BES500181

BIM360 for Design Collaboration Review and Issues Management

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Learning Objectives

- Learn about how to set up and work on Design Collaboration in BIM 360 and its Workflows
- Learn about how to set up and work on Design Review in BIM 360 and its Workflows
- Learn about how to set up and work on Issues Management in BIM 360 and its Workflows
- Learn about how to use on Desktop Connector for Navisworks (Coordination Add-in for Issue management) and CAD files

Description

To learn more about BIM 360 modules like Design collaboration, Design review and Issue management and how a project team can work together as single team even though they are divided by different companies by their trade. Also, you will know about the workflows, how to do the set up in BIM 360, benefits of using this features in your project. You will learn about the desktop connector usage and Coordination & Issues add-ins for Navisworks and Revit respectively. In this class, you will know about the how Revit, BIM 360 and Navisworks and Desktop connectors are related to each other and workflows for successful implementation to your ongoing ptrojects.

Speaker

Kalyana Sundara Annamalai is a Mechanical Engineer by trade who has more than 10 years of experience in AEC industry. Currently working as BIM_Digital Technology Lead for WME Consultants. Implementing Digital strategies for the projects in WME consultants. A progressional who is awre of benefits of BIM and work towards for the successful delivery of the projects. He provides the support to the project team to overcomes the issues/ changes had on the project by providing alternative workflows/ solutions.

Introdution

Autodesk BIM 360 is a powerful platform for collaborative working, sharing the documents, reviewing the design and raise the problems on the design with other project team members. This class talks about the BIM 360 modules like Design collaboration, Design review and Issue management and it's workflows. This handout will explain about the step by step procedure for set up, workflows, benefits, lessons learned and interoperability between BIM 360, Revit, Navisworks and AutoCAD.

Design Collaboration

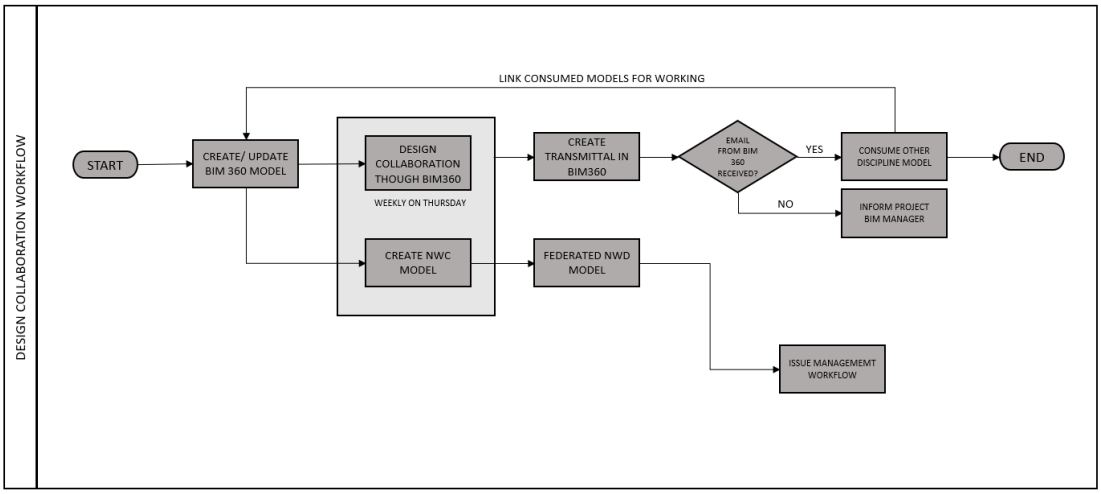
Design Collaboration is one of the BIM 360 module which is used to share the project files such us Revit models, drawings and other project documents within project team members on the same company or project team menmebers from other stake holders. When the project teams are located in different parts of the world and now the entire world is in the difficult situation because of COVID 19 which affects the world and every one are working remotely. BIM 360 provides an opportunity to overcome all this kind of issues. Design collaboration module on BIM 360 can be used to share all the project files within project team.

Types of Design collaboration workflow

There are four different ways of workflows are available in BIM 360. They are as follows:

- Live linking of models without discipline folder
- Live linkling of models with discipline folder
- Linking files from Shared folder
- Linking Revit models from Consumed folder

In this class, we are going to see about the "Linking Revit models from Consumed Folder" which is most effective workflow for a large scale proects. To know about other workflows, please find the link here which explains about the BIM 360 Desing collaboration. Below is the workflow flow chart diagram which explains about the Design collaboration method.



Design collaboration License

In order to access the BIM 360 Design collaboration module, the user needs to have BIM 360 Collaborate Pro license. You can get the free trial and overview of BIM 360 Desing collaborate pro here.

Design collaboration Steps

Once the project is created in the BIM 360 and user is added to the project, then the project Admin can do the Design collaboration set up for the project. The project admin shall create the folder structure as per their company standard/ project requirement. Once this step is done, you are good to go Design collaboration. Then he shall add the project members to the project by providing access to Design Collaboration module.

How to do the project set in BIM 360 shall be found here.

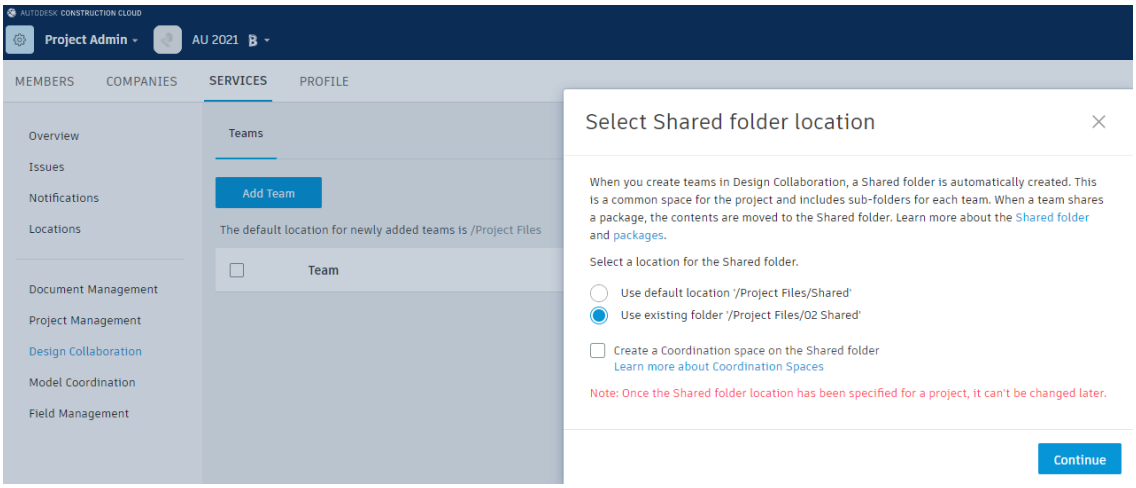
There are 6 steps in the Design collaboration workflow process.

- First step is to do the Set up in BIM 360 – that will be done by Project admin
- Second step is model Publishing – each discipline team members are responsible for this step
- Third step is model sharing – again each discipline team members are responsible for this step
- Fourth step is transmittal creation – this can be done by each discipline team members
- Fifth step is Model consuming – this can be done by other discipline team members
- Sixth step is linking and working with consumed model – each discipline team members are responsible for this step

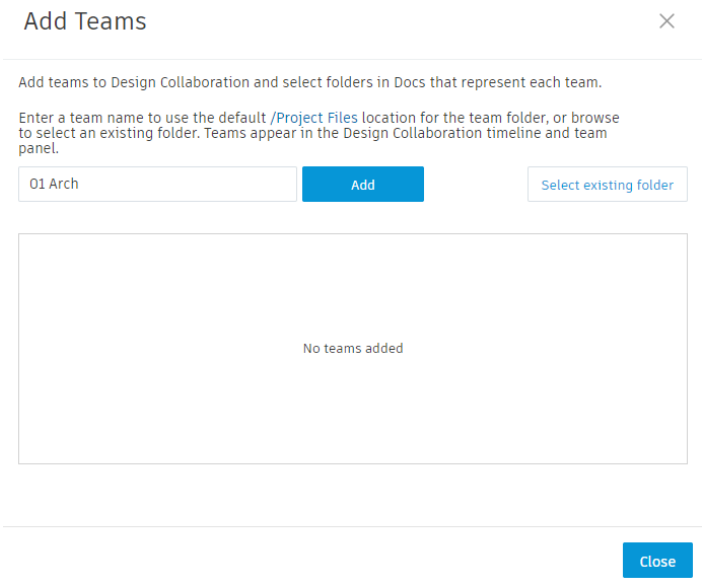
Design collaboration Set up

- The project admin shall go to “Project Admin” module on the BIM360 and then “Services” > “Design Collaboration” > “Teams” and then “Add Team”. He/ She needs to select Shared folder location based on their company folder structure or they shall use the default “Shared” folder from Autodesk.

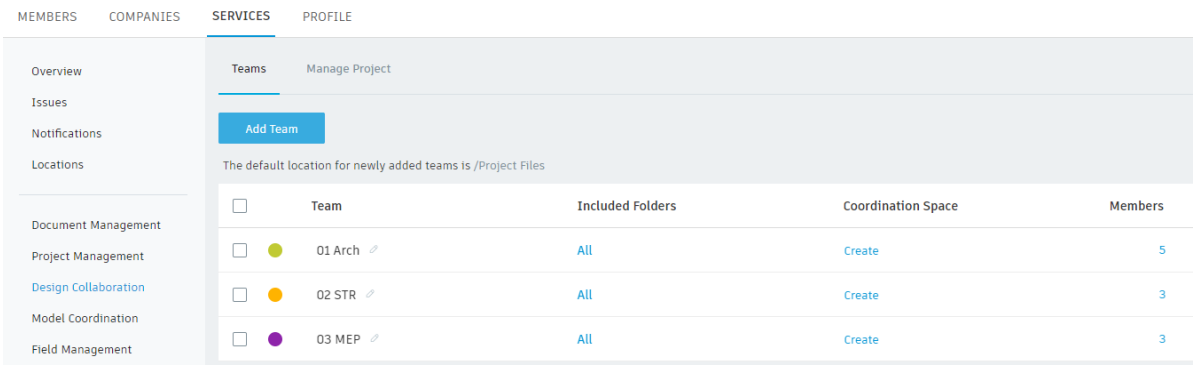
Note: Once you have selected folder you are not able to chage the path through out the project cycle.



- Once the shared folder is selected, then the project admin shall create “Teams” by clicking “Add Team” option then by selection the existing folder which was created by admin earlier.



- Finally all the Teams are created in the project.

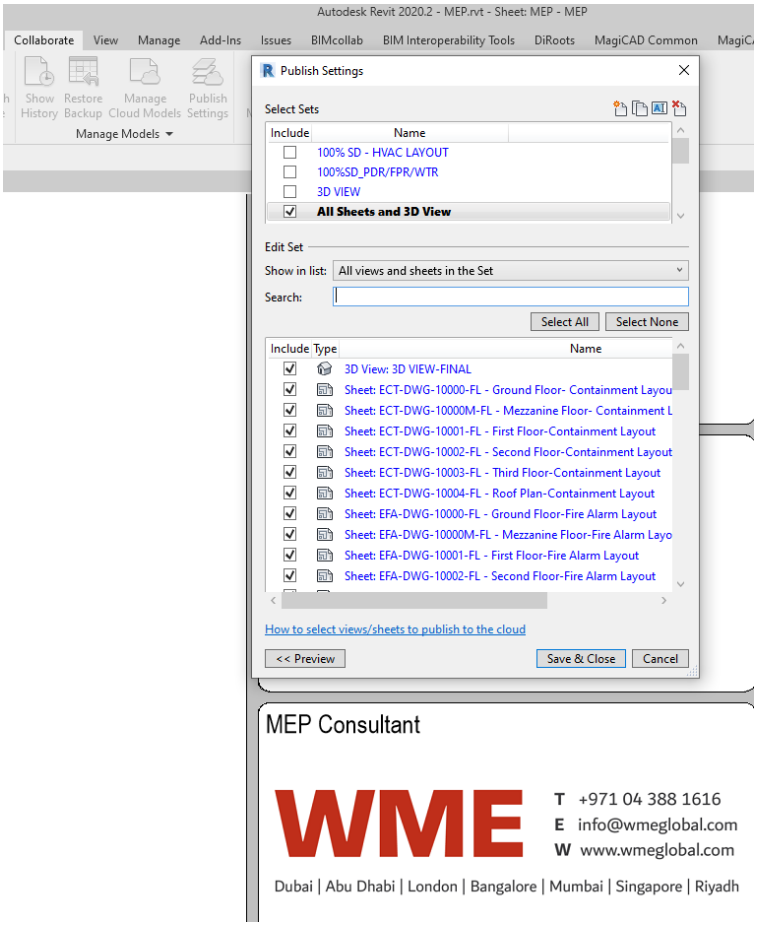


Teams are the discipline folders or this can be company folders depends on the project requirements.

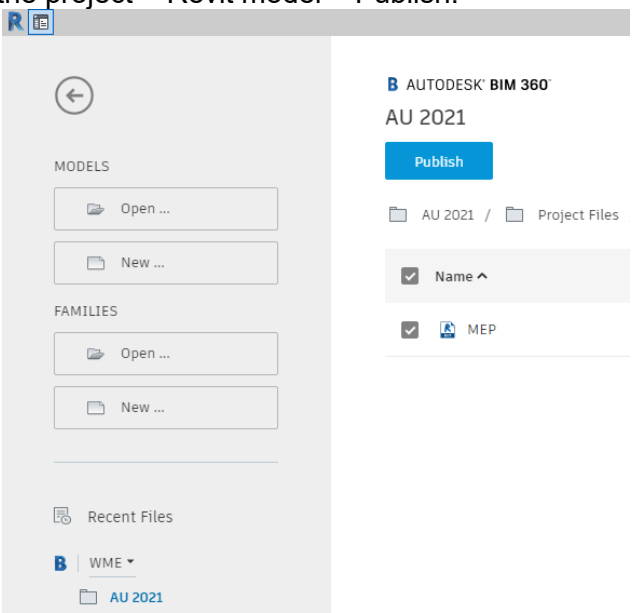
To know more about Teams in Design Collaboration, please follow the link here.

Design collaboration Model Sharing

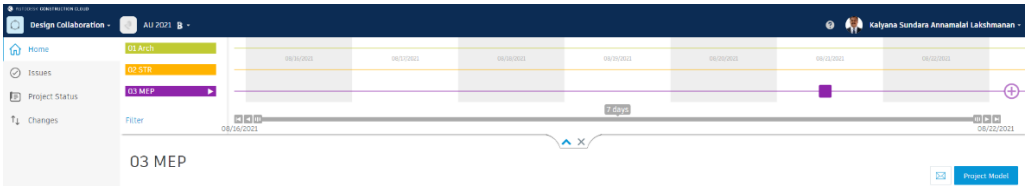
- Firstly, the model needs to be uploaded in BIM 360. Note: if you are new to BIM 360 please follow this link, for uploading Revit model to BIM 360.
- Once the model is uploaded in BIM 360, the sheets and 3D views need to be created on the Revit model.
- Then this views shall be added to “Publish settings” to publish the model to BIM 360. Then you can see the model in BIM 360 without the Revit software on your system.
- You shall go to Collaborate > Publish Settings > Select all views/ sheets/ 3D views whichever you would like to see on BIM 360. Create “New set” and “give name” to the set and “save & close” the Publish setting.

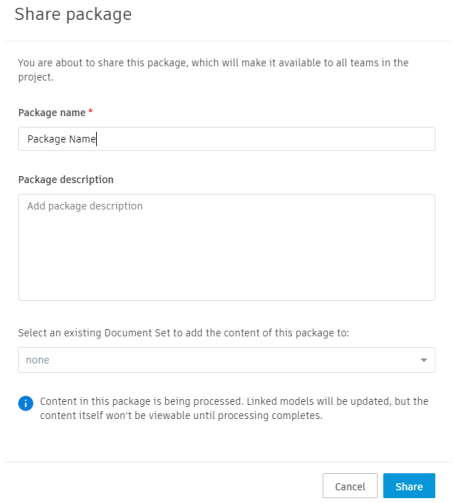


Once the setting is done, you can go to Collaborate cloud model > Manage cloud models > Select the project > Revit model > Publish or You shall go to Revit start up location and Select the project > Revit model > Publish.

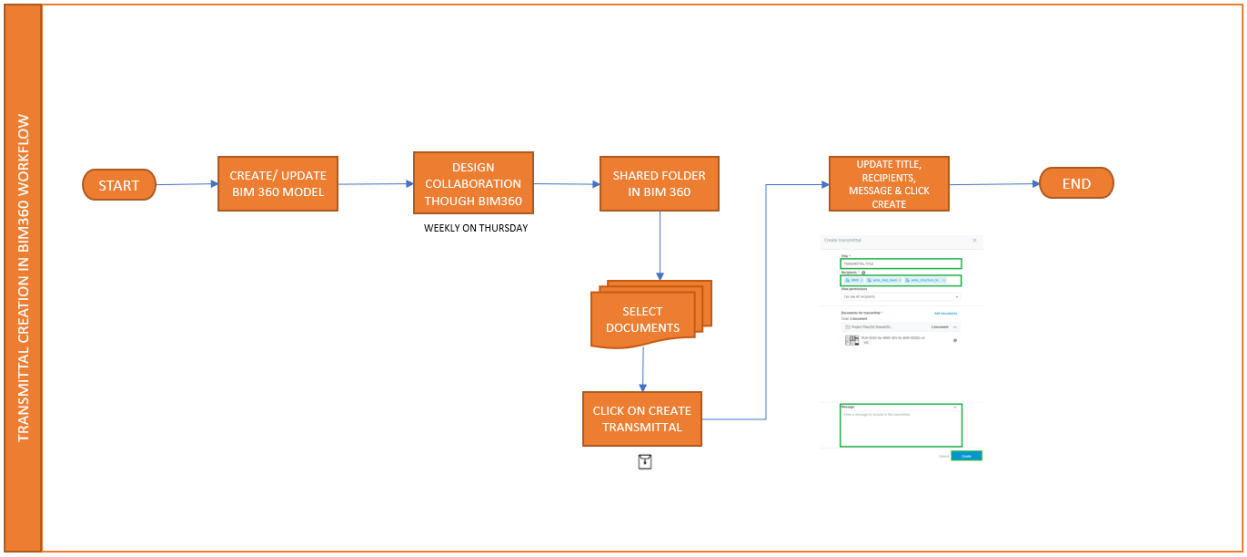


- Once the Revit model is published in BIM 360 – the discipline team member can share the model using Design collaboration module on BIM 360
- He can click on Design collaboration module and then select his discipline and click on + symbol to create a package with name and description and then share the model



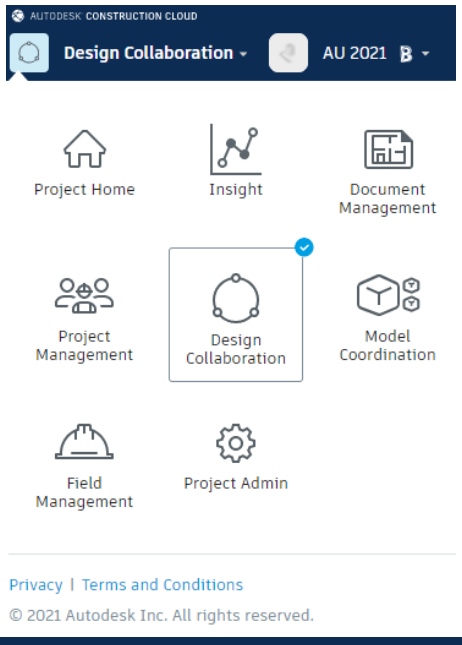


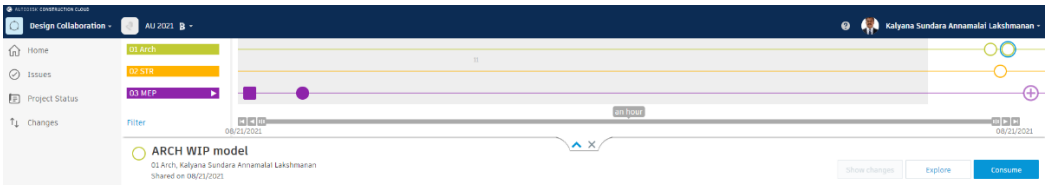
- Once it is done the model will be copied to shared folder
- Then he can select the model and create transmittal. Below is the process diagram for Transmittal generation.



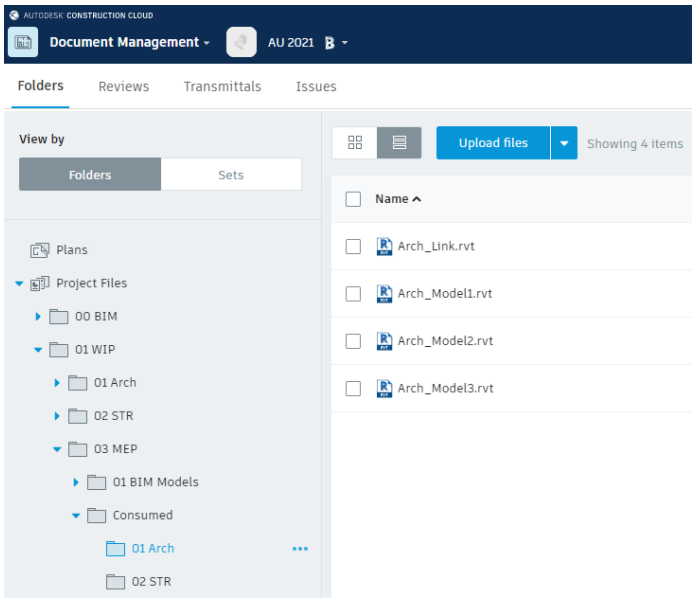
Design collaboration Model Consuming & Referencing

- After receiving the transmittal notification email, the discipline models are ready for consuming by discipline team member.
- He/ she can go to BIM 360 Design collaboration > Select the Discipline folder > then select the other discipline folder > click consume

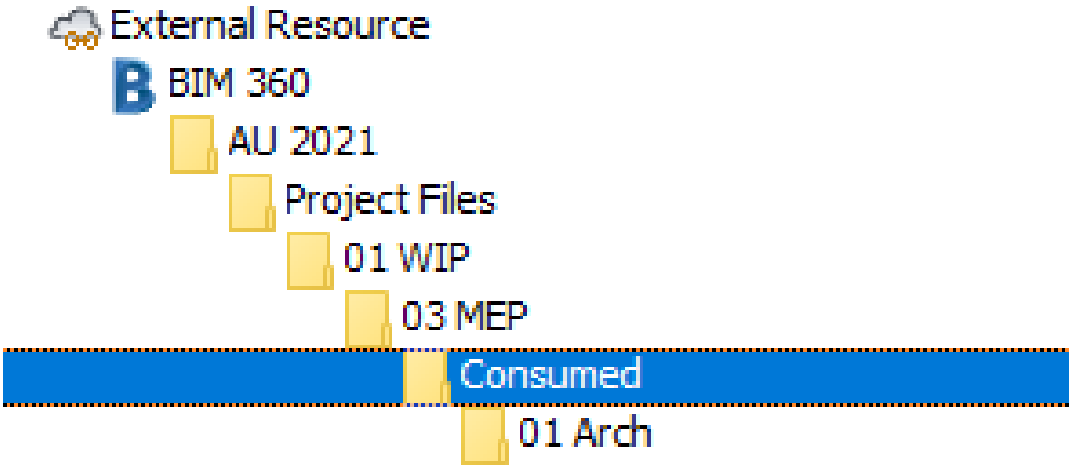


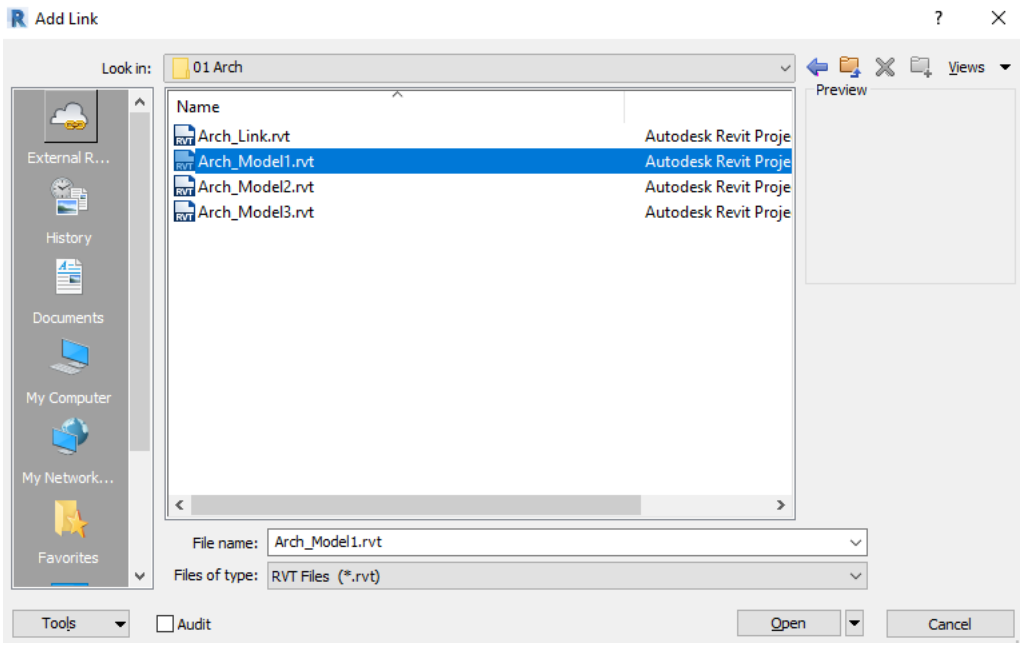


- Now the models will be copied to the consumed folder.



- The models from Consumed folder shall be linked in the discipline models for reference and working. Insert > Revit link > External Resources > Browse to Consumed folder> Select the file and open





To know more about Design collaboration process, please follow the linke here.

Lessons Learnt

- Files Publishing may take longer time depends on the number of Sheets/ views selected for publishing and It will consider the linked files
- File sizes shown in BIM 360 is not actual file size, this is including the linked models
- Models needs to be shared in Design Collaboration after the Publishing to BIM 360
- We can decide when to consume the model for the design development
- Files in the consumed folder will be updated whenever we consume the model.
- If we consume the latest package and after that we consume the old package, then Consumed folder will have old package files only as we consumed old package recently.
- Consumed/ Shared folder shall be used to access the Changes from the previous version of the file.

To know more about Packages, please follow the link here.

Key Benefits

- Collaborative working with Multiple Stakeholders – no need to have document controller to download and keep record of incoming models.
- Control of the data – we can consume the package as and when it is needed.
- Version Control – All files will be created as next version of file. So it is easy to compare the model changes and minimize losses

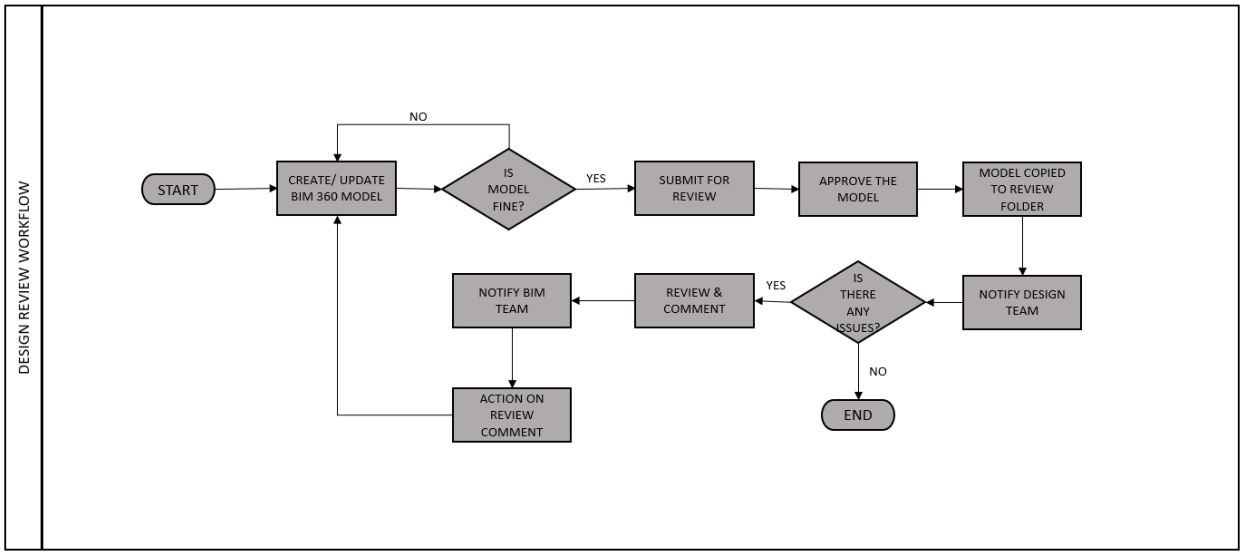
Total time savings in every week is about 27 Hours (Approx.)

Design Review

Design review is essential step in all stages of the project. In general, the review shall be taken in place by various option such Paper, or separate software such as Autodesk Design Review, PDF and other review tools, etc. BIM360 shall be used for Review and mark-ups without have an additional software installed on their system. As BIM 360 is a colud based platform, we don't required to transfer the review files from one location to other location for further review and to copy all the review files to single location for proper records. All this process became easy and BIM 360 shall be used for collaborative review process.

Design Review workflow

Once the model is published in BIM 360 then it is ready for the Review workflow. Design review workflow is defined in the below diagram.



- Publish the Revit model with sheet and one 3D views
- If the model is good for the Design review, select the model and "submit for Review".
- You shall give the name and select the workflow and submit.
- Then the Reviewer shall open file > start Review > Approve the document
- Then this document will copy to Review folder
- Then the Reviewer shall provide the comments on the document.
- After the review is complete, the comments shall be updated by Model author.

Design Review Steps

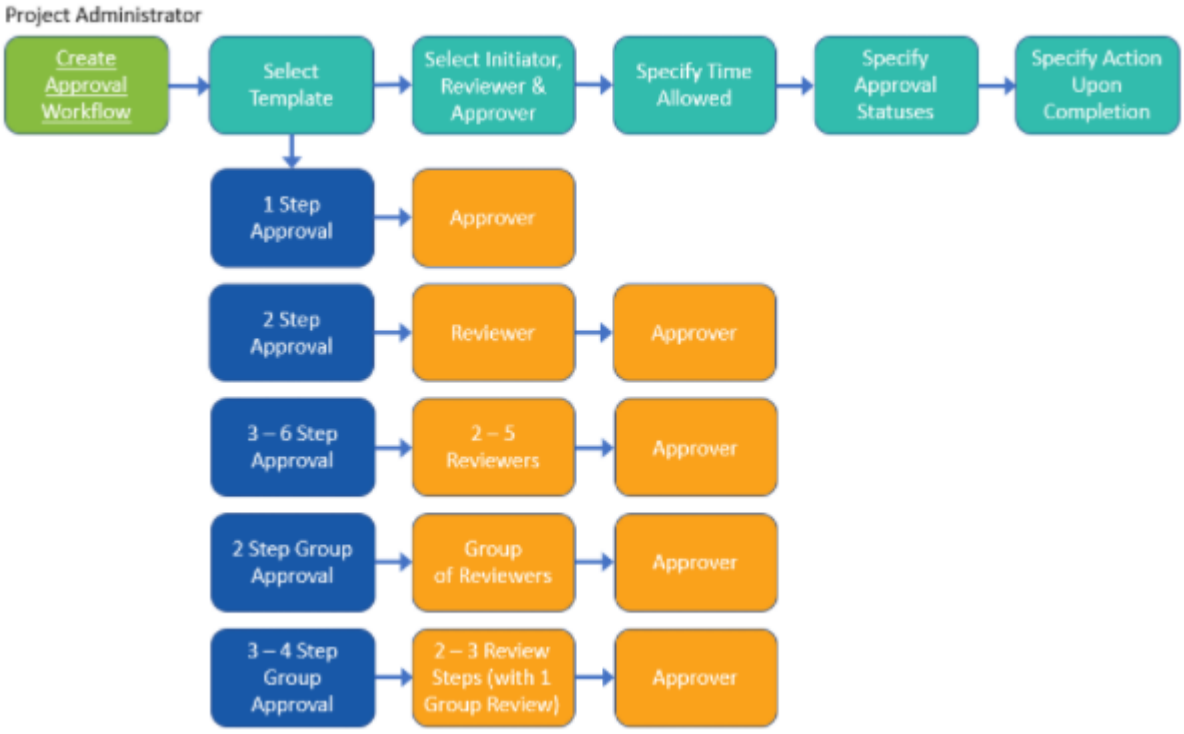
There are 3 Major steps involved in the process:

- Approval workflow setup
- Submit Document for review
- Revit comment with markups

Approval Workflow setup

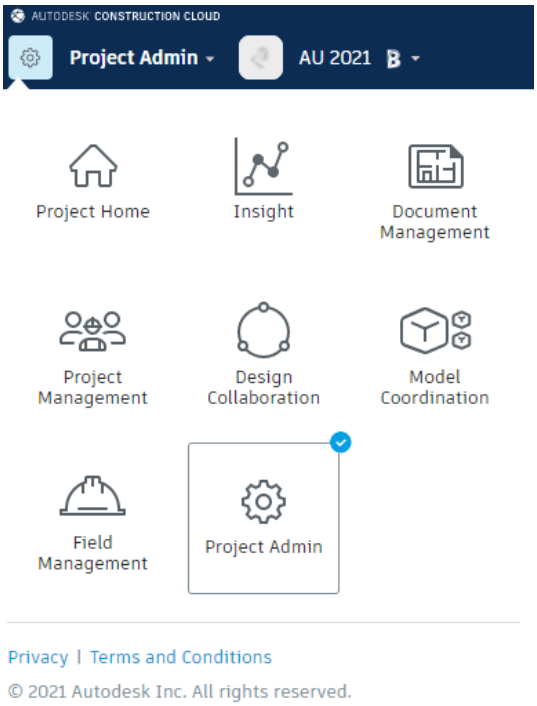
The Approval workflow will be set up by project administrator. He/ she shall create the workflow depends on their project requirements and company structure.

Autodesk BIM 360 is providing 5 types of Approval workflow.



Here you will be seeing the steps for one step approval process.

- The Project admin shall access the create approval workflow option under Services > Document Management > Review
- Then you shall click on “Create approval workflow” > One step approval > provide the name for approval, initiator, approver and then select the location where the approved documents need to copy
- Then you shall click on Finish.


AUTODESK CONSTRUCTION CLOUD
Project Admin
AU 2021
Project Home
Insight
Document Management
Project Management
Design Collaboration
Model Coordination
Field Management
Project Admin
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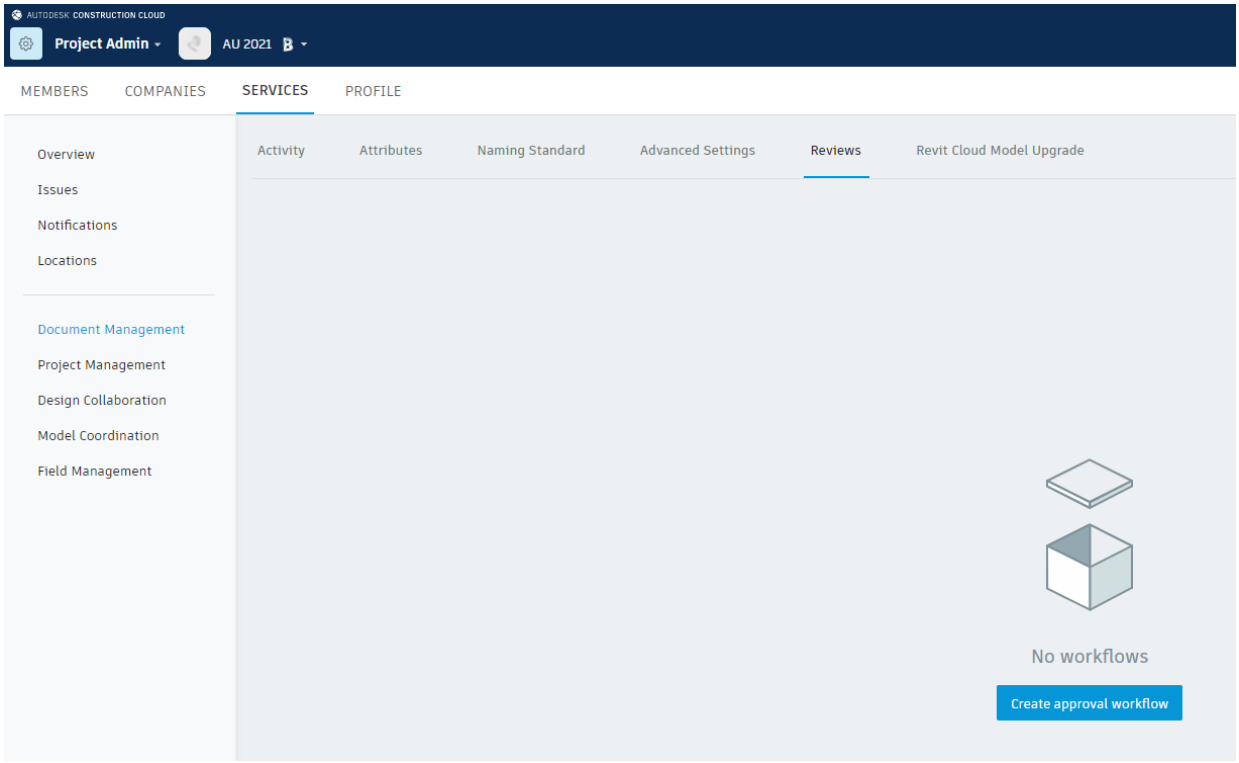
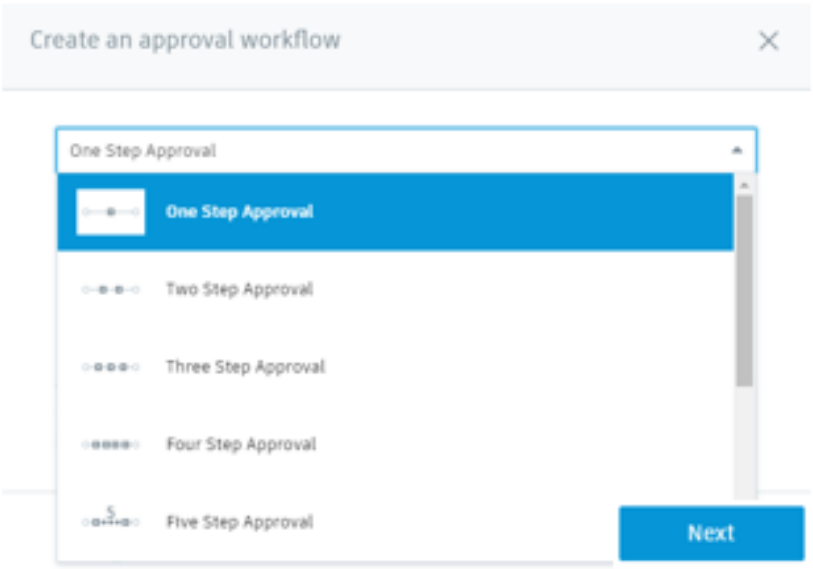
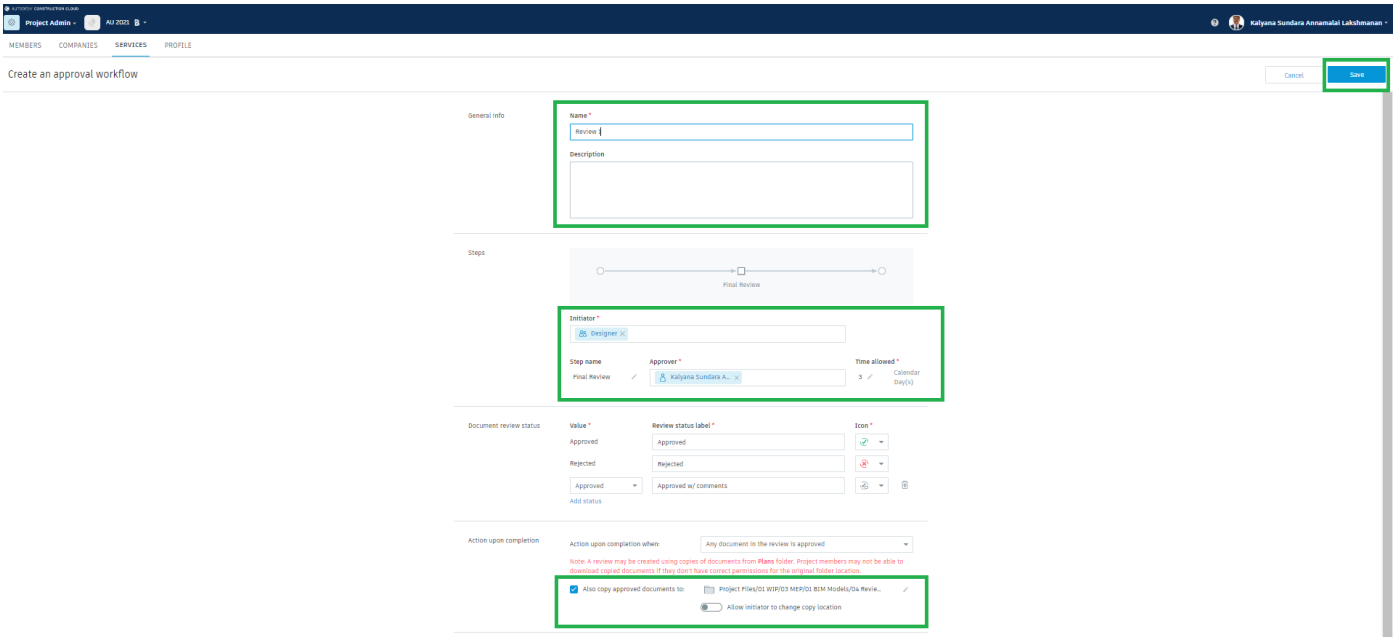

AUTODESK CONSTRUCTION CLOUD
Project Admin
AU 2021
MEMBERS
COMPANIES
SERVICES
PROFILE
Overview
Issues
Notifications
Locations
Document Management
Project Management
Design Collaboration
Model Coordination
Field Management
Activity
Attributes
Naming Standard
Advanced Settings
Reviews
Revit Cloud Model Upgrade
No workflows
Create approval workflow



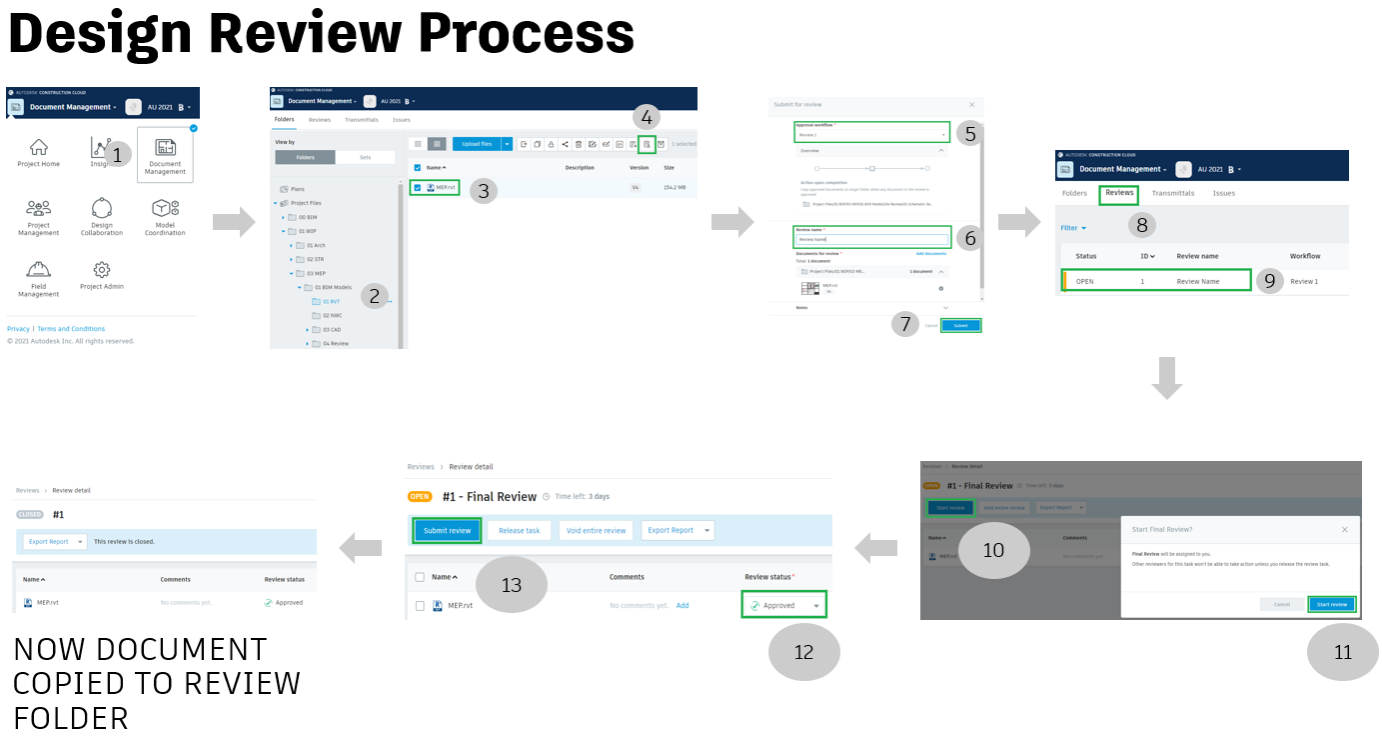


Note: The review folder needs to be created in BIM 360 before you create the Approval workflow.

To know more about Approval workflow, please follow the link here

Submit Document for review

When the model is published and ready for review, this model needs to go through the Approval workflow. The iniator/ BIM lead shall submit the model for review by selecting the model and click on Submit for review option on the top. Then the review process is initiated, the reviewer shall open the Review model, then start review the same. If the model is good to go for review then change the status to approved and submit the review. Once the status is approved, the document will be copied to the review folder.

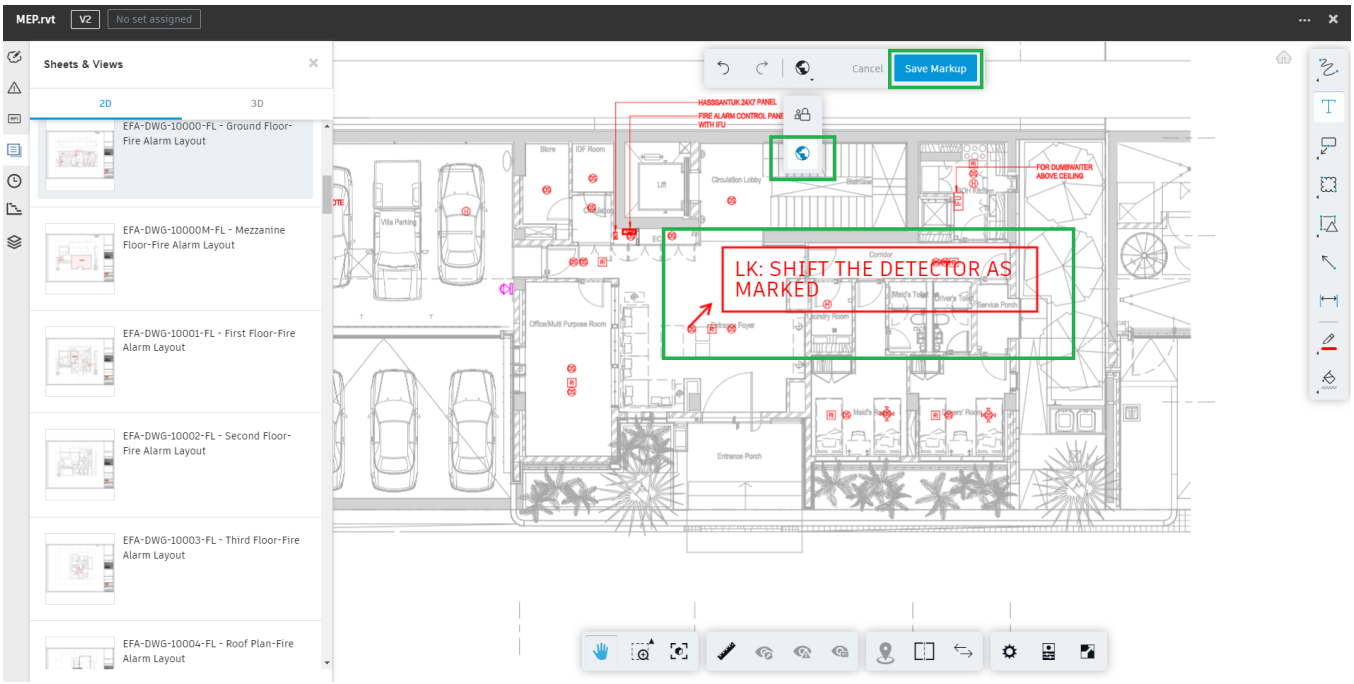


To know more about Review and approve documents process, please follow the link here

Review comment with markups

In this step, the Reviewer will select the model in the Review folder and he can see the sheet views and 3D views which has been selected in the Published setting. Reviewer shall go to the respective views/ sheets and start adding the comments using Mark-ups tool in BIM 360.

Once reviewer is complete his review, then the BIM team shall address the same on the Revit model.



Note: when the user add the mark-up comments, the reviewer needs to publish the markups, then only the other can see the mark-ups and address the comments.

To know more about mark-up process, please follow the link here

Lessons learned

- If the sheet number is changed after the review comment, then the mark-up will loss it's connectivity.
- Archieve the previous mark-ups shall be done by Project admin/ the comment creater
- If there is broken icon on the published model, the sheet views can't be viewed

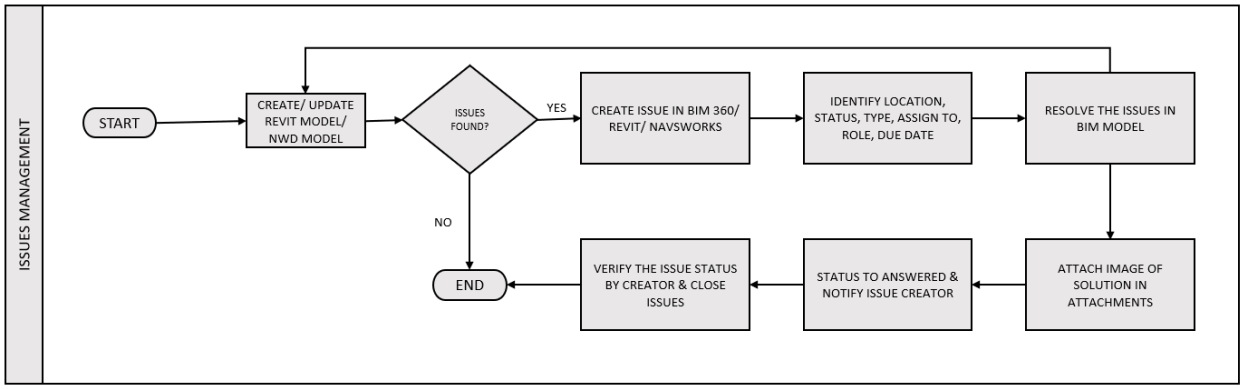
Key Benefits

- Collaborative Design Review – multiple person can review the model same time
- No need of Additional Software
- Proper QA/QC control – all reviews shall be located in one folder
- Full record of project reviews under one location
- No need to achieve previous Mark-ups
- Minimize losses

Total time savings for one project is about 100 Hours (Approx.)

Issues Management

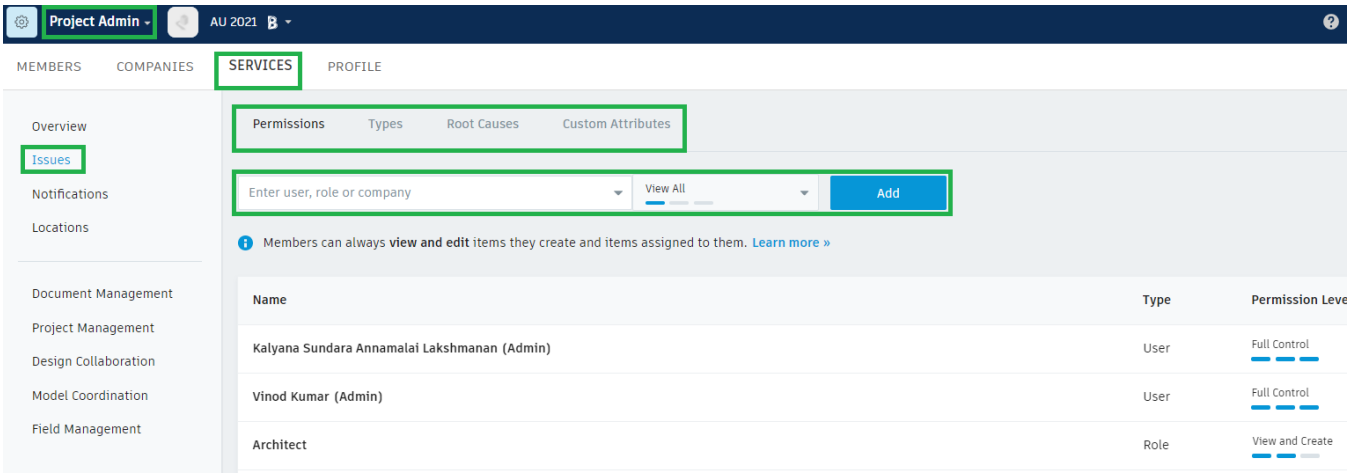
In BIM 360, the project issues shall be created and tracked for the full project cycle. The issues shall be created in BIM 360 and these can be assigned to specific person/ role/ company depends on the project requirement. Also you will be having an option to provide the attachment to the same issue itself. Below is the sample workflow for Issues Management.



To know more about mark-up process, please follow the link here

Issues Management setup

The project admin shall create Issues management set up under Project admin portal. Under Project admin, Services tab > Issues is the area where the admin can do the set up for Permission, type, Root causes and custom attributes.



To know more about creation of issues permission, please follow the link here

To know more about creation of issues types, please follow the link here

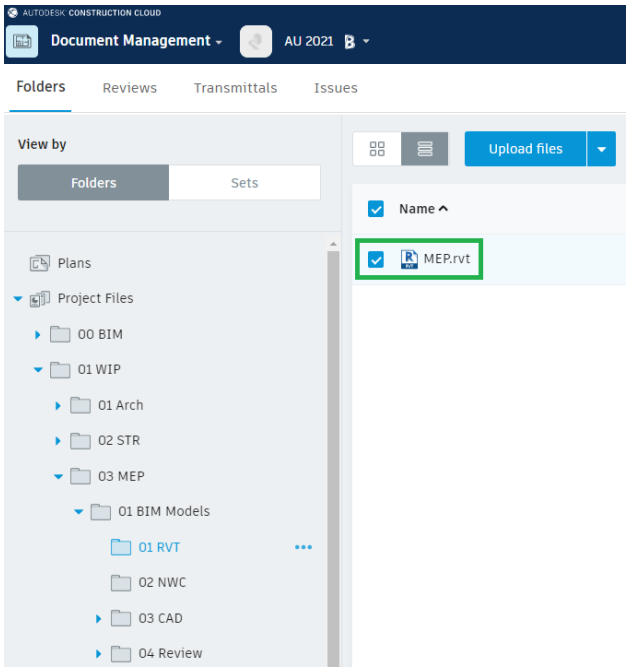
To know more about creation of issues Root causes, please follow the link here

To know more about creation of custom attributes, please follow the link here

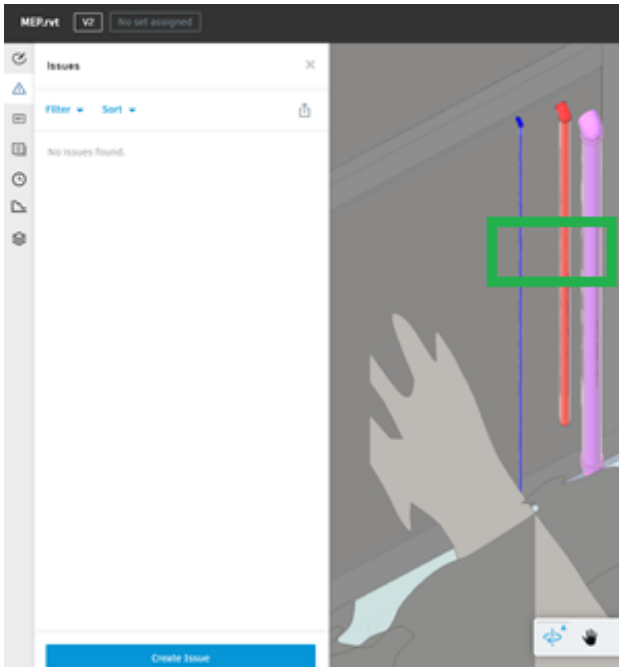
Issues Management in BIM 360

Below are steps for the Issues Management process:

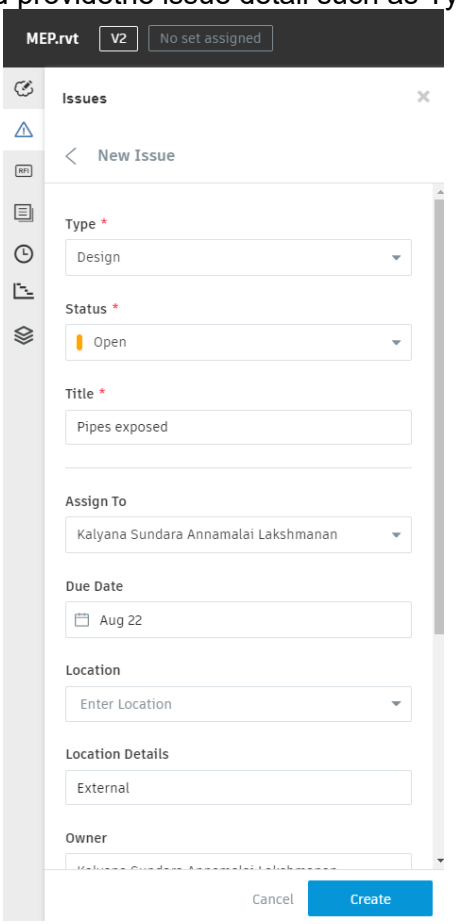
- Select the model for review



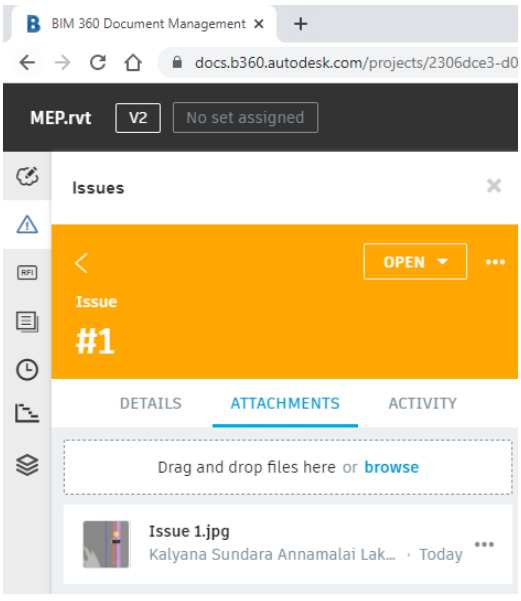
- Identify the problem is the model



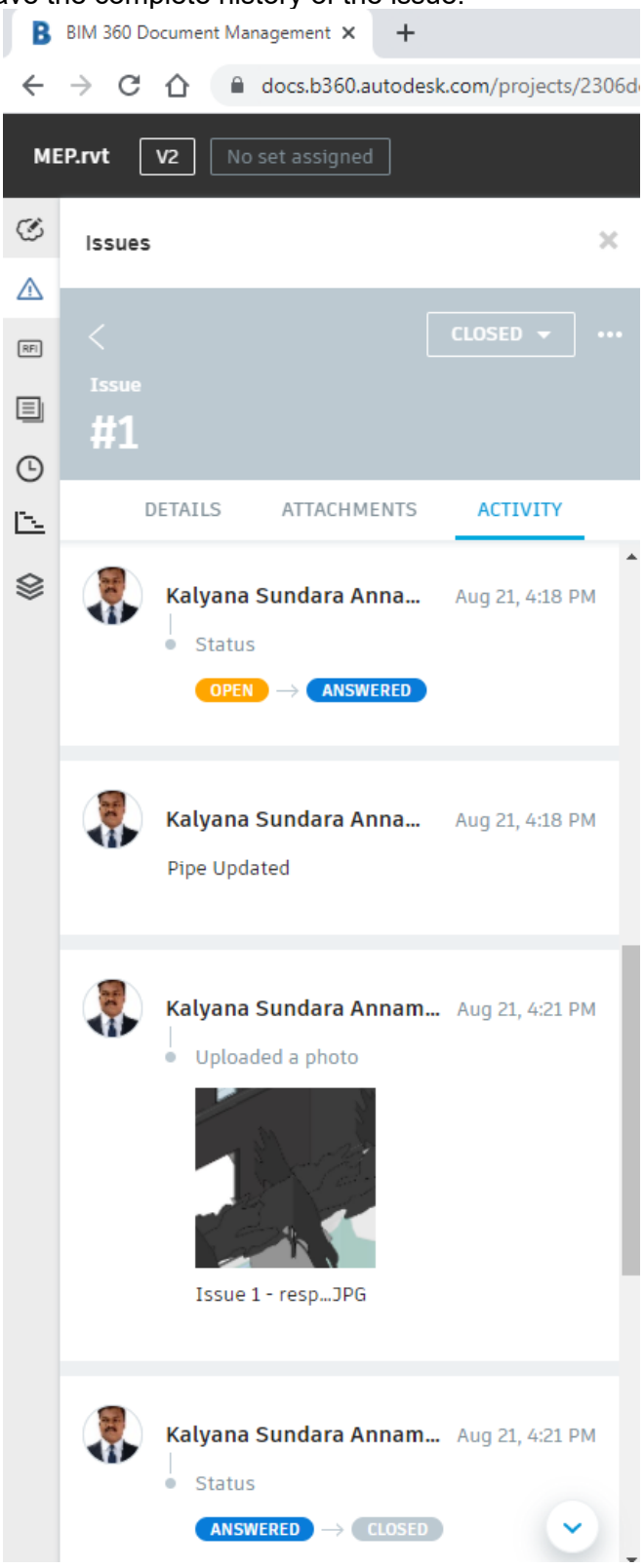
- Click on “create issues” and providethe issue detail such as Type, status, Title, etc



- Provide the images as attachment in the issues.



- Activity tab will have the complete history of the issue.

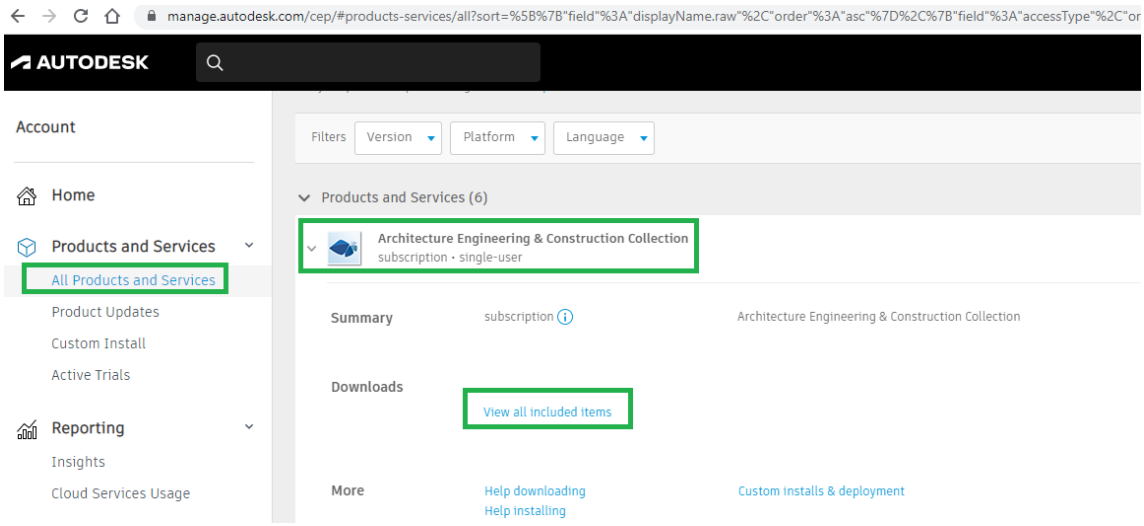


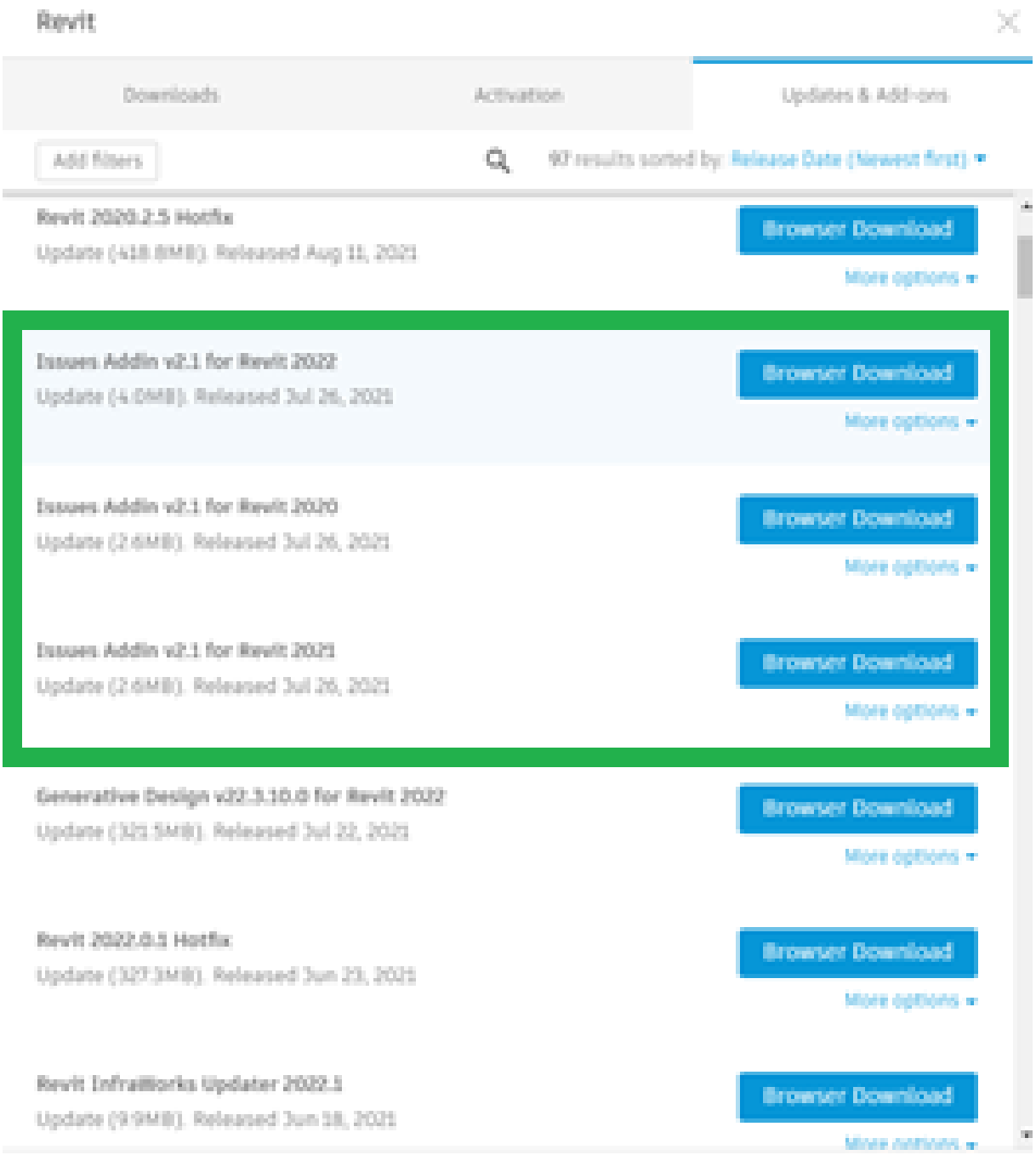
Issuement Management Revit (Issue Addin)

In this type, the issues needs to be created in BIM 360 on the Revit model, the issues status and respsnses with attachment shall be done via Revit issues addin. Remaining workflow is same as Issues creation in BIM 360.

Addin location

To download and install the Issues addin, you shall go to https://manage.autodesk.com/ and sign with your Autodesk user name and password. You shall see the All project and services > AEC Collection > Revit > Updates & Addons > Issues addins. Then you can download and install the addin on you system




Revit
Downloads
Activation
Updates & Add-ons
Add filters
97 results sorted by: Release Date (Newest first)
Revit 2020.2.5 Hotfix
Update (418.8MB). Released Aug 11, 2021
Browser Download
More options
Issues Addin v2.1 for Revit 2022
Update (4.0MB). Released Jul 26, 2021
Browser Download
More options
Issues Addin v2.1 for Revit 2020
Update (2.6MB). Released Jul 26, 2021
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Update (2.6MB). Released Jul 26, 2021
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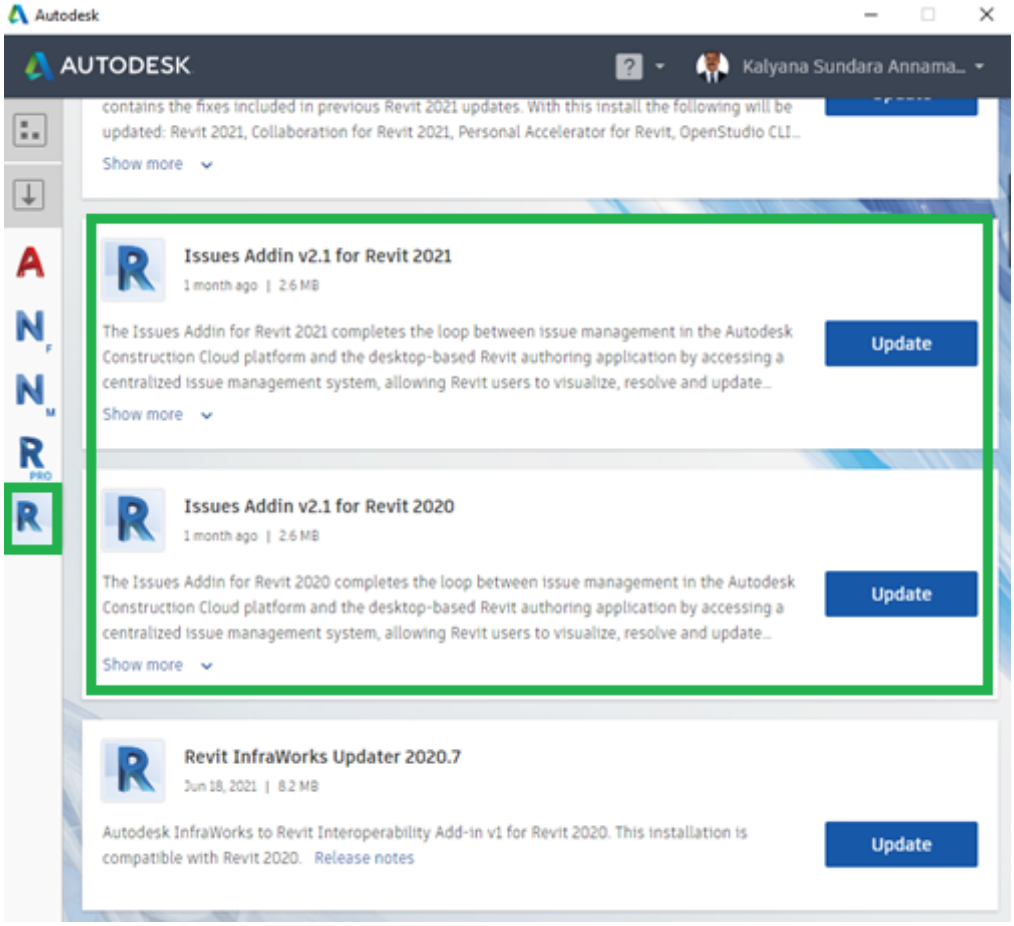
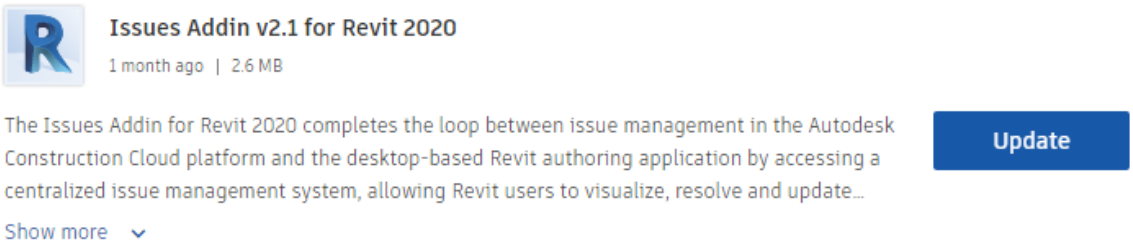
More options
Generative Design v22.3.10.0 for Revit 2022
Update (321.5MB). Released Jul 22, 2021
Browser Download
More options
Revit 2022.0.1 Hotfix
Update (327.3MB). Released Jun 23, 2021
Browser Download
More options
Revit InfraWorks Updater 2022.1
Update (9.9MB). Released Jun 18, 2021
Browser Download
More options

Or

The Revit issues addin shall be installed/ updated through Autodesk Desktop app > Revit > Issues Addin



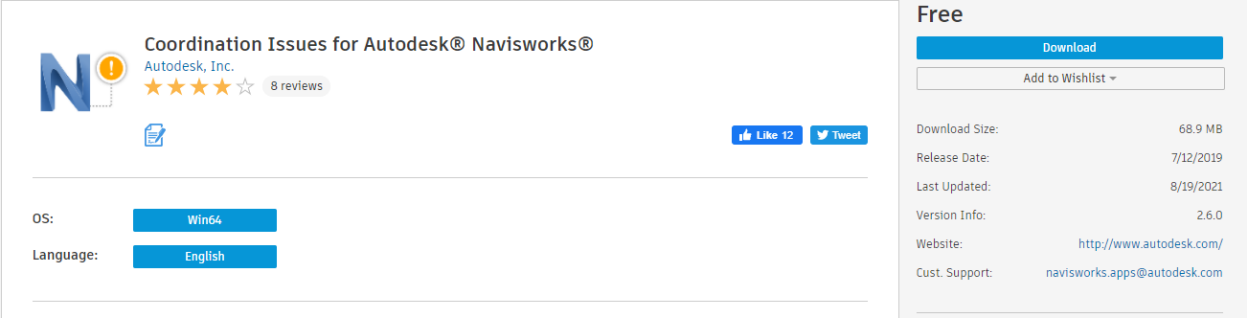


Issues Management Navisworks (Coordination addin)

In this type, the issues shall be created in BIM 360 and NWD file using Coordination addin, the issues status and respsnses with attachment shall be done via coordination addin in Navisworks Manage. Remaining workflow is same as Issues creation in BIM 360.

Addin location

To download and install the Coordination addin, you shall go to Autodesk App store and sign with your Autodesk user name and password. You shall download and install the addin on you system from the link here



Lessons Learnt

- Federated NWD shall be used for creating issues by opening from Desktop connector
- If the NWD name is changed also, the issues created on the file will be avalalbe on the same file.
- You shall lock the NWD file from BIM360, but still other project members shall update the Issues creted on the NWD file
- Full issues shall be seen in the single NWD file
- Issues created in NWD can't be seen on the Revit using Issues Addin
- Only issues created on the revit model shall be seen using Issues addin

Key Benefits

- Identify problem/ revalidate solution/ raise Issue is easy
- Great Interoperability between BIM360 and Revit/ Navisworks
- Full history of action for each issues
- Full record of project Issues under one location (From CD to Handover)
- No missing information / Minimize losses
- Easy to maintain and generate report

Total time savings for one project is about 200 Hours (Approx.)

Desktop Connetor

Desktop Connector is a desktop service from Autodesk that integrates an Autodesk data source with your desktop folder and file structure will be similar as BIM 360 folder structure. Any update on the files through desktop connector will be updated in BIM 360 directly. It is use ful tool for easy file management from BIM 360.

To know more about Desktop connector, please follow the link here

To know more about the working with Desktop connector, please follow the user guide here

Desktop Connector Application location

The latest vesion of desktop connector shall be found here. It is recommended that the project team shall use the same version of desktop connector.

Desktop Connector for Navisworks & CAD

Desktop connector is drive for accessing the BIM 360 files from your local machine. It can be used to open the files from BIM 360 and also the files which can't be seen in BIM 360 web eg. NWF files in Navisworks.

Once the file is copied to BIM 360, using Desktop connector you shall open and update the file in BIM 360.

The changes will be communicated and updated back to BIM 360. Moreover, whenever there is the save on the file BIM 360 will automatically creates the backup files.

Lessons Learned

- All files can be opened from the Desktop connector
- CAD files xref path will have BIM360 location, so Desktop connector shall be used for xref files
- NWF shall be opened and updated from Desktop connector.
- NWC files are linked in NWF showing the path of local machine user link. However if the file is opened on one person machine with the help of cache files it will open
- It is faster than VPN access

Key benefits

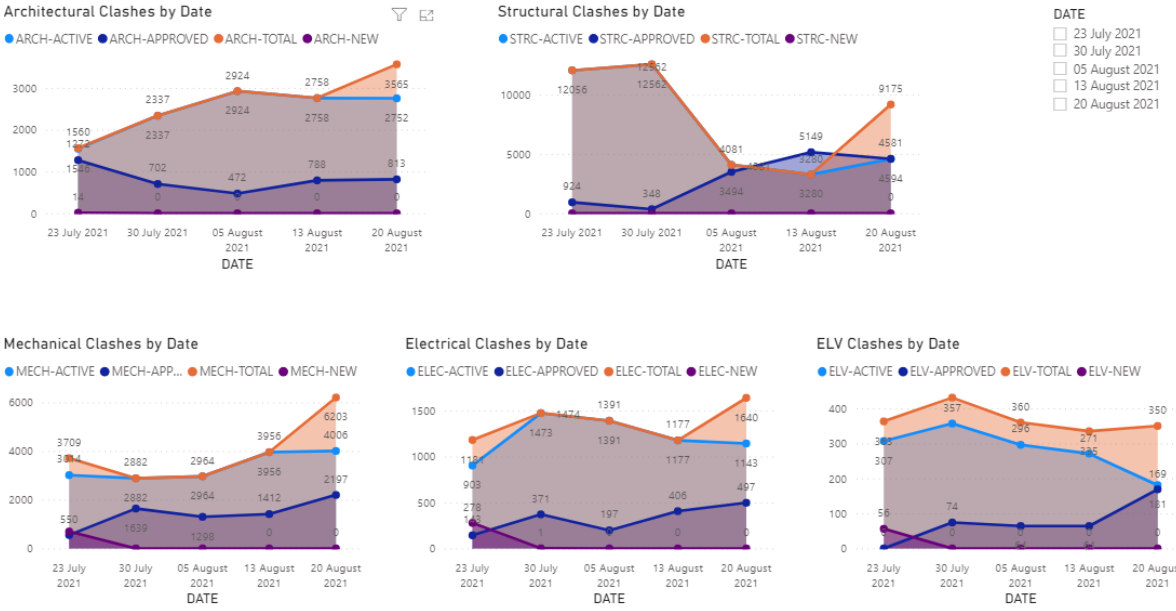
- It will act as Windows Explorer
- BIM360 files (CAD, NWD,NWF & NWC) can be opened/ updated from Desktop Connector
- Automatic Version backup for each time saving the file

- No need of VPN access due to remote working
- Faster than VPN access

Total time savings for one project is about 150 Hours (Approx.)

BIM 360 Insights

BIM 360 Insights can be used to show the Power BI report in BIM 360 without Power BI software. Below is sample report for clash detection progress dashboard.



To know more about BIM 360 insights, please follow the link here