

Culture Shift : Technology Implementation at an “Old School” Construction Company

Chad Holbrook

Virtual Design & Construction Manager

W.E. O’Neil Construction

Stephen Bessette

Subject Matter Expert | Construction

Autodesk, Inc.





About the speaker

Chad Holbrook

As the Manager of the Virtual Design & Construction department for W.E. O'Neil, Chad brings his extensive experience to implementing technology solutions and leading 3D coordination efforts. Chad has been in the construction industry for his entire career, working for multiple construction companies throughout the country.



About the speaker

Stephen Bessette

As the Construction Subject Matter Expert, he provides technical sales assistance for the Autodesk AEC portfolio. Bessette has over 20 years of experience within the design and construction industry from fire protection design, land surveying, to construction management and estimating.

Key Takeaways

BUSINESS

Discover the benefits and value that revolutionizing current workflows enable to your overall business

PROCESS

Learn how to differentiate yourself from the competition with better capabilities using connected processes. See how connected teams provide better results and enable better.....

VALUE

Learn how to create value for your team through amplifying workflows via collaborative technology. Enable better retention by advancing the “old school” way of working.

Before We Start...

INDUSTRY STUBBORNNESS

- Construction is inherently resistant to change.
- AEC is resistant to change.
- Change can be slow.

OUR STORY AND LESSONS-LEARNED

- What have we done to be better?
- How you can learn from our story.

YOU AREN'T ALONE

- Many companies experience the same hurdles.
- Develop networks, groups and friendships.

Persistence Is Key
Don't Give Up

Facts & Numbers

W·E·O'NEIL

94

YEARS

Of success due to our people and our commitment to quality, integrity and responsiveness to our clients' needs.

80%

REPEAT CLIENTS

Due to the great value in the relationships our people develop with our clients.

66

ENR 100

Ranked #66 on the ENR top 100. Making W.E. O'Neil the 4th largest contractor in Chicago

5

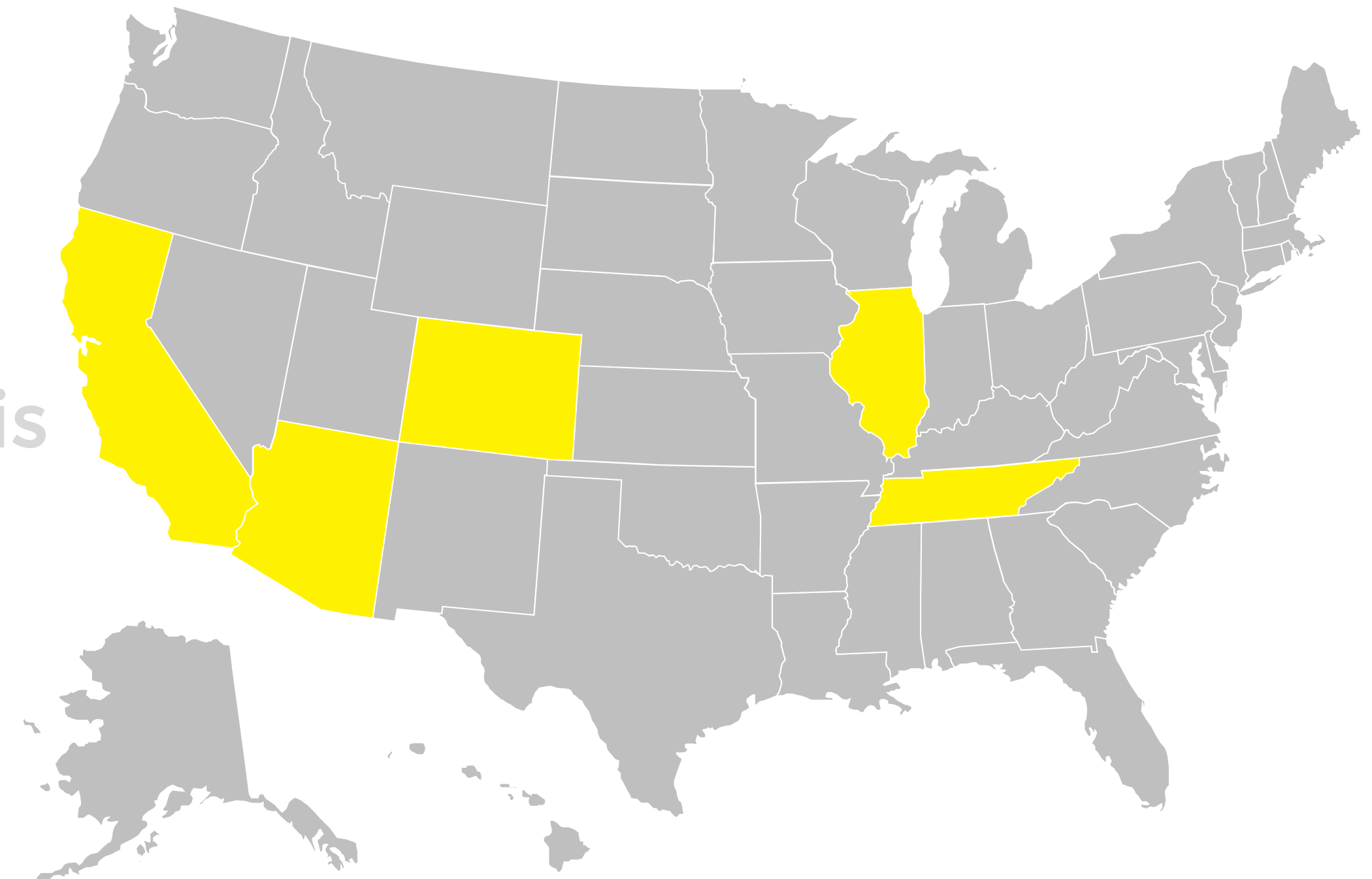
STATES

Careful and strategic expansion from a single-office to a national general contractor with a wide footprint.

W.E. O'Neil's Footprint

1925 – Single Office – Chicago, Illinois

Today – 8 Offices in 5 States



TIMELINE

“BUILDING A TECHNOLOGY-ENABLED WORKFORCE”

“Low-Hanging Fruits”

“Sustain Momentum”

2017

- 3D/MEP Coordination
- 360° Photography (PlanGrid)
- Laser Scanning
- 3D Modeling
- Assemble Purchased
- Revit Workflow Implemented
- HTC Vive Purchased

2019

- Estimators Using Assemble/Revit/BIM360
- Microsoft HoloLens Purchase
- Augmented Reality Implementation (AR)
- More Virtual Reality Use (VR)
- Training & Support

“Current Reality”

- No In-House VDC Expertise
- Utilizing Consultant As Needed
- PlanGrid
- 2 FARO Scanners

2018

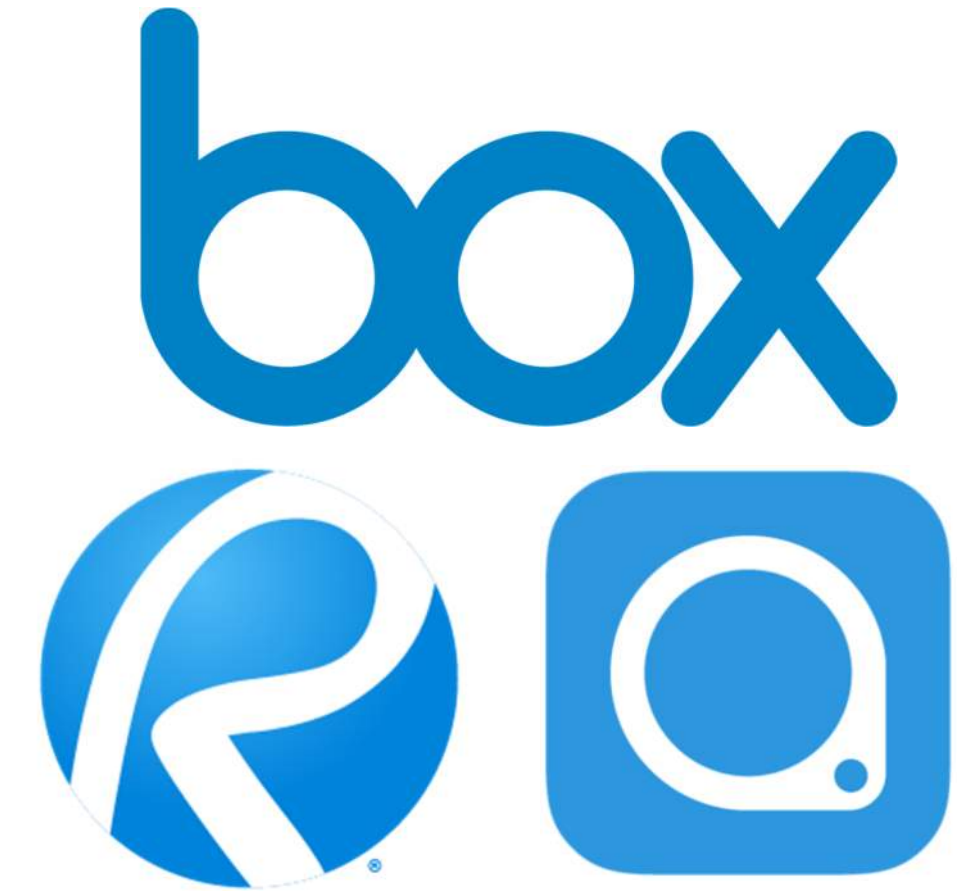
“Breakthrough”

- Started Concrete Modeling
- Started 3D Estimating
- BIM360 Purchased
- Autodesk Ecosystem Developed
- 360° Photography Solution
- Drone Purchased

2020...

2017 – Current Reality

- No in-house VDC team (Chicago)
 - Consultant was used for VDC purposes
 - 1 VDC Engineer in CA
- PlanGrid heavily used
- 2 FARO scanners
- Coordination put on Mechanical trades



2017

2018

2019

2020...

“Current Reality”

“Low-Hanging Fruits”

“Breakthrough”

“Sustain Momentum”

2018 – Low-Hanging Fruits

- In-house VDC team grows
 - 3 team members in Chicago
 - 2 team members in CA
 - 1 team member in AZ
- WEO leads ALL coordination
- 2 FARO scanners
 - Pre/post concrete pour scans
 - Heat/contour maps
 - As-built conditions
- Introduced 360° cameras
 - 360° photos documented using PlanGrid
 - Purchased Assemble
 - Implemented a Revit workflow for coordination views
 - Purchased an HTC Vive VR headset
 - Dabbled in 3D estimating



2017

2018

2019

2020...

“Current Reality”

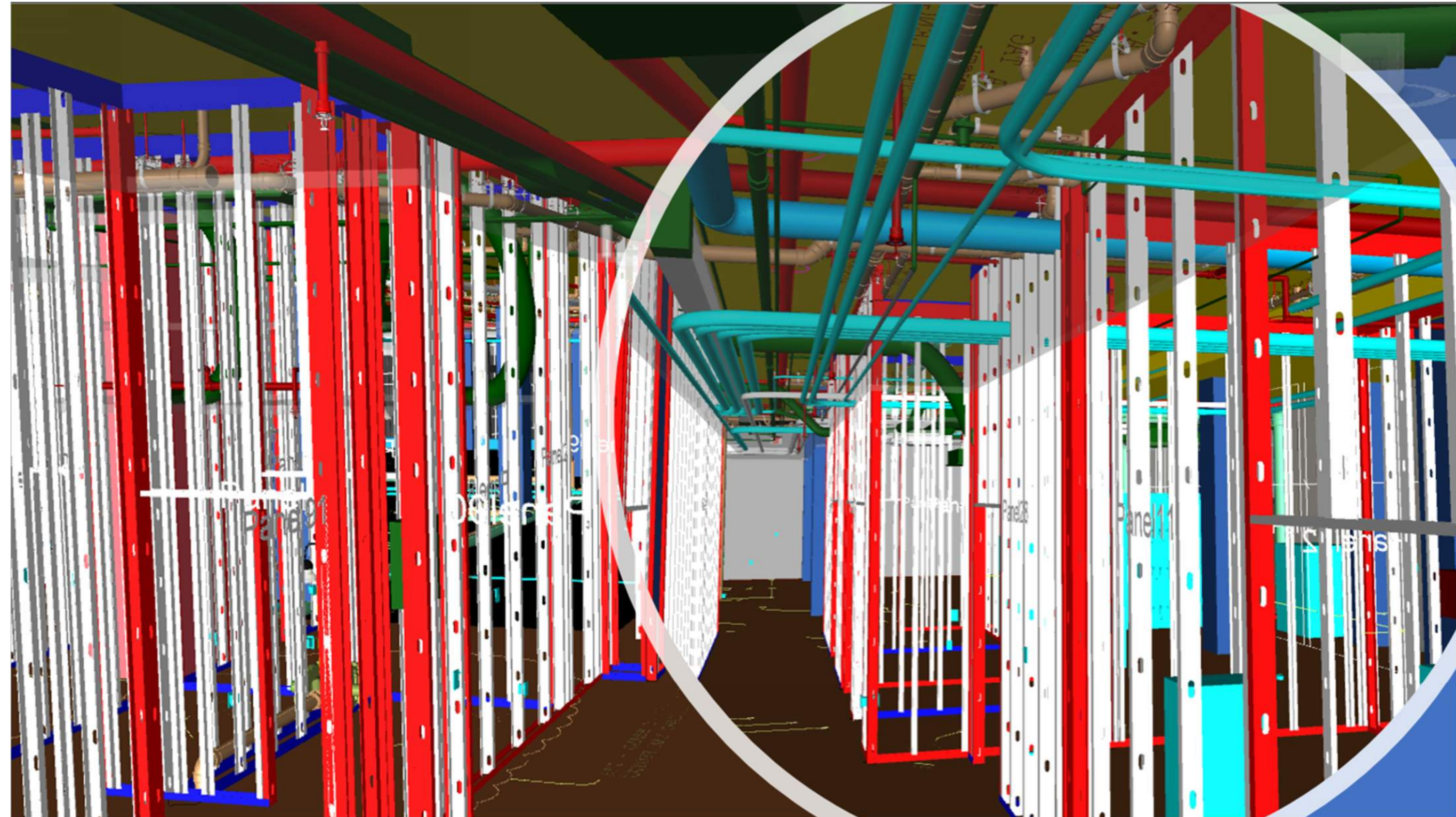
“Low-Hanging Fruits”

“Breakthrough”

“Sustain Momentum”

2018 – Low-Hanging Fruits

- WEO leads/manages ALL coordination
- More trades involved in coordination



2017

2018

2019

2020...

“Current Reality”

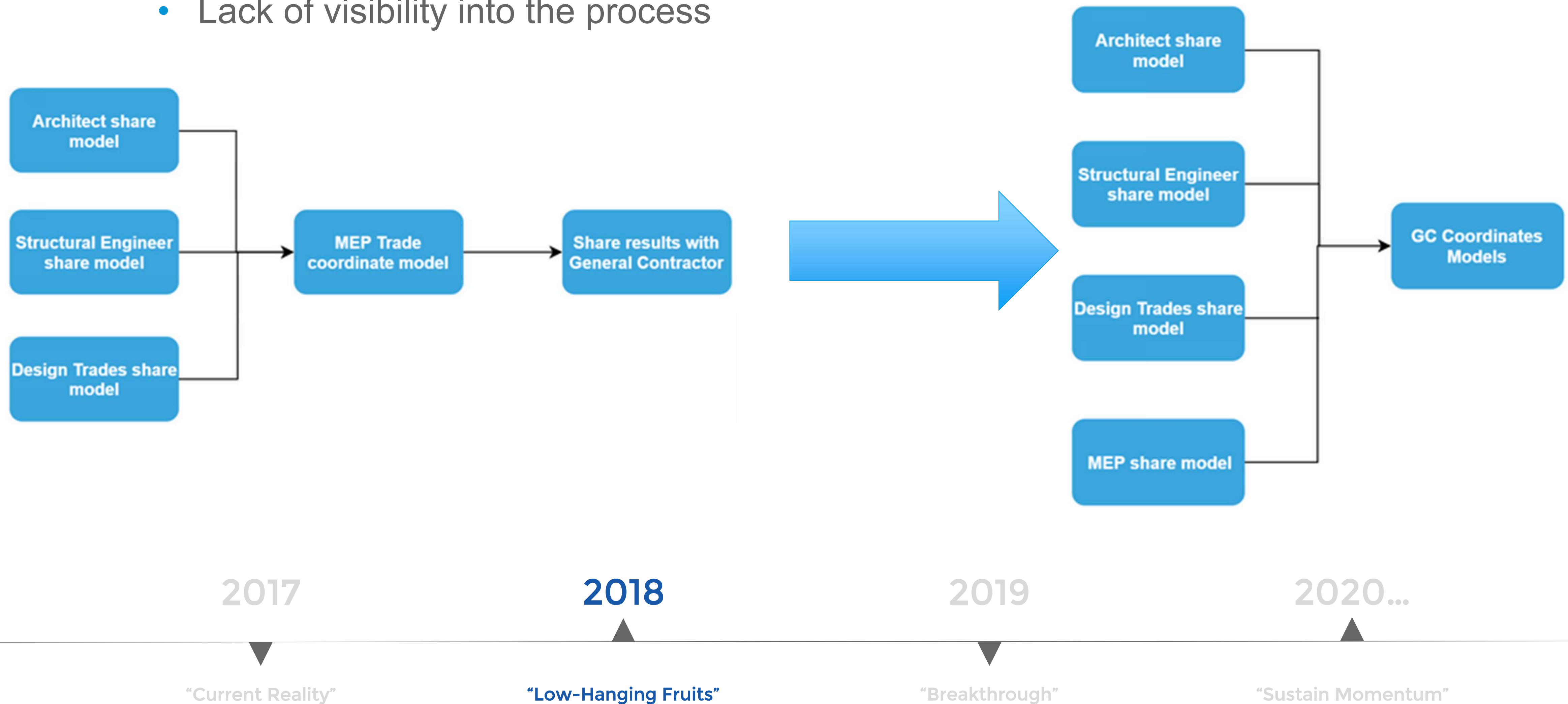
“Low-Hanging Fruits”

“Breakthrough”

“Sustain Momentum”

2018 – Coordination

- MEP Owned Coordination
 - Lack of visibility into the process



2018 – Coordination



- GC Owned Coordination
 - Better insight into design | coordination issues
 - Enabled more trades to become involved in the entire process
- **RESULTING IN BETTER DESIGNS AND LESS ISSUES IN FIELD**

2017

2018

2019

2020...

“Current Reality”

“Low-Hanging Fruits”

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2018 – Low-Hanging Fruits

- As-built documentation
- Supplemental modeling



2017

2018

2019

2020...

“Current Reality”

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2018 – As-Builts

- Utilizing technology to increase “as-is” conditions
- Accuracy increases coordination and decreases issues on project site



2017

2018

2019

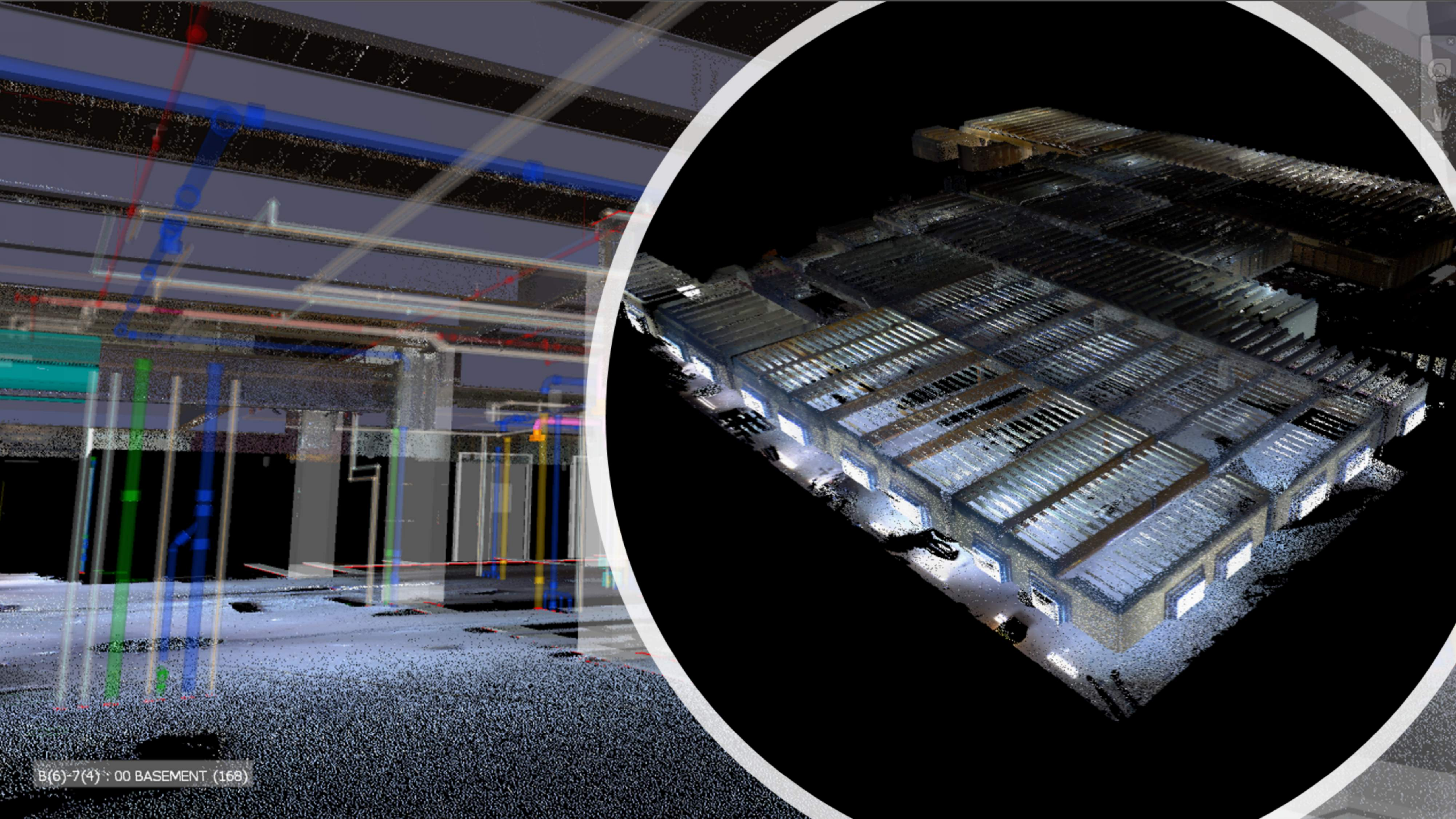
2020...

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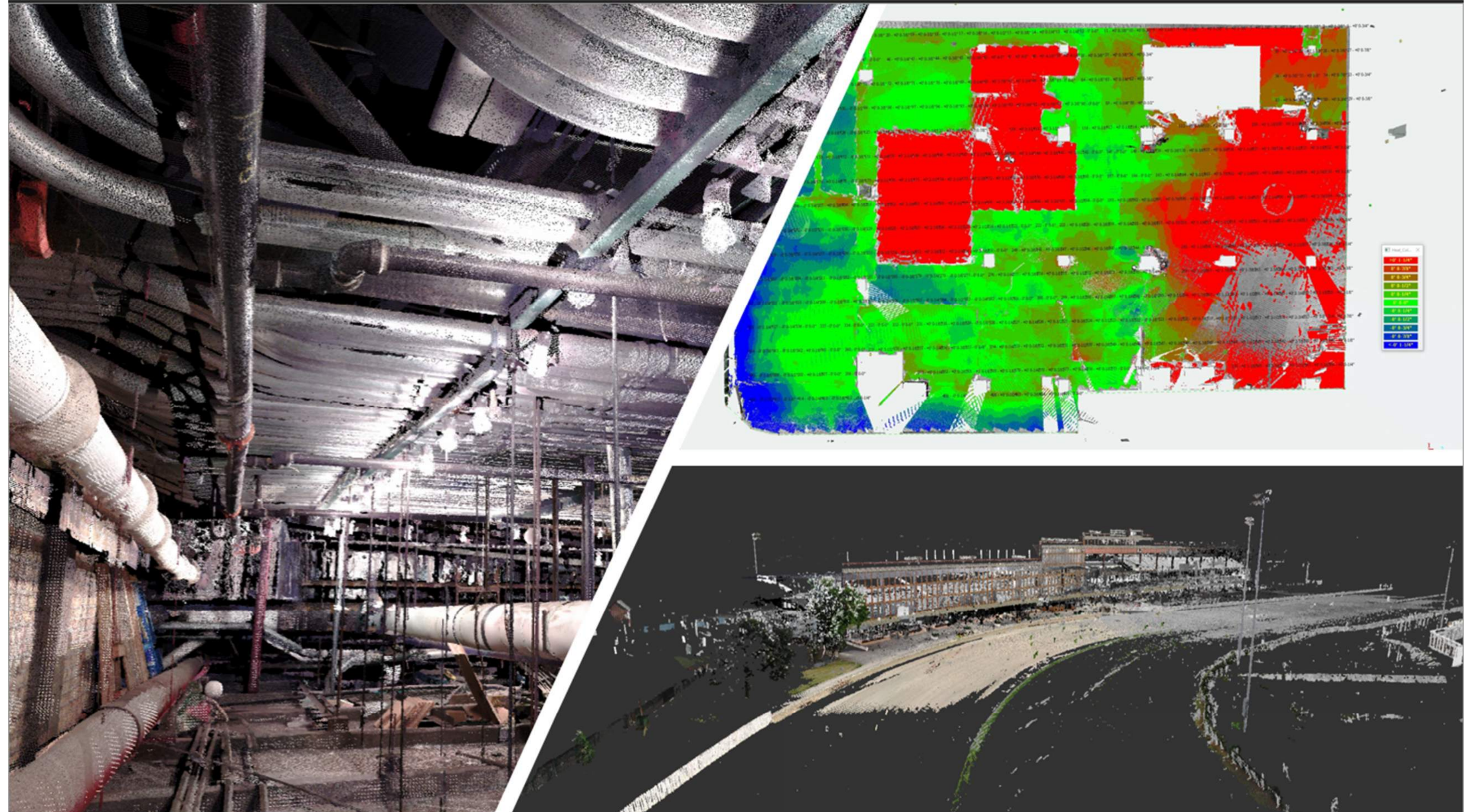


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2018 – Supplemental Modeling

- Pre-planning
- Floor flatness
- Documentation



2017

2018

2019

2020...

“Current Reality”

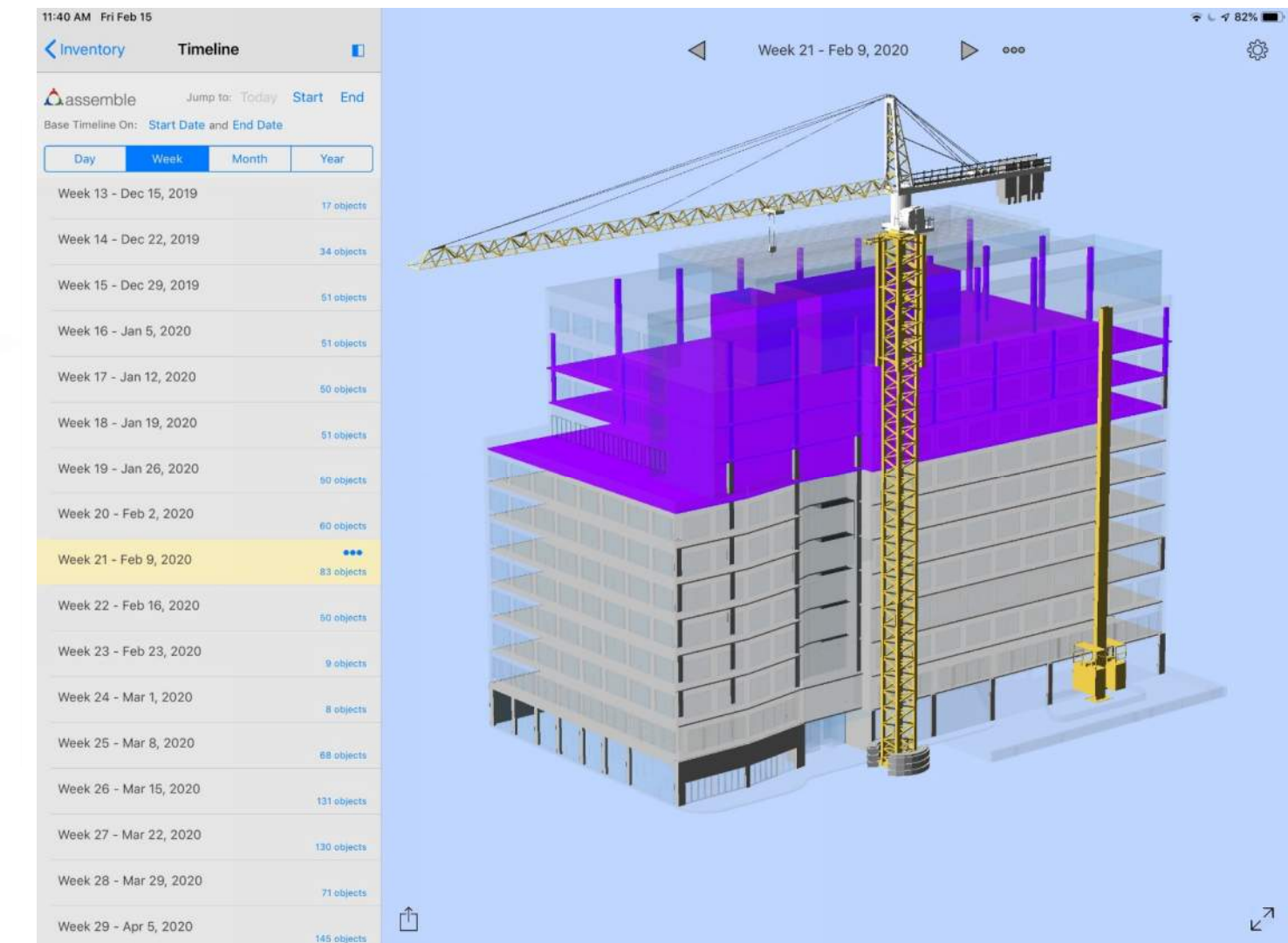
“Low-Hanging Fruits”

“Breakthrough”

“Sustain Momentum”

2019 – Breakthrough

- In-house VDC team adjusts
 - 3 team members in Chicago
 - 1 team members in CA
 - 1 team member in AZ
- Purchased BIM360
- Developed an Autodesk ecosystem
 - Assemble
 - BIM360
 - PlanGrid
- Purchased a drone (DJI Phantom 4 Pro)
- 360° photos documentation solution Utilizing Infracore more for site logistics planning
- Dabbled in 4D schedule visualization
- Investigating site cameras



2017

2018

2019

2020...

“Current Reality”

“Low-Hanging Fruits”

“Breakthrough”

“Sustain Momentum”

2019 – Pre-Planning

- Site Scanning projects
 - Uncovers unforeseen conditions
- Quickly identify issues for resolution planning
- True representation of existing conditions



2017

“Current Reality”

2018

“Low-Hanging Fruits”

2019

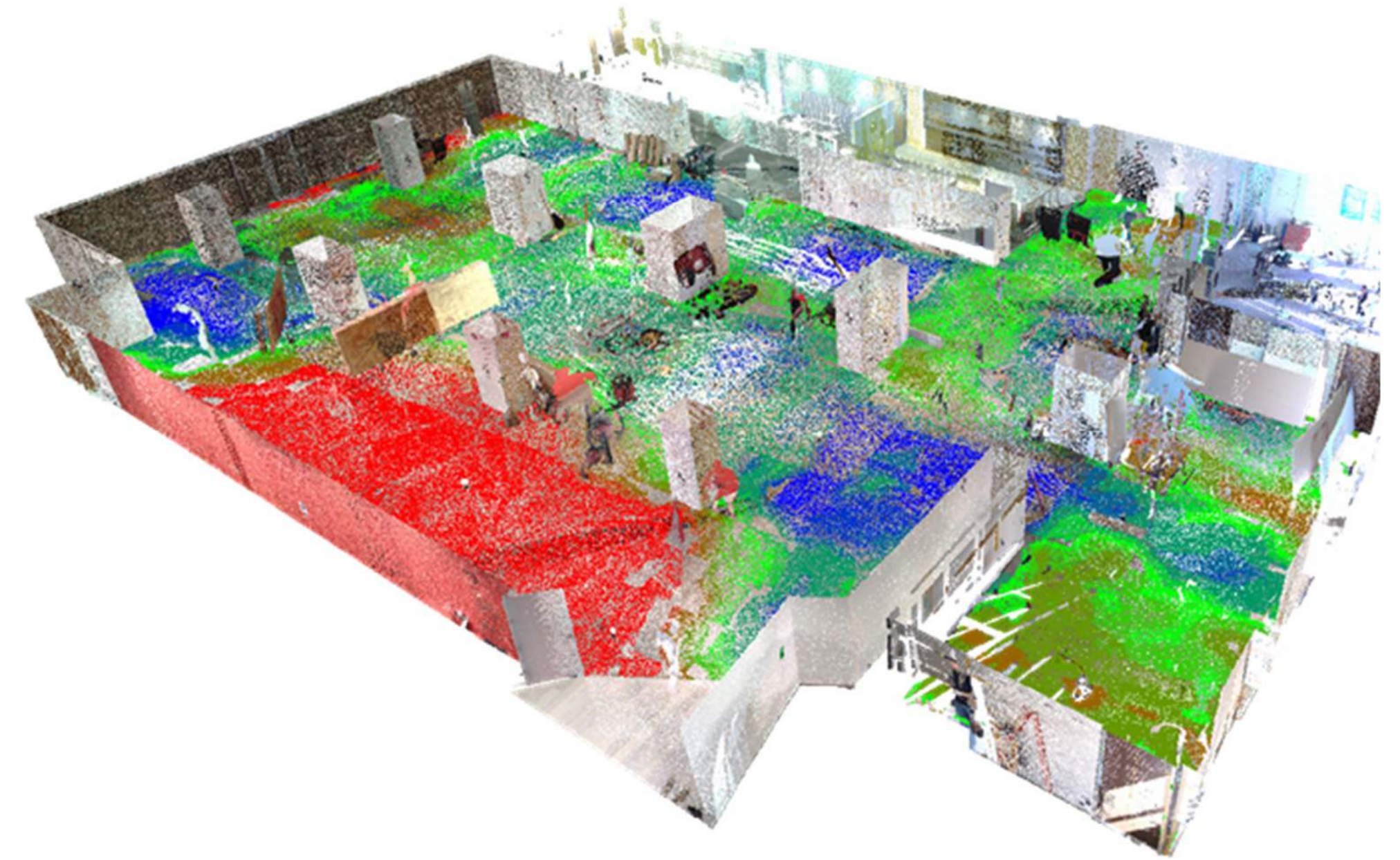
“Breakthrough”

2020...

“Sustain Momentum”

2019 – Floor Flatness

- Site Scanning projects
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“Current Reality”

2018

“Low-Hanging Fruits”

2019

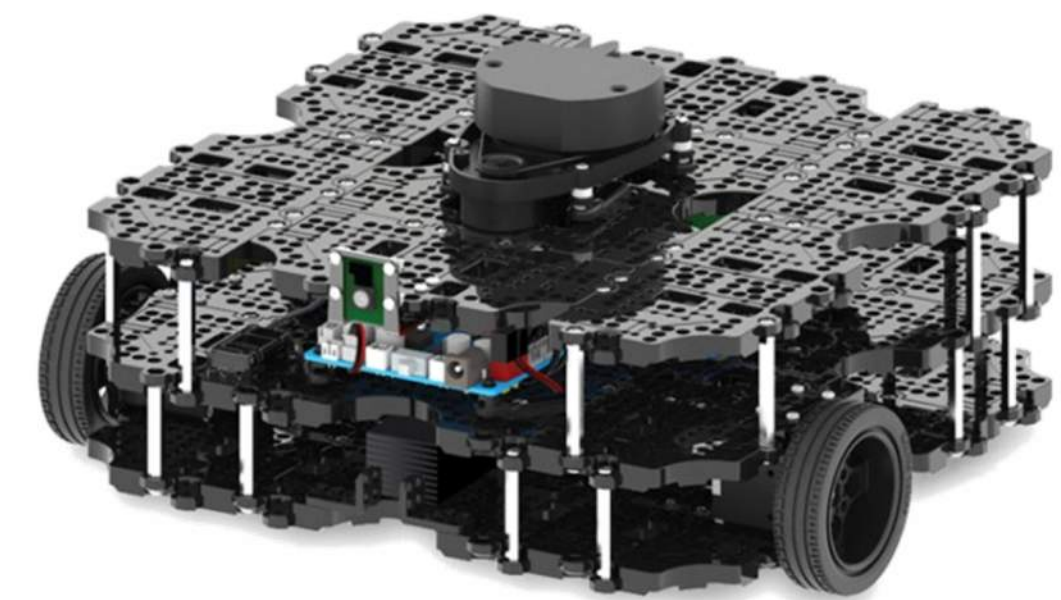
“Breakthrough”

2020...

“Sustain Momentum”

2020 – Sustain Momentum

- In-house VDC team adjusts
 - 4 team members in Chicago?
 - 1 team members in CA
 - 1 team member in AZ
 - 1 team member in CO?
- Estimators using Assemble+BIM360 for estimating
- Having a fully automated Autodesk ecosystem?
- Expand footprint to have VDC training+support staff
 - Product integration
 - Product training
 - Product support
- Robotics?



2017

2018

2019

2020...

“Current Reality”

“Low-Hanging Fruits”

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CLASS SURVEY IN THE AU APP

SOCIAL MEETUPS IN THE EXPO AND COMMUNITY QUADS

WANT TO HAVE FURTHER DISCUSSIONS? LET'S SCHEDULE TIME TO TALK IN THE QUADS

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