

# Scan to BIM and to Design

Mohamad Khalouf  
Solutions Engineer – Infrastructure

# Safe harbor statement

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# AGENDA



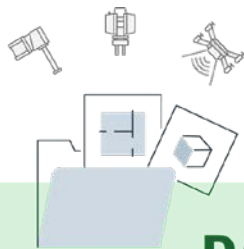
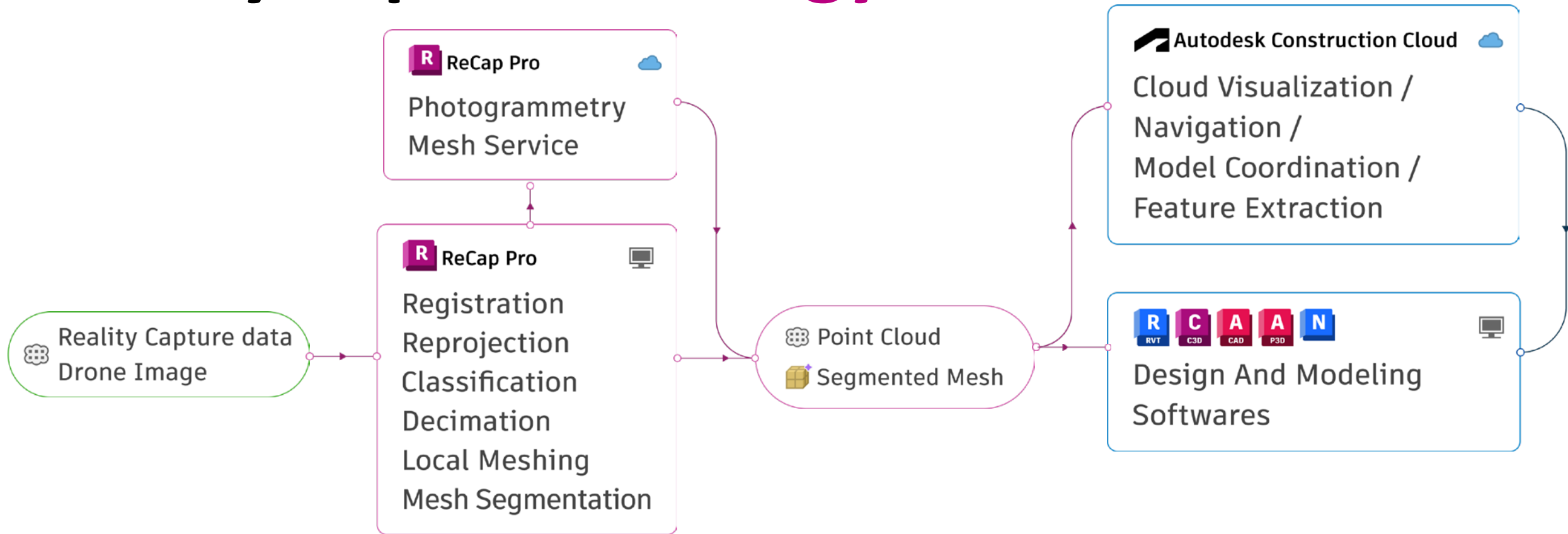
- Reality Capture Strategy
- Point Clouds in Recap Pro
- Point Clouds in ACC
- Scan to Design
- Scan to BIM



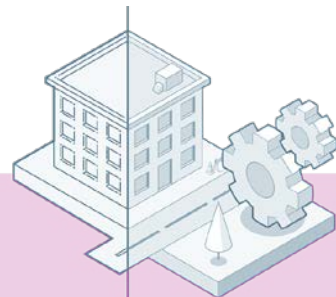
*I need rich existing conditions for my design and decision making, which ...*  
*... is easy to use and simple to manage*  
*... focuses on the key information that I need*  
*... provides information **earlier, accurate, and with sustainability***  
***insights***



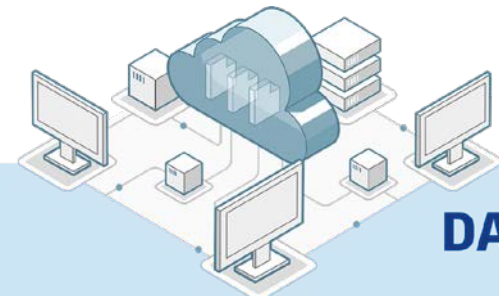
# Reality Capture Strategy



**DATA SURVEY**

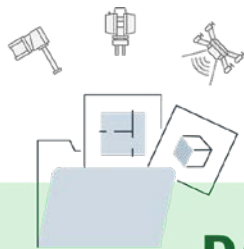
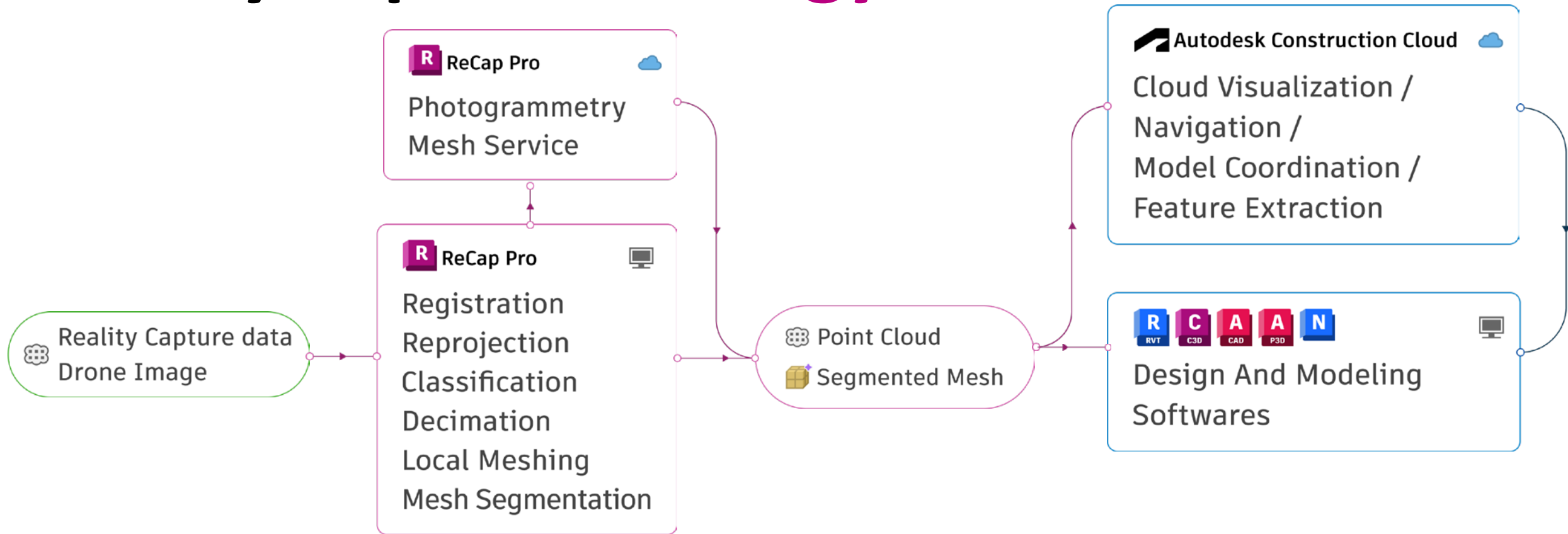


**DATA PREPARATION**

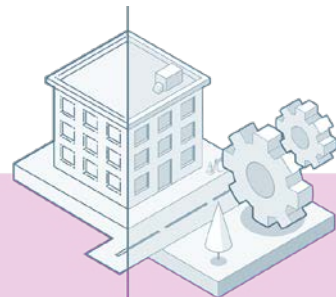


**DATA USAGE**

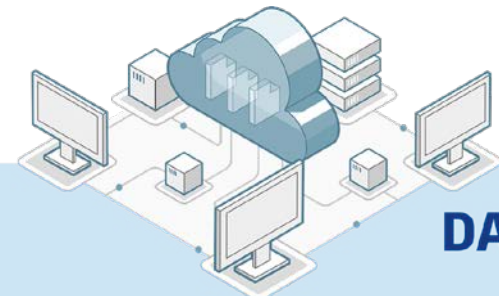
# Reality Capture Strategy



**DATA SURVEY**

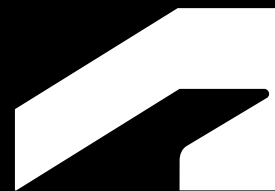


**DATA PREPARATION**



**DATA USAGE**





# Point Clouds in Recap Pro



***I need to prepare my large reality capture data and share it for my team in a way that is practical to ...***

*... cleanup and optimize large data so its not too heavy*

*... get it ready in the right format for others to use*

*... publish it to ACC so my team can view and collaborate in one place*



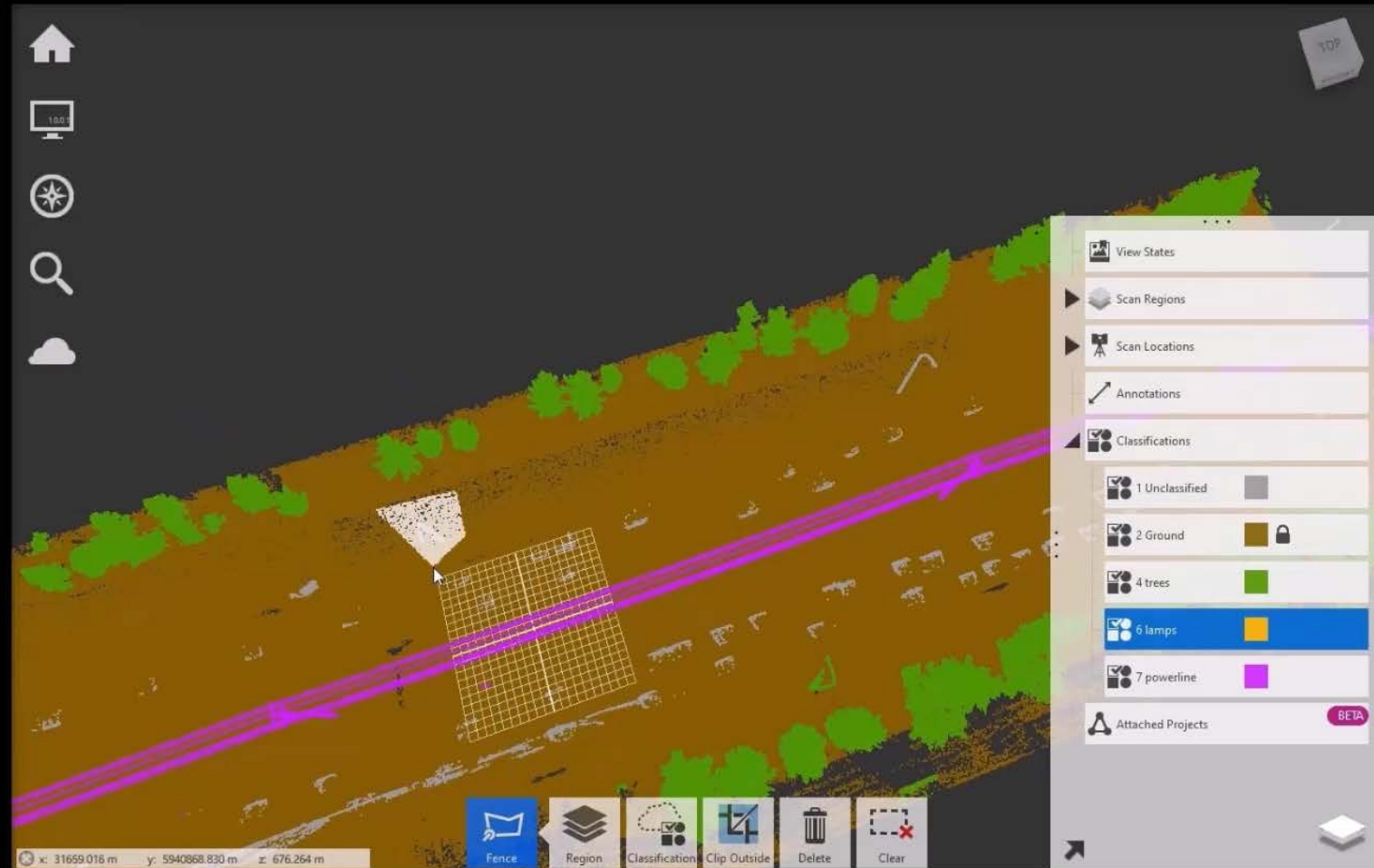


# Convert point clouds to meaningful surfaces

Automatic  
classification

User-defined  
feature  
classes

Interactive  
point  
selection

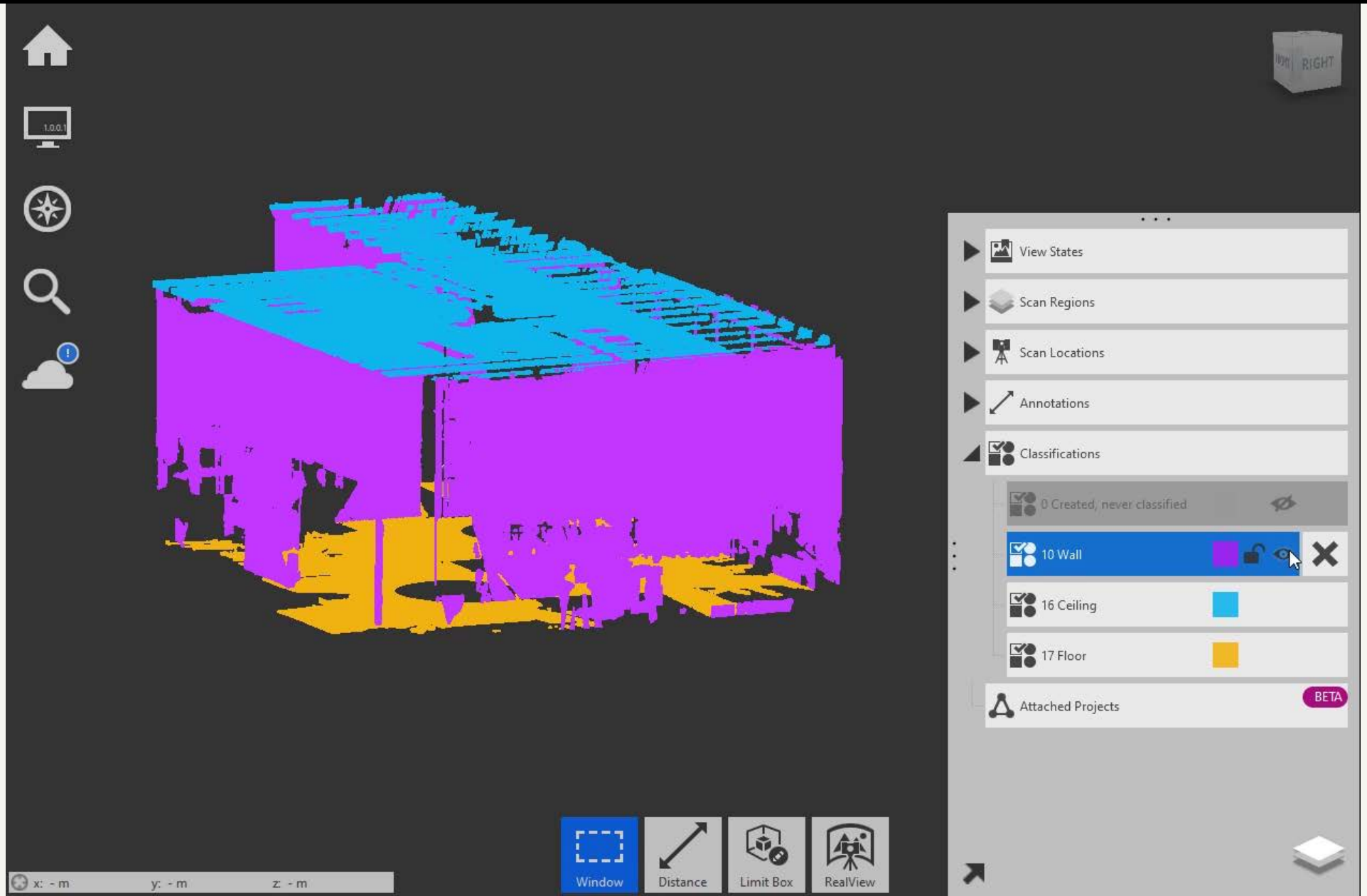


# Intelligent Decimation

Intelligent  
point cloud  
decimation

Up to 90%  
fewer points

Less than  
0.5%  
measurable  
deviation





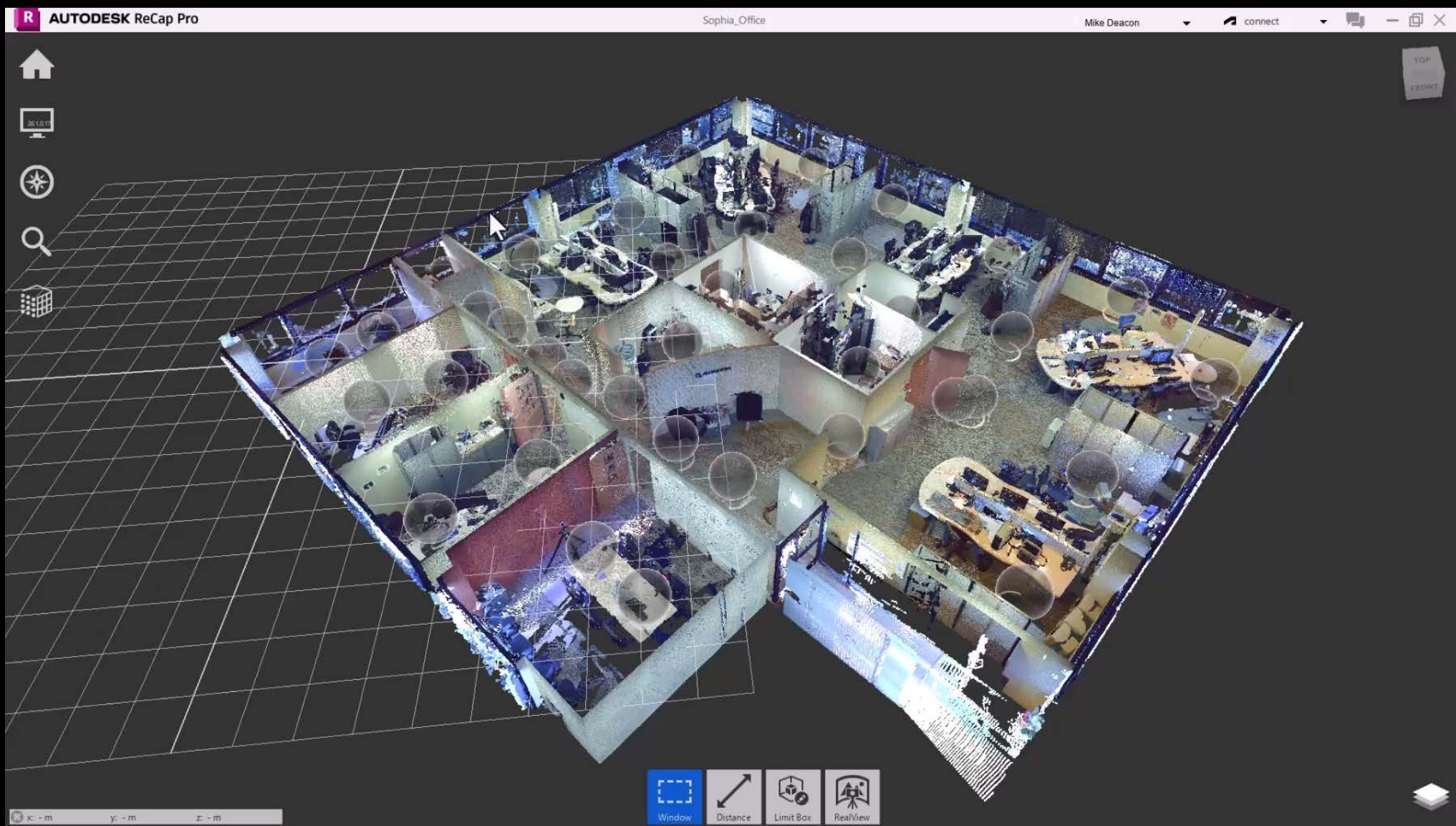
BETA

# AI Classification

Industry-specific  
smart object  
recognition

Automated  
Scan-to-BIM  
workflow

Driven by  
Autodesk AI







# Bulk File Manager - Publishing to ACC

# Smart tiling to enable large project uploads to ACC

Smart  
decimation  
reduces data  
size efficiently

Efficiently  
manage large  
volume publish  
and track  
progress

Upload files

Upload history

In progress

Completed

Uploading files from source local folder to target project folder...  
Total 803 files to be uploaded, 797 files pending upload, 6 files successfully uploaded and 0 failed to upload.

Cancel

0%

Estimated time: 9 Hr, 50 Min, 55 Sec.

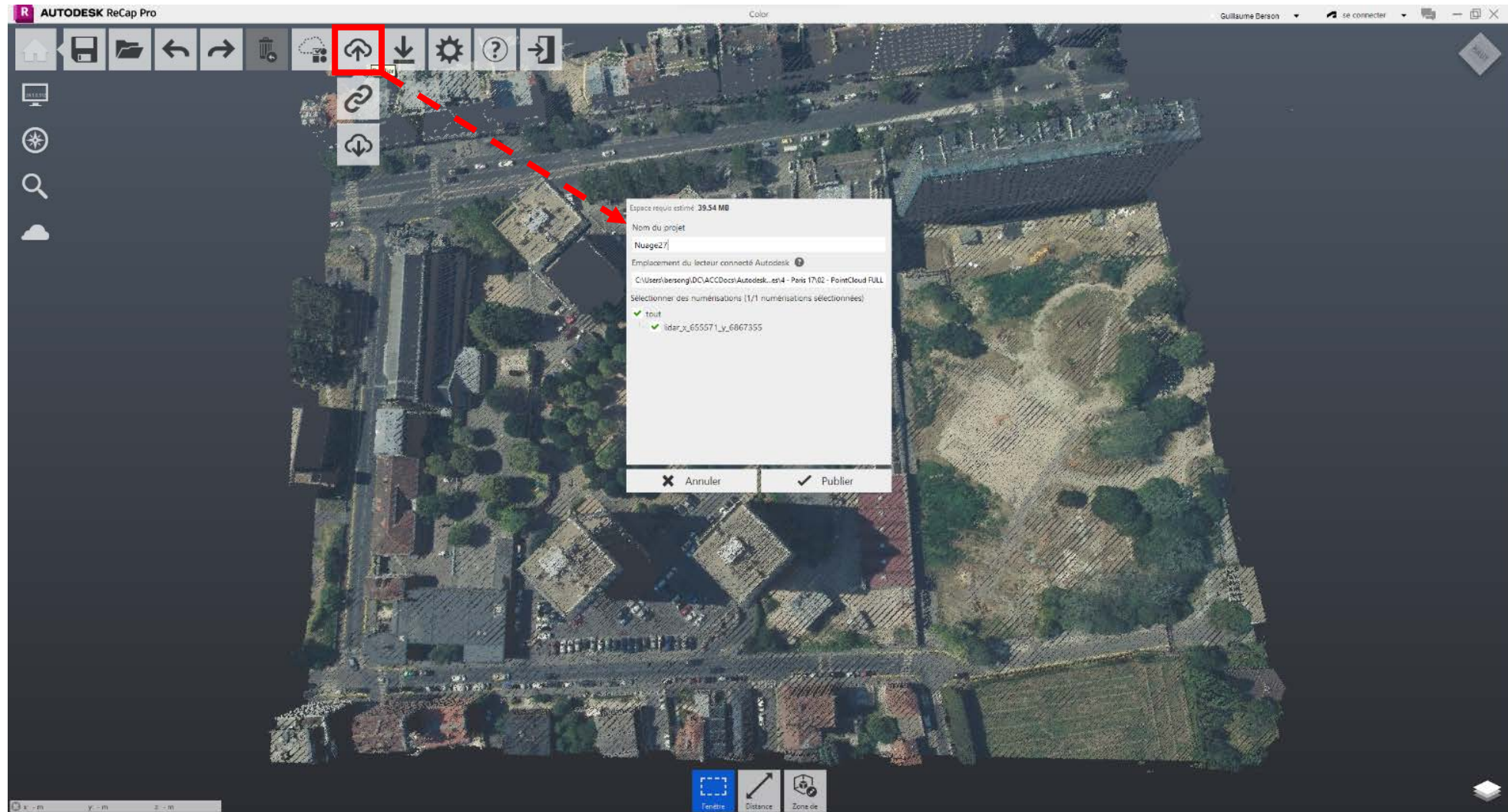
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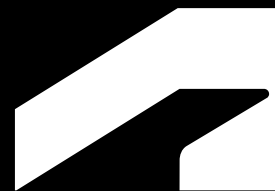
File name	Local folder path	Status	Target folder
faro_scan_024.thumbnail	D:\Datasets\Scan_TrainStation\TrainStationCleaned Support\faro_sc...		Reality Solutions\ReCap Pro\Project Files\Rishov\Pro\TrainStationCle...
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Files per page: 50 1-50 of 803

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# ReCap Pro - Publishing to ACC





# Point Clouds in ACC



***I need to easily view and work with my reality capture data in the cloud that enable me to***

*... visualize my scans in the browser without desktop tools*

*... explore and extract critical information*

*... have a smooth performance even with large datasets*





✓ RELEASED



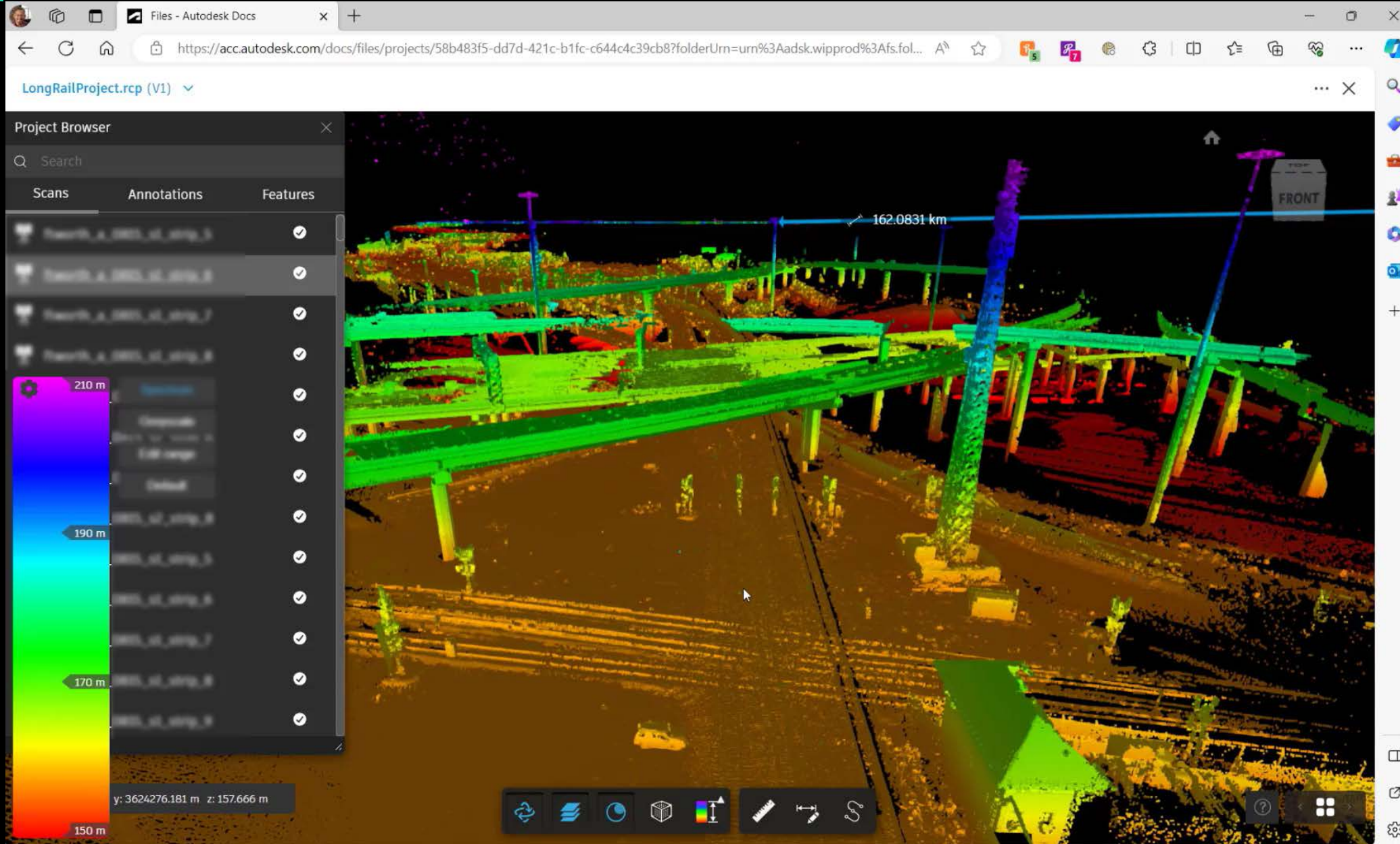
**AUTODESK**  
ReCap

# ACC: Viewing Large Point clouds

Visualize  
large  
datasets in  
ACC

Easily view,  
share, and  
reuse large  
reality  
capture data

Integrated  
with ACC  
Model  
Coordination





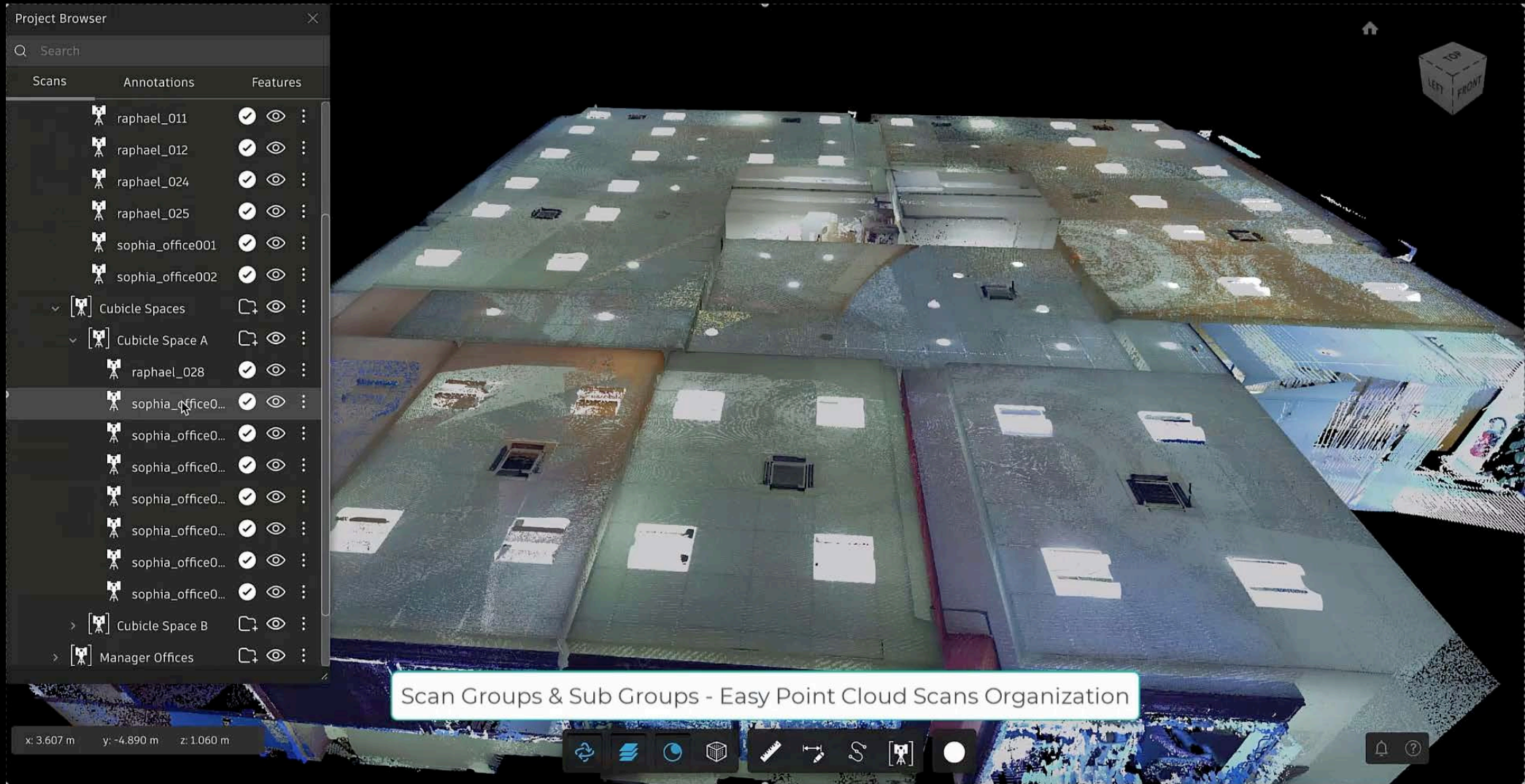
# ACC: Scan Groups

Organized  
scan  
collections

Improved  
team  
collaboration

Desktop – ACC  
viewer sync

Efficient large  
projects  
management





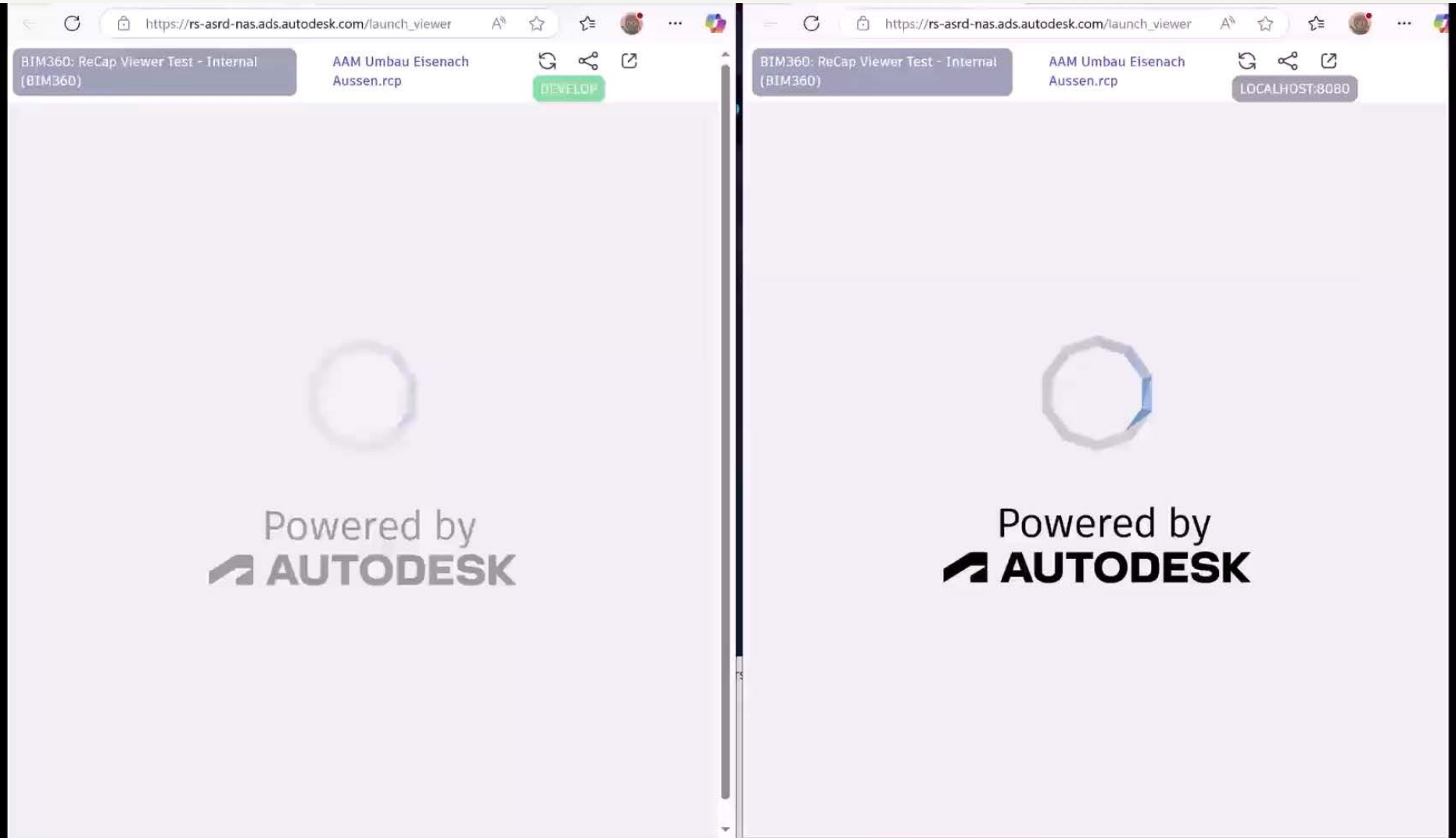
RELEASED

## ACC: Continuous Improvement on Experience & Scalability

Faster UI  
initialization

Improved  
camera  
rotation  
rendering  
performance

Supports  
projects with  
over 1000  
scans



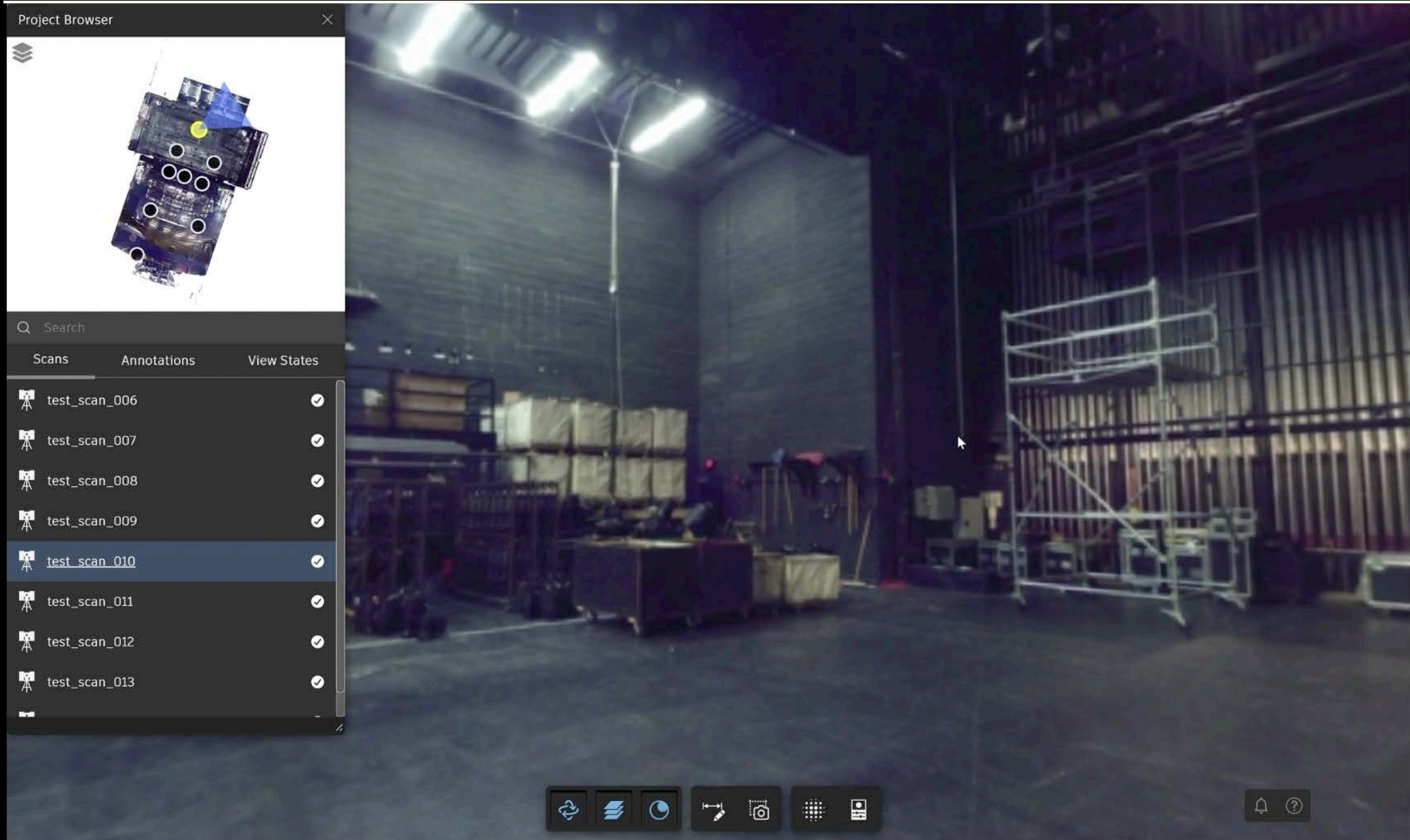


# ACC: Real View Performance

Image-  
based  
intuitive  
navigation

Boosted  
visualization  
performance

High-quality  
streaming of  
images



# ACC: View States

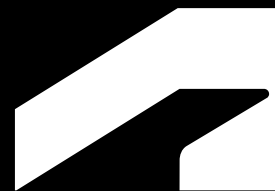
Save and recall  
multiple  
viewpoints

Integrate  
viewpoints  
with  
annotations

Customize  
settings by  
data types

Animate  
transitions  
between views





# Scan to Design



***I need to extract linear features and assets for transportation design that empowers me ...***

*... to automatically generate breaklines from reality capture data*

*... to capture transportation assets with less manual effort*

*... deliver usable design inputs directly into my design workflows.*





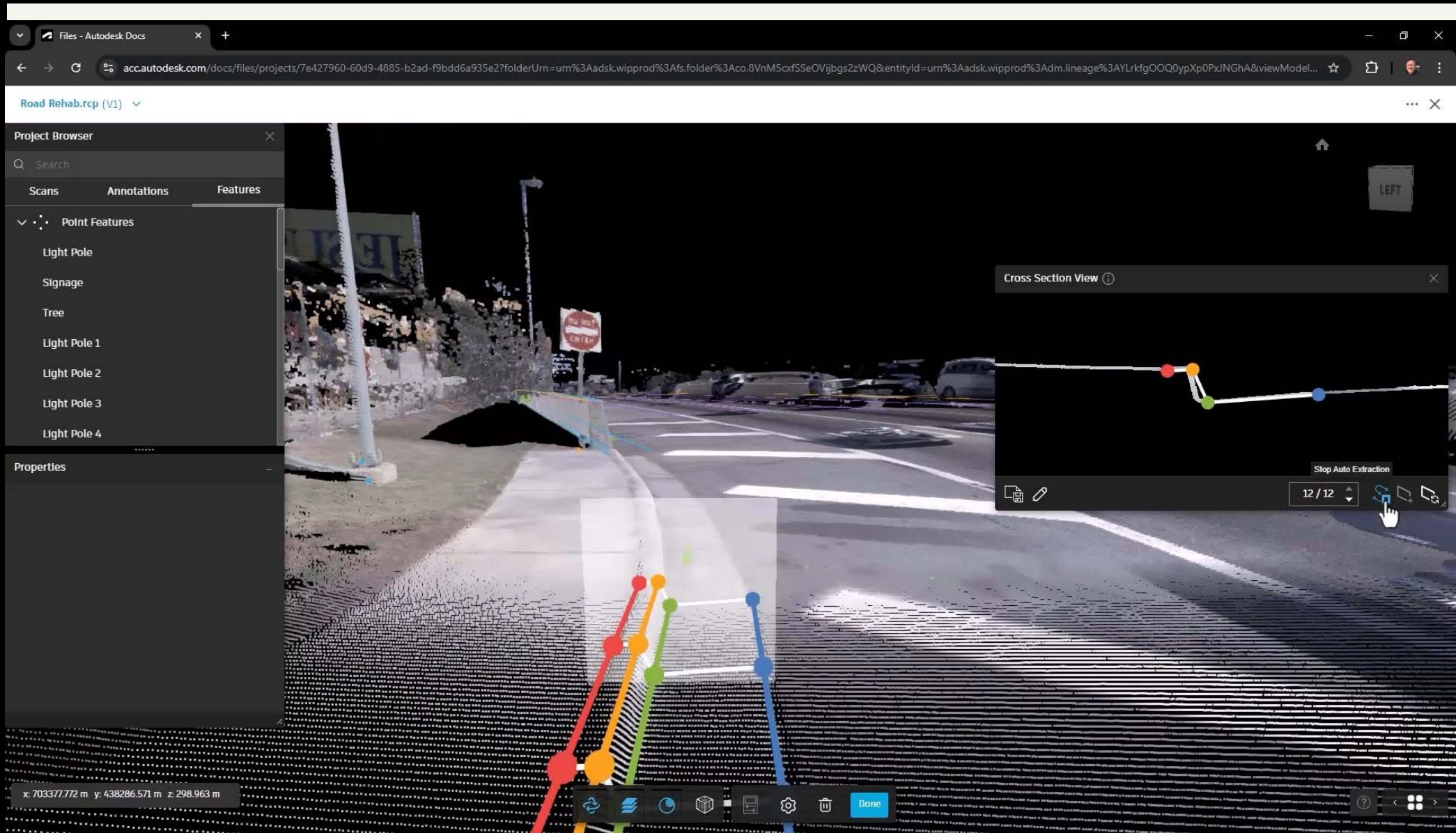
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# Scan-to-Design: Linear feature extraction

Cloud-based  
collaboration  
across teams,  
and  
timezones

Automated  
feature  
extraction

Leverage  
extracted  
features as  
design-ready  
lines in Civil  
3D



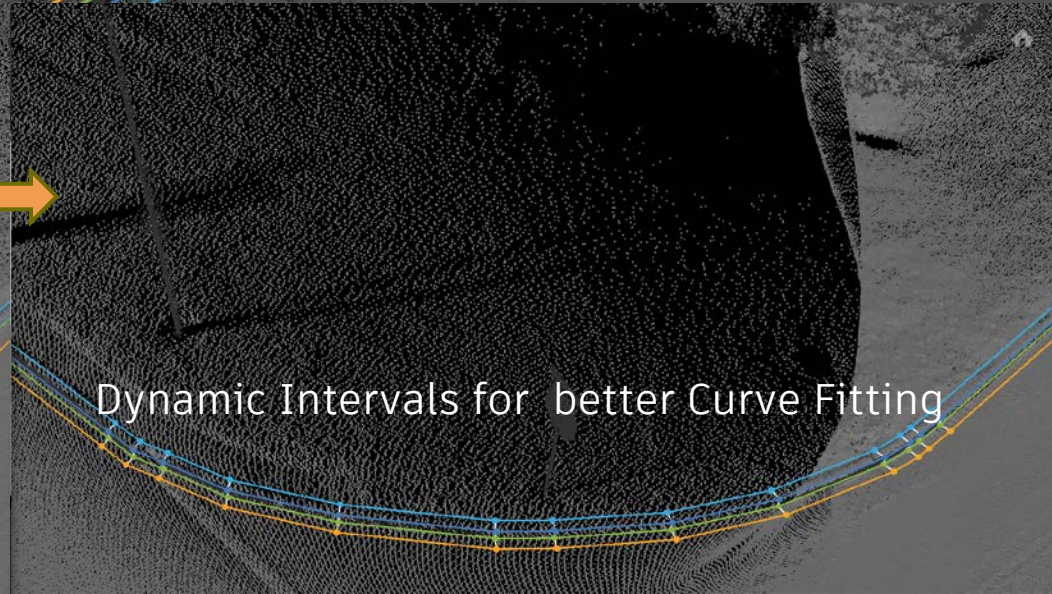
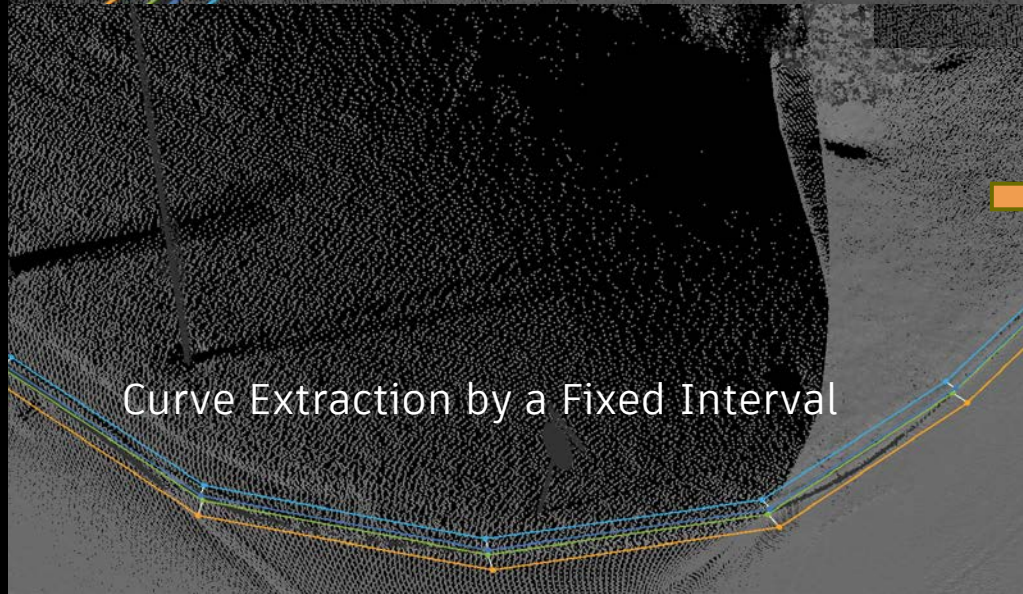
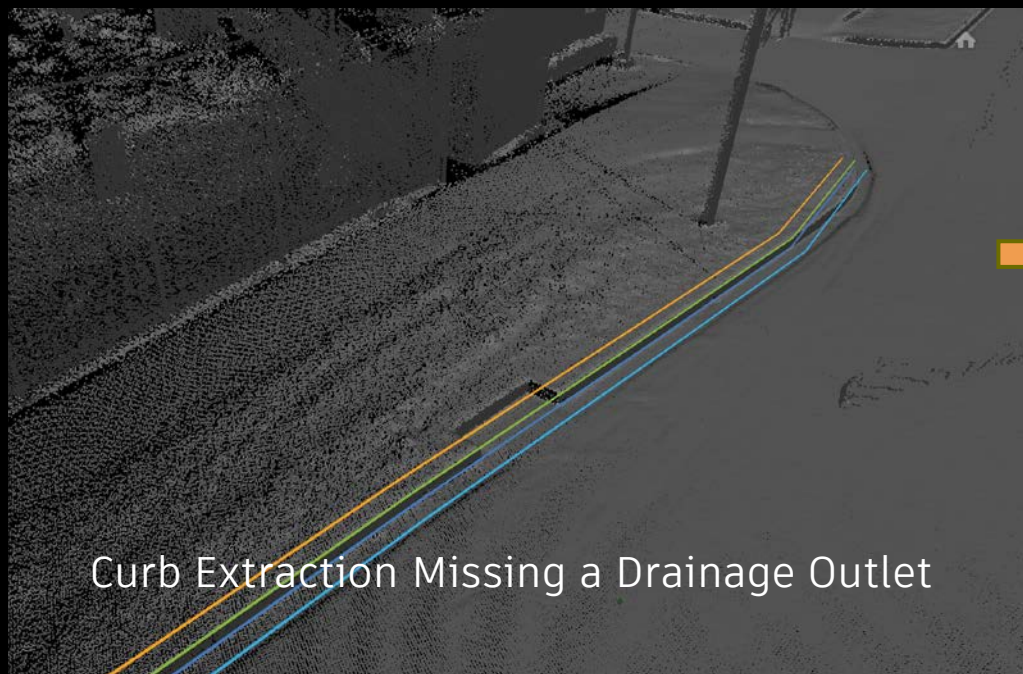


# Scan-to-Design: Linear Feature Extraction Enhancements

Enhanced  
feature  
extraction  
for greater  
accuracy

Dynamic-  
interval  
curve  
extraction

Optimized  
and smooth  
feature  
extraction



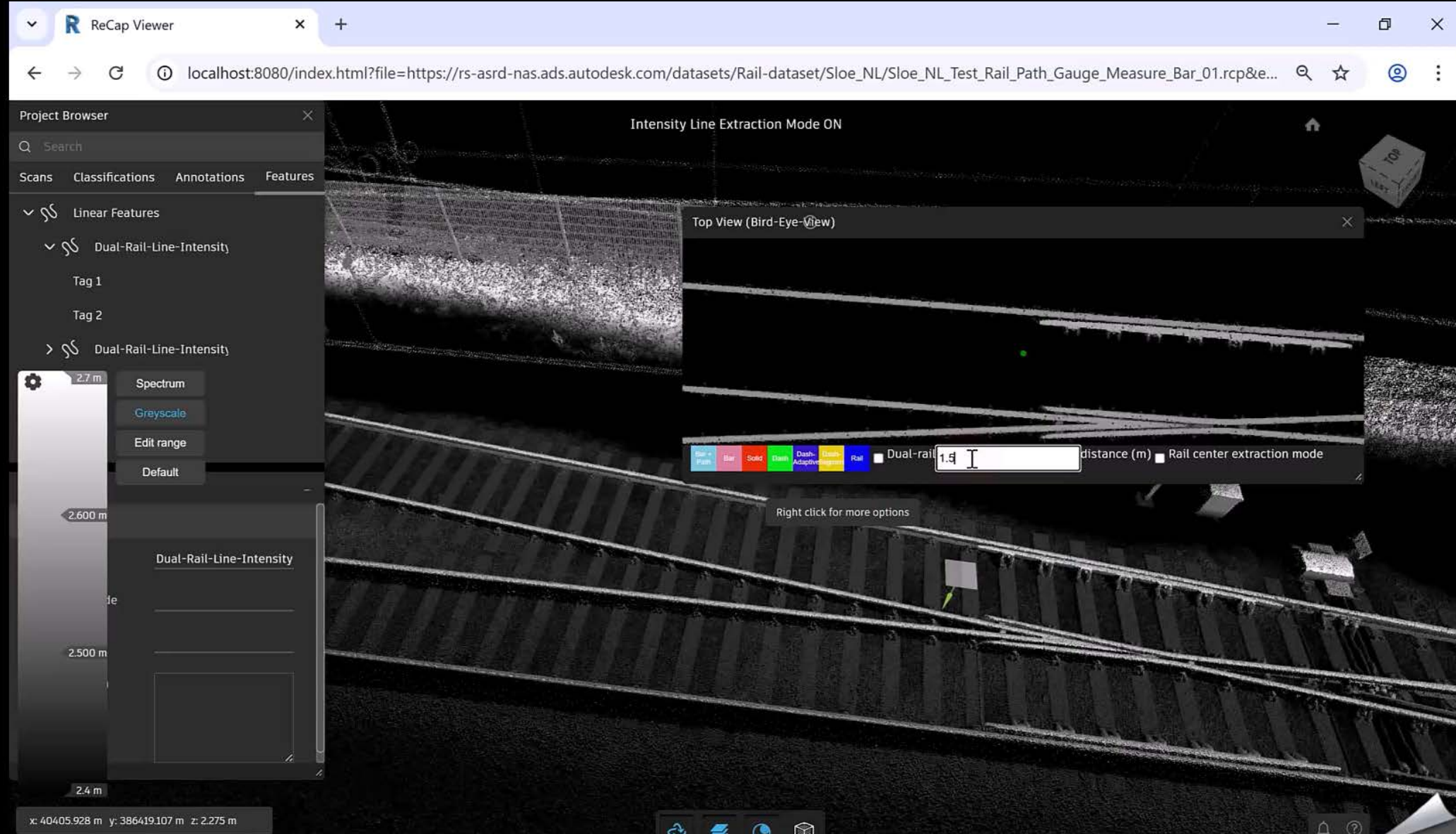


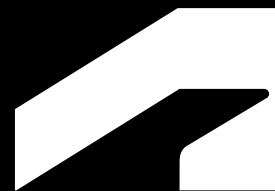
# Scan-to-Design: Rail Extraction

Gauge Line  
as key  
existing rail  
condition

Automatic  
path  
tracing for  
consistency

Alignment  
refitting in  
Civil 3D





# Scan to BIM



***I need to transform my reality capture data into actionable BIM format that ...***

*... unlocks the full intelligence hidden in scans*

*... speak designers' and modelers' language*

*... makes complex workflows instantly intuitive*







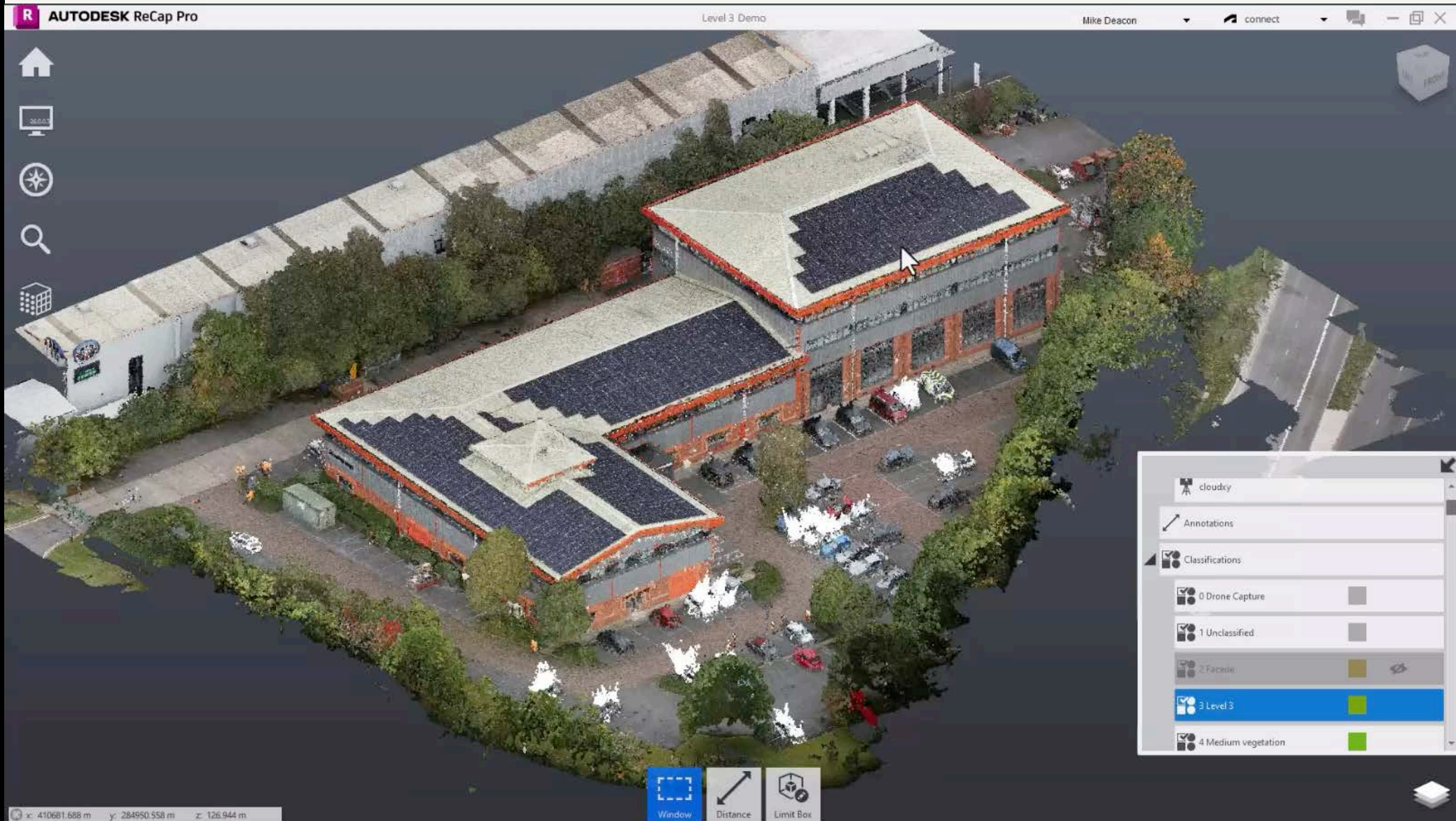
RELEASED

# Scan to BIM for Buildings

Segmented  
mesh  
creation and  
editing in  
ReCap Pro

Revit tools  
for targeted  
BIM  
conversion

Improved  
modeling  
control and  
accuracy





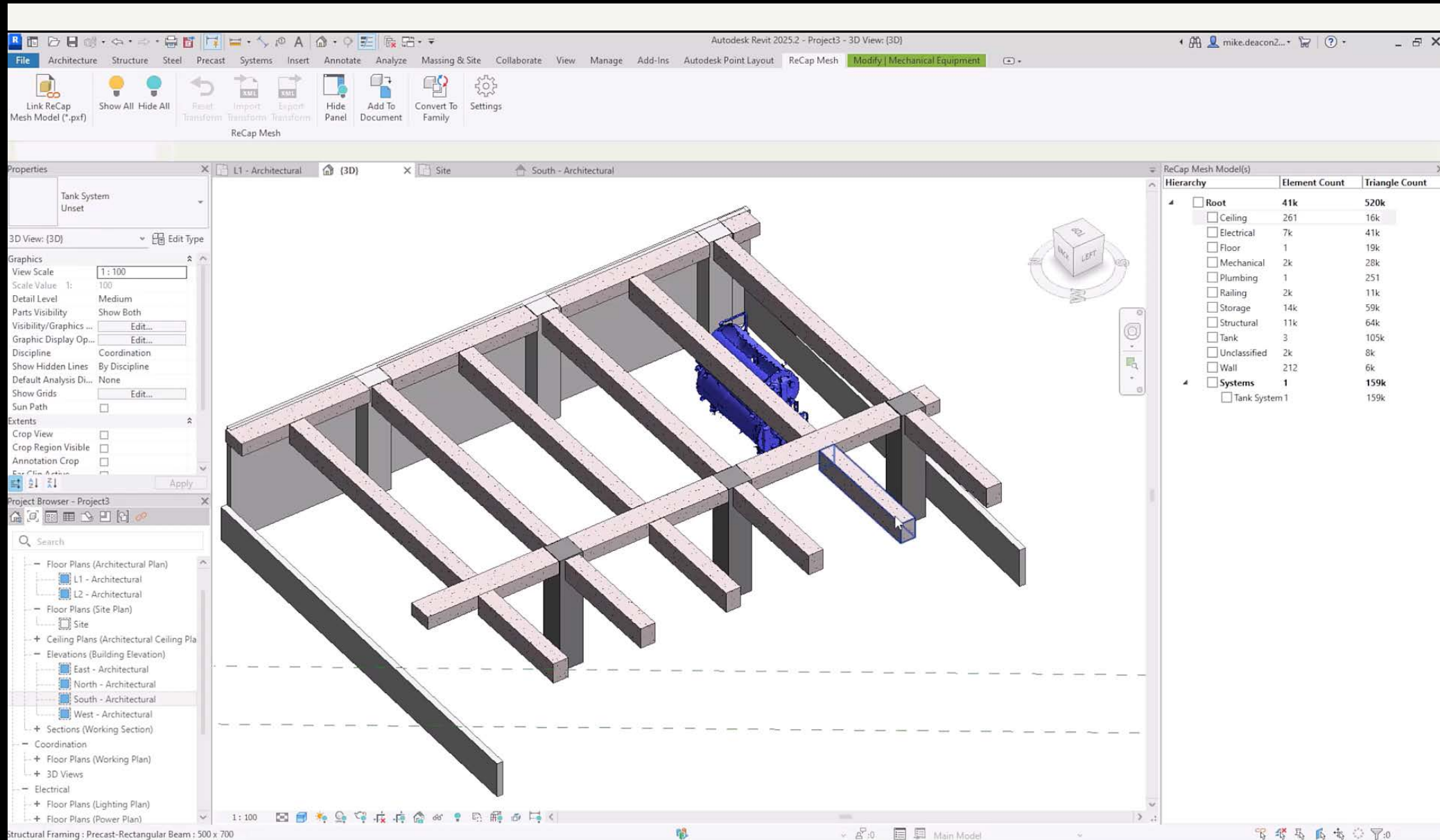
RELEASED

# Scan to BIM for MEP

Segmented  
mesh creation  
and editing in  
ReCap Pro

Revit tools for  
targeted BIM  
conversion

Improved  
modeling  
control and  
accuracy







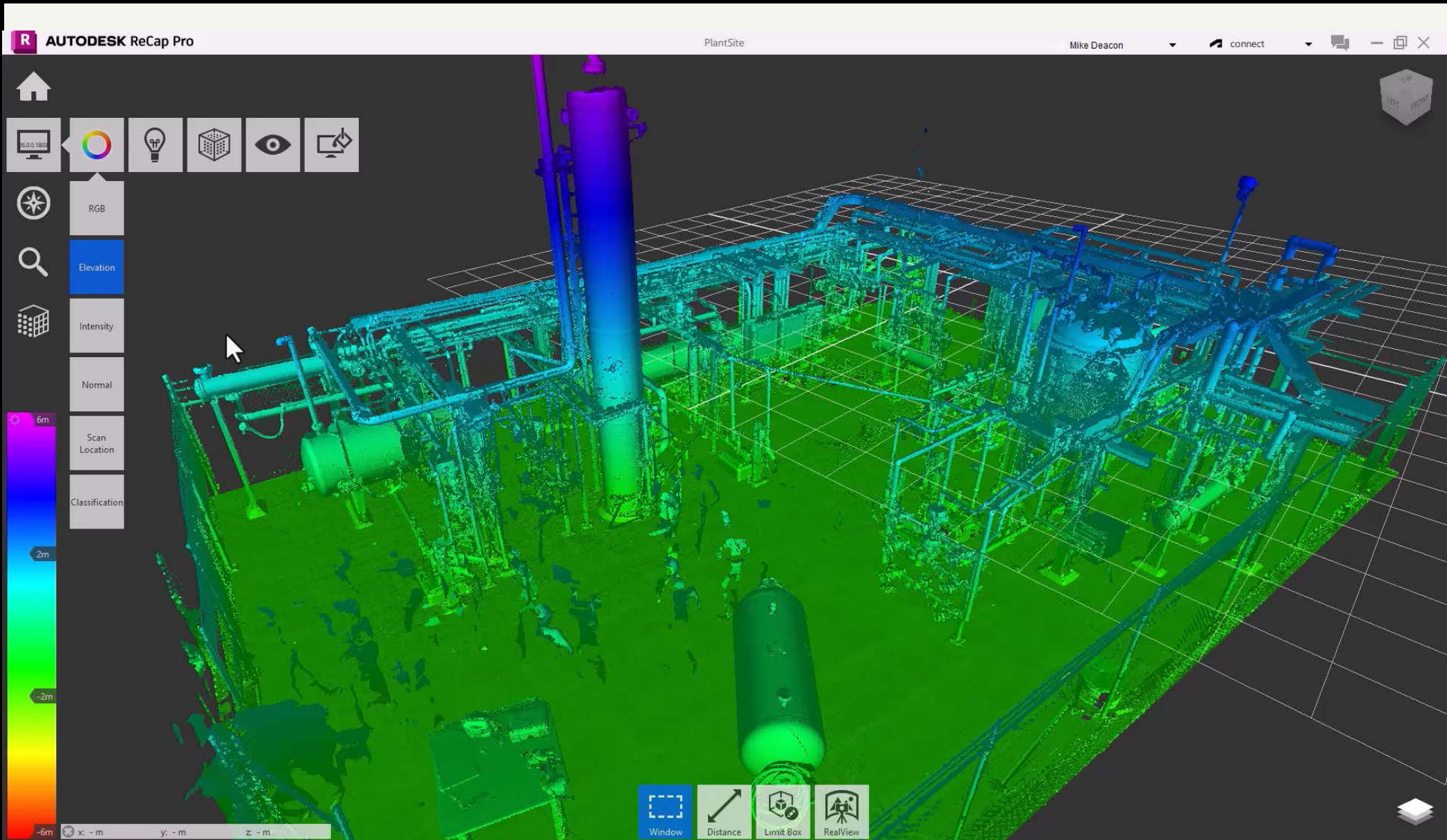
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# Scan to BIM for Plants

Segmented  
mesh creation  
and editing in  
ReCap Pro

Revit tools for  
targeted BIM  
conversion

Improved  
modeling  
control and  
accuracy



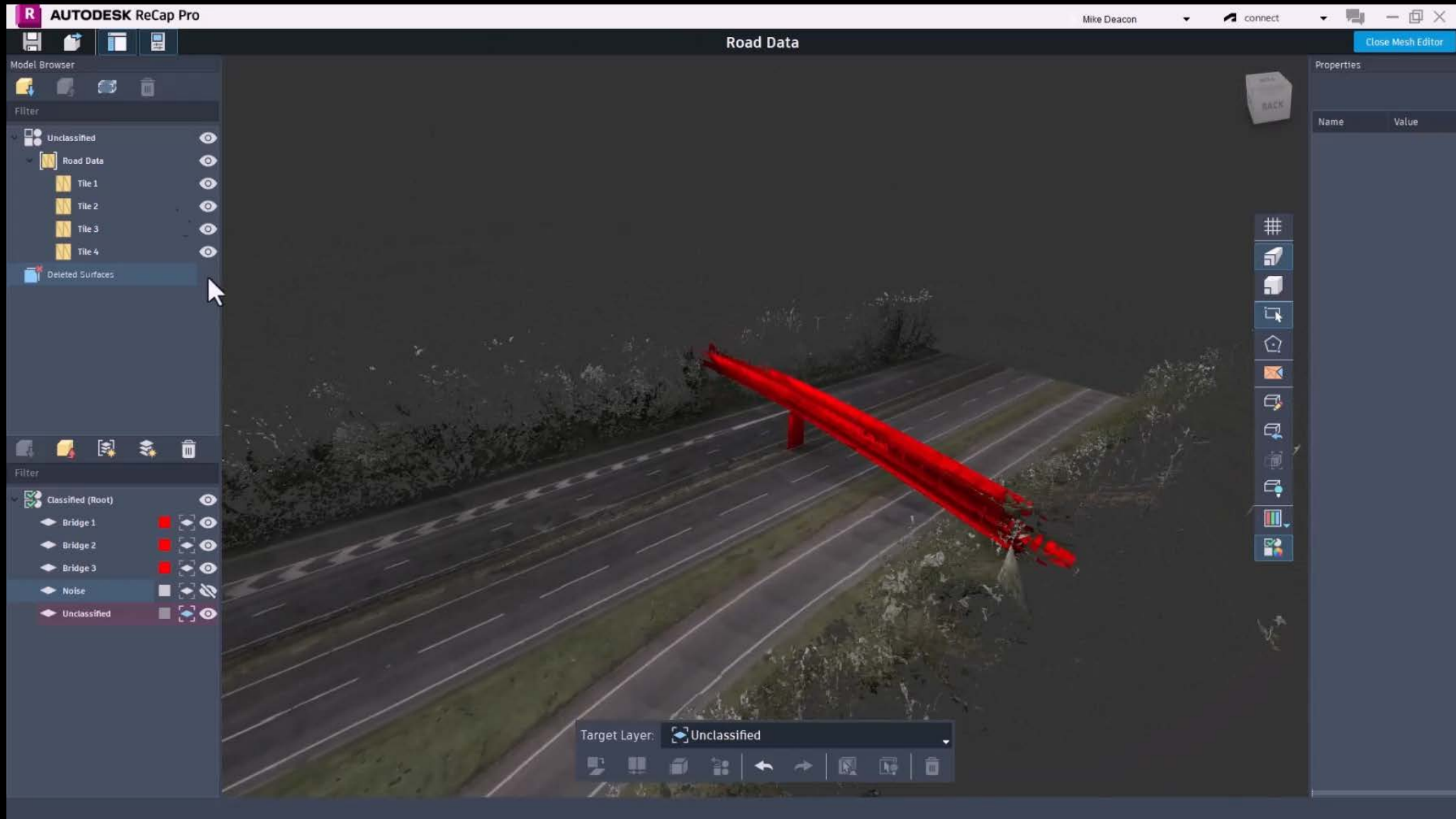
✓ RELEASED

# Scan to BIM for Civil Infrastructure

Segmented  
mesh  
creation and  
editing in  
ReCap Pro

Revit tools  
for targeted  
BIM  
conversion

Improved  
modeling  
control and  
accuracy





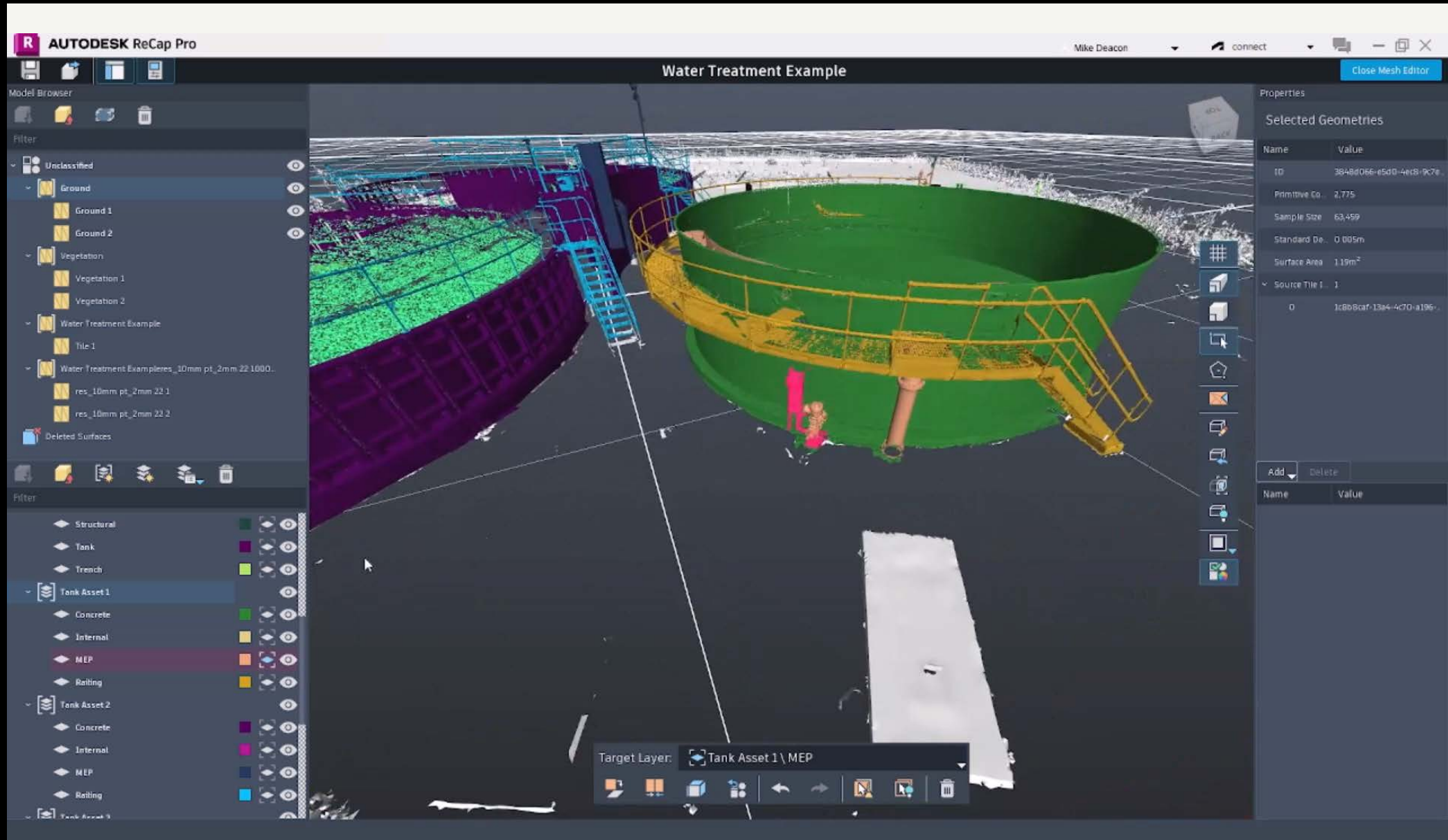
✓ RELEASED

# Scan-to-BIM for Water

Segmented  
mesh  
creation and  
editing in  
ReCap Pro

Revit tools  
for targeted  
BIM  
conversion

Improved  
modeling  
control and  
accuracy





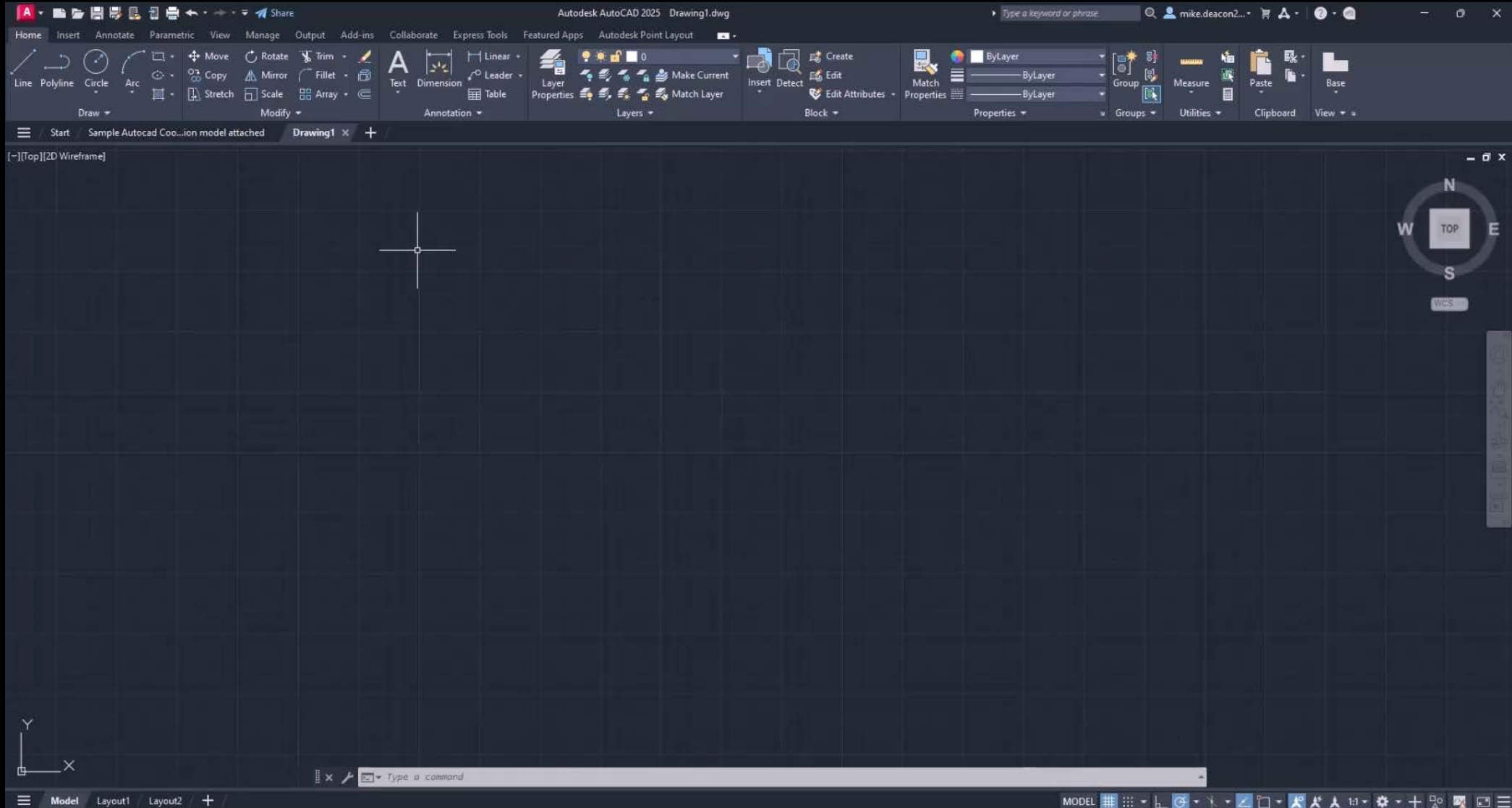
RELEASED

# Segmented mesh in AutoCAD

Attach meshes  
to CAD  
Drawing

Snap to extract  
floorplan and  
measurements

View in 2D and  
export as PDF



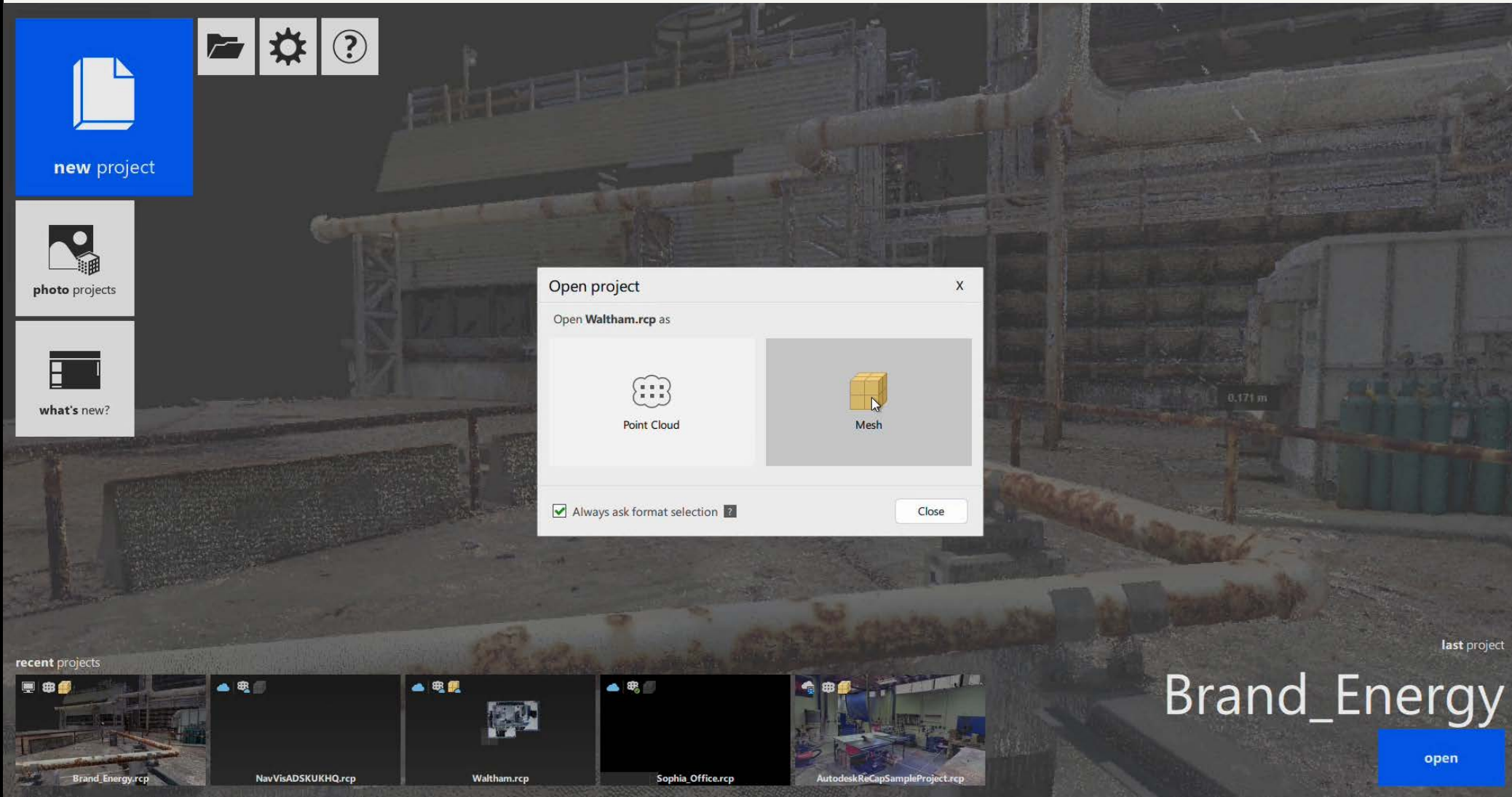
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# Faster Access to segmented mesh

Navigate directly to segmented mesh models

Faster access to segmented mesh from ACC

Visual signals for project status and content availability





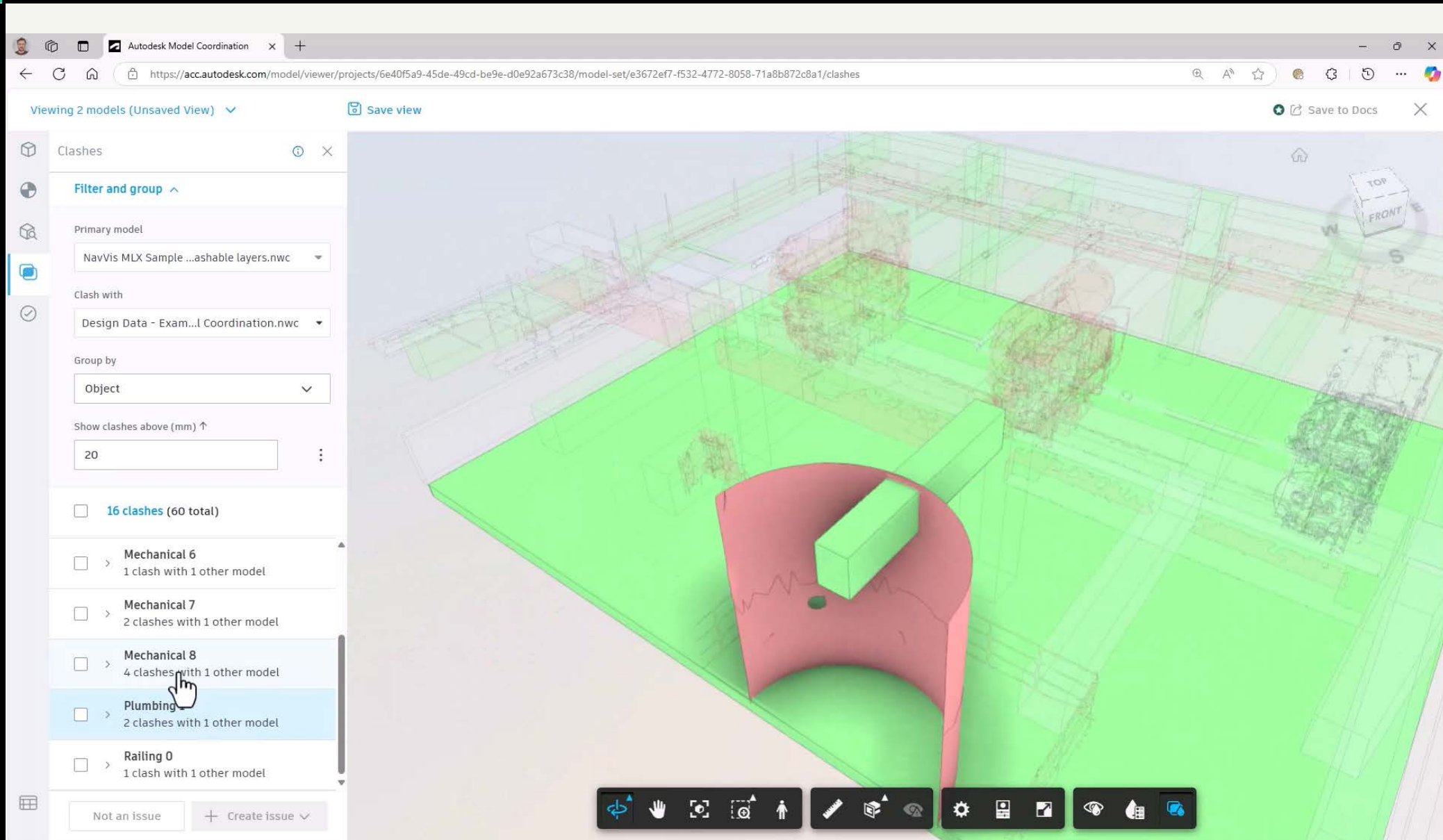
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# ACC Model Coordination

Collaborate  
using NWC  
meshes in ACC

Enables design  
verification  
through model  
Coordination

Group and  
filter clashes  
by type





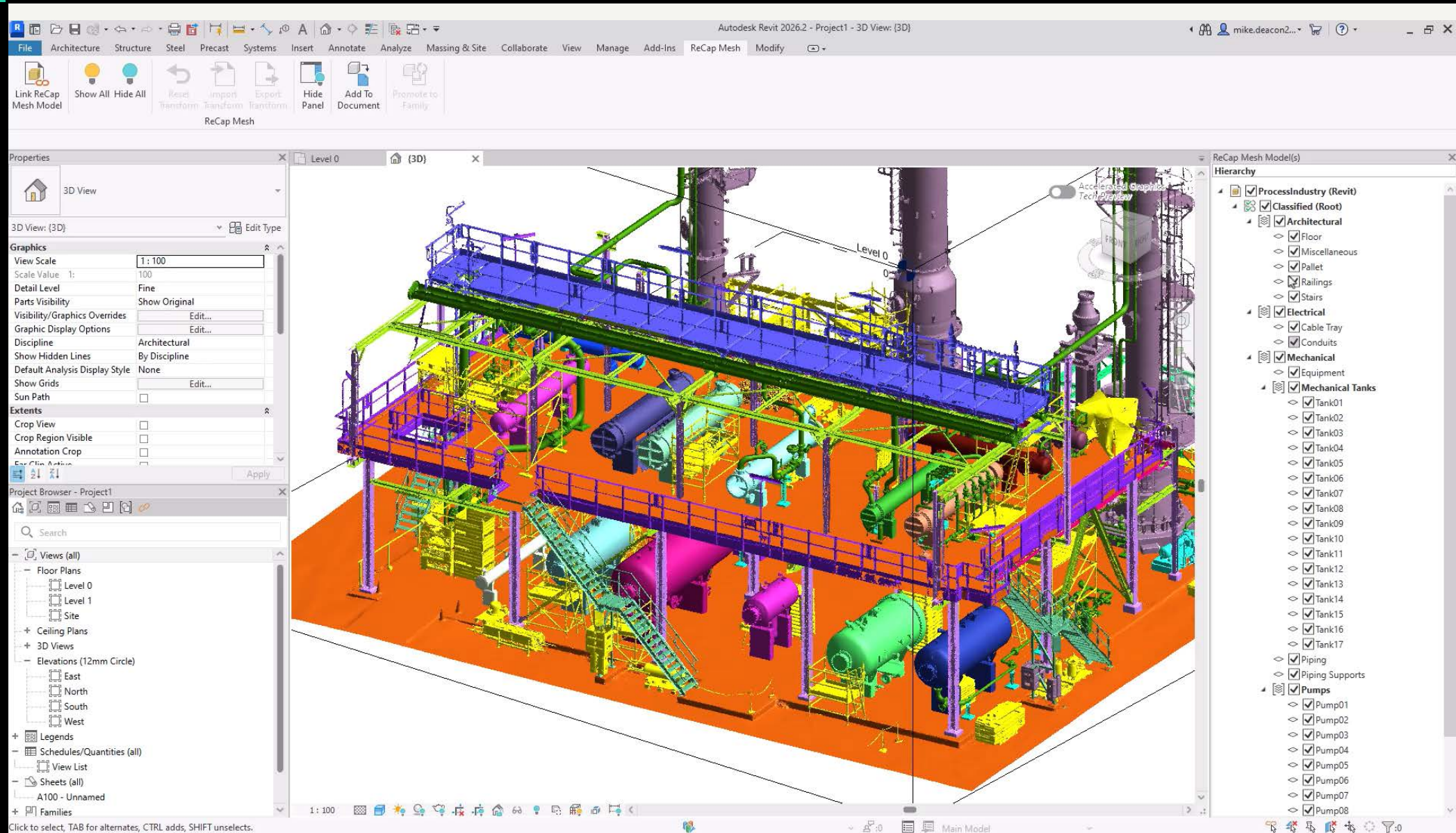
RELEASED

# ACC Build, Assets and Issue Tracking

Integrates  
with ACC  
Build for  
assets and  
issues

Faster, cost-  
effective  
model  
generation

Easy onsite  
data/asset  
access







BETA

# Digital Twin in Tandem

Use segmented mesh to build digital twin

Organize and classify mesh assets in Tandem

Attach metadata and live data streams to asset

