



AR21416

A360 Team and Collaboration for Revit: 2 Years Later and Still Going Strong!

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Learning Objectives

- Understand how A360 Team can be utilized on complex projects to enhance project team collaboration
- Learn about implementation, evolution, and management of Collaboration for Revit versus traditional Revit collaboration
- Discover the impact of near-real-time collaboration on project-delivery workflows and project teams
- Learn about technologies that enable our Project Team to revolutionize the AEC project-delivery workflow

Description

This class is an overview of how A360 Team and Collaboration for Revit software are impacting the traditional project collaboration workflows and the overall project delivery. We will present our lessons learned after multiple iterative implementations on complex projects. We will explore the features of A360 Team and Collaboration for Revit software that enabled project teams to work much more efficiently in a more transparent environment. With new tools come new responsibilities. We will explore how to effectively implement the frequently evolving A360 cloud-based collaboration service platform to large project teams, often exceeding 150 project participants. We will focus on some of the ways our Team managed the impact of the new A360 Collaboration for Revit workflow while keeping the entire Project Team engaged in the process. This class will also showcase several additional workflow improvements and technologies used in conjunction with A360 Team and Collaboration for Revit software, aimed at streamlining the disjointed architecture, engineering, and construction workflow and connecting the owner closer to the Design and Construction Teams. This session features A360 Team, Collaboration for Revit, and Revit.



Your AU Experts

Marin Pastar graduated from Drury University in 2005 and got licensed as an Architect in 2011. From the beginning of his career, Marin was deeply involved in 3D modeling and visualization with AutoCAD and 3DS Max, which evolved into a career defining turn to Revit and BIM.

Fascinated by BIM compared to traditional project delivery methods, Marin was the driving force in evolving the 11-person CAD firm into a growing, multi-office 80+ person VDC firm that Bates is today. As Director of Innovation, Marin is involved in all aspects of Projects from Design and VR, to streamlining AEC Workflows from Planning and Construction, into Facility Management and Operation.

Marin has been a regular AU attendee and a Revit Certified Professional since 2012. He has been invited to speak about VDC at several CSI and AGC conferences as well as AU 2015. Autodesk recognized Bates as “Early Technology Adopters” and produced a customer success story published at <https://www.youtube.com/watch?v=meJ2t3BSeR4>

Ian McGaw has a dual degree in computer science and international business, focusing on the management and research and development of emerging technologies in the AEC/O sector. He is an executive business leader with broad domestic and international experience in identifying strategic and innovative technology solutions to complex business challenges. Ian’s interests, along with years of industry-related experience, have allowed him to understand complex technology process has become an influential factor in the way buildings are delivered all over the world. Ian has experience in full value chain of project development process, starting from early strategic planning, project planning, business IT innovation strategy and business portfolio management for long term clients all the way to project execution on healthcare, mega-sized mixed use development, aviation, hospitality, simulation training, and complex industrial projects.



A360 Team (BIM 360 Team) Overview

What is it?

BIM 360 Team (fka A360 Team) is a cloud-based platform that places powerful collaboration tools in the hands of designers, engineers and builders.

No matter where you are or what device you own, BIM 360 Teams enables you to securely view, share, review, find and manage every kind of data, communication and task associated with your project in one central workspace.

Main Features:

- Data / Project Centric Design
- Rich Immersive Experience
- Built for Distributed Teams
- Metadata & Workflow Utilization
- Live Review

A360 Team vs. BIM360 Team vs. Fusion 360 Team

A360 teams was created to fill a need that existed in both the AEC/O and Product Manufacturing. Initially, this provided a great deal of use for each of these industries. However, fundamentally these two industries workflows are very different. Due to these differences BIM 360 Team and Fusion 360 Team have been created. This will allow the data management functions to be customized per industry. This is going to be very important for future use on projects with complex workflows.

How can BIM 360 Team be Utilized?

Centralized Data Sharing

- Project Standards & BxP's
- Meetings & Correspondence
- Schedules & Cost Estimates
- Presentations & Progress Drawings
- Bid Documents & Coordination Files
- C4R Revit Files

3D Model Viewing

Breaking Down Siloed Information

C4R (Collaboration for Revit) Overview

What is it?

Collaboration for Revit is a Cloud Subscription service that works with Revit software to connect building project teams with centralized access to BIM project data in the cloud. Teams stay connected in real time using the Communicator chat tool within models.

Main Features

- Access Data in the Cloud
- In-Context Communication w/ Communicator
- Extended Team Collaboration – Revit files can be published to A360/BIM360 Team

Where Have We Been?

Mercy Hospital Jefferson

Since their creation in 1986, Mercy is the fifth largest Catholic health care system in the U.S. and serves millions annually. Mercy includes 46 acute care and specialty (heart, children's, orthopedic and rehab) hospitals, more than 700 physician practices and outpatient facilities, 40,000 co-workers and more than 2,000 Mercy Clinic physicians in Arkansas, Kansas, Missouri and Oklahoma. Mercy also has outreach ministries in Louisiana, Mississippi and Texas. The assets of Mercy are in excess of \$5.9 billion with operating revenues of \$4.6 billion.



Mercy Hospital Jefferson (MHJ) was selected as the pilot project to develop and implement a holistic lifecycle solution to manage the transfer of data more efficiently. Mercy made a promise of pioneering a new method of care, and they are committed to deliver on that promise to the community.

The scope of the MHJ Project is a new 4 story bed tower along with new cardiology, oncology, labor and delivery centers along with a renovated center utility plant and a brand new entrances to the hospital and integrated hospital clinics.

Our Requirements for a Collaborative Platform Solution included:

- Cloud-Based platform
- Centralize Hub that could be used throughout design and construction process
- Ability to house unlimited (or near) file formats
- Inclusive 3D viewer
- The ability to link data into a model that is hosted on the hub
- Easy mobile experience
- Multiple users to work on the same files without implemented Revit Server or a BIM cloud



Where Are We?

Mercy Hospital Jefferson

The patient tower expansions is deep into construction at this time. BIM 360 Team is an integral part of sharing information and providing transparency into the construction process. All of the field reports, photos, RFI's, SI's, etc have been posted to the Team site. Something that we had learned early on in construction is that our initial folder structure was not truly conducive to the construction process.

While we are now in construction the use of Collaboration for Revit has slowed. Bates has continued to update and evolve their modeling efforts on C4R. The engineer and contractors have moved away from C4R as their workflows have dictated the use of AutoCAD, Fabrication Suite, Trimble MEP & Auto-Sprink.

As a team the decision was made to not upgrade the Collaboration for Revit models due to the fact that a new A360 Team project would need to be created and all 150+ users would need to be re-invited to the project.

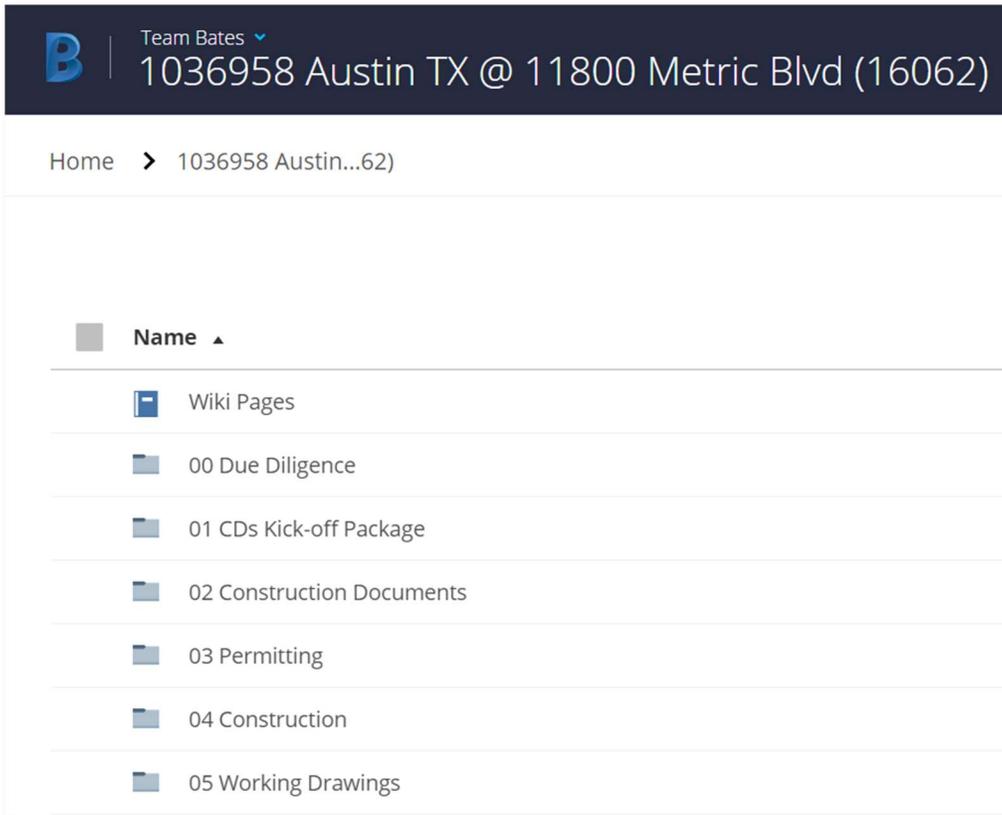
The Mercy Hospital Jefferson has had no less than six concurrent projects that have been designing and constructing at the same time. Due to these simultaneous projects it has been a requirement to have separate Revit project models that have all been linked through C4R. As these interior projects have been completing it has been necessary to federate the projects into the existing conditions model.

Other Projects

Bates, BatesENG & ENGworks have worked together to build a common workflow that is now being implemented on wide scale healthcare projects. The projects are all leveraging BIM 360 Team & C4R during design, during construction they are still utilizing BIM 360 Team.

Many of these progressive projects have been inclusive of non-traditional consultants such as furniture, lighting, casework, medical equipment and dietary consultants. These consultants have all been invited to BIM 360 Team to collaborate, furthermore, they have been invited to C4R to collaborate and create their designs in a live design environment. Traditionally, these consults have worked in their own silos unaware of constant design changes. It has increased the level of coordination as well as fidelity in their designs.

Using C4R and BIM 360 Team has required the design team to meet more often to have live working design sessions but also technology sessions to validate the technology is being leveraged to its full capacity.



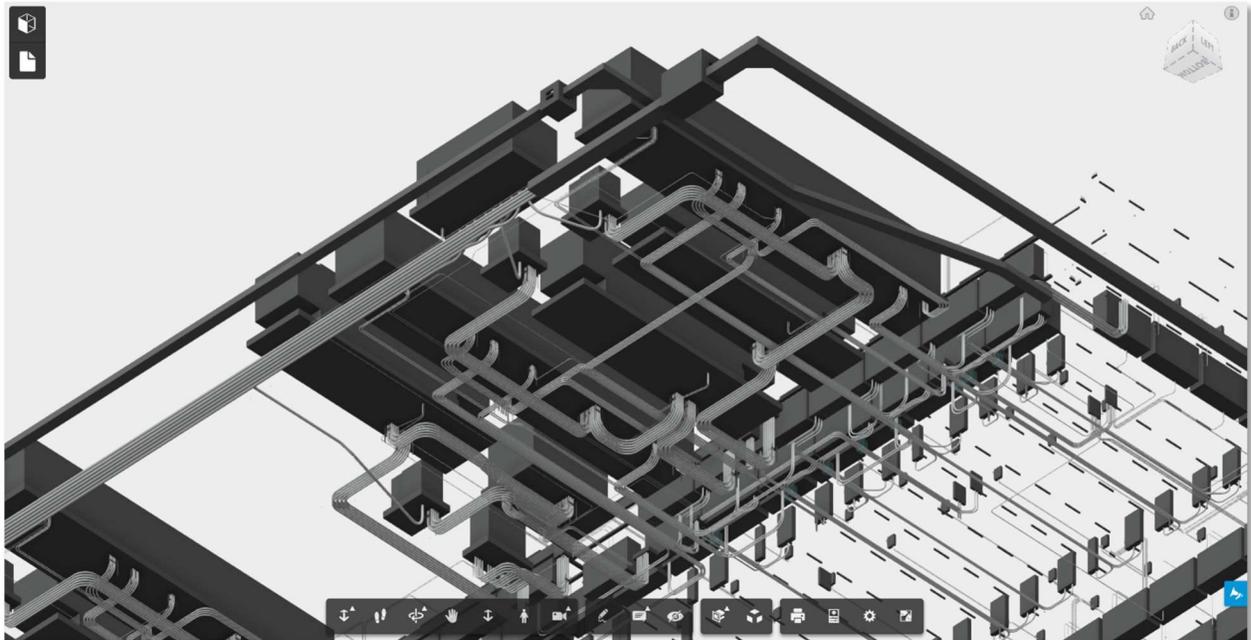
The screenshot shows a web interface for a BIM 360 Team project. At the top, there is a dark blue header with a large blue 'B' logo, the text 'Team Bates' with a dropdown arrow, and the project name '1036958 Austin TX @ 11800 Metric Blvd (16062)'. Below the header, a breadcrumb trail shows 'Home > 1036958 Austin...62)'. The main content area features a table with a 'Name' column header and a list of project folders:

| Name |
|---------------------------|
| Wiki Pages |
| 00 Due Diligence |
| 01 CDs Kick-off Package |
| 02 Construction Documents |
| 03 Permitting |
| 04 Construction |
| 05 Working Drawings |

From a Contractors Perspective

Though contractors are usually at the discretion of the general contractor or architectural/engineering teams some contracts that have multiple remote teams have found success while leveraging C4R and BIM 360. We have assisted contractors implement BIM 360 Team and C4R on projects ranging from data centers to high rise buildings.

Contractors are finding benefit from BIM 360 Team by being able to locate information that has been used to make design decisions, models and schedules. One of our findings has been that many sub-contractors do not have a project management platform implemented. Some contractors have also been leveraging the BIM 360 platform as a file repository for their specific project management platform.



Virtual Reality

While BIM 360 Team is not a Virtual Reality engine we have leveraged the platform to share demonstrations and updated visual content for our clients. Initially, we had multiple websites and locations for this content; however, we found that by having one centralized location of content and links that end users of this content found it much simpler to use these tools.

Shameless Plug: We are also teaching a class about Virtual Reality!

DV23698-R - Total Guide to Virtual Reality Visualization: Hardware Edition

Wednesday, Nov. 16, 2016 at 1:00 – 2:00 PM

★ DV23698-R - Total Guide to Virtual-Reality Visualization: Hardware Edition (Repeat)

Marin Pastar - Principal / Director of Innovation, Bates

Ian McGaw - Chief Technology Officer, BatesENG

Rich Conyers - Associate Architect, bates

This roundtable will focus on different available virtual-reality (VR) hardware options, with the purpose of implementing VR into architecture, engineering, and construction (AEC) workflows. We will have an in-depth discussion both about the tethered VR options like the Oculus Rift and HTC Vive, as well as about more-affordable mobile options like the Samsung Gear VR, Google Cardboard, and others. Every VR platform has strengths and weaknesses. We will discuss which VR platforms perform best paired with specific workflows for optimal end results. We will discuss everything from setting up and optimizing the VR hardware and available accessories to desktop/laptop/mobile requirements and hardware specifications needed to ensure an optimal AEC-VR experience. We will showcase different ways we use VR in the AEC industry, paired with appropriate hardware. VR can realize major savings in various VR workflows that include 360 renderings, VR walk-throughs, existing conditions exploration, virtual mockups, and many others. This session features Revit, 3ds Max, and Autodesk Stingray.

Learning objectives

1. Gain an overview of the virtual-reality uses in the AEC industry
2. Learn about tethered versus mobile—implementing VR for Oculus Rift, HTC Vive, Gear VR, Google Cardboard, and others
3. Discover pros and cons of all major currently available hardware solutions
4. Learn how to get started with VR visualization on any budget

Where Are We Going?

While we cannot predict what the BIM 360 Teams and Collaboration for Revit platforms have in store. We have seen a large shift in the use of these tools to encompass a more holistic lifecycle use. As of recently we have seen a large number of sub-contractors transition into the use of Revit even for fabrication. We feel that as the Autodesk evolves the products there will be much more interdisciplinary collaboration. We are testing this concept out today on a large hospital expansion by having the sub-contractors work in our live C4R models. This is not an IPD project but it is being treated as such.

Of most importance is to gain the buy-in from ownership. Some owners are very set in their ways of project management and that is quite ok. This tool is just that, at tool. A tool that is able to supplement the existing workflows. Furthermore, another software to assist us in the transparency and issue tracking has been Revizto. Revizto is a viewing application that allows designs, owners and contractors link Revit, Navisworks, and AutoCAD together to have one platform for issue tracking. Currently, we have only implemented this during the design phases; however, the goal is to continue this issue tracking transparency into pre-construction and at that point switch over to a more traditional issue tracking method for any field issues.



Links

A360 Team (BIM 360 Team)

A360 Team (BIM 360 Team) – <https://team.bim360.com/>

Sign Up For Free - <https://a360.autodesk.com/>

bates A360 Team YouTube Video - <https://www.youtube.com/watch?v=meJ2t3BSeR4>

What is A360 Team YouTube Video - <https://www.youtube.com/watch?v=3mGrVYvNQPU>

Collaboration for Revit (C4R)

C4R - <http://www.autodesk.com/products/collaboration-for-revit/overview>

Bates C4R YouTube Video - <https://www.youtube.com/watch?v=HkXvWC47j60>

General

Autodesk Health Dashboard - <https://health.autodesk.com>

AU 2016 – Class Presentation - http://prezi.com/pjeb3-ierms/?utm_campaign=share&utm_medium=copy&rc=ex0share

AU 2015 - A360/C4R Class Presentation - <https://prezi.com/sdemqgorgohz>

(2015) A360 Webcast: The Future of Project Collaboration (Autodesk + bates)
<https://goto.webcasts.com/starthere.jsp?ei=1080007>

Sample Drone Footage

Mercy Hospital Jefferson – 10.25.2016

<https://vimeo.com/190934836/b3853e0825>

Mercy Butler Hill - 10.18.2016

<https://vimeo.com/187912007/43345203b9>

Mercy Hospital Joplin - 10.17.2016

<https://vimeo.com/187685852/5ed714a6f4>

Mercy Clinic Ozark - 10.18.2016

<https://vimeo.com/187912899/89ab0b8546>

Mercy Hospital Northwest Arkansas – 10.12.2016

<https://vimeo.com/187905358/0716b7b0b4>