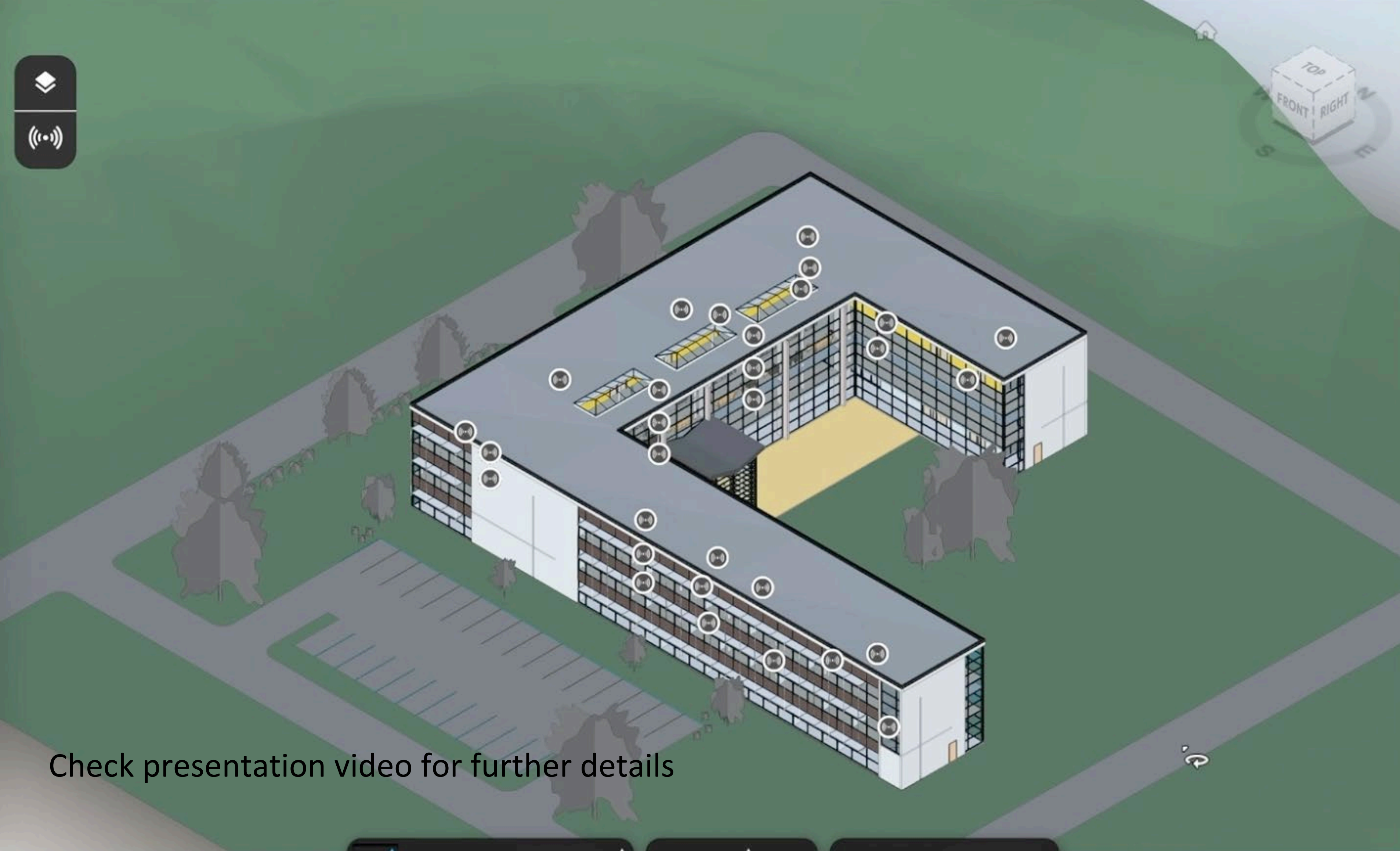
We believe that by empowering more people to get access to more insights, we are enabling more **innovation** to the world



Our mission at Forge, is to provide the building blocks for people like you to make innovation possible.

Visualizing design data and IoT data

Let's see it in action...



Search

🔍

▾ 01 - ENTRY LEVEL

10

Lobby 102 North >

22.34 celsius

35.80 %

484.85 ppm

Lobby 102 South >

22.27 celsius

36.05 %

487.34 ppm

Cafeteria 121 East >

22.66 celsius

33.09 %

489.49 ppm

Cafeteria 121 West >

22.64 celsius

34.08 %

499.75 ppm

Conference 123 >

22.46 celsius

35.13 %

498.67 ppm

Instruction 115 >

IoT Extensions

Demo Recap

- React-based reference app
 - Open-source Widgets libraries (Apache echart)
- Data Adapters to IoT Hubs (Azure, AWS)
- IoT Visualization
 - Dots (sensors)
 - Heatmaps
 - Timeline



Benefits to Web Developers

- Reduce Development Time (time-to-helloWorld)
- Lower Level of Graphics Expertise Required
 - Decrease Complexity
- Enhance Overall Experience



Benefits to Business Owners & Innovators

- Collect insights faster
- Decrease downtime & safety hazards due to:
 - Accurately diagnoses of problems
 - Preventive care
- Reduce operational cost by improving asset performance (utilities, people experience...)
- Reduce human errors by leveraging technologies like machine learning



If you...

- Want to try this advanced IoT extension
- Have an IoT use case that wasn't covered
- Just want to learn more

Reach out to us!

Go to <https://hyperion.autodesk.io>



Thanks for listening

Questions?

- Use the comments in the AU class page
- Visit <https://forge.autodesk.com>
- Go to the Forge Answer Bar





Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2020 Autodesk. All rights reserved.

