

# The Step Child Named BIM

Cliff Ragan, Andrew Cooper

VDC Engineers – AECOM Hunt



Please Silent Phones

**THANK YOU!!**



## Cliff Ragan

### VDC Engineer – AECOM Hunt

- Raised in construction.
- Associates in Applied Science
- “BIMming” since 2010
- Various roles in the BIM realm
- CM-BIM, Certified UAS Pilot, CP in Revit MEP and Arch
- Responsibilities at Hunt, IMPLEMENT BIM
  - Field Training, Coordination, 4D, 5D, 6D, etc.



## Andrew Cooper

### VDC Engineer – AECOM Hunt

- Architectural and Engineering Design Background
- Terrible at ping pong
- Various roles in the BIM realm
- Certified UAS Pilot
- Responsibilities at Hunt, IMPLEMENT BIM
  - Coordination, Drones, Laser scanning



**AECOM HUNT**



**AECOM HUNT**

## AECOM Hunt

Hunt Construction Group was acquired by AECOM in 2014/2015? We represent a portion of the C in AECOM, "A"rchitecture "E"ngineering "C"onstruction "O"peration "M"aintenance

**AECOM HUNT**





WHO'S HERE??



# Why am I Here?

## LEVERAGE SOFTWARE

Capitalize on using the correct software for the appropriate task

## TEACH YOUR TEAM

Gain some pointers for teaching those that struggle with adopting new technology.

## WE DON'T NEED BIM

Learn how to defeat the we don't need BIM attitude.

## COMMON COORDINATION PROBLEMS

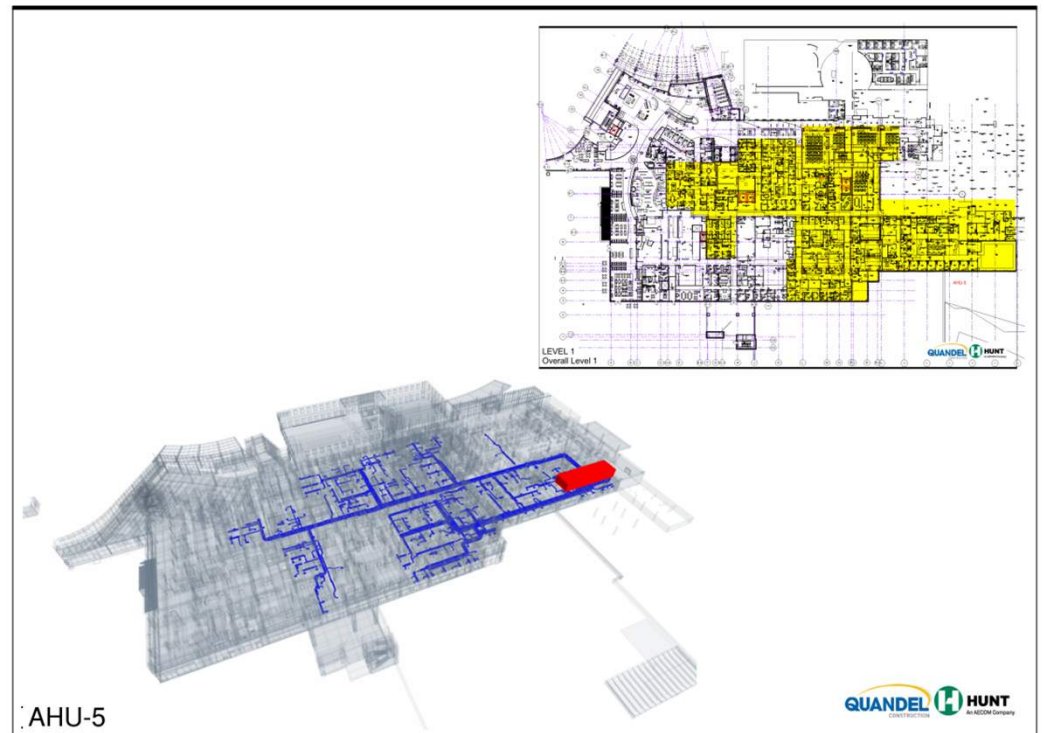
Learn from a few of the problems we have tackled in the past.

.....Walk Away With Some Knowledge

# LEVERAGING SOFTWARE

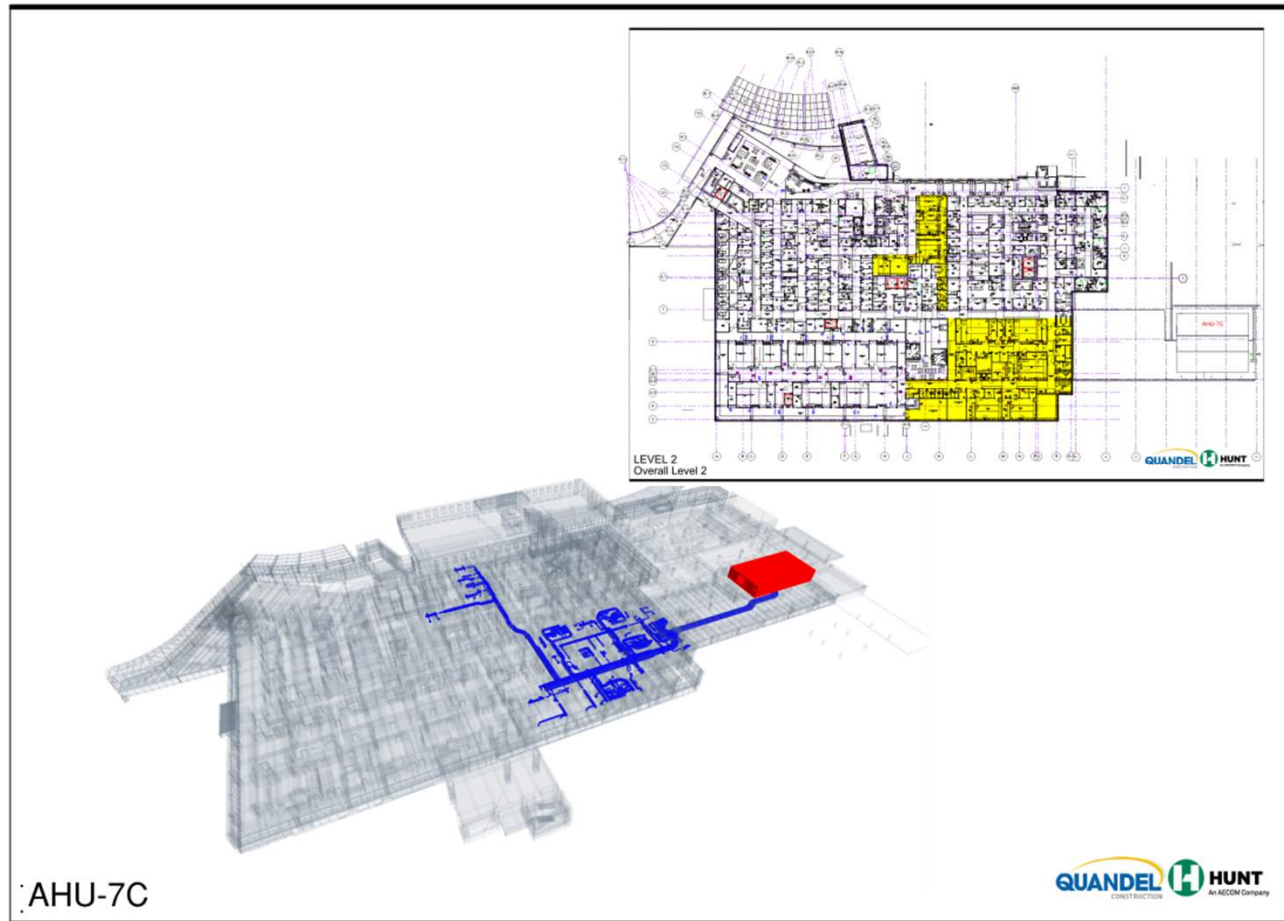
## PUSH THE LIMITS OF THE SOFTWARE

- Press Every Button
- Break It
- Engage your team





# LEVERAGING SOFTWARE

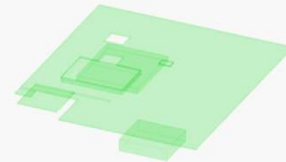


# LEVERAGING SOFTWARE

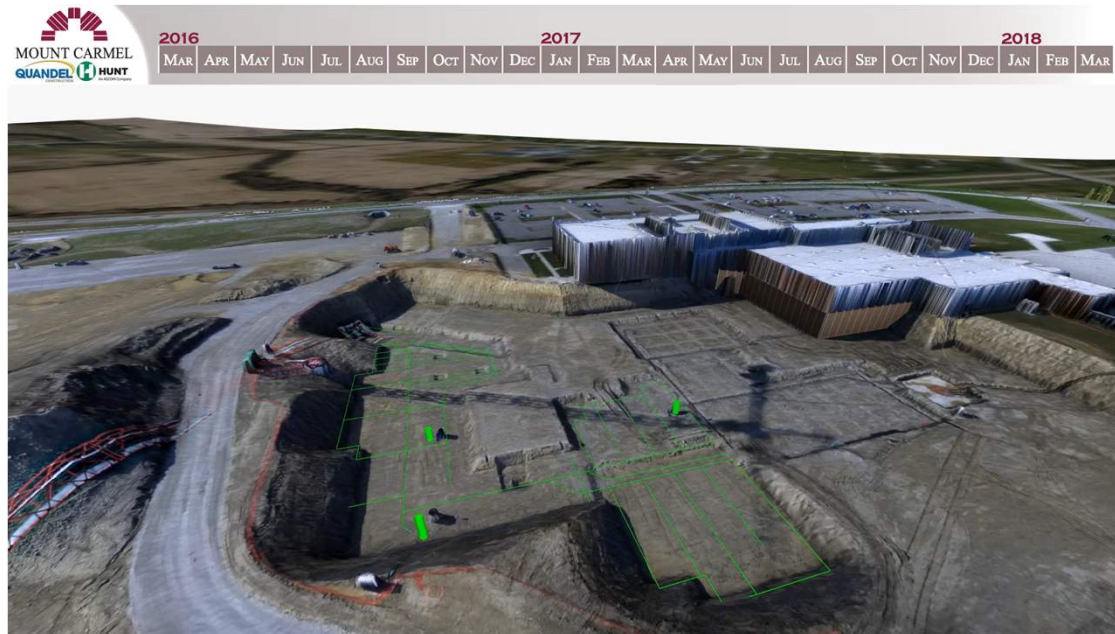
## ENHANCED 4D TIME LINER

- Not a 4<sup>th</sup> Dimension
- Adds time, or a schedule, to the model.
- Many different applications and detail levels.
- Use multiple software to create the best visuals.

**March 15 17**



# LEVERAGING SOFTWARE



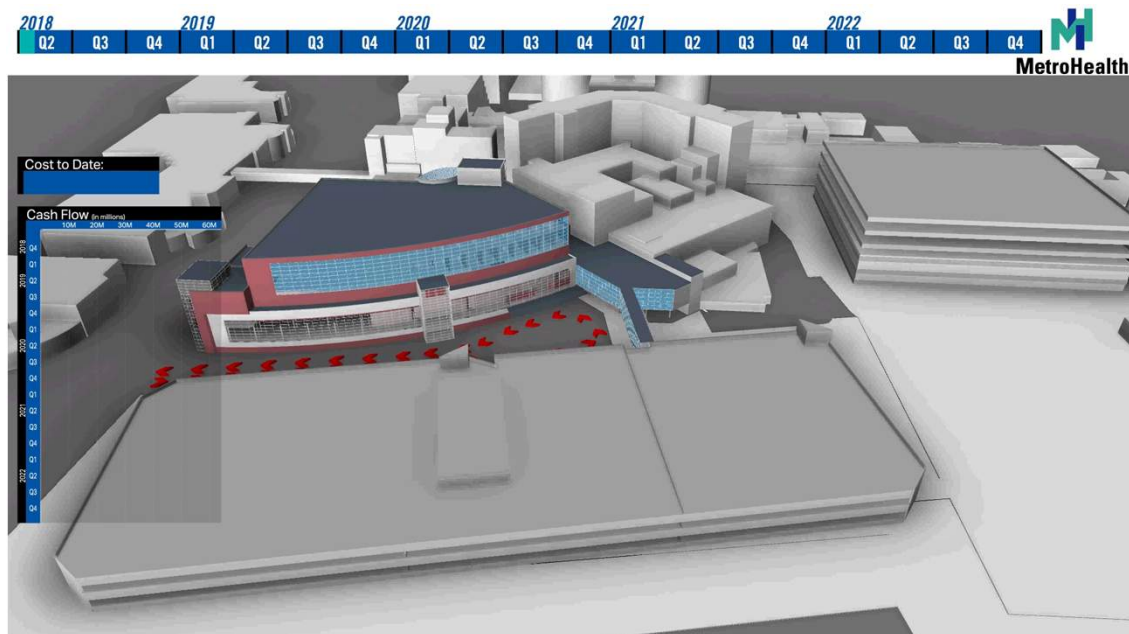
ENHANCED 4D WITH DRONE BACKDROP & TIMEBAR

# LEVERAGING SOFTWARE



ENHANCED 4D WITH PIP

# LEVERAGING SOFTWARE



ENHANCED 4D WITH CASHFLOW

# TEACHING YOUR TEAM

## LET THEM KNOW BOUNDARIES

- You are not a IT person, however, help when you can.
  - Need to know basic computer functions.
- Make sure they understand your role, but assist as necessary.
- Have resources available.....



# TEACHING YOUR TEAM

## INNOVATION CENTER

## AECOM HUNT

BD	BUSINESS DEVELOPMENT
BEP, BxP	BIM EXECUTION PLAN
BIM	BUILDING INFORMATION MODELING
BIM 360	SUBCONTRACTOR COORDINATION IN THE CLOUD BIM 360 GLUE / BIM 360 FIELD
LOD	LEVEL OF DEVELOPMENT, DEFINED BY AIA DOCUMENT E202-2008
SHOP DRAWINGS	2D DRAWINGS EXTRACTED FROM SUBCONTRACTOR MODELS FOR FABRICATION AND INSTALLATION
VDC	VIRTUAL DESIGN & CONSTRUCTION

2D

PAPER OR PDF  
DRAWINGS PRODUCED  
FROM THE MODEL

3D

VISUALIZATION  
COORDINATION  
CLASH DETECTION

4D

COMBINE TIME  
& GEOMETRY  
FOR SCHEDULING

5D

QUANTITY TAKE-OFF  
& ESTIMATING

6D

"AS-BUILT" MODEL WITH  
INFORMATION FOR  
FACILITIES MANAGEMENT

### LEVEL OF DEVELOPMENT



**CONCEPTUAL**  
overall building massing indicative  
of area, height, volume, location and  
orientation  
non-geometric information may also  
be attached to model elements



**APPROXIMATE GEOMETRY**  
elements are modeled as generalized  
systems or generic assemblies with  
approximate quantities, size, shape,  
location and orientation  
non-geometric information may also  
be attached to model elements



**PRECISE GEOMETRY**  
elements are modeled as specific  
assemblies accurate in terms of  
quantity, size, shape, location and  
orientation  
non-geometric information may also  
be attached to model elements



**FABRICATION**  
elements are modeled as assemblies  
accurate in terms of quantity, size,  
shape, location and orientation with  
fabrication and detailing information  
non-geometric information may also  
be attached to model elements



**AS - BUILT**  
elements are modeled as constructed  
assemblies actual and accurate  
in terms of quantity, size, shape,  
location and orientation  
non-geometric information may also  
be attached to model elements

100  
200  
300  
400  
500



### OUR TOOLS



# TEACHING YOUR TEAM

## GET TO KNOW THE PROJECT TEAM

- Gain trust.
- Prove the value of yourself and BIM early in the project.
- Immerse yourself in the goals of your project team.

# TEACHING YOUR TEAM

## BE AVAILABLE

- ANSWER YOUR PHONE
- Use email for documentation and sending memos, not to carry on a conversation.



“Whatever Good Things  
We Build, End up  
Building Us”

-Jim Rohn

“The Road to Success is  
Always Under  
Construction”

-LILY TOMLIN

“We Don’t Need BIM”

-TOO MANY PEOPLE





**YES YOU DO!**

## “WE DON’T NEED BIM”

### BAD EXPERIENCES

- Get feedback on what issues with BIM they’ve seen in the past.
  - Cost, Ineffective Coordination, Schedule Impact, etc.
- Ask what common problems they face on a project in general.
  - Look for opportunities for BIM to aid in those problems.

## “WE DON’T NEED BIM”

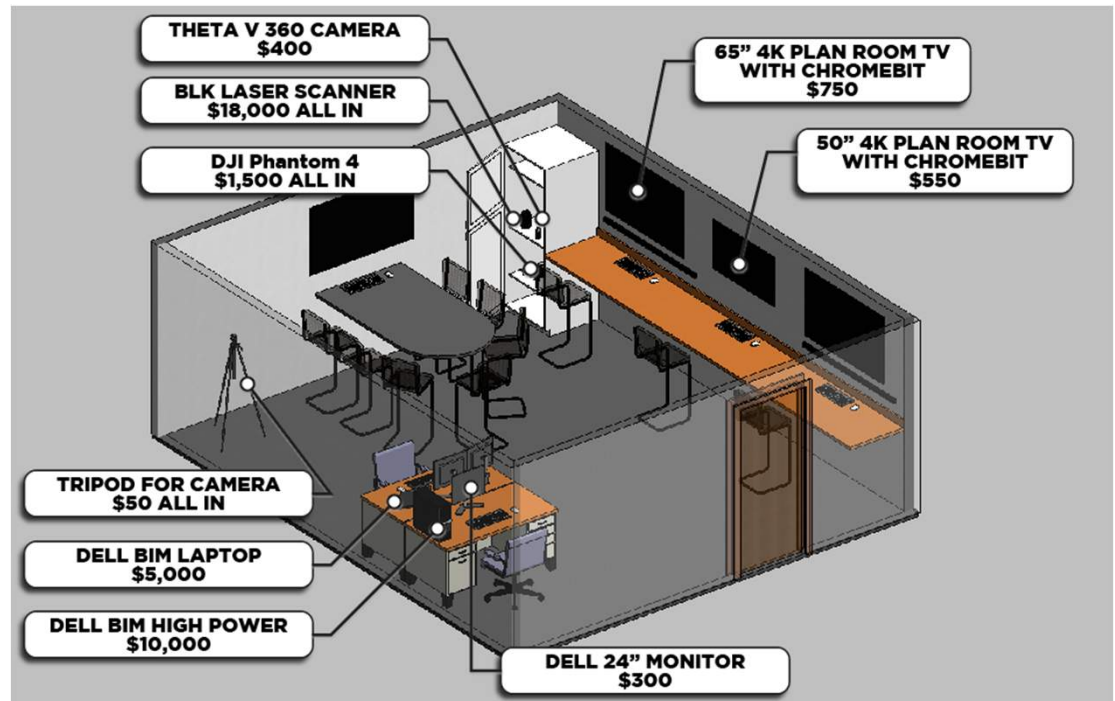
### BIM IS SCALABLE

- BIM is not just modeling and coordination.
- Stress the Information in “BIM”
- Keep current drawings posted in digital form.

## “WE DON’T NEED BIM”

### BIM IS SCALABLE

- Have answers for common questions.
- Be fluent in pricing, available tools, processes, and workflows.



# COMMON COORDINATION PROBLEMS

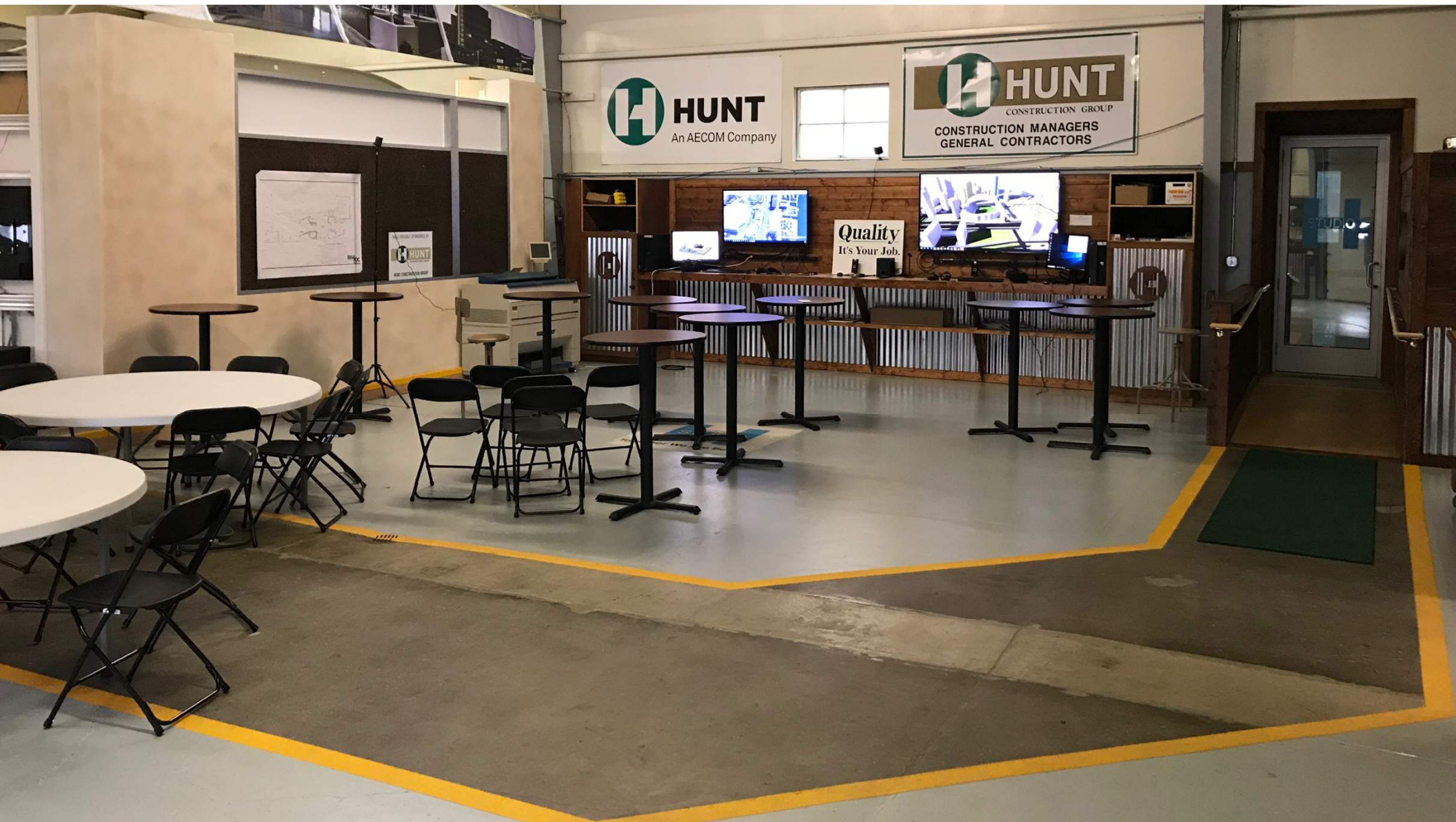
COVER YOURSELF  
BY CONTRACT

HAVE RESOURCES

COMMUNICATION  
BARRIERS

BE READY TO TRAIN









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