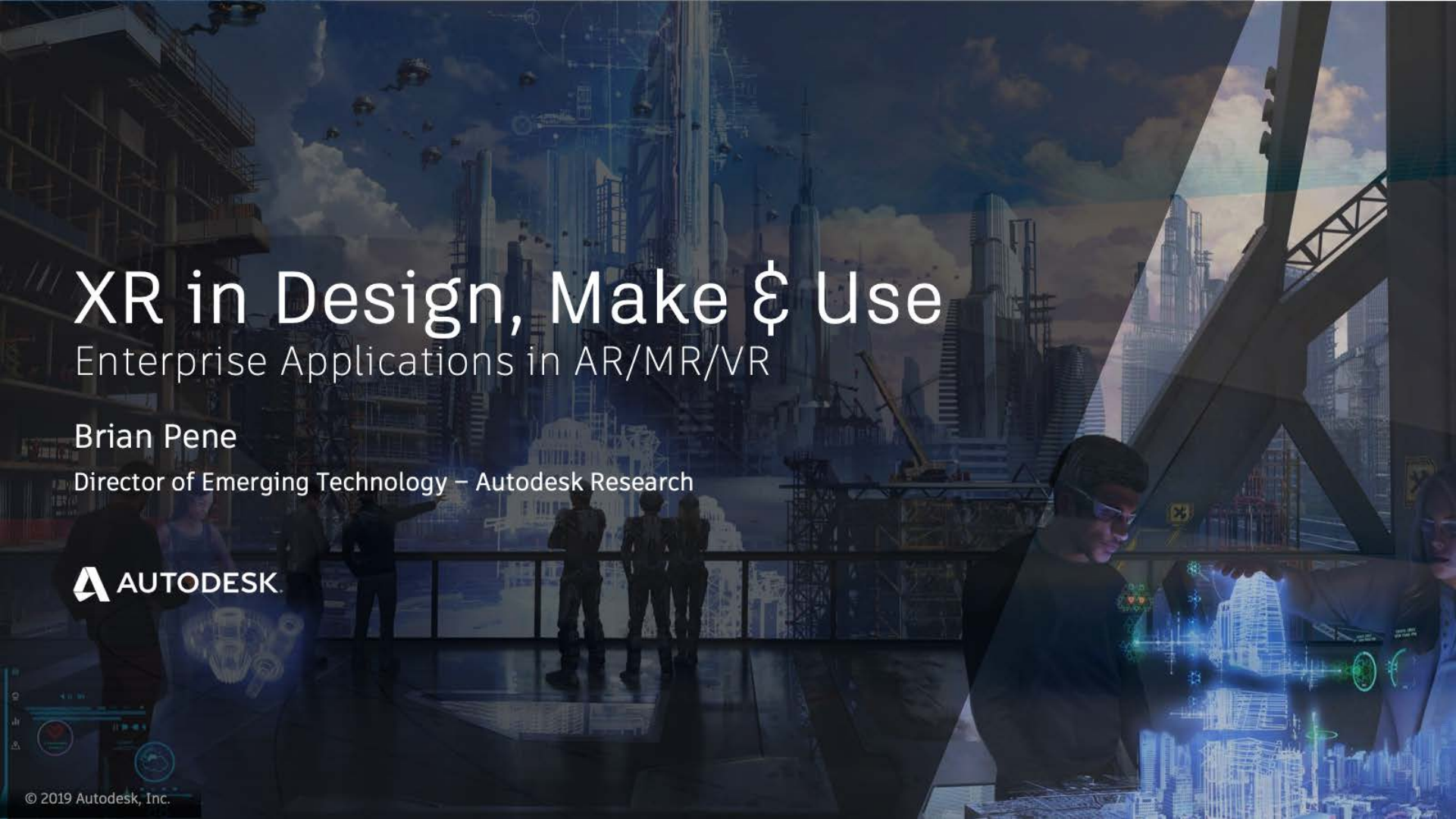

XR in Design, Make & Use

Enterprise Applications in AR/MR/VR

Brian Pene

Director of Emerging Technology – Autodesk Research

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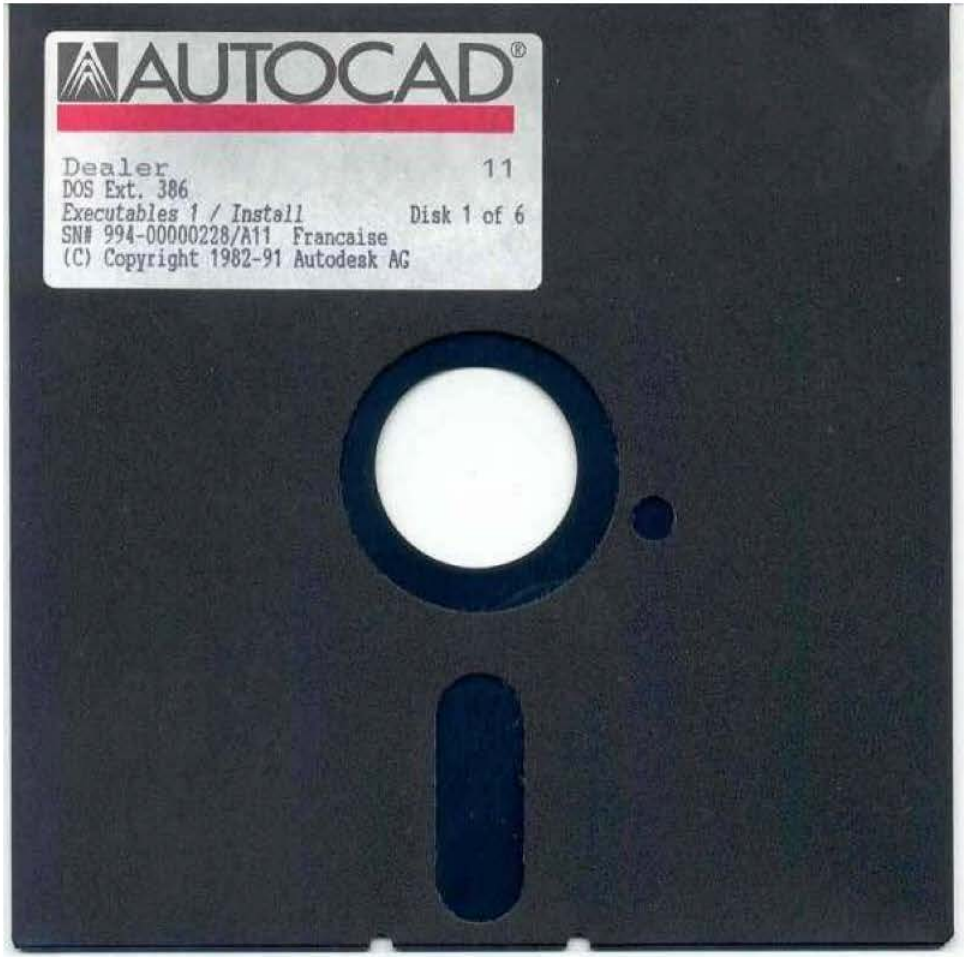
A Brief History
Autodesk + VR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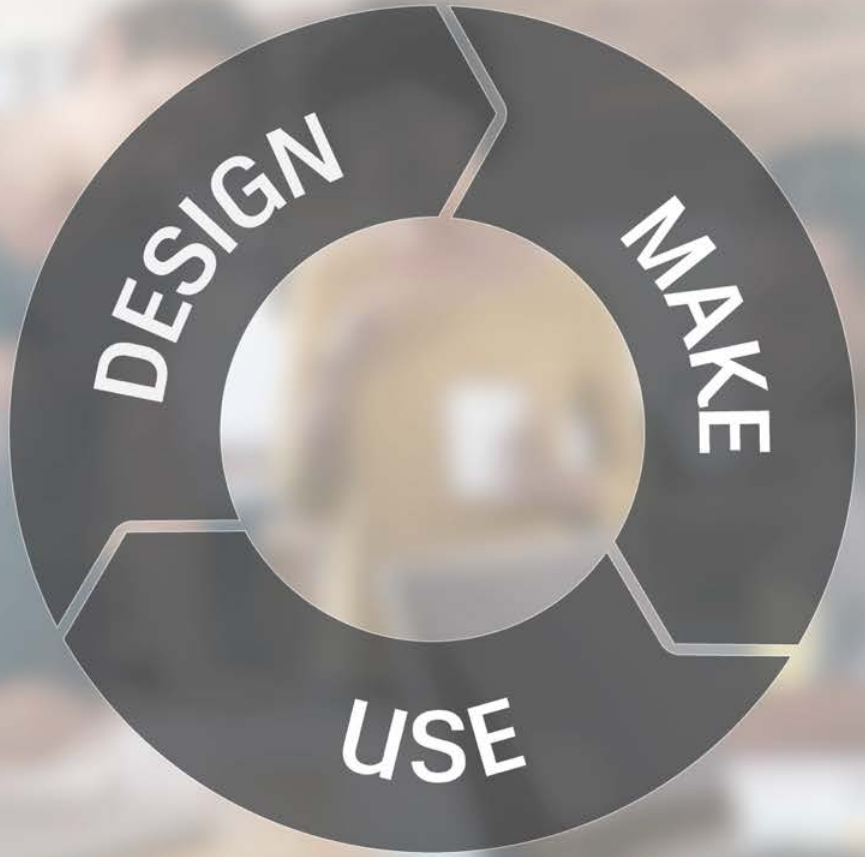
(C) Copyright 1982-91 Autodesk AG

The Future of Making Things



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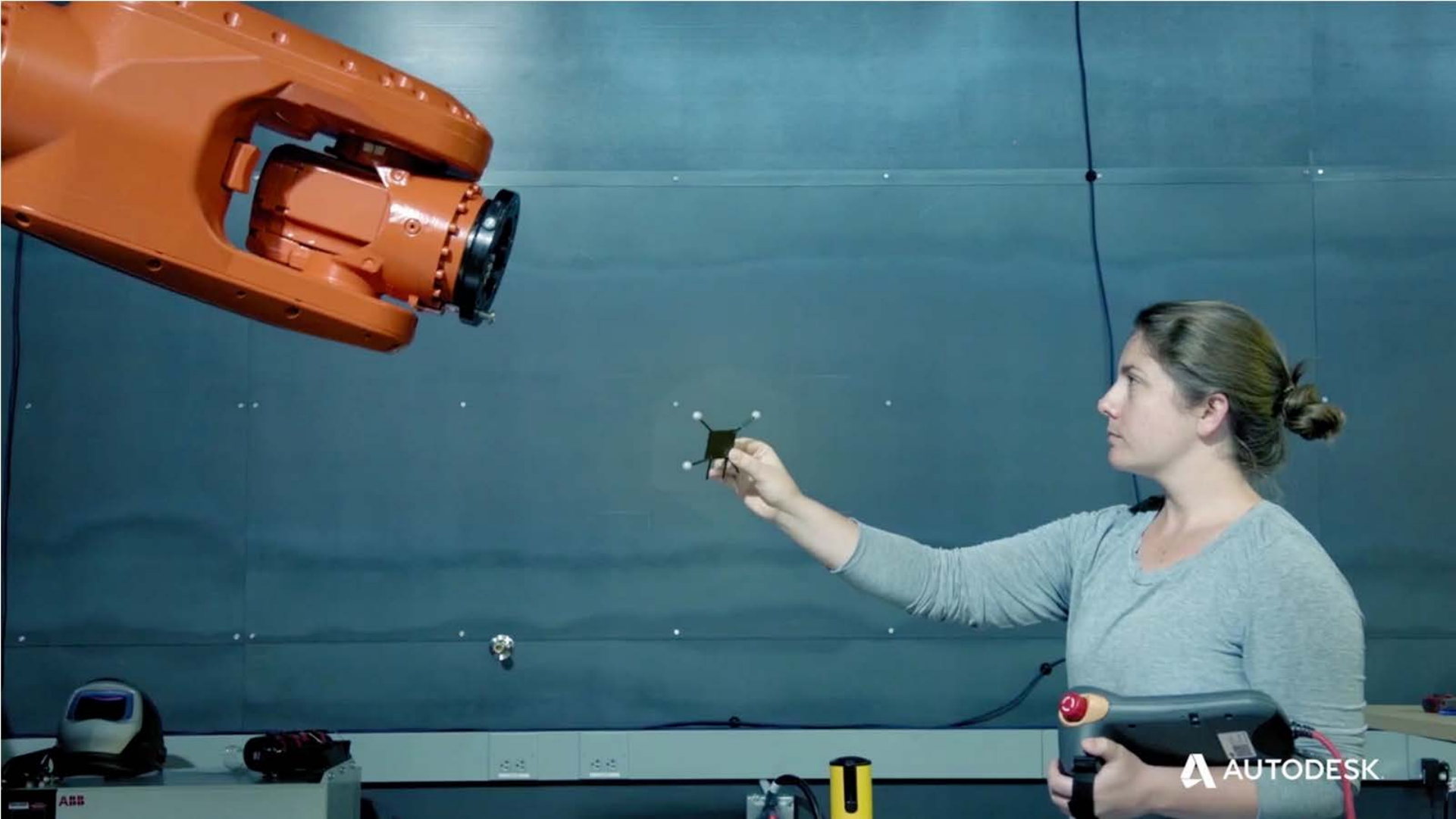
We create stories of the future and help Autodesk make them come true.

·PIER·9·

AUTODESK
BUILD SPACE

AUTODESK

Imagining The Future of Immersive + AI Experiences



ABB
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Enabling workflows for:

DESIGN	MAKE	USE
VR	VR	AR/MR

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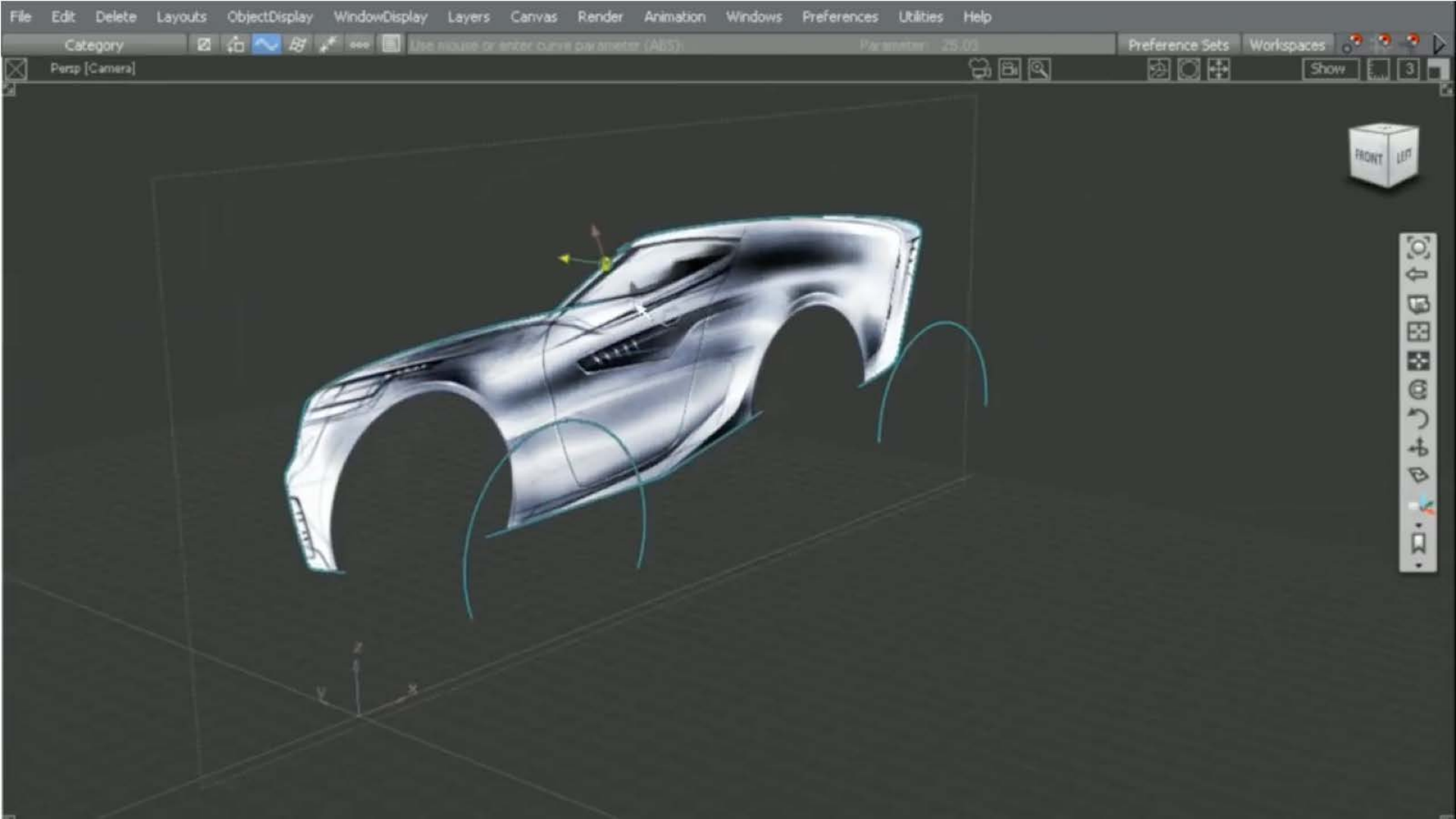
XR IN
DESIGN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Delete
Layouts
ObjectDisplay
WindowDisplay
Layers
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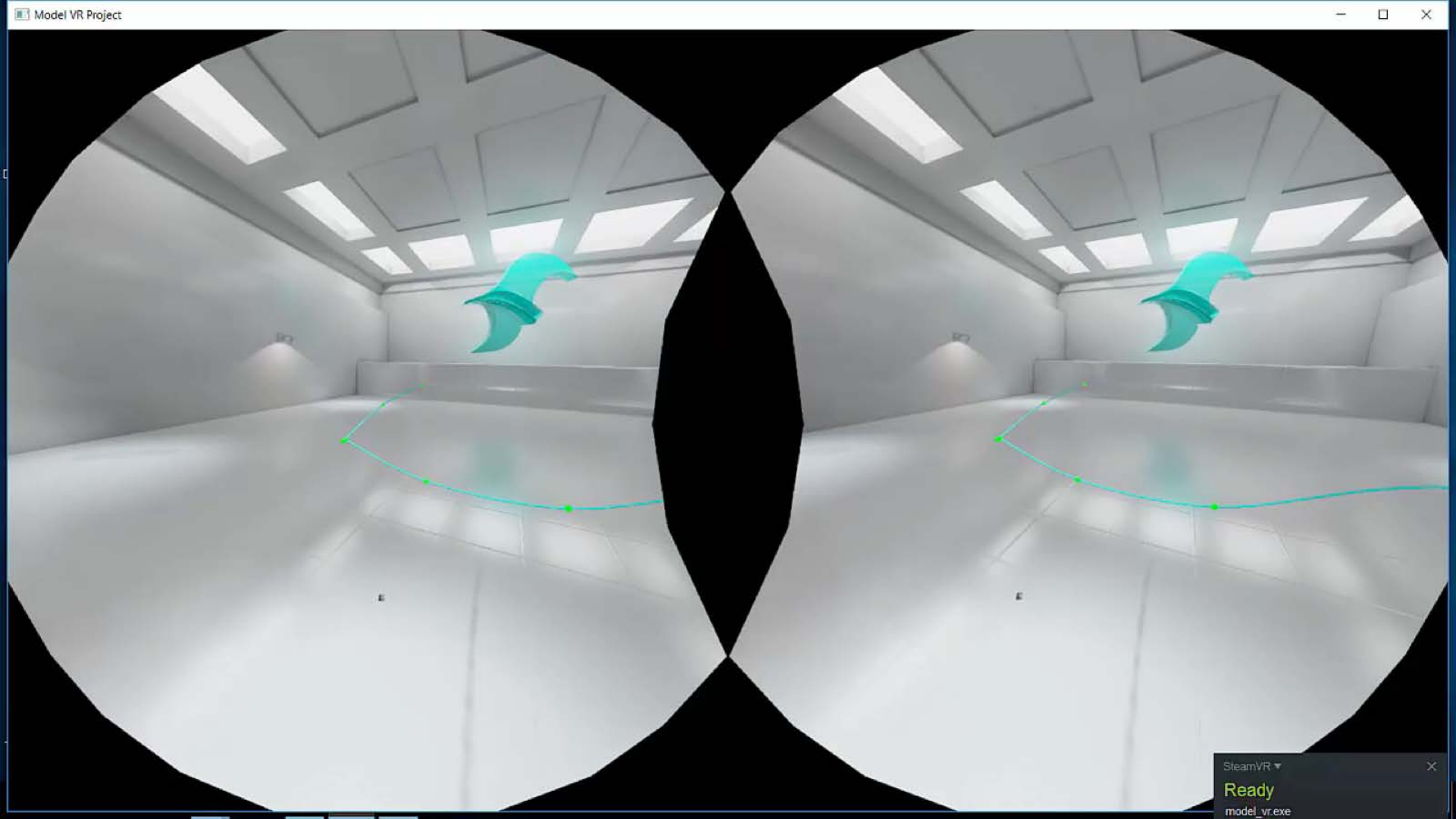
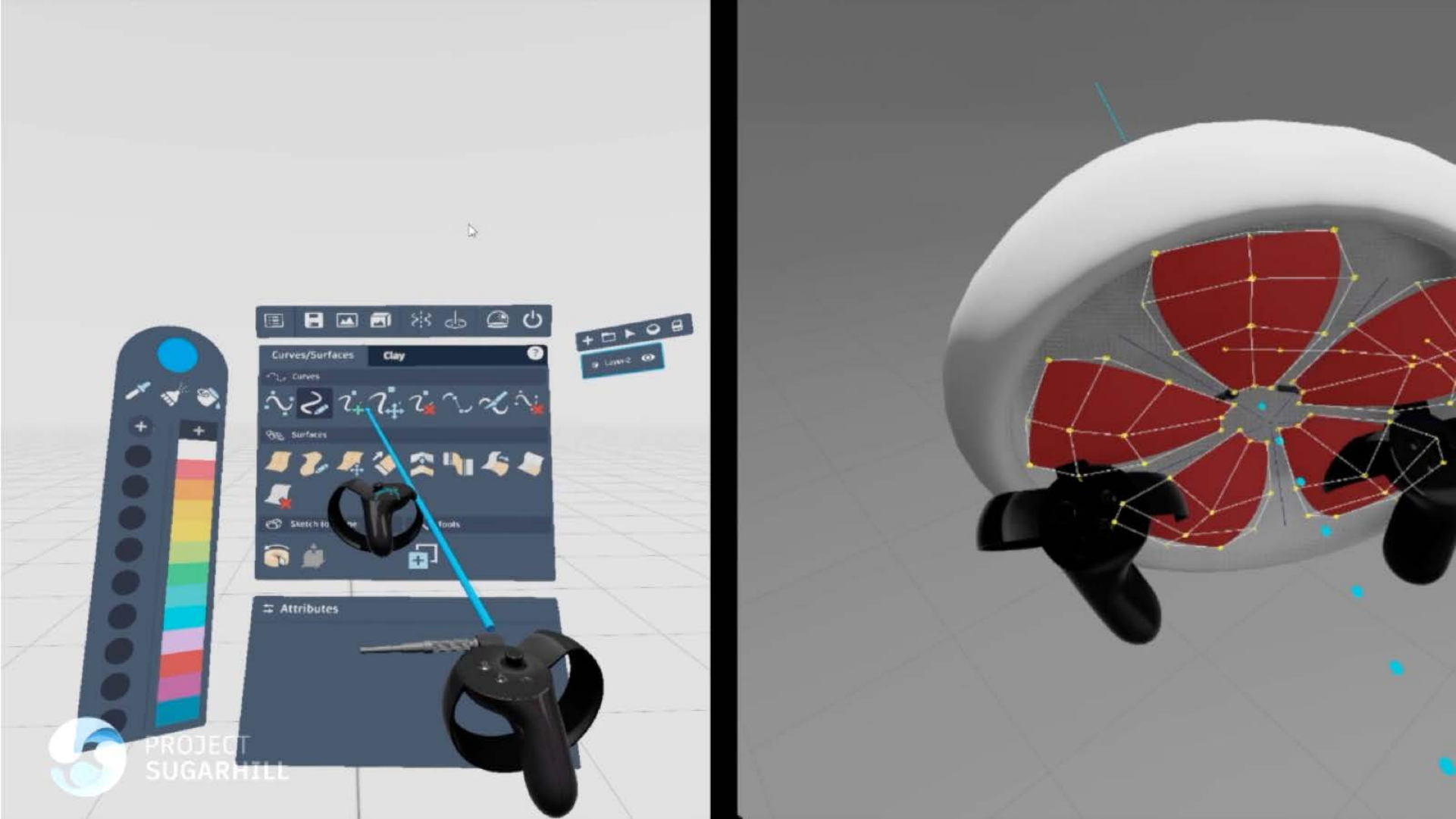
Render
Animation
Windows
Preferences
Utilities
Help
Category
Preference Sets
Workspaces
Persp [Camera]
Show
FRONT
LEFT


Model VR Project
SteamVR
Ready
model_vr.exe


Curves/Surfaces
Clay
Curves
Surfaces
Attributes
PROJECT
SUGARHILL

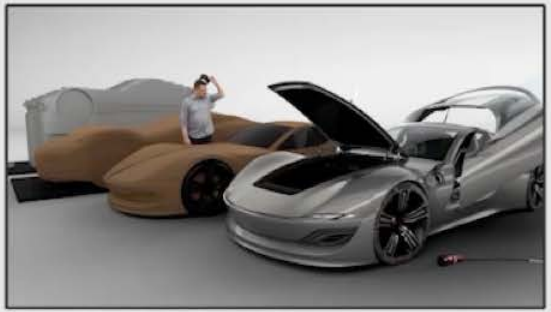
Collaborative
Design Review

AUTODESK VRED
Home
Variant Sets
Viewpoints
Hand Poses Only
Teleport Ground
Share Pointer

SKETCH

RAPID PROTOTYPE

SHAPE



IMMERSIVE FORMFINDING

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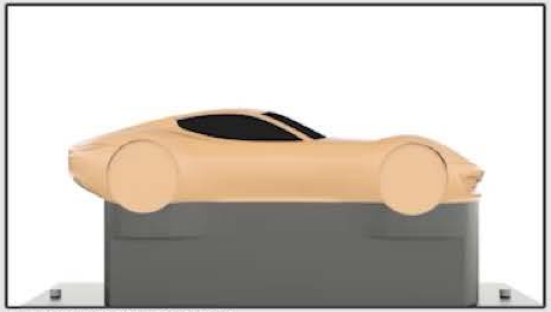
Make anything.

IMMERSIVE REVIEW

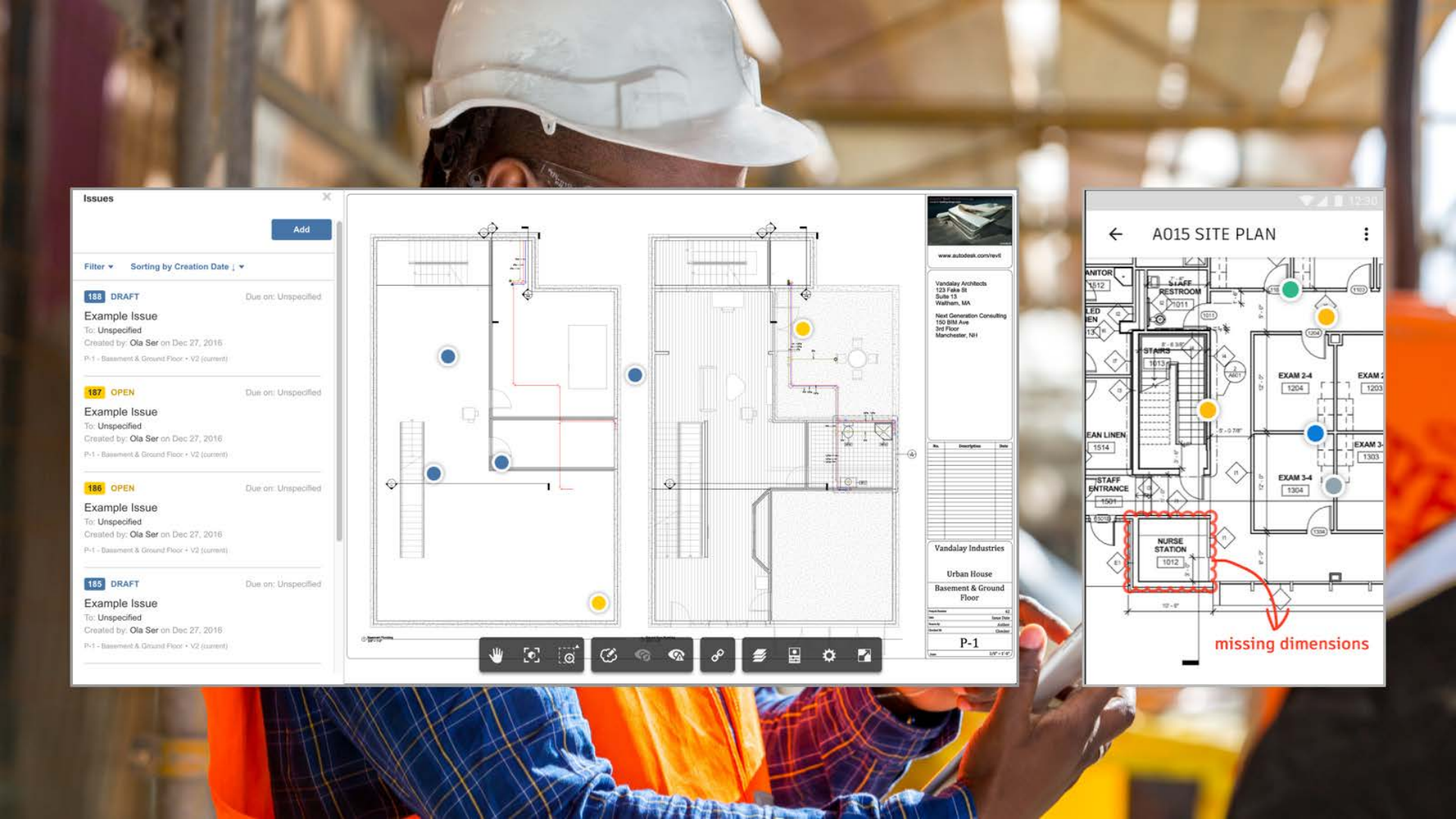


INTERACTIVE DESIGN

USER EXPERIENCE

DESIGN REVIEW

XR IN
MAKE


Issues
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Filter
Sorting by Creation Date
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Due on: Unspecified
Example Issue
To: Unspecified
Created by: Ola Ser on Dec 27, 2016
P-1 - Basement & Ground Floor • V2 (current)
187 OPEN
Due on: Unspecified
Example Issue
To: Unspecified
Created by: Ola Ser on Dec 27, 2016
P-1 - Basement & Ground Floor • V2 (current)
186 OPEN
Due on: Unspecified
Example Issue
To: Unspecified
Created by: Ola Ser on Dec 27, 2016
P-1 - Basement & Ground Floor • V2 (current)
185 DRAFT
Due on: Unspecified
Example Issue
To: Unspecified
Created by: Ola Ser on Dec 27, 2016
P-1 - Basement & Ground Floor • V2 (current)
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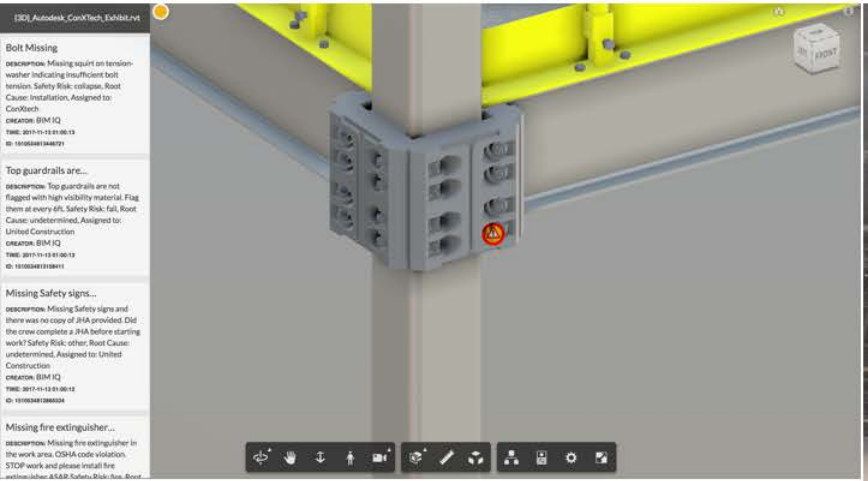
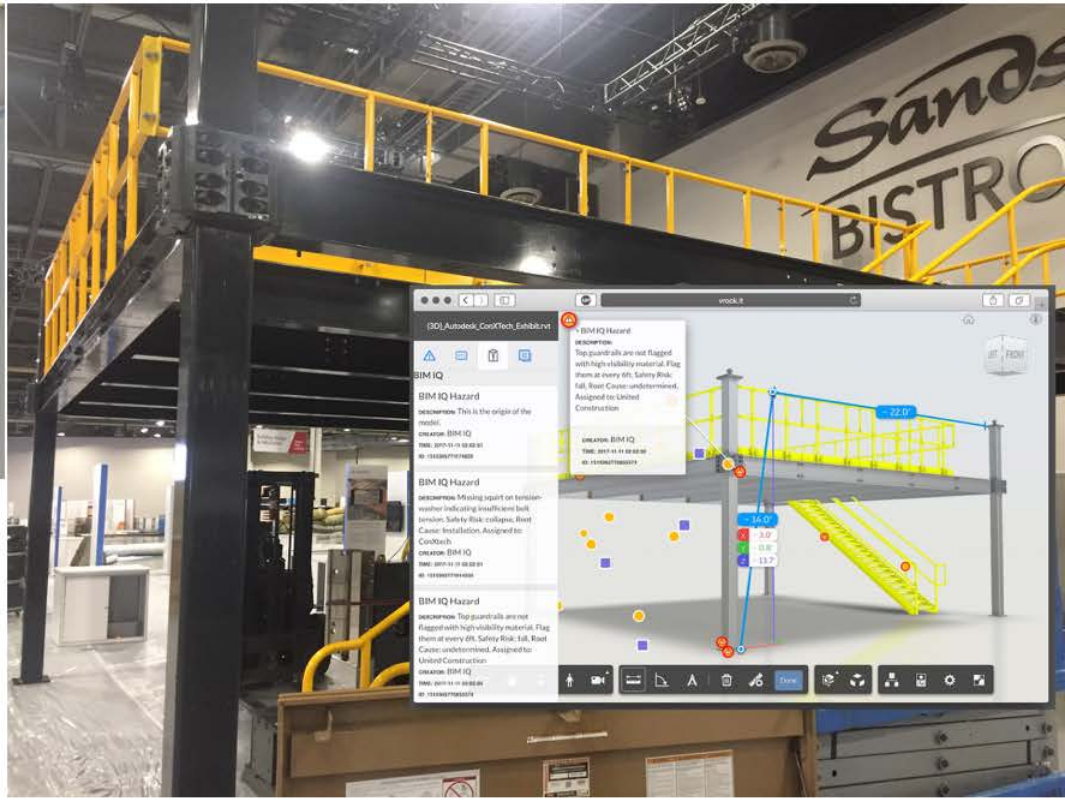
Vandalay Architects
123 Fake St
Suite 13
Waltham, MA
Next Generation Consulting
150 BIM Ave
3rd Floor
Manchester, NH
Vandalay Industries
Urban House
Basement & Ground Floor
P-1
A015 SITE PLAN
STAFF RESTROOM
STAIRS
EXAM 2-4
EXAM 3-4
STAFF ENTRANCE
NURSE STATION
missing dimensions

Rethinking the Jobsite with XR





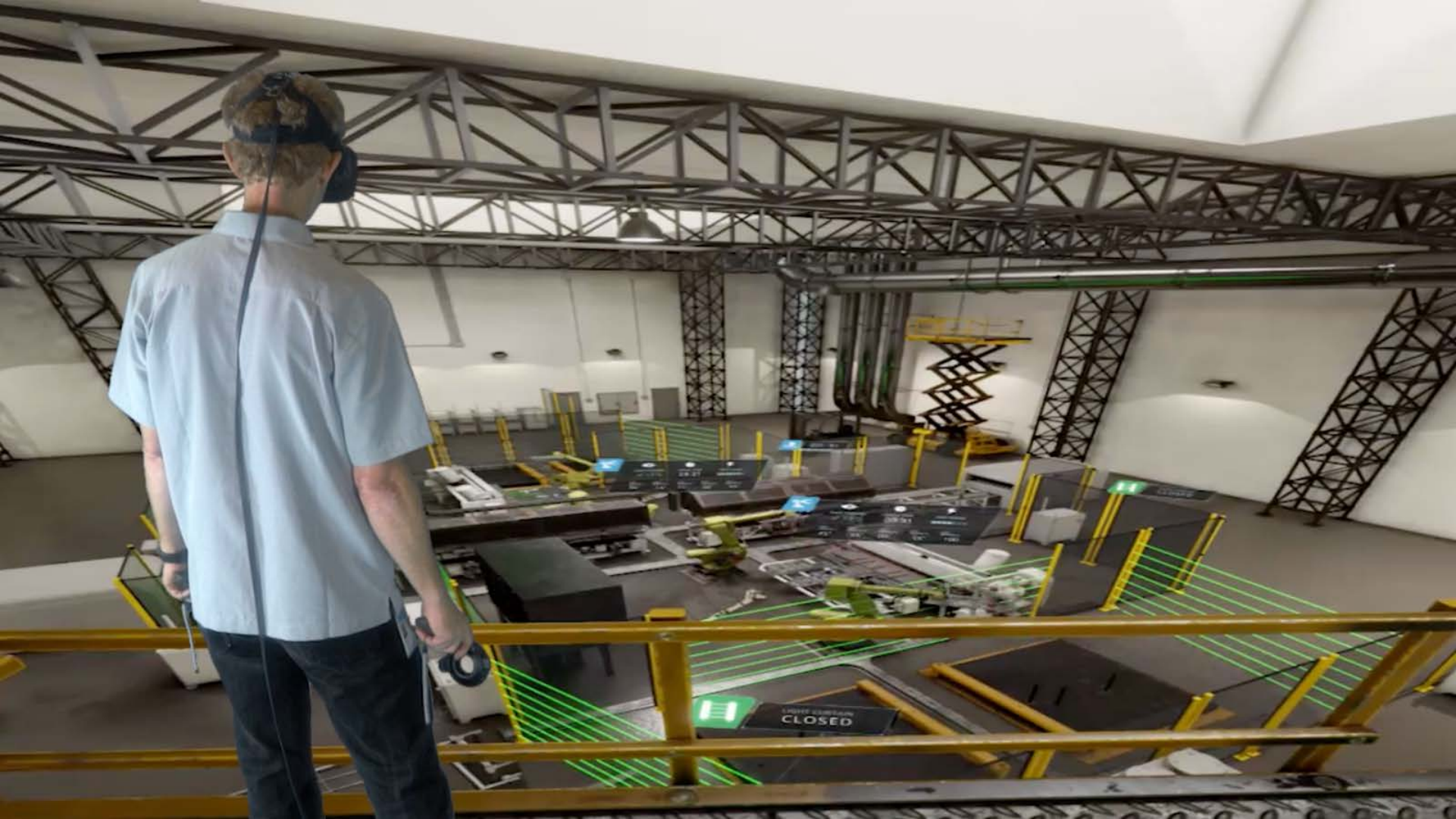
Enables workers to **access current BIM data in a spatial context**, serving up information when and where it's needed and **optimizing functions such as layout, planning, quality control, and safety concerns**.

Top guardrails are…
Bolt Missing
Mold
Rust
SETTINGS
CALIBRATE
ABOUT
CREATE ISSUE
CREATE RFI
Show BIM IQ
Show Model
Show 3rd Flr

Source: VisualLive

Source: Shaper Tools, Inc.

FANUC Robot R-2000iB
NO STEP
NO STEP
BX-060-04


CLOSED

PART PRESENT
YES
CYCLE TIME
08:21
AMP DRAW
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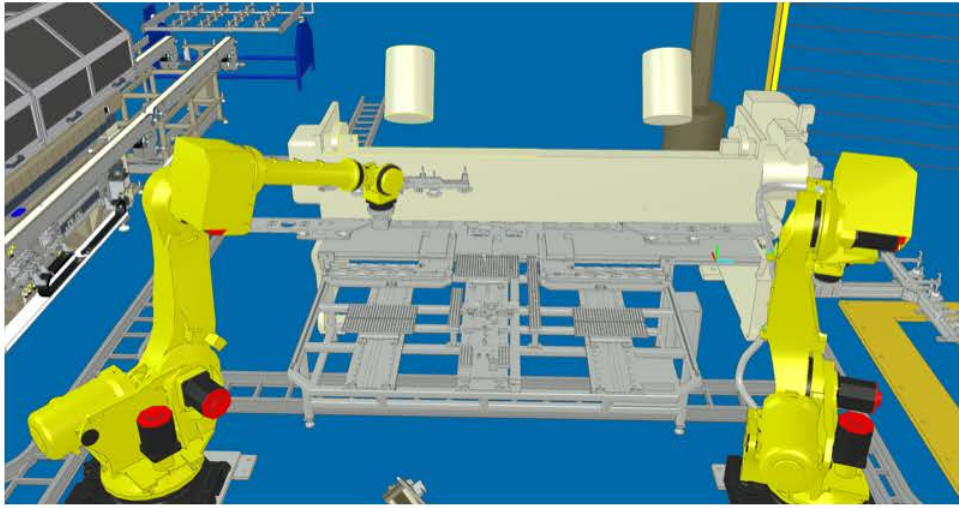
Digital Twin Factory

Factory Floor

Digital Twin



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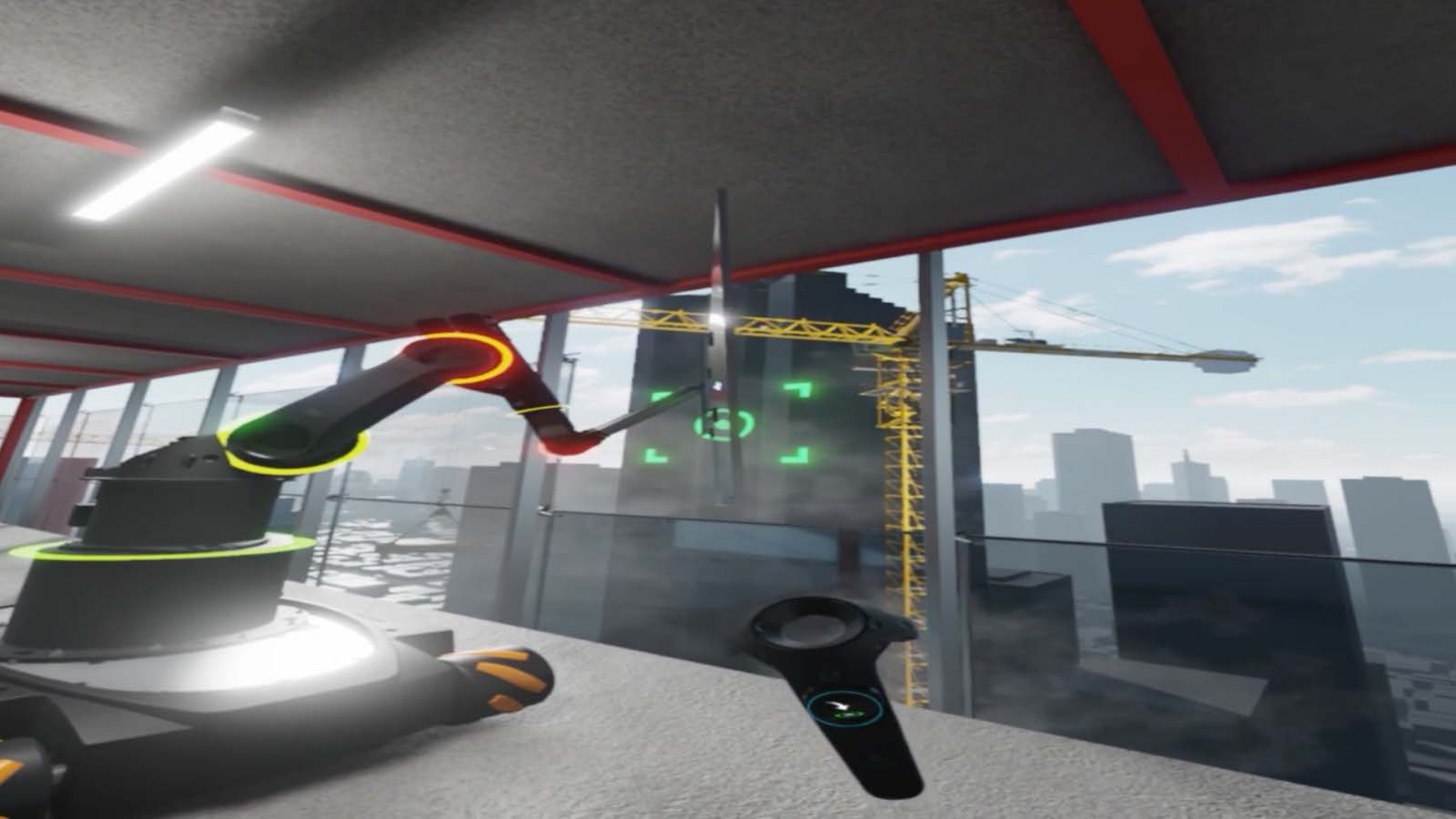
KUKA



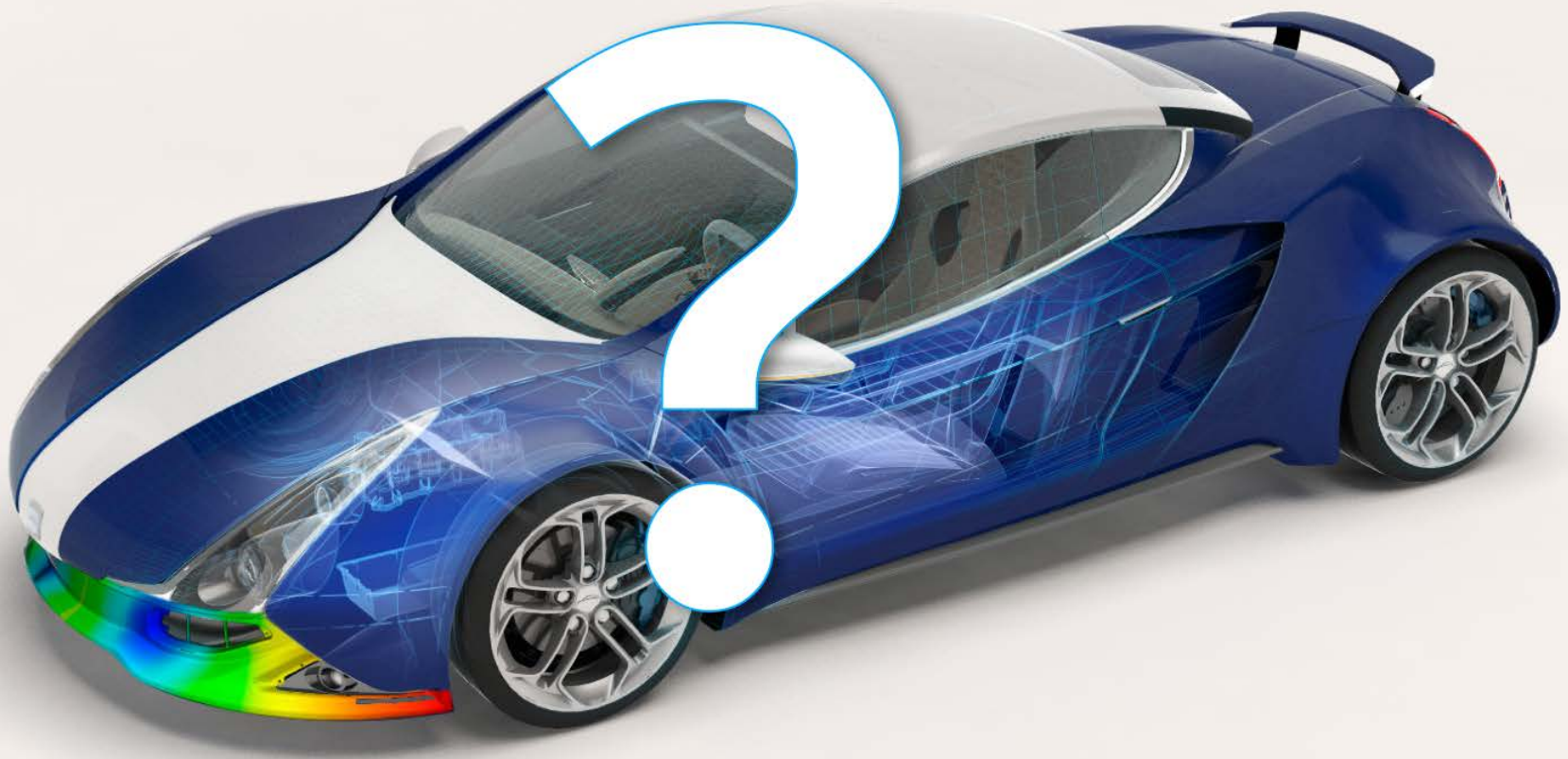
CHALLENGES

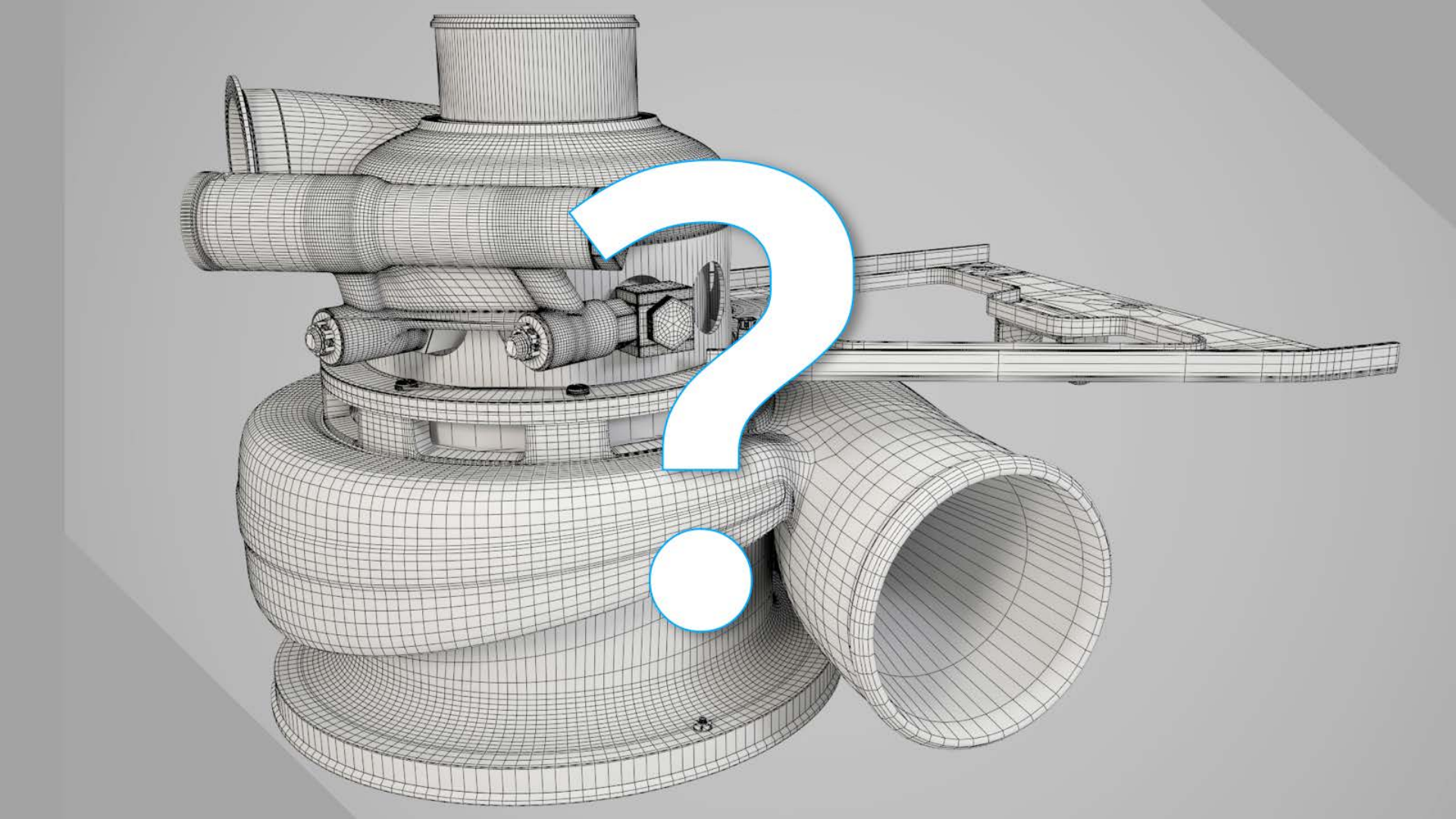
Creating Immersive Experiences

COST

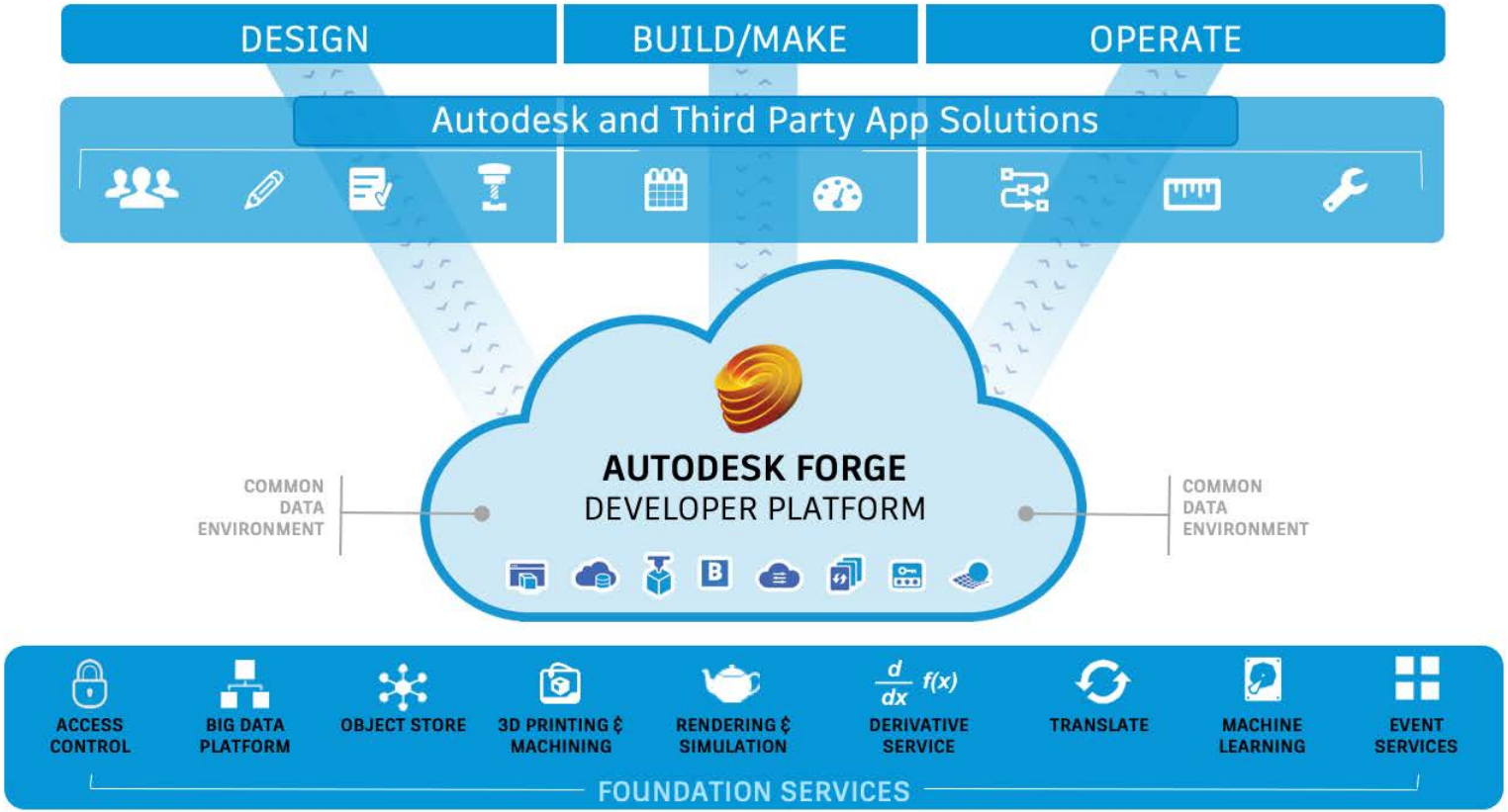
TIME

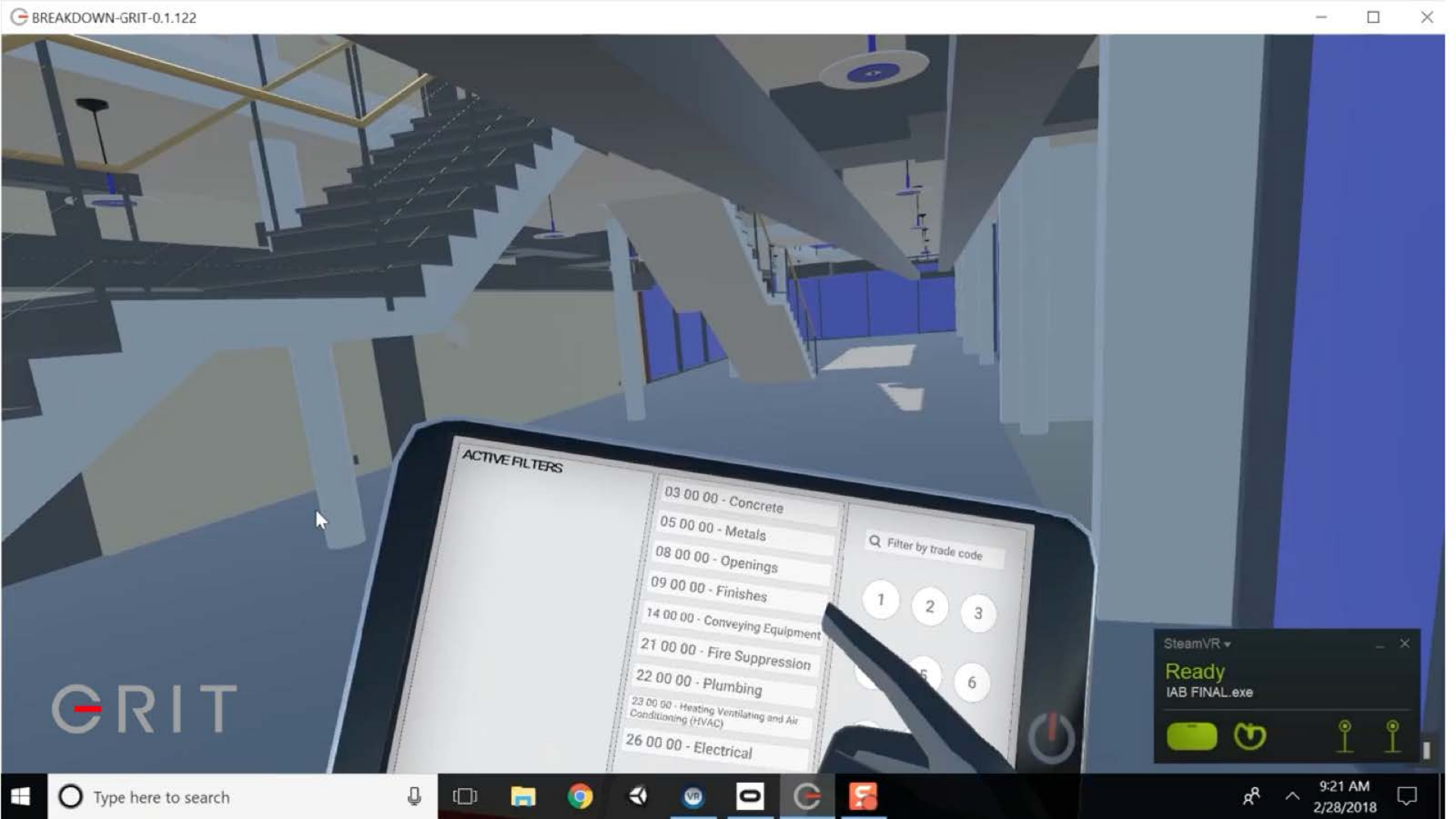
EXPERTISE





FORGE AR/VR Toolkit – http://forgetoolkit.com




BREAKDOWN-GRIT-0.1.122
ACTIVE FILTERS
03 00 00 - Concrete
05 00 00 - Metals
08 00 00 - Openings
09 00 00 - Finishes
14 00 00 - Conveying Equipment
21 00 00 - Fire Suppression
22 00 00 - Plumbing
23 00 00 - Heating Ventilating and Air Conditioning (HVAC)
26 00 00 - Electrical
Filter by trade code
1
2
3
6
GRIT
SteamVR
Ready
IAB FINAL.exe
Type here to search
9:21 AM
2/28/2018

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Make anything™

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