

Remote Team Collaboration for Revit

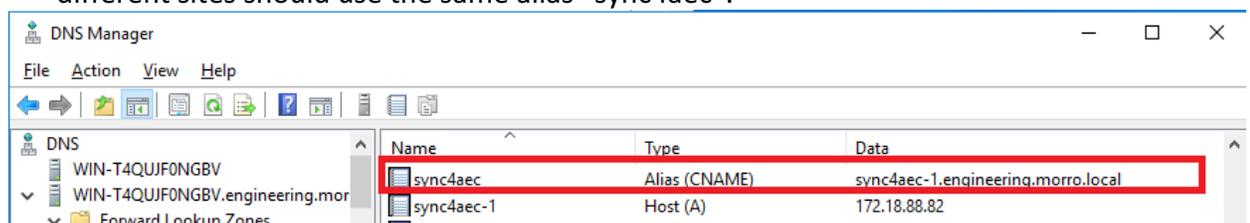
Introduction

Morro Data RTC for Revit syncs Revit project files with locking among remote CacheDrives. To maintain data consistency in Sync-with-Central operations, files are first locked, synced to all CacheDrives, and unlocked. RTC for Revit is a high performance and reliable sync architecture designed to support Revit collaboration for the same project on as many as 5 sites.

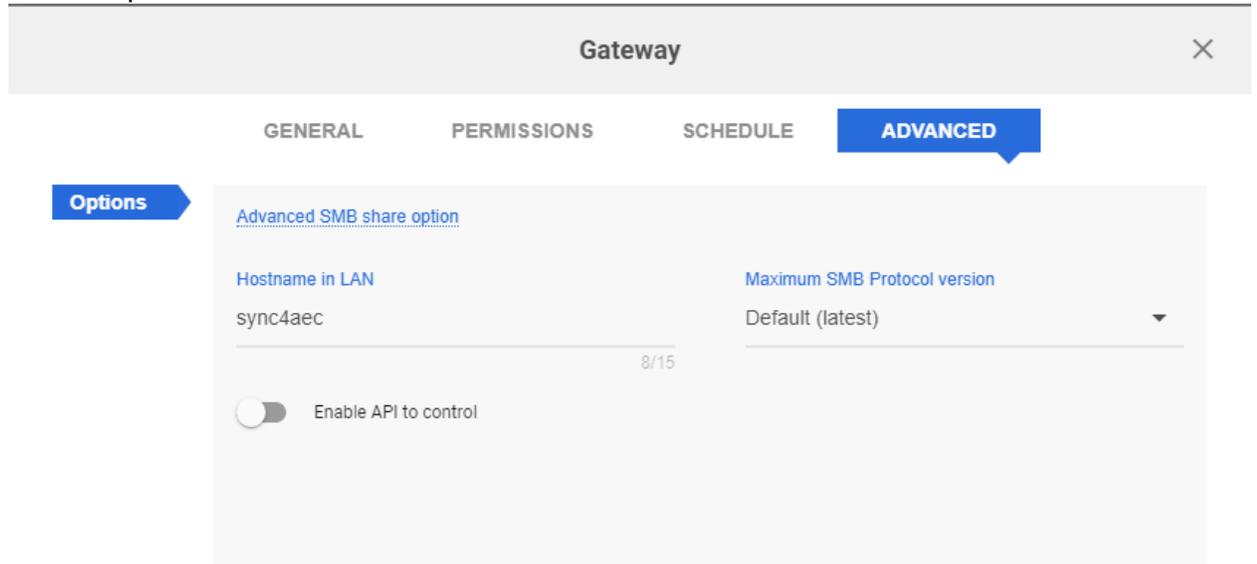
URN Requirement for the Revit Central Model *(for system admin)*

To evaluate RTC, we want to simulate a multisite environment with multiple Revit users and multiple CacheDrives. However, Revit requires that the central model be accessed with the same Universal Resource Name (i.e. CacheDrive hostname) by collaborating users. There are multiple ways to achieve this, and only one of the following methods should be used:

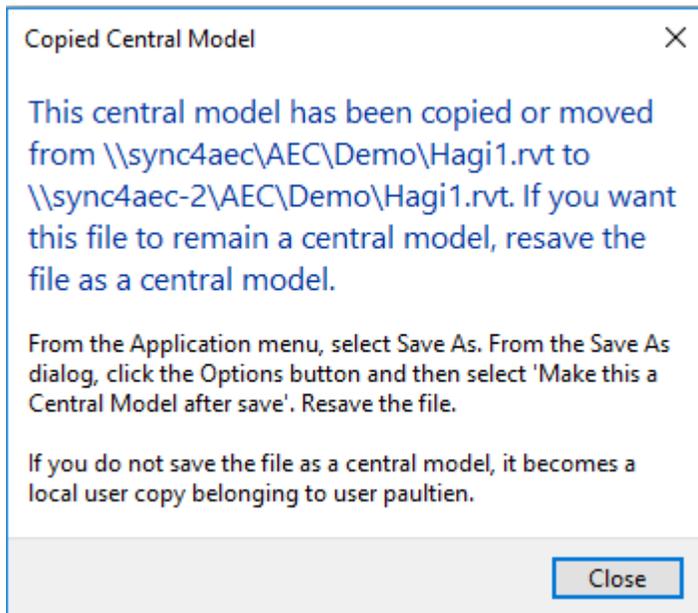
- PC Hosts File
 - For domain and non-domain environment
 - As a quick setup for testing by a few users
 - Multiple CacheDrives can be in the same or different subnets
 - Each PC connects to a different CacheDrive to simulate multisite
 - For each testing PC running Revit, admin adds entry to
C:\Windows\System32\drivers\etc\hosts
 - example entry to PC-A's Hosts file
172.19.88.83 sync4aec
 - example entry to PC-B's Hosts file
172.20.88.94 sync4aec
 - where the IP addresses are the unique address of the CacheDrive each PC uses and the hostname is the SAME hostname used by all the CacheDrives.
- DNS Entry
 - For domain environment
 - As the production method for many users
 - Example for the domain controller at one of the sites. All CacheDrives at different sites should use the same alias "sync4aec".



- Hostname in LAN
 - o For non-domain environment
 - o CacheDrives must be in different subnet
 - o Go to MCM > Devices > Advanced > Hostname in LAN and set the same name for all CacheDrives
 - o Example

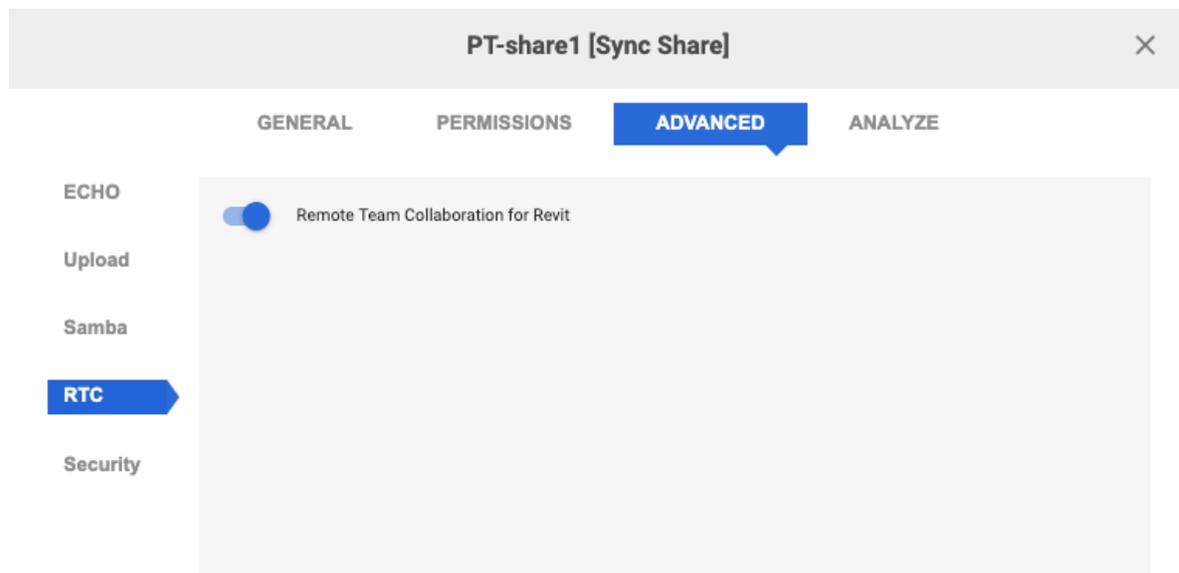


If the URN setup is not correctly done, we will receive the following error when opening the central model:



Morro Data Account Setup *(for system admin)*

1. The description below assumes a two-site collaboration setup.
2. Go to MCM and set up Devices and Team.
3. Create a new Sync share with prefetch enabled. For the best protection and performance, we recommend that the Pool's versioning policy of the Pool be set to "Keep all versions".
4. Enable RTC mode in Sync Share (you may need an activation key, please consult Morro Sales) <https://support.morrodata.com/en/support/solutions/articles/14000049328#redeemkey>



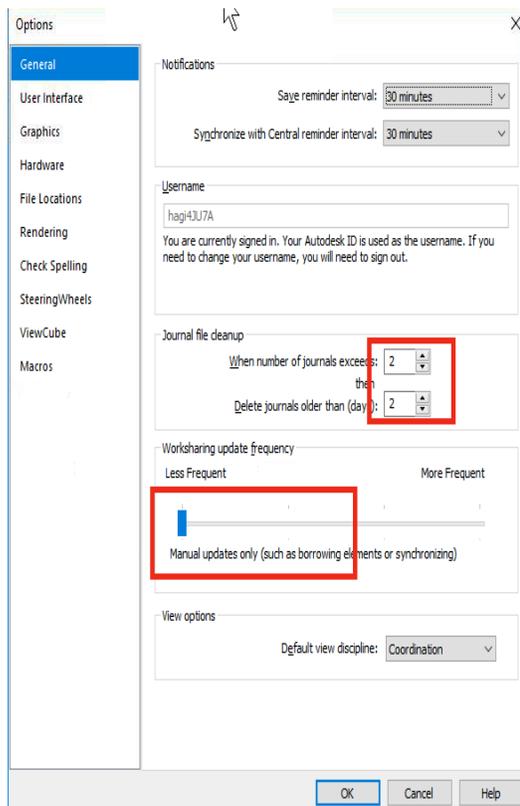
** The RTC for Revit option sends all Revit locking resolution to the Morro Lock Server in the cloud. This is required for remote collaboration. Once RTC for Revit is enabled, all locking resolution is done in the cloud which will add some latency depending on Internet speed. If only collaboration among local users are required, there is no need to enable RTC for Revit. Please see later sections for information on lock server latency.

5. Map the share to the same letter drive in the two Revit PCs, such as S:\. This is not a requirement, but it's a common IT practice to map a network share to the same letter drive on all the PCs for ease of reference.
6. Revit Central Model requires all access through the same Uniform Resource Name. Set up one of the 3 URN methods (PC Hosts file / DNS Entry / Hostname in LAN) in the previous section.

Recommended Revit Configuration for Performance *(for Revit users)*

Do not use the application “Worksharing Monitor for Revit” since it creates heavy signaling traffic among collaborating sites.

See the following Revit screenshot. In Revit > File > Options > General, set “Worksharing update frequency” to “Manual updates only” or no less than 30-second interval. Set to manual update means files are updated only when “Sync to Central” operation is performed. Revit will still check for data consistency and element ownership under the setting of Manual updates only. Set Journal to 2 or more as a safe practice.



Example: RTC for Revit Collaboration with two sites [Revit 2019.2]

Outline of steps:

Create Central Model (User in San Francisco)

- Step. 1 Create new model
- Step. 2 Edit design, and Click collaboration
- Step. 3 Set Central Model file to CacheDrive S:\Demo\Project3.rvt
- Step. 4 Choose collaborate “within your network”
- Step. 5 Save design
- Step. 6 Confirm you are creating central model
- Step. 7 Close the file < Do not miss this step! >

Open Central Model (User in San Francisco)

- Step. 8 Open the Central Model from the Revit Home canvas
- Step. 9 Confirm you are creating local model

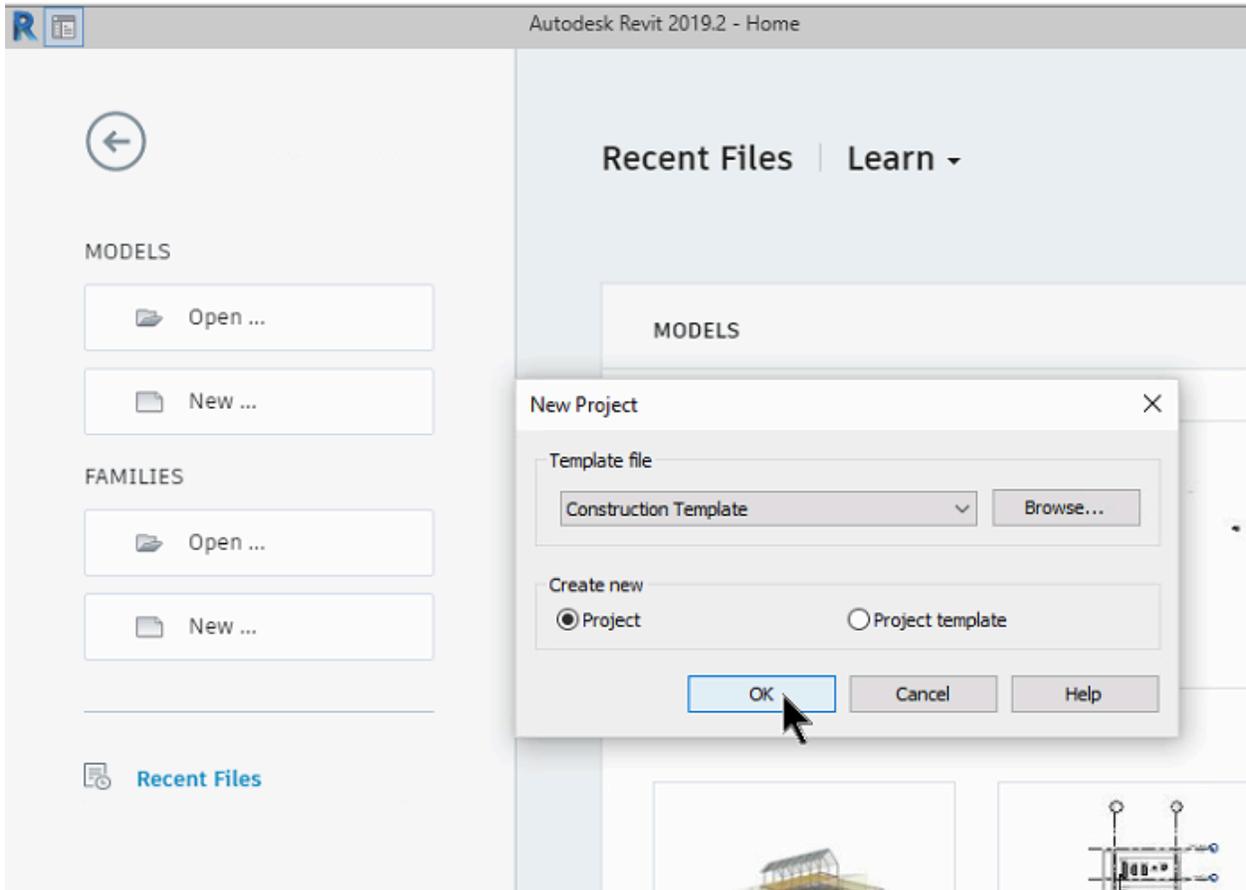
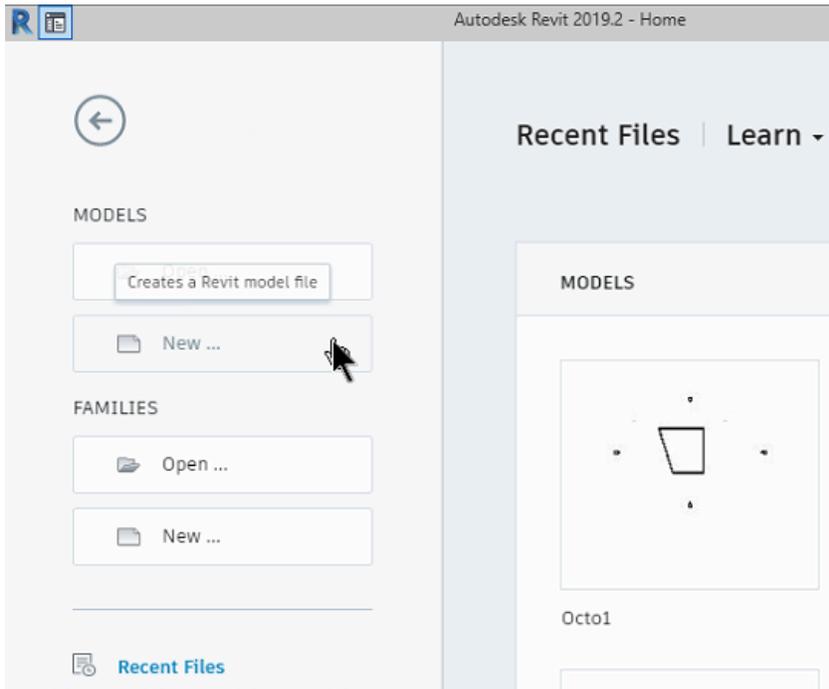
Open Central Model (User in New York)

- Step. 10 From Files menu, open S:\Demo\Project3.rvt

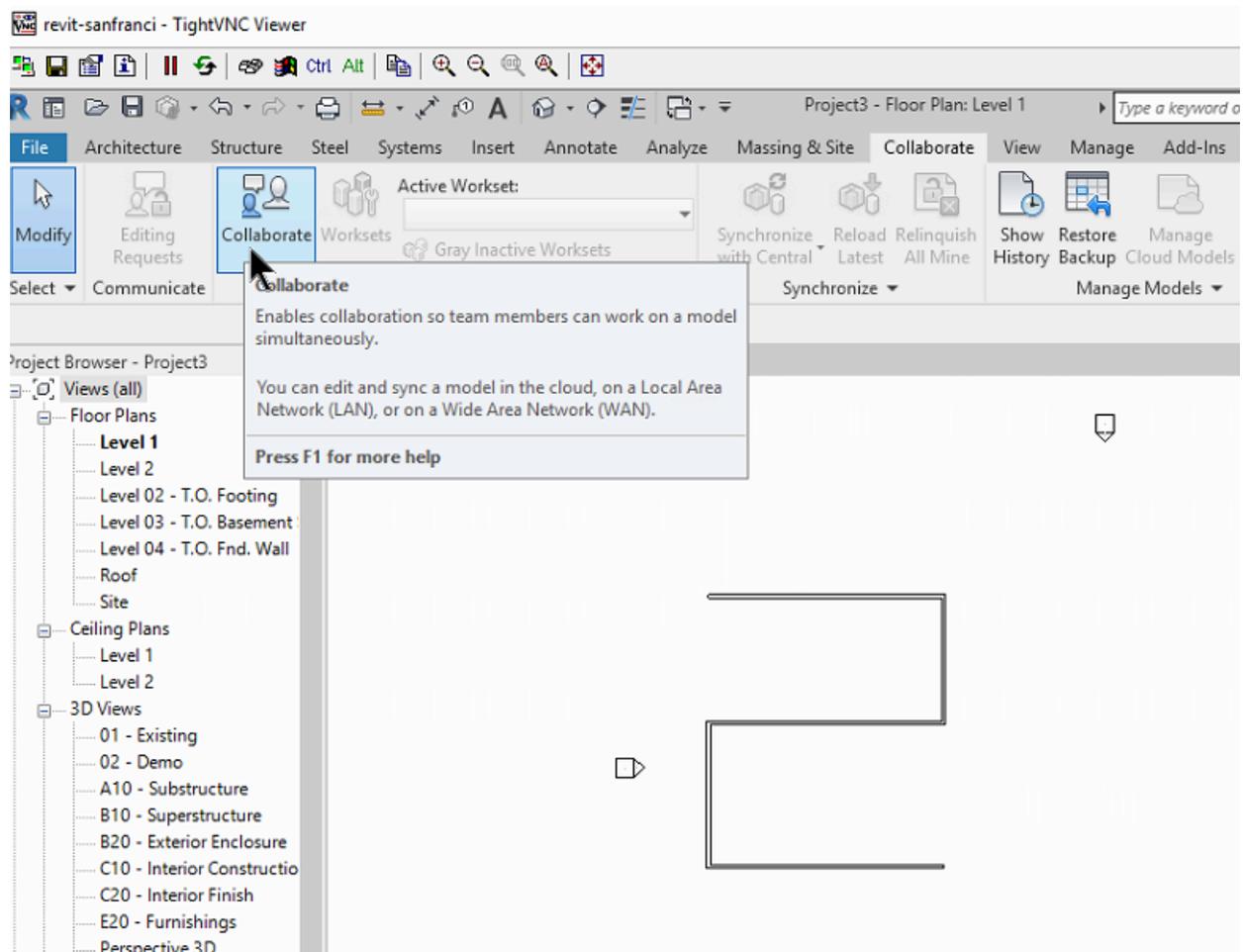
Collaborate (Both Users)

- Step. 11 NY user edits design and Sync with Central
- Step. 12 SF user Reload Latest
- Step. 13 SF user sees changes by NY user

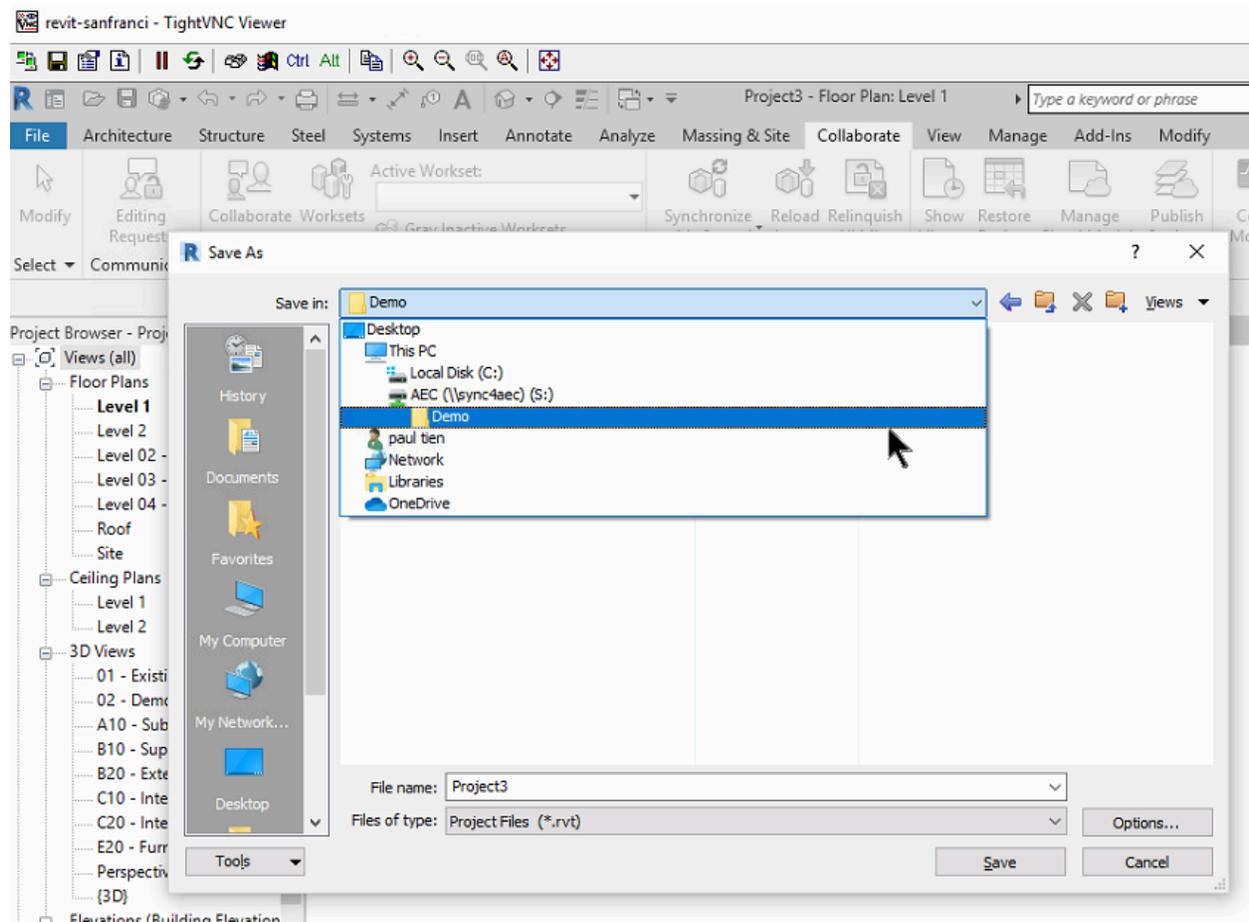
Step 1: San Francisco Revit User – Create a new Revit model file.



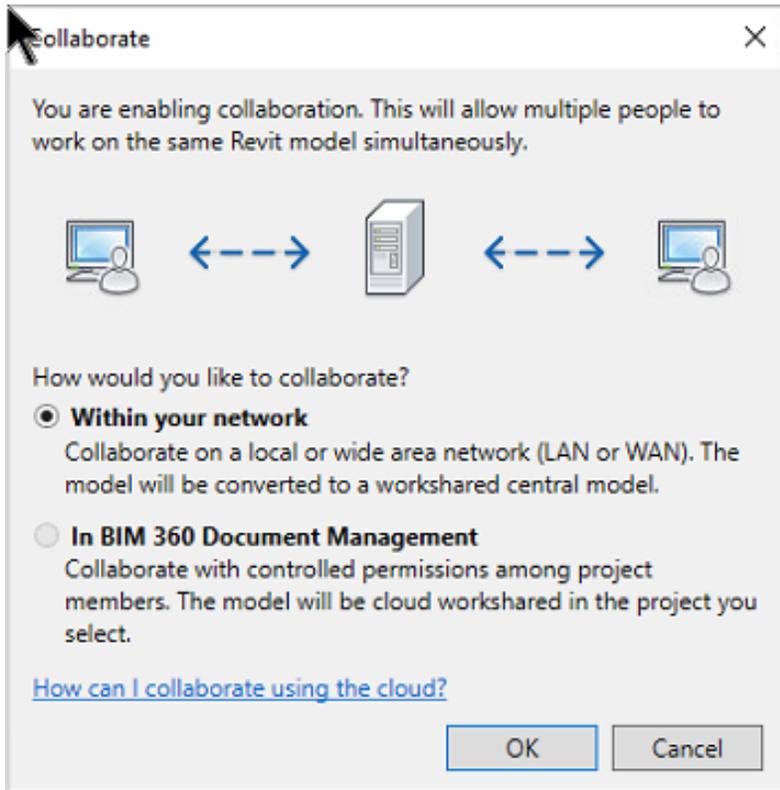
Step2: San Francisco Revit User - Edit the design, click Collaborate. The New York user should not be accessing the same design until Step 10.



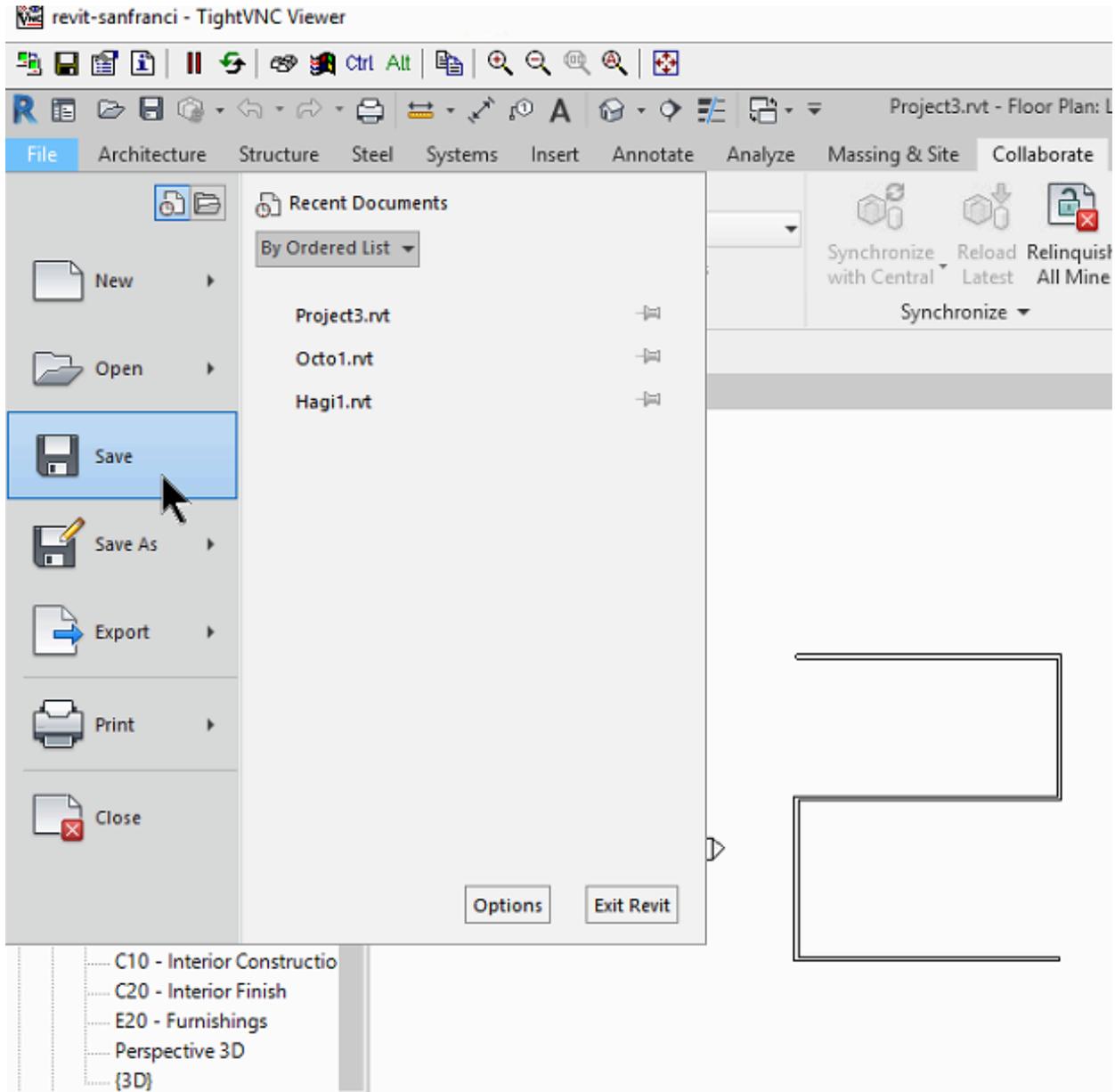
Step 3: San Francisco Revit User – Set the Central Model location by saving the design in the network Share folder using the mapped letter S:\Demo in “This PC”.



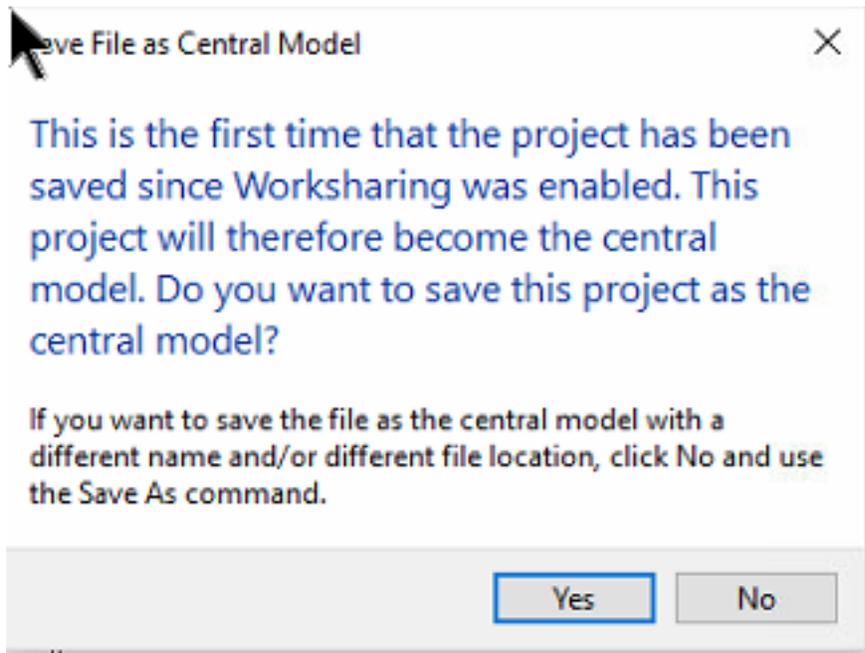
Step 4: San Francisco Revit User – Select collaborate “Within your network”.



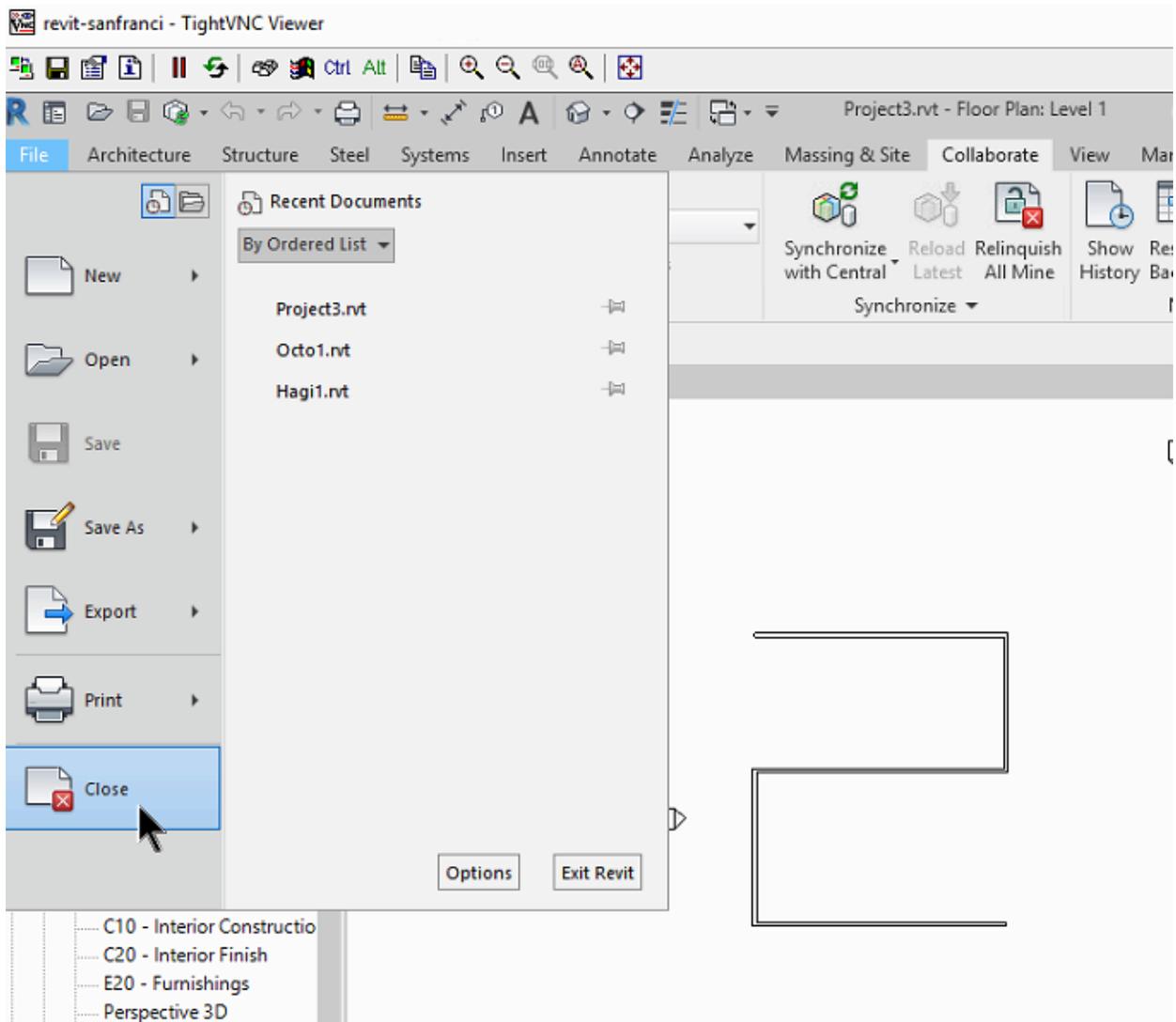
Step 5: San Francisco Revit User – Save the design again before closing



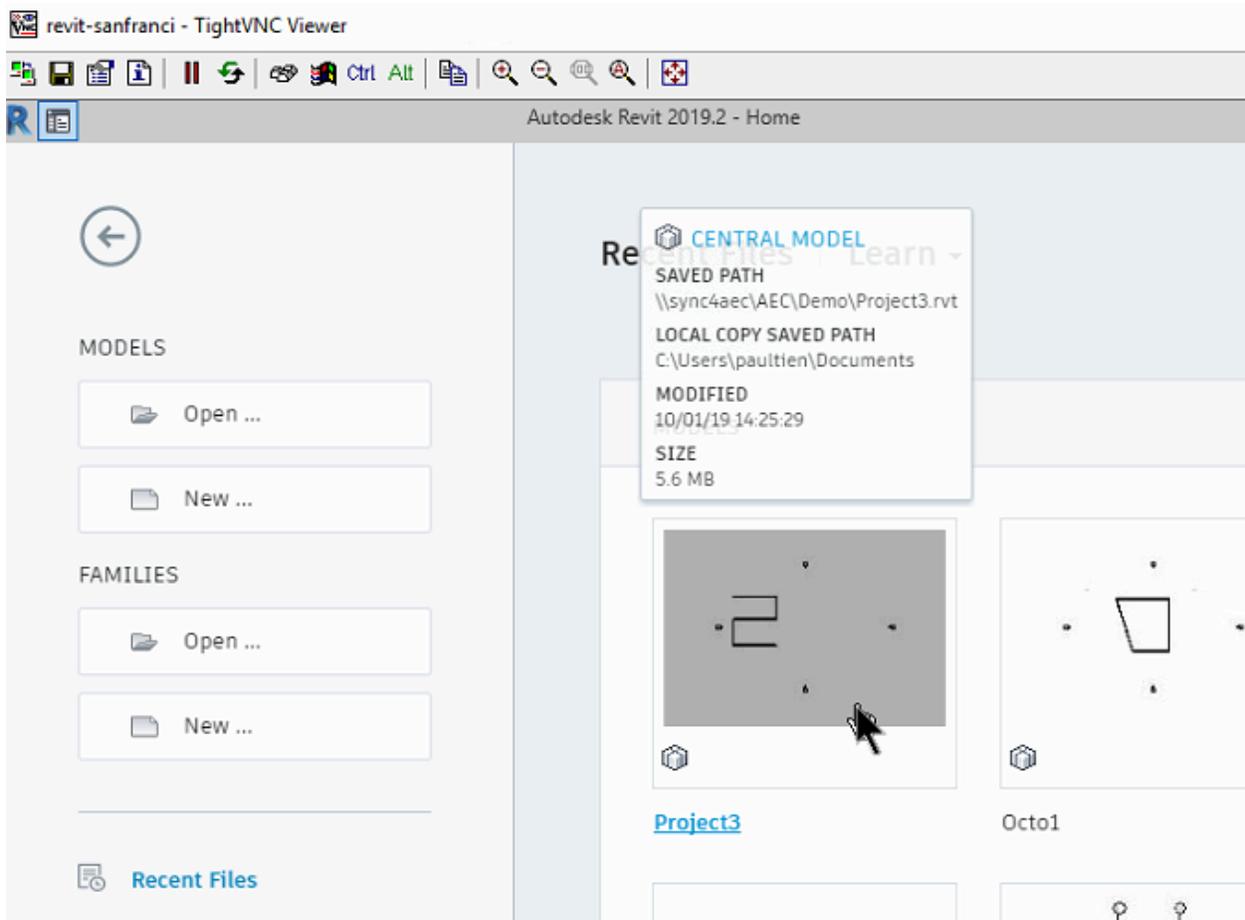
Step 6: San Francisco Revit User – Click Yes to save as the central model.



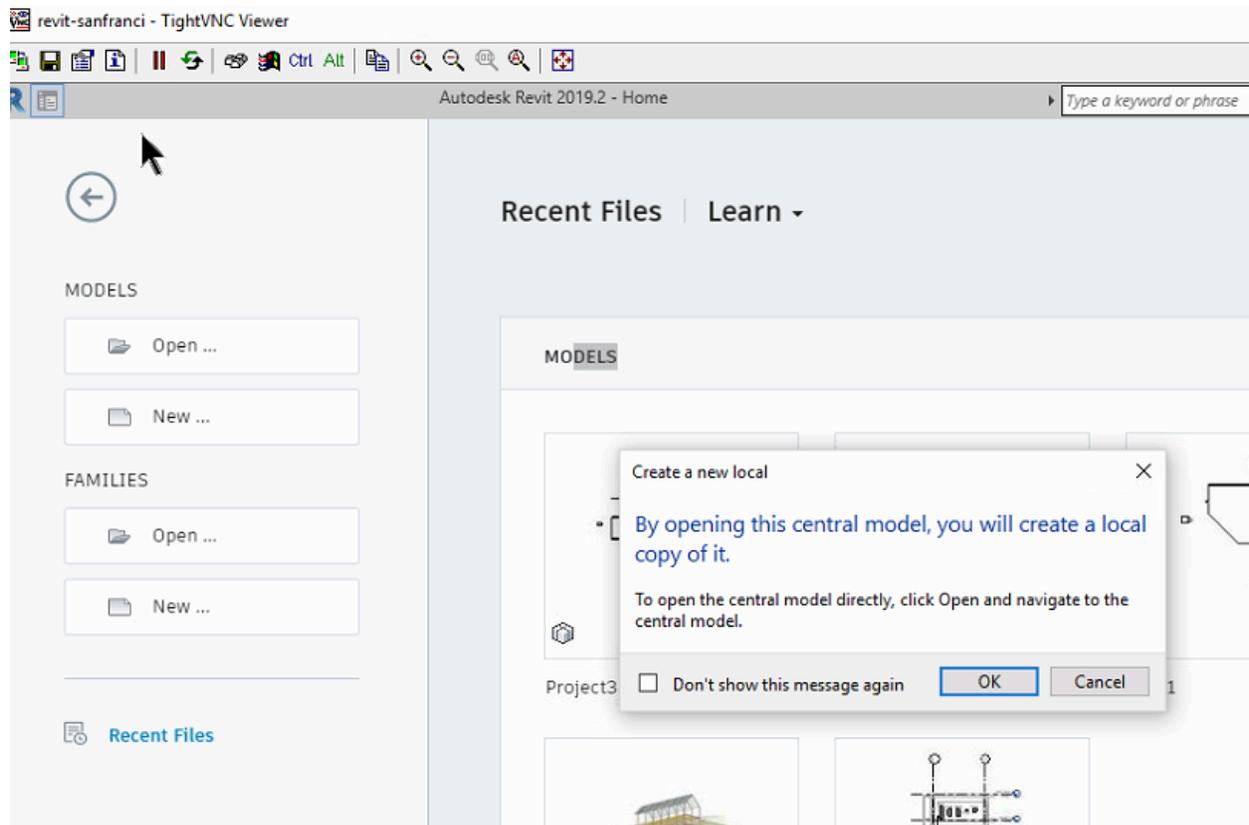
Step 7: San Francisco Revit User – Close the file. < Do not miss this step! >



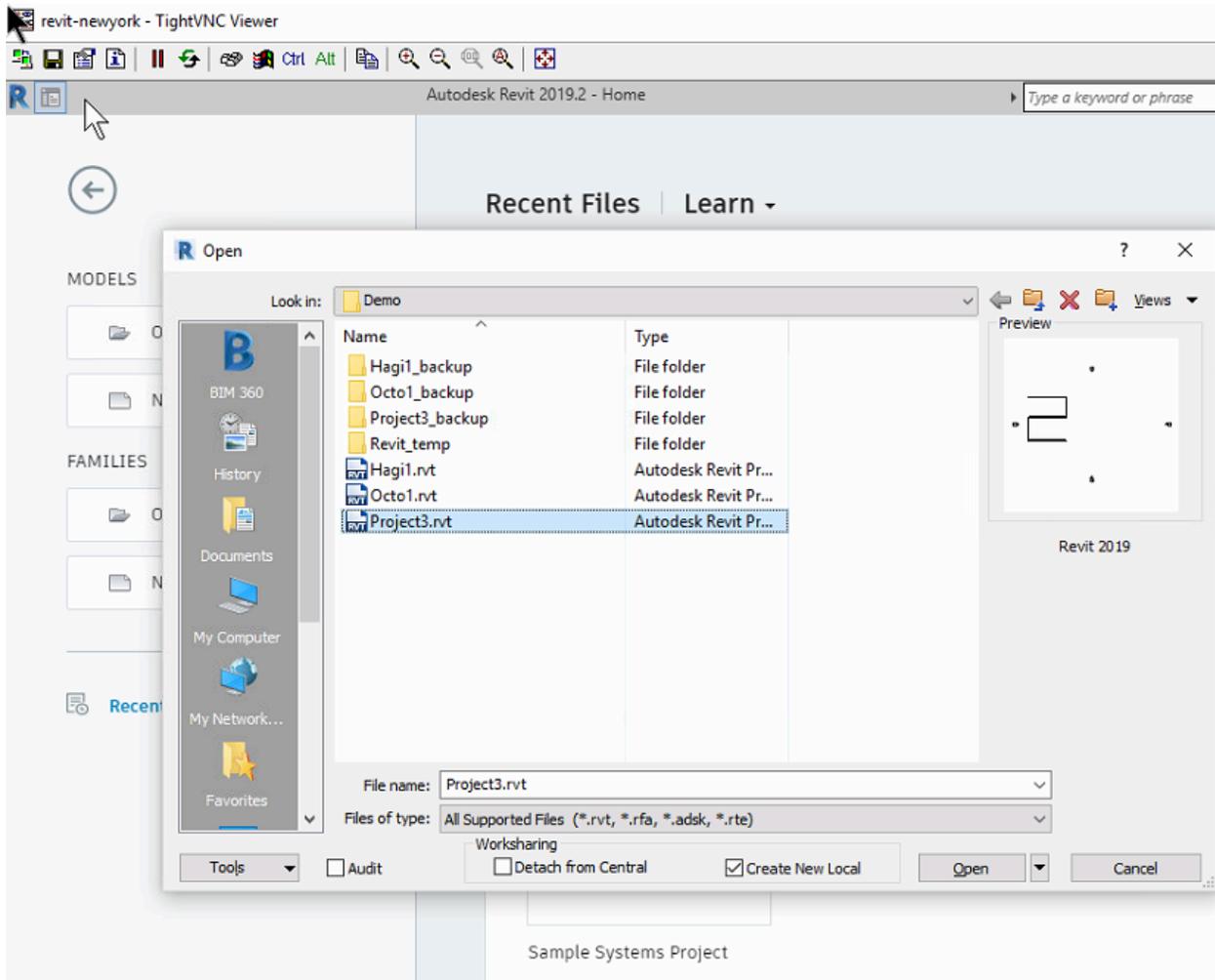
Step 8: San Francisco Revit User – Open the design again as a Central Model by clicking the icon for the Central Model.



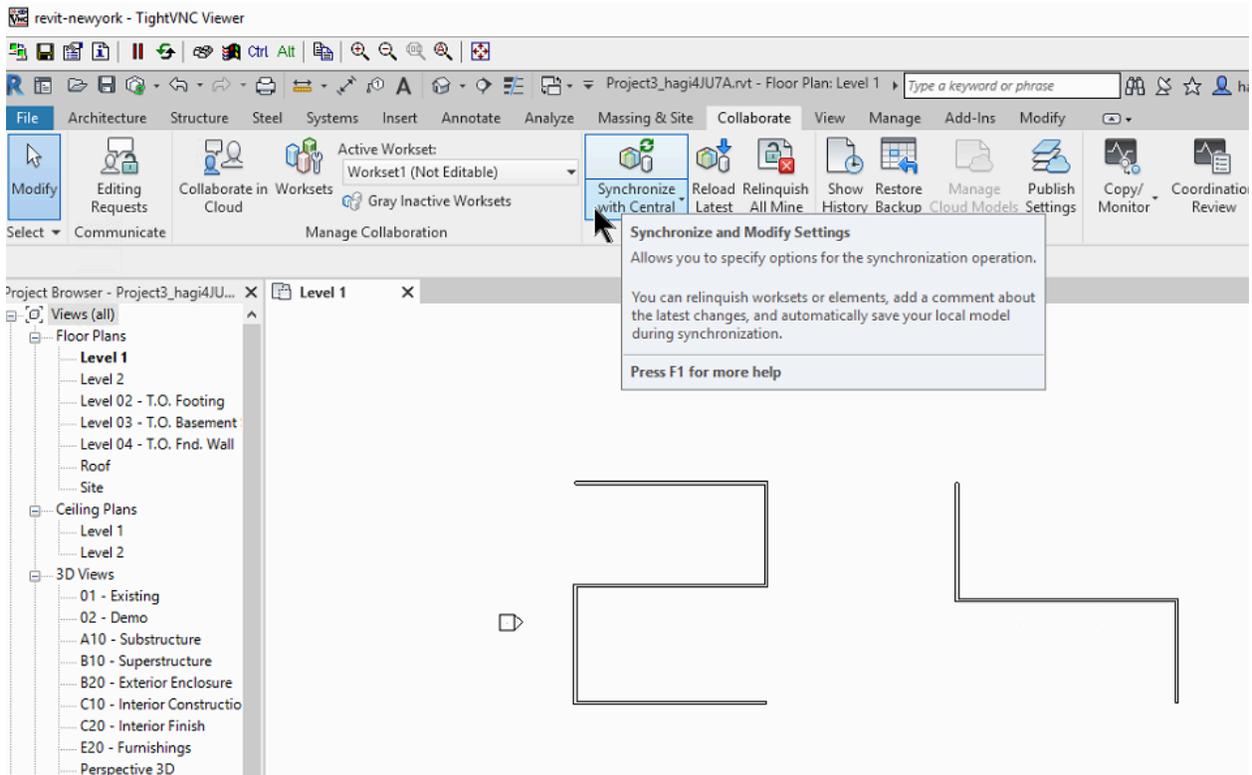
Step 9: San Francisco Revit User – Click OK to create a local copy of the Central Model. This completes the creation of the Central Model.



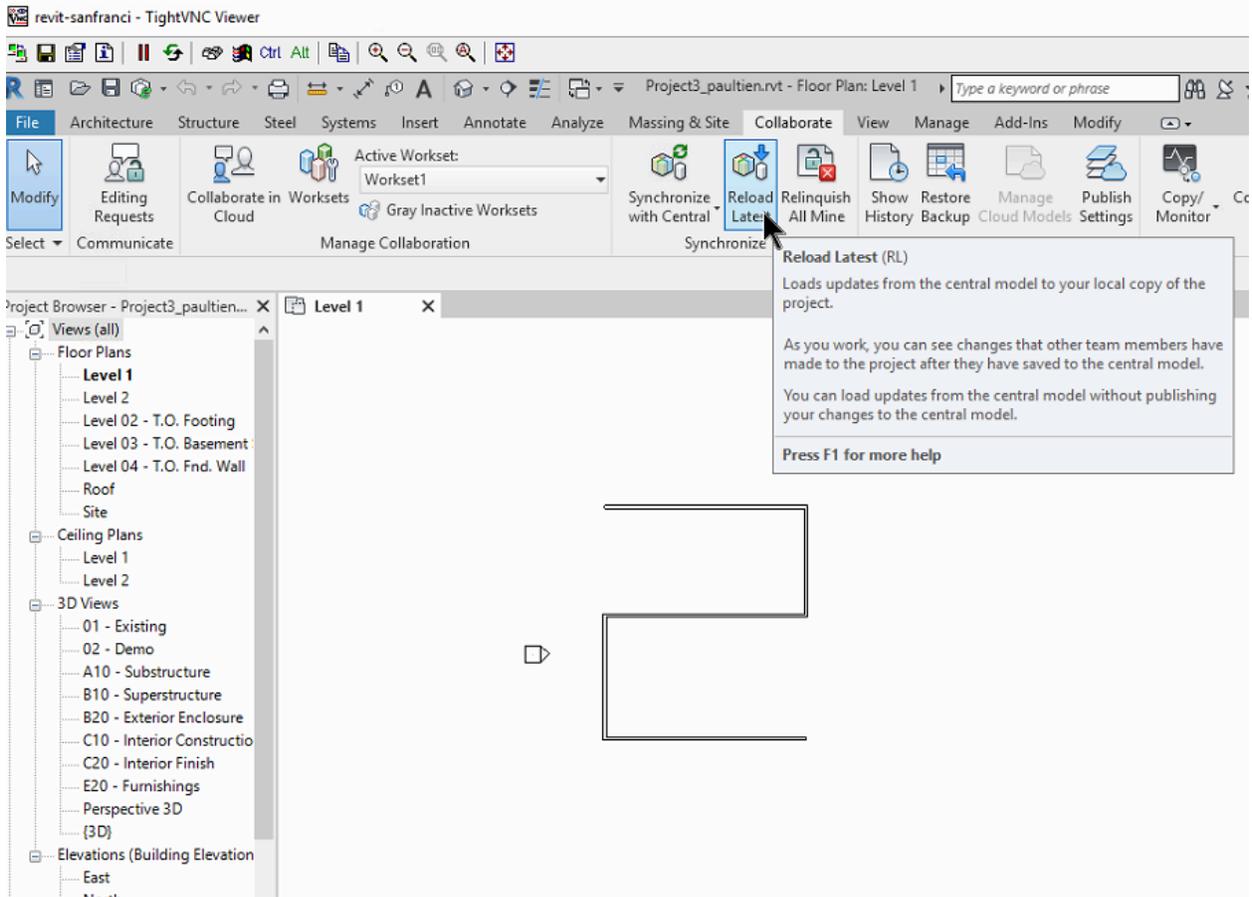
Step 10: New York Revit User: Once the Central Model creation is complete, the New York user can open the Central Model from his PC in the same S:\Demo folder. Make sure “Create New Local” is enabled.



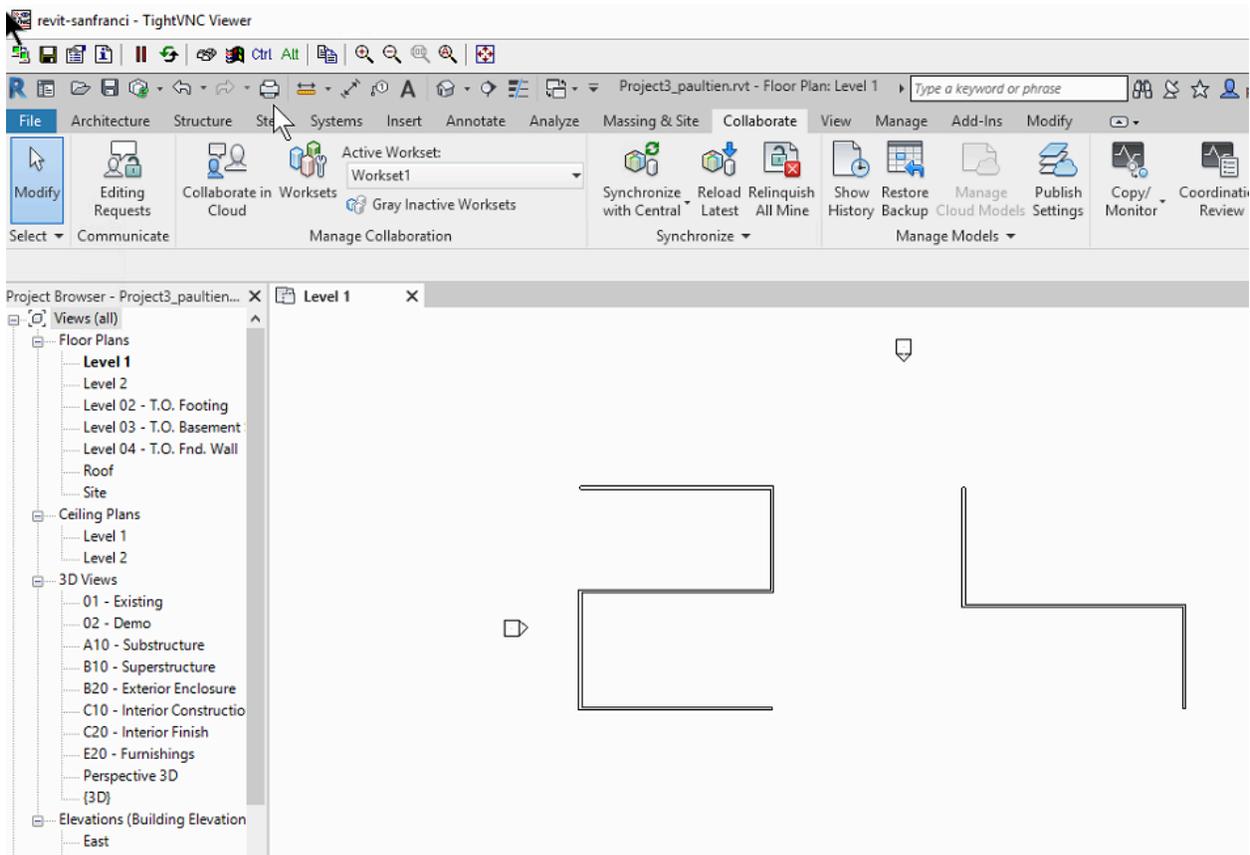
Step 11: New York Revit User – Make edits and Synchronize with Central.



Step 12: San Francisco Revit User – Reload Latest to sync the changes from New York.



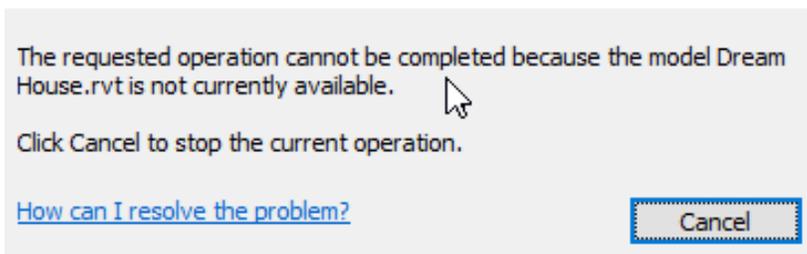
Step 13: San Francisco Revit User – sees the changes from New York. Both users can now make edits and perform Sync with Central to collaborate on the project.



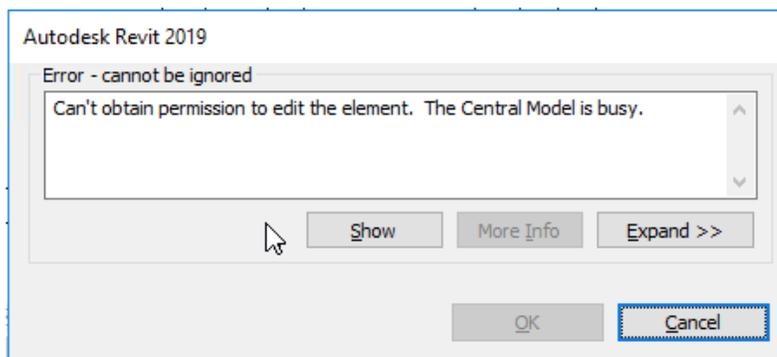
Technical notes and Latency of the cloud-based lock server:

1. Do not use Revit's "Worksharing Monitor" which creates heavy traffic.
2. Do not use the same user on two different client machines. Revit does not function properly this way.
3. At least 20mbps Internet upload and download bandwidth is recommended for two-site collaboration. 100mbps upload is recommended for five-site collaboration.
4. Depending on the latency for the file locking resolution, the Revit user may encounter temporary error dialog box "Unable to Access the Model" or "The Central Model is busy" while performing Sync-with-Central, as shown in the two dialog boxes below. This is OK since Revit is just waiting for the locking to be resolved. Depending on your Internet speed, user may wait 2 to 15 seconds for the dialog box to disappear automatically and Sync-with-Central will be completed.

Unable to Access the Model



or



5. RTC for Revit supports Slack integration to help remote team members communicate with each other. Please refer to documentation on CloudNAS Slack integration.

How to move project files from file server to CloudNAS:

1. It is a good practice to design the file system structure before data migration. This includes the number of shares and how files are organized in the shares.
2. When migrating old project files into a separate share, it is recommended to turn off PREFETCH to speed up multisite sync.
3. Revit share has higher priority in syncing to cloud than other regular sync shares. It is therefore advised that the Revit design files and non-design files are stored in separate shares. In the case that this cannot be arranged, at least ensure that very large files such as perspective views and walkthrough videos are stored in a separate share so they do not take up the high priority bandwidth. Once stored in a separate share, these files can still be made visible in the Revit share by using links such as Windows Shortcut.

References:

- <https://knowledge.autodesk.com/support/revit-products/learn-explore/caas/CloudHelp/cloudhelp/2018/ENU/Revit-Customize/files/GUID-16E78DEE-F5B1-45F0-8A3B-000BB275B3A8-htm.html>

- https://knowledge.autodesk.com/support/revit-products/troubleshooting/caas/sfdcarticles/sfdcarticles/Revit-How-to-keep-size-of-Revit-files-manageable.html?_ga=2.135867313.146345783.1547141489-827140278.1541266278