User Manual

Revizto 2017

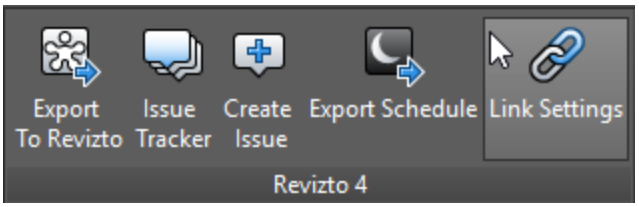
Table of Contents

Source Export to Revizto. Synchronization

General Procedure

In general, all supported source files are exported to Revizto according to a standard four-step procedure implemented via the Revizto plugin. Particularities of specific sources are described below.

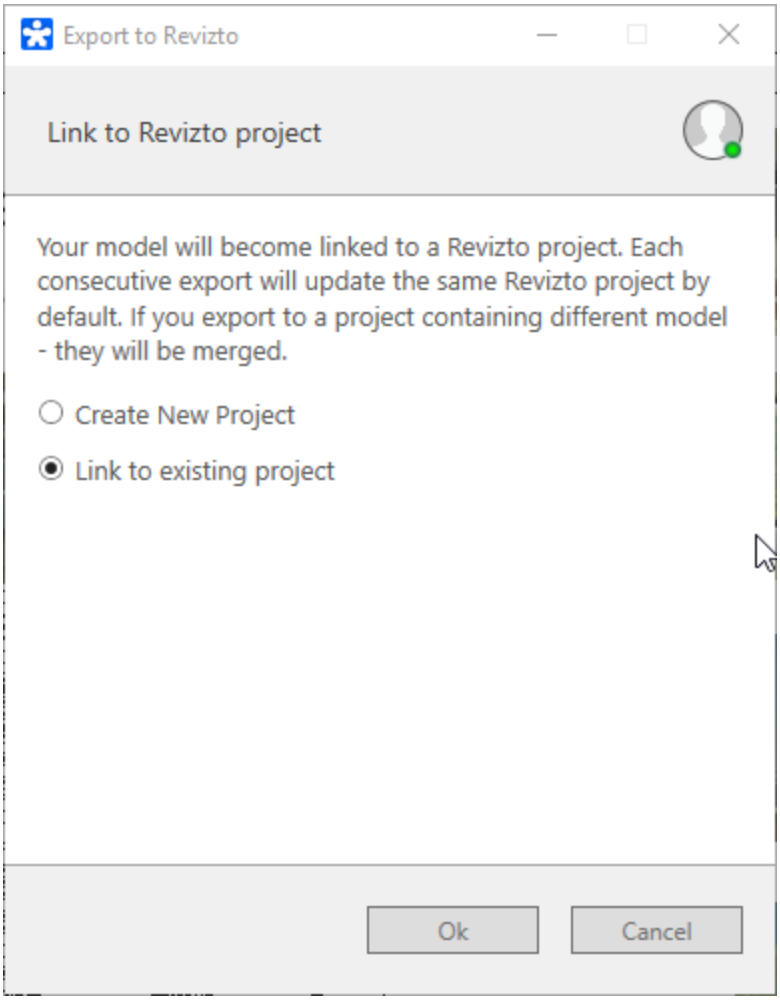
Most part of the source BIM software supports Revizto plug-ins (or addons) with similar menus. As a rule, plug-ins are installed automatically into the source software, but in some cases you have to install them manually (clarified in the following sections).



Important: Revizto only supports 3D objects, so if your source project contains any lines these will not be exported. Make sure that your export view uses 3D objects.

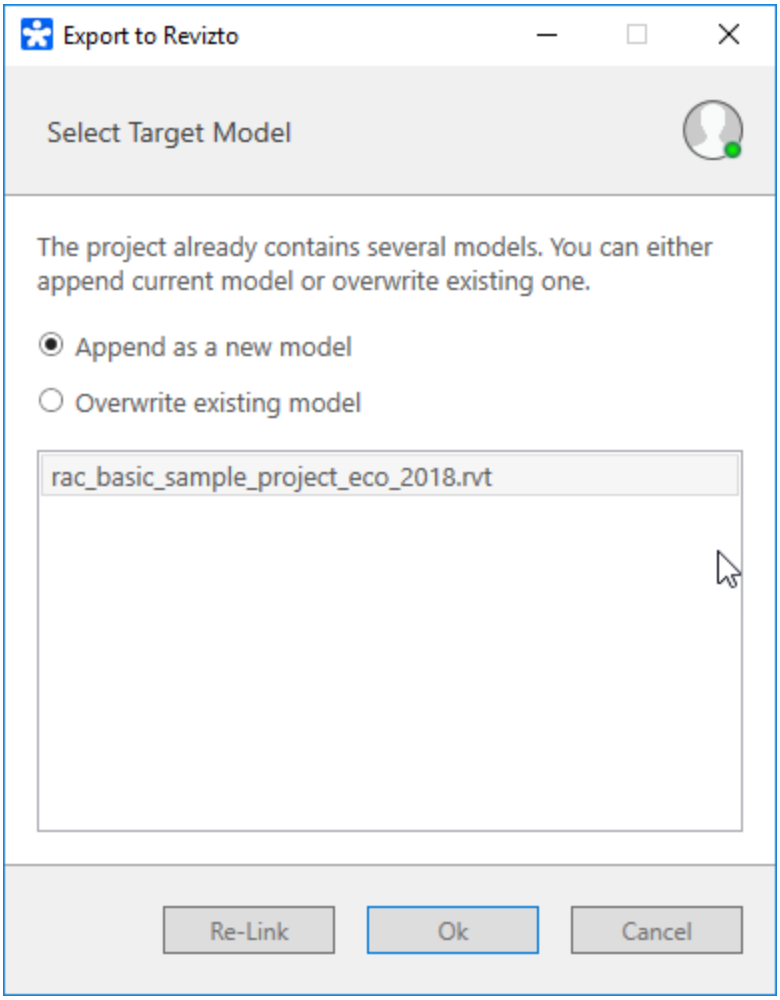
To export a source model:

1. Open the view you want to use for export in the source program. Note that Revizto export operates under the “you see is what you get” principle, so the final Revizto view will be based on what you choose in the source program.
2. Click the Revizto plug-in menu.
3. Click the ***Export to Revizto*** button.
4. Choose whether to create a new project or link files to an existing one. Note that you can link one source to multiple projects.



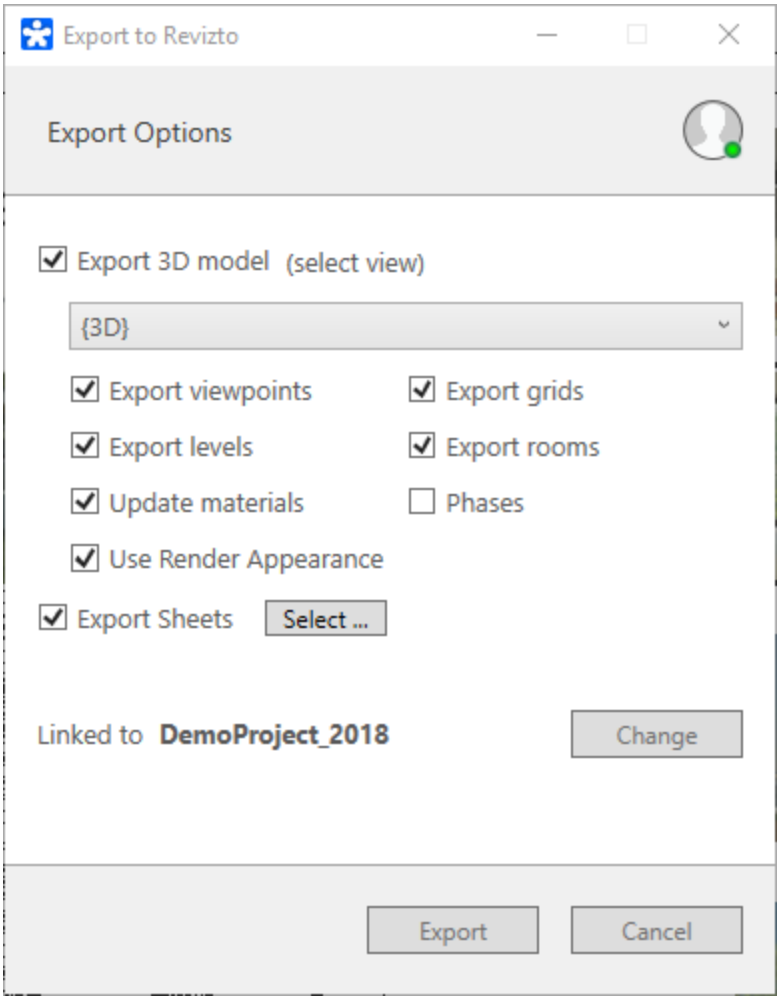
5. For an existing project, choose whether to overwrite existing files or to append new files to them. Files are appended on the basis of shared coordinates. Note that Revit also allows linking multiple sources locally, so you will not need to append each of them separately to a Revizto project. There are now hard and a fast rules for choose an option, but our recommendations are given in the FAQ section.

   For a new project, enter project name.



6. Define export options (differ for each source program). This is the most important step where accuracy is required. Most part of export errors and problems are caused by misinput at this stage and/or incorrect selection of the exported view (step 1). Most frequent problems and particularities of each source program are covered below.

Export and further Revizto model generation is based on source elements: viewpoints, materials, levels, phases (the exact list depends on the source software, see specific sections below for particulaties).



7. Launch export. When export completes, Revizto starts automatically (unless already running) and displays the resulting model.

Note that, if you created a new project, you will have to define sharing options for it and manually upload it for the first time (if shared).

Relinking Projects

You can export one source to multiple Revizto projects. To relink your source, click the ***Link Settings*** button of the Revizto plug-in. It initiates the dialog which allows you either to create a new project or to link your file to an existing one (i.e. to change the link).

If you decide to create an export schedule, you can redefine export options again.

Export Scheduling

Note that the scheduling option is unavailable to users with view and collaborate level access.

Project export schedules are built in relevant Revizto plug-ins and can then be managed in Revizto Export Scheduler Application.

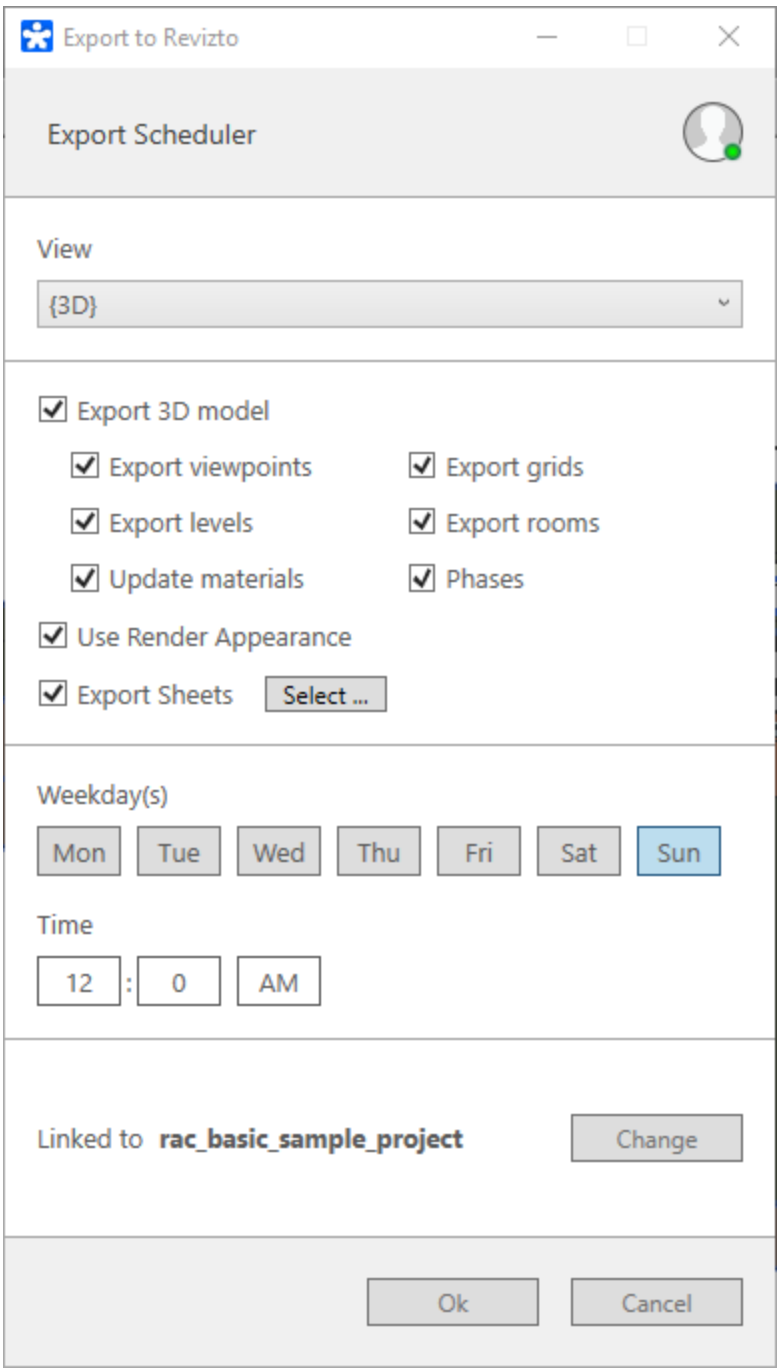
Creating a Schedule in Revizto Plug-in

To create an export schedule:

1. Open the plugin in the relevant source program.
2. Click the ***Export Scheduler*** button. The schedule builder loads in a pop-up.
3. Redefine export options and relink the source, if needed.
4. Create the export schedule. You can choose several days of the week and define time (the same for all days).
5. Note that if the project has been earlier shared and uploaded to the cloud, the Upload to the cloud checkbox appears in the form. Activate it to synchronize your project at each export.

Note that if synchronization settings are also defined in Revizto, they are updated according to the latest modification (the reverse will be true).

6. Click ***OK*** to save you settings. The new schedule is applied to the project and becomes available in the Export Scheduler Application that contains information on all export schedules for a license.



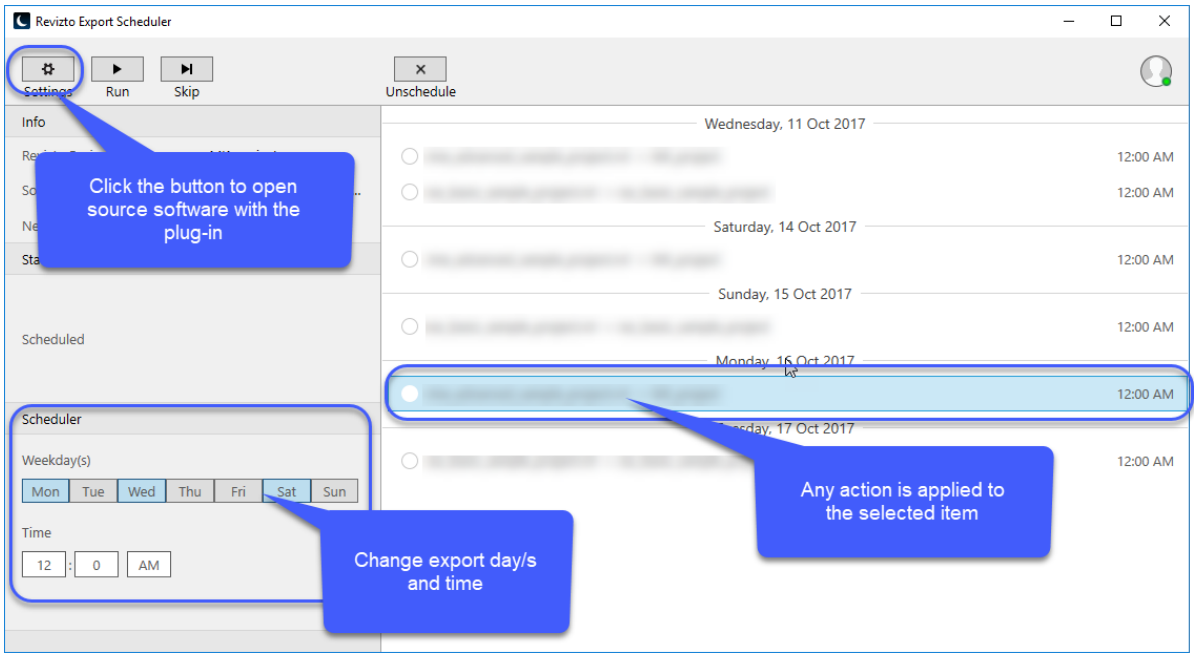
Export Scheduler Application

The Export Scheduler Application displays all active export schedules. It can only be used when at least one schedule is created from a Revizto plug-in. Existing schedules are listed in the application with the source file and target Revizto project names indicated.

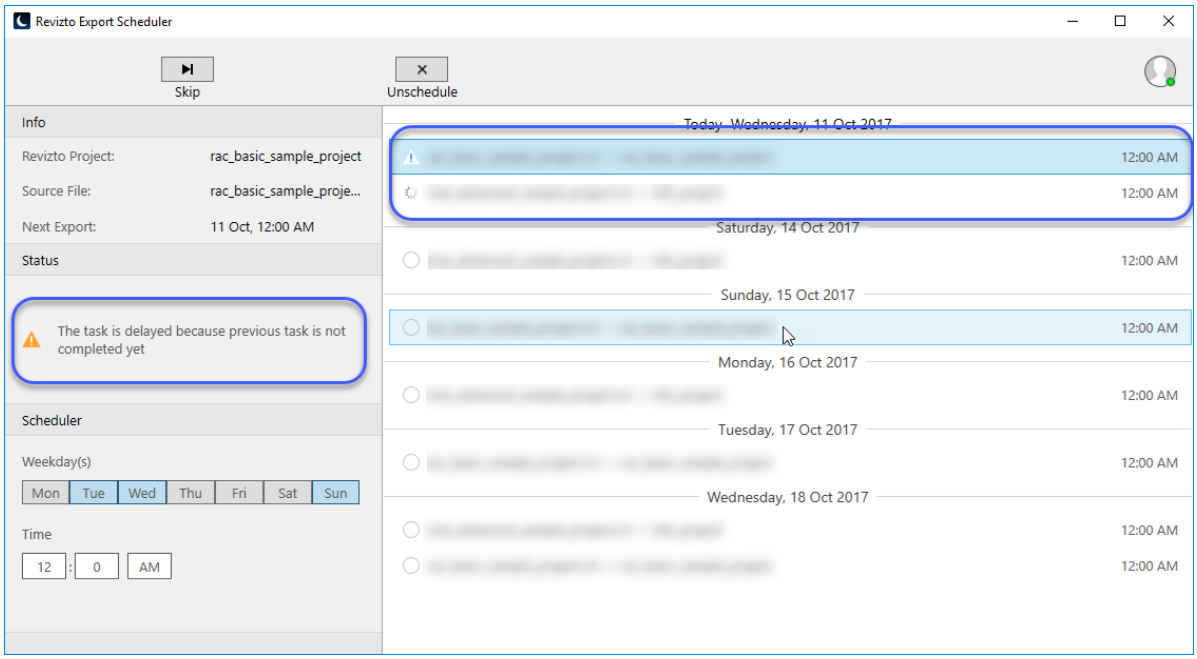
You can use the Export Scheduler to:

- run an export immediately for the selected schedule (click ***Run***)
- unschedule an export for the selected schedule (click ***Unschedule***)

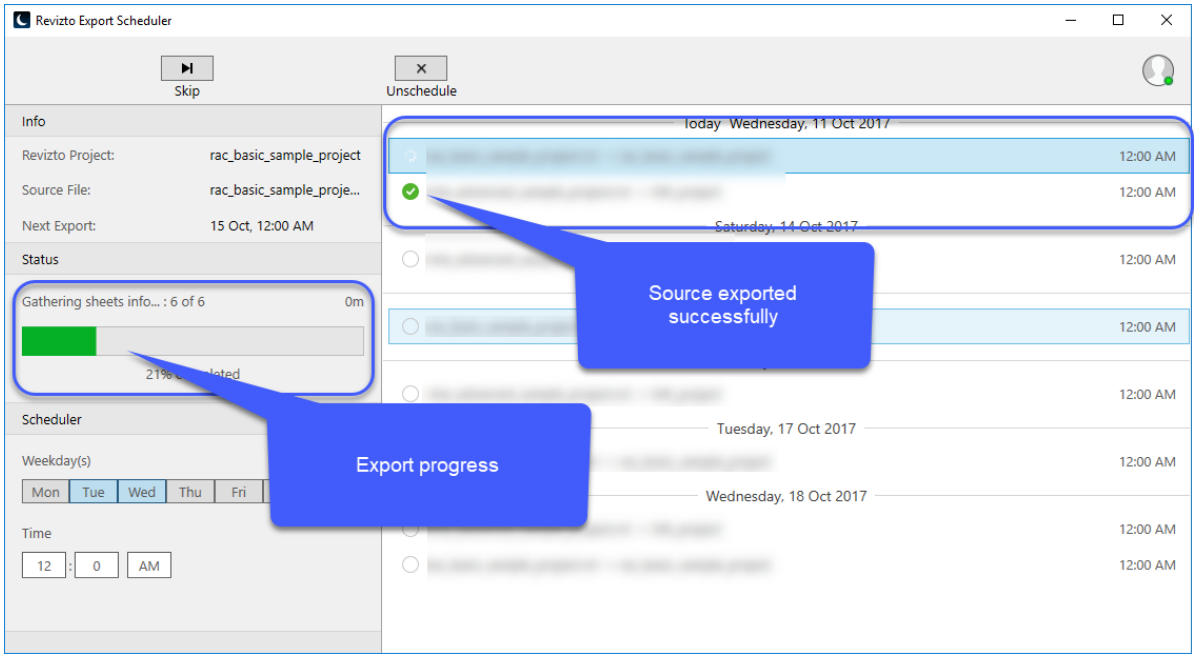
- skip the nearest export for the selected schedule (click ***Skip***)
- change schedule for the selected schedule (use the ***Scheduler*** area)
- redefine export settings for the selected schedule (click ***Settings*** to access the source file and relevant Revizto plug-in)



Note that even if two sources are scheduled to be exported at the same time, they are not exported simultaneously, but in turns.



When export time comes, the application launches and displays the progress and statuses.



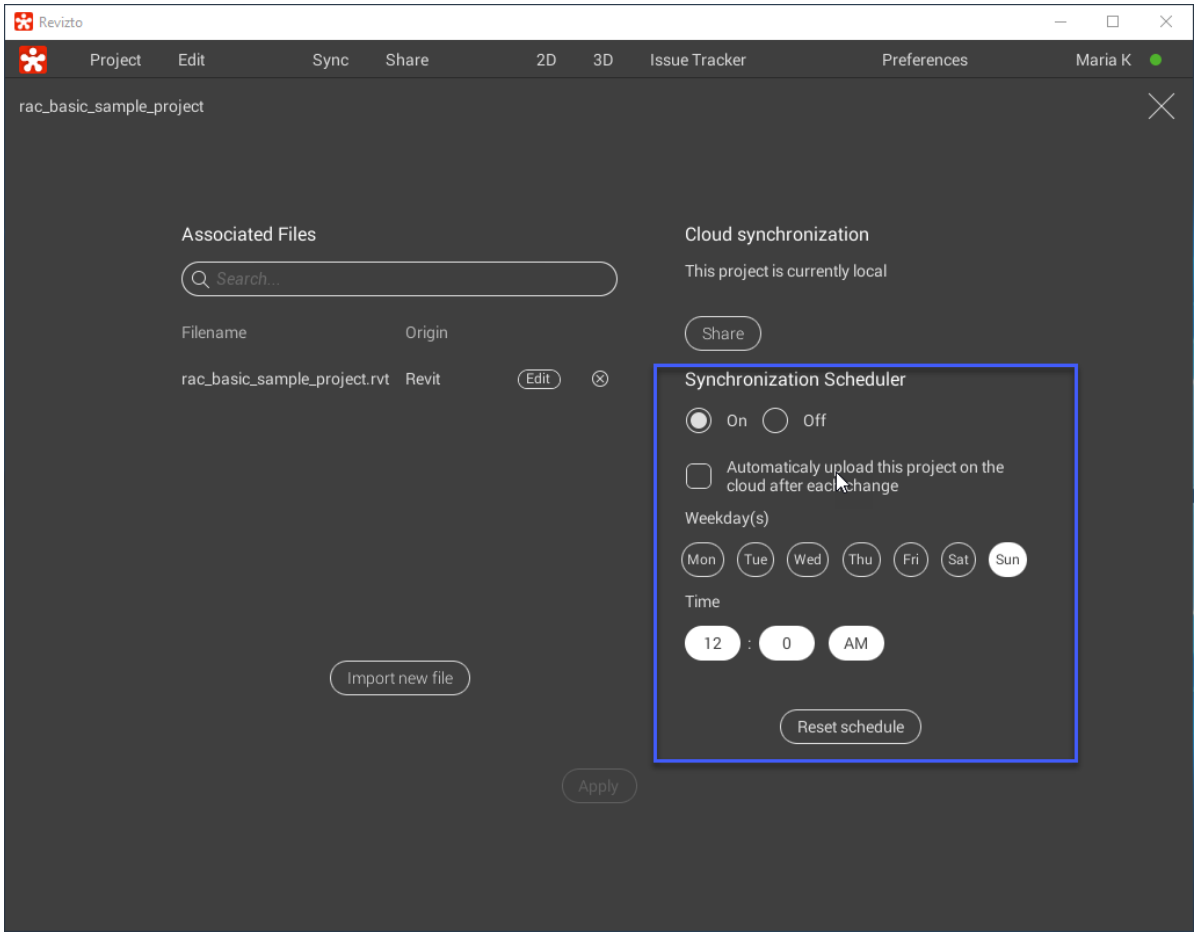
Cloud Synchronization

Once export settings are defined, you can also define schedule for synchronizing Revizto project with the Cloud (or with the shared location).

To set up the synchronization schedule:

1. Make sure that the project has been exported at least once and is available in Revizto.
2. Open the project and navigate to ***Edit*** > ***Scenes and Scheduler***.
3. Fill-in synchronization preferences in the right part of the window. You can choose several days and define export time (one for all days). It is logical to have your synchronization schedule correspond to the export one.
4. Click ***Reset schedule*** to save your settings and the ***Apply*** button.

Note that when your project has already been shared the ***Automatically upload this project on the cloud after each change*** checkbox becomes available. Activate it to use this option.



Synchronization can also be scheduled from Revizto plug-in; if both scheduling options are used, the latest configuration is applied.

Note that to have all sheets updated, it is recommended to load full project cache.

For more details on synchronization, see also the Creating a Project section.

For additional information on importing sheets outside any source model to a Revizto project, see the Importing Sheets subsection.

1.1 Revit

Before Exporting

Before exporting source files from Revit, it is recommended to create a target 3D view with settings that suite export needs. In particular, it is recommended to:

- Set ***Detail Level*** to ***Fine***. Note that Revizto excludes 2D items from export and at low detail level Revit displays small items (e.g. tubes) as 2D lines.
- Make sure that Renderings and Views have different names in Revit. Otherwise, some views will not be exported.
- Set the Phase Filter to the option that creates a view you want to have in Revisto as default. Note that if phases are exported correctly, you will be able to switch them in

Revizto as well, but you default view will be based on the open open in Revit at the point of export.

Export options. Detailed

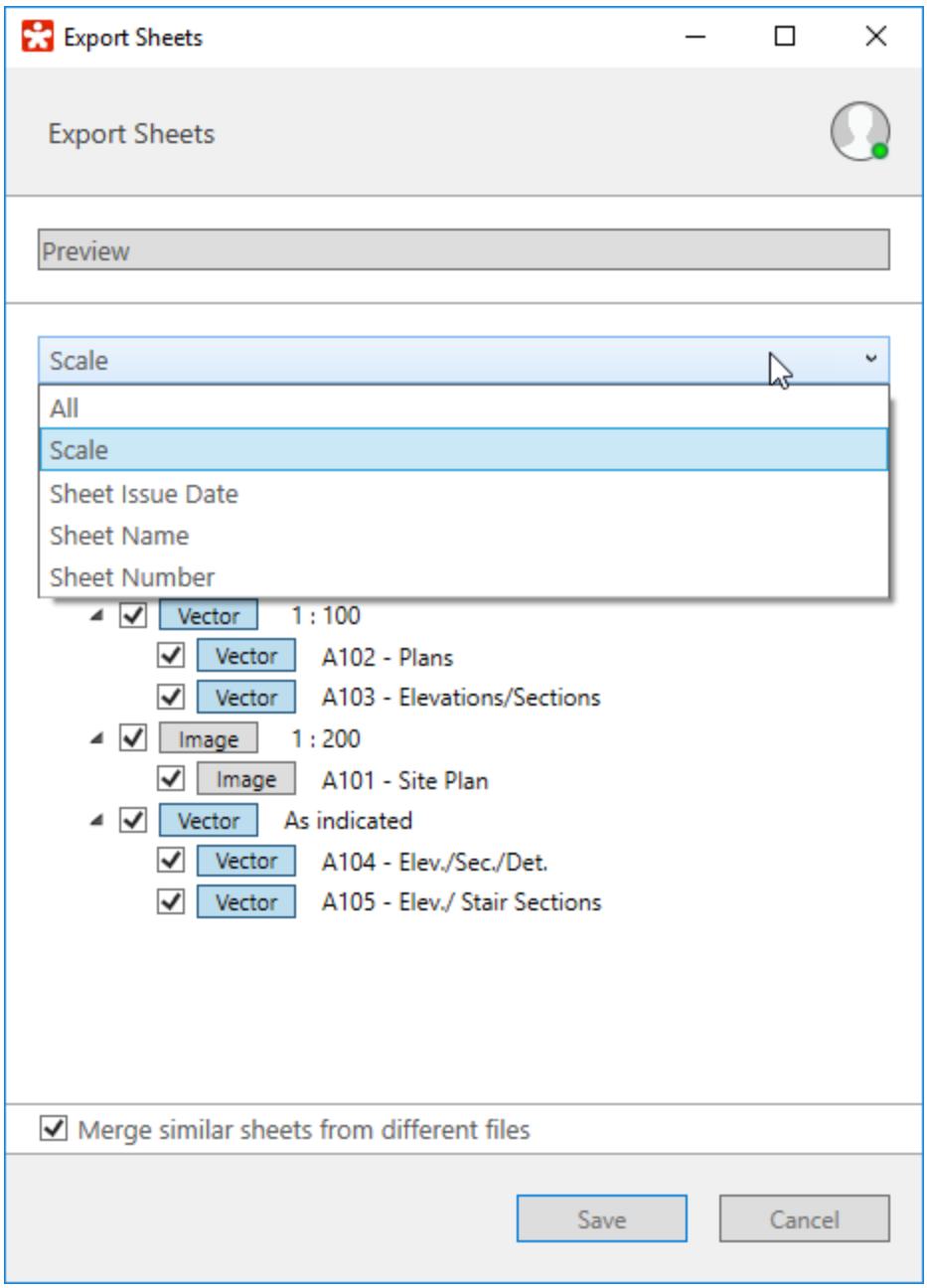
Option	Description
Export 3D model	Activate this checkbox to export the 3D model. Note that if this checkbox is deactivated all options related to 3D view become unavailable. Before launching export make sure that your source file is open in the 3D mode (3D view is selected in Revit).
Export viewpoints	Activate the checkbox to export all original Revit views. Otherwise only the currently selected view (3D) will be exported and available in Revizto.
Export levels	Activate the checkbox to export Revit levels defined in 2D. All elements outside levels are assigned to the ***No Level*** Revizto level. It is also used when levels are not defined/exported at all.
Update materials	This checkbox is important when export is carried out repeatedly. Revizto has its own lighting and material editor that allows changing textures, colors of objects, lighting. If you are sure that it is necessary to overwrite changes made in Revizto every time source is exported, activate this checkbox. Otherwise, deactivate it.
Use render appearance	Activate the checkbox, if you want your Revizto model to have a more movie-like appearance with less attention to actual materials. If correct display of materials is important, deactivate the checkbox. This option does not affect any lighting/material changes in Revizto editor.
Export grids	Activate the checkbox to export Revit grids. Grids are created in Revit manually and can be very useful for collaborators.
Export rooms	Activate the checkbox to export Revit rooms and use them to navigate within the resulting Revizto model.
Export phases	Revit files store data on development stages called phases and users can switch from phase to phase and review changes. If you activate this checkbox, phases will be also available in Revizto. **Caution**: If your Revit file is open in the phase mode and the flag is deactivated, only the open phase will be exported, which is not likely to be the desired option.

Option	Description
	Note: Phase export may affect performance of the Revizto lighting editor due to the large amount of layers coexisting in a scene.
Export sheets	Activate the checkbox to add sheets to Revizto model. Then click ***Select*** to choose which sheets have to be exported. Choose export option for each sheet: ***Image*** or ***Vector***. The Image option means that the exported sheet will only have 3 zoom levels, each represented by an image. The ***Vector*** option has a smooth, more powerful zooming, yet, it may be unavailable for some files and requires more system resource. For more details on sheet export, see below. **Tip**: use filters to manage the list of sheets. Note that sheets can have similar names (not IDs though).

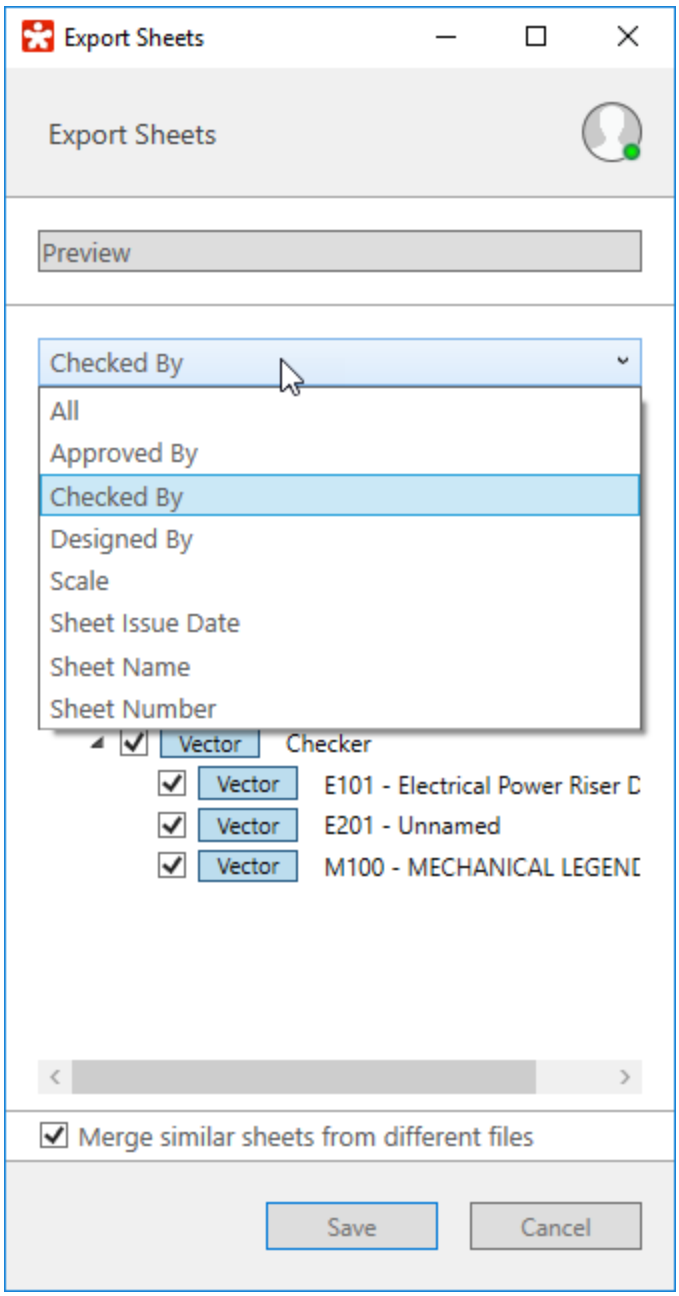
Sheet Export Particularities

As mentioned above, you can export sheets in vector or image format. the Image option is recommended for sheets that use East Asian fonts. Also, images are quicker processed when image overlay is created.

You can also use a range of filters to quicker find sheets that you want to export.



Note that the list of available filters is not strictly defined and depends on properties available in the source file.



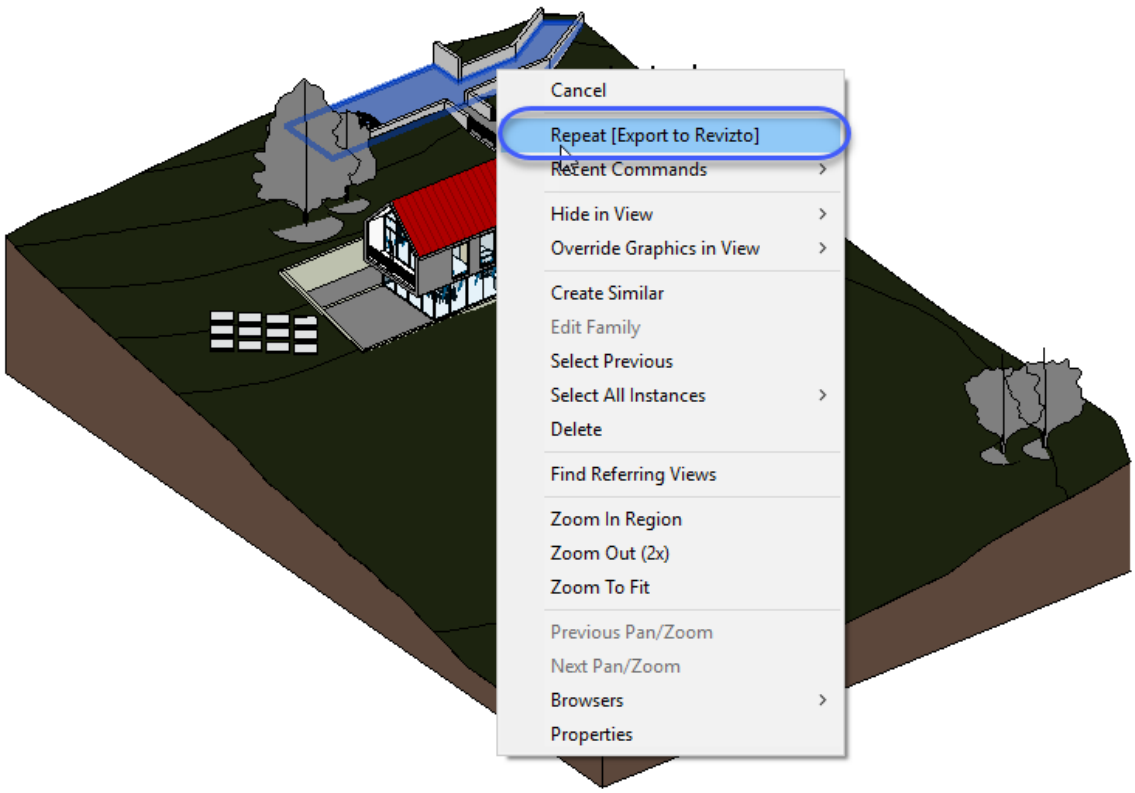
Warning: Make sure to export sheets without rotation. Otherwise Revizto will be unable to properly align them with the 3D model.

Exporting Selection

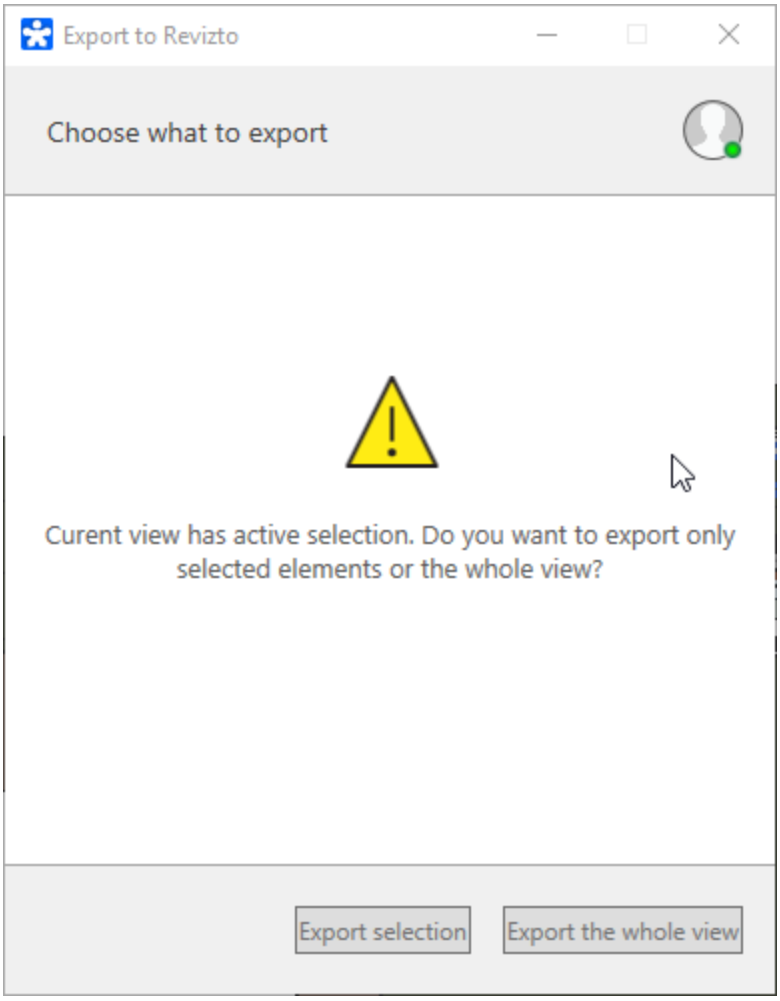
Revit allows exporting a selected item, not the whole view.

To export selection:

1. Select an object in Revit, right-click on it to open the context menu.
2. Choose the ***Repeat [Export to Revizto]*** item.



3. Confirm that you want to export only the selected item. Revizto will export the selected item and sheets related to it.



Warning: do not use the option to update an existing project containing the whole view. It only exports the selected element creating a model from it.

Exporting Sheets with Similar GUID's

Users may need to create multiple copies of the same Revit scene in the framework of their BIM projects (e.g. the same building model can be copied to create a street block). In this case sheets with similar GUID's appear. When such scenes are appended to the same Revizto project, sheets are exported anew with suffixes added to their names. Yet, if you do not want to have identical sheets in your projects, you can activate the ***Merge same sheets from different files*** option before export.

Export tutorial

1.2 Navisworks

Navisworks is not designed for creating models, it combines various sources together and detects clashes. One of its key sources is Revit. So, when you want to add a Navisworks source to your Revizto project, you may separately add the Revit model and exclude it from Navisworks exports (i.e. export it without geometry and sheets). In general, this is the recommended option, though it may be unavailable due to project particularities.

Also note that Navisworks does not allow exporting sheets in vector format, only as images.

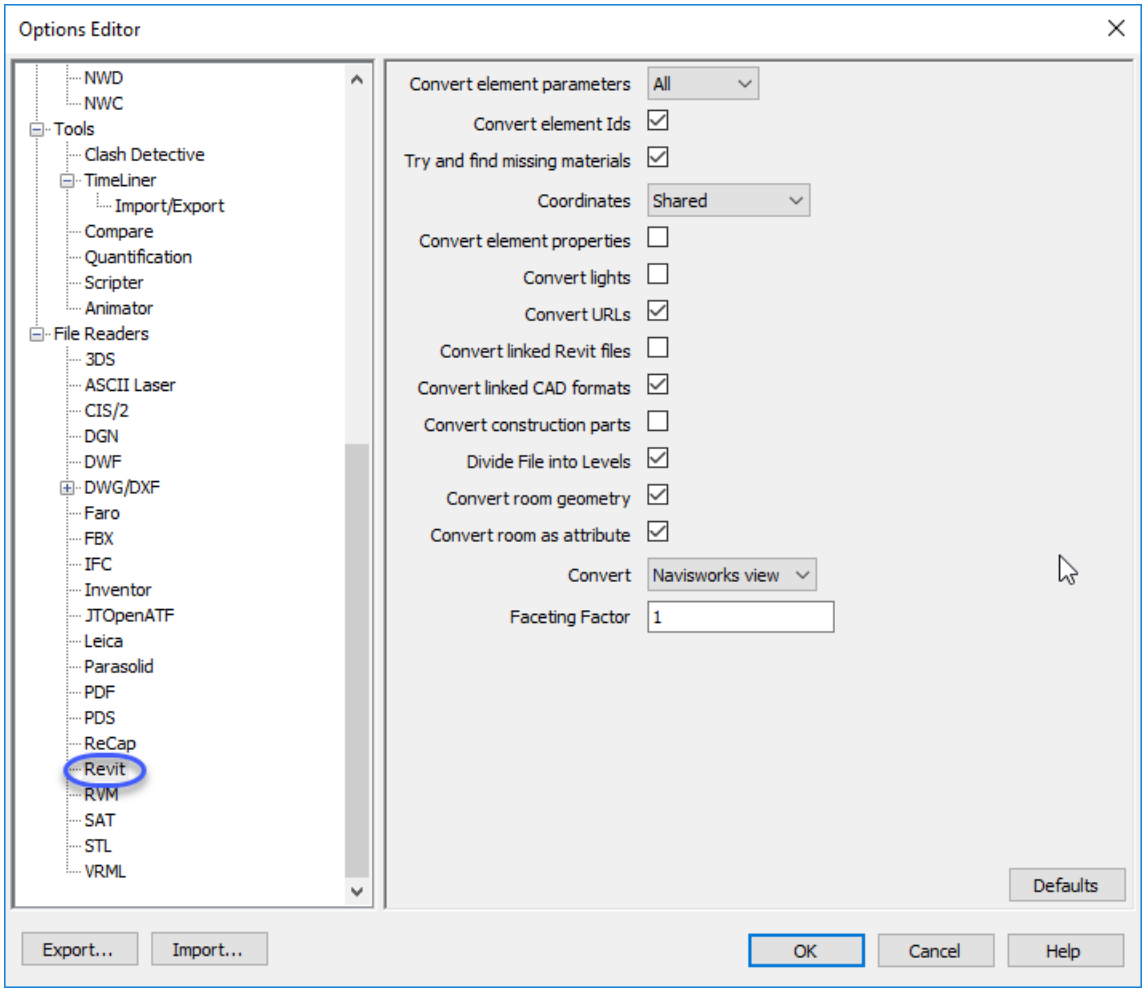
If you want to export all data from Navisworks, it is crucial to make sure that initial export from Revit to Navisworks is performed correctly. Revit uses an addin for export to Navisworks, in Navisworks there is built-in function (go to the ***N*** menu > click the ***Options*** button > expand the ***File Readers*** item in the left panel> choose ***Revit***, see the image below). All in all, export/import settings are quite similar.

Make sure to:

- export the entire project, not the first 3D view (if exported from Revit),
- convert construction parts, elements, element ID's (both export/import)
- Use the ***Shared Coordinates*** option (both export/import). Note that when Navisworks and Revit sources are combined within the same Revizto model, the resulting view may appear to be corrupted due to coordinates mismatch. Before exporting Navisworks source data, make sure that it uses the same set and type of coordinates as the Revit file.
- Do not use the ***Convert linked Revit files*** option. Revit projects can has numerous embedded files and including them into your export can cause software failure or very long delay.

Pay attention to the ***Faceting Factor***. It is responsible for the way circular shapes are rendered. It is not recommended to use high values for large working projects. Although a higher factor means better view, it also results in higher system load and slower operation. Yet, you may use higher factors when creating small Revizto models designed for presentation purposes.

Also, when Revit project is initially exported to Navisworks, and then exported to Revizto via Nvisworks, you have to make sure that all data from Revit has been duly exported and added in Navisworks.



Tip: For additional options for compressing projects, see the ***Project Optimization*** section below.

Grouping and Exporting Clashes

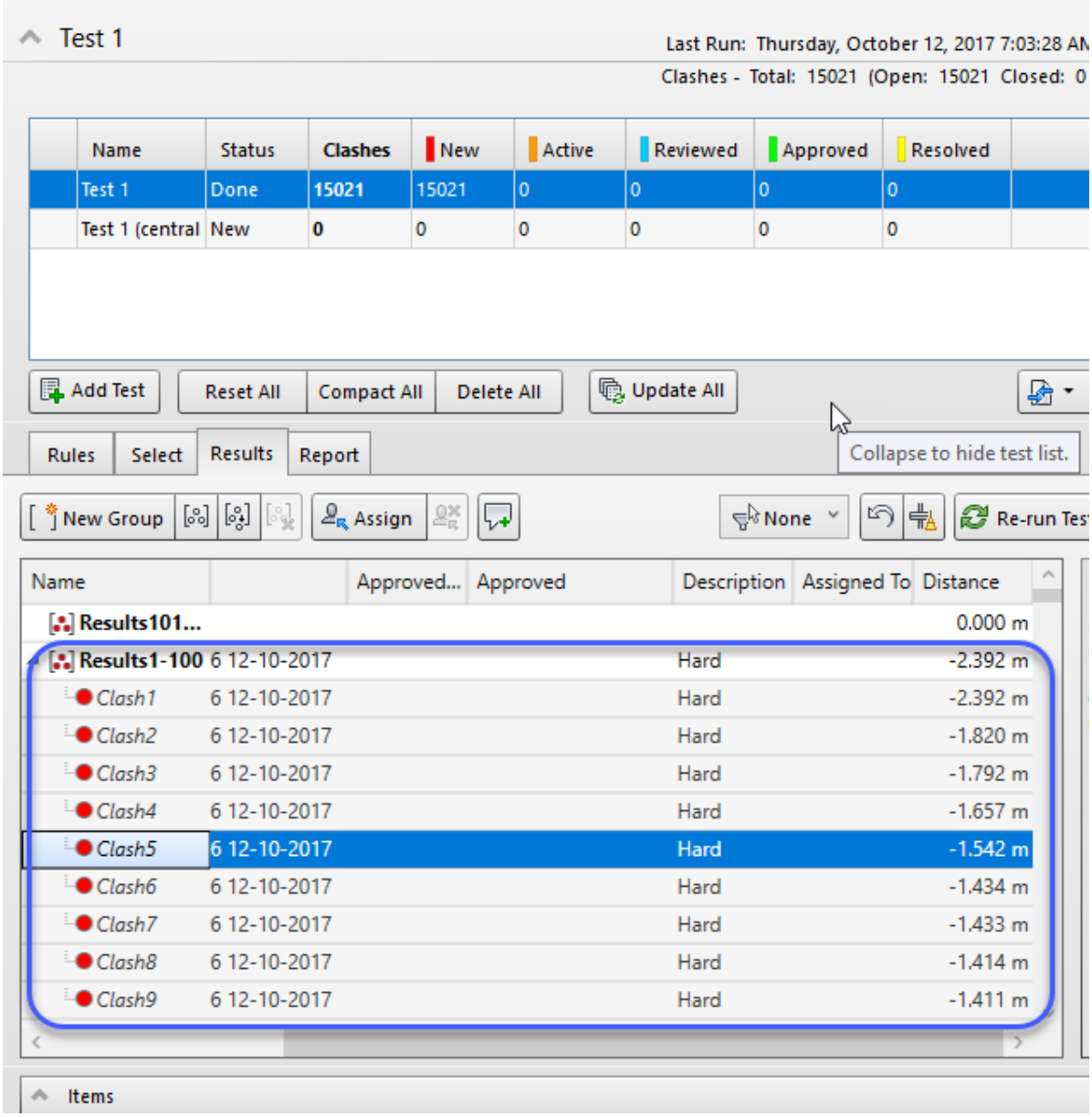
Need to confirm some info

Navisworks clashes are exported to Revizto as issues. Note that exporting separate clashes is not recommended. You have to make sure that clashes are conveniently and logically grouped within the source file.

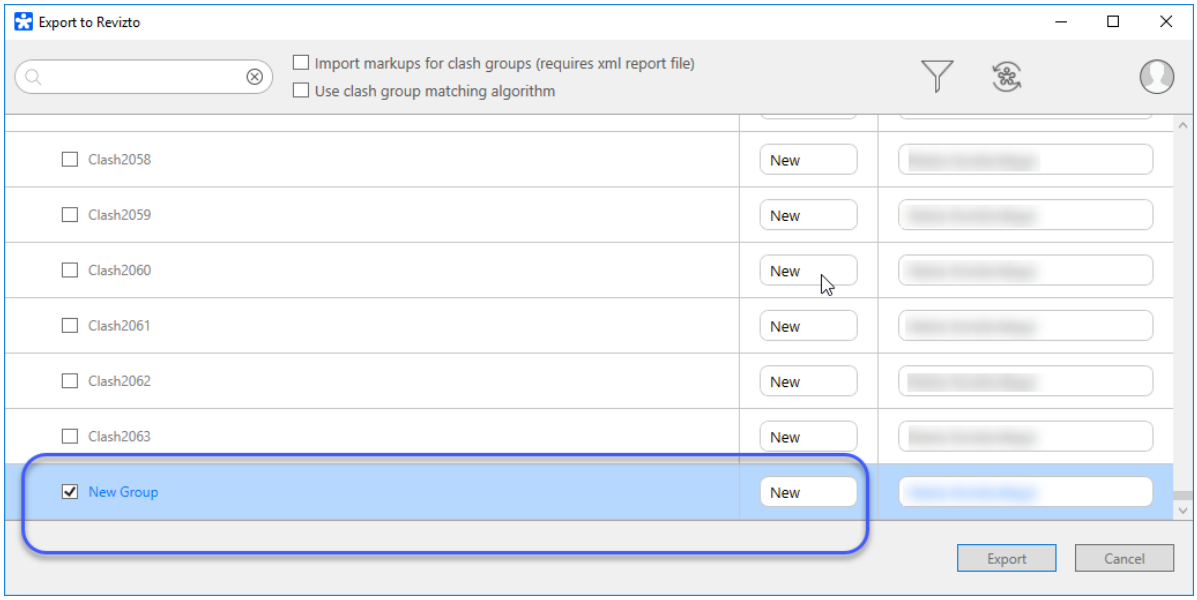
To group clashes in Navisworks, you can either use its own functionality or the relevant feature of the Revizto plug-in. Also, third-party grouping tools are available in the market.

If Navisworks grouping is used:

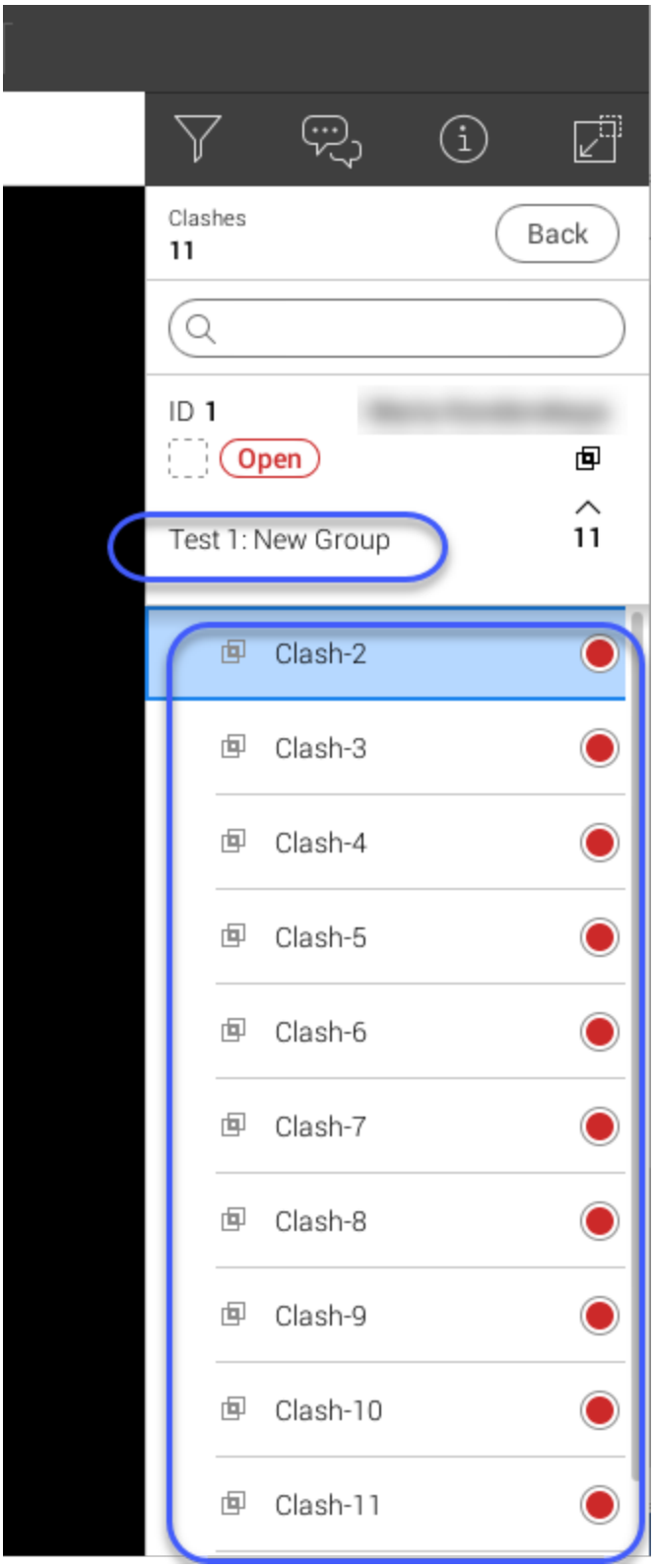
1. Create your own tests for clash detection. Note that you may want to define rules. Run your test in Navisworks to detect clashes matching your rules. It is not unlikely that you get several thousands of clashes. If not grouped, each is exported to Revizto as a separate issue which is not convenient. Therefore, grouping is recommended before exporting.
2. In Navisworks you can select clashes, right-click and add them to a new group. Then each exported clash group will represent an issue in Revizto.



3. After grouping clashes, go to Revizto plug-in and click ***Sync Clashes***. Note that you have to save your Navisworks file before. At this point you can also link clashes to a new project. Revizto plug-in processes clashes and builds and export list.
4. Activate checkboxes by the names of clashes/groups you want to include in your export. Click the ***Export*** button.



In case of successful export, the exported group is displayed as a single issue in Revizto with the ***Open*** status. This issue can be expanded to review and manage separate clashes within it.

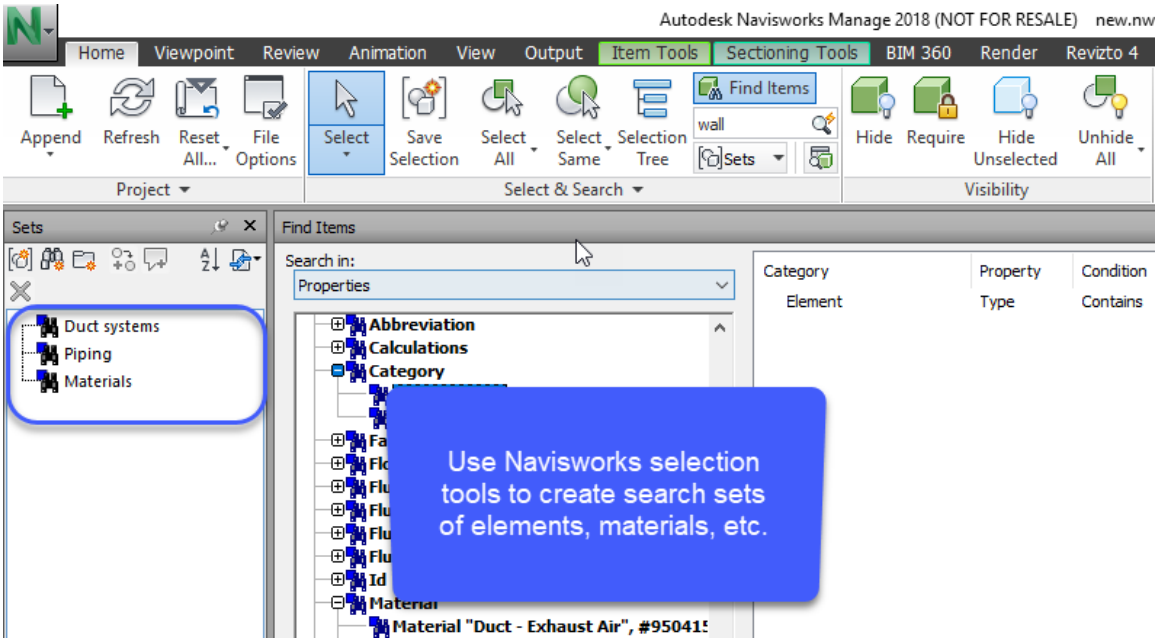


Revizto plug-in offers its own functionality (Intersect Search Sets) for building clash tests and grouping clashes for export. Note that this feature only builds clash tests for search sets. So,

before using it, you have to create custom search sets, each including objects you have to intersect (i.e. clash).

If Revizto grouping tool is used:

1. Make sure to create your own search sets in Navisworks. For example, they may include ducts and pipes, or walls and pipes, etc.



2. Then launch the Revizto plug-in and click ***Intersect Search Sets***. Yours sets will appear is a separate window.
3. Define the test, i.e. select a set or sets on the left and on the right to intersect them and detect clashes, if any. Click OK to save your settings as a clash test. Your test will be available in the ***Clash Detective*** window of Navisworks.
4. Run your test/s. Then export results. Note that with Revizto intersection option used each test is exported as an issue (i.e. a group of clashes).

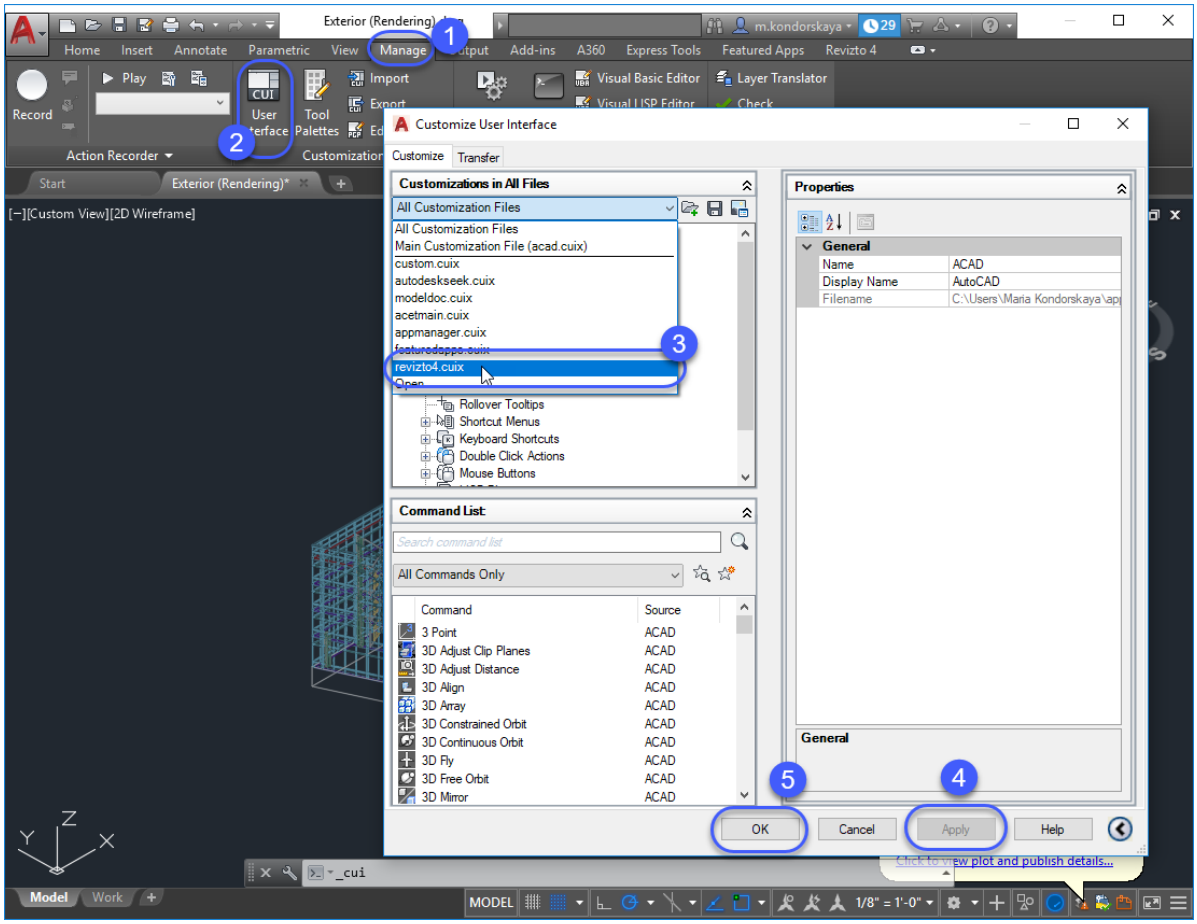
1.3 AutoCad/ArchiCad

AutoCAD

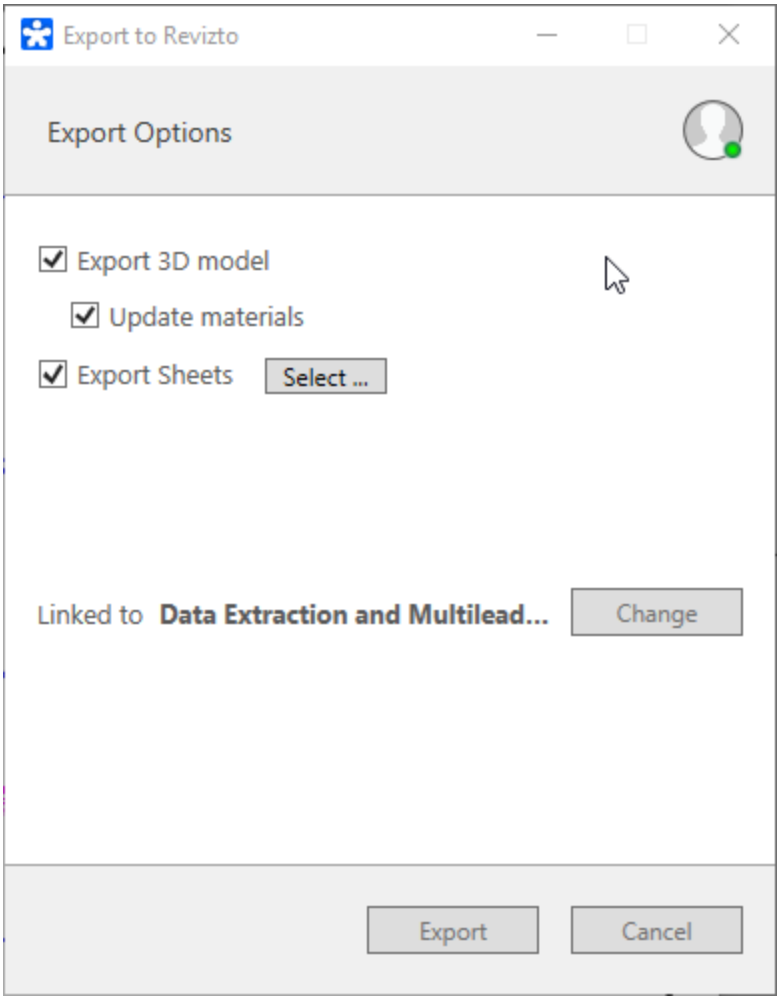
All in all, the overall export procedure is similar to the general one, but there are things to keep in mind.

If Revizto plug-in is not displayed in AutoCAD 18 after installation:

1. Go to the main menu and choose ***Manage*** > ***User Interface*** > ***Customize***.
2. Right-click ***REVIZTOEXPORT4*** in the ***Partial Customization Files*** section and choose the first option: ***Unload REVIZTO4.CUIX***.
3. Click ***Apply*** and ***OK***.

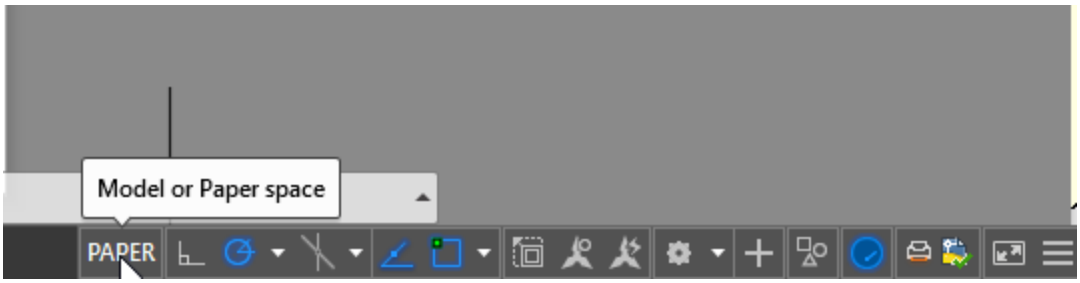


AutoCAD offers less export options than Revit or ArchiCAD.



AutoCAD allows working both with separate files and projects (sheet sets, `.dst` files); you can simultaneously have an open project and an open file outside this project. Note that in this case the export plug-in exports all open documents to Revizto. You have either to close redundant elements before starting export, or exclude them manually from the export.

Before exporting a 2D drawing from AutoCAD make sure to switch to the ***Paper space*** mode (the bottom menu of AutoCAD). Otherwise Revizto may fail to properly process exported data.



When defining your export options, make sure to click the ***Select*** button of the ***Export Sheets*** checkbox (see the image above) even if you are going to export all the sheets to check whether sheets are properly added to the export. Sometimes errors occur and sheets are not added to the export by default.

Note: If trying to link a new scene from AutoCAD to an existing Revizto model, make sure the model being merged is also in shared coordinates or your AutoCAD model may not line up once in Revizto.

ArchiCAD

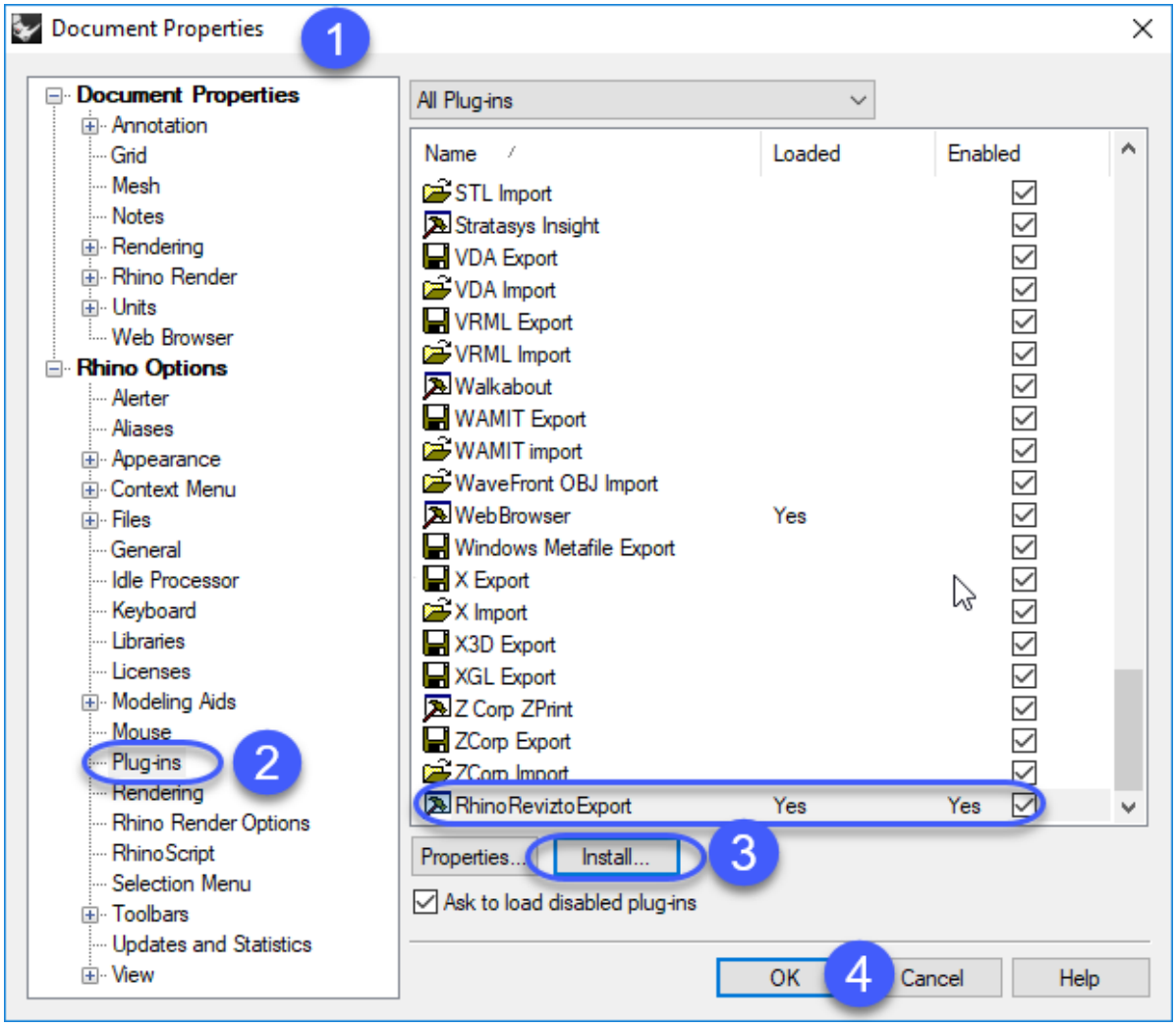
Revizto is not automatically installed in most versions of ArchiCAD (due to GUI localization particularities). Installation procedure is similar to that given for AutoCAD above.

1.4 Rhinoceros for Windows

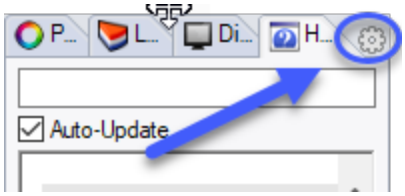
By default Revizto plug-in is not available in a newly installed Rhinoceros instance. You have to install it.

To install the export plug-in:

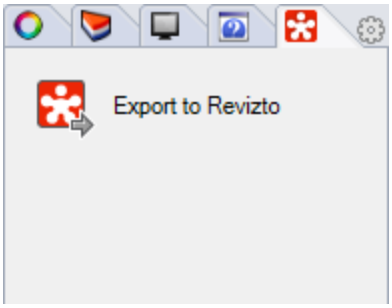
1. Launch Rhinoceros, go to the ***File*** menu and choose ***Properties***.
2. Navigate to ***Plug-ins*** in the left navigation bar.
3. Click ***Install***. The standard Windows file selection dialogue opens.
4. Go to the Revizto installation folder (C:\Program Files\Vizerra LLC\Revizto4\Bin) and choose `RhinoReviztoExport.rhp`.



5. Click ***OK***.
6. Click the options icon at the top of the right bar of the Rhinoceros GUI.

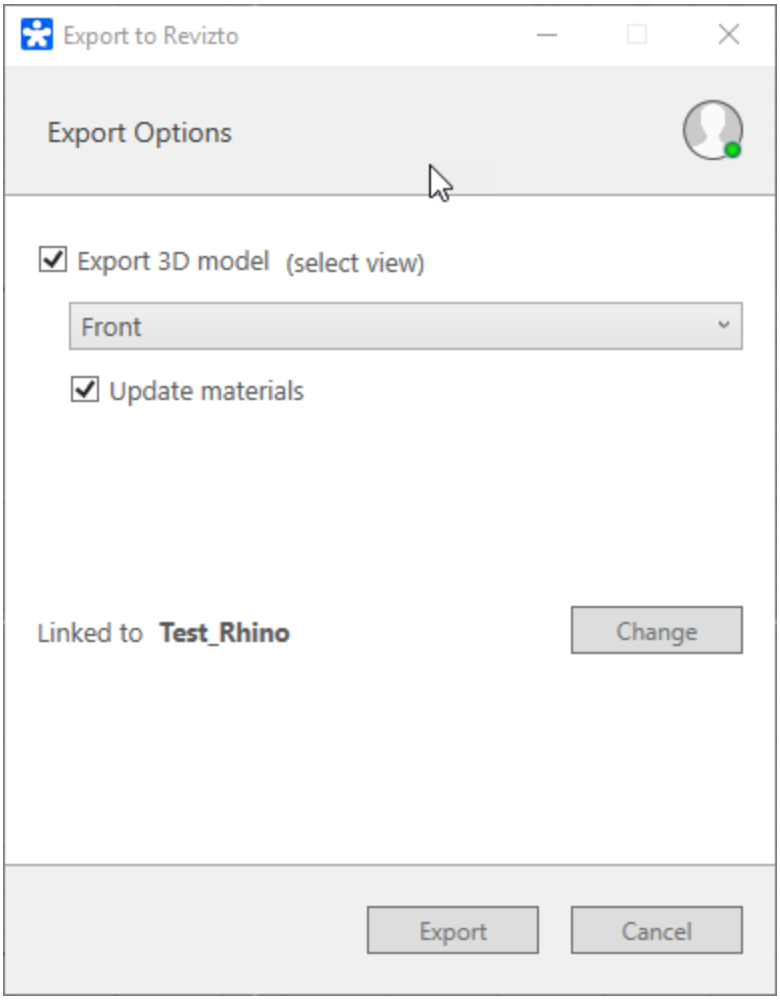


7. Choose Revizto in the list that opens. The ***Export to Revizto*** link appears in a separate bar tab.

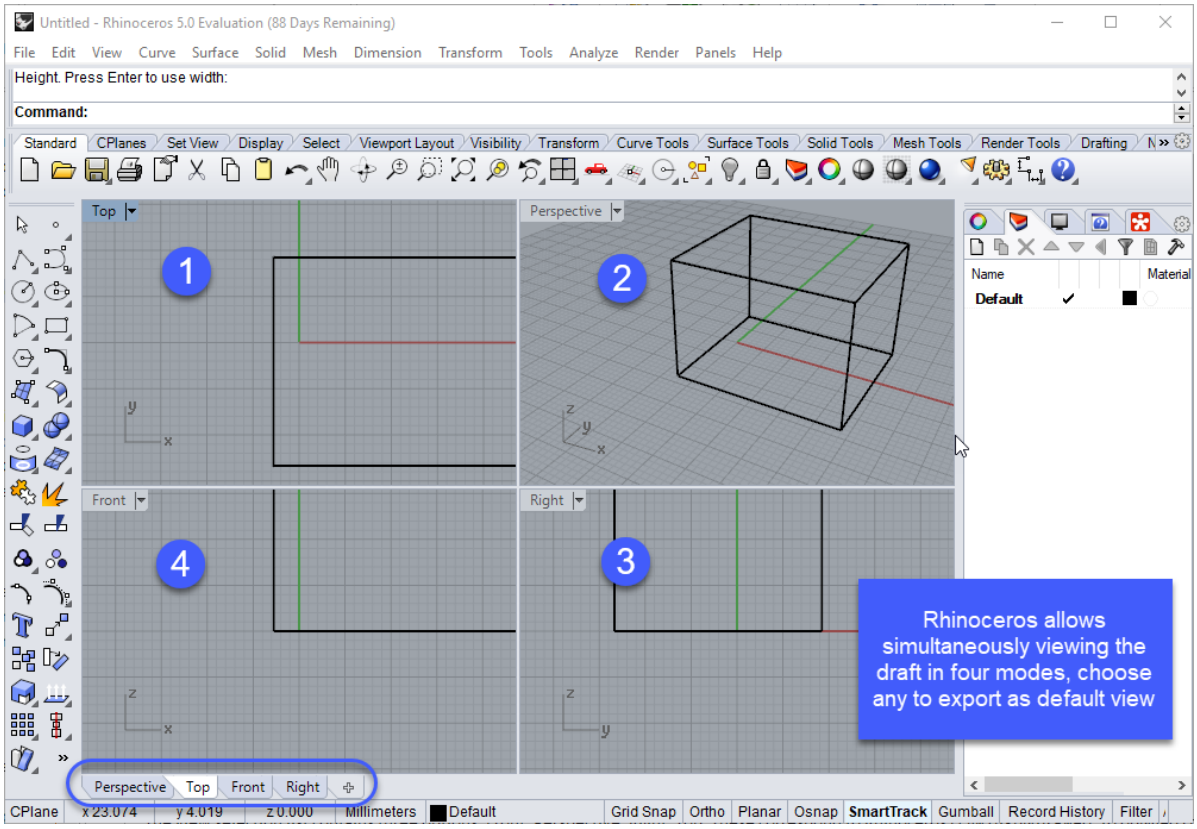


Export Procedure

The very export procedure is similar to the general one. Note that you can only choose whether or not to export materials and choose a view.



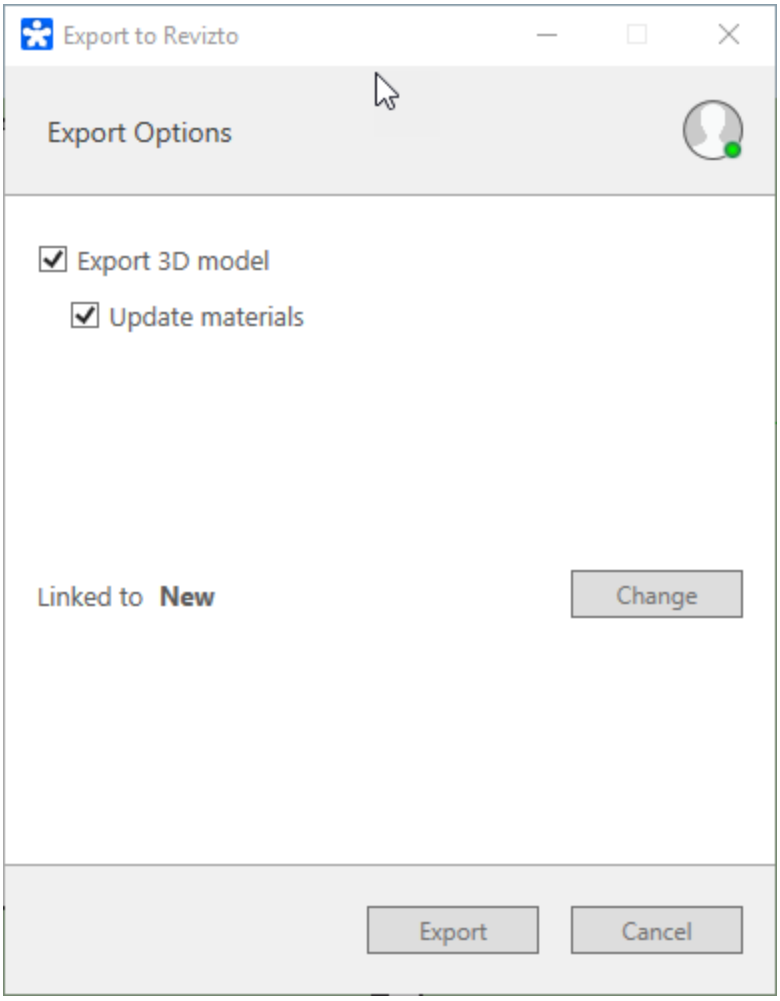
The view selection list contains three options: Front, Perspective, Right, Top. These correspond to Rhinoceros default view modes. One view mode is always active (i.e. used for editing) and it is selected as the home viewpoint for export. You can manually define your preferences.



1.5 SketchUp

By default Revizto plug-in is available from the main menu of the program (***Extensions*** > ***Revizto 4***). Yet, at the first launch SketchUp suggests creating a toolbar icon. You can use any navigation option you prefer.

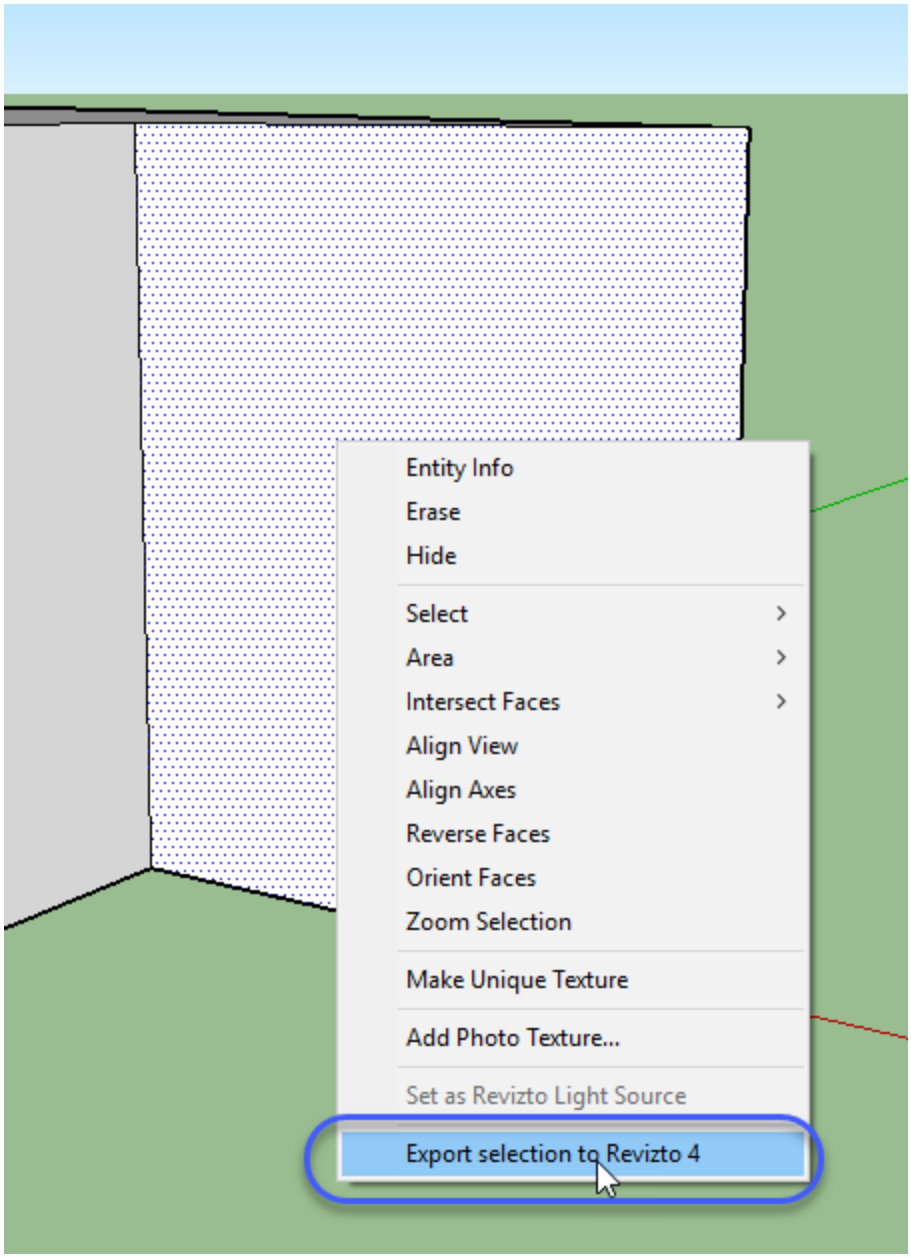
Basically, the only function of the plug-in is export which has no particularities and fits the general procedure[1] . Note that SketchUp allows exporting only 3D with materials.



Note that SketchUp generates levels from the native entity type called scenes.

You can use all collaboration options in projects based on SketchUp files, but, unlike AutoDesk software, you cannot simultaneously navigate to an issue point in the source program by selecting the issue in Revizto.

SketchUp allows exporting selected items. Like Revit, when selection is exported to an existing project, it replaces all previously exported 3D elements (i.e. you cannot use this option to update a specific object).



1.6 Import from IFC and FBX

Revizto allows importing `.ifc` and `.fbx` models.

`.ifc` files designed to store 3D sources are supported by most of programs in the architecture, engineering, and construction (AEC) industry. It is widely used as collaboration format in Building Information Modeling (BIM) based projects.

`.fbx` format is used in:

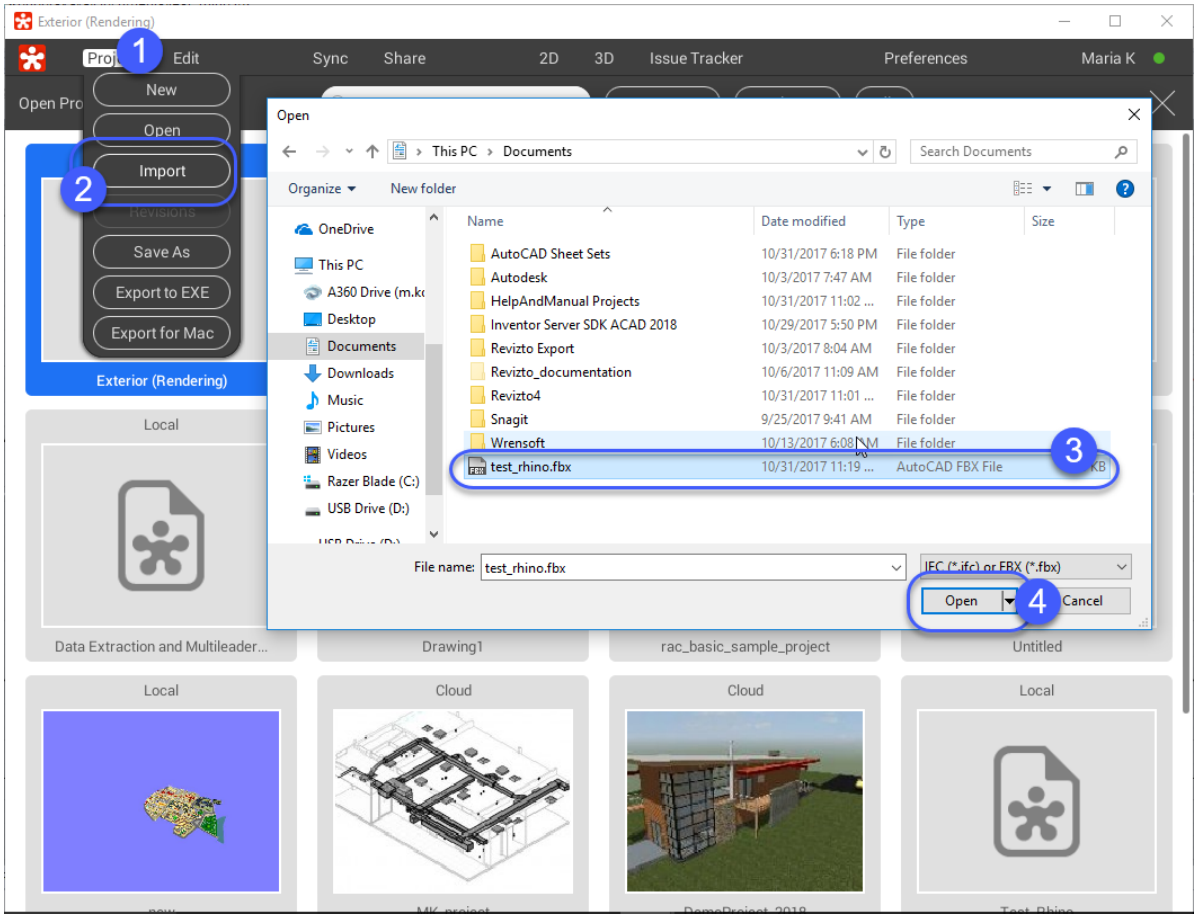
- 3ds Max
- Blender

- Rhinoceros[24]
- Maya
- Cinema 4D
- Revit LT

.ifc is widely promoted by Autodesk and is used by Solibri. Note that the latter does not strictly observe the IFC requirements, therefore issues may occur during data export from Solibri to Revizto (we support the strict format).

To import an .ifc/.fbx file:

1. Create an empty project and open it in Revizto. You can use an existing project, if it is ok to append `.ifc/.fbx` content to it, or to overwrite existing content.
1. Choose ***Project*** > ***Import*** in Revizto top menu.
2. Find the necessary file by using Windows Explorer and click ***Open***.



3. Define your export options in the standard Revizto export dialog that displays.
4. Click ***OK***.

When a Revizto project is created, it is no longer connected with its original IFC or FBX model. If you do changes in Revizto, they cannot be synced back to the file. However, if you make changes in the original model, you can always do re-export to "current project" (see the description above).

The dialog box also has an option to duplicate back faces. Revizto only shows the front face of the surface, so when you look at it from the back, it is invisible. If the model assumes two-sided surfaces but only has one-sided, then you may want to select this option. However, it duplicates every surface of the scene thereby increasing its size and slowing down the performance.

Note on Lighting Sources

Revizto Editor doesn not allow creating new light sources. All light sources that you want to be in the project should be created in the software you use. Revizto should detect all the light source information automatically when importing your project.

1.7 Other import options

Revizto supports the BIM collaboration initiative that promotes `.ifc` and `.bcfzip` formats.

`.ifc` is designed to export source 3D scenes (e.g. from Revit and other Autodesk software) and is described above, `.bcf` stores issues.

You can export/import Revizto issues as `.bcf` from the ***Issue Tracker*** view.

Index

- A -

- E -

- N -

- R -

- S -