



Autodesk Artificial Intelligence

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About me

Technical Sales Specialist AECO at Autodesk with +10 years of experience helping the AEC industry to innovate and work smarter.

Expertise & Focus

- Building Information Modeling (BIM)
- Computational & Generative Design
- Digital Twin Technology
- Autodesk AI
- Digital Transformation



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The AI Opportunity



Leaders | Regulating the internet giants

The world's most valuable resource is no longer oil, but data

The data economy demands a new approach to antitrust rules

Share



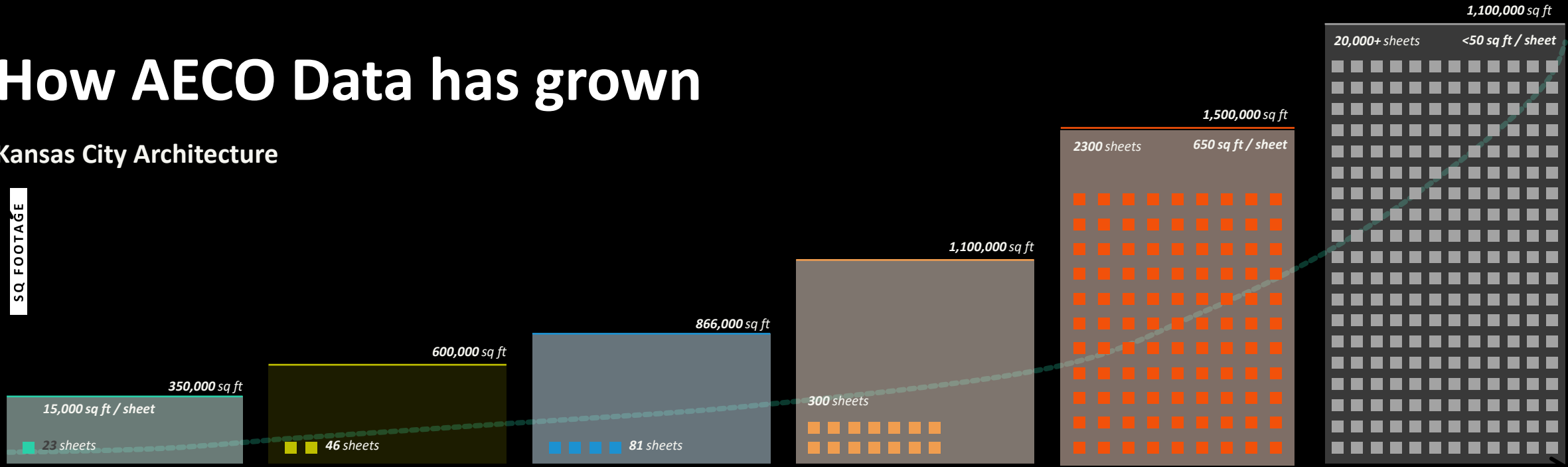
May 6th 2017 | 5 min read

A NEW commodity spawns a lucrative, fast-growing industry, prompting antitrust regulators to step in to restrain those who control its flow. A century ago, the resource in question was oil. Now similar concerns are being raised by the giants that deal in data, the oil of the digital era. These titans—Alphabet (Google's parent company), Amazon, Apple, Facebook and Microsoft—look unstoppable. They are the five most valuable listed firms in the world. Their profits are surging: they

How AECO Data has grown

Kansas City Architecture

SQ FOOTAGE



1931
Nelson Atkins
Museum
350,000 SQ FT
23 sheets in the set

Drawings ink on linen

Outcome: Building



1933
KC Power
& Light
600,000 SQ FT
46 sheets

Drawings ink on mylar

Outcome: Building



1988
One Kansas
City Place
866,000 SQ FT
81 sheets

Drawings in AutoCAD

Outcome: Building,
but faster



2003
IRS Processing
Center
1,100,000 SQ FT
300 sheets

Largest in Revit

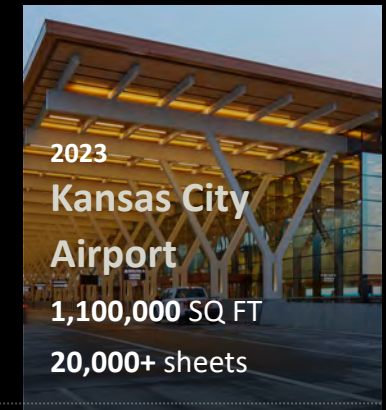
Outcome: Coordinated building w/
Clash



2010
NNSA Process
Facility
1,500,000 SQ FT
2300 sheets

Revit model is
linked to MS Access

Outcome: Coordinated building
w/ Clash and digital test fit for
equip



2023
Kansas City
Airport
1,100,000 SQ FT
20,000+ sheets

Revit model
is tied to CMMS

Outcome: Coordinated building
and digital
as-built w/ connected data

Business Challenges with Data

You have more data than ever, and rather than creating value it's costing you dearly

95.5%

Of all **data goes unused** in engineering & construction²



Inefficiency & Rework

\$1.84T

Estimated annual **cost of bad data** to the global construction industry²



Unreliable Data

6+

73% of AEC teams using **6 or more software tools** on a daily basis³



Fragmented Data

²Big Data = Big Questions for the Engineering and Construction Industry, FMI Report

³Gaining control over challenging project management workflows, CIO / Quickbase

Data can become your biggest asset and a competitive advantage

56%

Increase in average profit growth rate
between data capability leaders over beginners

2.7%

Increase in expected
average profit each year

-2023 State of Data Capabilities in Construction Report



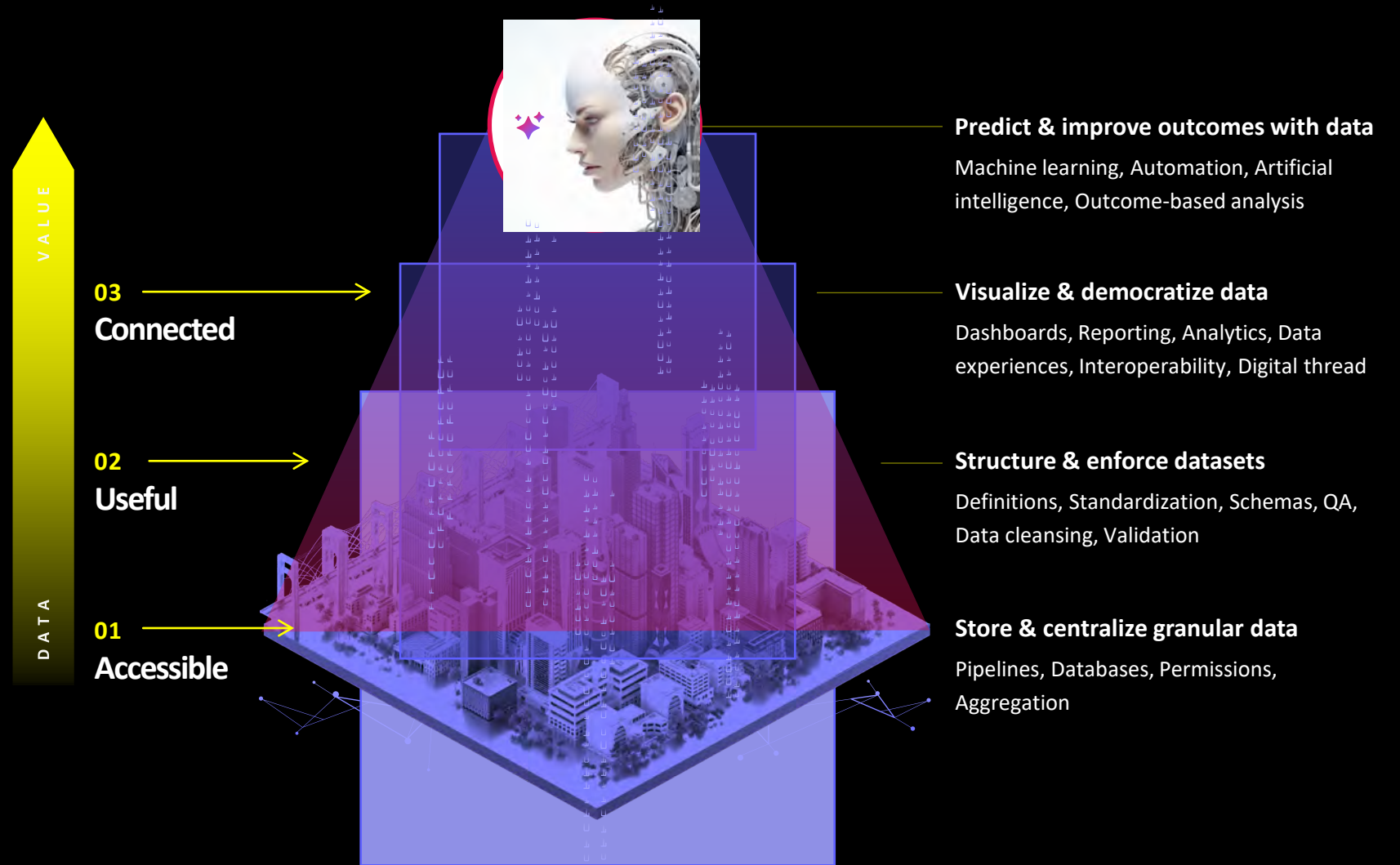
The future of data is...

ACCESSIBLE

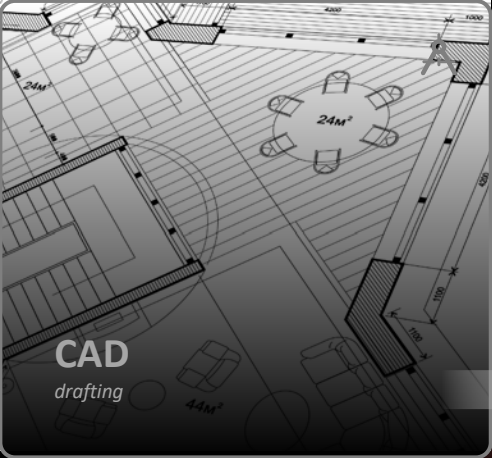
CONNECTED

USEFUL

Unlocking the power of AI starts with a foundation of better data



Outcome-based BIM, powered by AI



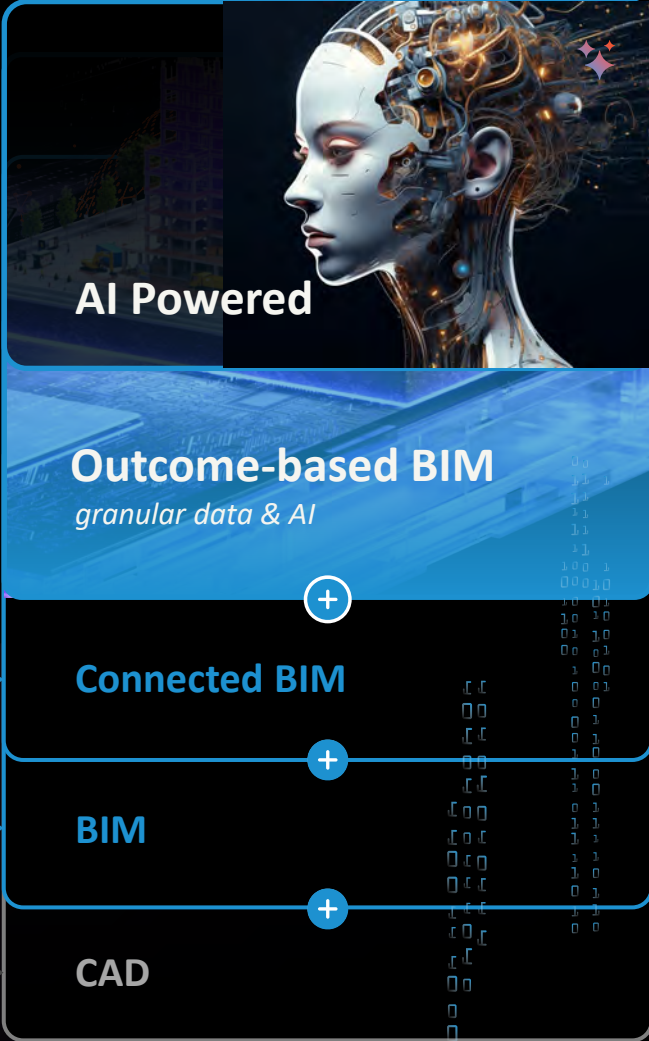
SINGLE PRODUCT



SPECIALIZED PRODUCTS



HYBRID CONNECTED PORTFOLIO



INDUSTRY CLOUD

TECHNOLOGY EVOLUTION

OUTCOME CRITERIA



- Sustainability
- Cost
- Time to Deliver
- Habitability
- Diversity
- Net Operating Income
- Human Experience
- Affordability



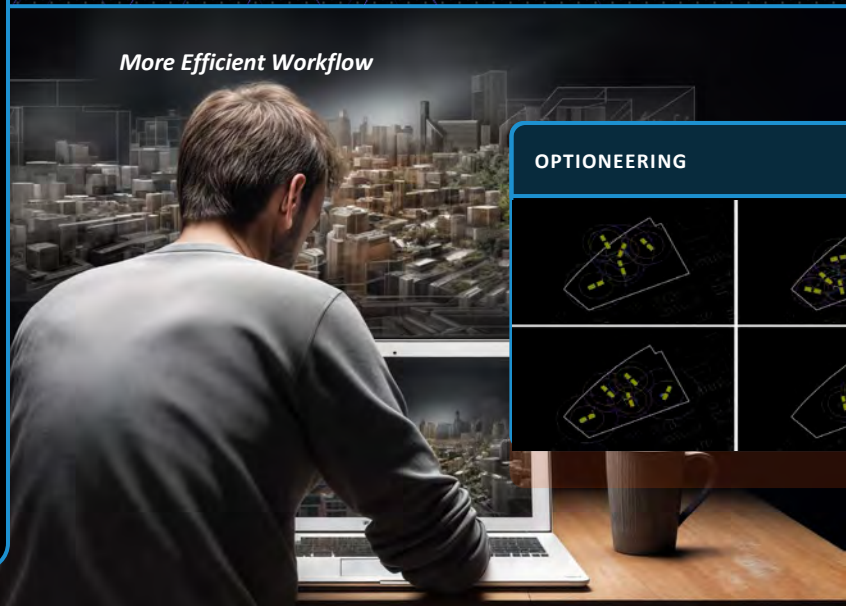
Better, Connected
Granular Data



Real World Context
and Knowledge



ACCELERATED APPROACH



More Efficient Workflow



AI Co-creation

ACHIEVE DESIRED,
BETTER OUTCOMES

**Traditional
relationship
with machines**



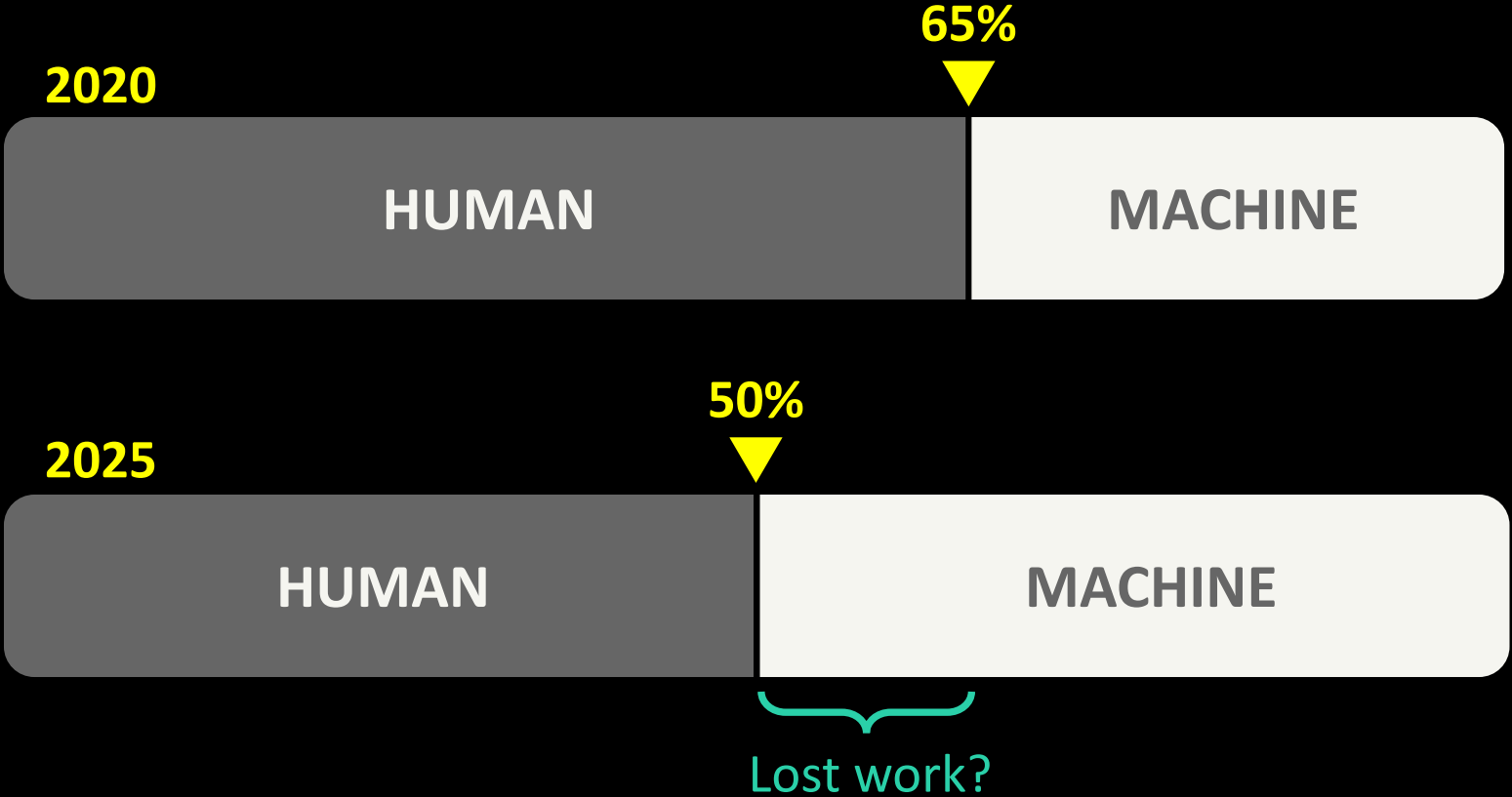


“Conversation is the **new interface**”

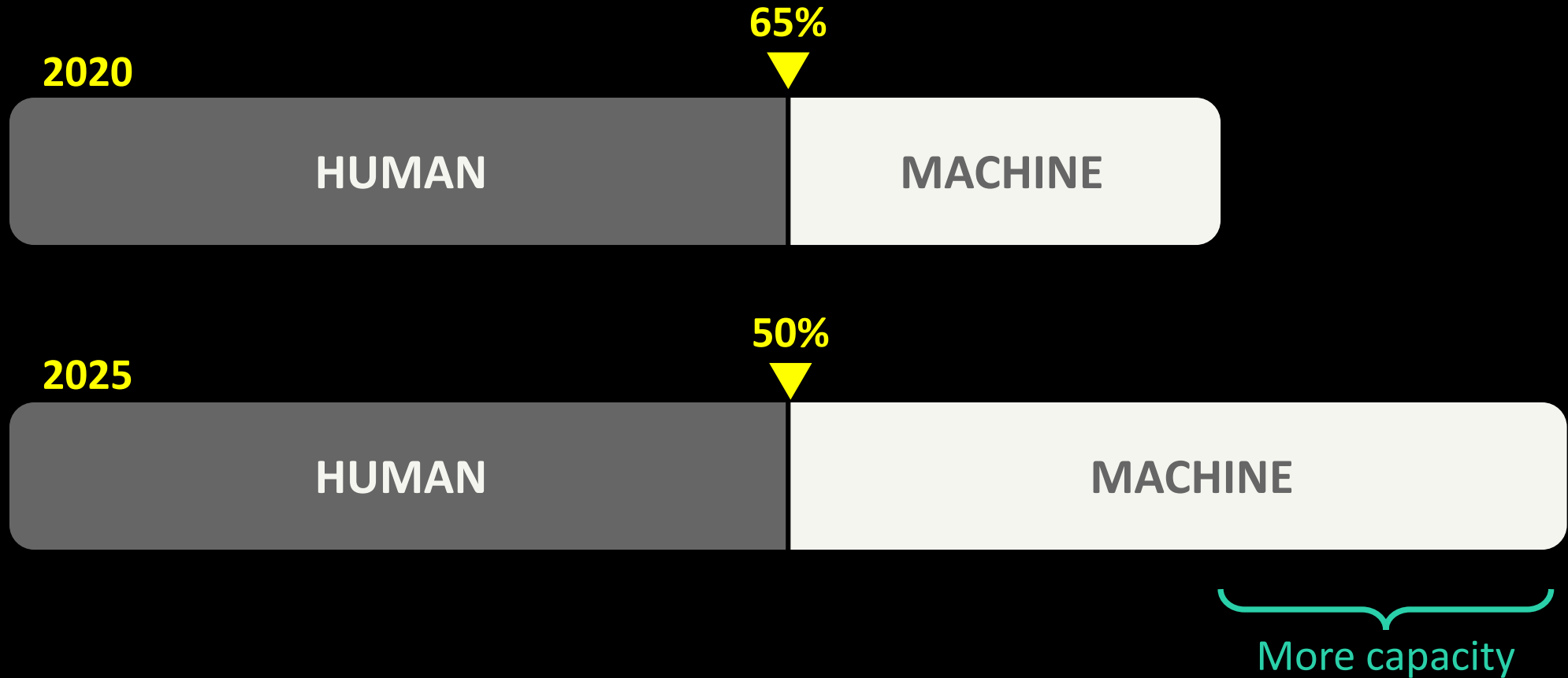
Mustafa Suleyman, CEO, Microsoft AI

**New relationship
with machines**

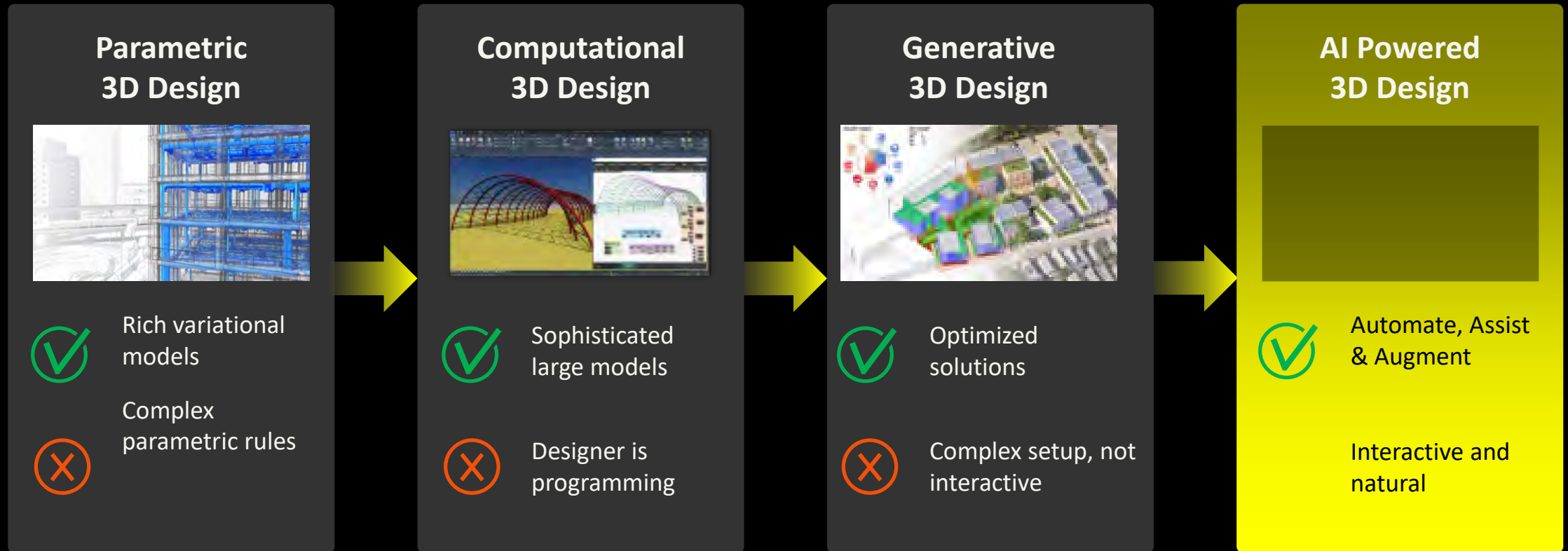
Perceived relationship with machines



A new relationship with machines



Finally, Computers Adjust to Designers!



Hierarchy of AI Models



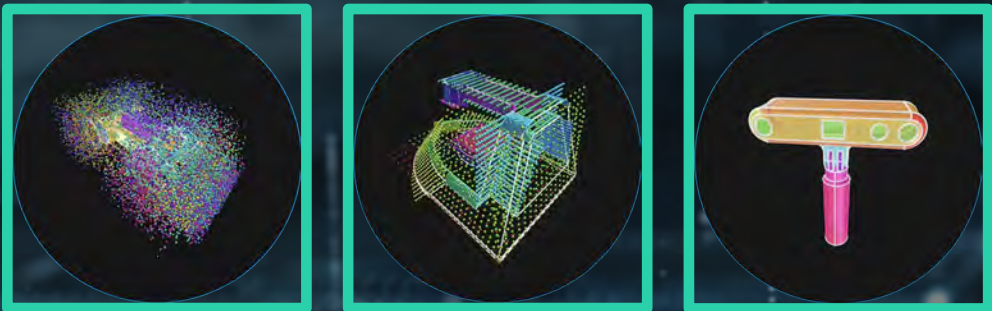


```
31 self.file = None
32 self.fingerprints = {}
33 self.logged_in = True
34 self.debug = debug
35 self.logger = logging.getLogger(__name__)
36
37 @property
38 def file(self):
39     return self._file
40
41 @file.setter
42 def file(self, value):
43     self._file = value
44
45 @property
46 def fingerprints(self):
47     return self._fingerprints
48
49 @fingerprints.setter
50 def fingerprints(self, value):
51     self._fingerprints = value
52
53 def request_fingerprint(self, request):
54     return request_fingerprint(request)
55
56
```



Language & visual reasoning

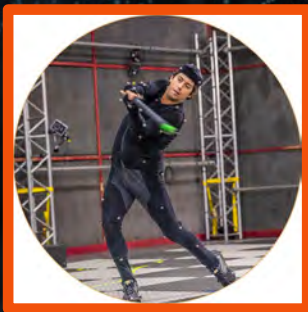




Spatial & physical reasoning



Industry-specific reasoning



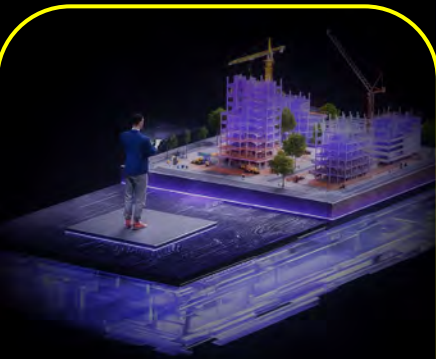
Your team's information



What is **Autodesk AI ?**

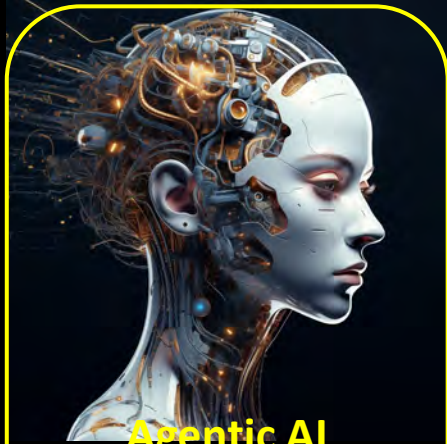


How do we deliver AI



Generative AI

- Outcome Based BIM
- In Forma or 3rd Party tools



Agentic AI

- Assistants
- MCP Servers



Predictive AI

- Realtime simulation
- Based on synthetic data
- For Buildings and Water



Productivity Tools

- Scan to BIM
- Quick RFI Creation
- Photo Issues
- CAD Block automation



Insights & Personalization

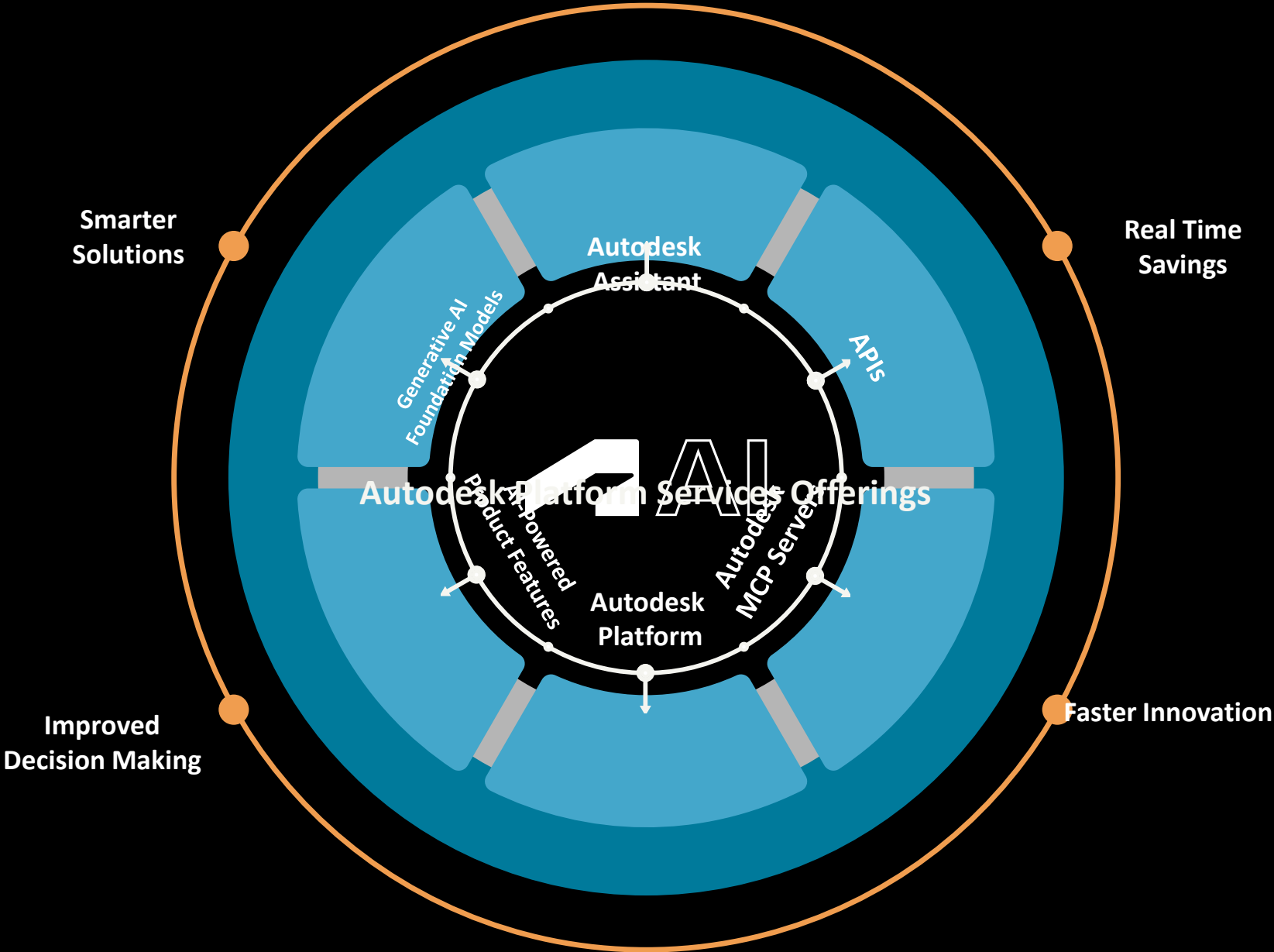
- AI generated insights across products
- Focused on user productivity and learning

Autodesk AI Ecosystem

Together, these components enable agentic AI workflows that drive business transformation

Ecosystem Layers:

- Autodesk AI
- Infrastructure & Tools
- New Business Model
- Customer Value



Autodesk AI Value Propositions

AUTOMATE

Free up time from repetitive tasks

ASSIST

Understand complex data

The logo features the Autodesk 'A' icon followed by the text 'AUTODESK AI' in a bold, sans-serif font.

AUGMENT

Enhance workflows and amplify creativity

Autodesk **trust** principles for AI

Building integrity & trust
into Autodesk AI



Responsible

We hold ourselves to high standards in acquiring and managing data as well as training and delivering fair and safe AI models.



Transparent

We are forthcoming about the design, development, and intended use of AI systems and data.



Accountable

We are committed to respecting the choices of our customers and aligning to laws and regulations.



Reliable

We are rigorous in building AI systems that strive to provide accuracy, validity, and consistency.



Safe & Secure

We employ robust practices throughout the AI lifecycle to protect customer data, intellectual property, and privacy, and to produce safe outcomes.

AI Transparency Cards

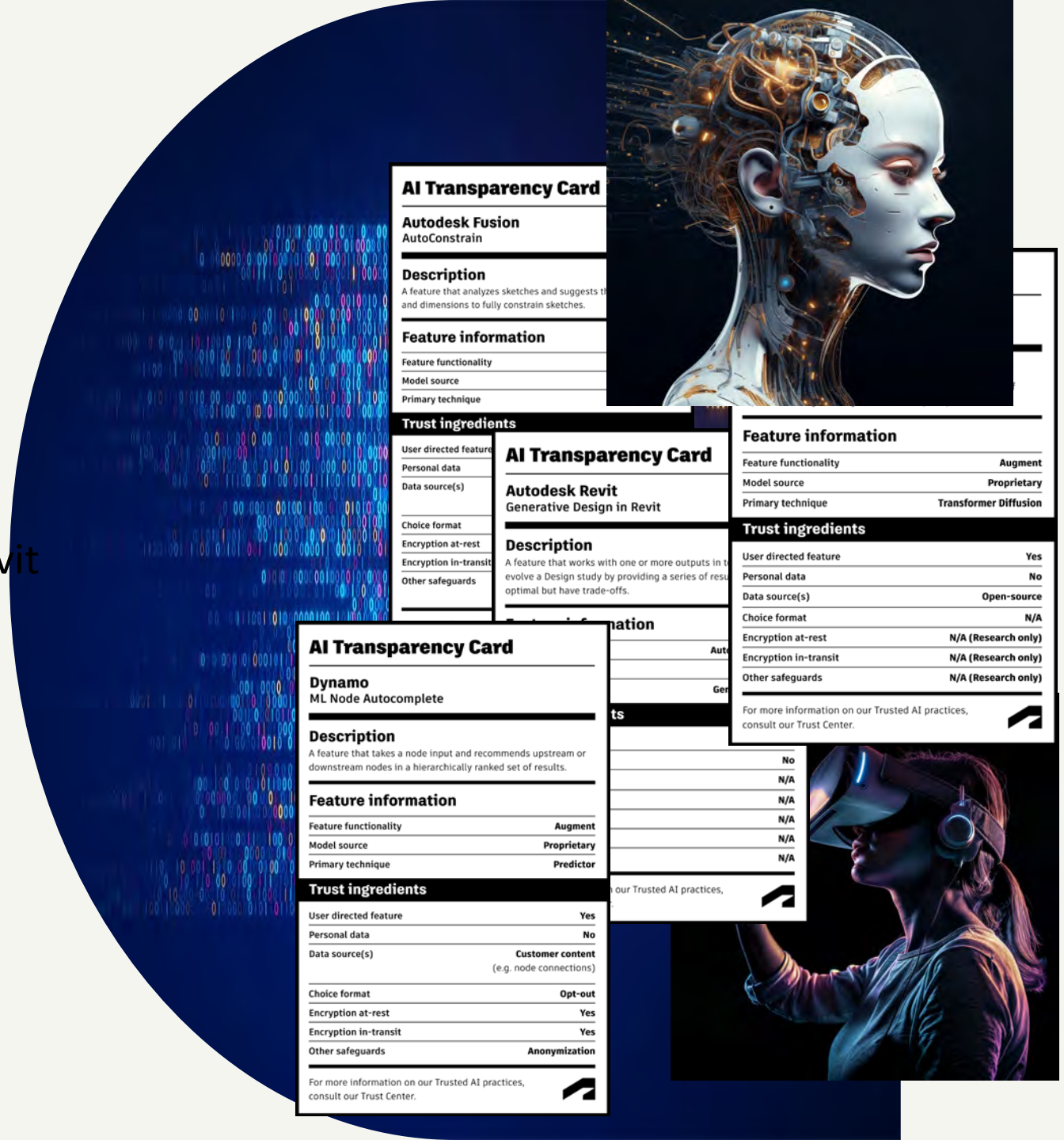
High-level info on the product AI feature at hand

EXAMPLES:

- **Forma:** Rapid Wind Analysis
- **Forma:** Embodied Carbon Analysis
- **Fusion:** AutoConstrain
- **Autodesk Revit:** Generative Design in Revit
- **Dynamo:** ML Node Autocomplete



<https://www.autodesk.com/trust/trusted-ai>



AI Transparency Card	
Autodesk Fusion AutoConstrain	
Description A feature that analyzes sketches and suggests dimensions to fully constrain sketches.	
Feature information	
Feature functionality	
Model source	
Primary technique	

AI Transparency Card	
Autodesk Revit Generative Design in Revit	
Description A feature that works with one or more outputs in Revit to evolve a Design study by providing a series of results that are optimal but have trade-offs.	
Feature information	
Feature functionality	
Model source	
Primary technique	

AI Transparency Card	
Dynamo ML Node Autocomplete	
Description A feature that takes a node input and recommends upstream or downstream nodes in a hierarchically ranked set of results.	
Feature information	
Feature functionality	Augment
Model source	Proprietary
Primary technique	Predictor
Trust ingredients	
User directed feature	Yes
Personal data	No
Data source(s)	Customer content (e.g. node connections)
Choice format	Opt-out
Encryption at-rest	Yes
Encryption in-transit	Yes
Other safeguards	Anonymization
For more information on our Trusted AI practices, consult our Trust Center.	

Feature information	
Feature functionality	Augment
Model source	Proprietary
Primary technique	Transformer Diffusion
Trust ingredients	
User directed feature	Yes
Personal data	No
Data source(s)	Open-source
Choice format	N/A
Encryption at-rest	N/A (Research only)
Encryption in-transit	N/A (Research only)
Other safeguards	N/A (Research only)
For more information on our Trusted AI practices, consult our Trust Center.	



Autodesk Assistant

Your essential agentic partner for Design and Make



Industry-Specific Conversational Assistance

- ❖ Delivers informed answers and recommendations
- ❖ Natural language interaction
- ❖ Personalized & context aware



Trusted and Unified Agentic AI Experience

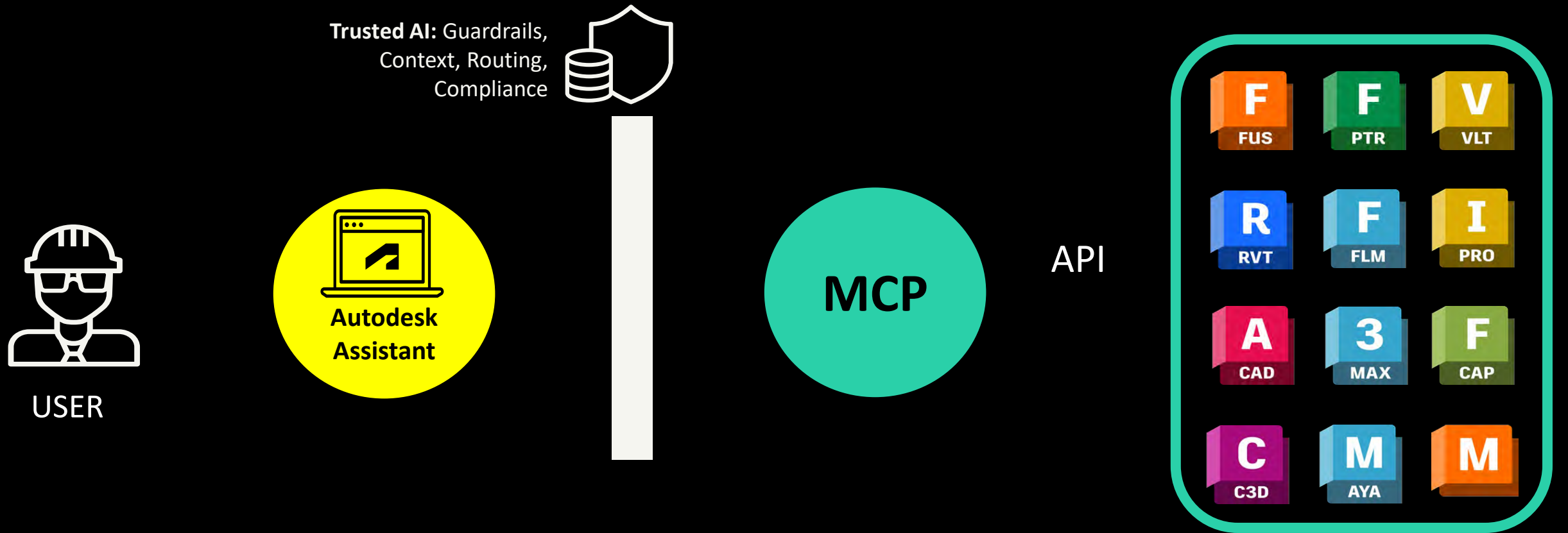
- ❖ Embedded within your products for a fluid, connected experience
- ❖ Built-in data protection and privacy standards.
- ❖ Adheres to Autodesk's Trusted AI policies



Augmented Design and Make Workflows

- ❖ Allows you to move faster and do more
- ❖ Tackles design and make tasks in real-time
- ❖ A collaborative tool that won't disrupt your design flow

MCPs unlocking **Agentic AI**



Industry-specific conversational assistance

Trusted & unified agentic experience

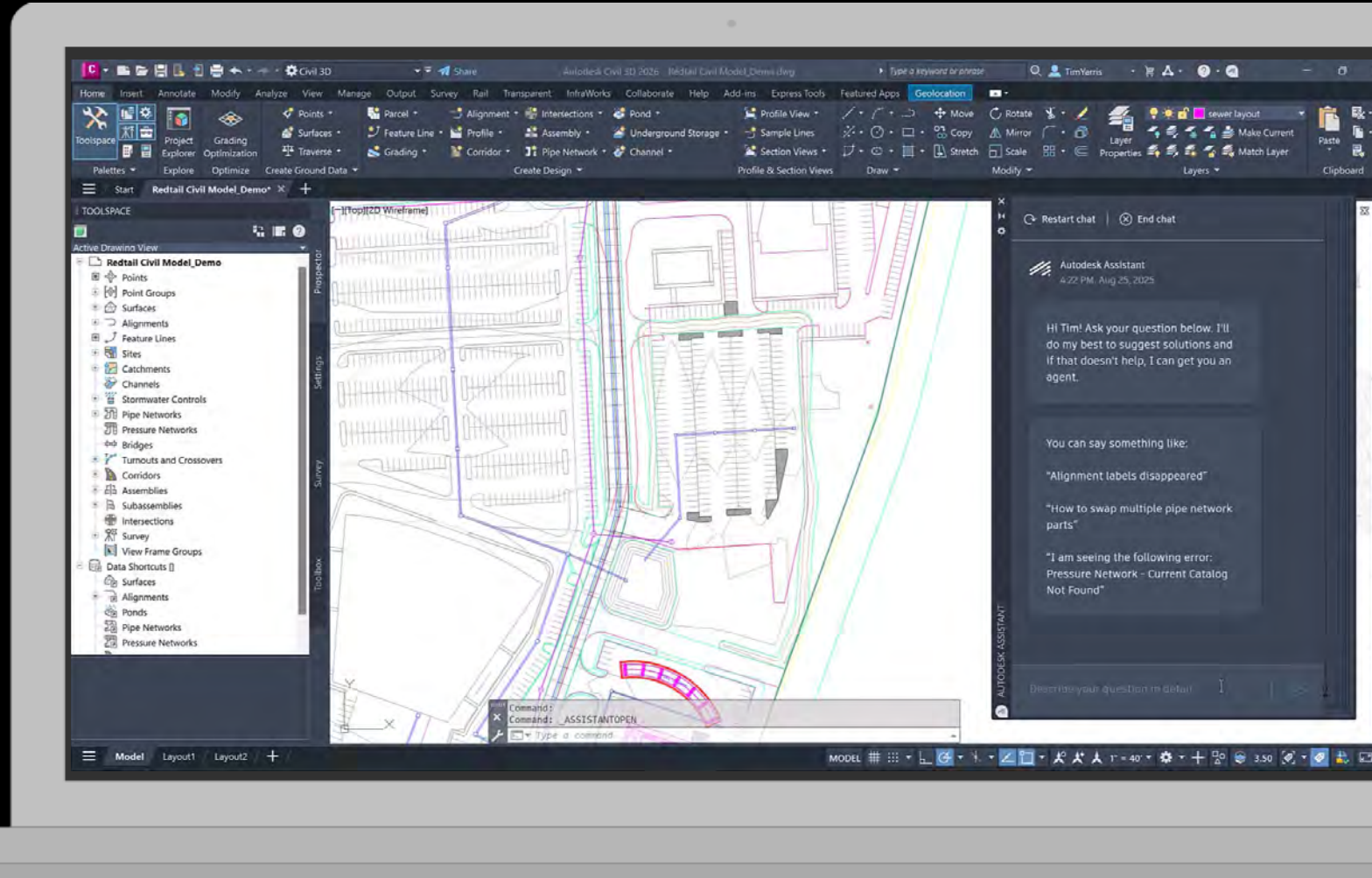
Augmented execution for Design & Make workflows

AI capabilities in **AECO**



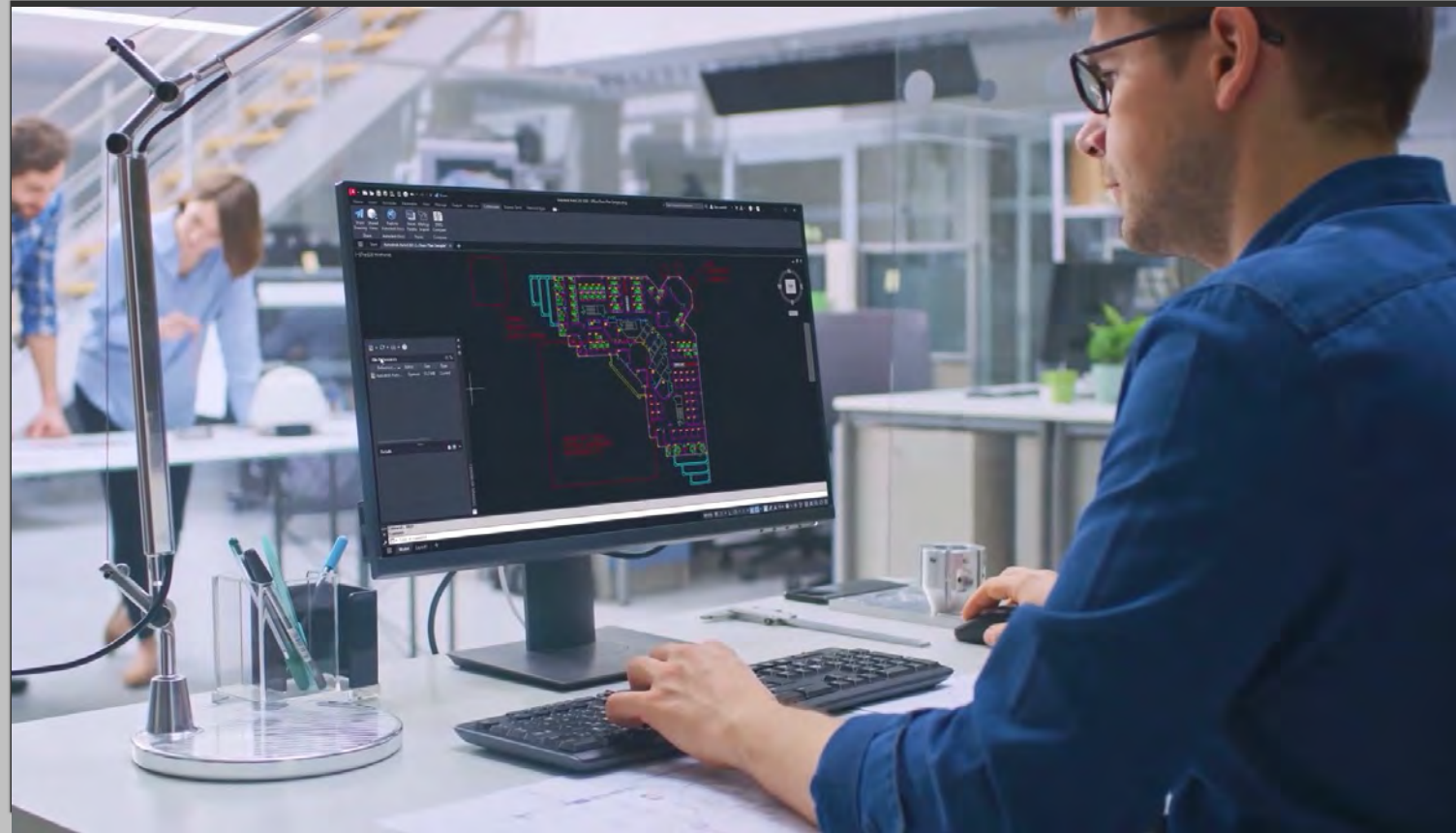
In-Product Assistance

- ✓ Helpful to learn the product
- ✓ Find results for common questions
- ✓ No model awareness



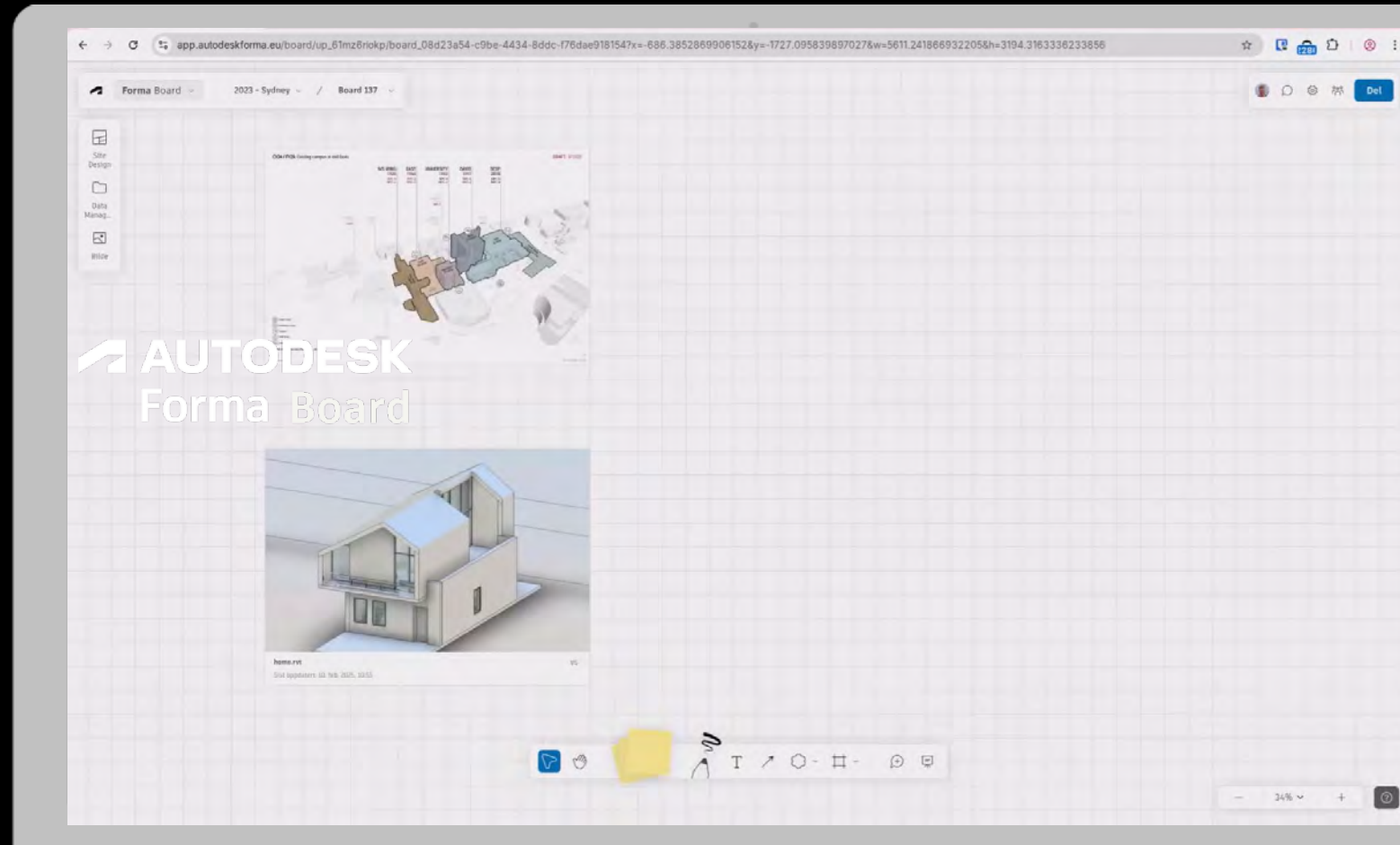
Markup Import & Markup Assist in the cloud

- ✓ Extract redlines from PDFs/images
- ✓ Detect markups automatically
- ✓ Import active drawing elements
- ✓ Streamline design reviews



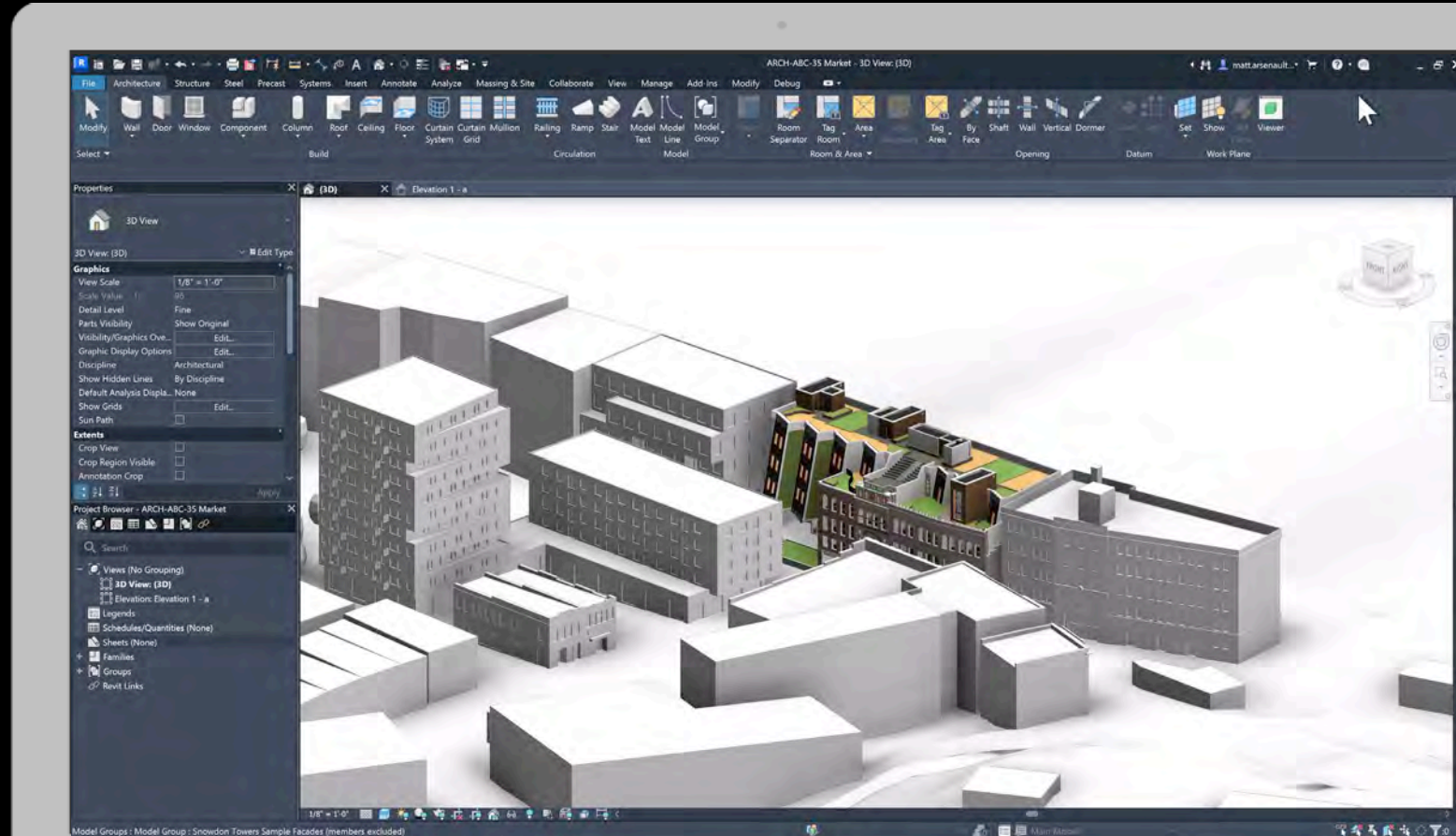
Forma Board

- ✓ Generate renderings from board images
- ✓ Visualize design intent quickly
- ✓ Iterate using plain language



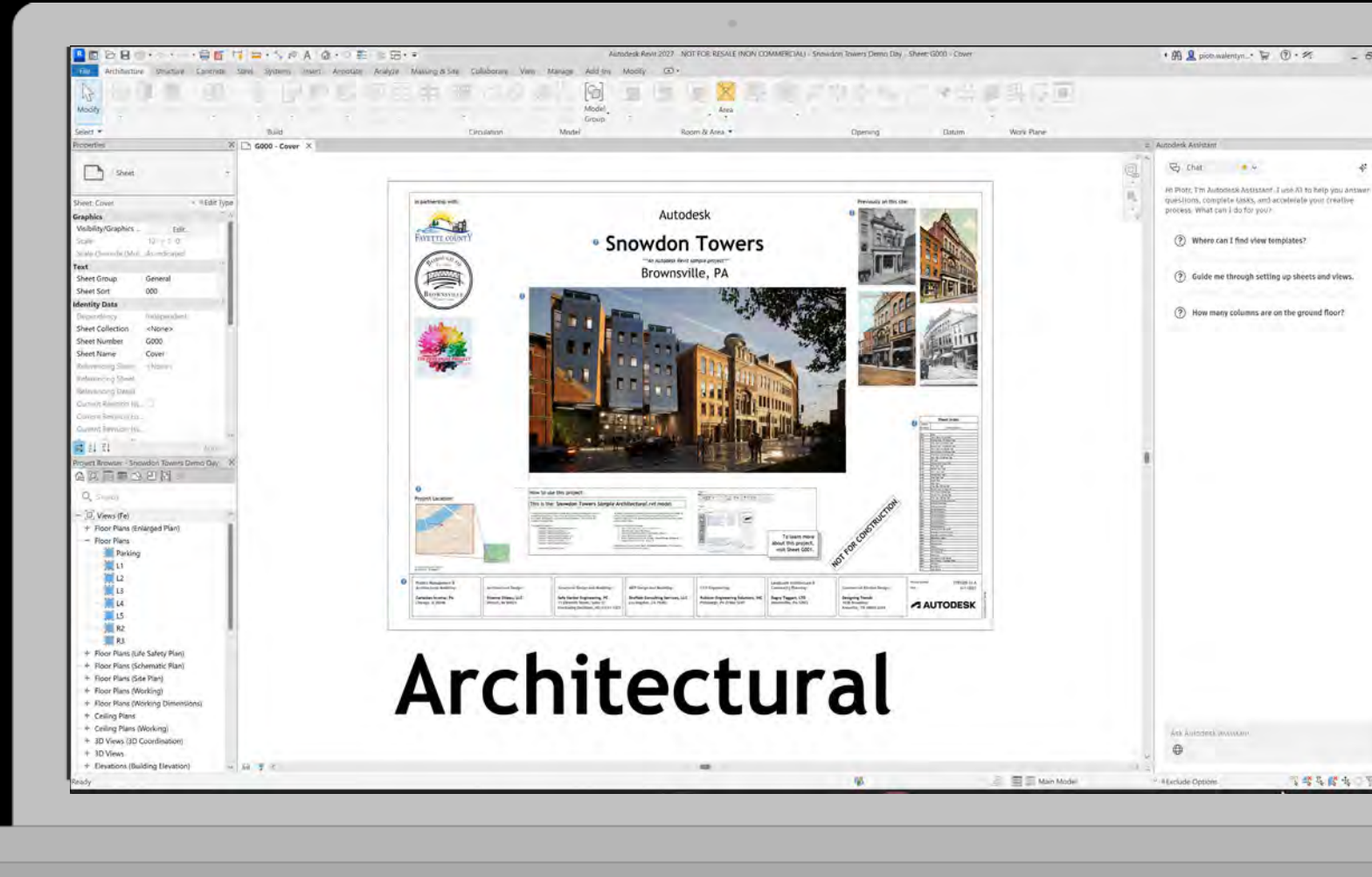
Autodesk Assistant in Revit

- ✓ Measure window-to-wall ratio
- ✓ Replace window families
- ✓ Create floor plan drawings
- ✓ Automate Revit design tasks



Autodesk Assistant in Revit

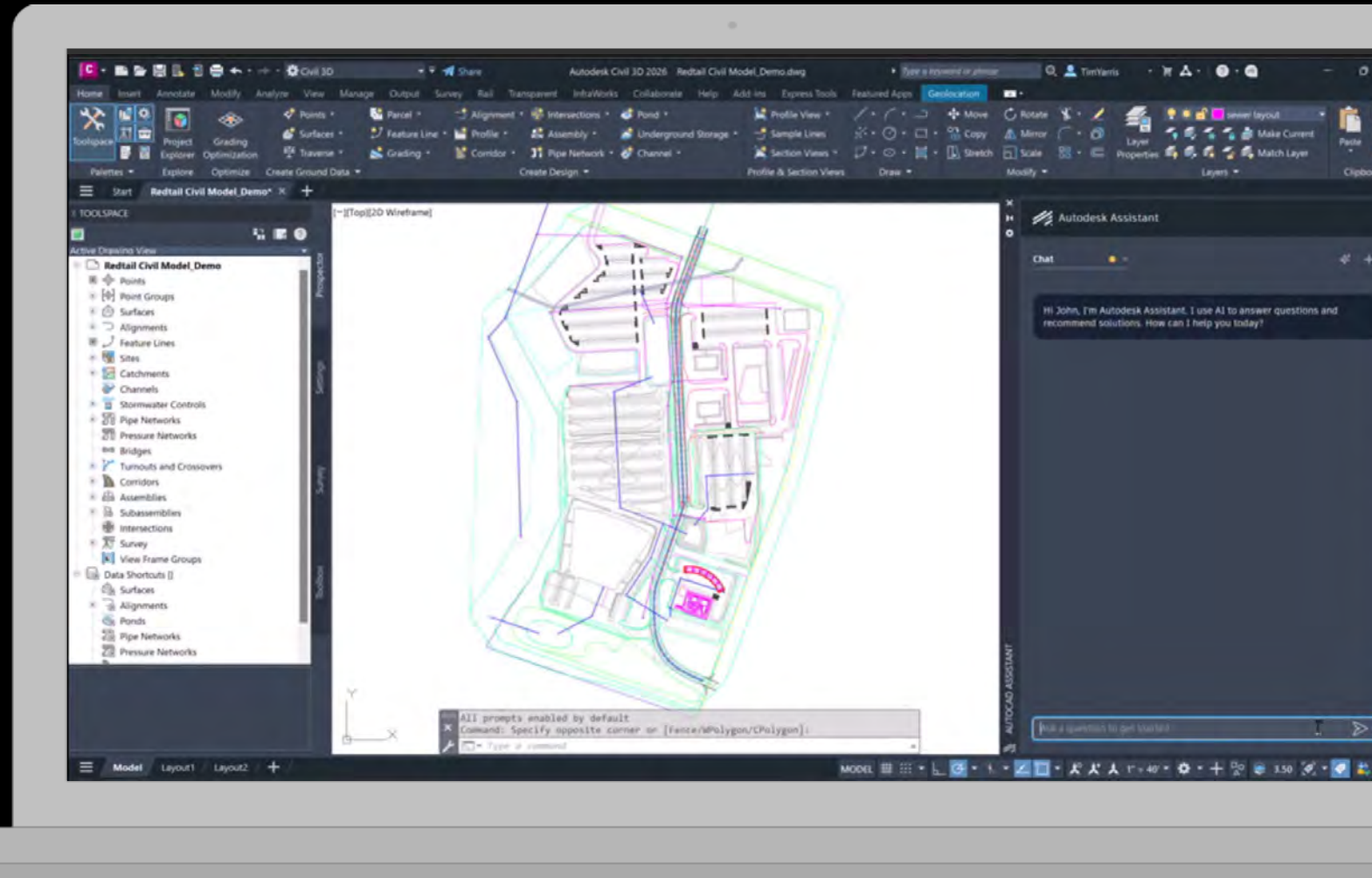
- ✓ Ask how-to questions
- ✓ Create views and schedules
- ✓ Request model quantities
- ✓ Check incomplete model information
- ✓ Modify models with prompts



BETA

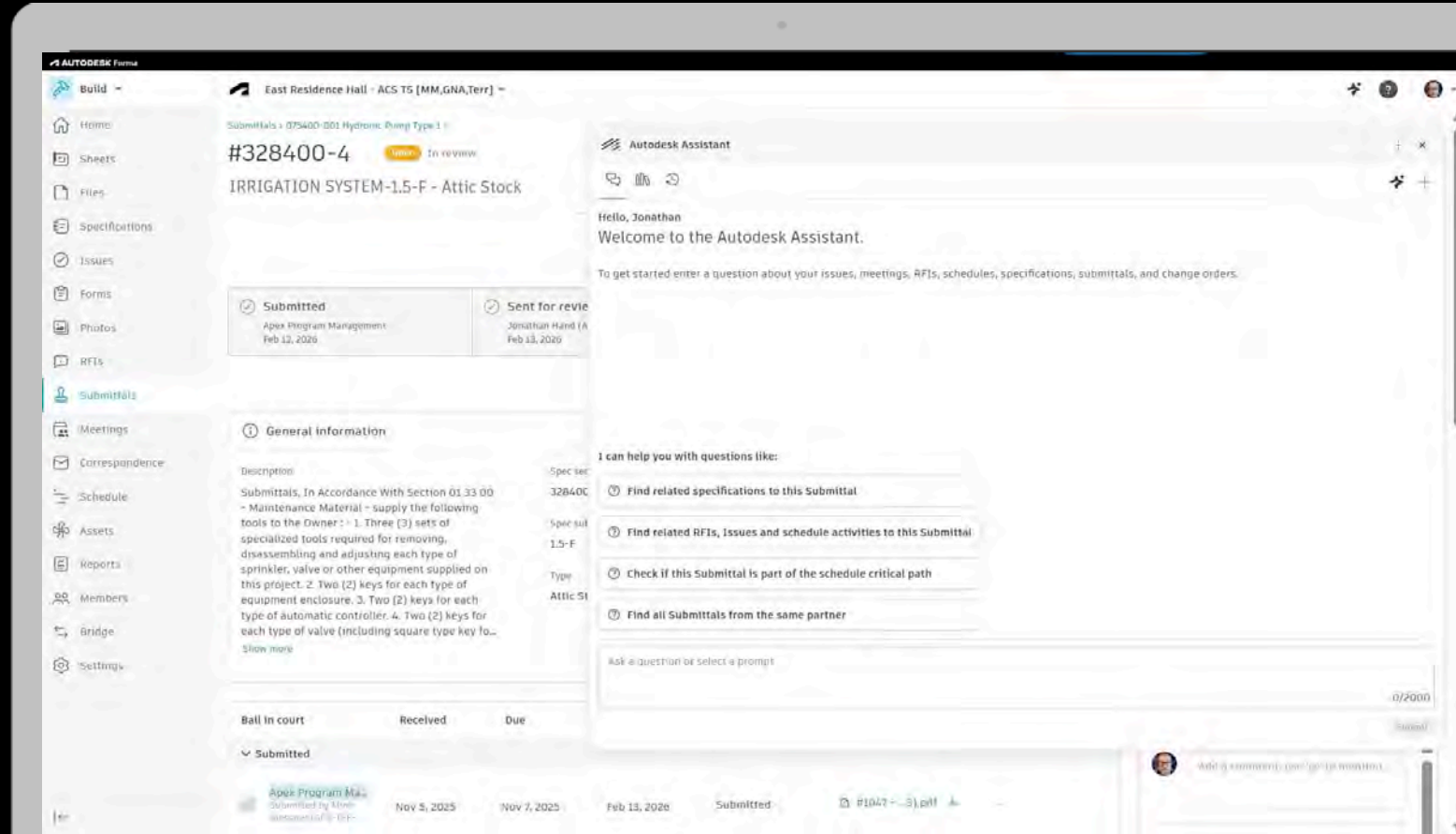
Query Pipe Data with AI

- ✓ Get pipe data instantly
- ✓ Detailed information about materials and slope



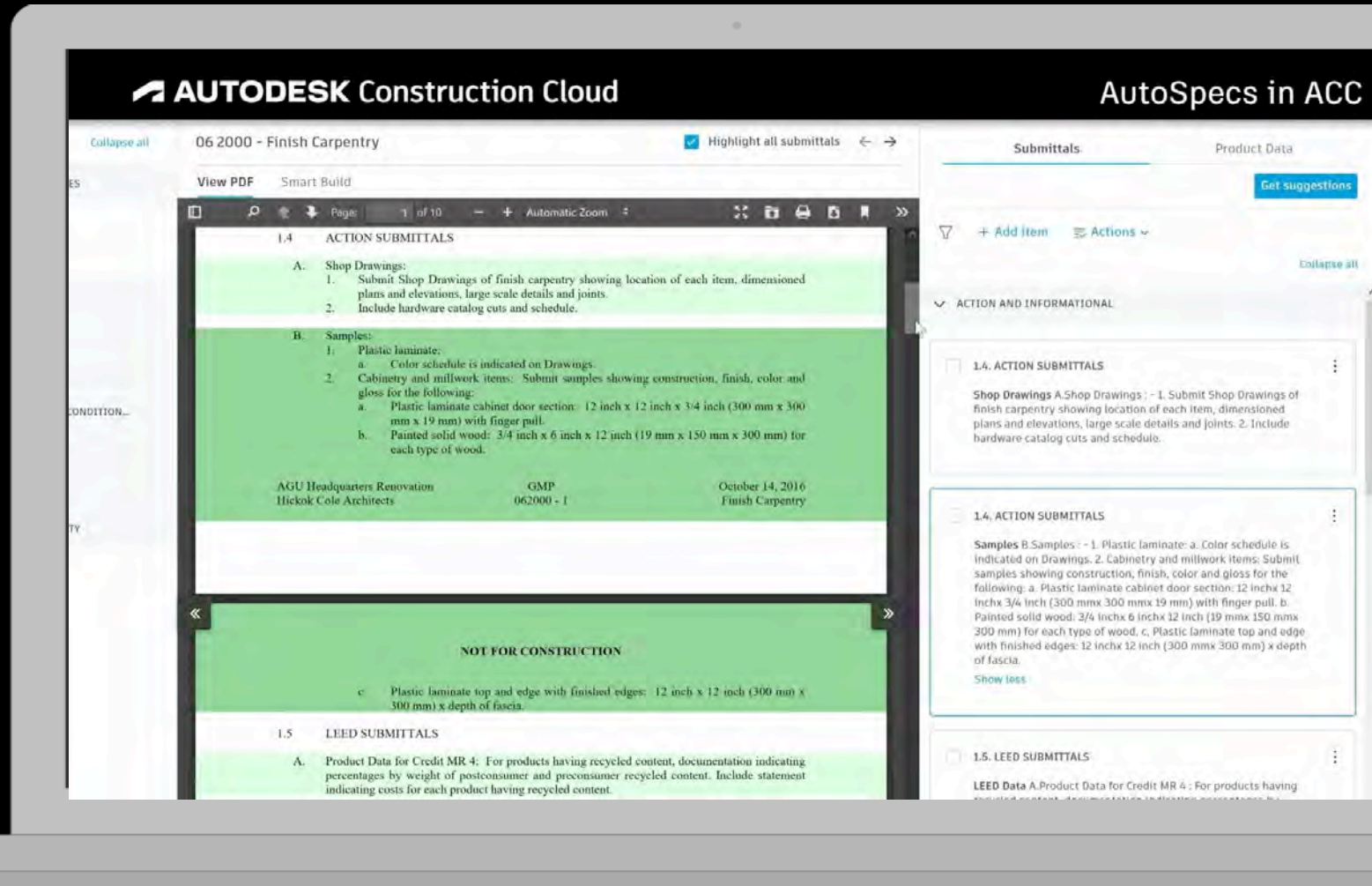
Autodesk Assistant

- ✓ No switching tools, no exporting data
- ✓ Instant answers & reusable prompts keep work moving
- ✓ Smarter insights for faster decision making



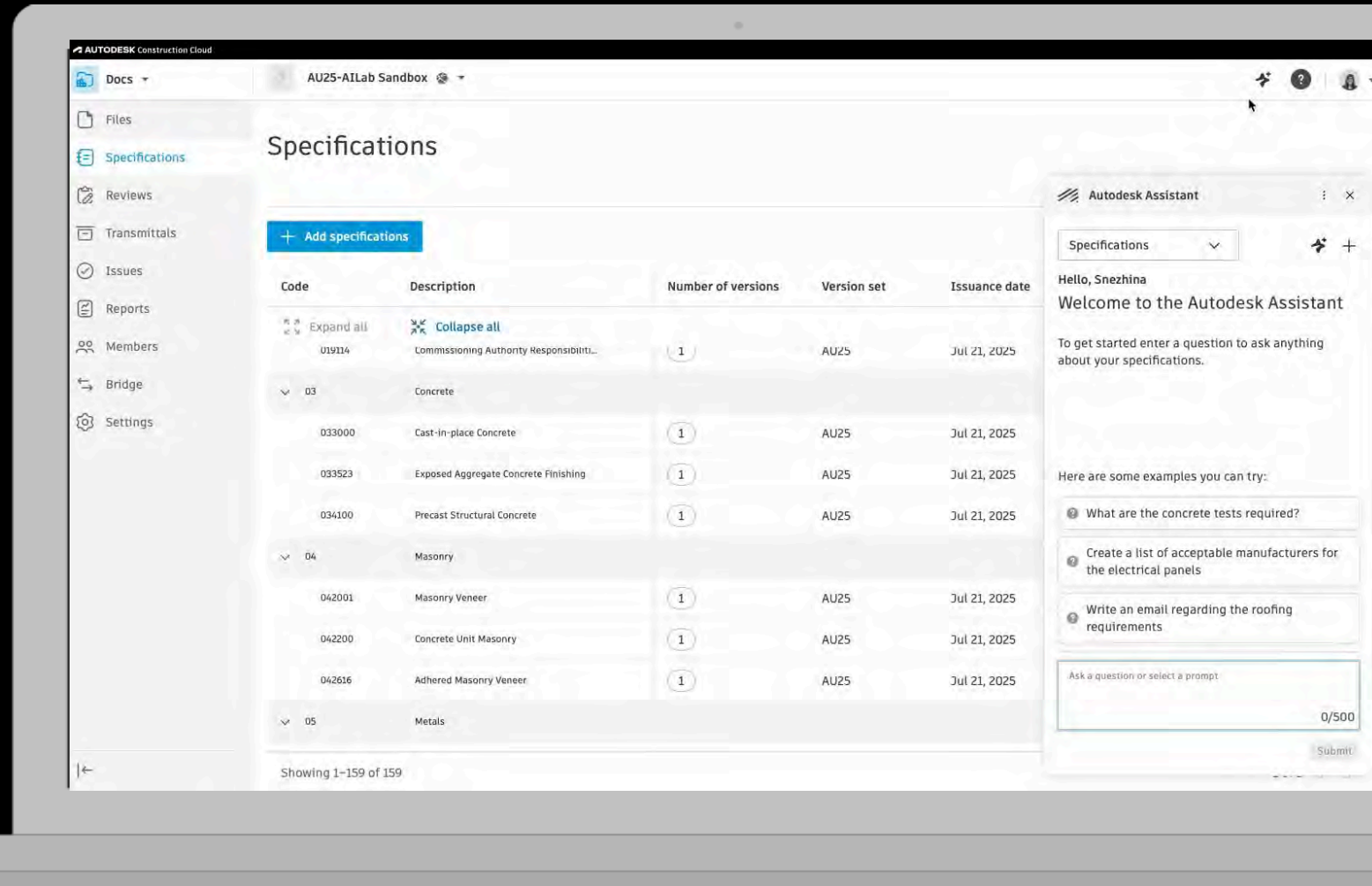
Suggested submittals

- ✓ Automatically catch gaps before they impact the project
- ✓ Improve accuracy and consistency
- ✓ Eliminate manual spec reviews



Request Specifications

- ✓ Using the AI chat to ask project questions
- ✓ Getting instant summaries with direct specification links
- ✓ Web availability for all stakeholders



Quick RFI Create

- ✓ From prompt to RFI in seconds
- ✓ More complete, context-rich RFIs
- ✓ Faster responses, fewer delays

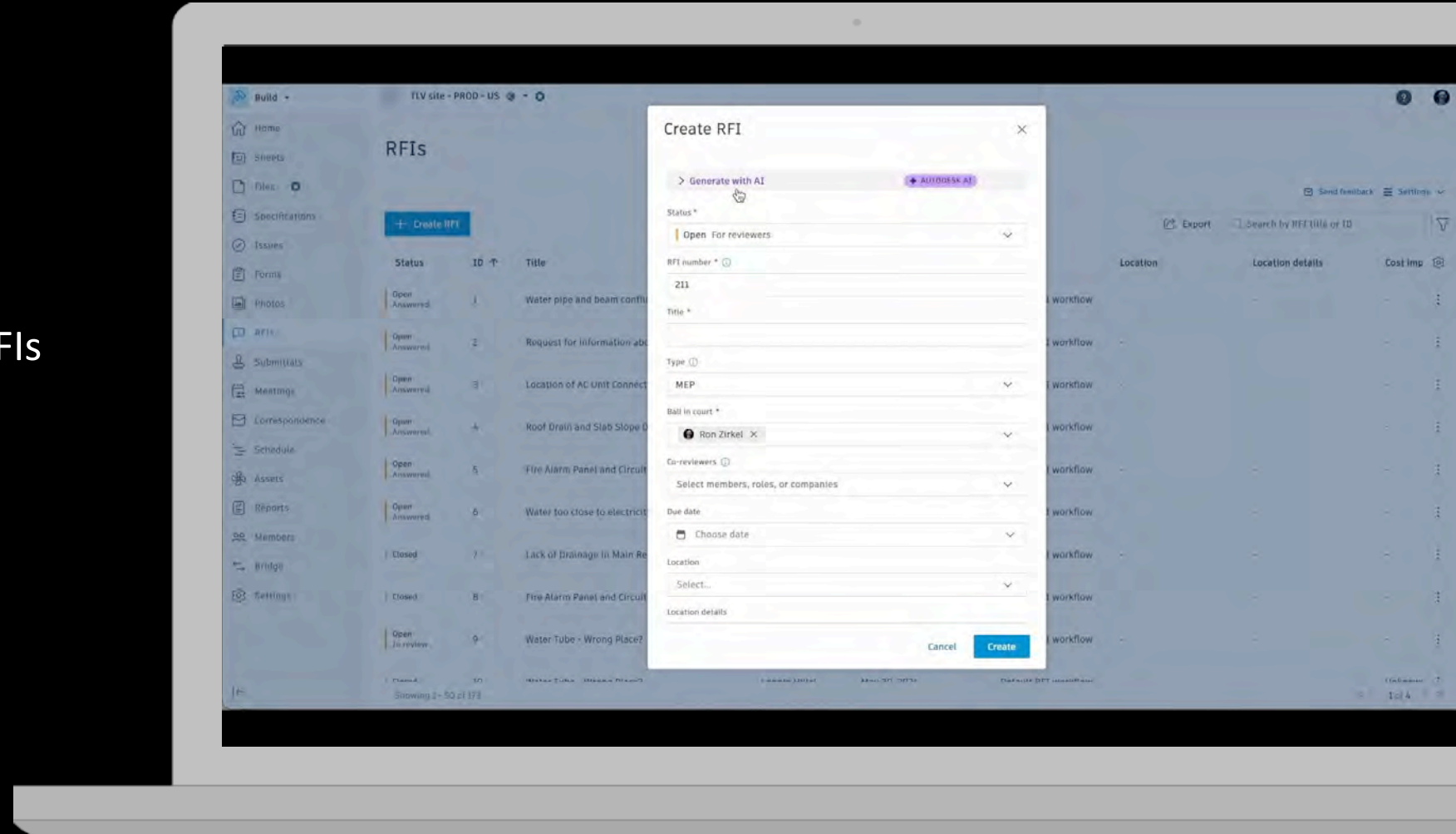
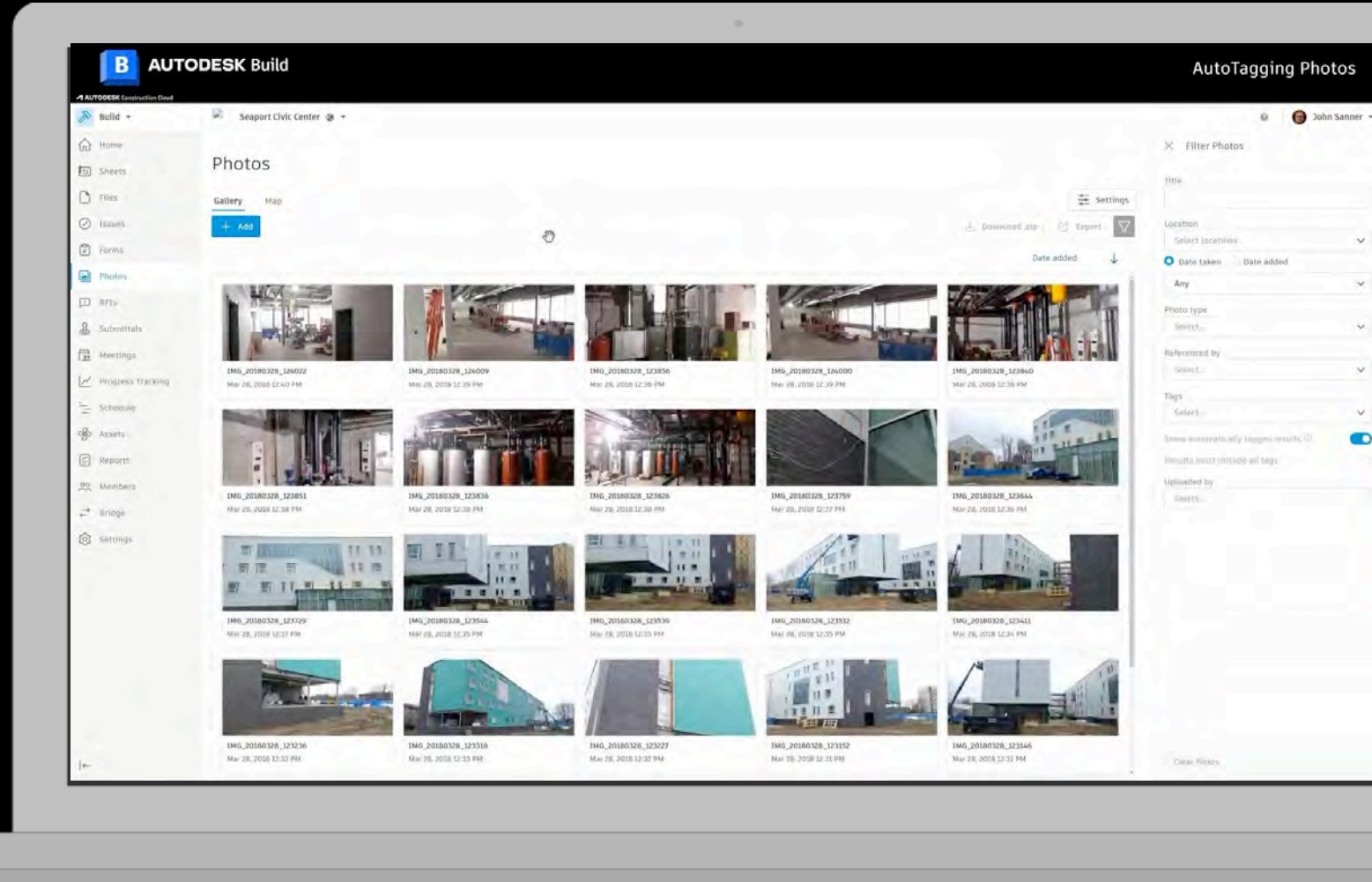


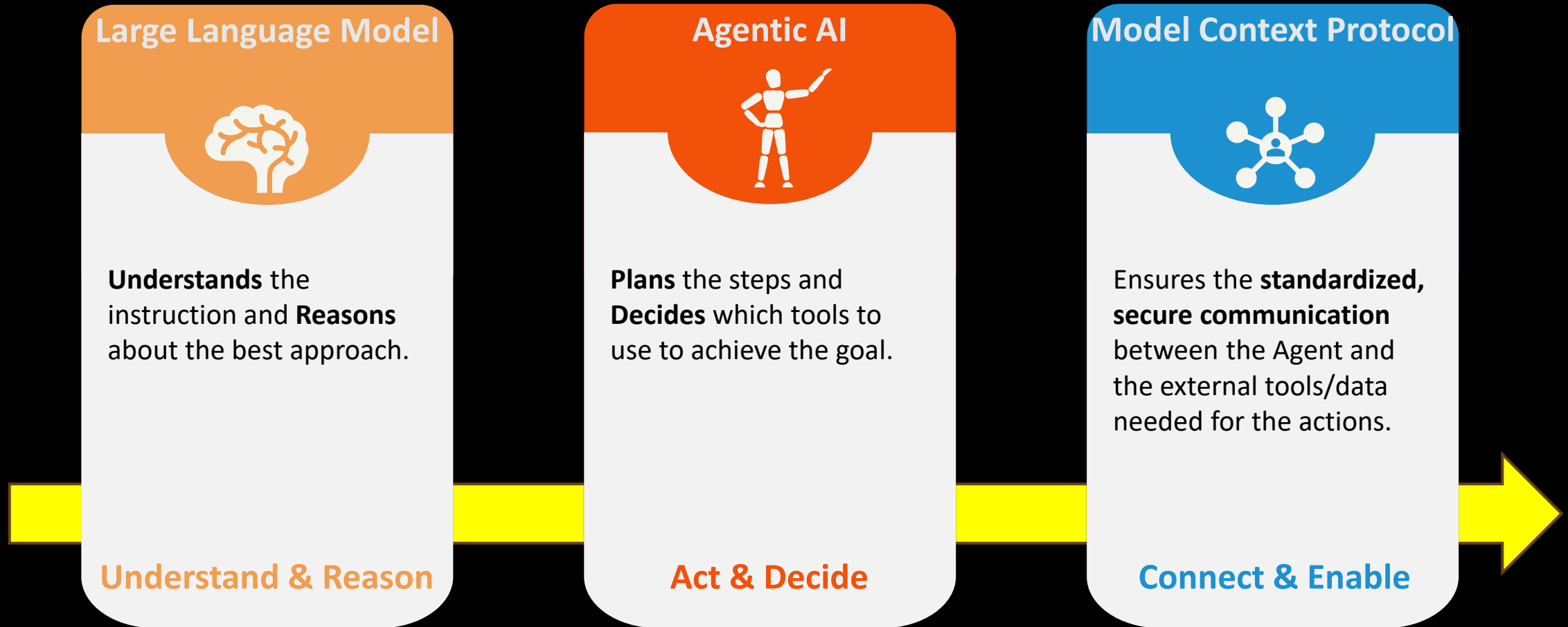
Photo Autotags

- ✓ Automatically tag and organize photos at scale
- ✓ Continuously improves based on your team's usage



MCP as connector of LLM with Agentic AI

From experimental AI chatbots to enterprise-ready, autonomous systems that truly take work off your hands.

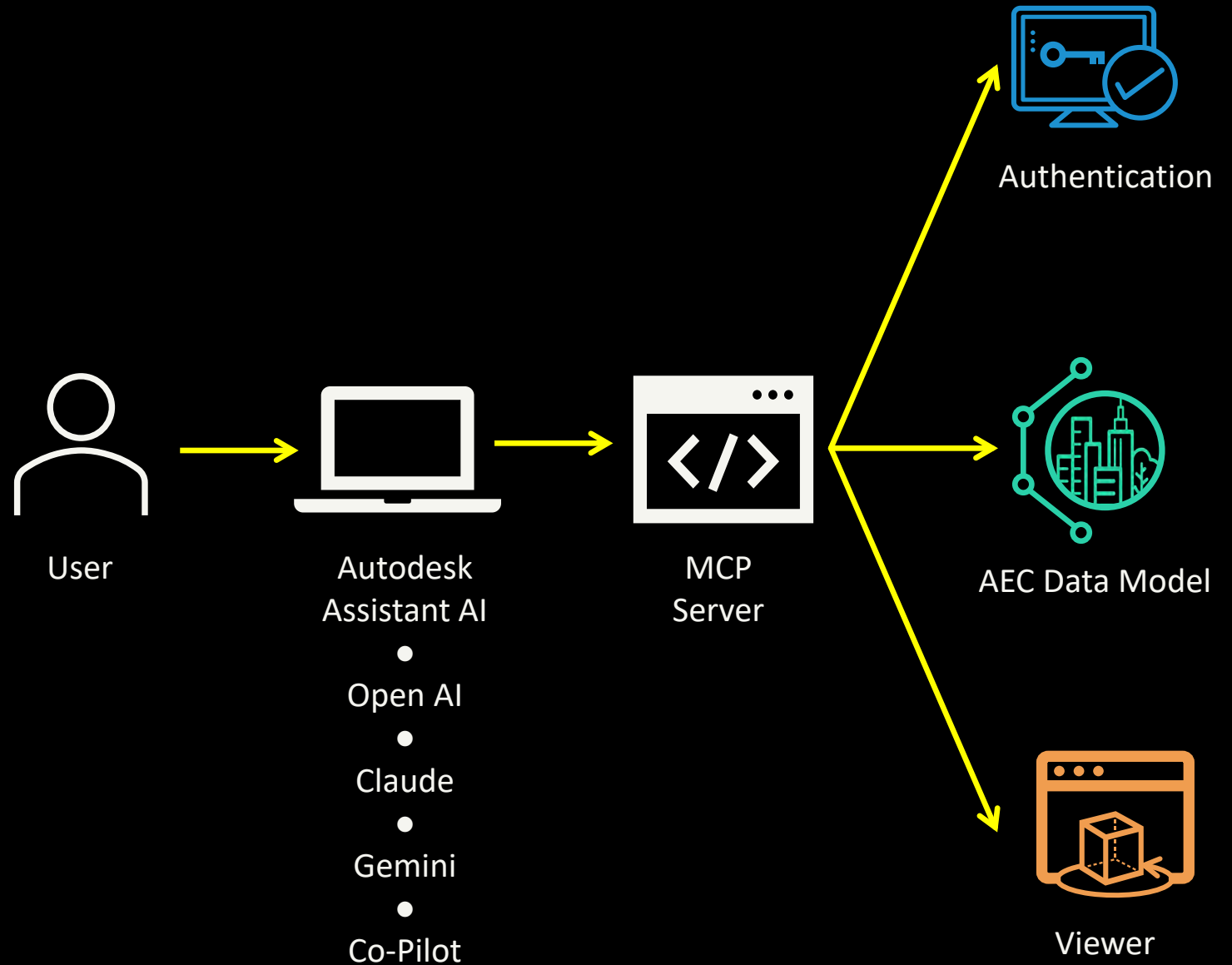


*“Without the LLM, the Agent has no ‘brain.’
Without the MCP, the Agent has no standardized way to interact with the ‘world.’”*

Model Context Protocol (MCP) is a piece of code that **defines** how an AI model (like ChatGPT) can **connect** to external tools and data in a secure, structured way.

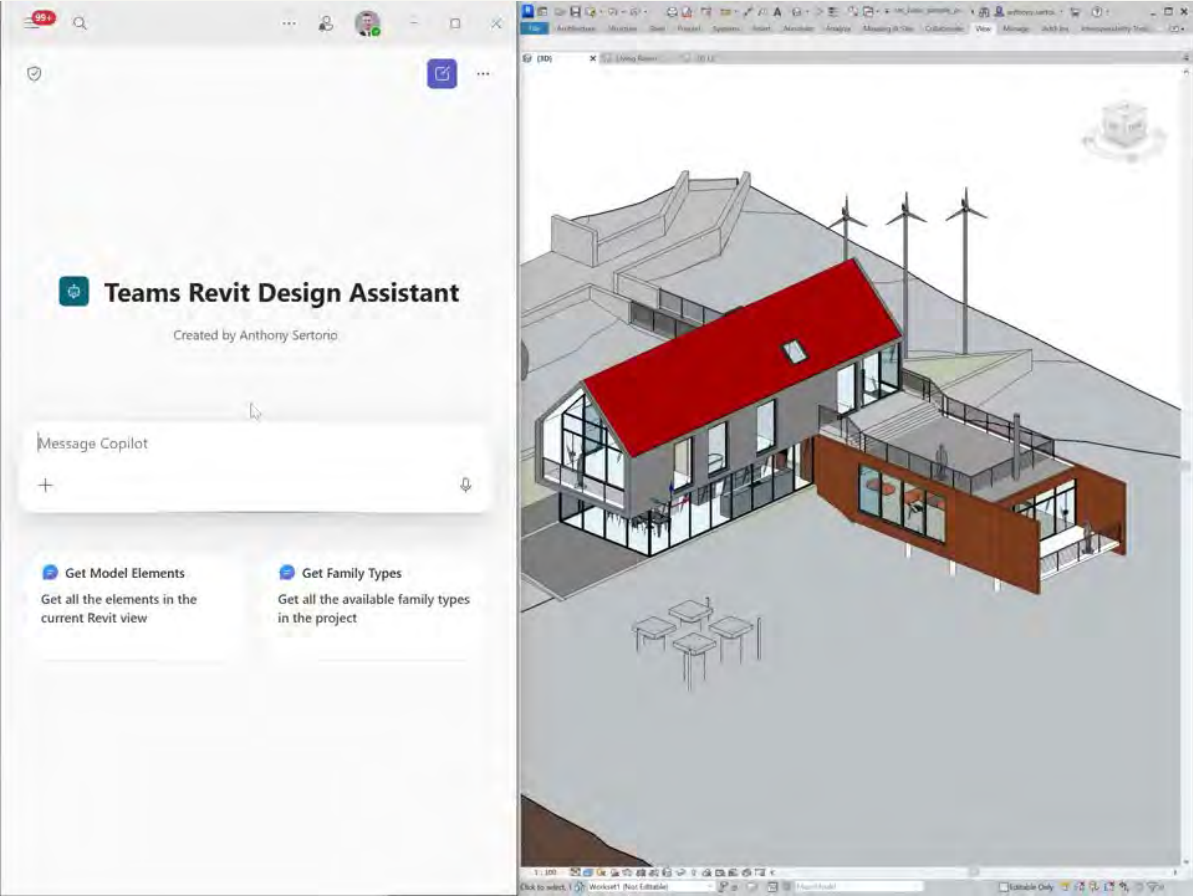
Think of it as a “plug” or “bridge” between an AI and other software systems.

It lets the AI ask for information, run operations, or retrieve context from your own systems — but through a **well-defined, controlled channel**.



MCP Servers and Revit

Automate Tasks in Revit



The image features the text "Thank You" in a large, white, sans-serif font centered on a dark background. The background is decorated with glowing green elements: stylized leaves with a particle trail effect, and several thin, curved lines that resemble light trails or particle paths. The overall aesthetic is modern and elegant.

Thank You



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