

# Democratizing Clash Detection with BIM 360 Model Coordination to Improve Design Quality

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That's Not Me!

## About the speaker

Dennis Neal, AIA

Dennis is a licensed architect and BIM Manager for AECOM in Roanoke Virginia and alumni speaker at Autodesk University. At AECOM, Dennis guides BIM planning, standards, project setup and assists project teams with their design efforts. He is also responsible for training BIM staff, investigating new technology and promoting and refining project workflow improvements.



# About the speaker

## Matt Anderle

Matthew Anderle is the Building Information Modeling (BIM) director for Buildings + Places business line of AECOM, with focus on Americas. He is a BIM and technology evangelist with over 19 years of experience establishing global BIM workflows and standards around content, computational BIM, interoperability and BIM consultation as a service. His experience spans over multiple market sectors with emphasis on large healthcare facilities, data centers, aviation, government projects and science facilities. Mr. Anderle serves AECOM as leader in the advancement and efficient implementation of BIM processes for a variety of project types. He manages and directs large distributed project teams to successfully implement BIM collaboration workflows, enabling global offices to work as one entity.

# AECOM Airfield Project

3x the work or 1/3 the time?

2.5 million square feet

40+ buildings


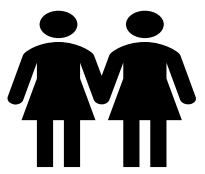
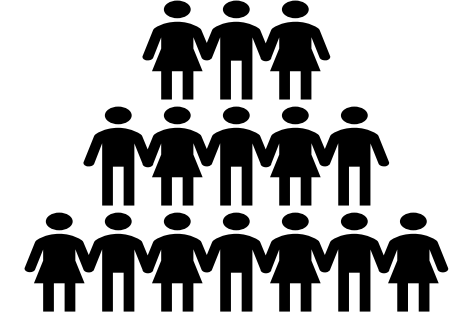
300 team members

BIM 360 clash detection added efficiency by sharing the clash effort



# Learning Objectives

## TYPES OF CLASH DETECTION

Lonely  Hybrid  & Democratized  clash detection.

## BIM 360 DESIGN COLLABORATION & MODEL COORDINATION

Understand these cloud based collaboration and coordination tools

## REVIT SETUP FOR BIM 360

Publish Revit to BIM 360 for coordination and clash detection

# Learning Objectives

## SETUP BIM 360 DESIGN COLLABORATION AND MODEL COORDINATION

Getting around and setting up

## WORKING WITH CLASHES

We all have Issues – Learn how to deal with them!

## BEST PRACTICES

Democratize = Share the work

# Types of Clash Detection

## LONELY

Navisworks – The granddaddy of clash detection

## HYBRID

BIM 360 Glue + Navisworks

## DEMOCRAT

Building legacy clash detection by minimizing the need for a full time expert and sharing the clash burden

I MADE UP THESE TERMS!



# Design Collaboration Overview

The screenshot displays the BIM 360 Insight web application interface. The browser address bar shows the URL: <https://insight.b360.autodesk.com/accounts/b1495878-bc9f-4998-b3db-d29404d1e510/projects/cf5c6e1f-1765-4816-8acb-c3036b>. The page title is "Project Home".

The interface includes a sidebar with the AECOM logo and project name "00000000-AU2019". The main content area is divided into several sections:

- Project Address:** A map showing the project location in the Arena District, Downtown, with the address 277 W Nationwide Blvd, Suite 500, Columbus, OH 43215.
- Weather:** A weather widget showing a current temperature of 24°C and a clear sky. The forecast for the next few days is: Sat 43°, Sun 55°, Mon 42°, Tue 27°.
- Design Review Risk Factors:** A section with five cards showing risk factors: CODE COMPLIANCE (0), CRITICAL COMPONENTS (0), DOCUMENTATION INCOMPLETE (0), OVERDUE ISSUES (0), and OVERDUE REVIEWS (0).
- Project Issues:** A table listing project issues with columns for ID, Title, Type, and Due Date. The table shows 10 issues, with the first one being "Door locations" due on Nov 23, 2019.
- Open RFIs and Submittals:** A section showing "No RFIs And Submittals" with a message: "Data is required for us to provide charts."
- Project Design Issues:** A table listing project design issues with columns for ID, Title, and Due Date. The table shows 10 issues, with the first one being "Door locations" due on Nov 23, 2019.
- Project Submittals:** A section showing "No Submittals".
- Design Packages:** A section showing "No Packages".

<https://autode.sk/2X07xBT>

# Model Coordination Overview

The screenshot displays the BIM 360 Insight web application interface. The browser address bar shows the URL: <https://insight.b360.autodesk.com/accounts/b1495878-bc9f-4998-b3db-d29404d1e510/projects/cf5c6e1f-1765-4816-8acb-c3036b2>. The page title is "BIM 360 Insight".

The main header area includes the Autodesk BIM 360 logo and the project name "AECOM 00000000-AU2019". Below this, the project address is displayed: "277 W Nationwide Blvd, Suite 500, Columbus, OH 43215".

The interface is divided into several sections:

- Project Address:** A map showing the project location in Columbus, OH.
- Weather:** A widget showing the current temperature as 26°C and the weather as "Clear".
- Design Review Risk Factors:** A section with five cards showing zero counts for: CODE COMPLIANCE, CRITICAL COMPONENTS, DOCUMENTATION INCOMPLETE, OVERDUE ISSUES, and OVERDUE REVIEWS.
- Project Issues:** A table listing open issues. The table has columns for ID, Title, Type, and Due Date. The data is as follows:

ID	Title	Type	Due Date
10	Door locations	Design	Nov 23, 2019
6	23 33 13_rmk - Damper - BDD-FD-3FD-FSD-SQ - Round [3550119] and 3 other objects.	Coordination	
9	Damper clashes with ceiling	Coordination	
1	23 09 13_rmk - Air Valve - Single Unit - Duct Accessory [1029080] and Compound Ceiling [3955757]	Coordination	
5	Device clashes with ceiling	Coordination	
8	23 33 13_rmk - Damper - BDD-FD-3FD-FSD-SQ - Round [4170948] and 2 other objects.	Coordination	

Below the table, it indicates "0 of 10 Open Issues | View All (10)".

- Open RFIs and Submittals:** A section showing "No RFIs And Submittals" with a message: "Data is required for us to provide charts."
- Project Design Issues:** A table listing design issues. The table has columns for ID, Title, and Due Date. The data is as follows:

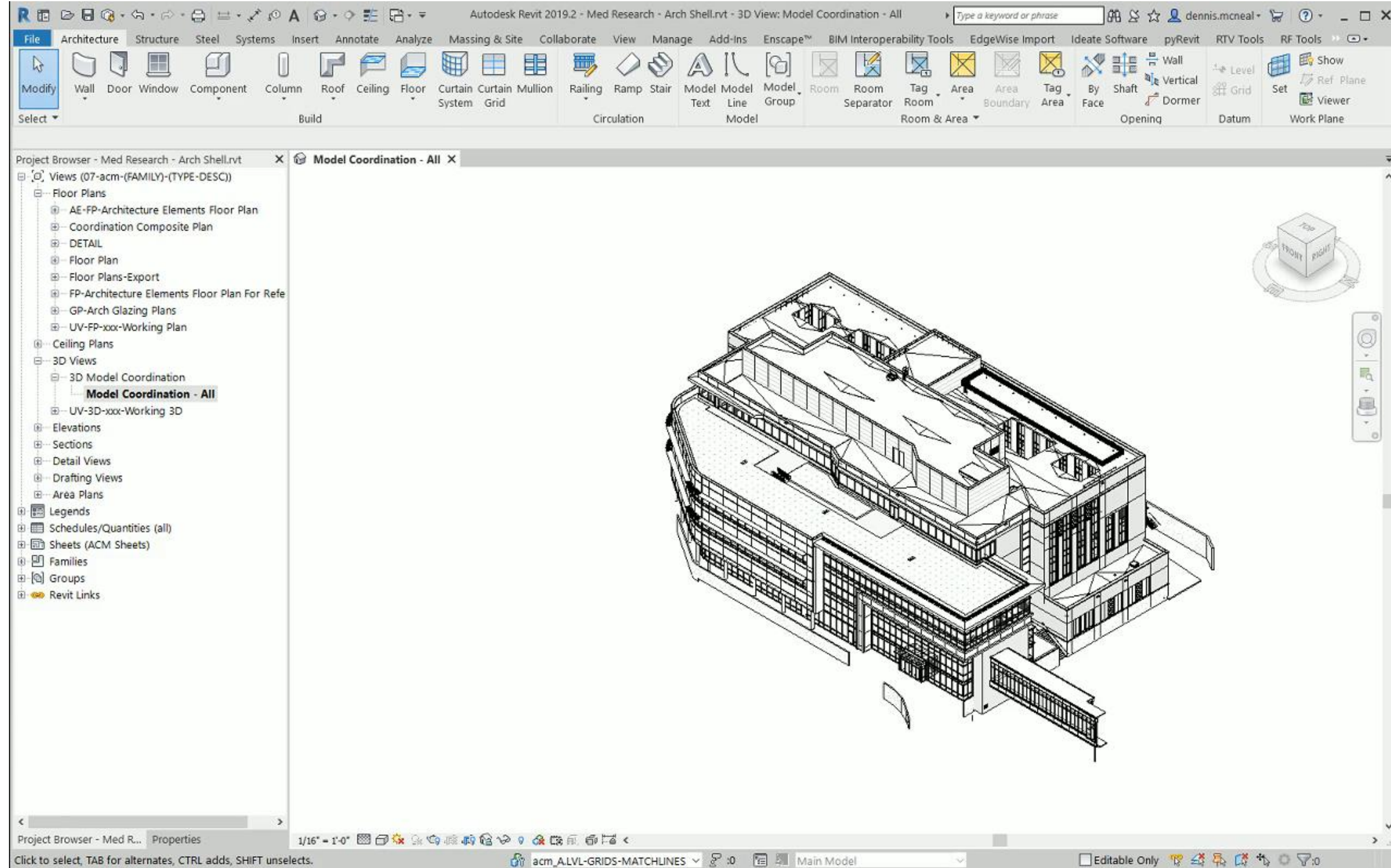
ID	Title	Due Date
10	Door locations	Nov 23, 2019

- Project Submittals:** A section showing "No Submittals".
- Design Packages:** A section showing "No Packages".

<https://autode.sk/36RP5jM>



# Setup Revit for BIM 360



<https://autode.sk/2qyEg5t>



# Design Collaboration Setup

The screenshot displays the BIM 360 Insight web application interface. The browser address bar shows the URL: <https://insight.b360.autodesk.com/accounts/b1495878-bc9f-4998-b3db-d29404d1e510/projects/cf5c6e1f-1765-4816-8acb-c30>. The page header includes the Autodesk BIM 360 logo and the project name "AECOM 00000000-AU2019". The main content area is divided into several sections:

- Project Address:** A map showing the project location in Columbus, OH, with the address 277 W Nationwide Blvd, Suite 500, Columbus, OH 43215.
- Weather:** A weather widget showing a temperature of 36° and "Mostly Cloudy" conditions.
- Design Review Risk Factors:** A section with five cards showing zero counts for: CODE COMPLIANCE, CRITICAL COMPONENTS, DOCUMENTATION INCOMPLETE, OVERDUE ISSUES, and OVERDUE REVIEWS.
- Project Issues:** A table listing project issues with columns for ID, Title, Type, and Due Date. The table shows 11 open issues.
- Project RFIs:** A section indicating "No RFIs" and providing a link to "Go to Project Management".
- Open RFIs and Submittals:** A section indicating "No RFIs And Submittals" and providing a link to "Go to Project Management".
- Project Design Issues:** A table listing project design issues with columns for ID, Title, and Due Date. The table shows 10 design issues.
- Project Submittals:** A section indicating "No Submittals".
- Design Packages:** A section indicating "No Packages".

<https://autode.sk/36Qqb3W>

# Model Coordination Setup

**BIM 360 Insight** Contribution Dashboard | AECOM | 00000000-AU2019

**Project Home**

**AECOM** 00000000-AU2019  
Project Dates: Sun Sep 01 2019 - Tue Dec 31 2019

**Project Address**  
277 W Nationwide Blvd  
Suite 500  
Columbus, OH 43215

**Weather**  
37° Mostly Cloudy  
Sat 40° Sun 55° Mon 41° Tue 29°

**Design Review Risk Factors**

Risk Factor	Count
CODE COMPLIANCE	0
CRITICAL COMPONENTS	0
DOCUMENTATION INCOMPLETE	0
OVERDUE ISSUES	0
OVERDUE REVIEWS	0

**Project Issues**

ID	Title	Type	Due Date
10	Door locations	Design	Nov 23, 2019
6	23 33 13_rmk - Damper - BOD-FD-3FD-FSD-SO - Round [3550119] and 3 other objects.	Coordination	
9	Damper clashes with ceiling	Coordination	
11	Shelving [3829620] and RNK_Speaker Strobe Wall Mounted_17 [2029489]	Coordination	
1	23 09 13_rmk - Air Valve - Single Unit - Duct Accessory [3029080] and Compound Ceiling [3955757]	Coordination	
5	Device clashes with ceiling	Coordination	

0 of 11 Open Issues | View all (11)

**Open RFIs and Submittals**  
No RFIs And Submittals  
Data is required for us to provide charts.

**Project RFIs**  
No RFIs  
Go to Project Management

**Project Design Issues**

ID	Title	Due Date
10	Door locations	Nov 23, 2019

**Project Submittals**  
No Submittals

**Design Packages**  
No Packages

<https://autode.sk/2Cvlu0q><https://autode.sk/2Cvlu0q>

# Working with Clashes

The screenshot displays the BIM 360 Insight web application interface. The browser address bar shows the URL: <https://insight.b360.autodesk.com/accounts/b1495878-bc9f-4998-b3db-d29404d1e510/projects/cf5c6e1f-1765-4816-8acb-c3036b2>. The page header includes the Autodesk BIM 360 logo and the project name "AECOM 00000000-AU2019". The project dates are listed as "Sun Sep 01 2019 - Tue Dec 31 2019".

The main content area is divided into several sections:

- Project Address:** A map showing the project location in Columbus, OH, with the address "277 W Nationwide Blvd, Suite 500, Columbus, OH 43215".
- Weather:** A weather widget showing a current temperature of 38° and a "Clear" forecast for the next few days.
- Design Review Risk Factors:** A section with four cards showing zero counts for "CODE COMPLIANCE", "CRITICAL COMPONENTS", "DOCUMENTATION INCOMPLETE", and "OVERDUE ISSUES".
- Project Issues:** A table listing project issues with columns for ID, Title, Type, and Due Date. The table shows 6 issues, with the first one being "Door locations" due on Nov 23, 2019.
- Project RFIs:** A section indicating "No RFIs" and a link to "Go to Project Management".
- Open RFIs and Submittals:** A section indicating "No RFIs And Submittals" and a note that "Data is required for us to provide charts."
- Project Design Issues:** A section showing a single issue "Door locations".
- Project Submittals:** A section indicating "No Submittals".
- Design Packages:** A section indicating "No Packages".

<https://autode.sk/2NxaZRE>



# Best Practices

## COORDINATE EARLY

Old school, new school – It doesn't matter! Be sure to discuss and plan coordination with the entire team.

## INTEGRATE DESIGN COLLABORATION INTO YOUR MEETINGS

Team meetings, standup meetings and design reviews can benefit from BIM 360 Design Collaboration!

## DEMOCRATIZE CLASH DETECTION

Consider inviting non-traditional clash reviewers to BIM 360 to participate in Model Coordination – Managers, interns and any team member can contribute to clash reviews!

Questions?

Thank You!





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