Autodesk University 2012

Cloud Collaboration Glue's it all Together!

Autodesk® BIM 360™ Glue®

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PL3802

Autodesk BIM 360 Glue is a data-centric, cloud-based BIM management solution that provides easy, ubiquitous access to the project model, data, and collaborative workflows, regardless of authoring tools. Based on the Horizontal Glue™ technology that is currently used by leading construction, owner, and design firms, the session will focus on improved day-to-day processes for model coordination and collaboration across the entire project team. Join our gurus as they take us through BIM 360 Glue services and demonstrate multidiscipline model aggregation, clash management and collaboration in the cloud.

Learning Objectives

At the end of this class, you would have learned about:

- One-click access to BIM for all project stakeholders
- Data-centric, cloud based collaboration
- Round-trip workflows for design and coordination
- Integrations with project control applications
- Model access on the iPad

About the Speaker

Renad has eight years' experience in the construction industry with extensive work in infrastructure, mixed-use and high-rise development. In the past six years, she has focused on preconstruction coordination leveraging building information modeling platforms. She was part of the original team at Horizontal Systems who developed the cloud-based solution – Glue. Now at Autodesk, her primary focus is to work with clients in AEC towards achieving completely cloud based team collaboration. She attributes her ability to manage multiple projects and communicate across various disciplines to her construction experience. She holds a Bachelor's of Science (B.S.) in Architecture and a Master's in Business Administration (M.B.A).

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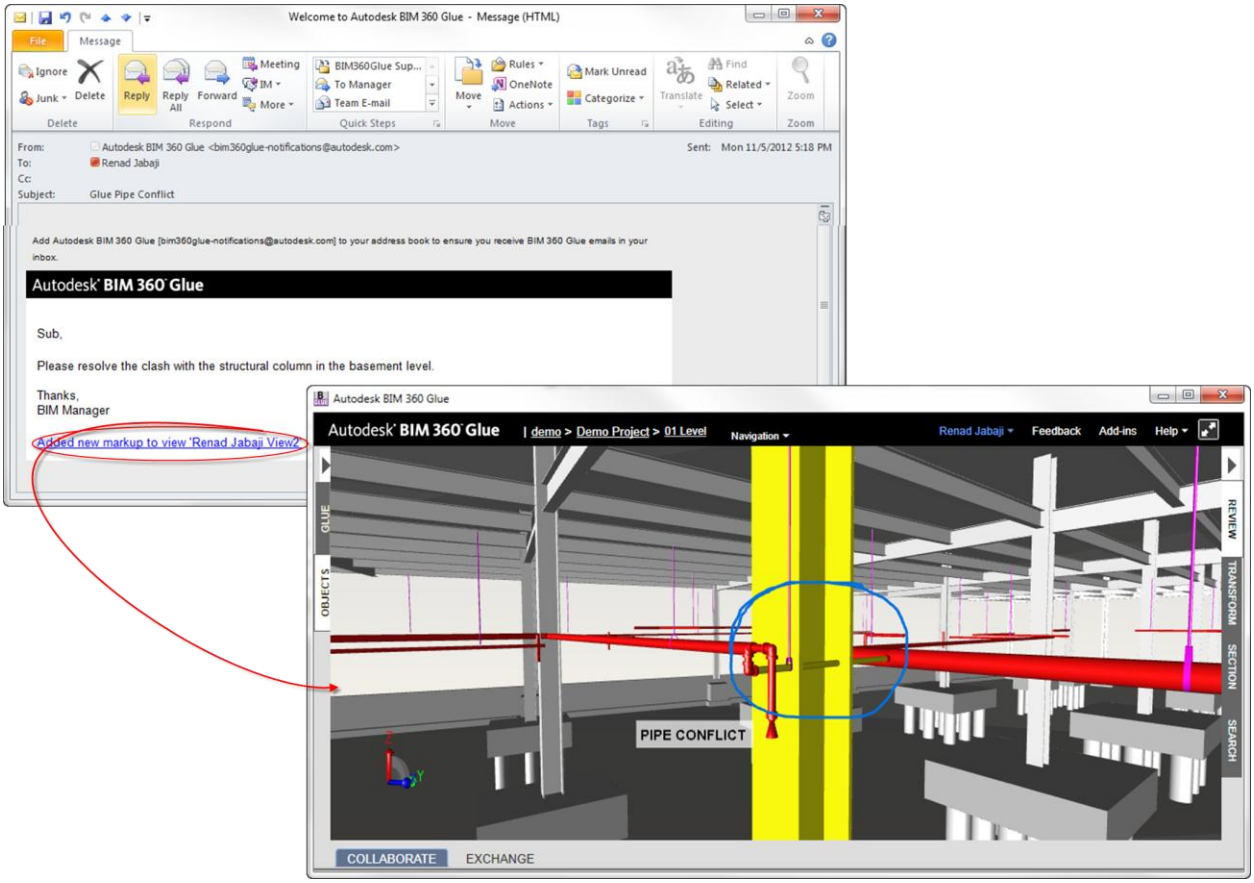
Collaboration Defined

"A recursive process where two or more people or organizations work together to realize shared goals, more than the intersection of common goals, but a collective determination to reach an identical objective". - Wikipedia

One-click Access to BIM

Autodesk BIM 360 Glue is a data-centric, cloud-based management solution that provides easy access for all project stakeholders. That is quite a statement for a Building Information Modeling (BIM) platform. Most people remember a time when in order to share music or videos with someone else, the media had to be burned to a CD. Furthermore, in order to access the media the appropriate player was required based on the file extension (ex: mp4, .avi, .mov). YouTube changed the way music and videos are shared by moving to the cloud. It's as simple as searching for the song or video and sharing the hyperlink to it. When the hyperlink is clicked, the website will launch and the song or video will begin to play instantly.

In BIM 360 Glue, sharing BIMs is as easy as easy as sharing Bieber's latest song. Hyperlinks for every activity; such as uploading a new model, saving a view or creating a markup, can be found in the records and emailed to another user directly from Glue. When the team member clicks on the hyperlink, Glue launches and the appropriate models automatically begin to load. Those without any prior experience in BIM are now just one click away from collaborating with the team in the cloud.



Ease of access to real-time project data is a key component in the success of the team, especially when they are geographically dispersed and working across time zones. The coordination phase of a project is critical to ensuring on-time and on-schedule delivery and relies heavily on efficient cross-team collaboration.

Data-centric, Cloud Based Collaboration

The coordination process in virtual construction typically involves a lot of time spent on uploading, downloading and aggregating massive models, with complex folder and file nomenclature structures to manage the multiple versions and instances being created. Glue simplifies this process by taking project collaboration to the cloud. Built on the premise of sending people to the models (rather than sending the models to the people) the BIMs that live in the cloud become the central source of truth, whereby every team member has access anytime and from anywhere. A deeper comparison between desktop centric and cloud based workflows helps illustrate why project teams are moving to the cloud.

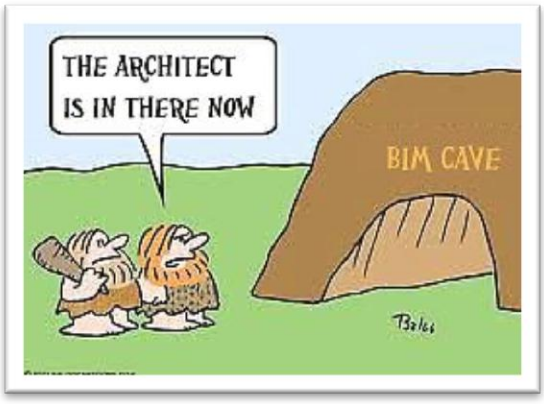
File-centric, Desktop workflow

In the traditional workflow, designers, engineers and subcontractors upload their models to a project server typically once a weekly on a specified day. The BIM manager downloads the models, aggregates them locally and checks for clashes. After reviewing the clashes, a clash report is generated and uploaded to the server, together with the federated model and the team is notified to go download.

File-centric desktop workflow

Upload to FTP	Download from FTP	Aggregate on Desktop	Run Clash & Create Report	Post to FTP
2 – 4 hrs	2 hrs	1 hr	4 – 6 hrs	2 hrs

The durations represent the average time per week in hours that a single team member can spend with a desktop workflow. An estimated eleven to fifteen hours a week[1] in uploading, downloading, aggregating, and checking for clashes. This doesn't account for the time and cost to traveling to the big room, where then only two or three participants can be involved in resolving an issue at any given time.



[1] The durations represent the average time per week and are based on data collected from clients over the past 5 years.

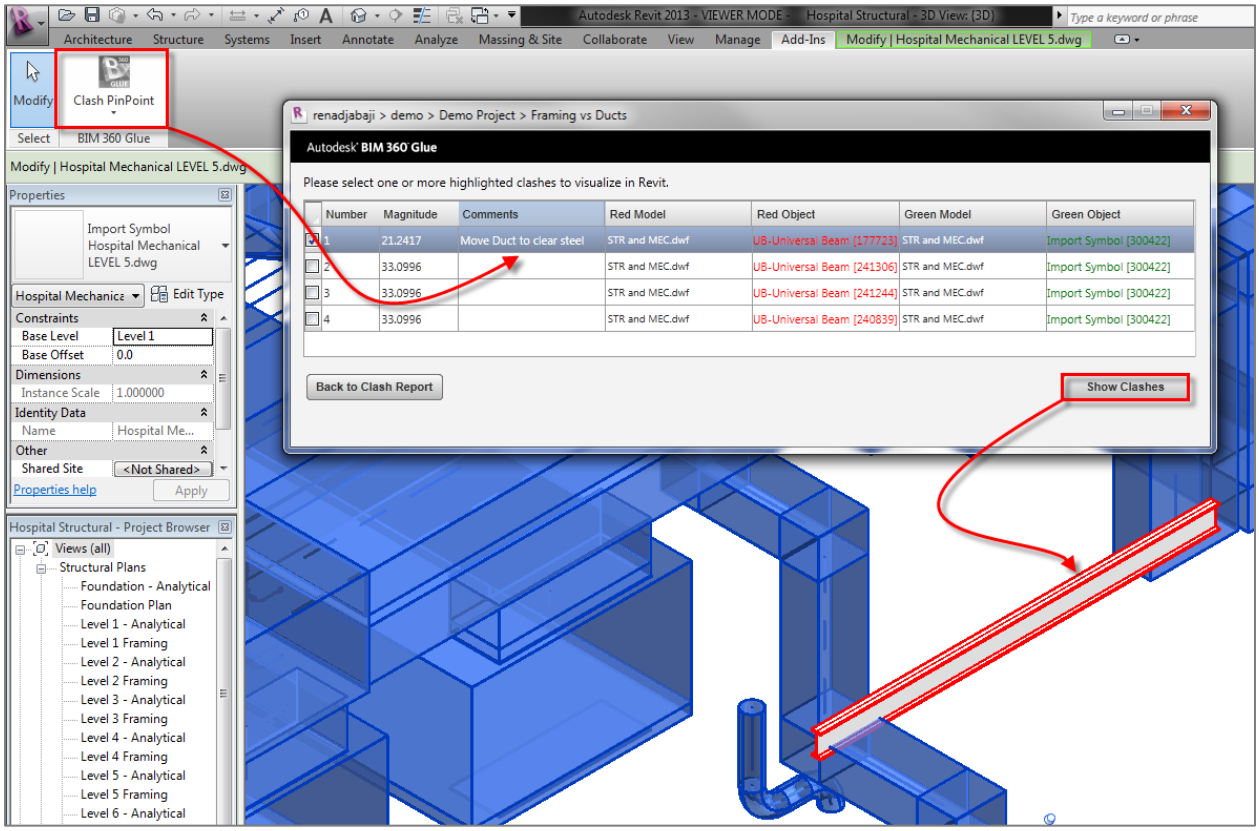
Cloud-based, Data-centric workflow

In the cloud, designers, engineers and subcontracts have the Glue plugin installed in their authoring tools (AutoCAD, Revit, etc.), and as their designs evolve throughout the day or over the course of the week, they *Glue it* – making it immediately available to the rest of the team. By keeping the same model nomenclature, Glue automatically achieves the previous version and refreshes the aggregated models to show the latest designs while notifying the team members of the update.

Cloud-based, data-centric workflow

Glue it!	Aggregate in Cloud	Real Time Clash Check	Automated Notification
1 hr	1 hr	2 – 3 hrs	N/A

Glue plugins offer a clash pinpoint feature whereby clashes saved in Glue can be accessed directly in the authoring application. With real-time access to clashes, team members can easily isolate the clashing objects in Revit or AutoCAD and address the design issues right away.



Glue Revit Clash Pinpoint

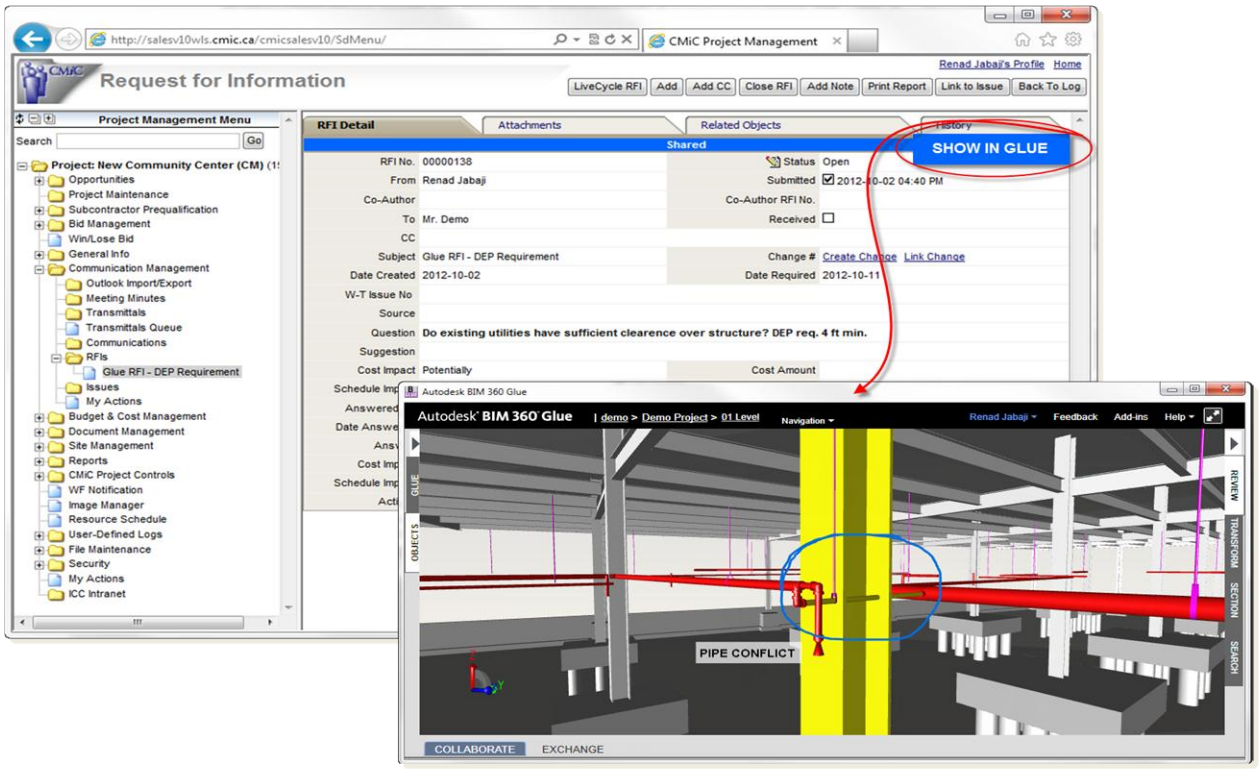
The result is a decrease in the number of clashes and subsequently shorter coordination meetings. Combine this with significant reduction in upload and download times, a single team member can get back an estimated seven to ten hours a week to allocate towards higher-level tasks.

Integrations with Project Control applications

With real-time access to project data, multidisciplinary collaboration can be achieved not only across authoring tools, but also through integration with project control applications. Integration can be as sophisticated as linking BIM data to project workflows such as Requests for Information (RFI) or as simple as embedding the Glue 3D viewer into an application such as Microsoft's SharePoint or IBM's Maximo (similar to embedding a YouTube video in a webpage).

Integration with a Construction ERP system

This integration leverages the BIM data in the cloud to provide increased visual clarity within a Request for Information (RFI) or Potential Change Item (PCI). A BIM manager creating views and markups in the models can initiate RFIs directly from Glue to utilize the approval workflows that are managed by the third party system. Issues that may potentially have an impact on project cost and/or schedule can be escalated from to a project manager for review. Upon logging into the system, the project manager will see that a new RFI has been added, with an embedded hyperlink to the model view or markup in Glue.

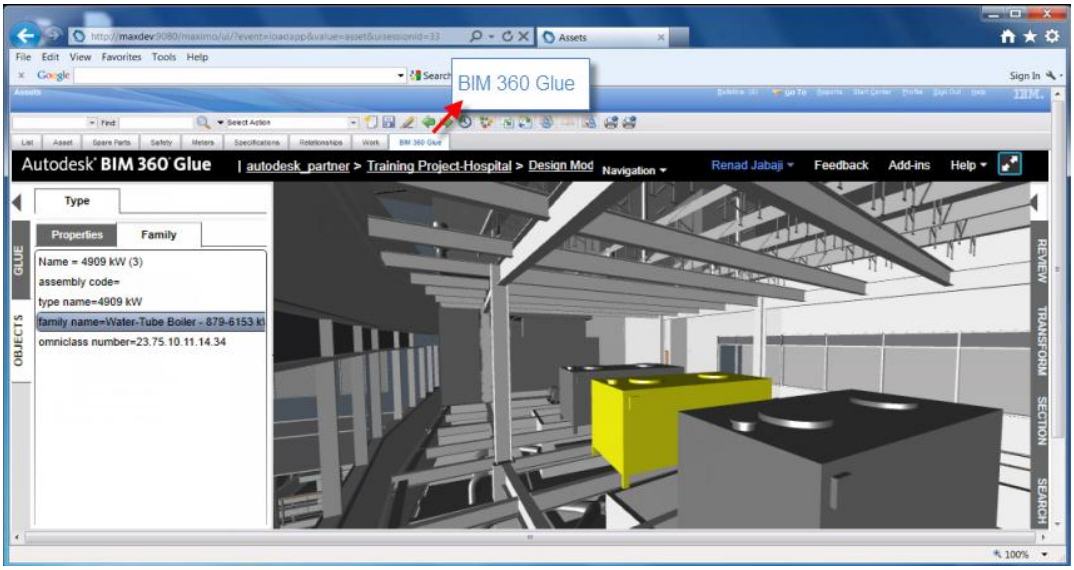


Glue integration with CMiC

Any changes made to the RFI – such as a status update or an answer to the original question, are automatically reflected in Glue. This integration brings immediate value to team members during the construction phase of the project.

Integration with a Facilities Management system

This integration helps extend the value of Revit BIMs into the operations phase of the building lifecycle. Richly attributed data about building assets that are developed in Revit during the building design and construction phases, can be published directly into Maximo during commissioning or at building "handover," thus supporting more immediate and efficient use of Maximo once the building is occupied. The Revit asset data can be exported in the COBie data specification, if desired. In addition, the BIM asset data can be viewed inside Maximo by embedding Glue in context with Maximo applications and processes.



Glue embedded in Maximo

BIM 360 Glue Mobile App

The BIM 360 Glue mobile app for iPad enables users securely access BIM projects from anywhere at any time. In addition the "one-click to BIM" which enables users to receive an email notification on their iPad that contains a hyperlink to a precise model view, Glue users can also intuitively explore multi-disciplinary models online or offline. Accessing saved views, reviewing intelligent object attributes and taking simple measurements are other key features of the app.

Navigation is made simple; users can walk through the model with gravity-assisted navigation optimized for BIM. The immersive feature is a gyroscope-enabled look-around tool that makes field inspections as easy as taking a picture. Now building, infrastructure, design and construction professionals can easily explore the latest model updates, supporting over 50 design file formats, and intelligent object metadata. Visit the App Store to download the BIM 360 Glue app for iPad.

Additional Information:

List of Supported File Types:

https://bim360.autodesk.com/file_compatibility.html

Videos and Tutorials:

http://www.youtube.com/playlist?list=PL71F6A665981BE491

Frequently Asked Questions:
http://wikihelp.autodesk.com/BIM_360_Glue/enu/Community/Frequently_Asked_Questions

Mobile App for iPad:

http://www.youtube.com/watch?v=DHglW2lqdSw

http://itunes.apple.com/us/app/autodesk-bim-360-glue/id554629830?mt=8&;uo=2

Glue API for Integrations:

http://bim360.autodesk.com/api

Revit–Maximo–Glue:

http://labs.autodesk.com/utilities/revit_maximo

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