



User Manual

Revizto 2017

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Introduction

Revizto is a BIM collaboration toolkit compatible with Revit, Naviswords, AutoCad, ArchiCad, SketchUp, Rhinoceros for Windows. Revizto allows project participants to :

- share project models and review them in several friendly formats (game-line viewing and navigation options)
- report, process and monitor issues
- communicate in real time

Revizto toolkit includes:

- plugins for every supported source tool
- core application for viewing exported models, collaborating and managing projects
- additional viewers tailored to popular viewing formats for additional presentation options
- model export management application
- web GUI for [license management](#)^{□₆₀}
- VR functionality

Revizto relies on cloud technologies, so you can collaborate 24/7, worldwide.

1.1 Technical requirements

Hardware requirements

Desktops/laptops

CPU, GPU, RAM are needed for Revizto

The system requirements for working with Revizto mostly depend on the size and complexity of models which you plan to work with.

The initial conversion into Revizto from your authoring software relies mostly on CPU. To reduce long export times for large models choose a machine with a decent amount of CPU or use the Revizto export scheduler. The export scheduler still uses CPU but can be planned during non-working hours.

Real time navigation relies mostly on GPU and RAM. The Graphics Card is also very important if you're using a higher graphic quality or looking to view in VR. The NVIDIA GTX 1080 is a great choice for anyone needing great visual quality.

Tablets

- We recommend Apple IOS powered tablets: iPad Air 2 and better.
- Android tablets are less preferred due to a huge variety of the available models and potential device-specific problems. In case Android is your only possible choice we recommend current top devices from vendors like Samsung, Google, LG, Asus, etc.
- MS Surface Pro 4 is a good choice if you need a Windows device.

Network requirements

If the company is using firewall, ports 80 and 443 have to be opened for Revizto. And the following domains must be allowed:

- *.revizto.com
- *.s3.amazonaws.com

If the company is using the proxy server, you need to set up proxy server settings in Revizto. In log in window click the Proxy server settings in the right top corner of the screen and fill in all required information.

Tip: Revizto displays the current connection status in a circle by the name of current user. If everything is ok, the circle is green, if there are connection issues, it is yellow, if you are offline, it goes black.



1.2 Glossary

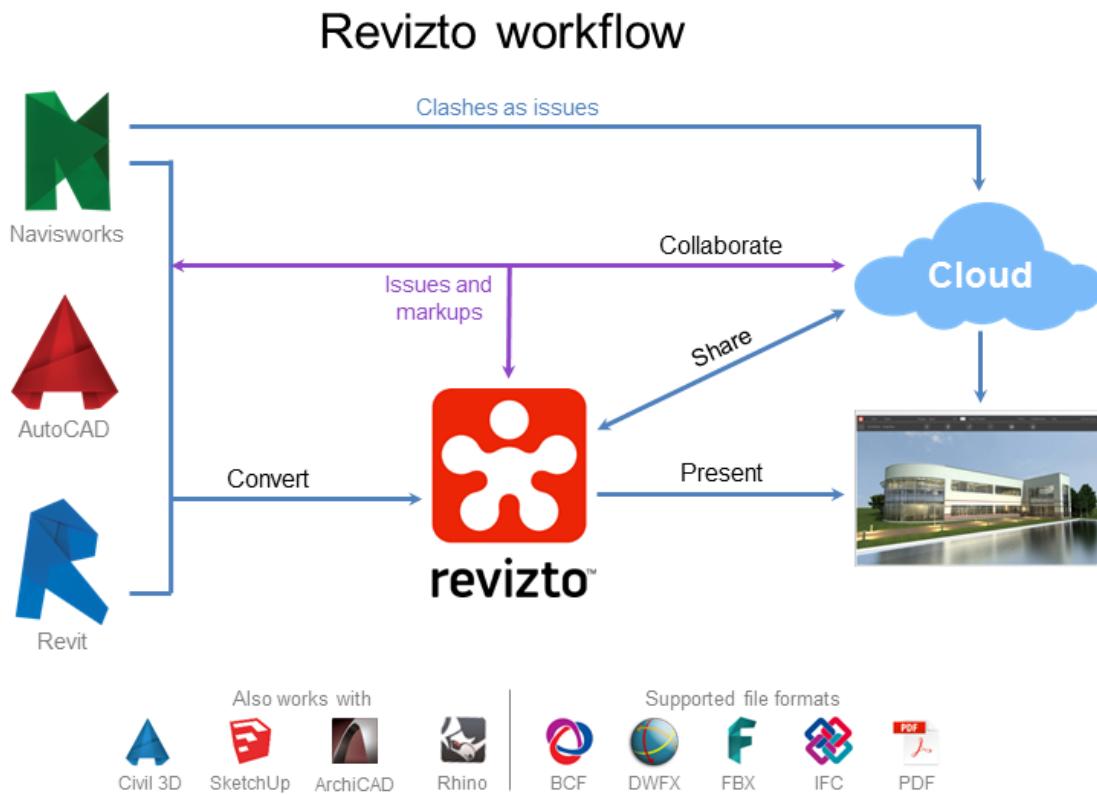
Term	Definition
Revizto Application	Core software component of the suite that contains the whole project management, model creation and issue processing toolkit.
Revizto VR viewer	Revizto offers different options to view 3D, in particular, we support VR ¹⁷¹ . This option excludes 2D views, has limited project management and collaboration options. In turn, it offers additional presentation and navigation options, each viewer is tailored to support a specific set of gaming and VR controls/devices (e.g. WASD, Xbox, OCULUS & Vive headsets). Revizto hot keys ¹³⁶ are supported in viewers, as long as relevant functionality is available. E.g. with no 2D view mode, the hot key for switching to 2D is unavailable. VR viewers are not separate applications, but for convenience separate desktop shortcuts are usually created for them.
Revizto export scheduler	Software component designed to manage source export schedules created earlier in the project.
Revizto plug-in	Plug-ins installed automatically or manually to source software. You can use plug-ins to export source models, schedule exports and launch issue tracking functionality.
Revizto model	A set of files generated by Revizto to represent the source data (3D graphics, sheets, clashes) in a single viewable package. Model cannot be edited and used as a source, but it offers collaboration options. Issues created from the model become available to source users (depending on rights and notification settings).

Term	Definition
Revizto scene	3D view generated by Revizto and displayed in the application (VR viewer)
Revizto license	A fee-based license issued to a company for a specific number of users and projects. Typically it is provided for one year. To get familiar with the product, you can get a demo version which is free, though has limitations and is provided for a limited period.
Revizto user	Revizto user having a license role and an account at www.revizto.com
Active user	User who accessed project by opening them in Revizto within a specific period of time. Users become inactive after a certain period of idleness.
Revizto license role ^{□63}	Level of access to Revizto license (rights to add project and users). For more details, follow the hyperlink.
Revizto project ^{□116}	A bunch of files storing 3D graphics, 2D sheets and issues (clashes) imported from source BIM software and converted into a unified package viewable in Revizto to report and discuss issues and have them highlighted in source files.
Revizto [project] access level	Access level of a project member ^{□120} . There are default level settings, but these can be changed both at the license level (new access levels will be available in all projects; requires SuperAdmin/Admin license role) and at the project level (requires Administrator project level access or equivalent).
License owner	Same as SuperAdmin, see the Managing Users ^{□62} section.
Region/geography	Revizto cloud sharing architecture largely depends on geographical settings (team members using the same license have to choose the same geography within the program). This implementation option saves resources and ensures faster operation. Currently there are six key geographies: North America, Europe, South America, South East Asia, Australia. For China the service is offered as well, yet, it relies on different servers (due to the local legislation)
Synchronization	Revizto model is regularly synchronized with the cloud (or other shared storage location) to make sure that all users are on the same page, i.e. have the same view, sheets and same set of issues with their respective statuses and attached information. Synchronization can be scheduled.

Workflow & Role Guides

This chapter provides concise Revizto user road-maps with regards to their license roles. If reading the web version, click on each step, to expand detailed guidelines. To get function-based guidelines, navigate to the following chapters (see the TOC).

Sample Revizto Workflow



2.1 License Administrator

The License administrator (typically, the SuperAdmin/license owner) is responsible for the license life-cycle. Typically, the License management includes the following steps and stages:

- I. Team license activation.

To start using your Revizto license:

- Find an email with license owner credentials (check the spam folder). These provide full access to the workspace management web-interface. By default, the License owner has the SuperAdmin role in the workspace. See more on roles below.
- Navigate to <http://revizto.com>, log in with the above credentials and open the workspace management GUI. Note that simultaneously you may start downloading Revizto software for local installation (if you need it).



Sign in

E-mail

Password [Forgot password](#)

Region



3. Go to the **License page** of the workspace GUI.

It displays summarized license status (number of user account created, number of projects created, SuperAdmin name, Team name) and allows navigating to other management pages (See fig. 1).

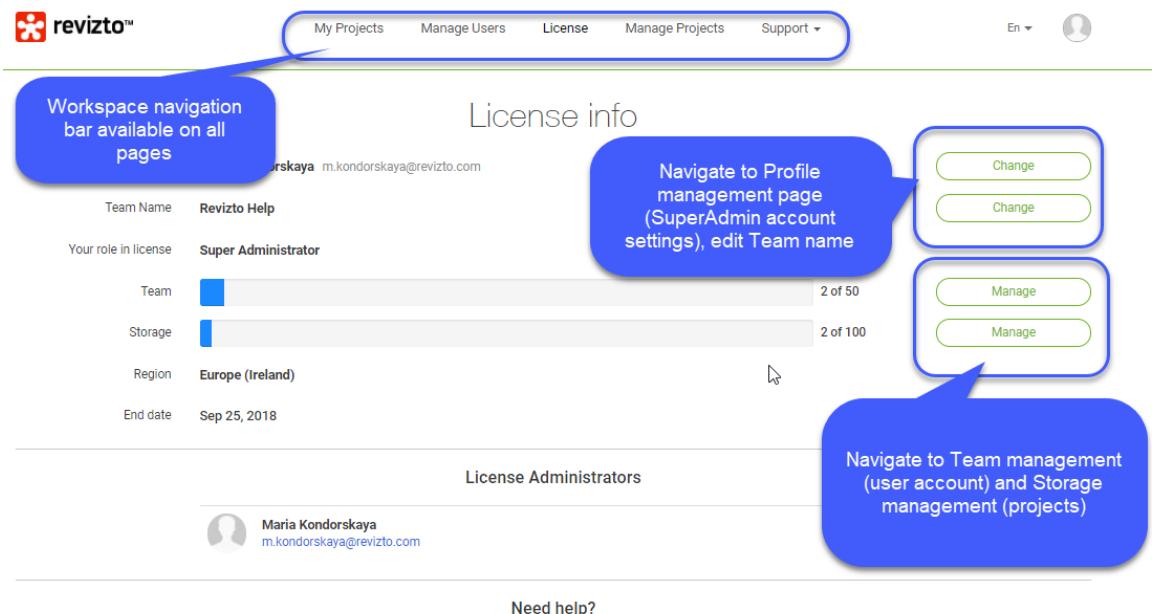


Figure 1 - License Info Screen

From this page you can navigate to project management, team management, support.

II. Team configuration (creating/deleting users).

To manage users (user licenses), navigate to the Manage Users screen. There the SuperAdmin/Administrator can:

- Create/edit/deactivate users
- Manage user [license roles](#)^{□7}
- [Monitor user activity](#)^{□71}

Revizto Help Users

Activity | Sep 14 | Export to Excel

The screenshot shows a user management interface with a sidebar for filtering and a main table for managing user accounts. A blue speech bubble points to the sidebar with the text: "Create a convenient user list display. Note how you can use tags for filtering". Another blue speech bubble points to the top bar with the text: "Manage user accounts on this page". A third blue speech bubble points to the user profile icons in the main table with the text: "Navigate to individual user profile".

Name	Role	Status	Projects Involved
Maria Kondorskaya m.kondorskaya@revizto.com	Super Administrator	Active	2
Mary Kondorskay maria.kondorskaya@gmail.com	Content Creator	Inactive	1
kondor40@ya.ru	Collaborator	Inactive	1

To extend user level license (create user):

Note that to manage users you have to be the License Owner (SuperAdmin) or Administrator of the workspace. At initial configuration SuperAdmin is the only user.

1. Click the **Add users** button. The GUI navigates to a blank form where you have to enter user email address and select their role (can be changed later).

Tip: You can create multiple users by entering several email addresses in the textbox (use comma for division). For other [group actions](#) see below.

There are five roles at the license level:

- SuperAdmin (or License owner): assigned to a license owner, can be transferred to another user. There can be only one SuperAdmin in a workspace (role modification and removal are not available for this user). The License Owner has the broadest access

rights.

- Administrator: have full control over the license. They can manage users and projects. If they need to access projects within Revizto (and they are not invited there yet) they need to grant themselves permissions on those projects through the website first.
- Content Creator: can upload new models to the license and invite unlicensed users to projects they are involved in (in this case collaborator/guest level license is automatically assigned to new members). Content creators can only access their own projects, or projects they were invited to.
- Collaborator: has access to projects they are invited to. Once invited, can have any access level within the given project (even administrator)

Note: This role is by default assigned to users that are initially created at the project level by project owners and administrators.

- Guest: Has same rights as collaborator. This role is reserved to users that already have access to Revizto under another license. So, Guest role can only be assigned if user email is already registered with Revizto in the current geography.

Note that if Guest's initial licenses expires, they lose access granted under Guest rights (Revizto highlights the user in red in the user list). To resume user access to the project, either Collaborator role has to be assigned to them (with a license in the current workspace spent), or initial license has to be extended.

Users cannot change their own access levels. Each time a user role is changed, the user receives a notification.

2. Click **OK** to send an invitation. A new user receives an email with notification that can now use Revizto. To start using Revizto, they have to log in and download the product (further steps taken by users are described in the relevant sections).

After the first login a user becomes **Active**. An active user can simultaneously run any number of instances of the web-GUI and/or Revizto software on any number of devices.

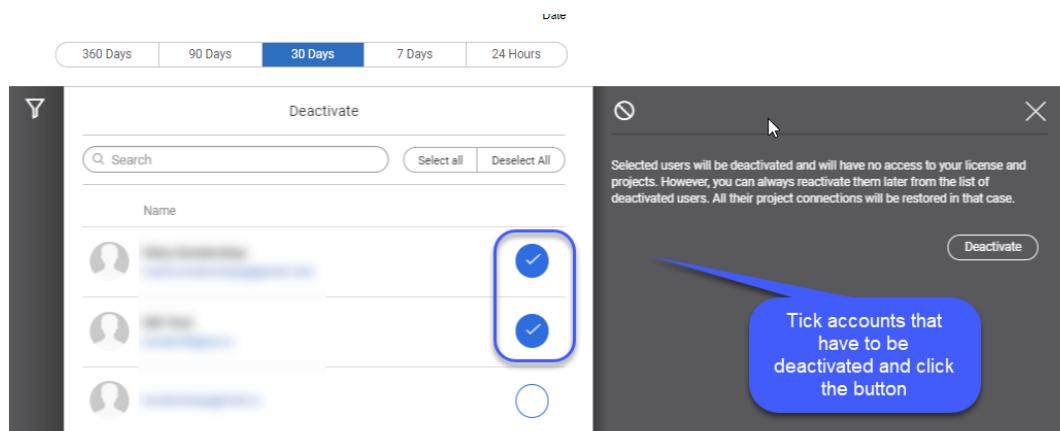
Warning: Neither the License Owner (SuperAdmin) nor the Administrator can edit user credentials. Therefore, make sure to timely deactivate users when people leave the company. Also make sure to duly transfer the License Ownership if the relevant employee leaves the company.

User license cancellation is called **deactivation**. This function is available to the license SuperAdmin and Administrator. Later deactivated users can be deleted.

To cancel user access (deactivate):

1. Click **Deactivate** at the top of the user list.
2. Select user/s.
3. Click **Deactivate** at the right side of the screen. The user becomes deactivated (cannot access their projects and/or projects shared with them), their license becomes vacant.

To get back to the main view, click X at the right side.



Deactivated users can be reactivated any time with the previous access level and project memberships. However, note that project ownership is not restored. At deactivation project ownership is automatically assigned to the SuperAdmin and reactivation does not reverse it. It is recommended to reassign ownership manually before deactivation, if the automatic option is not relevant.

To delete a user:

1. Deactivate a user.
2. Open the list of deactivated users (**Deactivated** tab).
3. Click **Delete** at the top of the list that is available in this view.

Name	Role	Projects Involved	Deactivate date
blurred	Collaborator	1	September 26, 2017

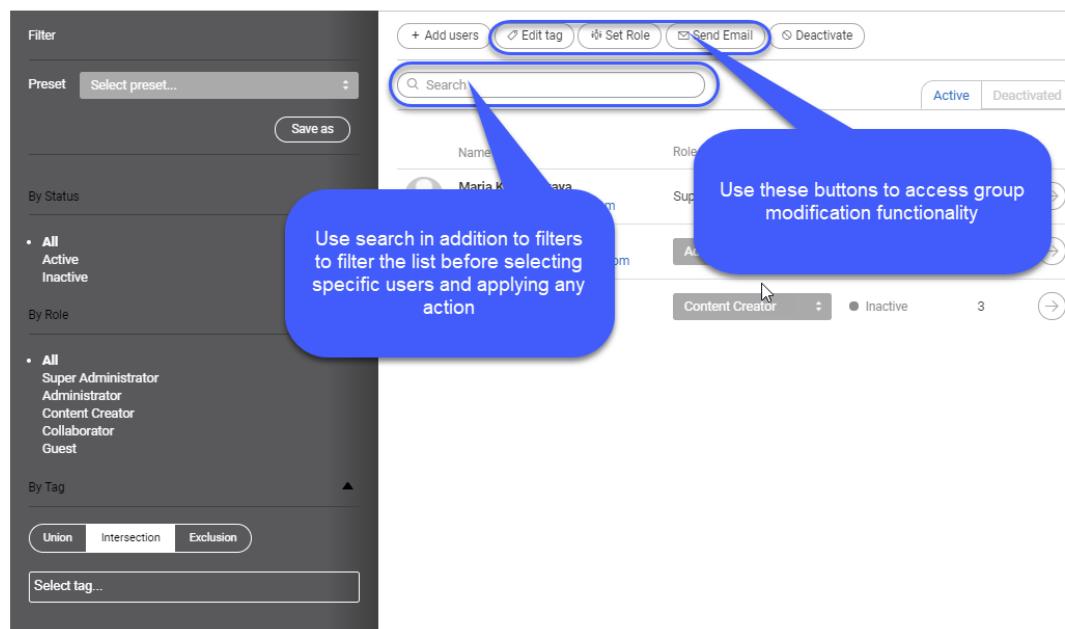
4. Select user/s that have to be deleted and click Delete button at the right side. Note that this action is irrevocable.

To get back to the main view, click **X** at the right side.

Tip: use the  icon to expand the filtration panel and filter the user list to reduce it before selecting specific users and applying any action to them.

Group Operations

Apart from allowing administrators to add, deactivate and delete multiple users, the web-GUI supports other group actions (emailing, tagging, access level change). These are implemented in a similar way with similar search and filtration options.



III. Project license management.

Super Admin, Administrator and Content Creator can create new projects within the team licenses using locally installed instances of Revizto (project creator is considered its Owner (for more details on project roles, please, [see below](#)¹³⁵).

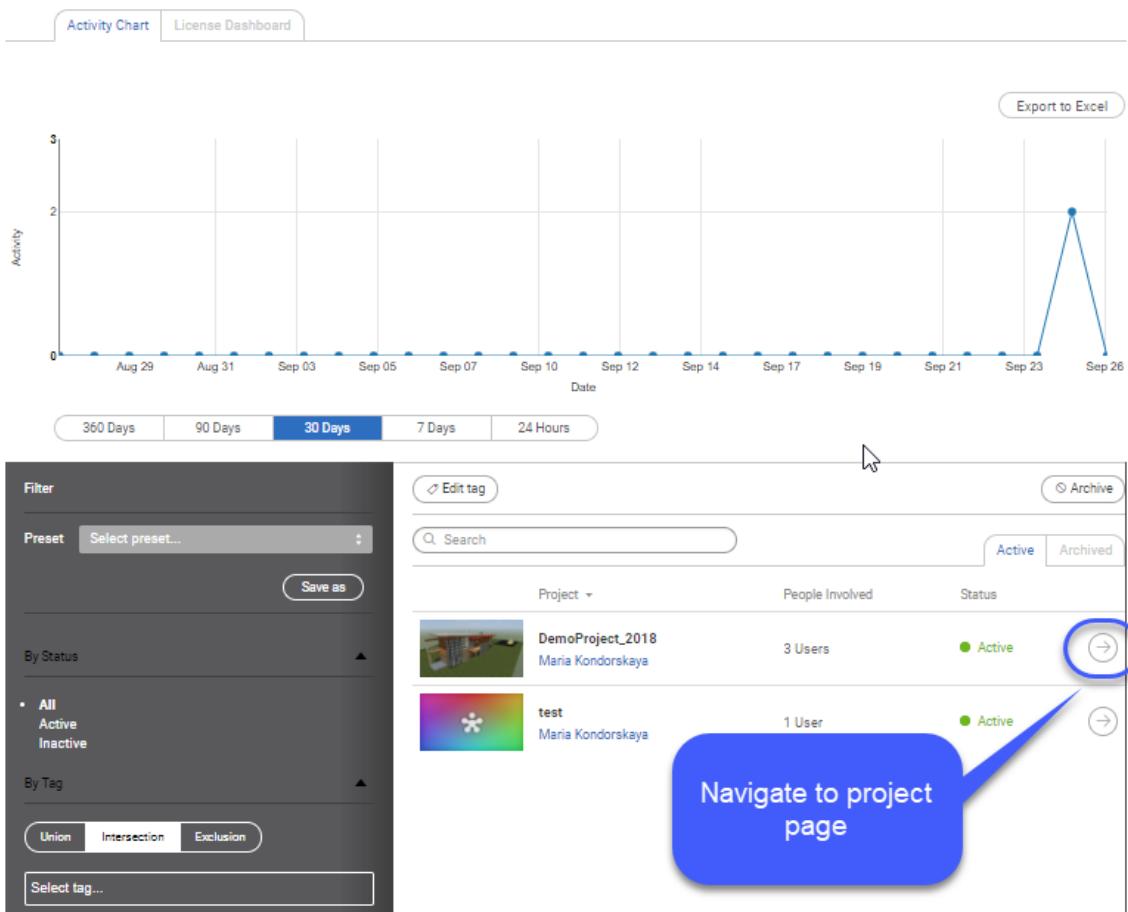
Newly created projects are listed on the **Manage Projects** screen of the workspace web GUI (available to the License Owner and Administrators) with an **Active** or **Inactive** status; a project license is issued. Projects are active when they are opened in the application at a specific frequency; users are active when they open projects in the application often enough. After a specific period of idleness projects and users are switched to **inactive** status.

Once a project is archived, its license becomes vacant for a new project. Members previously invited to an archived project lose access to it. Only project Owner can view an archived project in read-only format in [Revizto application](#)¹³⁵.

Archived projects can then be deleted altogether (i.e. from the cloud).

You can open project details in a new browser tab to edit it. Note that you can also navigate to a project page from a page of any of its members (users invited to the project).

Archiving and Deleting Projects



To archive project/s:

1. Click **Archive** above the project list.
2. Tick one or more projects. Click **Archive**. The selected project/s is archived, its license becomes vacant.

The list of archived projects is displayed in the **Archived** tab. Archived projects become unavailable to all members previously invited to it. Yet, the project owners retain read-only access to archived projects via Revizto.

Later, you can delete the project altogether (from the cloud) or restore it. Once the project is restored, it becomes available to all members invited to it before with all settings and issue history.

Editing Separate Projects

The project page consists of three views:

- Project Info
- Private Sharing
- Dashboard

Availability of these views depends on the user license role and project access level (see the table below).

All changes made in the workspace web GUI are automatically synchronized with local instances of Revizto. Below full functionality of each view is covered.

Project Info

Depending on the workspace and project role, use this view to:

- Rename the project
- Change project owner (only available to the current owner)
- Change master license (only available to the current owner, may be needed when a project is transferred to another team or trial license is replaced with a permanent)
- Upload a thumbnail
- Create and assign tags to the project
- View project activity summary

DemoProject_2018

Project info Private Sharing Dashboard

Project info

Title: DemoProject_2018 [Change](#)

Owner: Maria Kondorskaya [Change](#)

m.kondorskaya@revizto.com [Change](#)

License: Revizto Help [Change](#)

Created: September 25, 2017 Updated: September 25, 2017

Tags

demo new_tag

Scroll down for the dashboard

Private Sharing

Depending on the license and project role, this view allows user to invite people to the project, manage their access rights and remove project participants.

Note: You can invite a new user to the project without creating a license-level account before. Then the system creates a license-level collaborator account automatically. Yet, deleting a user at the project level does not mean deleting a license level account. You have to deactivate a user at the license level to completely cancel user access to the license.

Also, the License Owner (SuperAdmin) and license Administrators can manage project access levels from this view. Note that project access changes made from the web-GUI are applicable to the whole license, not to a single project. Project owners can modify and create project-level access rights from Revizto application (in this case changes are only applicable to a specific project).

The screenshot shows the 'Private Sharing' view of a project titled 'DemoProject_2018'. At the top, there are three buttons: 'Project info', 'Private Sharing' (which is highlighted in green), and 'Dashboard'. Below the buttons, there is a section for inviting people to the project, featuring a text input field with the placeholder 'Enter e-mail to invite a user' and a green 'Invite' button. A blue callout bubble points to the 'Enter e-mail' input field. Further down, there is a 'Set Access Level:' dropdown menu set to 'View and collaborate', a 'Manage Access Levels' button, and a 'Project team' section. The 'Project team' section lists three users with their names blurred, each with a rights dropdown menu and edit/delete icons. The first user has 'Owner' rights, the second has 'Administristrate', and the third has 'View and collaborate'.

Managing Project Access Levels in the Web GUI

SuperAdmin and Administrator can manage existing project-level access settings and create new ones; as mentioned above, settings defined in the web GUI are applied license-wide.

To create a new access level in the Web GUI:

1. Navigate to the **Private Sharing** view of the team workspace web GUI.
2. Click the **Manage Access Levels** button. The **Manage Access Levels** view opens.

In this view you can either edit an existing level, or a create a new one.

Manage Access Levels

Access level: Edit content and collaborate

Edit name: Edit content and collaborate

Edit 3D

Append 3D

Edit 2D

Append 2D

Add/Edit viewpoints

Add/Edit videotracks

View public issues

Create Issue

Comment Issue

Edit issue status (except closed)

Close issue

Edit issue title

Edit issue priority

Edit issue deadline

Reassign issue

Edit issue markup

Delete issue

Manage project rights / invite people to the project

Revert project to older revision

Ticked and gray means that the right is included within the upper level right

Ticking this field = creating an Administrator access level (includes all other rights)

Save | Save as new level | Cancel | Delete this level

3. To edit an existing level:

- Tick rights that you want to assign to the role, if you want to extend the access level
 - Untick available rights to revoke them and limit the access level in some respect
 - Enter a new name for the access level in the **Edit name** field, if needed.
 - Click the **Save** button at the bottom of the view.
4. To create a new access level repeat substeps a - c of the step 3 above and click the **Save as new level** button. Note that to create a new level you have to enter a new name.

You can delete any existing access level, but, if it was previously assigned to one or more team members, you will be requested to choose a new access level to them before deleting the current one.

Warning

You are about to delete the rights level "Edit content and collaborate" which is assigned to 1 people across 1 projects throughout the license. You may probably want to contact your team members and figure out if this doesn't break the workflow. If you decide to proceed, you will have to assign a replacement role for the people of that role.



To check current user access level:

1. Navigate to the page of the required project.
2. Go to the **Private Sharing** view.
3. Click button by the name of the user you want to check. The system displays detailed information on user rights with a modification option available at the top of the screen.

Edit or Append Content?

In Revizto there is a distinction between the right to edit 3D/2D and append 3D/2D. As you may see from the entry form, editing includes appending, but not vice versa. The idea is that appending allows user to add content (a sheet, or a scene) to a project and to subsequently modify/delete it, but not to edit content created by other project members. Editing, in turn, allows both appending new content and editing any existing regardless of its author.

IV. License Monitoring.

This feature allows license administrators to monitor whether Revizto is adopted well by the team, how actively it is used. It also allows checking the need for Licensing Plan extension.

The **Manage Users** and **Manage Projects** screens allow users to build activity charts for, respectively, user and project activity. Both are constantly updated and display dynamics for 24 hours; charts have similar GUI, settings, controls and functionality.

The User activity chart displays the number of users that were active in the current Revizto license within the monitoring period (30 days by default, you can customize it). Also, you can filter users by their license role.

An Excel version contains full user data (name, email, role, last activity time, total duration in the **Active** status, tags, number of projects and their names). The chart is also included.

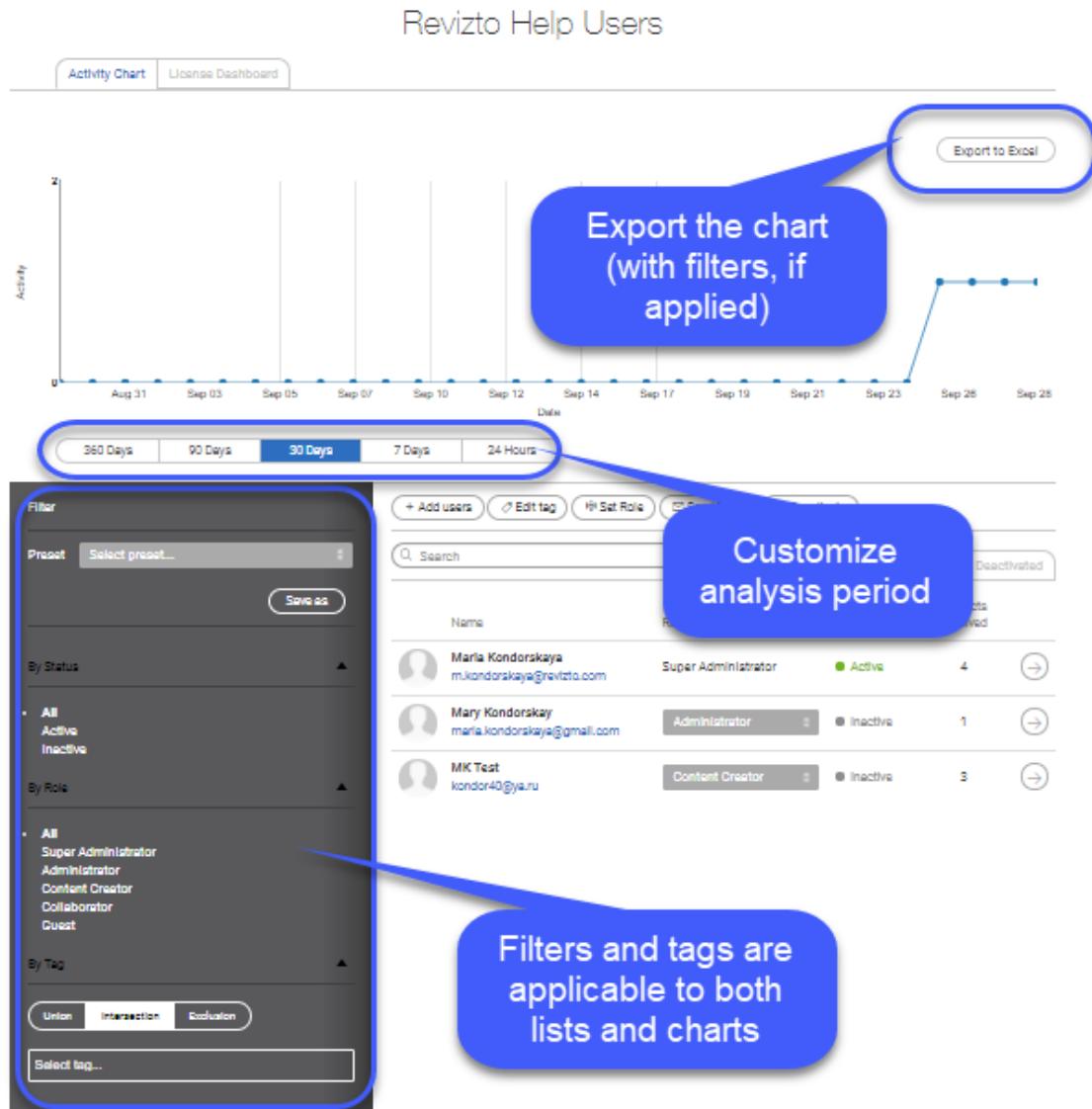
The **Project activity** chart displays the number of projects managed in Revizto within the

defined period. Also, you can filter projects by status (**Active/Inactive**).

An Excel version contains the total number of members and their names, project owner, project tags, time of the last activity within the project. The chart is also included.

Tip: To build a chart for activity of specific users within a specific project, tag those users and create a preset.

The **License Dashboard** tab shows how many project and user licenses are now used.



Activity charts for separate users/projects are built in a similar way with relevant filtration options.

2.2 Project Manager

Project manager is likely to be a Project owner or project Administrator of a project responsible for the project life-cycle. In Revizto it includes the following stages:

I. Project creation.

There are two points where a new collaboration project can be created:

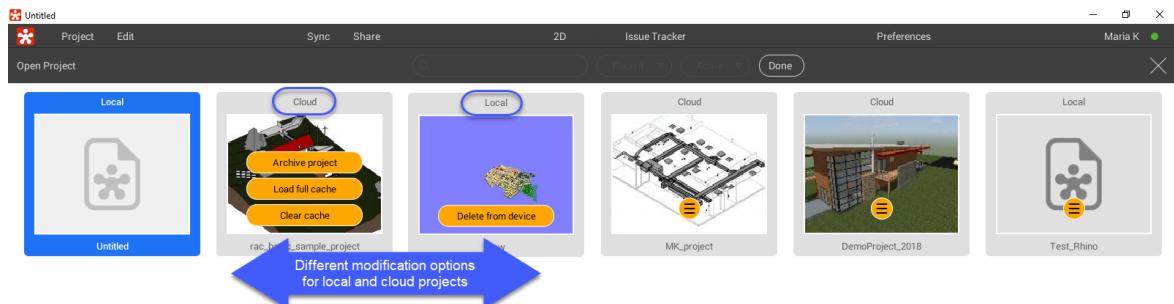
- Revizto Application
- Revizto plug-in in a source program

The preferred option depends on the business process. Note that to create new projects, you need at least Content Creator [license role](#)¹⁶³ because each new project requires a license.

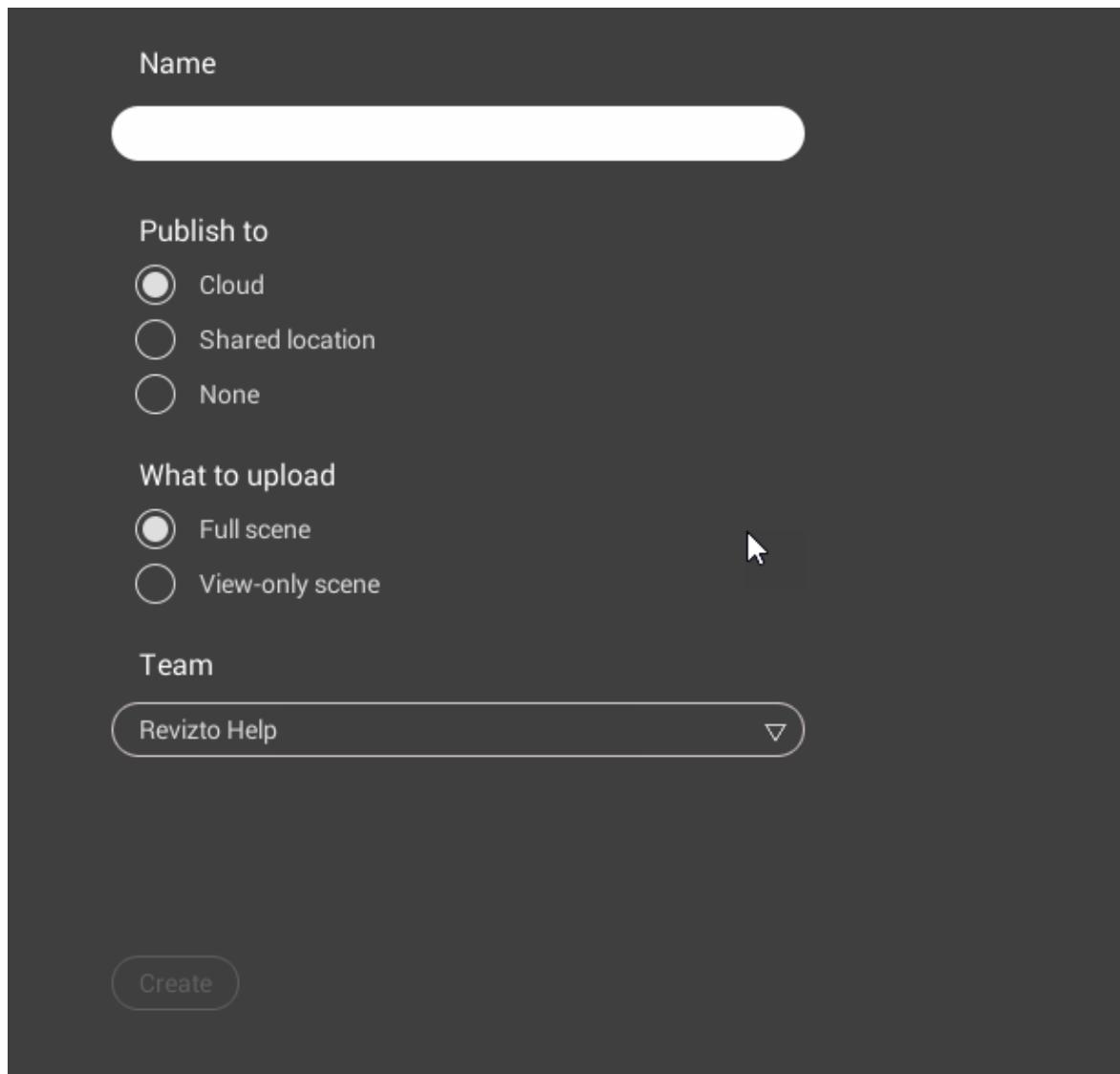
To create a new project in Revizto:

1. Go to **Project > New** in the main menu.
2. Fill in the form that opens.
 - a. Enter the project name.
 - b. Choose where the project will be published. Cloud is the preferred and recommended option. Revizto offers highly available clouds powered by Amazon servers. If cloud storage is selected, all project data (models and issues) are exported to it. Shared location implies that models are stored locally (e.g. on a server available to all team members) while user data, issues and related data is uploaded to the Cloud. None means that Revizto will only be used locally (i.e. not synchronized/published). Note that, while the option is available as some customers request it for security reasons, it is not recommended and prevents the customer from using Revizto to its full potential. Also, even if you prefer not to share data, you will still need to connect the web once in while to register and manage the license, edit access rights, etc.

Note that as long as a project remains local, you can delete it from your device (license is not used); once shared, it has to be archived for the license to be released. Removal is unavailable.



- c. Choose whether to fully upload models (with all the background data and properties exported from the source program) or to upload view-only scenes (presentation option).
- d. Choose team. By default the current license name is selected. You can choose another team if you have several active licenses or collaborate as a guest within several teams.



3. Click the **Create** button.

At this point the project is considered created and information about it appears in the Web-GUI. A project license is used. Although you are automatically redirected to the team building view, you can stop now and get back to team creation later. Same is true about model upload. You can create an empty project and later upload content to it.

To create a new project from Revizto plug-in:

1. Launch the [export process](#)^{D85} in any source program and choose the **Create New Project** option. For more details on export, see the relevant [section of this Guide](#)^{D85}.

Note that when a new project is created via a plug-in export and model creation are carried out immediately. Yet, the project remains local and not added to the license until you edit its properties.

2. Open Revizto and find your project in the project list (to find it quicker, limit your search to local projects).

3. Double-click on the project tile to open it. Click the **Sync** button at the top menu.
4. Define your sharing, publication and licensing settings in the form the opens (similar to the project creation screen described above).
5. Click the **Upload** button. Once uploaded, your project will be duly created with a license used.

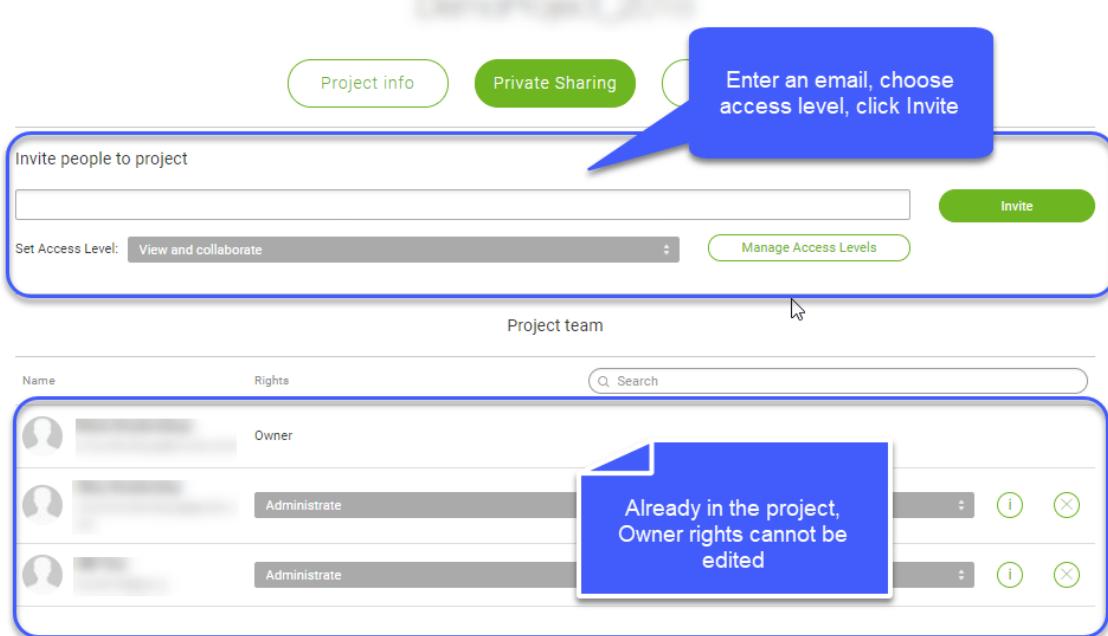
You can proceed to [team creation](#)^{D118} and [collaboration](#)^{D121} (issue management).

II. Team creation.

To invite a user to a project from the Web GUI:

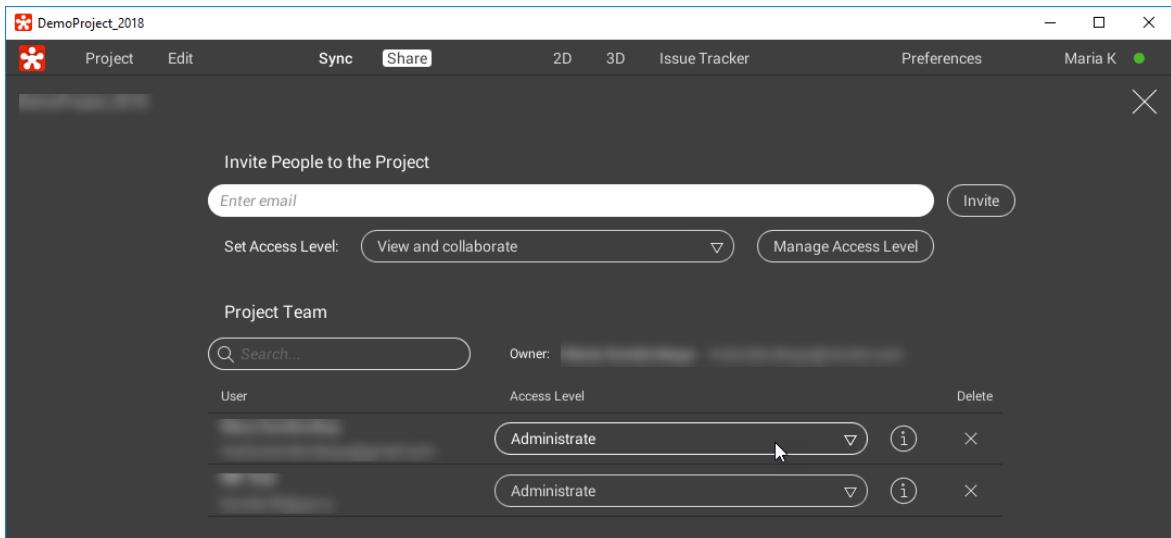
1. Log in to your workspace.
2. Navigate to the **Private Sharing** view (**Manage Projects** > choose a project).
3. Enter a valid email address of a person you want to invite. Choose an access level in the **Set Access Level** field.
4. Click the **Invite** button.

The user will then receive an invitation email from Revizto and will be able to download Revizto and join the project.



To invite a user from Revizto application:

1. Open your project in Revizto. Navigate to the **Share** menu.



2. Enter email of the person you want to invite to the project into the entry field. You can enter multiple email addresses, if you plan to give several users the same [access level](#)¹²⁰.
3. Choose project access level for the user in the **Set Access Level** list. Note that you can create custom access level, if you have administrator rights (see [Managing Project Access Rights](#)¹²⁰).
4. Click **Invite**. The invited users will receive email notifications to join the projects. Note that if new project members are not in your current Revizto team, they will automatically get Collaborator or Guest [license role](#)¹⁶³.

III. Access level management.

By default, there are three access levels available in Revizto projects:

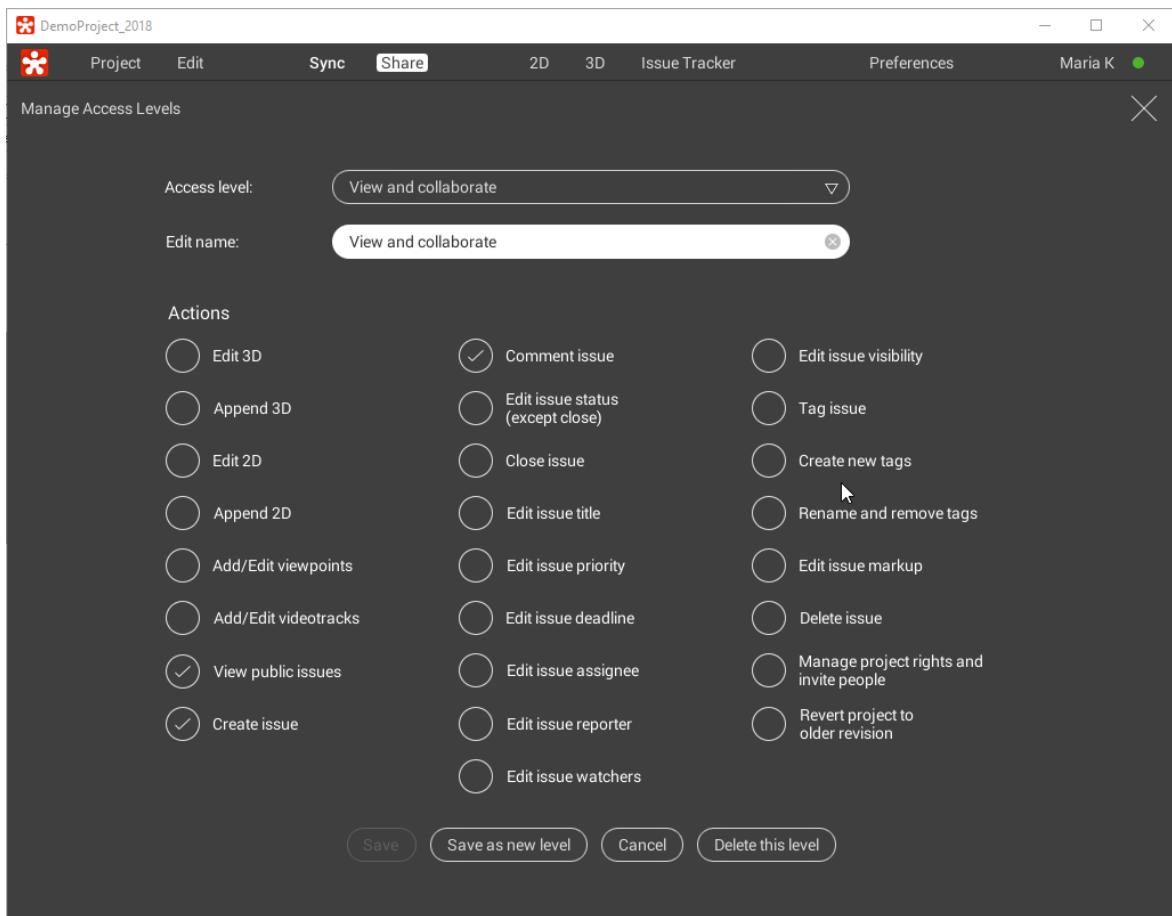
- Administrate
- Edit content and collaborate
- View and collaborate

Project owners can edit/create project access levels. Note that changes they make are only applied at the project level (unlike changes made by the [License Owner](#)¹⁴ (the SuperAdmin) or by a license level Administrator in the Web GUI).

Any time you invite a new user to your project, you have to assign rights to them. Note that if an invitation is issued to a person who has no team-level license, a collaborator/guest license is issued to them simultaneously.

To edit/create a new access level in Revizto application:

1. Open a project.
2. Go to the **Share** screen.
3. Click the **Manage Access** button.
4. Repeat steps 3-4 of the procedure provided for the Web GUI [access rights editor](#)¹⁶⁹ (the interface form is similar to that in the Web GUI). Note that you have to be the project owner, or license level Administrator/SuperAdmin to edit project access rights.



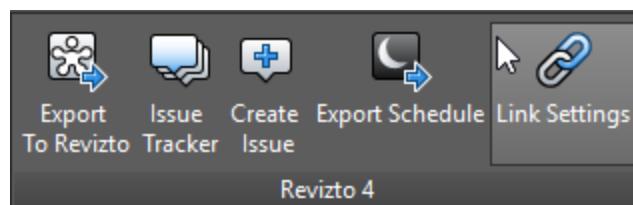
Note that even a project administrator cannot edit their own access rights.

IV. Export configuration and scheduling.

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).

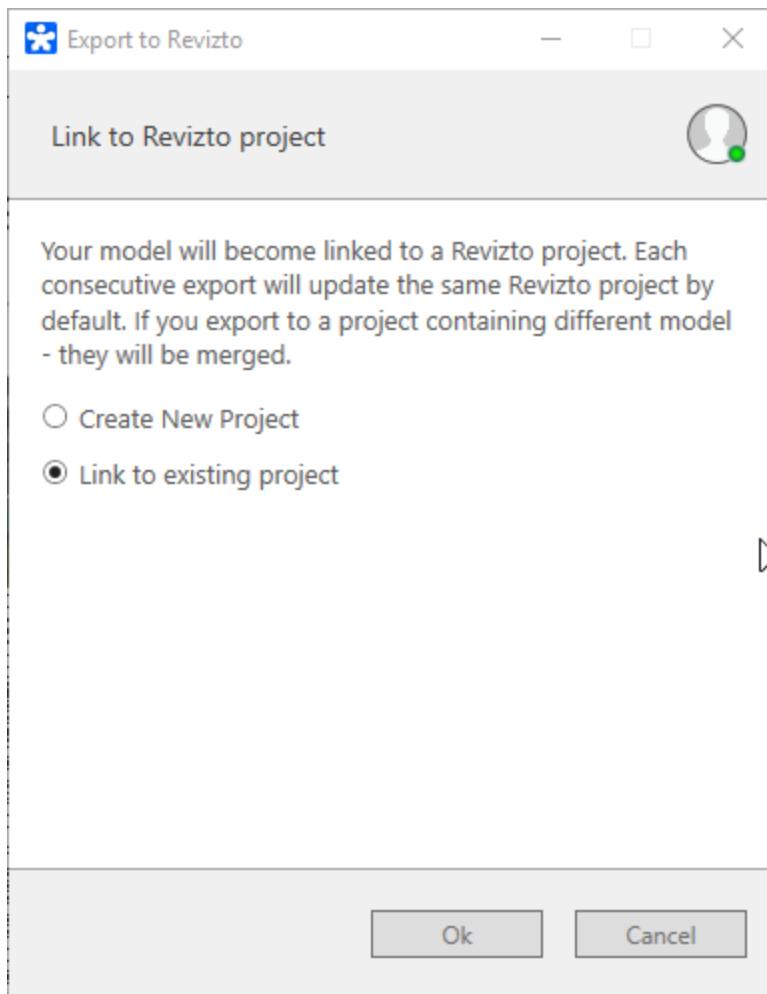


Important: Revizto only supports 3D objects, so if your source project contains any lines these

will not be exported. Make sure that your export view uses 3D objects.

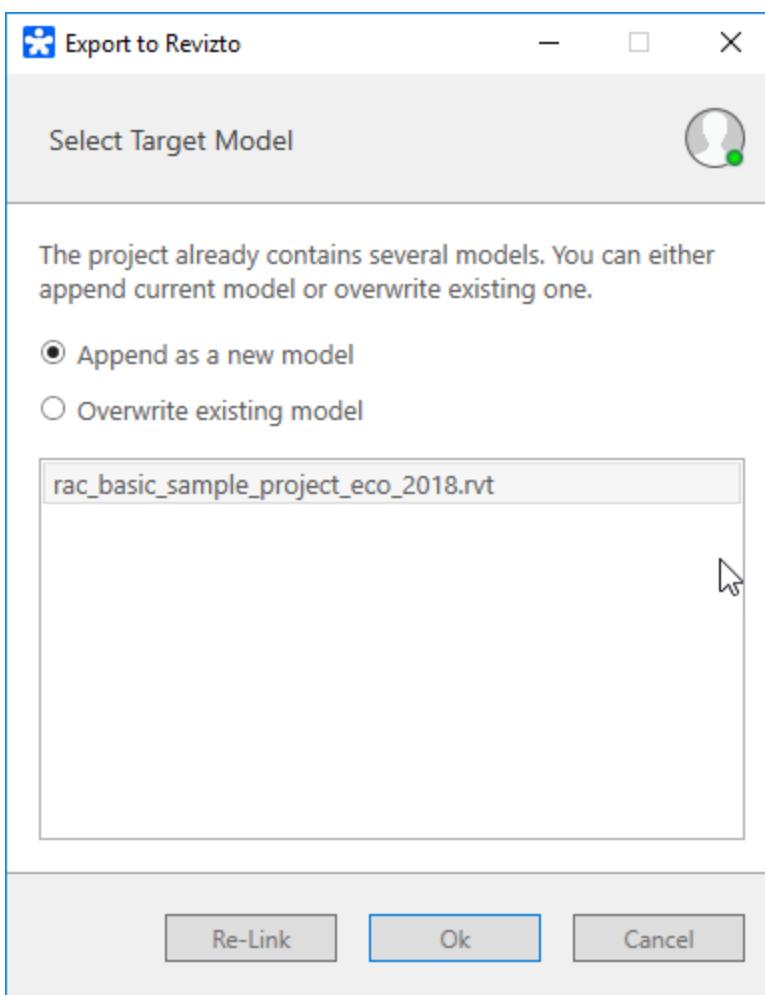
To export a source model:

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.



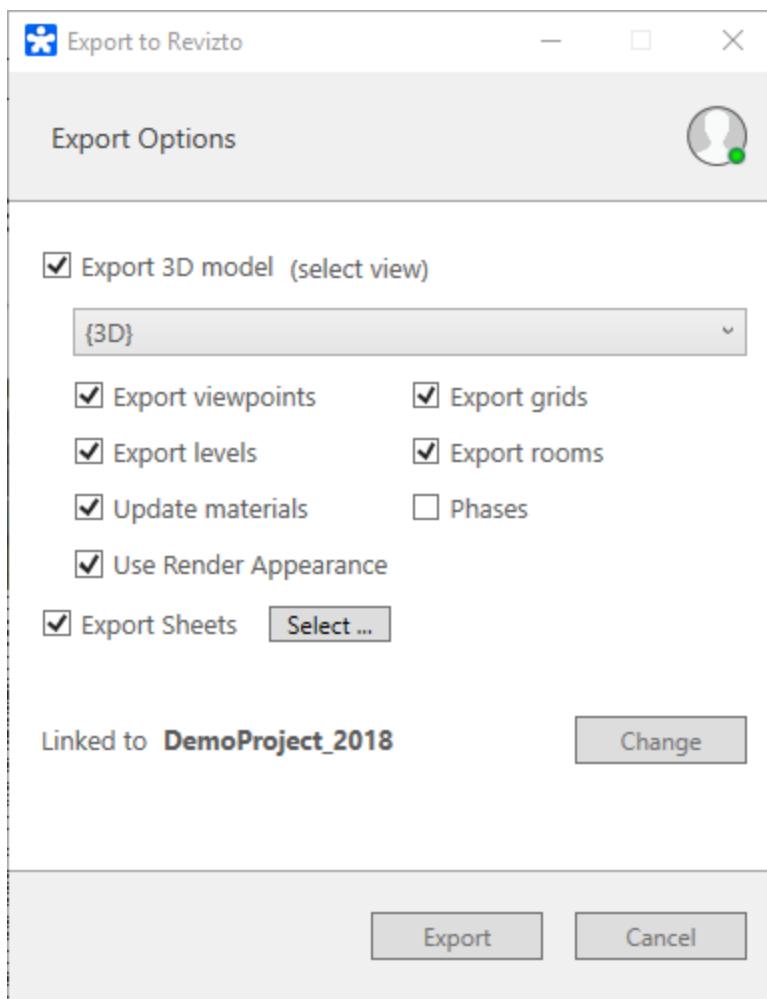
5. For an existing project, choose whether to overwrite existing files or to append new files to them. Files are appended on the basis of shared coordinates. Note that Revit also allows linking multiple sources locally, so you will not need to append each of them separately to a Revizto project. There are now hard and a fast rules for choose an option, but our recommendations are given in the [FAQ section^{D₁₇₉}](#).

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 particularities).



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.

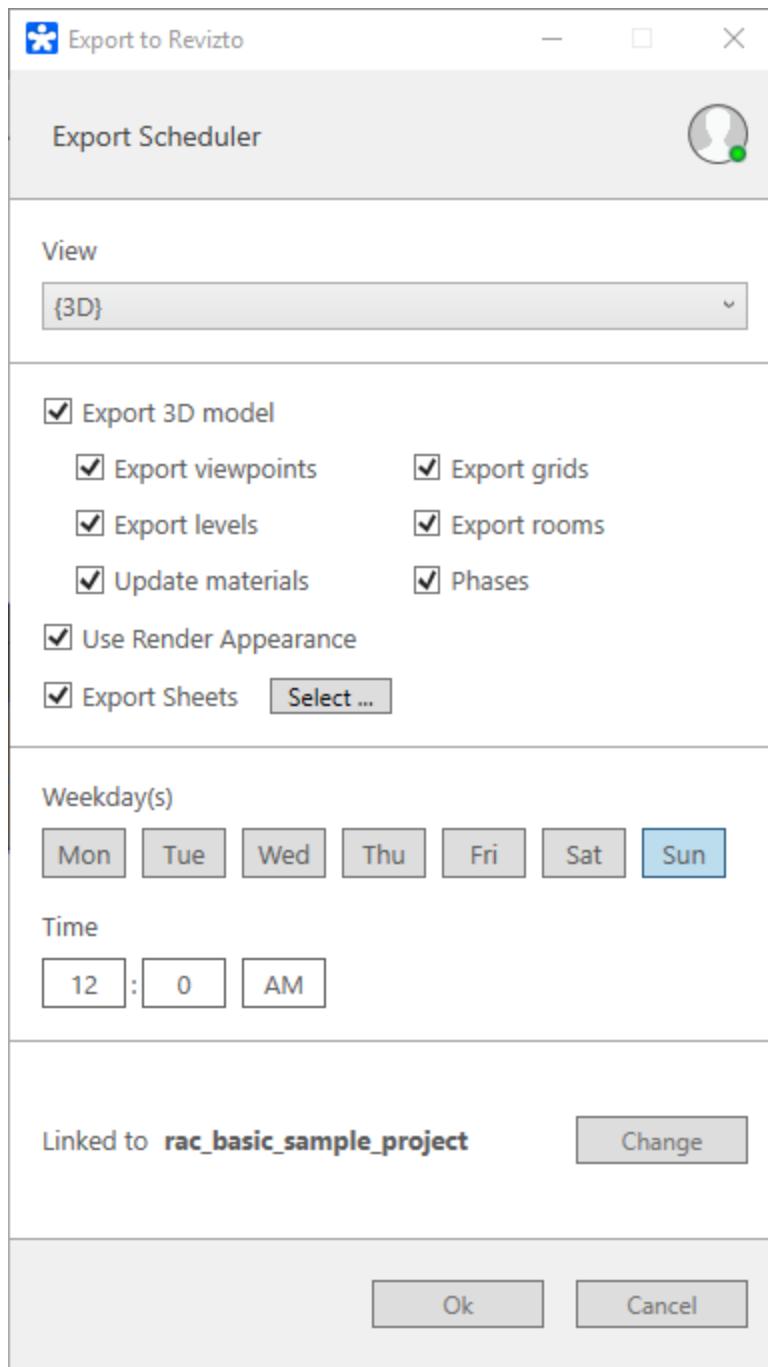
Creating a Schedule in Revizto Plug-in

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 your 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.



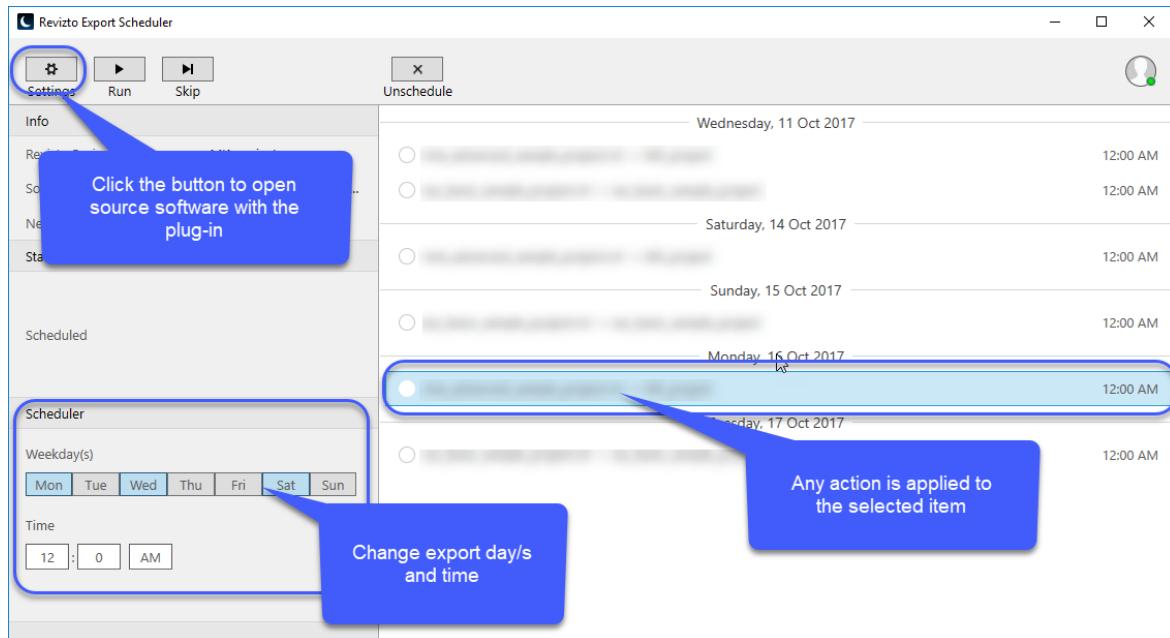
Export Scheduler Application

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.

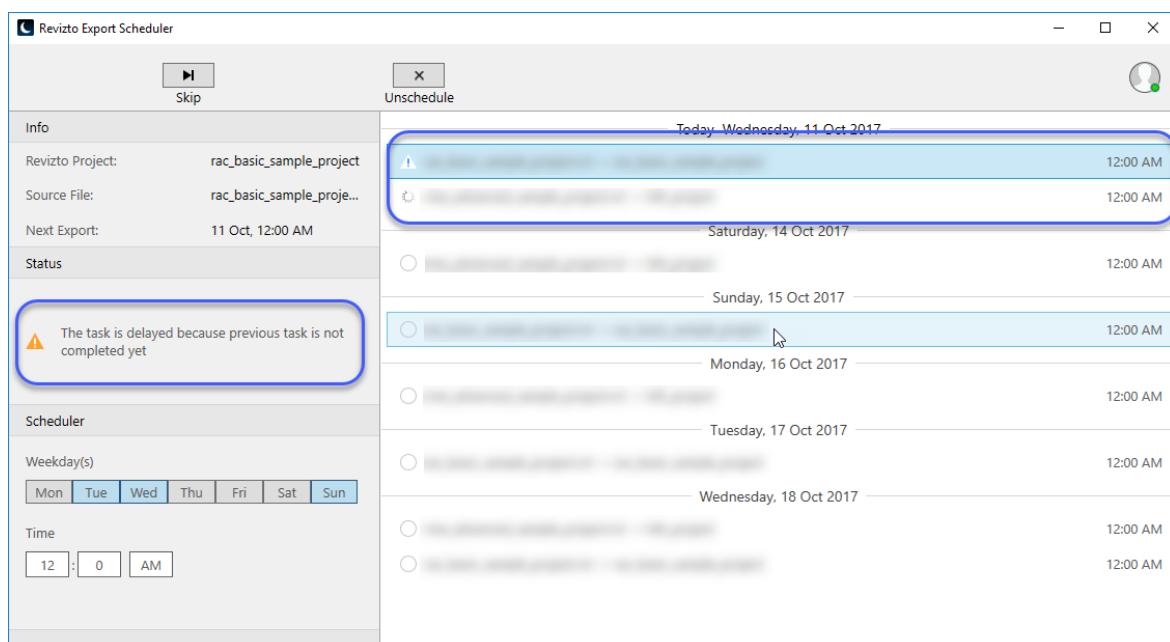
You can use the Export Scheduler to:

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

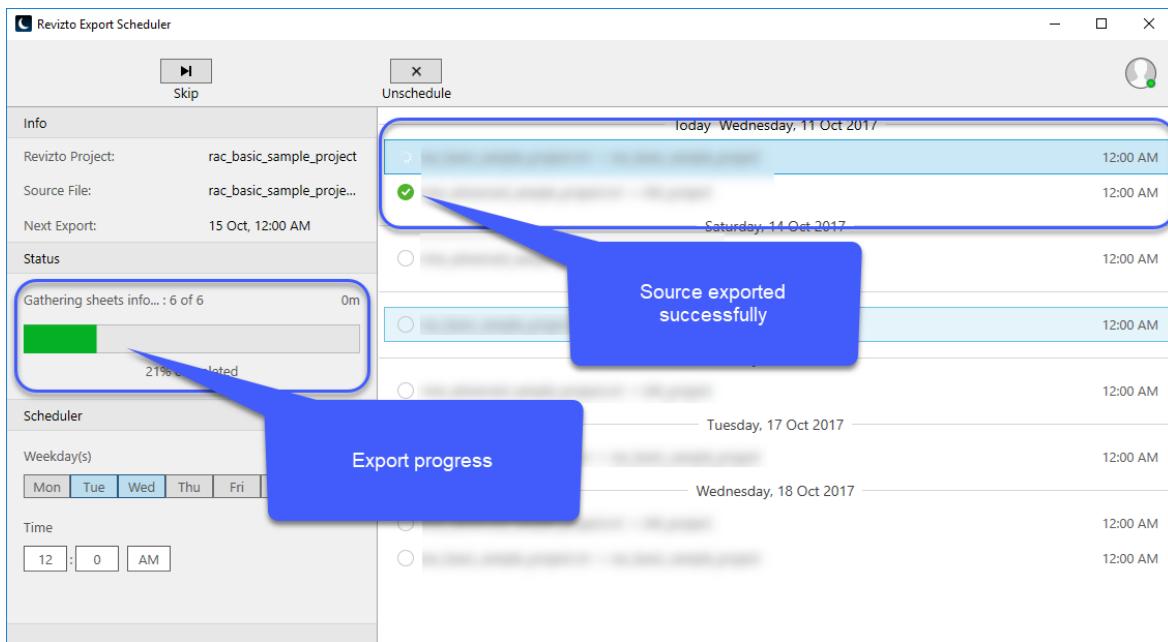
- unschedule an export for the selected schedule (click **Unschedule**)
- skip the nearest export for the selected schedule (click **Skip**)
- change schedule for the selected schedule (use the **Scheduler** area)
- redefine export settings for the selected schedule (click **Settings** to access the 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.



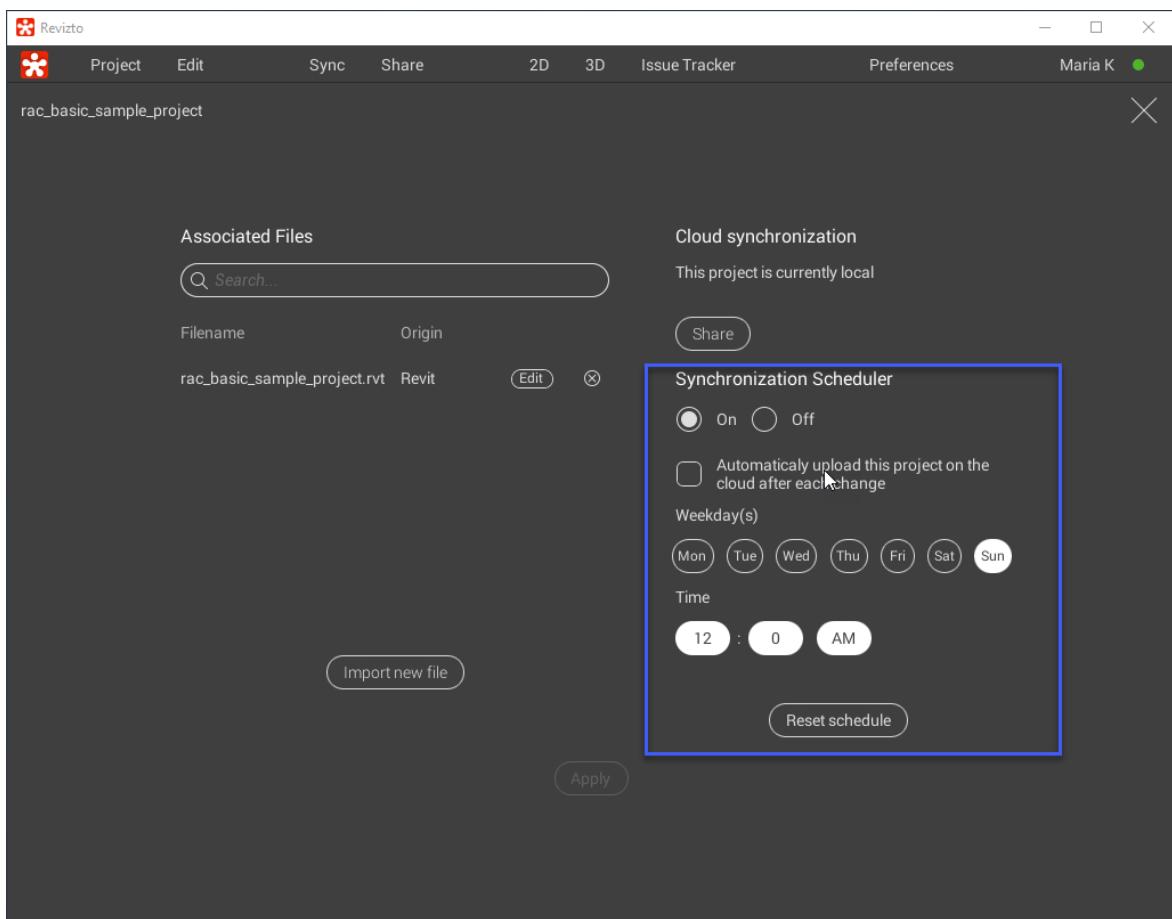
Cloud Synchronization

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](#)¹³⁴.

For more details on synchronization, see also the [Creating a Project](#)¹¹⁶ section.

For additional information on importing sheets outside any source model to a Revizto project, see the [Importing Sheets](#)¹⁵⁶ subsection.

V. Issue Management and collaboration.

General Issue LifeCycle

1. Issue is created:
 - a. In Revizto (Revizto plugin in the source software) and assigned to a team member. Issue status is **Open**.
 - b. Imported as a clash from Navisworks
2. The assignee receives an email notification (if configured). The issue automatically becomes available to the assignee in Revizto.
3. Optionally, relevant team members can be assigned as issue watchers. Issue becomes available to them for feedback and comments.
4. The assignee changes issue status to In progress and starts working on it. If needed, an

open issue can be reassigned to another team member.

5. When the issue is considered resolved its status is changed to **Resolved**.
6. The issue creator reviews the issue and closes it or changes its status back to **In Progress**. Note that a closed issue can be reopened.

Revizto uses the same color legend for issue statuses in the list and for pins in the viewer.

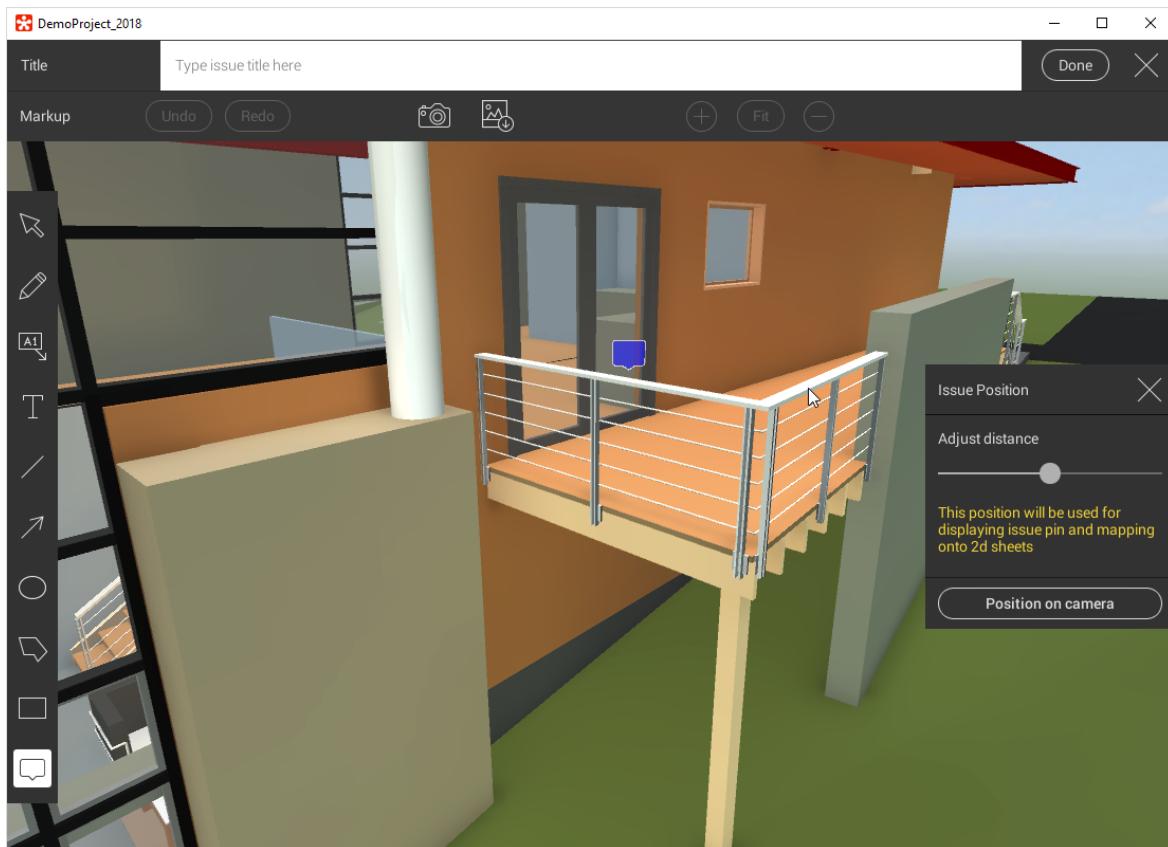
Reporting an Issue and Defining its Settings

From Revisto/Viewer

To create an issue:

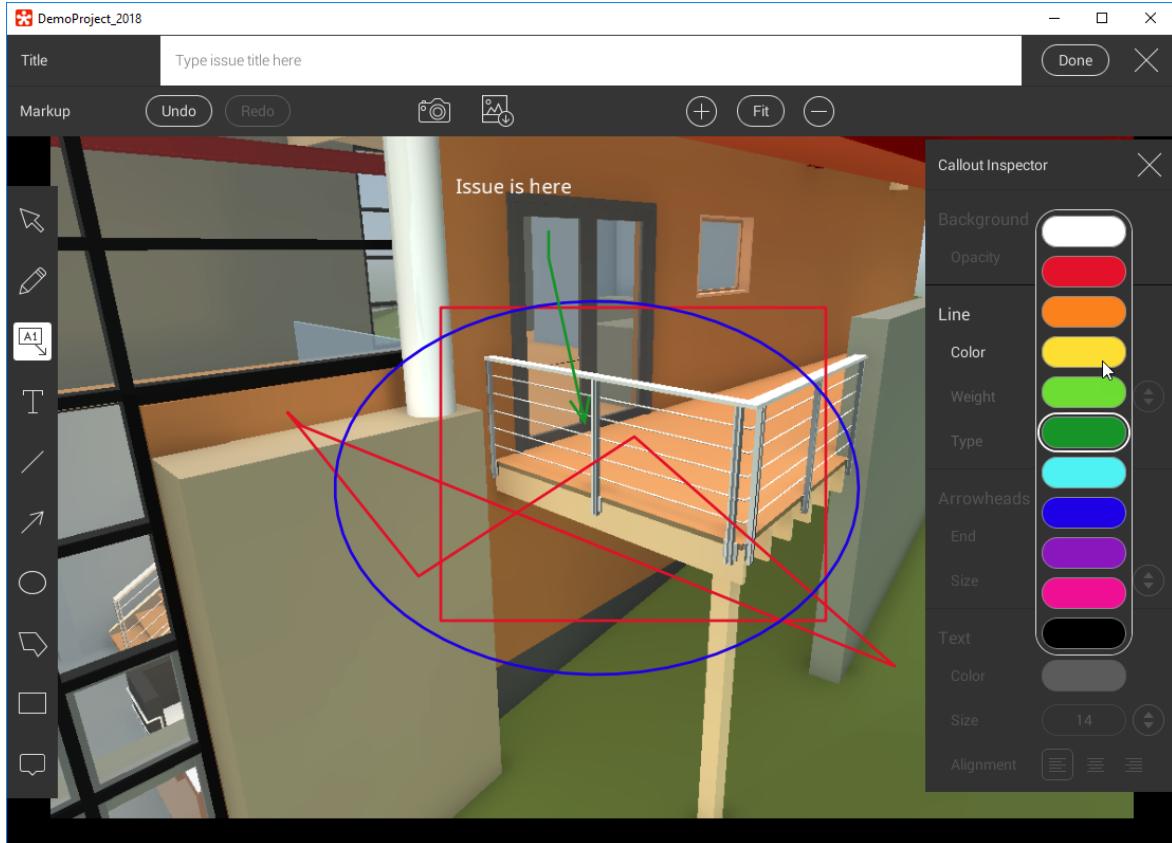
1. Navigate to the place where the issue is best visible in the 2D or 3D view (select the view in the top [GUI](#)¹³⁵ menu).
2. Click the  icon in the top/bottom tool bar, if you are happy about visibility of an object that caused an issue. If you are creating an issue from 3D, you can also use available [controls](#)¹³⁹ to ensure the issue can be accurately spotted from the source tool (e.g. Revit) and then click the  icon.

The issue editor opens. It has a transparent set of drawing tools you can use to highlight issue details. By default the Issue positioning option is selected.



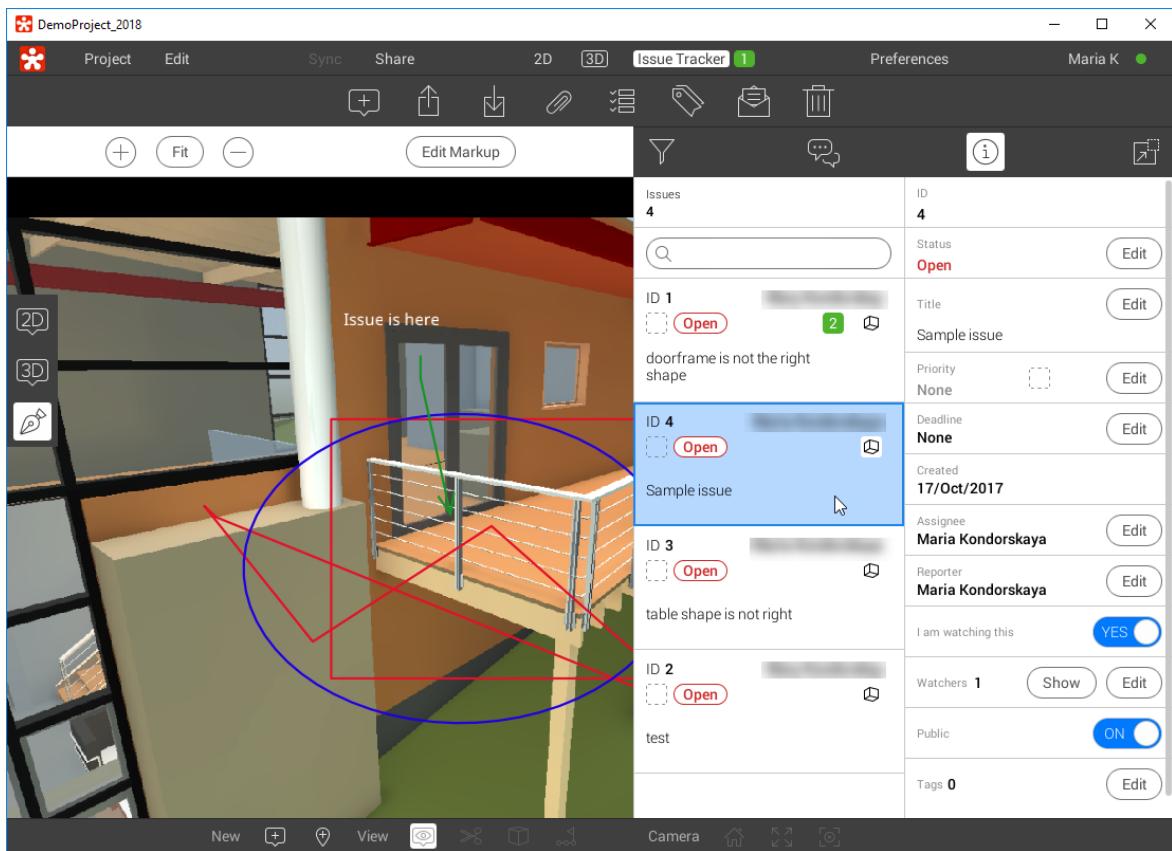
3. Make sure the issue pin (navy callout for Revizto own issues and  icon for Navisworks clashes) is positioned correctly. Use the positioning tool to adjust it. Positioning is crucial to the way issue is displayed on 2D sheets. Choose the **Position on camera** option, to locate the issue at the camera current position.
4. Use other graphical tools to highlight issue details. You can draw rectangles, circles, lines; add callouts, etc. You can also add an external image or take a screenshot.

Tip: Use GUI hot keys¹³⁷ to quicker mark up your issue.



5. Enter the issue name into the **Title** field at the top of the screen. Click **Done**.

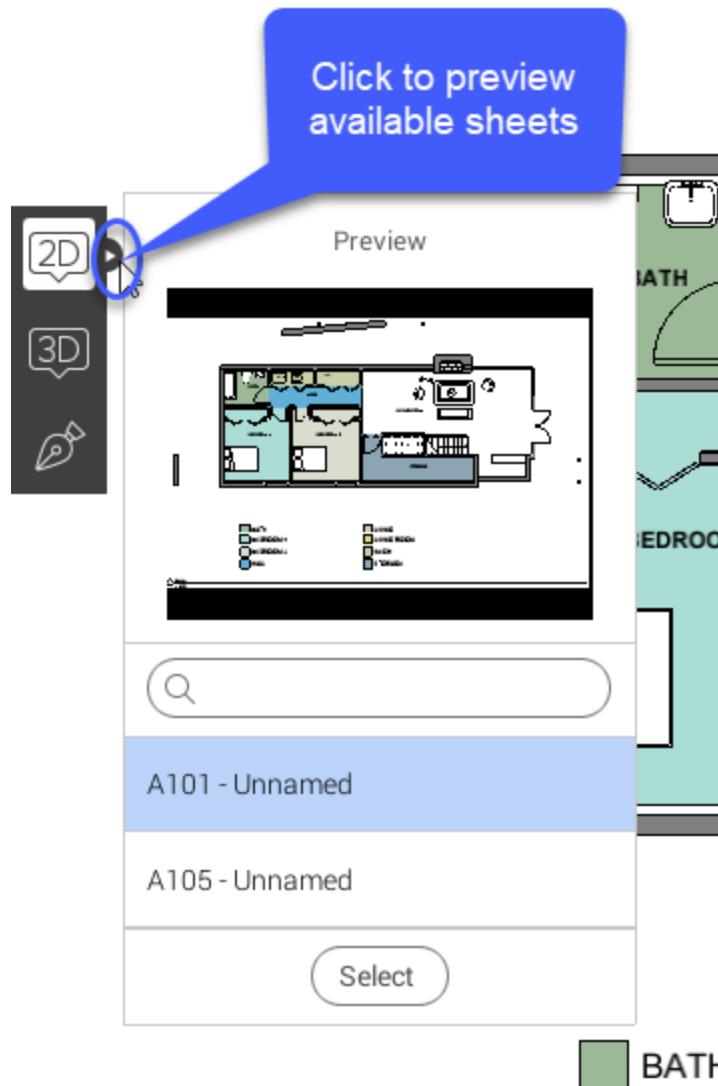
Revizto takes you to the **Issue Tracker** view. The newly created issue is selected. Its status is set to **Open**.



You can go on managing the issue content (i.e. get back to editing markup) and define the issue processing settings:

- status
- priority
- deadline
- reporter
- assignee (selected from [the project participants](#))¹¹⁸
- watchers (selected from the project participants)
- visibility: by default, issues are **Public**, that is visible to all project participants; if you turn the switch in this field off, the issue becomes restricted to the reporter, assignee and watchers.
- tags (optimize search and selection)

Note that issues created from 3D and from 2D are indicated differently in the issue list. You can open any 3D issue in 2D (use the view switch on the left) and vice versa. When 2D issue view is selected, Revizto offers all sheets where the issue location is shown. Yet, for issues initially created in 2D the original sheet comes first in the list. for 3D issues Revizto sorts available 2D sheets according to their similarity to the 3D viewpoint where the issue was created.



When you browse issues in 2D, the active issue is highlighted in blue, other are highlighted in red. To switch from issue to issue, click on a pin.

For more details on Revizto navigation options, available objects, view modes and tools, refer to the [Model Elements and Controls¹³⁹](#) section and to the [Using 3D controls to create an Issue Example¹⁴⁷](#) sub-section.

Reporting an Issue from a Plug-in

There is no issue reporting functionality in Revizto plug-ins. To report an issue, open the required source file and click the **New Issue** button in Revizto plug-in. It launches the relevant Revizto model in the application and allows [creating an issue¹³⁰](#) from there.

Issue Processing

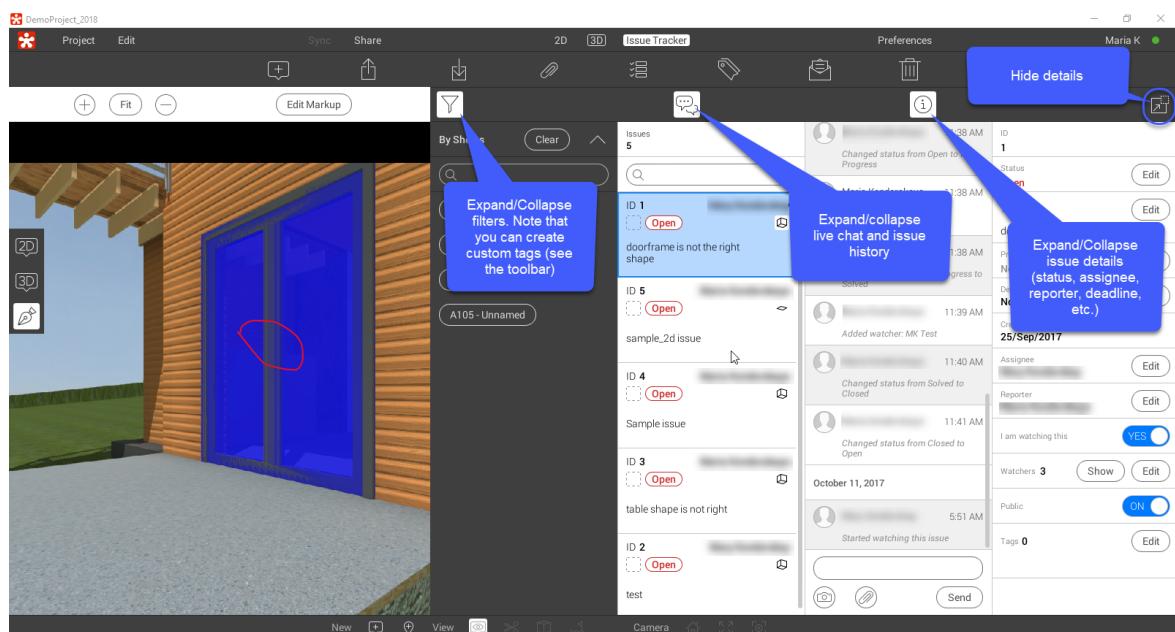
In Revizto

Team members can review and manage issues available to them in the **Issue Tracker** mode (as a rule, team members get [notifications](#)⁸² about changes in issues they reported, assigned to them or watched by them).

In general, the **Issue Tracker** offers the following options:

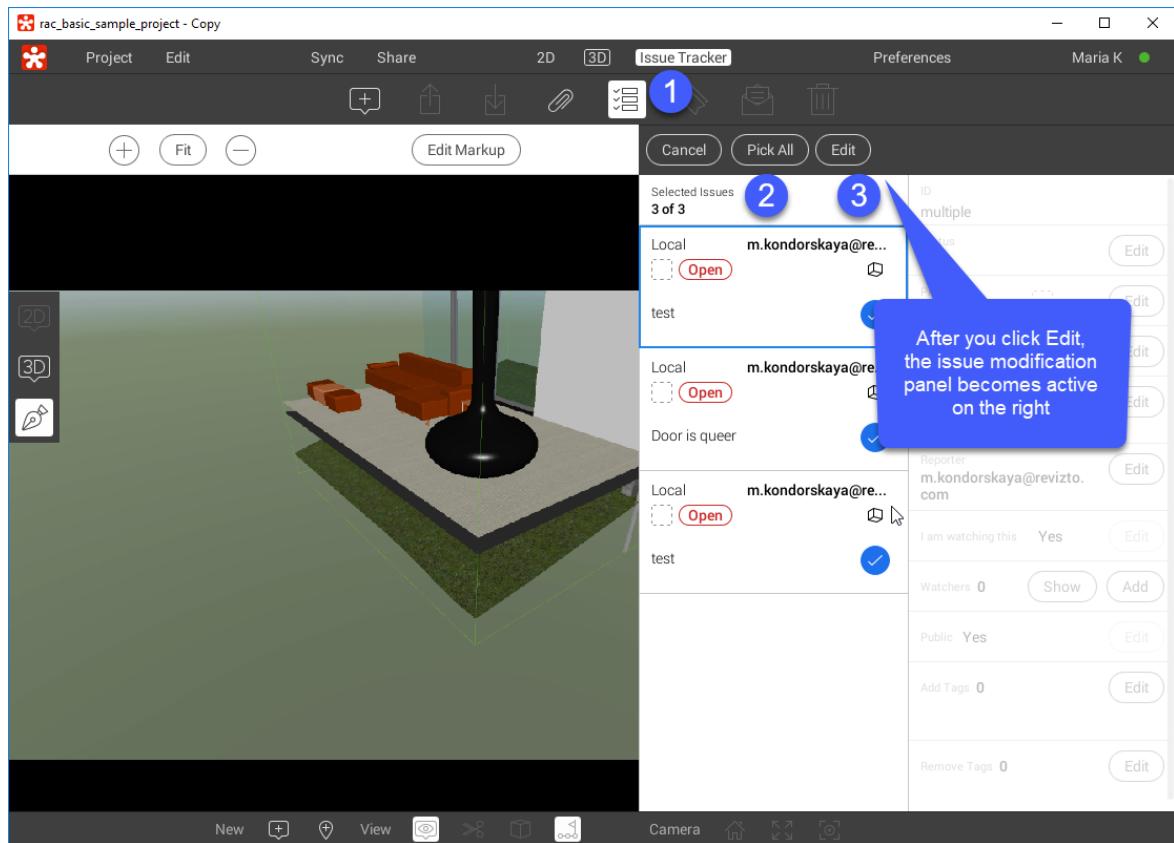
- expand/collapse issue details to view and edit them
- expand/collapse issue chat to collaborate in realtime with the team
- expand/collapse filter panel to browse across issues. Note that you can create your own tags to filter issues. Filtering by sheet is available to both issues created from 3D and 2D; if the issue location is on the sheet, filter considers it a match
- remove one or several issues
- [export/import issues](#)³⁶
- attach files to issues (in the chat dialogue)
- use web-camera in the chat dialogue
- access the [reporting feature of the web-GUI](#)¹²⁹ (under condition that the project is shared via the Cloud) ( icon)

Availability of specific features depends on [project level rights](#)¹²⁰ of the current user.



Tip: To simultaneously edit properties of several issues, use the multiedit icon (). It displays the whole list of project issues allowing you to select several of them and edit their properties. The features may be useful, if, for example, you want assign several issues to the

same person.



In Source Plug-ins

There is no issue tracking functionality in Revizto plug-ins. To access a current issue and take part in collaboration, open the required source file and click the **Track issue** plug-in button. It launches the relevant Revizto model in the application and shows issues available to the current user.

Tip: When you view issues in Revizto, keep the source software (Revit, Navisworks, etc.) open with the **Issue Tracker** plugin button pressed. Then, by selecting an issue in Revizto you will be able to see the relevant part of the structure both in Revizto model and in the source software. Note that you can have only one instance of source software simultaneously linked to Revizto.

Clashes

Clashes imported from Navisworks are available in the Issue Tracker. They have specific pins (



). Note that each clash-issue is a group that may contain multiple original clashes. Navisworks statuses do not directly correspond to Revizto issue statuses. The mapping rules are given below.

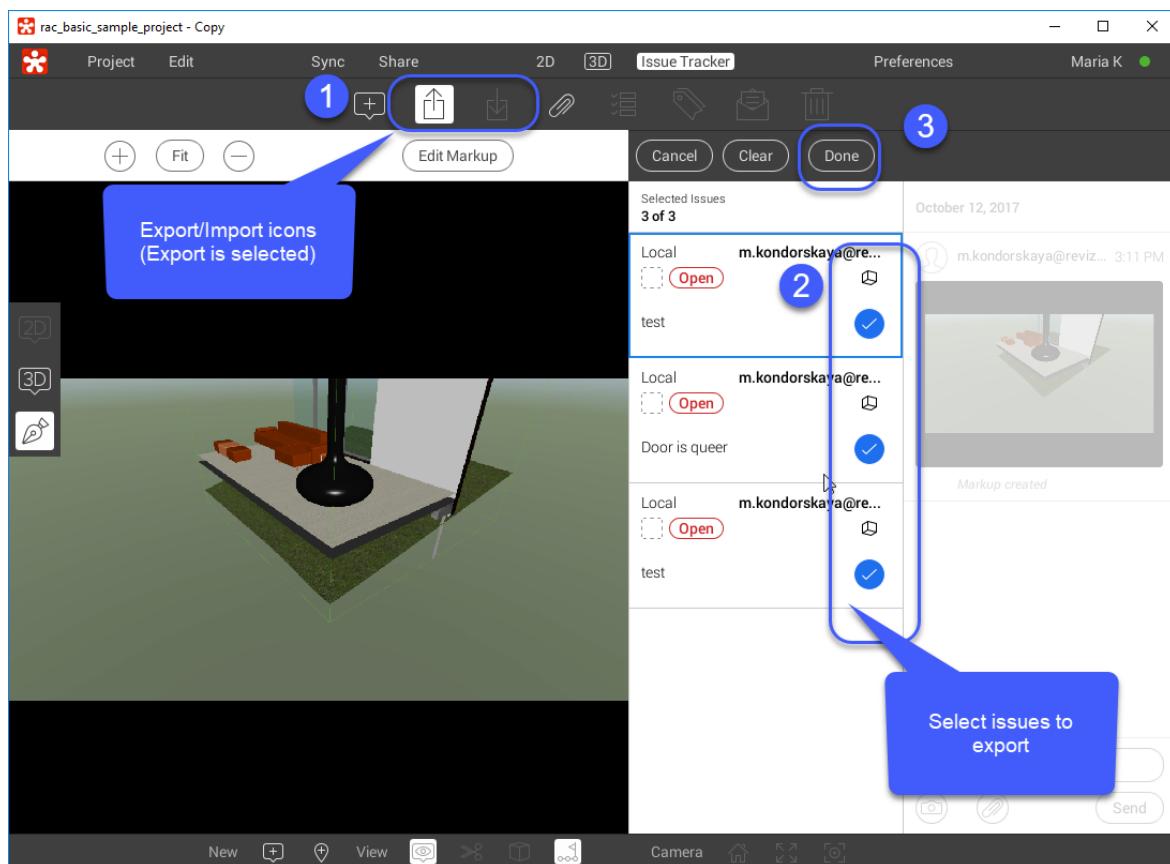
Navisworks Status	Revizto Status
-------------------	----------------

ACTIVE	Open, if non-existent. Don't change, if exists.
APPROVED	Open, if non-existent. Don't change, if exists.
NEW	Open
RESOLVED	Closed, if exists. Don't create if non-existent
REVIEWED	Closed

Attention: Issue content (attachments, etc.) is not automatically updated with the project at synchronization. Please, [load full project cache](#)^{D134} to make sure you are up to date.

Issue Export/Import Formats

You can export/import Revizto issues (see the procedure in the figure below).



By default, issues are exported as .vimmrk files, but you can also choose BCF (.bcfzip) and Excel (.xlsx). Same is true for issue import options.

2.3 Content Editor

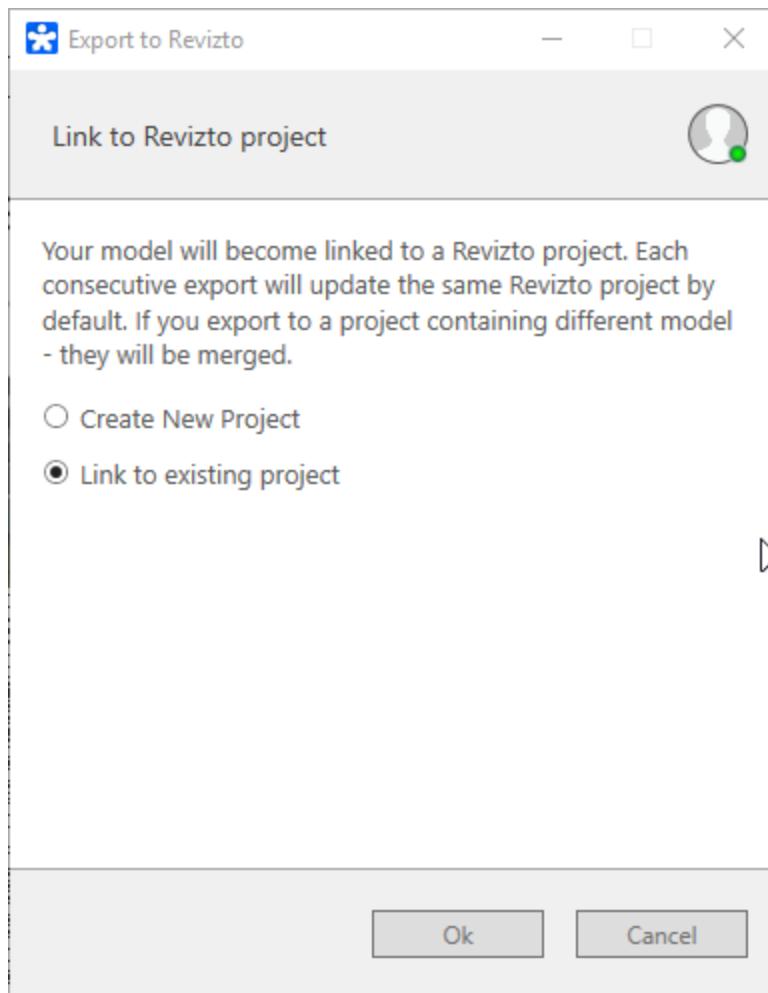
Content editor is someone working with source software. Typically, editors are responsible for exporting their changes and processing issues related to their area of responsibility. As far as Revizto is concerned, the general content management workflow is the following.

- I. Source model (or a part of it) created in the source software.
- II. [Project manager](#)¹⁶ creates a project in Revizto and invites content editors to it (Revizto licenses may be provided to them at the same point).
- III. Content editor [exports](#)⁸⁵ the source to the created project. The selected export method (appending or overwriting) depends on the project rules.

Expand to see the general export procedure. Navigate to relevant sections for more details

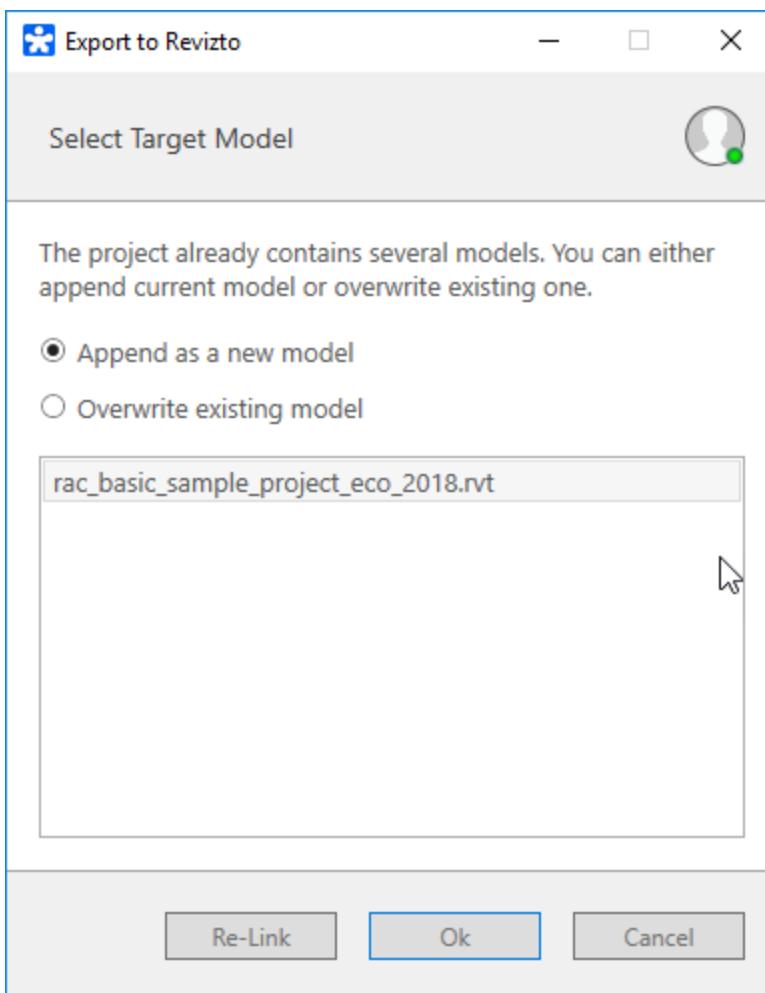
To export a source model:

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.



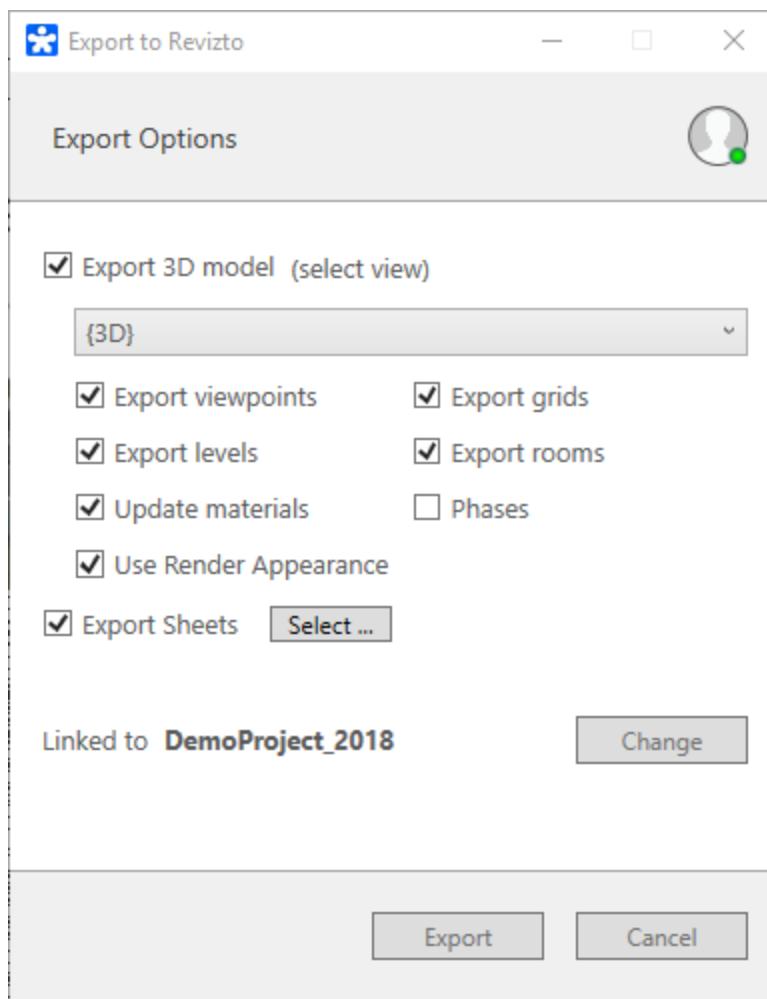
5. For an existing project, choose whether to overwrite existing files or to append new files to them. Files are appended on the basis of shared coordinates. Note that Revit also allows linking multiple sources locally, so you will not need to append each of them separately to a Revizto project. There are now hard and a fast rules for choose an option, but our recommendations are given in the [FAQ section^{D₁₇₉}](#).

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 particularities).



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).

IV. If needed, the content editor creates an [export schedule](#)^{D₈₈}.

V. The content editor uses the Issue tracker to take part in [collaboration](#)^{D₁₂₁} (processes issues assigned to them, watches available issues, etc.).

➤ Expand for the general issue creation procedure

From Revizto/Viewer

To create an issue:

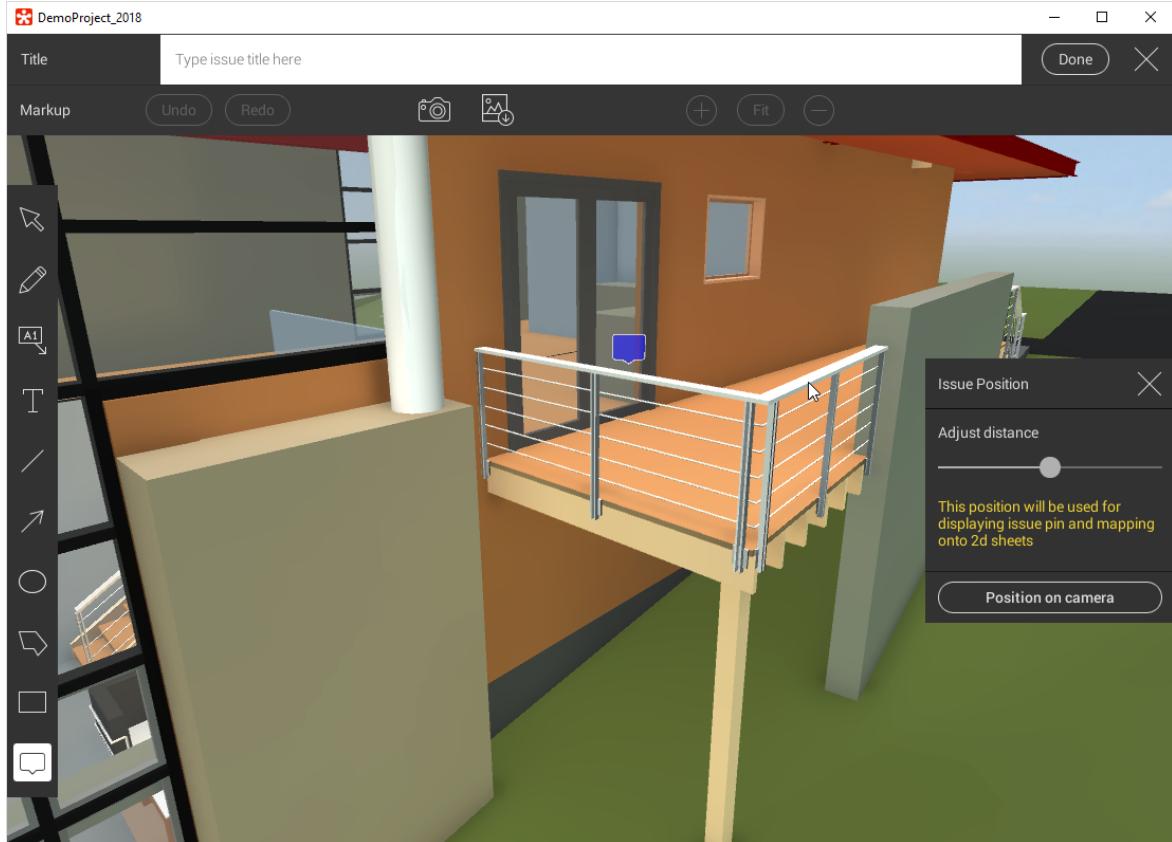
1. Navigate to the place where the issue is best visible in the 2D or 3D view (select the view in the top [GUI](#)^{D₁₃₅} menu).



2. Click the icon in the top/bottom tool bar, if you are happy about visibility of an

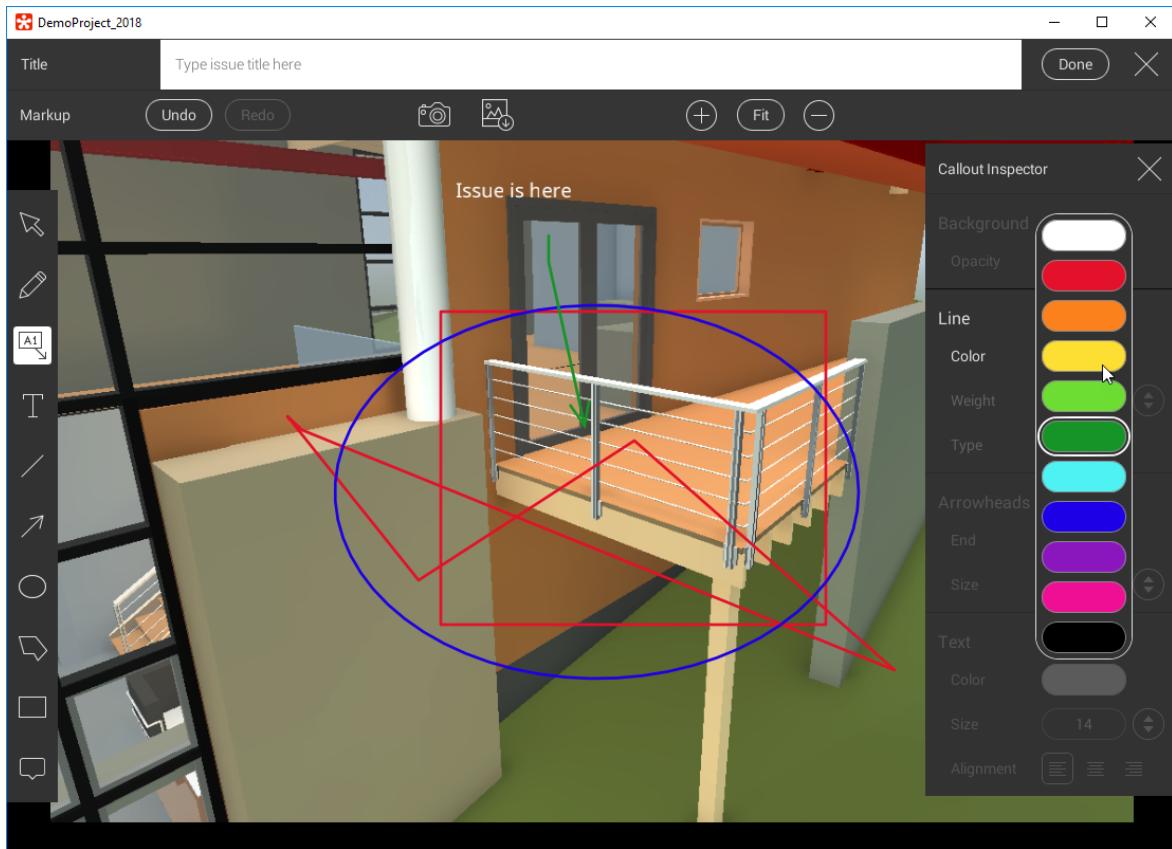
object that caused an issue. If you are creating an issue from 3D, you can also use available [controls](#)¹³⁹ to ensure the issue can be accurately spotted from the source tool (e.g. Revit) and then click the  icon.

The issue editor opens. It has a transparent set of drawing tools you can use to highlight issue details. By default the Issue positioning option is selected.



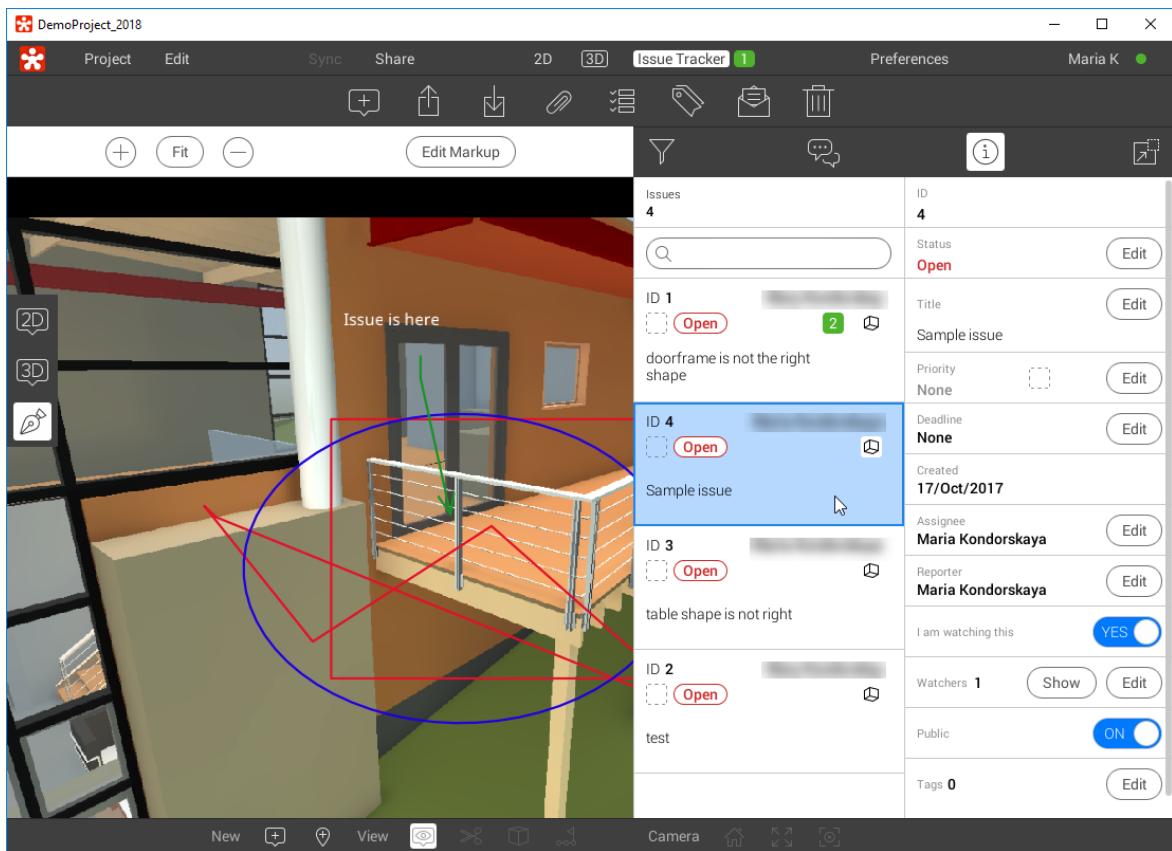
3. Make sure the issue pin (navy callout for Revizto own issues and  icon for Navisworks clashes) is positioned correctly. Use the positioning tool to adjust it. Positioning is crucial to the way issue is displayed on 2D sheets. Choose the **Position on camera** option, to locate the issue at the camera current position.
4. Use other graphical tools to highlight issue details. You can draw rectangles, circles, lines; add callouts, etc. You can also add an external image or take a screenshot.

Tip: Use GUI [hot keys](#)¹³⁷ to quicker mark up your issue.



5. Enter the issue name into the **Title** field at the top of the screen. Click **Done**.

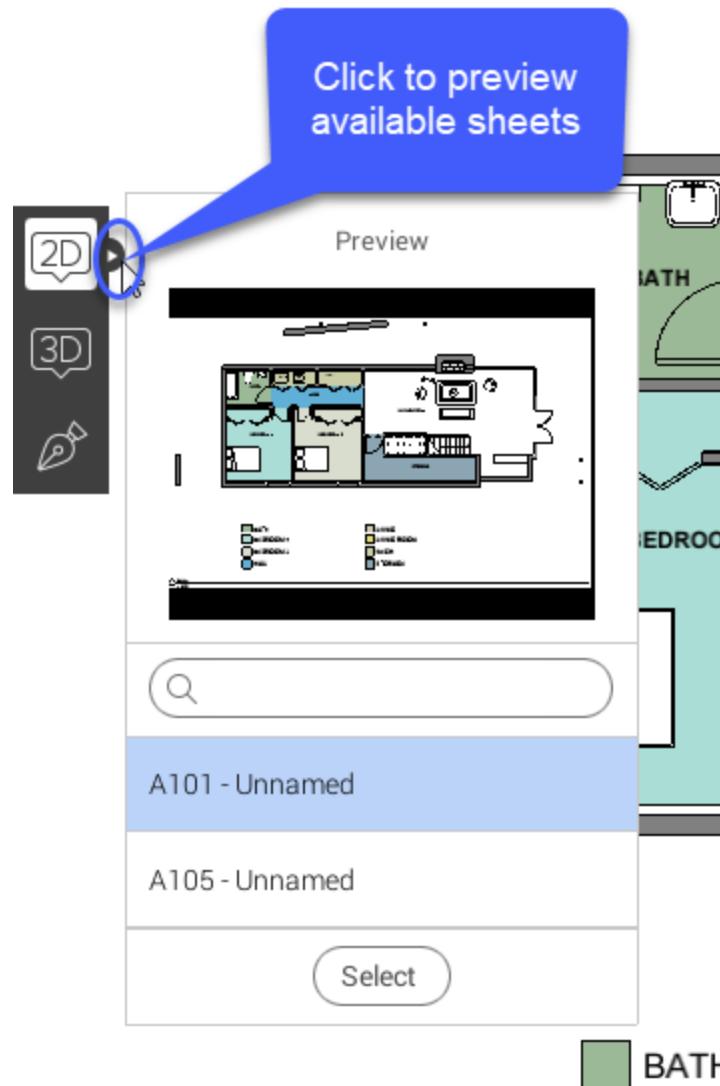
Revizto takes you to the **Issue Tracker** view. The newly created issue is selected. Its status is set to **Open**.



You can go on managing the issue content (i.e. get back to editing markup) and define the issue processing settings:

- status
- priority
- deadline
- reporter
- assignee (selected from [the project participants](#))¹¹⁸
- watchers (selected from the project participants)
- visibility: by default, issues are **Public**, that is visible to all project participants; if you turn the switch in this field off, the issue becomes restricted to the reporter, assignee and watchers.
- tags (optimize search and selection)

Note that issues created from 3D and from 2D are indicated differently in the issue list. You can open any 3D issue in 2D (use the view switch on the left) and vice versa. When 2D issue view is selected, Revizto offers all sheets where the issue location is shown. Yet, for issues initially created in 2D the original sheet comes first in the list. for 3D issues Revizto sorts available 2D sheets according to their similarity to the 3D viewpoint where the issue was created.



When you browse issues in 2D, the active issue is highlighted in blue, other are highlighted in red. To switch from issue to issue, click on a pin.

For more details on Revizto navigation options, available objects, view modes and tools, refer to the [Model Elements and Controls¹³⁹](#) section and to the [Using 3D controls to create an Issue Example¹⁴⁷](#) sub-section.

Reporting an Issue from a Plug-in

There is no issue reporting functionality in Revizto plug-ins. To report an issue, open the required source file and click the **New Issue** button in Revizto plug-in. It launches the relevant Revizto model in the application and allows [creating an issue¹⁴⁰](#) from there.

Expand for Guidelines on Scheduling Export in Plugin

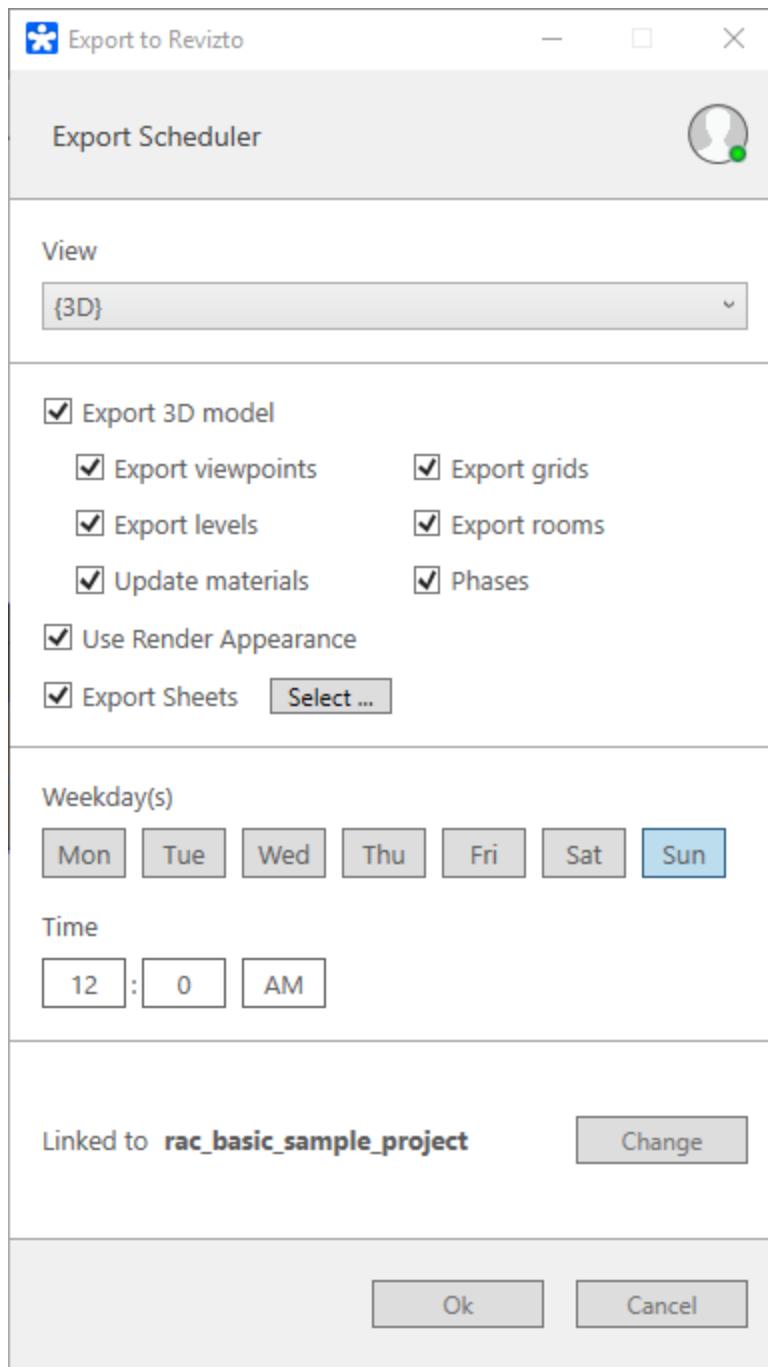
Creating a Schedule in Revizto Plug-in

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.



VI. Content editor monitors Revizto notifications for issues assigned to them, creates new, etc.

Issue Management

General Issue LifeCycle

1. Issue is created:
 - a. In Revizto (Revizto plugin in the source software) and assigned to a team member.

Issue status is ***Open***.

- b. Imported as a clash from Navisworks
- 2. The assignee receives an email notification (if configured). The issue automatically becomes available to the assignee in Revizto.
- 3. Optionally, relevant team members can be assigned as issue watchers. Issue becomes available to them for feedback and comments.
- 4. The assignee changes issue status to **In progress** and starts working on it. If needed, an open issue can be reassigned to another team member.
- 5. When the issue is considered resolved its status is changed to **Resolved**.
- 6. The issue creator reviews the issue and closes it or changes its status back to **In Progress**. Note that a closed issue can be reopened.

Revizto uses the same color legend for issue statuses in the list and for pins in the viewer.

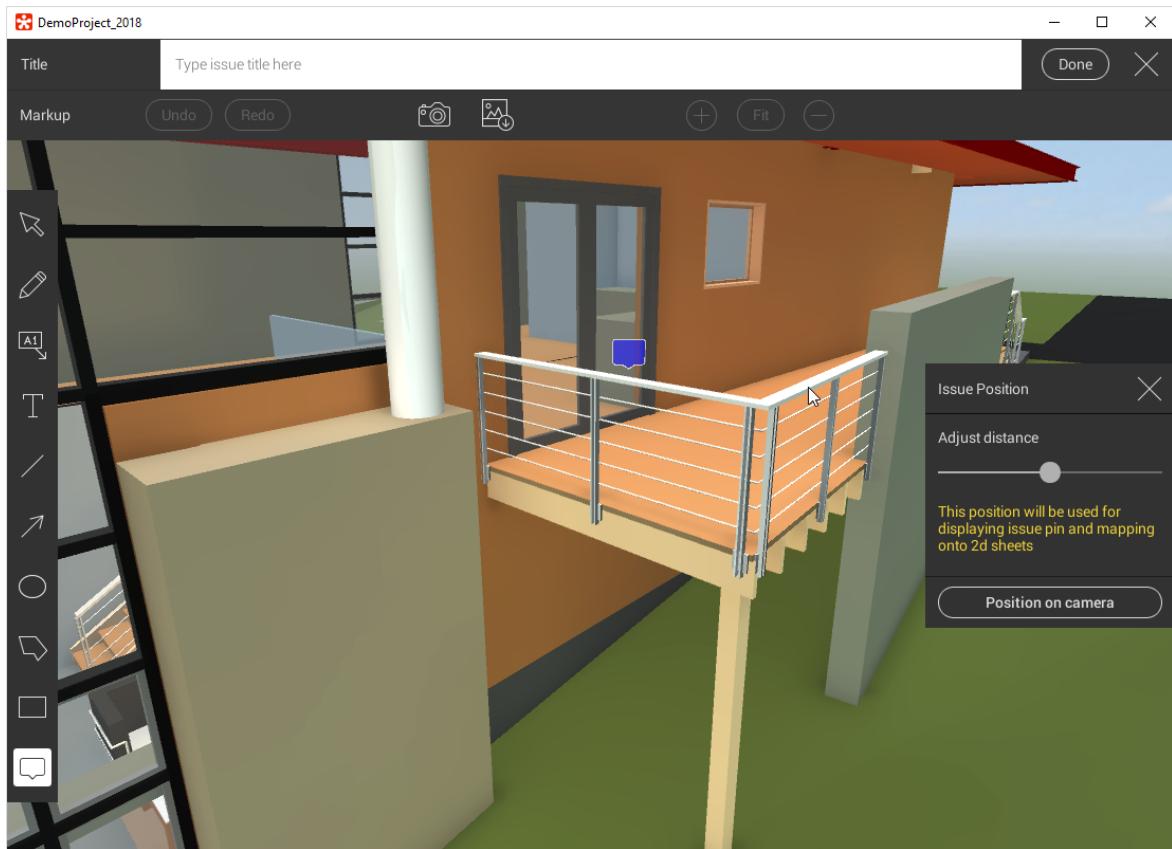
Reporting an Issue and Defining its Settings

From Revizto/Viewer

To create an issue:

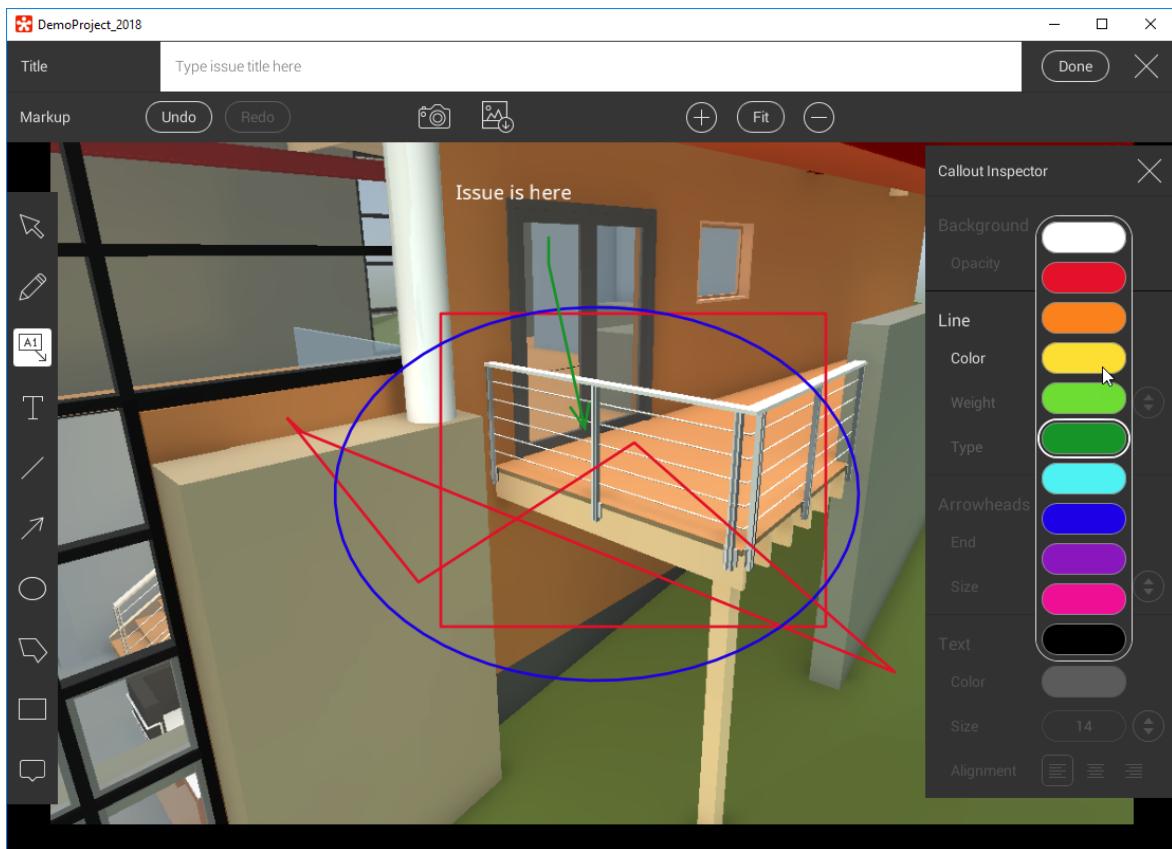
- 1. Navigate to the place where the issue is best visible in the 2D or 3D view (select the view in the top [GUI](#)^{D₁₃₅} menu).
- 2. Click the  icon in the top/bottom tool bar, if you are happy about visibility of an object that caused an issue. If you are creating an issue from 3D, you can also use available [controls](#)^{D₁₃₉} to ensure the issue can be accurately spotted from the source tool (e.g. Revit) and then click the  icon.

The issue editor opens. It has a transparent set of drawing tools you can use to highlight issue details. By default the Issue positioning option is selected.



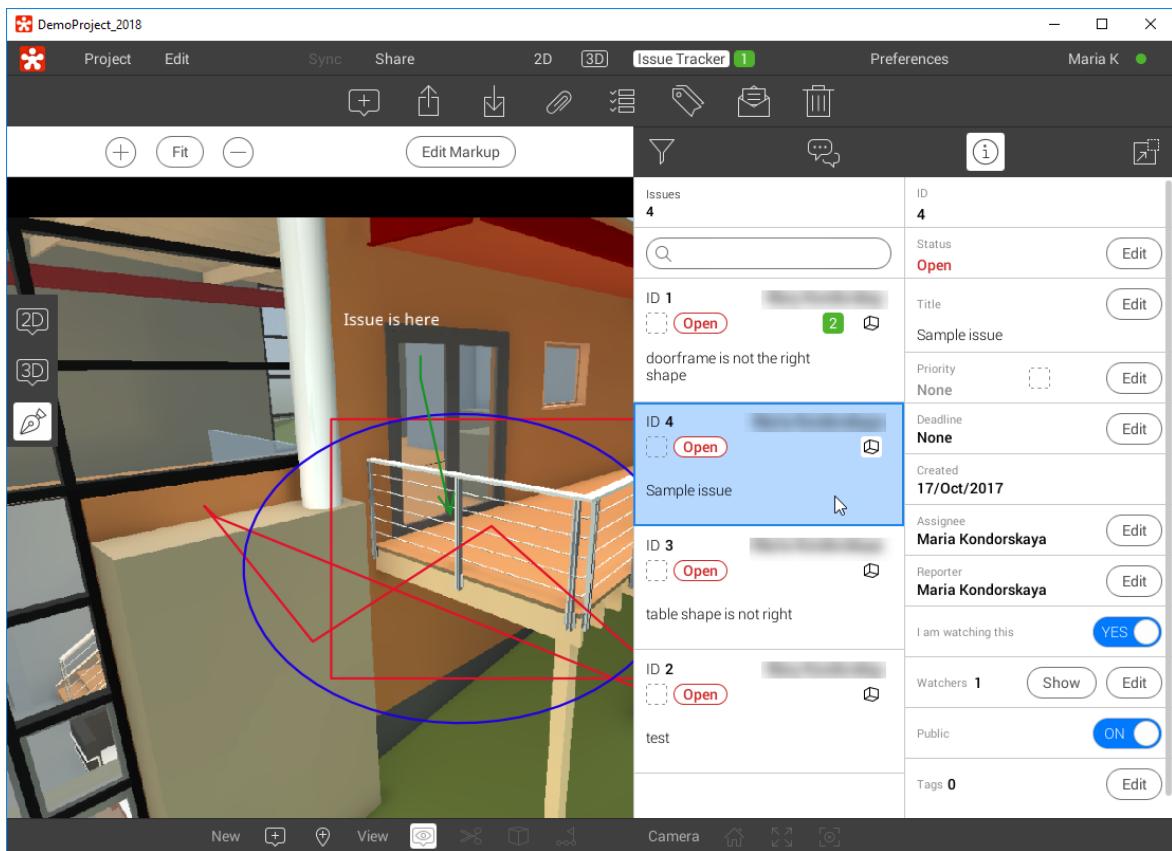
3. Make sure the issue pin (navy callout for Revizto own issues and  icon for Navisworks clashes) is positioned correctly. Use the positioning tool to adjust it. Positioning is crucial to the way issue is displayed on 2D sheets. Choose the **Position on camera** option, to locate the issue at the camera current position.
4. Use other graphical tools to highlight issue details. You can draw rectangles, circles, lines; add callouts, etc. You can also add an external image or take a screenshot.

Tip: Use GUI [hot keys](#)¹³⁷ to quicker mark up your issue.



5. Enter the issue name into the **Title** field at the top of the screen. Click **Done**.

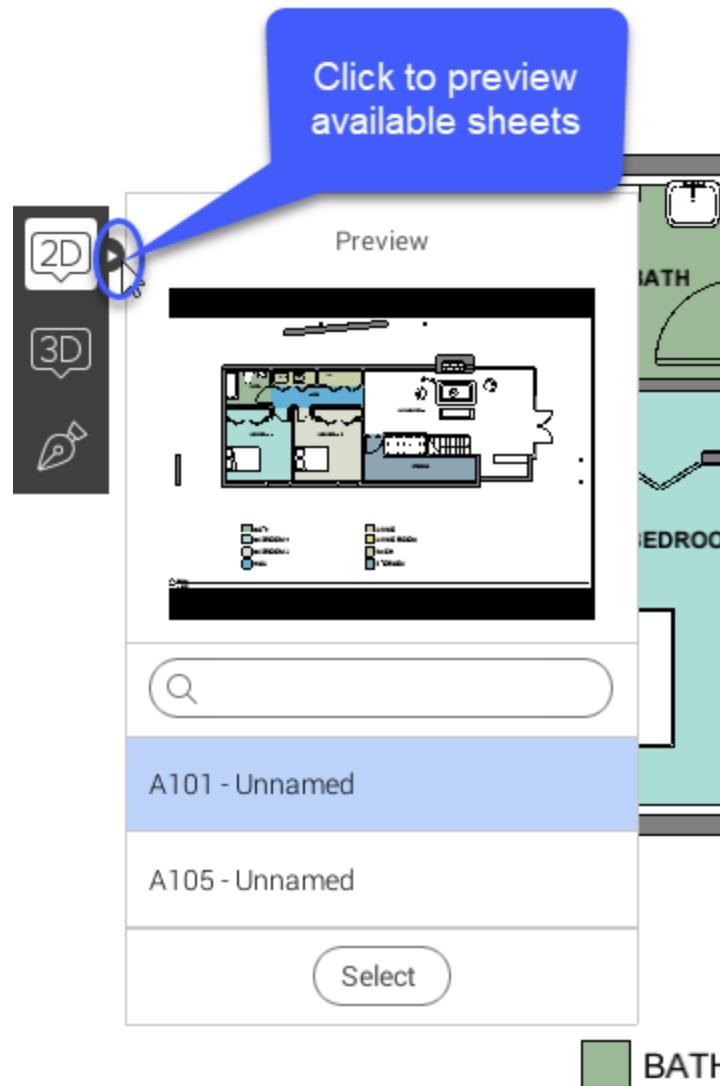
Revizto takes you to the **Issue Tracker** view. The newly created issue is selected. Its status is set to **Open**.



You can go on managing the issue content (i.e. get back to editing markup) and define the issue processing settings:

- status
- priority
- deadline
- reporter
- assignee (selected from [the project participants](#)¹¹⁸)
- watchers (selected from the project participants)
- visibility: by default, issues are **Public**, that is visible to all project participants; if you turn the switch in this field off, the issue becomes restricted to the reporter, assignee and watchers.
- tags (optimize search and selection)

Note that issues created from 3D and from 2D are indicated differently in the issue list. You can open any 3D issue in 2D (use the view switch on the left) and vice versa. When 2D issue view is selected, Revizto offers all sheets where the issue location is shown. Yet, for issues initially created in 2D the original sheet comes first in the list. for 3D issues Revizto sorts available 2D sheets according to their similarity to the 3D viewpoint where the issue was created.



When you browse issues in 2D, the active issue is highlighted in blue, other are highlighted in red. To switch from issue to issue, click on a pin.

For more details on Revizto navigation options, available objects, view modes and tools, refer to the [Model Elements and Controls¹³⁹](#) section and to the [Using 3D controls to create an Issue Example¹⁴⁷](#) sub-section.

Reporting an Issue from a Plug-in

There is no issue reporting functionality in Revizto plug-ins. To report an issue, open the required source file and click the **New Issue** button in Revizto plug-in. It launches the relevant Revizto model in the application and allows [creating an issue¹⁴⁰](#) from there.

Issue Processing

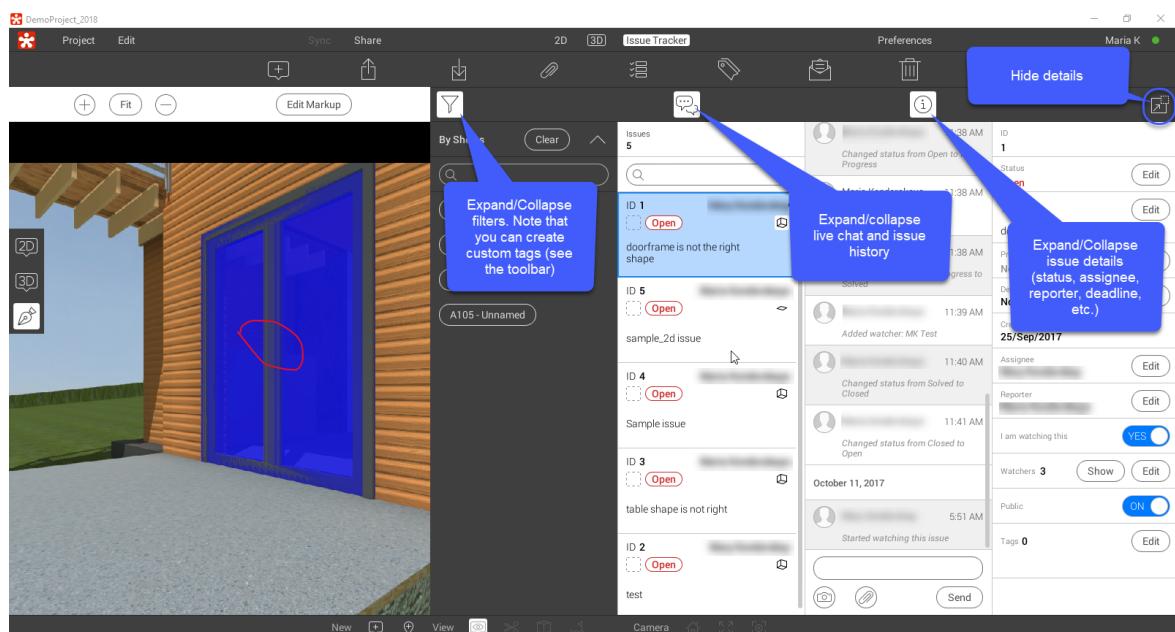
In Revizto

Team members can review and manage issues available to them in the **Issue Tracker** mode (as a rule, team members get [notifications](#)⁸² about changes in issues they reported, assigned to them or watched by them).

In general, the **Issue Tracker** offers the following options:

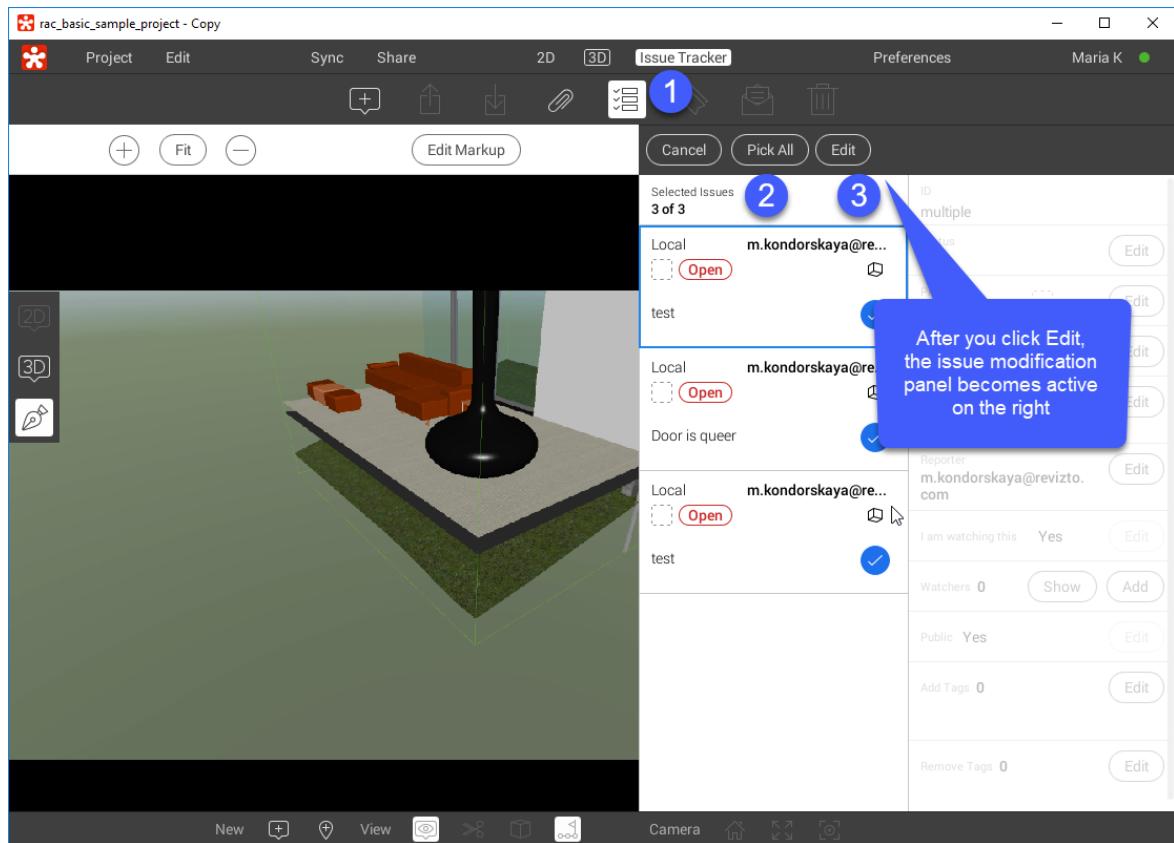
- expand/collapse issue details to view and edit them
- expand/collapse issue chat to collaborate in realtime with the team
- expand/collapse filter panel to browse across issues. Note that you can create your own tags to filter issues. Filtering by sheet is available to both issues created from 3D and 2D; if the issue location is on the sheet, filter considers it a match
- remove one or several issues
- [export/import issues](#)⁵⁴
- attach files to issues (in the chat dialogue)
- use web-camera in the chat dialogue
- access the [reporting feature of the web-GUI](#)¹²⁹ (under condition that the project is shared via the Cloud) ( icon)

Availability of specific features depends on [project level rights](#)¹²⁰ of the current user.



Tip: To simultaneously edit properties of several issues, use the multiedit icon (). It displays the whole list of project issues allowing you to select several of them and edit their properties. The features may be useful, if, for example, you want assign several issues to the

same person.



In Source Plug-ins

There is no issue tracking functionality in Revizto plug-ins. To access a current issue and take part in collaboration, open the required source file and click the **Track issue** plug-in button. It launches the relevant Revizto model in the application and shows issues available to the current user.

Tip: When you view issues in Revizto, keep the source software (Revit, Navisworks, etc.) open with the **Issue Tracker** plugin button pressed. Then, by selecting an issue in Revizto you will be able to see the relevant part of the structure both in Revizto model and in the source software. Note that you can have only one instance of source software simultaneously linked to Revizto.

Clashes

Clashes imported from Navisworks are available in the Issue Tracker. They have specific pins (



). Note that each clash-issue is a group that may contain multiple original clashes. Navisworks statuses do not directly correspond to Revizto issue statuses. The mapping rules are given below.

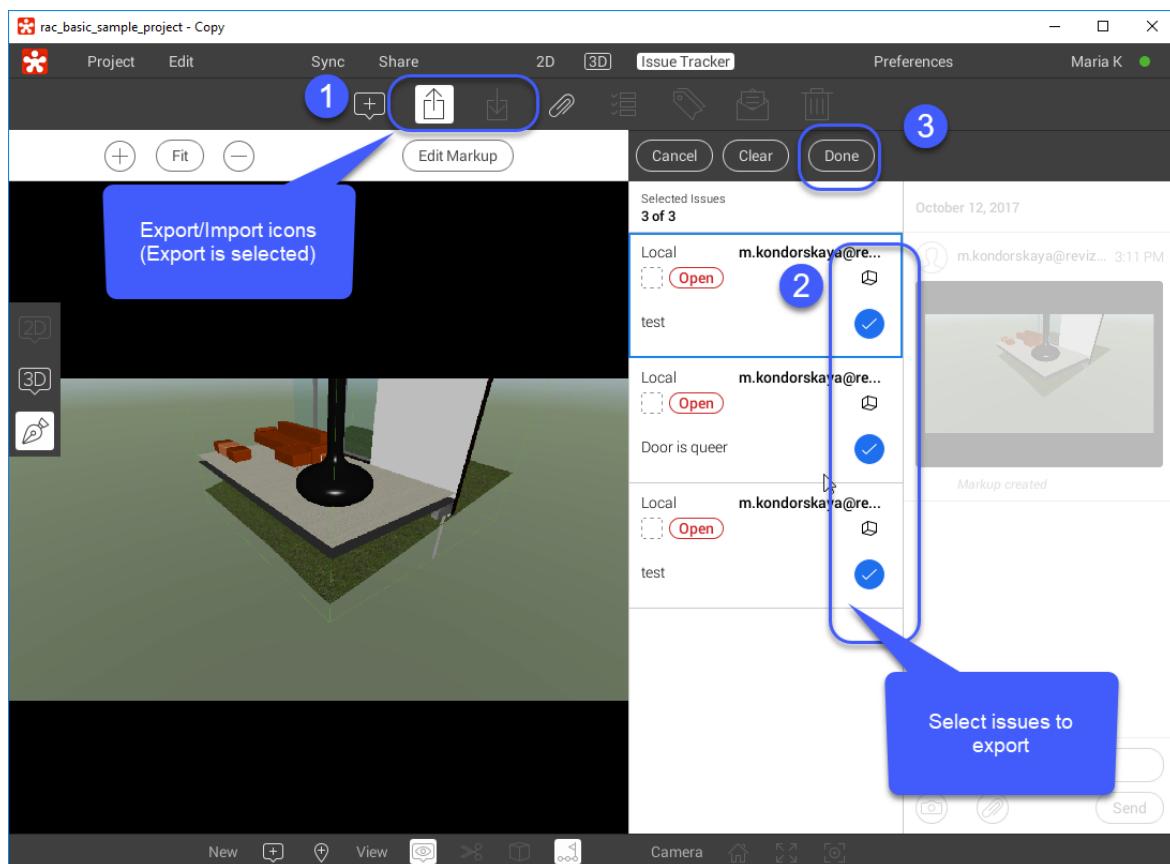
Navisworks Status	Revizto Status
-------------------	----------------

ACTIVE	Open, if non-existent. Don't change, if exists.
APPROVED	Open, if non-existent. Don't change, if exists.
NEW	Open
RESOLVED	Closed, if exists. Don't create if non-existent
REVIEWED	Closed

Attention: Issue content (attachments, etc.) is not automatically updated with the project at synchronization. Please, [load full project cache](#)^{D134} to make sure you are up to date.

Issue Export/Import Formats

You can export/import Revizto issues (see the procedure in the figure below).



By default, issues are exported as .vimmrk files, but you can also choose BCF (.bcfzip) and Excel (.xlsx). Same is true for issue import options.

VII. ☐ Content editor generates reports, if requested.

Each user can create issue reports for projects they are invited to. Reports are created in the **Dashboard** view of the web GUI (*My Projects > Project page*). This view allows building customized issue reports at the project level, scheduling generation and distribution time for each.



You can also navigate to this page from the **Issue Tracker** ( icon).

To create a new report:

1. Click the **Create New Report** button.
2. Define the report settings. Make sure to correctly define reporters, assignees, tags, etc.

The screenshot shows a 'Create New Report' dialog box with the following fields:

- Name:** A text input field containing "New".
- Time Period:** A dropdown menu showing "Previous Week".
- Tag:** Radio buttons for "All" (selected) and "Any".
- Assignee:** A dropdown menu with a cursor pointing to it.
- Reporter:** A dropdown menu.
- Save:** A large green button at the bottom.

3. Save your settings. The system immediately generates the report and displays it on the view.

The screenshot shows the Revizto software interface. At the top, there is a navigation bar with links for 'Manage Users', 'License', 'Manage Projects', 'Support', and language selection ('En'). A blue callout bubble in the top left corner says: 'You can hide report details, delete your reports'. Below the navigation bar, a report titled 'Test_report' is displayed. The report has a date range from 'September 25, 2017 - September 25, 2017' and a trash can icon. The main area contains an 'Issue chart' with one red bar labeled '1' at the top and '100%' at the bottom. To the right of the chart is a summary table with three tabs: 'Issues', 'Settings', and 'Delivery'. The 'Issues' tab shows '1' active issue. The 'Delivery' tab shows '1' item with a note: 'doorframe is not the right shape'. A blue callout bubble next to the 'Delivery' tab says: 'Review issue info, edit report settings, define delivery parameters to share your report'.

4. If you want to email your report to another person, go to the **Delivery** tab of the report view. You can either launch a one-time immediate delivery or schedule regular mailings. Note that you can send reports to people outside the project and workspace. You can also define multiple delivery format/s. Note that all fields are mandatory.

Issues	Settings	Delivery
<p>▲ Recipients</p> <div style="border: 1px solid #ccc; height: 40px; margin-bottom: 10px;"></div> <p>▲ Delivery time</p> <p>Weekday(s)</p> <div style="border: 1px solid #ccc; width: 600px; height: 40px; margin-bottom: 10px;"></div> <p>Time →</p> <div style="display: flex; justify-content: space-around;"> 1 pm </div>		
<p>▲ Format</p> <p><input type="checkbox"/> Chart <input checked="" type="checkbox"/> Excel <input type="checkbox"/> PDF</p>		
<input style="background-color: #2e7131; color: white; padding: 5px; border-radius: 10px; font-weight: bold; width: 150px; height: 30px; border: none;" type="button" value="Save"/>		<input style="background-color: #d9534f; color: white; padding: 5px; border-radius: 10px; font-weight: bold; width: 150px; height: 30px; border: none;" type="button" value="Cancel"/>

Report recipients get links to documents generated in the requested format. If there are no issues matching the report settings for the selected period, reports (and links) are not generated, the recipient gets a relevant notification.

By default recipients are notified if they are scheduled to get reports.

Note on Timestamps

All timestamps in reports are based on the server time. For convenience standard timezone abbreviations are used (e.g. CEST). These abbreviations are used for convenience, yet each corresponds to a specific location. Here are locations used in Revizto timestamps.

Region	Local time used for timestamps
Usa	America/Chicago
Europe	Europe/Berlin

Brazil	America/Sao_Paulo
Singapore	Asia/Singapore
Australia	Australia/Darwin

2.4 Viewer/Collaborator

Collaborator workflow is similar to that of content editor as far as issue processing is concerned, but a collaborator is highly unlikely to be involved in editing actual source content.

Licensing. Workspace Configuration and Management

Revizto license is provided for a specific number of users and projects (depends on the purchased Plan). The starting point is activating the license and configuring the license workspace.

Note that even if it is planned to limit the use of Revizto Cloud, initial license configuration has to be carried out online via the web-GUI. Even if you use the Shared Location option for your projects, all user license and access level data, as well as issue-related workflow is managed via the Cloud, while project source files remain within the corporate network.

As most Plans imply a limited number of users and projects within a team workspace, it is necessary to regularly monitor the current license status. Note that before migrating to a smaller Plan, the number of active licenses has to be brought into correspondence with it. Otherwise the whole license will be frozen until the number of active users under it is not reduced to comply with the Plan. The freeze period is 6 months. Beyond this period Revizto is not responsible for any data exported to the Cloud.

3.1 Activating License

To start using your Revizto license:

1. Find an email with license owner credentials (check the spam folder). These provide full access to the workspace management web-interface. By default, the License owner has the SuperAdmin role in the workspace. See more on roles below.
2. Navigate to <http://revizto.com>, log in with the above credentials and open the workspace management GUI. Note that simultaneously you may start downloading Revizto software for local installation (if you need it).



Sign in

E-mail

Password [Forgot password](#)

Region



3. Go to the **License page** of the workspace GUI.

It displays summarized license status (number of user account created, number of projects created, SuperAdmin name, Team name) and allows navigating to other management pages (See fig. 2).

The screenshot shows the Revizto License Info screen. At the top, there's a navigation bar with links: My Projects, Manage Users, License, Manage Projects, and Support. Below the navigation bar, a blue callout box points to the 'Workspace navigation bar available on all pages' link in the header. The main content area displays license information: Team Name (Revizto Help), Your role in license (Super Administrator), Team (2 of 50), Storage (2 of 100), Region (Europe (Ireland)), and End date (Sep 25, 2018). A large blue callout box points to the 'License info' section, containing the text: 'Navigate to Profile management page (SuperAdmin account settings), edit Team name'. Another blue callout box points to the 'Manage' buttons for Team and Storage. At the bottom, there's a 'Need help?' section with contact information.

Workspace navigation bar available on all pages

License info

Navigate to Profile management page (SuperAdmin account settings), edit Team name

Manage

Manage

Need help?

Contact our precious customer support team via service@revizto.com and get a response within the next 24 hours.

Figure 2 - License Info Screen

From this page you can navigate to project management, team management, support.

3.2 Managing Users

To manage users (user licenses), navigate to the Manage Users screen. There the SuperAdmin/Administrator can:

- Create/edit/deactivate users
- Manage user [license roles](#)⁶³
- [Monitor user activity](#)⁷¹

Revizto Help Users

The screenshot shows the Revizto User Management page. At the top, there are tabs for 'Activity Chart' and 'License Dashboard'. Below the tabs, a large blue speech bubble on the left says: 'Create a convenient user list display. Note how you can use tags for filtering'. On the right, another blue speech bubble says: 'Manage user accounts on this page'. A third blue speech bubble at the bottom right says: 'Navigate to individual user profile'. The main area displays a list of users with columns for Name, Role, Status, and Projects Involved. Each user has a circular edit icon next to their name. The 'Filter' sidebar on the left allows users to set filters by Status (All, Active, Inactive), Role (All, Super Administrator, Administrator, Content Creator, Collaborator, Guest), and Tag. Buttons for '+ Add users', 'Edit tag', 'Set Role', 'Send Email', and 'Deactivate' are located at the top of the user list.

Name	Role	Status	Projects Involved
Maria Kondorskaya m.kondorskaya@revizto.com	Super Administrator	Active	2
Mary Kondorskaya maria.kondorskaya@gmail.com	Content Creator	Inactive	1
kondor40@ya.ru	Collaborator	Inactive	1

To extend user level license (create user):

Note that to manage users you have to be the License Owner (SuperAdmin) or Administrator of the workspace. At initial configuration SuperAdmin is the only user.

1. Click the **Add users** button. The GUI navigates to a blank form where you have to enter user email address and select their role (can be changed later).

Tip: You can create multiple users by entering several email addresses in the textbox (use comma for division). For other [group actions](#) see below.

There are five roles at the license level:

- SuperAdmin (or License owner): assigned to a license owner, can be transferred to another user. There can be only one SuperAdmin in a workspace (role modification and removal are not available for this user). The License Owner has the broadest access rights.

- Administrator: have full control over the license. They can manage users and projects. If they need to access projects within Revizto (and they are not invited there yet) they need to grant themselves permissions on those projects through the website first.
- Content Creator: can upload new models to the license and invite unlicensed users to projects they are involved in (in this case collaborator/guest level license is automatically assigned to new members). Content creators can only access their own projects, or projects they were invited to.
- Collaborator: has access to projects they are invited to. Once invited, can have any access level within the given project (even administrator)

Note: This role is by default assigned to users that are initially created at the project level by project owners and administrators.

- Guest: Has same rights as collaborator. This role is reserved to users that already have access to Revizto under another license. So, Guest role can only be assigned if user email is already registered with Revizto in the current geography.

Note that if Guest's initial licenses expires, they lose access granted under Guest rights (Revizto highlights the user in red in the user list). To resume user access to the project, either Collaborator role has to be assigned to them (with a license in the current workspace spent), or initial license has to be extended.

Users cannot change their own access levels. Each time a user role is changed, the user receives a notification.

2. Click **OK** to send an invitation. A new user receives an email with notification that can now use Revizto. To start using Revizto, they have to log in and download the product (further steps taken by users are described in the relevant sections).

After the first login a user becomes **Active**. An active user can simultaneously run any number of instances of the web-GUI and/or Revizto software on any number of devices.

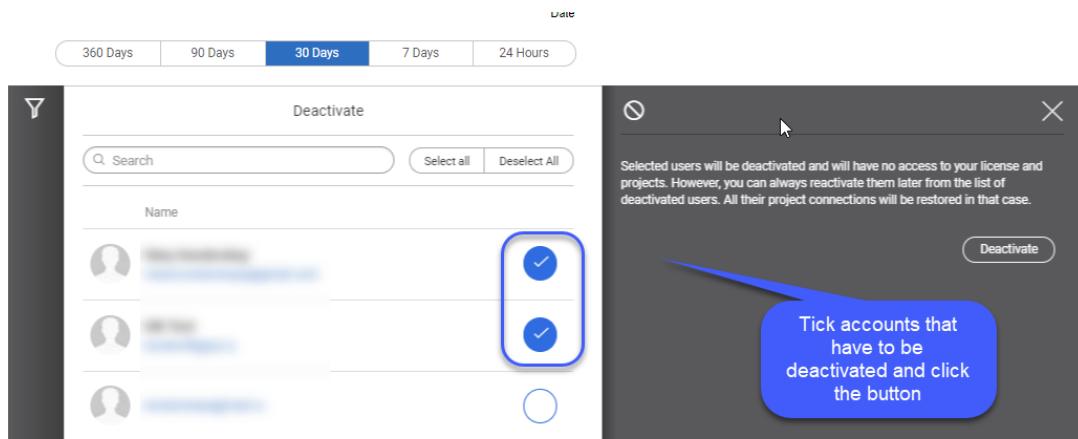
Warning: Neither the License Owner (SuperAdmin) nor the Administrator can edit user credentials. Therefore, make sure to timely deactivate users when people leave the company. Also make sure to duly transfer the License Ownership if the relevant employee leaves the company.

User license cancellation is called **deactivation**. This function is available to the license SuperAdmin and Administrator. Later deactivated users can be deleted.

To cancel user access (deactivate):

1. Click **Deactivate** at the top of the user list.
2. Select user/s.
3. Click **Deactivate** at the right side of the screen. The user becomes deactivated (cannot access their projects and/or projects shared with them), their license becomes vacant.

To get back to the main view, click X at the right side.



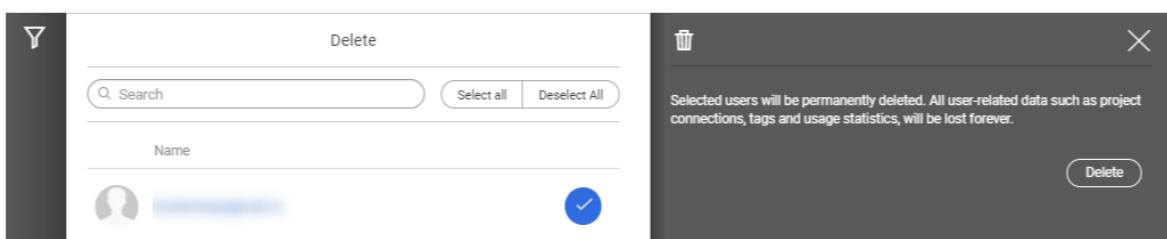
Deactivated users can be reactivated any time with the previous access level and project memberships. However, note that project ownership is not restored. At deactivation project ownership is automatically assigned to the SuperAdmin and reactivation does not reverse it. It is recommended to reassign ownership manually before deactivation, if the automatic option is not relevant.

To delete a user:

1. Deactivate a user.
2. Open the list of deactivated users (**Deactivated** tab).
3. Click **Delete** at the top of the list that is available in this view.

Name	Role	Projects Involved	Deactivate date
[User Profile]	Collaborator	1	September 26, 2017 [Delete]

4. Select user/s that have to be deleted and click Delete button at the right side. Note that this action is irrevocable.

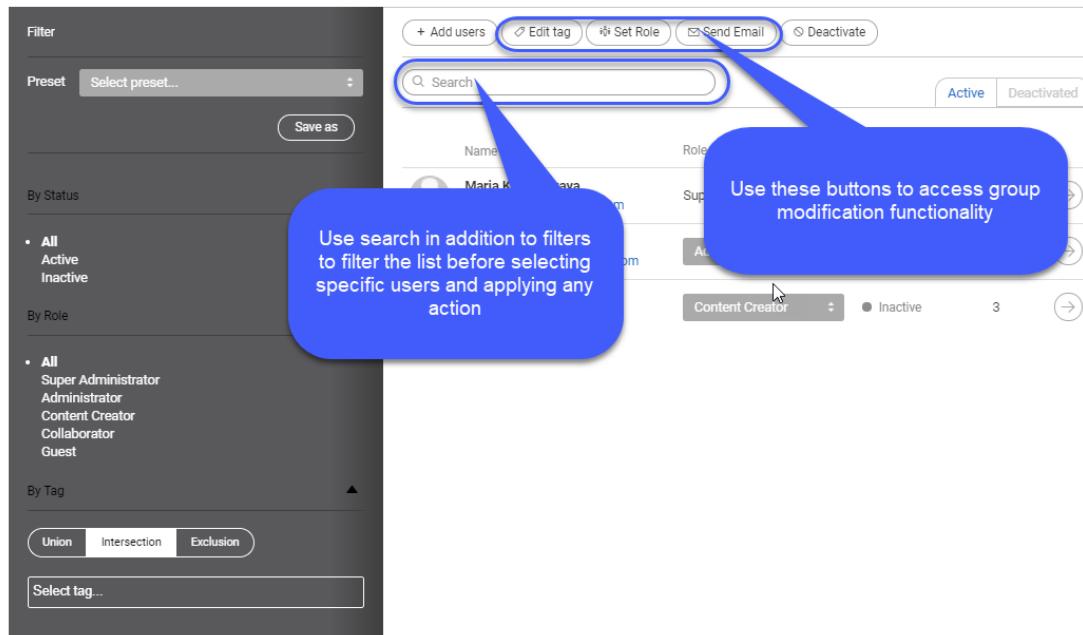


To get back to the main view, click **X** at the right side.

Tip: use the  icon to expand the filtration panel and filter the user list to reduce it before selecting specific users and applying any action to them.

Group Operations

Apart from allowing administrators to add, deactivate and delete multiple users, the web-GUI supports other group actions (emailing, tagging, access level change). These are implemented in a similar way with similar search and filtration options.



3.3 Managing Projects

Super Admin, Administrator and Content Creator can create new projects within the team licenses using locally installed instances of Revizto (project creator is considered its Owner (for more details on project roles, please, [see below](#)¹⁶⁹).

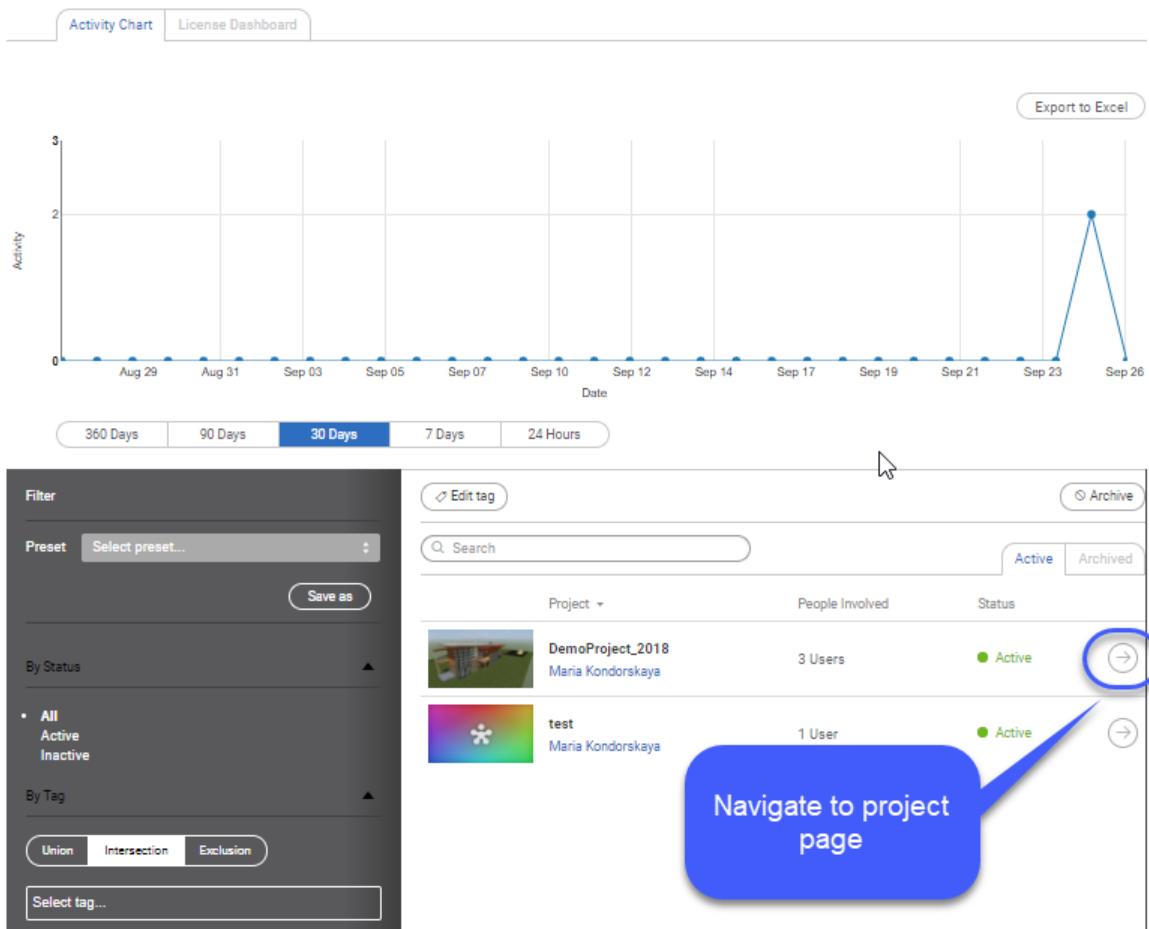
Newly created projects are listed on the **Manage Projects** screen of the workspace web GUI (available to the License Owner and Administrators) with an **Active** or **Inactive** status; a project license is issued. Projects are active when they are opened in the application at a specific frequency; users are active when they open projects in the application often enough. After a specific period of idleness projects and users are switched to **inactive** status.

Once a project is archived, its license becomes vacant for a new project. Members previously invited to an archived project lose access to it. Only project Owner can view an archived project in read-only format in [Revizto application](#)¹³⁵.

Archived projects can then be deleted altogether (i.e. from the cloud).

You can open project details in a new browser tab to edit it. Note that you can also navigate to a project page from a page of any of its members (users invited to the project).

Archiving and Deleting Projects



To archive project/s:

1. Click **Archive** above the project list.
2. Tick one or more projects. Click **Archive**. The selected project/s is archived, its license becomes vacant.

The list of archived projects is displayed in the **Archived** tab. Archived projects become unavailable to all members previously invited to it. Yet, the project owners retain read-only access to archived projects via Revizto.

Later, you can delete the project altogether (from the cloud) or restore it. Once the project is restored, it becomes available to all members invited to it before with all settings and issue history.

Editing Separate Projects

The project page consists of three views:

- Project Info
- Private Sharing
- Dashboard

Availability of these views depends on the user license role and project access level (see the table below).

All changes made in the workspace web GUI are automatically synchronized with local instances of Revizto. Below full functionality of each view is covered.

Project Info

Depending on the workspace and project role, use this view to:

- Rename the project
- Change project owner (only available to the current owner)
- Change master license (only available to the current owner, may be needed when a project is transferred to another team or trial license is replaced with a permanent)
- Upload a thumbnail
- Create and assign tags to the project
- View project activity summary

DemoProject_2018

Project info Private Sharing Dashboard

Project info

Title: DemoProject_2018

Owner: Maria Kondorskaya
m.kondorskaya@revizto.com

License: Revizto Help

Created: September 25, 2017

Updated: September 25, 2017

Tags

demo x new_tag x

Change Change Change Change

Change

Change

Change

Change

Change

Change

Scroll down for the dashboard

Private Sharing

Depending on the license and project role, this view allows user to invite people to the project, manage their access rights and remove project participants.

Note: You can invite a new user to the project without creating a license-level account before. Then the system creates a license-level collaborator account automatically. Yet, deleting a user at the project level does not mean deleting a license level account. You have to deactivate a user at the license level to completely cancel user access to the license.

Also, the License Owner (SuperAdmin) and license Administrators can manage project access levels from this view. Note that project access changes made from the web-GUI are applicable to the whole license, not to a single project. Project owners can modify and create project-level

access rights from Revizto application (in this case changes are only applicable to a specific project).

The screenshot shows the 'Private Sharing' view of a project named 'DemoProject_2018'. At the top, there are three buttons: 'Project info', 'Private Sharing' (which is selected), and 'Dashboard'. Below the buttons, there's a section for inviting people to the project, featuring a text input field labeled 'Enter e-mail to invite a user' with a blue callout pointing to it. To the right of the input field is a green 'Invite' button. Underneath this section, there's a 'Set Access Level:' dropdown menu set to 'View and collaborate' and a 'Manage Access Levels' button. A cursor is hovering over the 'Manage Access Levels' button. Below these controls, there's a 'Project team' section with a table. The table has columns for 'Name' and 'Rights'. It lists three users with the following access levels: 'Owner' (Administrate), 'Administrator' (Administrate), and 'View and collaborate' (View and collaborate). Each row includes edit and delete icons.

Managing Project Access Levels in the Web GUI

SuperAdmin and Administrator can manage existing project-level access settings and create new ones; as mentioned above, settings defined in the web GUI are applied license-wide.

To create a new access level in the Web GUI:

1. Navigate to the **Private Sharing** view of the team workspace web GUI.
2. Click the **Manage Access Levels** button. The **Manage Access Levels** view opens.

In this view you can either edit an existing level, or a create a new one.

Manage Access Levels

Access level: **Edit content and collaborate**

Edit name: **Edit content and collaborate**

Ticked and gray means that the right is included within the upper level right

Ticking this field = creating an Administrator access level (includes all other rights)

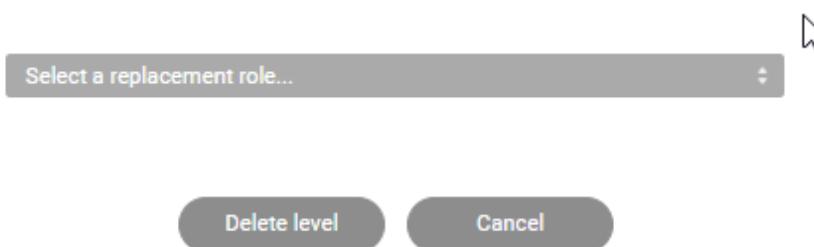
Buttons at the bottom: Save, Save as new level, Cancel, Delete this level.

3. To edit an existing level:
 - a. Tick rights that you want to assign to the role, if you want to extend the access level
 - b. Untick available rights to revoke them and limit the access level in some respect
 - c. Enter a new name for the access level in the **Edit name** field, if needed.
 - d. Click the **Save** button at the bottom of the view.
4. To create a new access level repeat substeps a - c of the step 3 above and click the **Save as new level** button. Note that to create a new level you have to enter a new name.

You can delete any existing access level, but, if it was previously assigned to one or more team members, you will be requested to choose a new access level to them before deleting the current one.

Warning

You are about to delete the rights level "Edit content and collaborate" which is assigned to 1 people across 1 projects throughout the license. You may probably want to contact your team members and figure out if this doesn't break the workflow. If you decide to proceed, you will have to assign a replacement role for the people of that role.



To check current user access level:

1. Navigate to the page of the required project.
2. Go to the **Private Sharing** view.
3. Click button by the name of the user you want to check. The system displays detailed information on user rights with a modification option available at the top of the screen.

Edit or Append Content?

In Revizto there is a distinction between the right to edit 3D/2D and append 3D/2D. As you may see from the entry form, editing includes appending, but not vice versa. The idea is that appending allows user to add content (a sheet, or a scene) to a project and to subsequently modify/delete it, but not to edit content created by other project members. Editing, in turn, allows both appending new content and editing any existing regardless of its author.

3.4 License Monitoring

This feature allows license administrators to monitor whether Revizto is adopted well by the team, how actively it is used. It also allows checking the need for Licensing Plan extension.

The **Manage Users** and **Manage Projects** screens allow users to build activity charts for, respectively, user and project activity. Both are constantly updated and display dynamics for 24 hours; charts have similar GUI, settings, controls and functionality.

The User activity chart displays the number of users that were active in the current Revizto license within the monitoring period (30 days by default, you can customize it). Also, you can filter users by their license role.

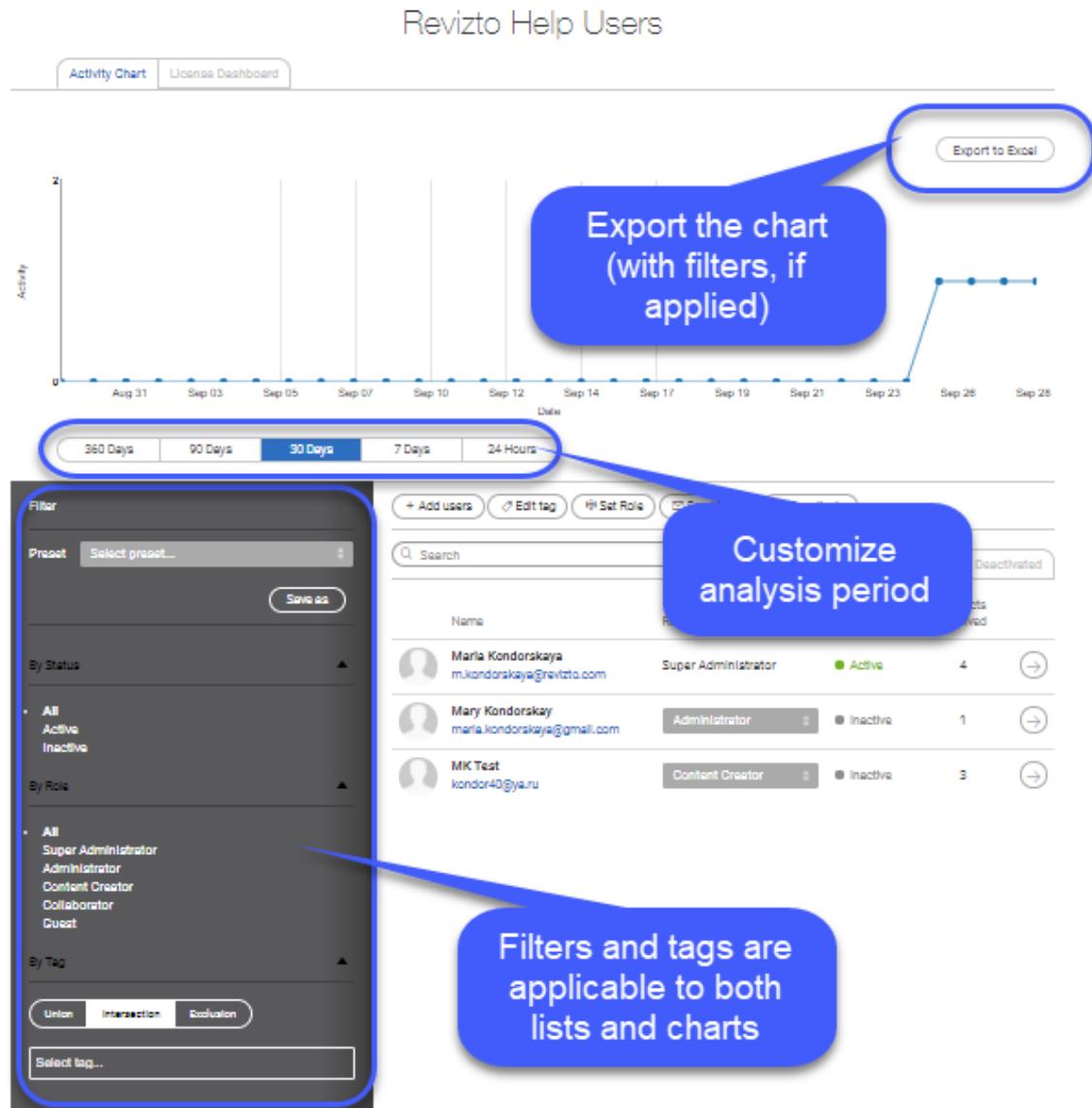
An Excel version contains full user data (name, email, role, last activity time, total duration in the **Active** status, tags, number of projects and their names). The chart is also included.

The **Project activity** chart displays the number of projects managed in Revizto within the defined period. Also, you can filter projects by status (**Active/Inactive**).

An Excel version contains the total number of members and their names, project owner, project tags, time of the last activity within the project. The chart is also included.

Tip: To build a chart for activity of specific users within a specific project, tag those users and create a preset.

The **License Dashboard** tab shows how many project and user licenses are now used.



Activity charts for separate users/projects are built in a similar way with relevant filtration options.

3.5 Web Interface Tips

Using Tags

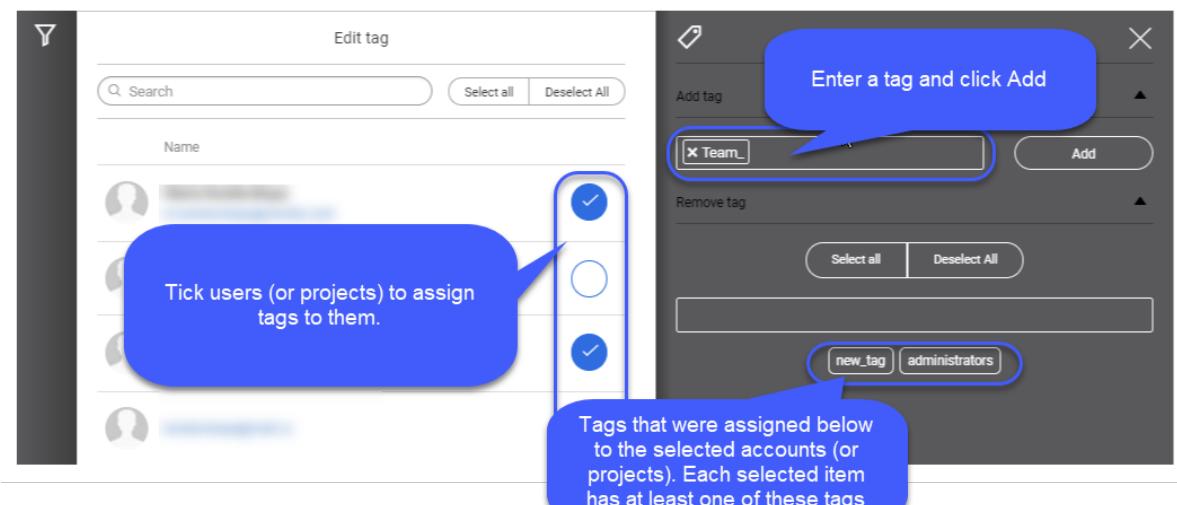
You can create and assign an unlimited number of tags to user accounts and projects. Tags provide an additional filtration options in large environments.

User and project tags are created in a similar way. To create and edit tags you need SuperAdmin, Administrator rights or Content Creator rights (limited to your own projects and relevant user accounts).

Tags are created either from views where projects/users are listed (preferred option when several items have to be tagged), or from individual user/project views.

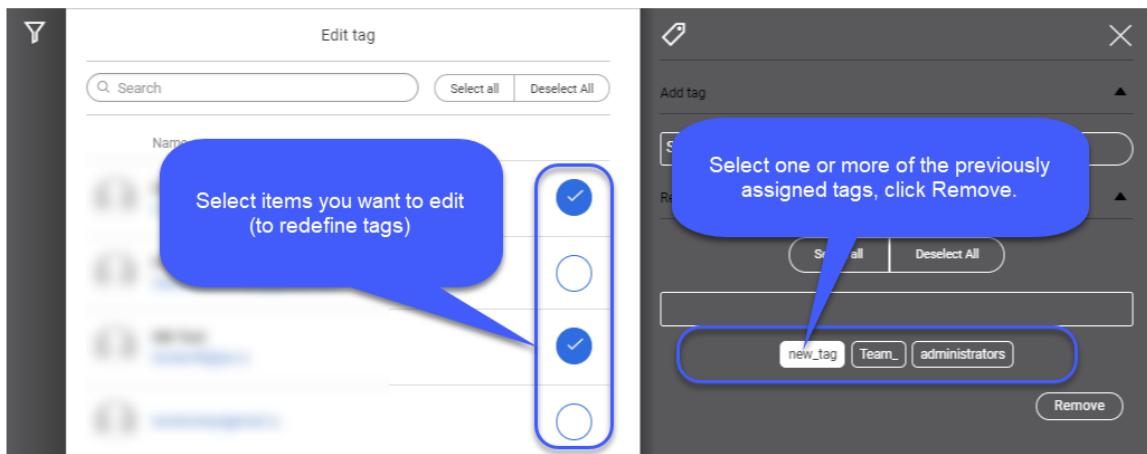
To create a tag from a general view:

1. Click the **Edit tag** button above the project/user list.
2. Select accounts/projects you want to tag. Enter your tag/s, click the **Add** button.



3. To return to the main view, click X button at the upper right corner.

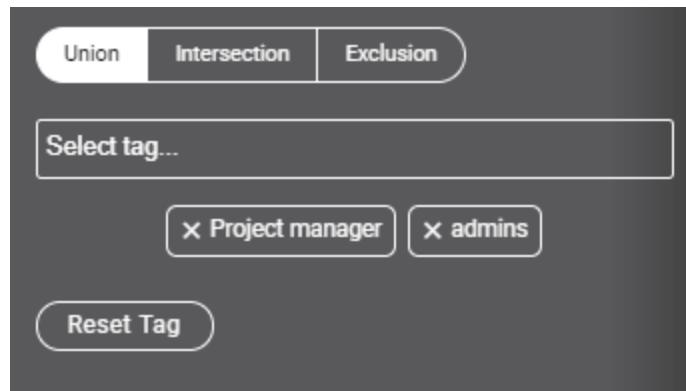
To remove tags, use the same window (see the image below).



To tag an individual project/account:

1. Open a project/user view. Both views have the **Tags** area.
2. Enter tag/s into the textbox and click **Add**. The application adds your tag/s to the item; assigned tags are displayed under the textbox.

To remove a tag, click **x** in the tax box (see the image below).

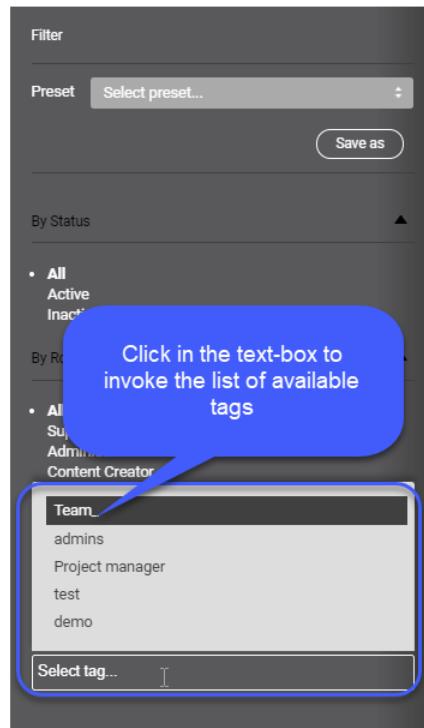


Using tags for filtration

Mainly, tags are used to filter project and user lists in major environments. In both lists tag-based filtration uses similar logic.

To filter items by tags:

1. Click in the **Select** tag text box to show the whole list of available tags.
2. Choose one or several tags to filter by.
3. Choose filtration logic. The following options are available:
 - **Union** - includes items with at least one of the selected tags into filtration results
 - **Intersection** - includes items that have all selected tags into filtration results
 - **Exclusion** - includes items that have none of the selected tags into filtration results



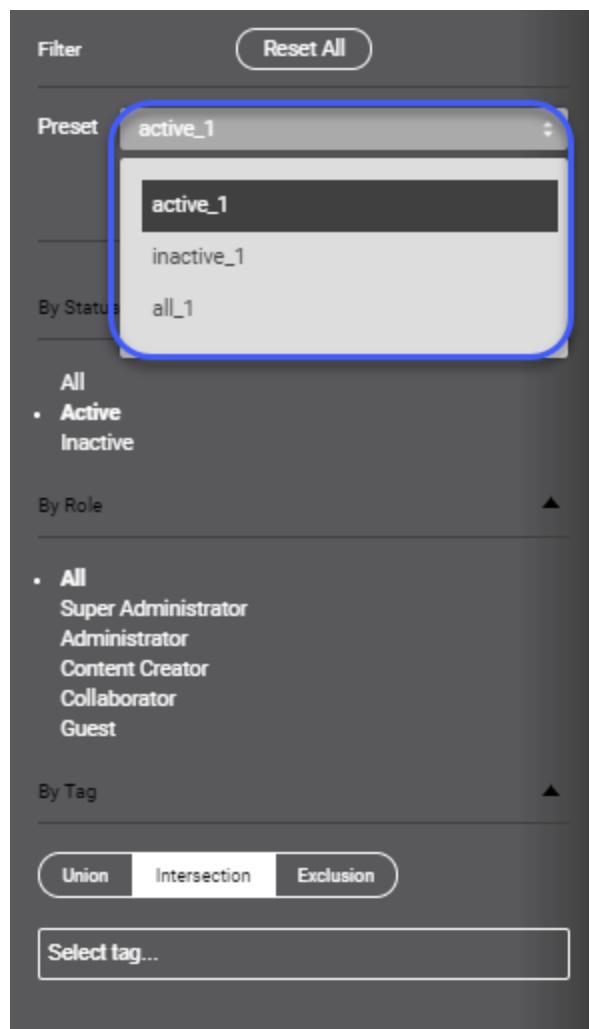
Creating Filtration Presets

Filtration presets allow administrators to quickly filter lists of licensed items (users and projects) and to build several charts with different settings for comparison. E.g.: a 30-day activity chart including collaborators with a specific tag, or a weekly chart for active projects with specific tag etc.

To create a preset:

1. Navigate to the **Manage Users** or **Manage Projects** page (depending on your needs).
2. Define your preferences in the filtration pane on the left.
3. Click the **Save as** button. Enter the preset name in the **Preset** field and click the **Save** button.

Your filter is saved and becomes available for selection.



Installation and Deployment

Local Installation. Windows

When a team license is issued to a customer, owner credentials are supplied by Revizto. Further configuration is performed at the customer side according to their business process and preferences.

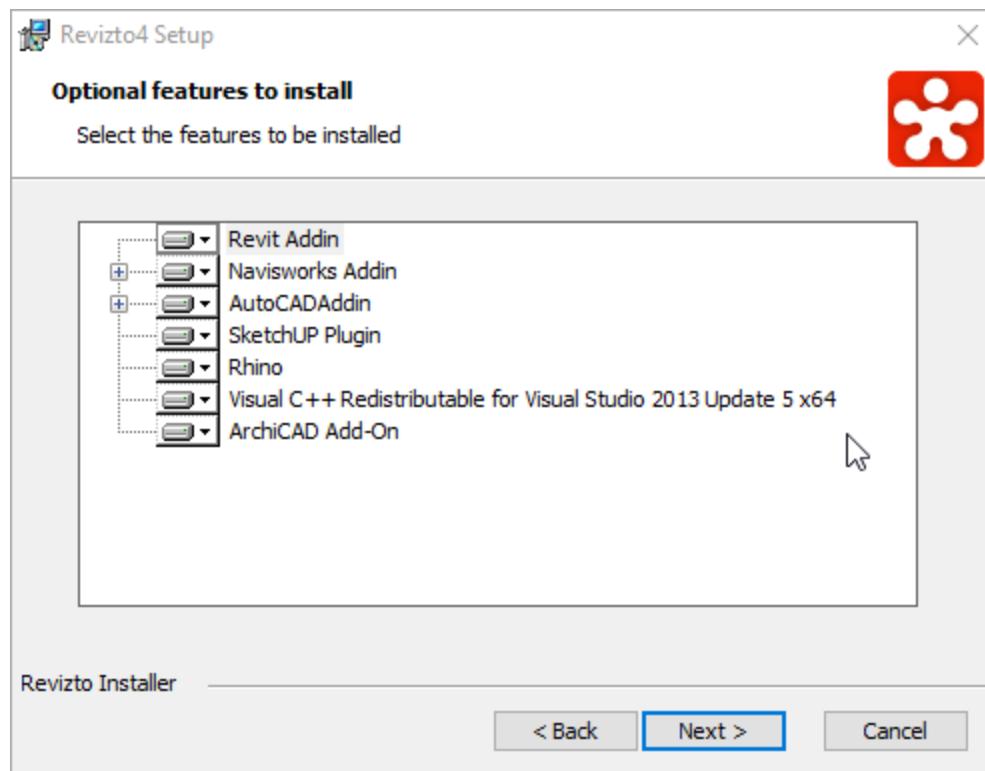
To deploy a collaboration environment, you have to first activate the team license in the web-GUI (see the Licensing section) and then proceed to local deployment. Note that to ensure valid network collaboration, you have to pay attention to [hardware requirements and network settings](#)^{D1} when installing local instances of Revizto, Viewers and plug-ins.

Installation Process

To install the software suite, you have to either be the license owner who obtains the download link from Revizto, or a license user invited directly to the team or to one of its projects. The

distribution package includes all Revizto components (Revizto application and VR viewers, scheduler, plug-ins). The installation wizard installs Revizto and viewers, and allows the user to select optional components.

Note that you will be able to install additional components anytime later (e.g. plug-ins) by launching the installer and choose the **Modify** option.



Generally, source editors need Revizto and plug-ins for software they work with (most popular ware Revit and Navisworks); collaborators on the customer (or management) side need Revizto and viewers. Thus, customers can review the model in a preferable display format, create issues and track them.

Also you can select your language and which shortcuts you want on your desktop.

The Wizard asks user permission to install certUtil.exe. It is safe to install this element and it is recommended to. It installs certificates that ensures smooth interaction with Revit and AutoCad (otherwise you will have to confirm that you want to use the plug-in any time you launch it).

From this point onwards the procedure is quite standard; just follow the wizard.

If a newer version of Revizto is available, notification is displayed at the launch (to turn off the updating feature, you have to change the registry, for more details, go to the [FAQ section^{D₁₇₈}](#)).

Caution: If you plan to install a new version of Revizto instead of an existing one, do not uninstall it manually. The installation wizard detects traces of the previous version and attempts to uninstall it, as it is a part of its logic. If unable to find an old version, the Wizard fails.

Note: When installing/updating Revizto, close source programs (e.g. Revit). Otherwise the installation process will stop.

Just as any software, Revizto can be installed for the current user and for all users of the machine. For the latter option you have to launch the wizard as the local administrator.

Quiet mode installation

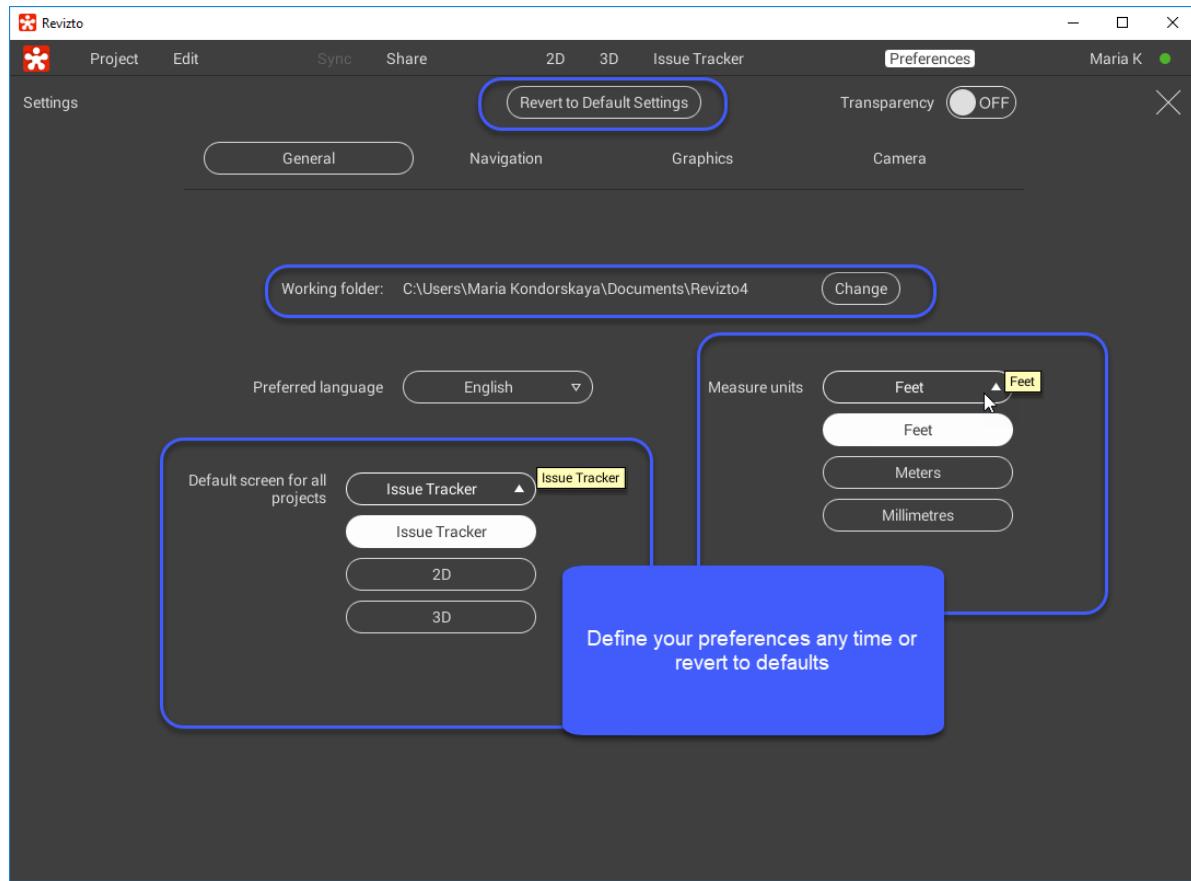
Revizto can be installed in the quiet mode (without UI) using the following keys:

- ALLUSERS="1"- installation for all users on this computer (per machine). Administrator rights are required.
- MSIINSTALLPERUSER="1" – installation for a current user (per user)

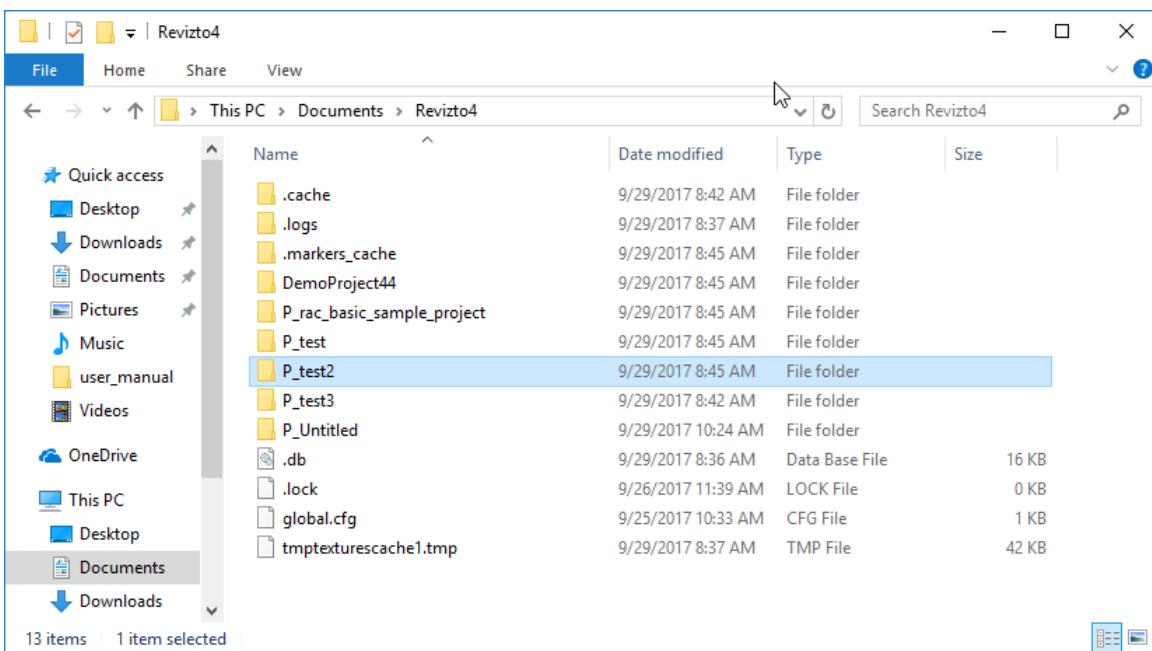
Tip: to quickly access the installation log, open the command line and enter “C:\MyPackage\Revizto(x64)-4.4.XXXX.msi” /L*V C:\MyPackage\ReviztoInstall.log” in it.

Defining Preferences

Upon completing installation, launch Revizto and navigate to the **Preferences** menu. By default, the **General** view is displayed.



Define the preferred display settings, measure units. Note that you can change language any time. You can also change the default project folder. During installation the wizard creates a new folder in the Documents folder of the current user. This folder is used for synchronization: projects somehow available to the user are stored there and shared from there.



Note that this folder contains logs for all Revizto components and events (if you have problems with the working folder, see [here](#)¹⁸²).

Caution: It is not recommended to create the working folder at remote network location. Revizto relies on SQL Light and major projects tend to generate multiple requests to the working folder. If created outside the local machine, it can cause failures and errors.

For more details on Preferences, please, refer to the [Detailed preferences](#)¹⁸³ section.

Portable Devices

Proxy Settings

Using the Web GUI

Each user (team member) has access to the web GUI where, depending on the access level, they can view or edit workspace and project settings, manage their personal profiles (account settings are available in Revizto as well).

Note on regional settings: you cannot change your region. Any Revizto license is strictly linked to one of the specific geographies. You can change your language settings any time from the web GUI or in Revizto preferences.

Warning: Although the sign in page allows changing the region, you should log in from the region of your team license. Otherwise you will not be able to access your projects.

Sign in

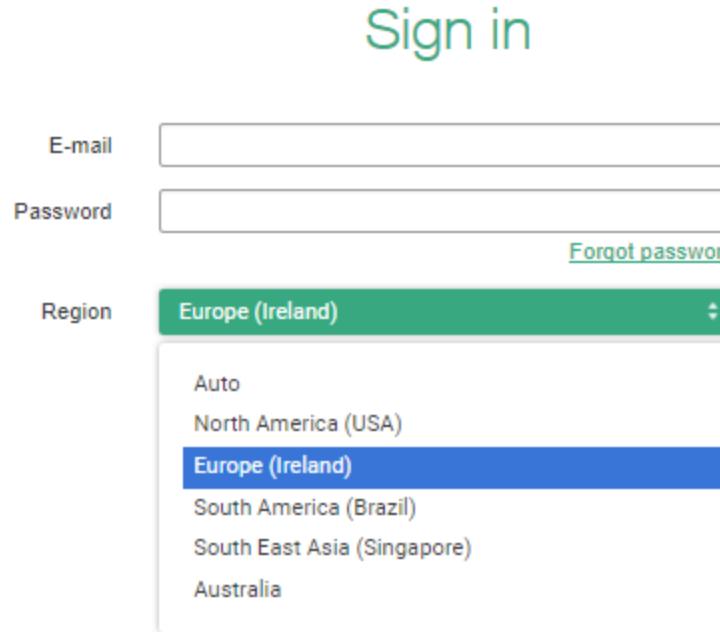
E-mail

Password

[Forgot password](#)

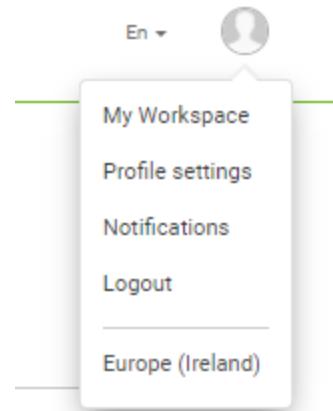
Region Europe (Ireland)

Auto
North America (USA)
Europe (Ireland)
South America (Brazil)
South East Asia (Singapore)
Australia



5.1 My Projects

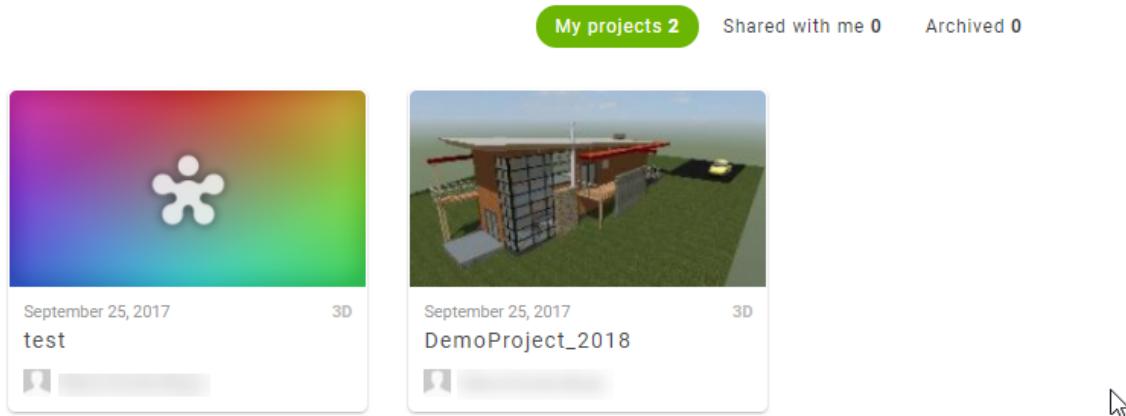
Regardless of an access level, a user can view their projects on the **My Projects** page. To navigate to the page, either use the main menu, or choose **My Workspace** in the profile drop-down list at the top upper corner of any page of the web-GUI.



It displays the list of projects a user is involved with. It has three views:

- **My projects** for projects created by the current user
- **Shared with me** for projects where the current user is a member (not Owner)

- **Archived** for closed projects



Each project tile shows the creation date, name and owner. Mouse-hover over a tile shows icons for navigation to the project **Private Sharing** view and to its **Dashboard**. If user rights are not sufficient for sharing, the view displays in the read-only mode.

5.2 Managing User Profile

Note that you can also change your profile settings in Revizto as well. The Web GUI allows users to change their names, passwords and language settings. Note that you cannot change your email, as it is linked to the license.

To edit your profile:

1. Sign in at www.revizto.com.
2. Choose **Profile settings** in the user menu (upper right corner).
3. Make necessary changes:
 - a. Enter necessary changes in the editable fields (**First name**, **Last name**).
 - b. Choose another GUI language in the **Language** field.
 - c. Click **Password > Change**, to enter new password. Enter the old password and the new one twice (for confirmation).
 - d. Upload your photo in the **Change picture** area, if you would like to have it in your profile.
 - e. Click **Save** to apply your changes.

Profile settings



Change picture

First name	<input type="text" value="Maria"/>
Last name	<input type="text"/>
E-mail	<input type="text"/>
Old password	<input type="password"/>
New password	<input type="password"/>
Confirm password	<input type="password"/>
Language	English 
	

Profile management is also available in Revizto application (see the [Local Profile Management](#)¹⁶⁷ section).

Resetting Password

The Web GUI offers standard, transparent procedure for resetting lost passwords.

To reset your password.

1. Go to the sign in page at www.revizto.com.
2. Click the Forgot password link.
3. Enter your valid email address linked to your Revizto license in the form and click **Change**.
4. Check your mail box (make sure to check the spam folder as well).
5. Open the email message from Revizto and follow guidelines (you will have to options to navigate to the password change page: a button and a link).
6. Navigate to the password change page. Enter your new password twice and click the **Change** button. Once the system applies changes, you will be able to enter the Web GUI.

5.3 Managing Notifications

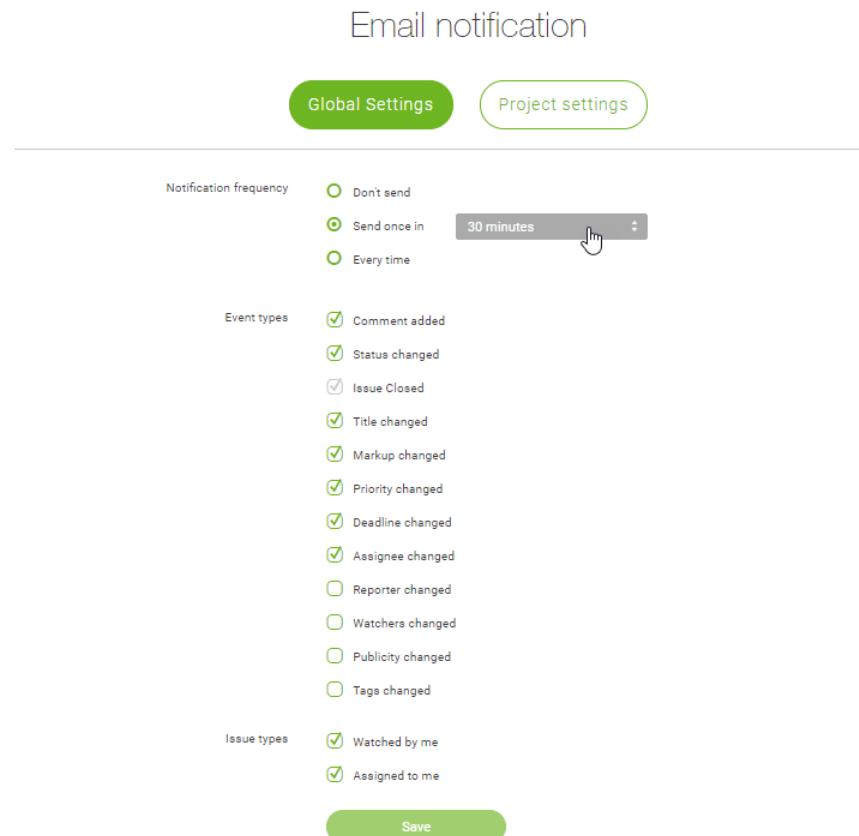
Notifications (messages from Revizto emailed to a user in response to a specific event) can only be edited by users in the Web-GUI.

There two sets of notifications settings:

- Global: applied at the license level and covering all projects, unless otherwise specified. By default, these are applied to every project a user is involved in.
- Project: customized set of notifications for a specific project.

To edit global notifications:

1. Log in at www.revizto.com. Navigate to the **Notifications** screen of your web GUI. By default the **Global settings** view is displayed.



2. Define notification frequency. You have three options. The **Don't send** turns all notifications off, the **Send once** in allows setting the frequency, the **Every time** option means that a notification is sent every time a triggering event occurs.
3. Choose event and issue types you want to be notified about (activate the checkboxes).
4. Click the **Save** button to apply your global settings.

To customize notifications:

1. Log in at revizto.com and navigate to the **Notifications** screen of your web GUI.
2. Define your global settings, if needed.
3. Go to the **Project Settings** view. The view displays the list of projects you are involved in. By default, all use global settings. Note that the view has a sorting option and a search box.
4. Find the project to customize its notifications settings.
5. Choose **Custom Settings** in the **Project settings** field. The **Edit settings** button then appears.

The screenshot shows the Revizto Web GUI interface. At the top, there are two tabs: 'Global Settings' (highlighted in green) and 'Project settings'. Below the tabs, there is a search bar with 'Sort by' set to 'Project Name' and a 'Search' input field. The main area is titled 'Projects' and lists several projects with their names and icons. To the right of each project name is an 'Owner' column and a 'Project settings' section. In the 'Project settings' section for the first project, 'DemoProject_2018', there is a 'Custom Settings' button and a green 'Edit settings' button. This 'Edit settings' button is highlighted with a blue rectangular box. Other projects listed include 'MK_project', 'rac_basic_sample_project', 'test', 'test2', 'test3', and 'test=2', each with its own 'Global Settings' button.

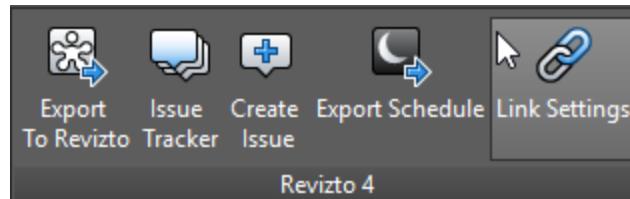
6. Click the **Edit settings** button. It navigates to the notifications editor similar to the one used to define global settings (the project name is displayed at the top of the screen).
7. Make your changes and save them. You can redefine global and project notifications settings any time for your convenience.

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.

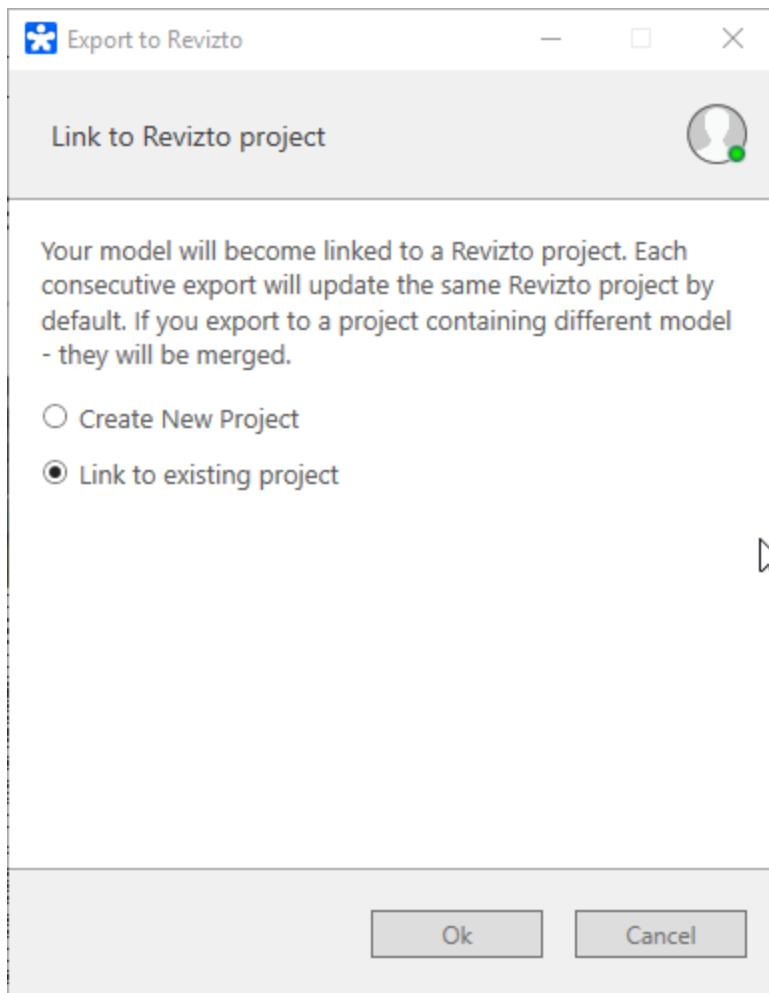
Most part of the source BIM software supports Revizto plug-ins (or addons) with similar menus. As a rule, plug-ins are installed automatically into the source software, but in some cases you have to install them manually (clarified in the following sections).



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.

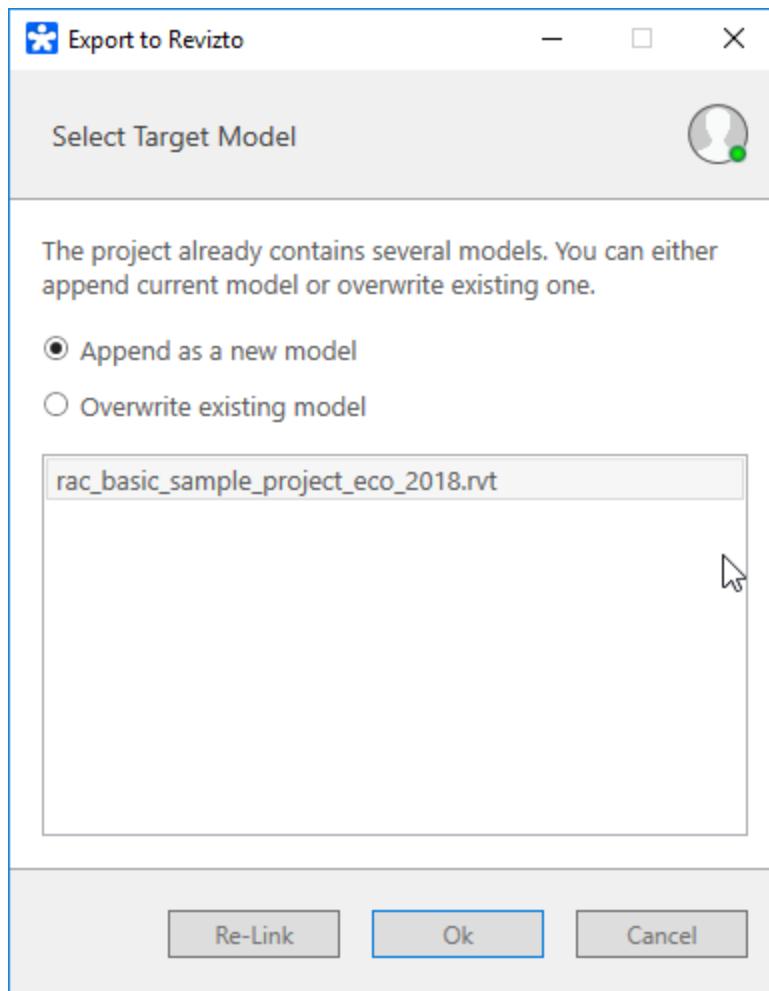
To export a source model:

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.



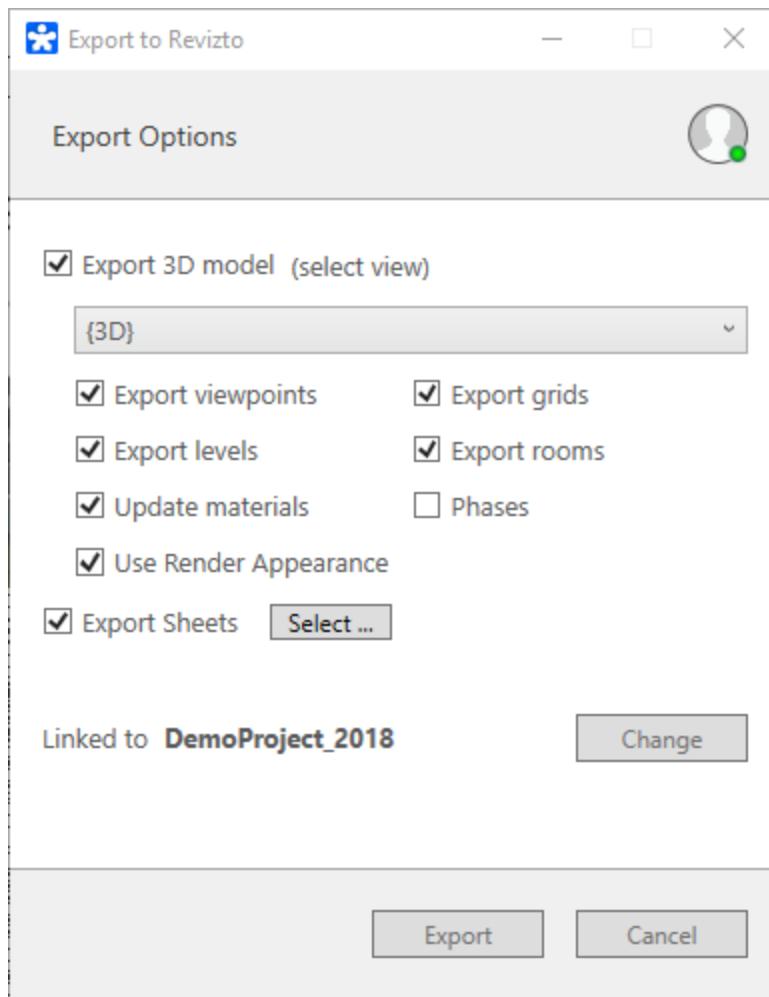
5. For an existing project, choose whether to overwrite existing files or to append new files to them. Files are appended on the basis of shared coordinates. Note that Revit also allows linking multiple sources locally, so you will not need to append each of them separately to a Revizto project. There are now hard and a fast rules for choose an option, but our recommendations are given in the [FAQ section¹⁷⁹](#).

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 particularities).



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.

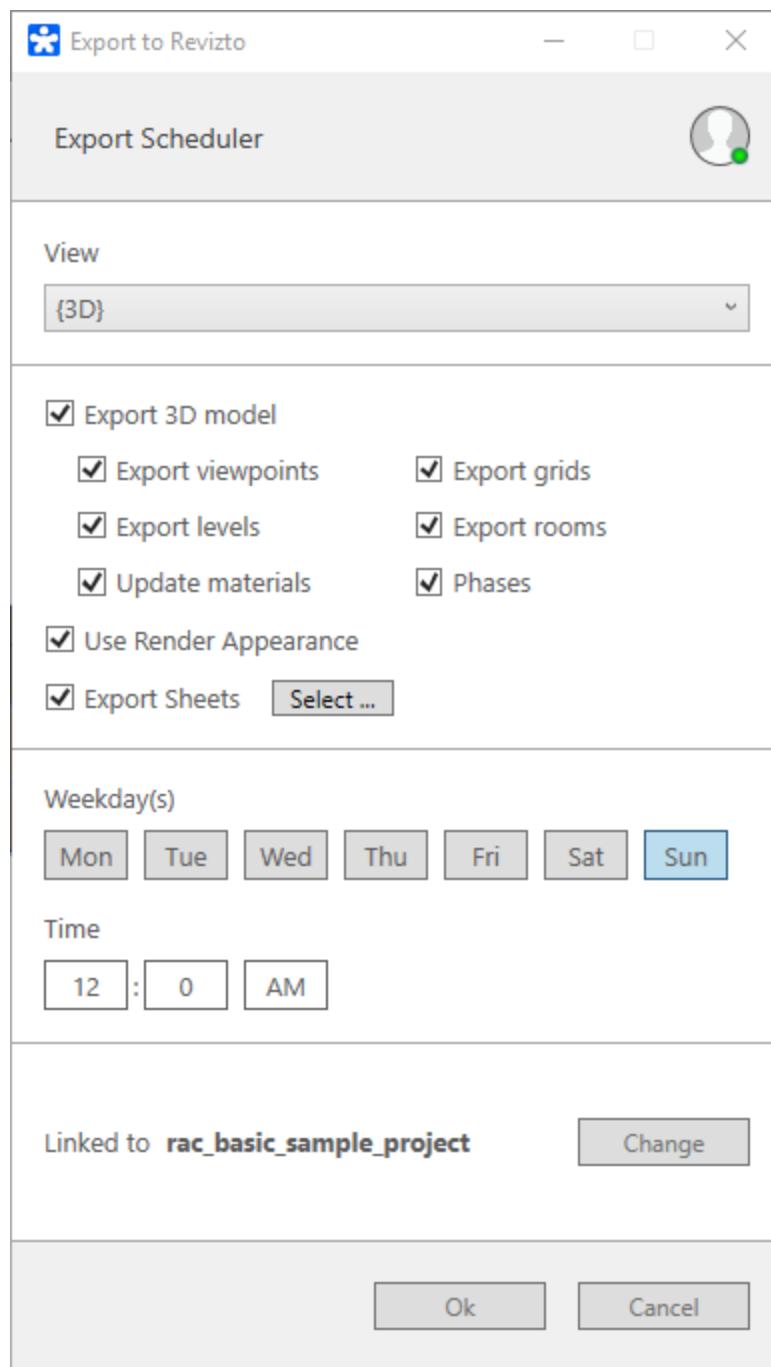
Creating a Schedule in Revizto Plug-in

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 your 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.



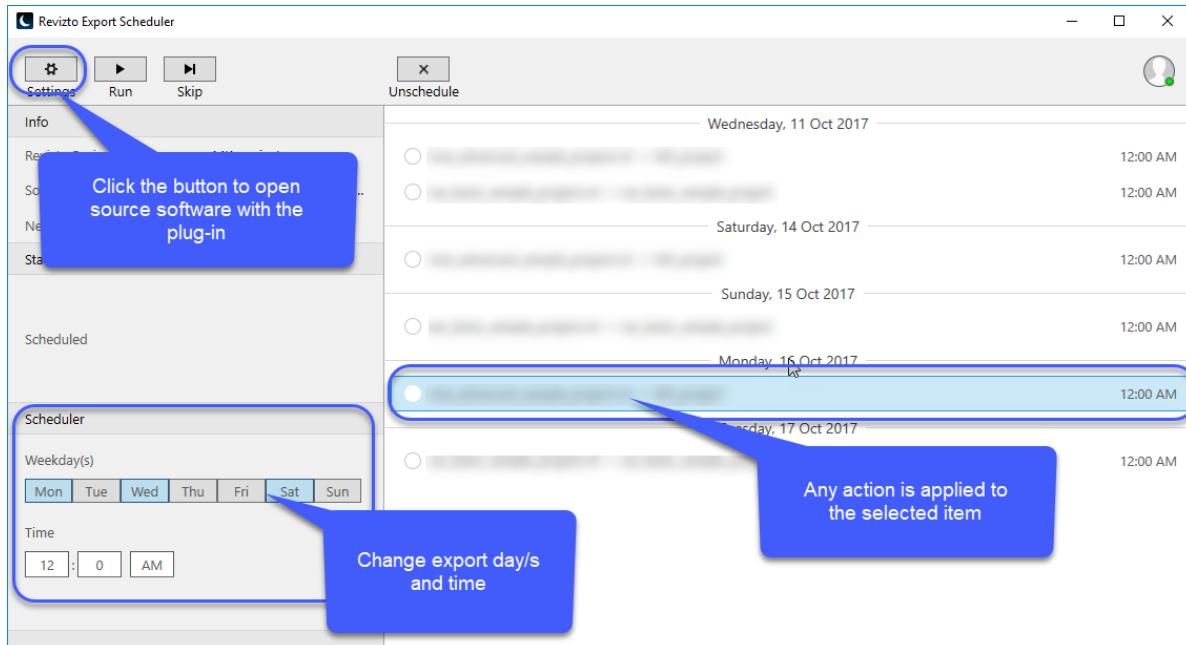
Export Scheduler Application

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.

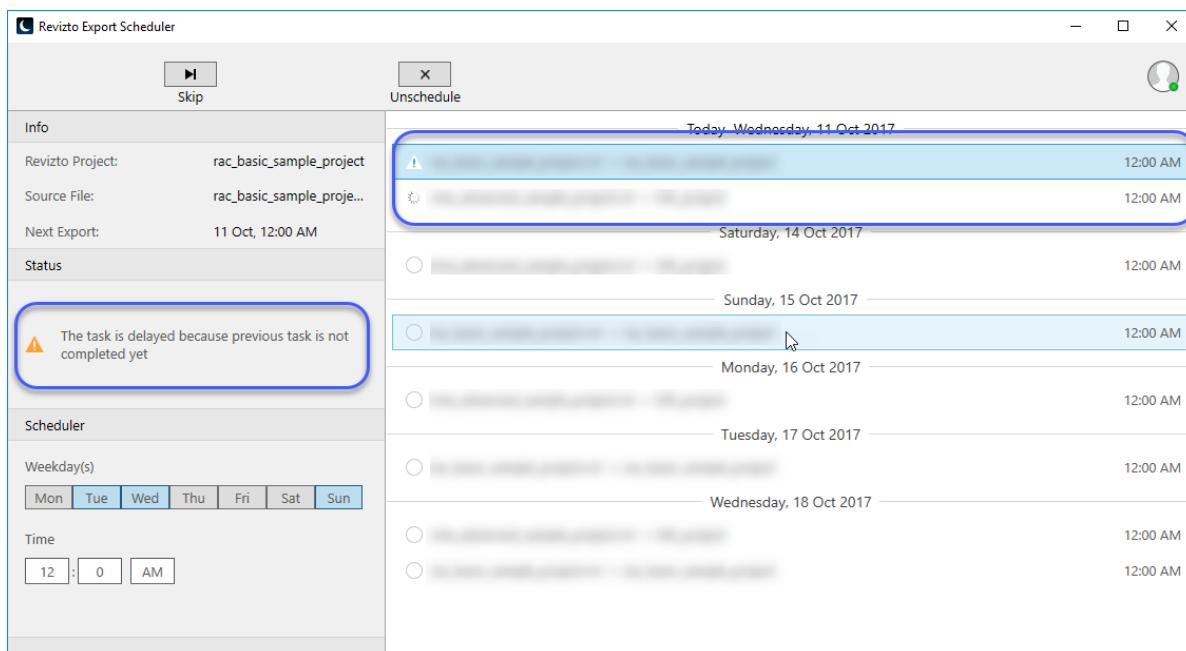
You can use the Export Scheduler to:

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

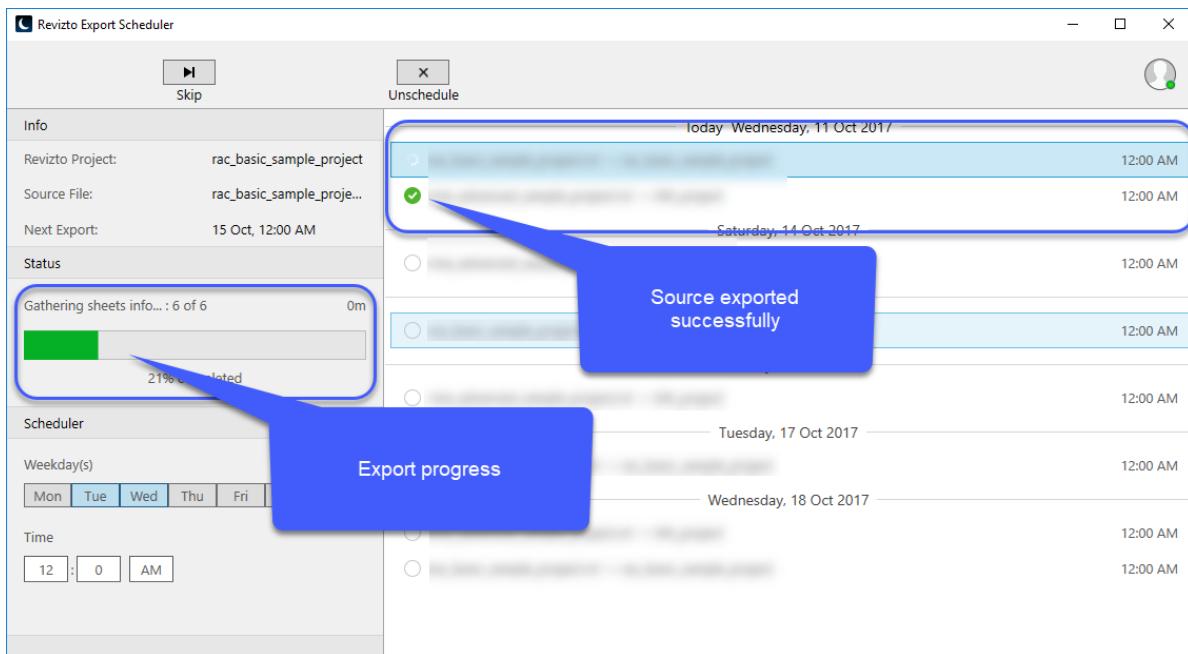
- skip the nearest export for the selected schedule (click **Skip**)
- change schedule for the selected schedule (use the **Scheduler** area)
- redefine export settings for the selected schedule (click **Settings** to access the source file and relevant Revizto plug-in)



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.



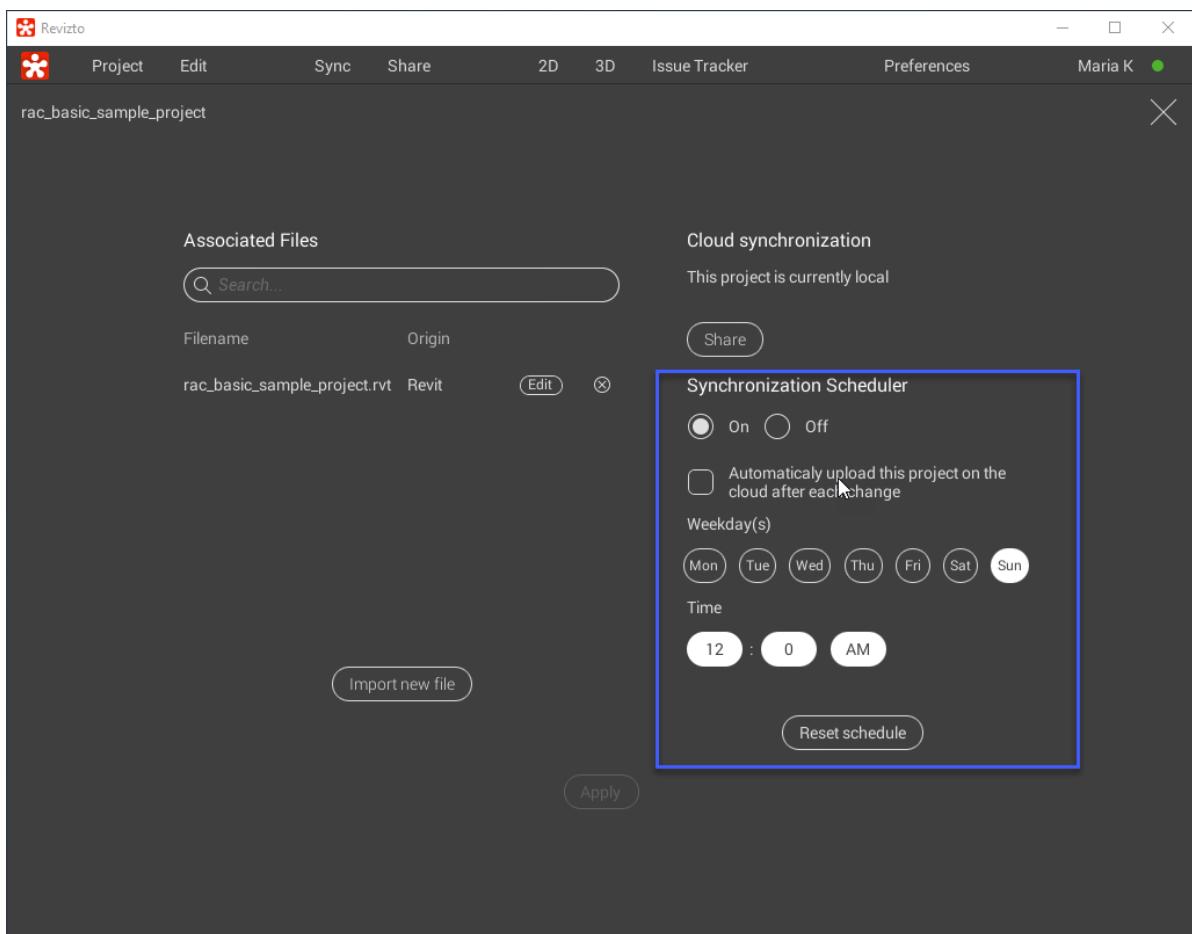
Cloud Synchronization

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](#)¹³⁴.

For more details on synchronization, see also the [Creating a Project](#)¹¹⁶ section.

For additional information on importing sheets outside any source model to a Revizto project, see the [Importing Sheets](#)¹⁵⁶ subsection.

6.1 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 Revizto as default. Note that if phases are exported correctly, you will be able to switch them in

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

Export options. Detailed

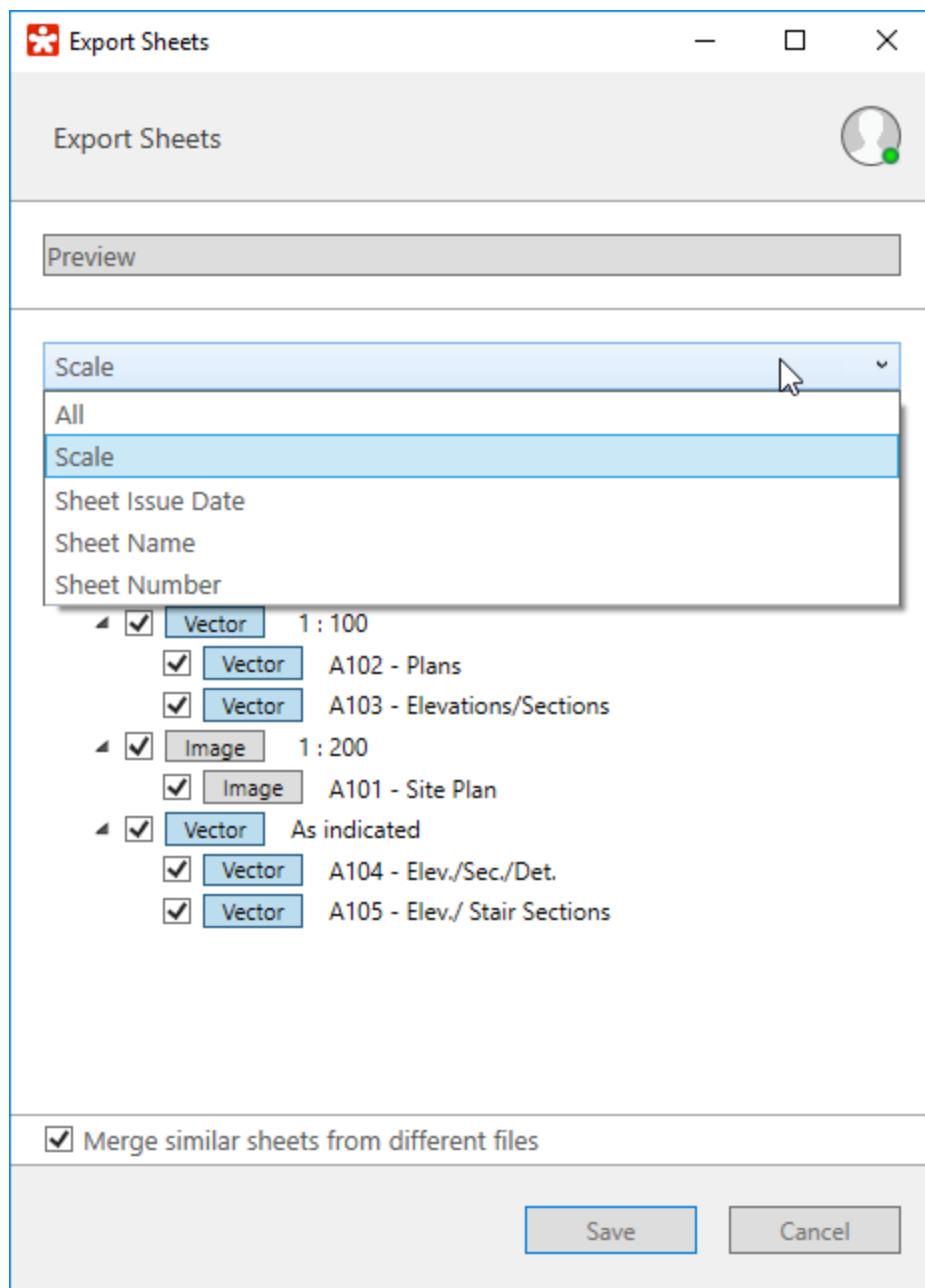
Option	Description
Export 3D model	<p>Activate this checkbox to export the 3D model. Note that if this checkbox is deactivated all options related to 3D view become unavailable.</p> <p>Before launching export make sure that your source file is open in the 3D mode (3D view is selected in Revit).</p>
Export viewpoints	<p>Activate the checkbox to export all original Revit views. Otherwise only the currently selected view (3D) will be exported and available in Revizto.</p>
Export levels	<p>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.</p>
Update materials	<p>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.</p> <p>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.</p>
Use render appearance	<p>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.</p> <p>This option does not affect any lighting/material changes in Revizto editor.</p>
Export grids	<p>Activate the checkbox to export Revit grids. Grids are created in Revit manually and can be very useful for collaborators.</p>
Export rooms	<p>Activate the checkbox to export Revit rooms and use them to navigate within the resulting Revizto model.</p>
Export phases	<p>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.</p> <p>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.</p>

Option	Description
	<p>Note: Phase export may affect performance of the Revizto lighting editor due to the large amount of layers coexisting in a scene.</p>
Export sheets	<p>Activate the checkbox to add sheets to Revizto model. Then click Select to choose which sheets have to be exported.</p> <p>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.</p> <p>For more details on sheet export, see below.</p> <p>Tip: use filters to manage the list of sheets. Note that sheets can have similar names (not IDs though).</p>

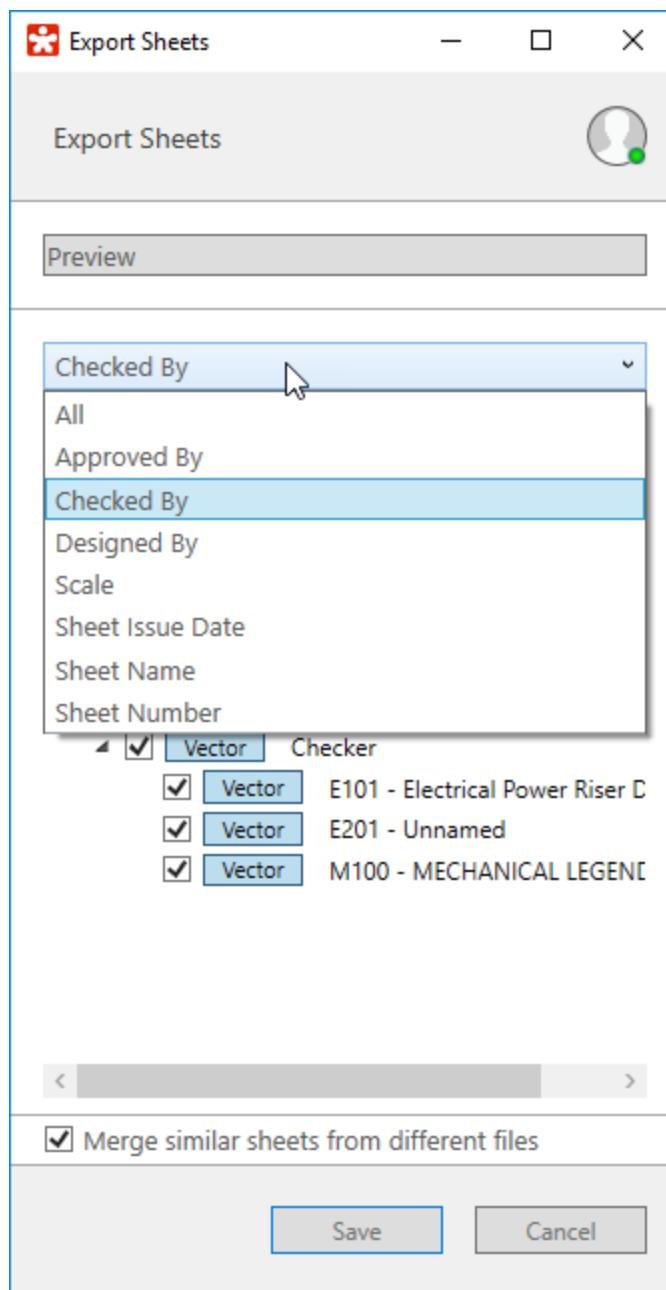
Sheet Export Particularities

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](#)^[152] 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.



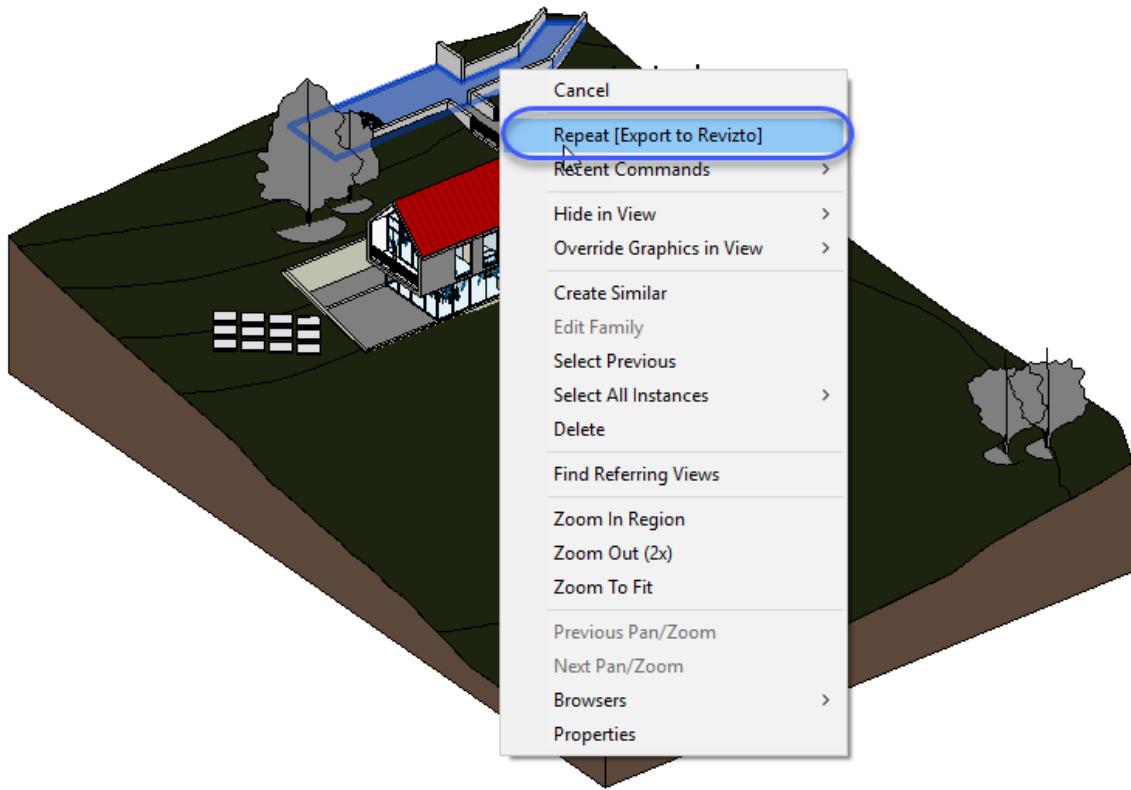
Warning: Make sure to export sheets without rotation. Otherwise Revizto will be unable to properly align them with the 3D model.

Exporting Selection

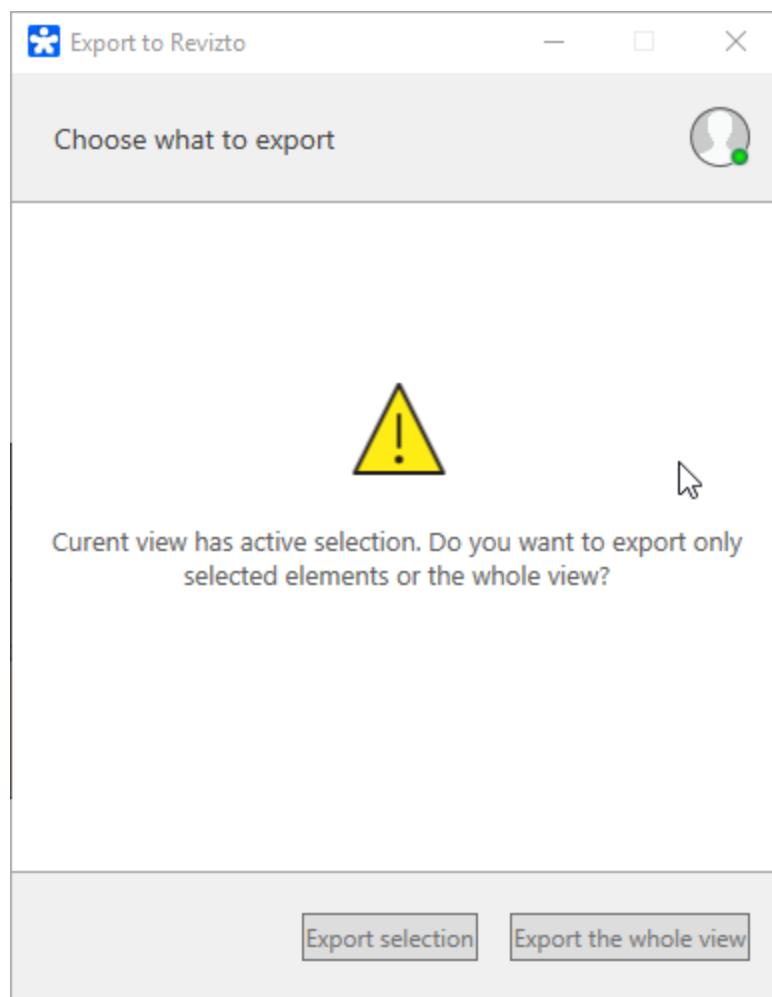
Revit allows exporting a selected item, not the whole view.

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.

6.2 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.

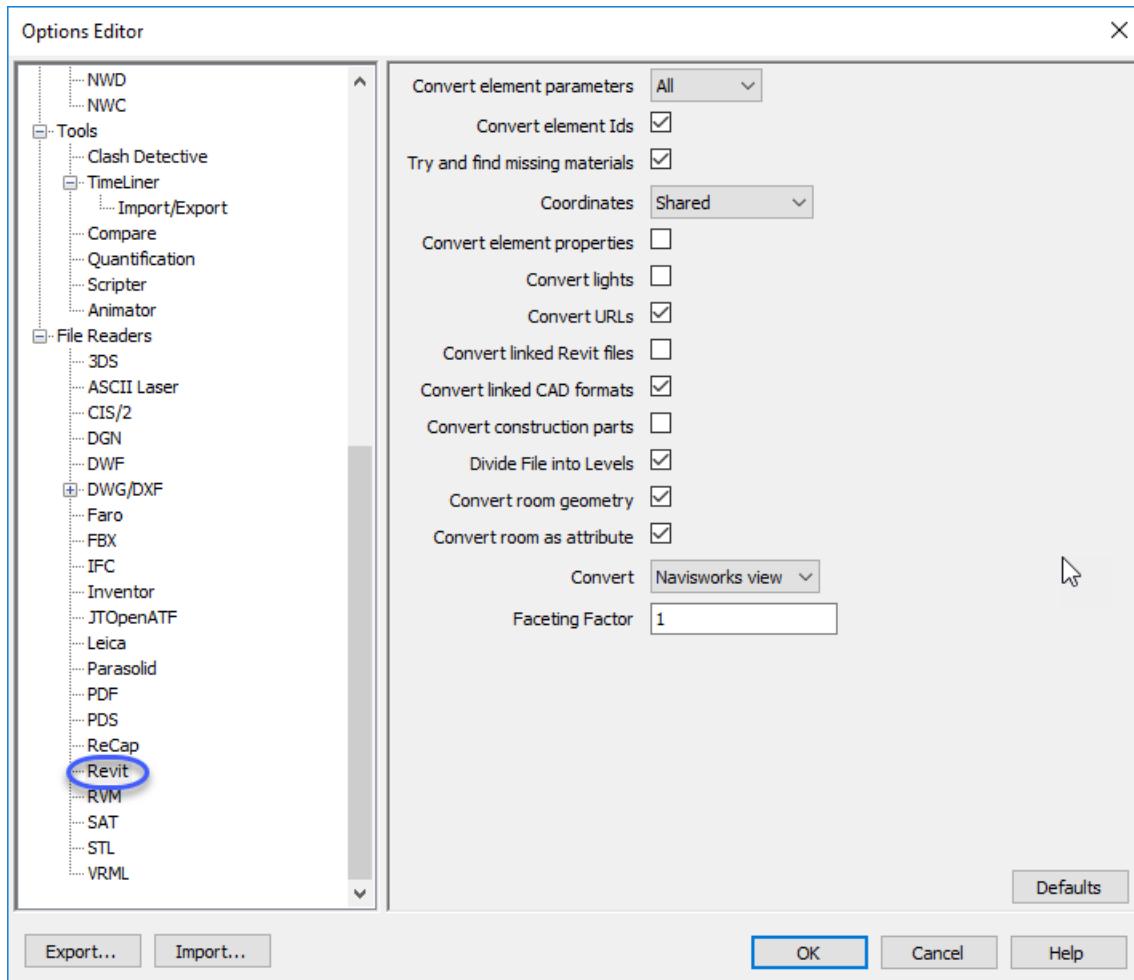
If you want to export all data from Navisworks, it is crucial to make sure that initial export from Revit to Navisworks is performed correctly. Revit uses an addin for export to Navisworks, in Navisworks there is built-in function (go to the **N** menu > click the **Options** button > expand the **File 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 have 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 Navisworks, 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](#)¹⁶⁴ 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.

Test 1

Last Run: Thursday, October 12, 2017 7:03:28 AM
Clashes - Total: 15021 (Open: 15021 Closed: 0)

	Name	Status	Clashes	New	Active	Reviewed	Approved	Resolved	
	Test 1	Done	15021	15021	0	0	0	0	
	Test 1 (central)	New	0	0	0	0	0	0	

Add Test Reset All Compact All Delete All Update All

Rules Select Results Report

New Group Assign Re-run Test

None

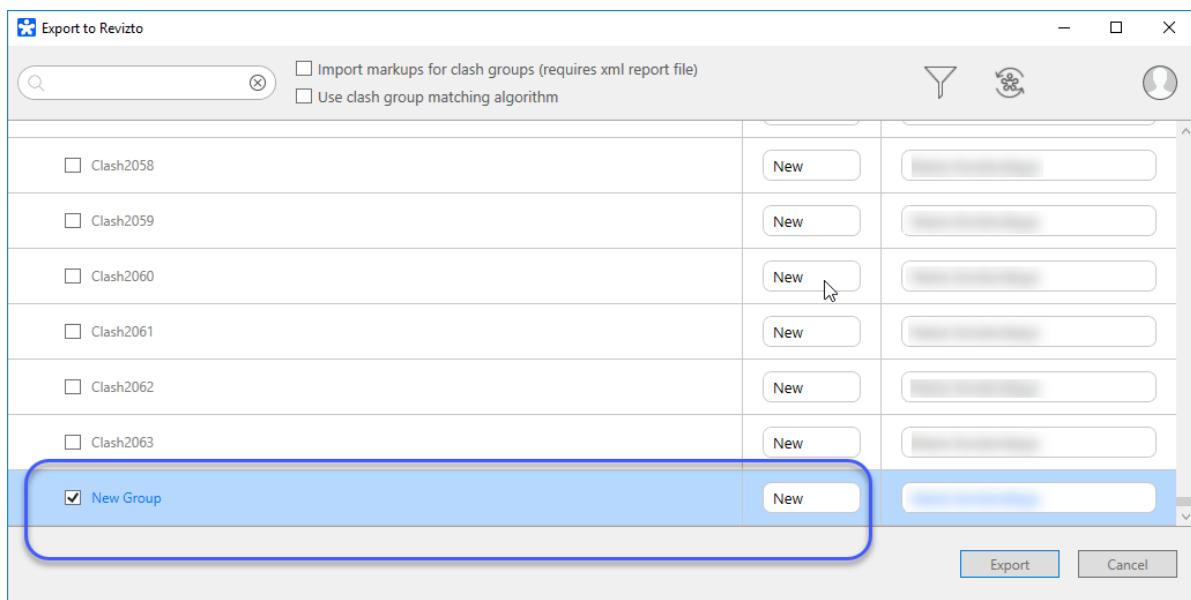
Collapse to hide test list.

Name	Approved...	Approved	Description	Assigned To	Distance
[Results101...]					0.000 m
[Results1-100 6 12-10-2017]					-2.392 m
Clash1 6 12-10-2017					-2.392 m
Clash2 6 12-10-2017					-1.820 m
Clash3 6 12-10-2017					-1.792 m
Clash4 6 12-10-2017					-1.657 m
Clash5 6 12-10-2017		Hard			-1.542 m
Clash6 6 12-10-2017					-1.434 m
Clash7 6 12-10-2017					-1.433 m
Clash8 6 12-10-2017					-1.414 m
Clash9 6 12-10-2017					-1.411 m

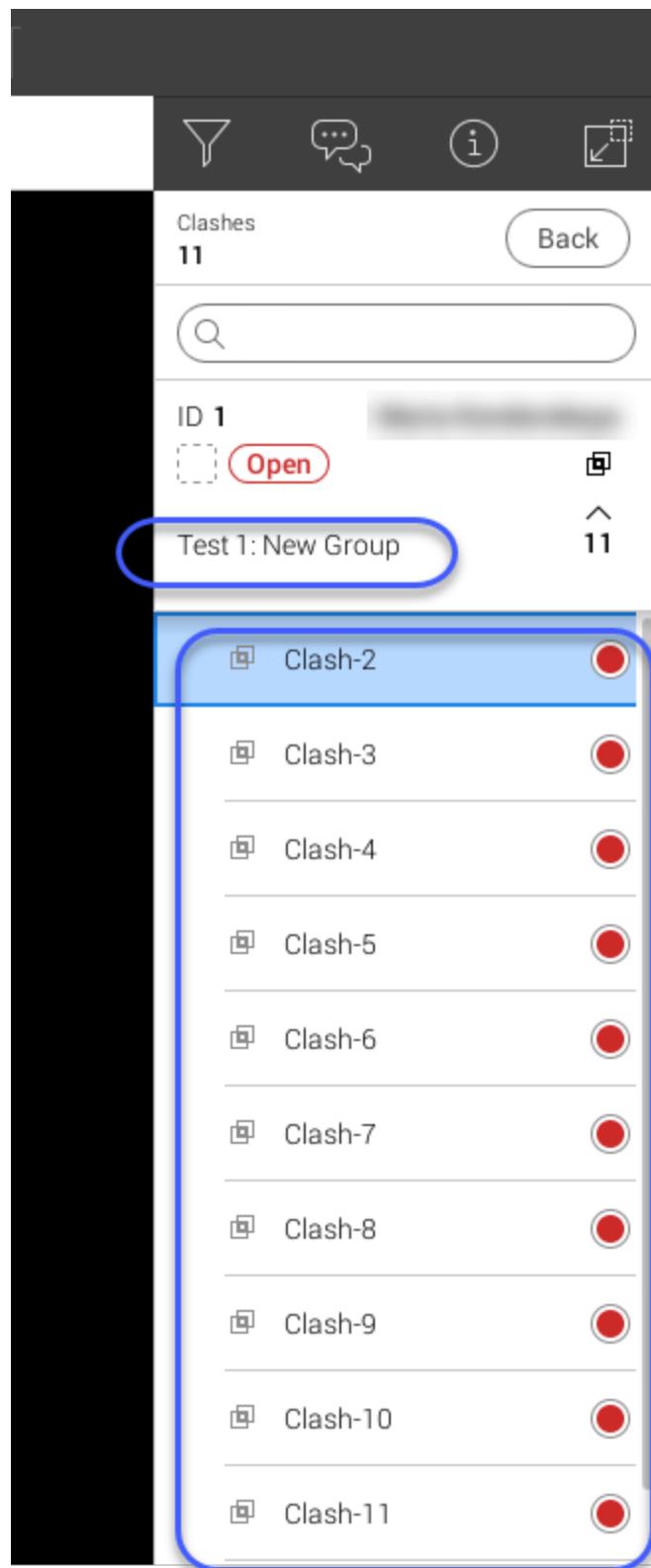
Items

The screenshot shows the Revizto software interface for managing clash detections in a Navisworks file. At the top, it displays a summary of 'Test 1' with 15021 total clashes, all of which are open. Below this is a detailed table of clashes, grouped by a main entry 'Results1-100'. Within this group, individual clashes are listed with their respective dates and severity levels (e.g., Hard). The clash 'Clash5' from the group 'Results1-100' is specifically highlighted with a blue selection border. The bottom section of the interface shows a list of items, likely related to the selected clash.

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](#) ¹²¹ in Revizto with the **Open** status. This issue can be expanded to review and manage separate clashes within it.

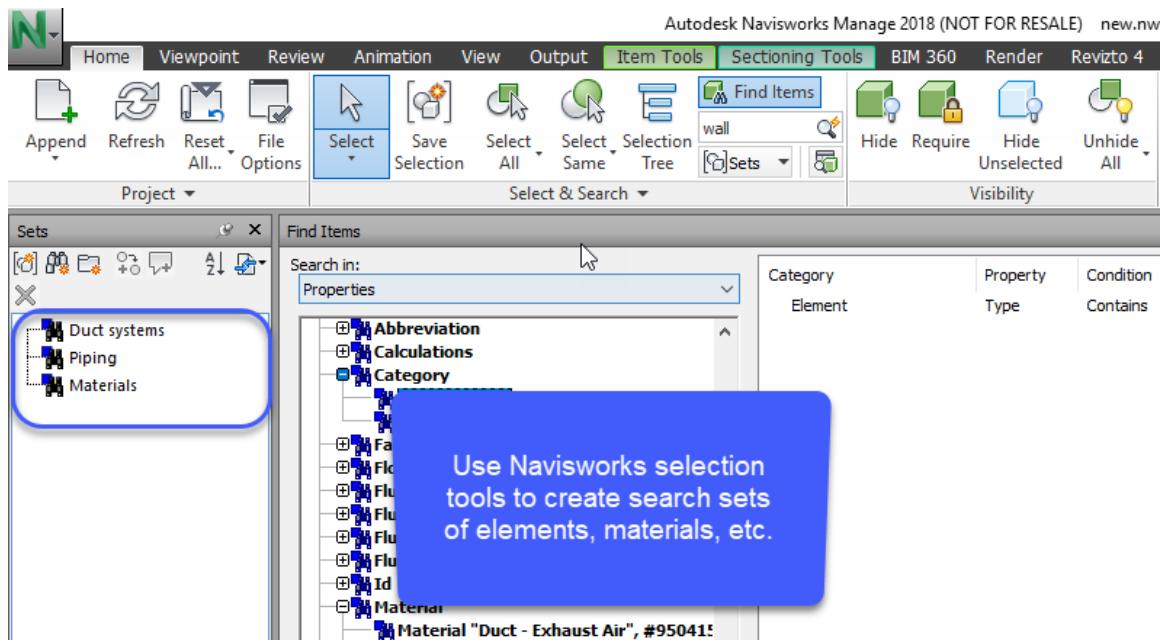


Revizto plug-in offers its own functionality (Intersect Search Sets) for building clash tests and grouping clashes for export. Note that this feature only builds clash tests for search sets. So,

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***. Your sets will appear in 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).

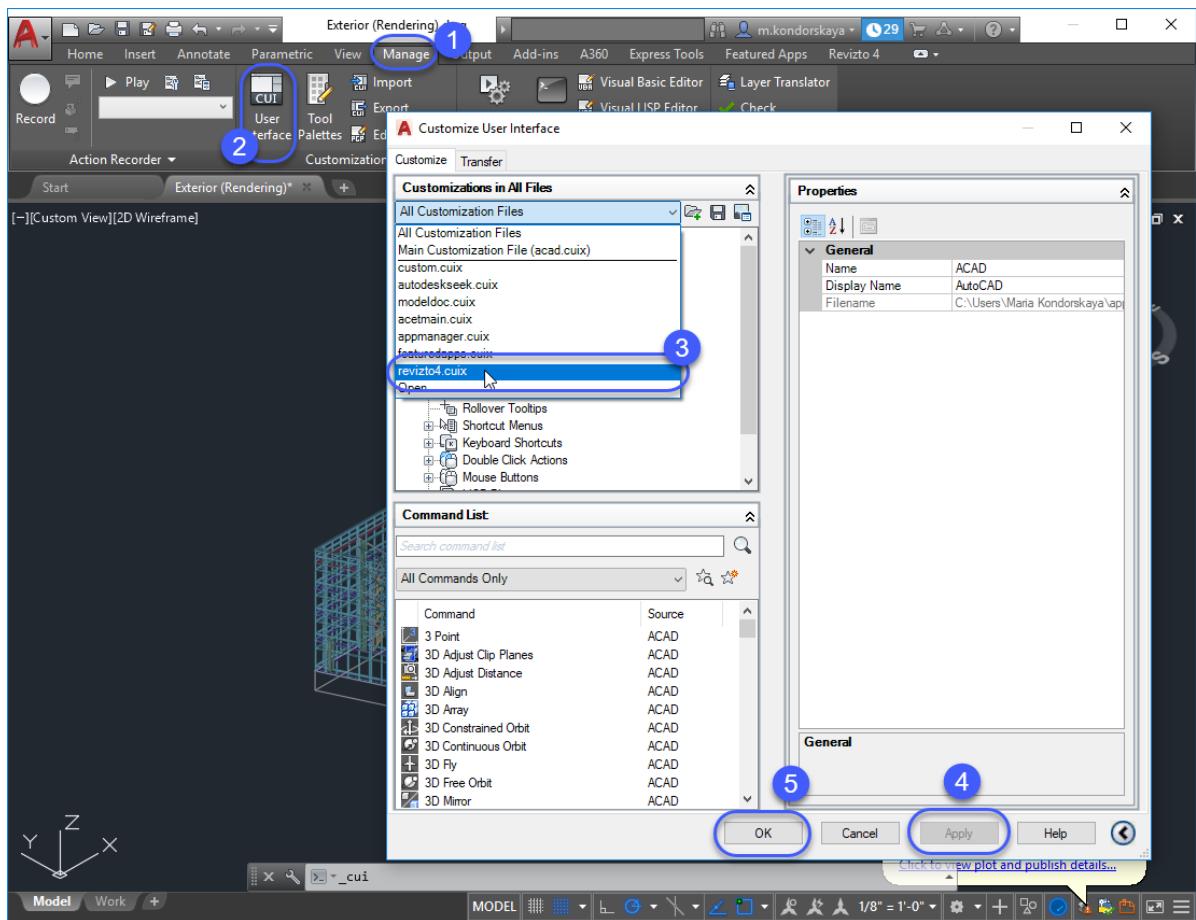
6.3 AutoCad/ArchiCad

AutoCAD

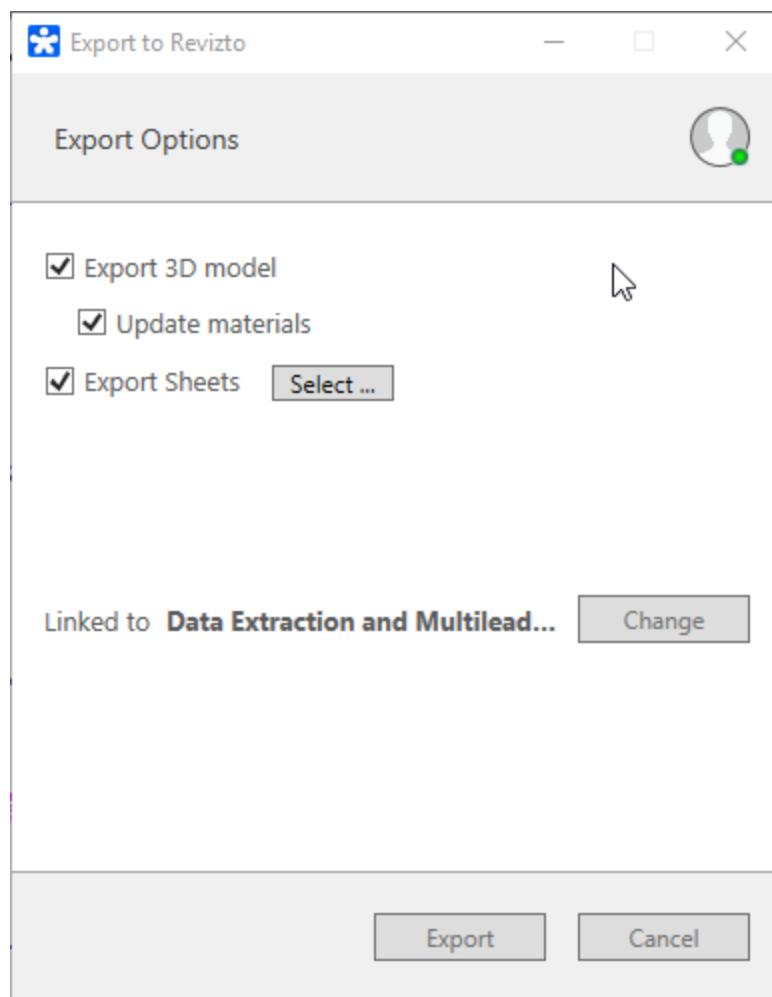
All in all, the overall export procedure is similar to the general one, but there are things to keep in mind.

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***.

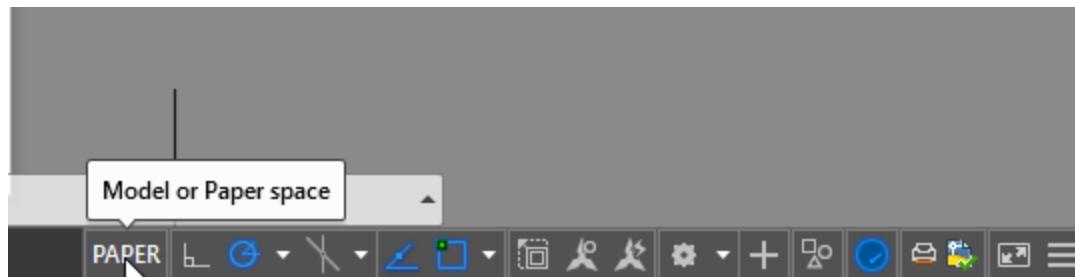


AutoCAD offers less export options than Revit or ArchiCAD.



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

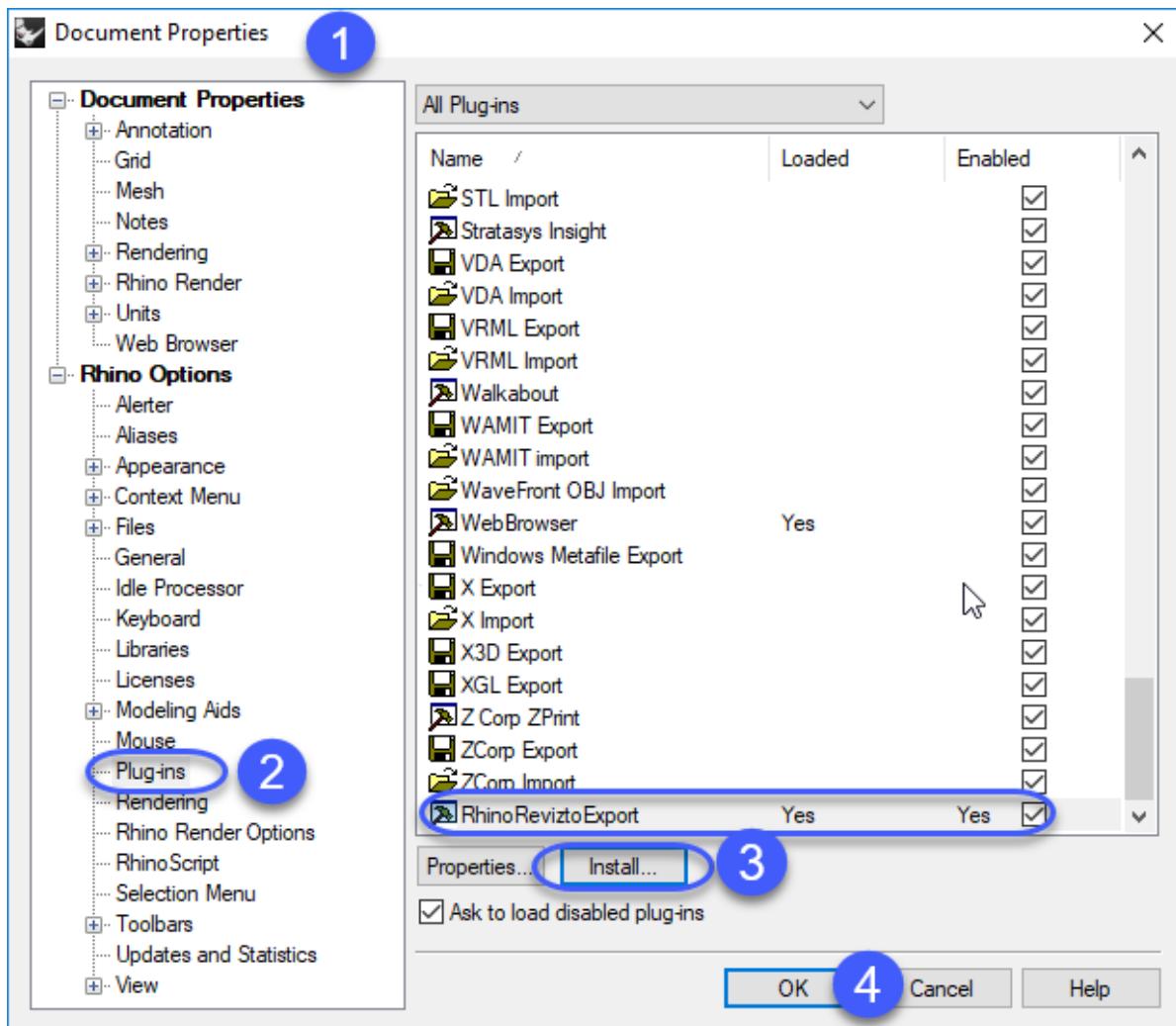
Revizto is not automatically installed in most versions of ArchiCAD (due to GUI localization particularities). Installation procedure is similar to that given for AutoCAD above.

6.4 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:

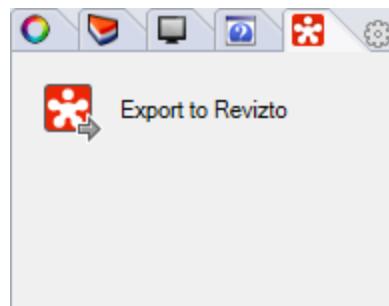
1. Launch Rhinoceros, go to the **File** menu and choose **Properties**.
2. Navigate to **Plugins** in the left navigation bar.
3. Click **Install**. The standard Windows file selection dialogue opens.
4. Go to the Revizto installation folder (C:\Program Files\Vizerra LLC\Revizto4\Bin) and choose `RhinoReviztoExport.rhp`.



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

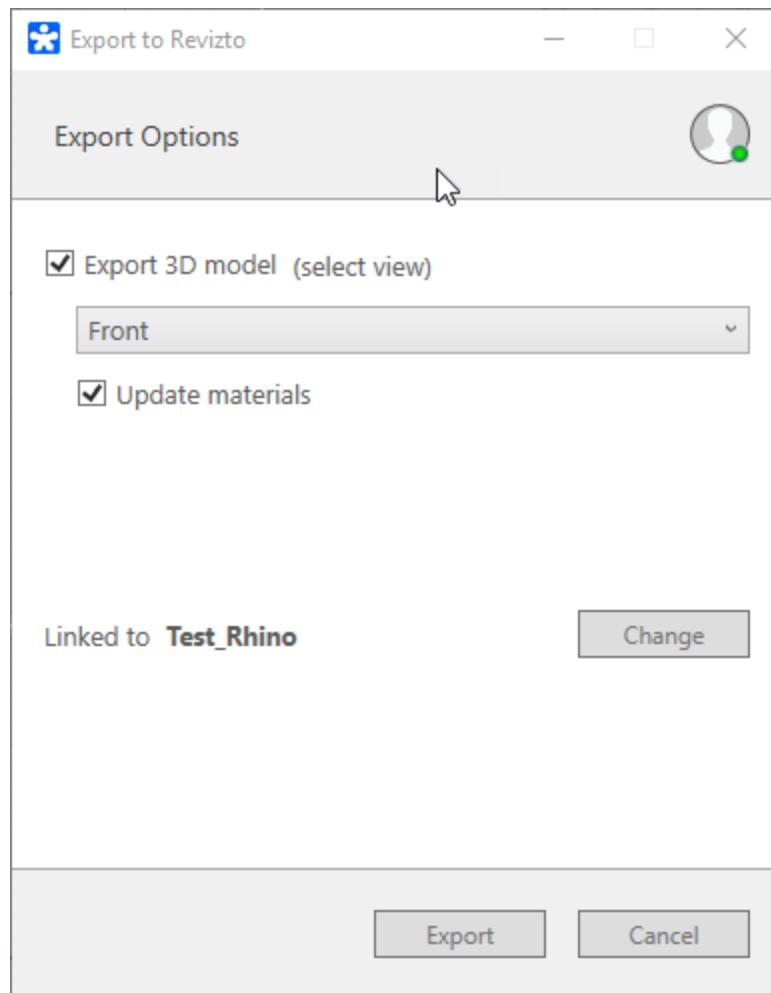


7. Choose Revizto in the list that opens. The ***Export to Revizto*** link appears in a separate bar tab.

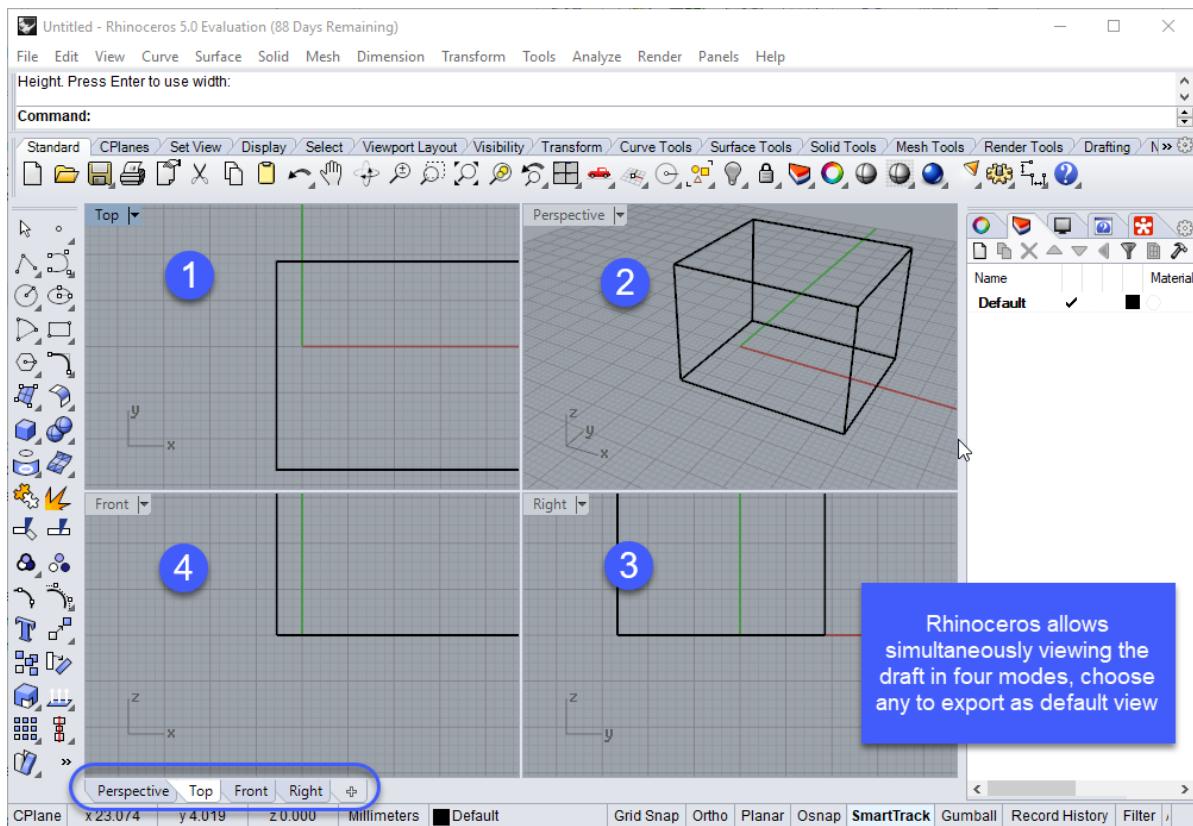


Export Procedure

The 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.

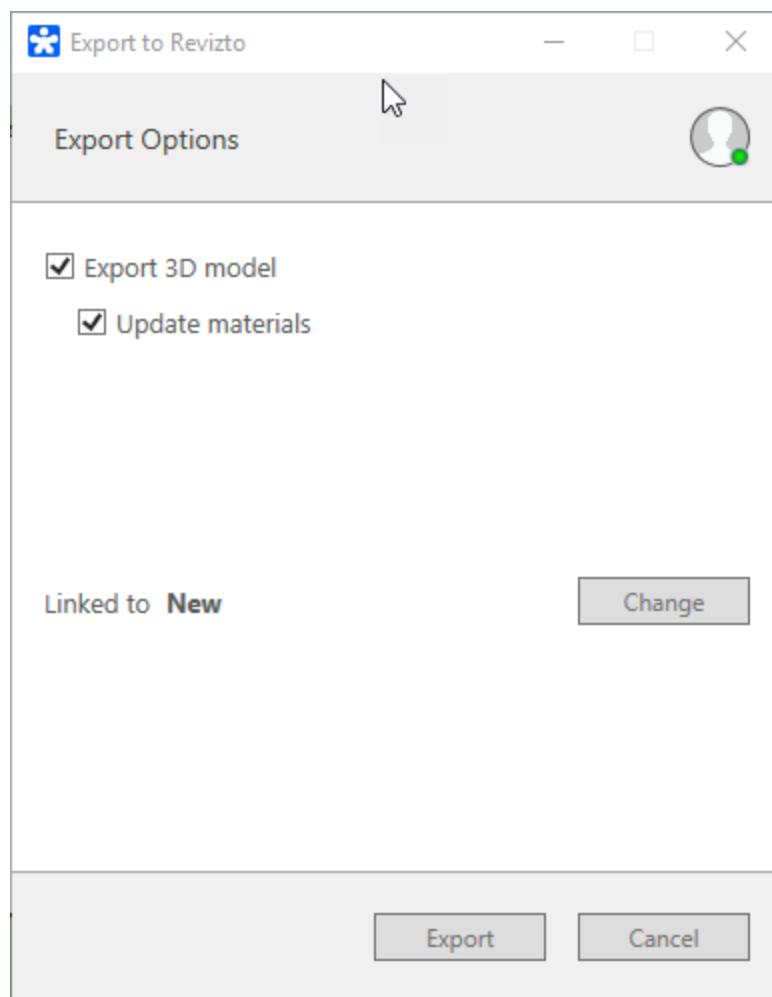


6.5 SketchUp

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.



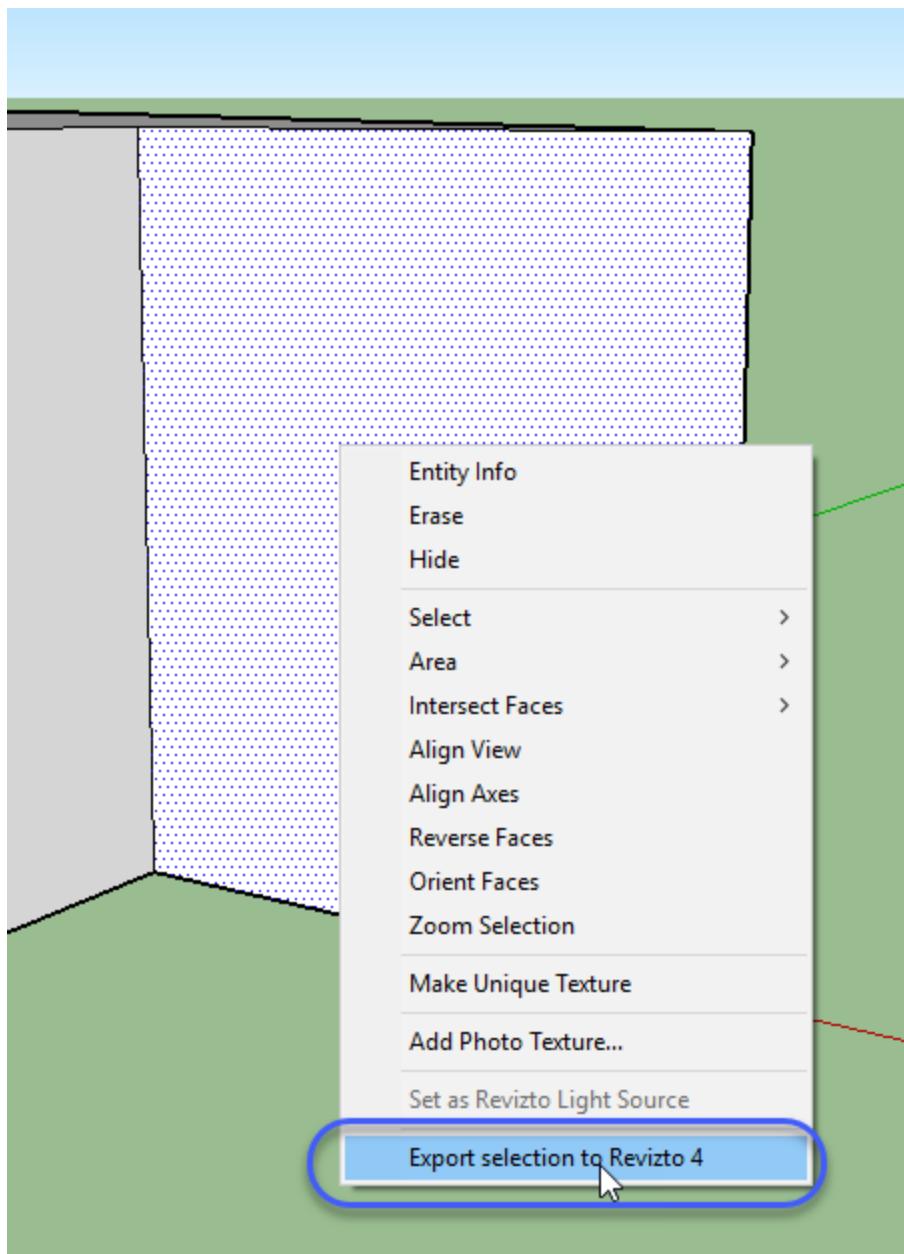
Basically, the only function of the plug-in is export which has no particularities and fits the [general procedure](#)⁸⁵. Note that SketchUp allows exporting only 3D with materials.



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

You can use all [collaboration options](#)^{D₁₂₁} 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).



6.6 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:

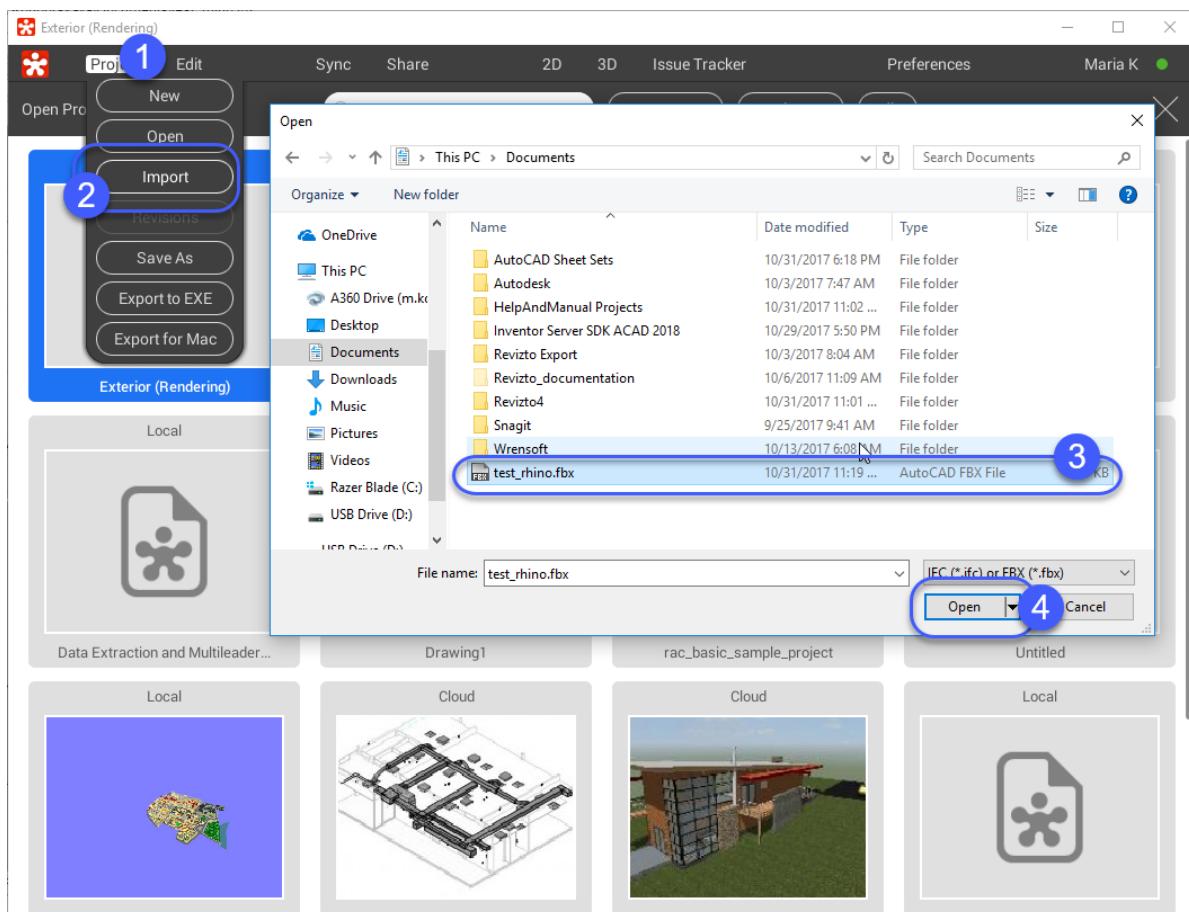
- 3ds Max
- Blender

- [Rhinoceros](#)
- 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't 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.

6.7 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](#)¹²⁸ as `.bcf` from the **Issue Tracker** view.

Project Management

Revizto-based project collaboration involves using the web workspace web-GUI (license manager), Revizto Viewer software and Revizto plugins integrated into source software.

Project collaboration is an iterative process that includes:

- Project creation
- Export of source files to create viewer scene (a new project can be created at this stage as well)
- Issue creation and management (collaboration)

Note that the flexible system of user access level allows limiting high-level functions like file export and export scheduling, to specific employees. Issue handling is available to editors of source files who get issue status updates via plugins (again the level of access to the issue workflow is editable).

7.1 Creating a Project

There are two points where a new collaboration project can be created:

- Revizto Application
- Revizto plug-in in a source program

The preferred option depends on the business process. Note that to create new projects, you need at least Content Creator [license role](#)^{D63} because each new project requires a license.

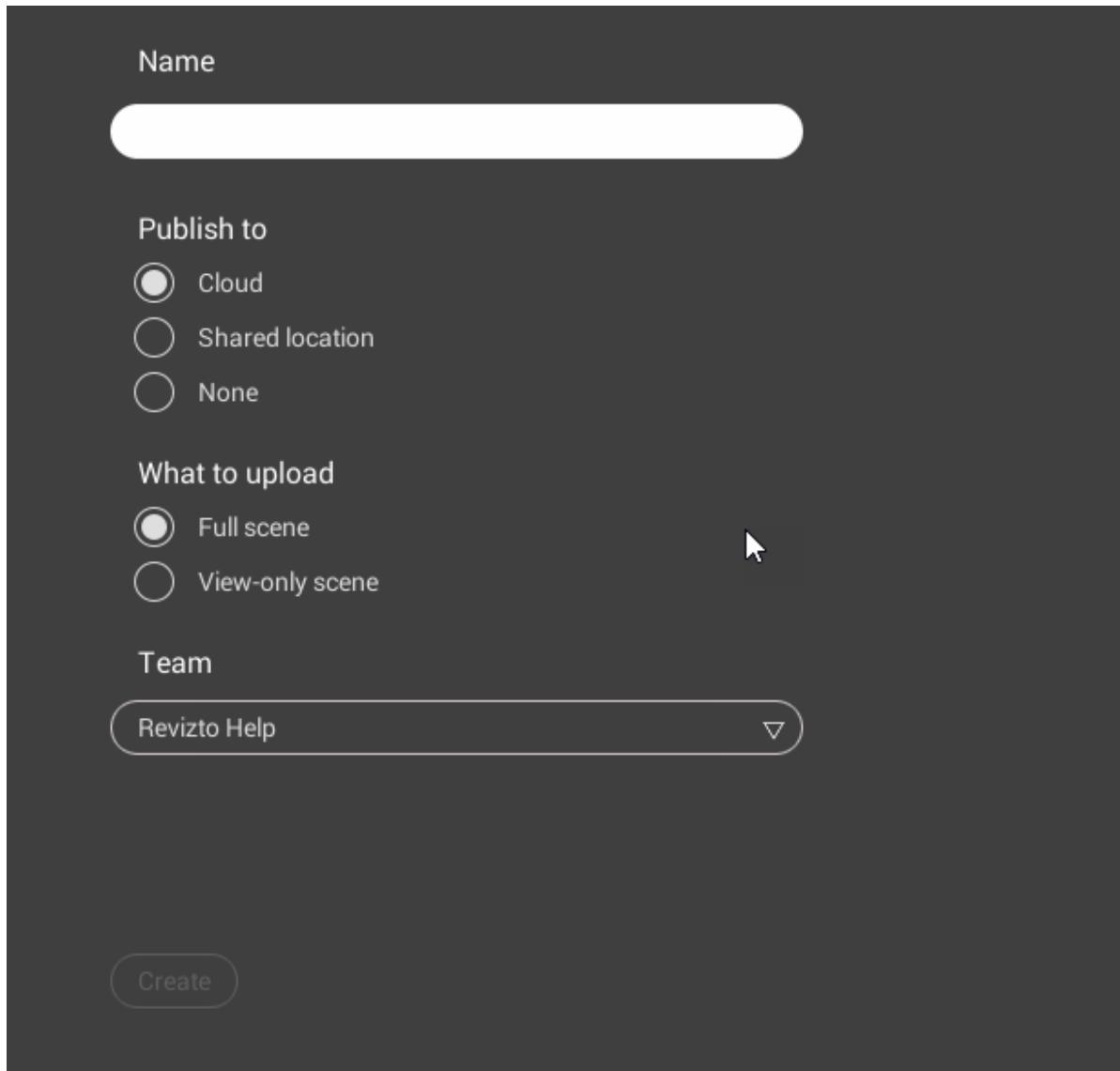
To create a new project in Revizto:

1. Go to **Project > New** in the main menu.
2. Fill in the form that opens.
 - a. Enter the project name.
 - b. Choose where the project will be published. Cloud is the preferred and recommended option. Revizto offers highly available clouds powered by Amazon servers. If cloud storage is selected, all project data (models and issues) are exported to it. Shared location implies that models are stored locally (e.g. on a server available to all team members) while user data, issues and related data is uploaded to the Cloud. None means that Revizto will only be used locally (i.e. not synchronized/published). Note that, while the option is available as some customers request it for security reasons, it is not recommend it and prevents the customer from using Revizto to its full potential. Also, even if you prefer not to share data, you will still need to connect the web once in while to register and manage the license, edit access rights, etc.

Note that as long as a project remains local, you can delete it from your device (license is not used); once shared, it has to be archived for the license to be released. Removal is unavailable.



- c. Choose whether to fully upload models (with all the background data and properties exported from the source program) or to upload view-only scenes (presentation option).
- d. Choose team. By default the current license name is selected. You can choose another team if you have several active licenses or collaborate as a guest within several teams.



3. Click the **Create** button.

At this point the project is considered created and information about it appears in the Web-GUI. A project license is used. Although you are automatically redirected to the team building view, you can stop now and get back to team creation later. Same is true about model upload. You can create an empty project and later upload content to it.

To create a new project from Revizto plug-in:

1. Launch the [export process](#)¹⁸⁵ in any source program and choose the **Create New Project** option. For more details on export, see the relevant [section of this Guide](#)¹⁸⁵.

Note that when a new project is created via a plug-in export and model creation are carried out immediately. Yet, the project remains local and not added to the license until you edit its properties.

2. Open Revizto and find your project in the project list (to find it quicker, limit your search to local projects).
3. Double-click on the project tile to open it. Click the **Sync** button at the top menu.
4. Define your sharing, publication and licensing settings in the form the opens (similar to the project creation screen described above).
5. Click the **Upload** button. Once uploaded, your project will be duly created with a license used.

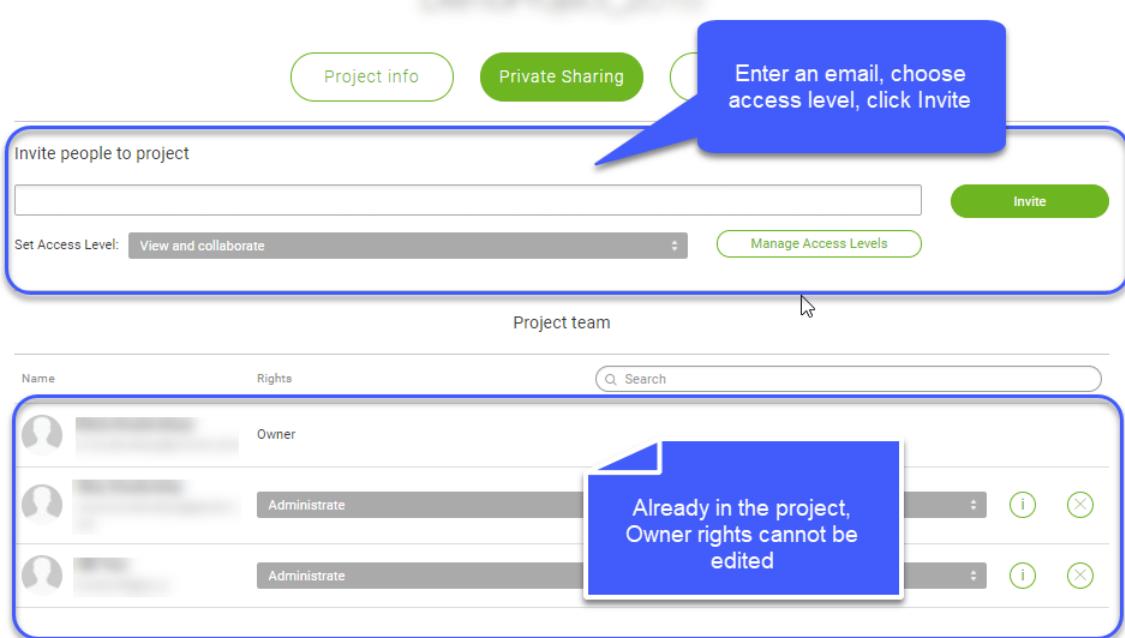
You can proceed to [team creation](#)¹¹⁸ and [collaboration](#)¹²¹ (issue management).

7.2 Creating and Managing Project Team

To invite a user to a project from the Web GUI:

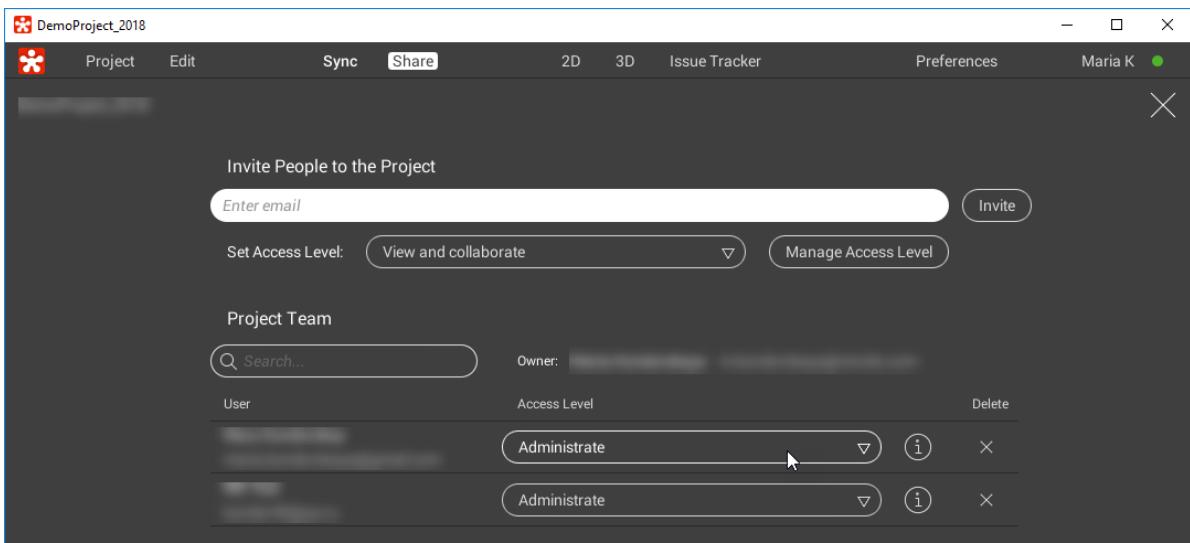
1. Log in to your workspace.
2. Navigate to the **Private Sharing** view (**Manage Projects** > choose a project).
3. Enter a valid email address of a person you want to invite. Choose an access level in the **Set Access Level** field.
4. Click the **Invite** button.

The user will then receive an invitation email from Revizto and will be able to download Revizto and join the project.



To invite a user from Revizto application:

1. Open your project in Revizto. Navigate to the **Share** menu.



2. Enter email of the person you want to invite to the project into the entry field. You can enter multiple email addresses, if you plan to give several users the same [access level](#)¹²⁰.
3. Choose project access level for the user in the **Set Access Level** list. Note that you can create custom access level, if you have administrator rights (see [Managing Project Access Rights](#)¹²⁰).
4. Click **Invite**. The invited users will receive email notifications to join the projects. Note that if new project members are not in your current Revizto team, they will automatically get Collaborator or Guest [license role](#)⁶³.

7.3 Managing Project Access Rights

By default, there are three access levels available in Revizto projects:

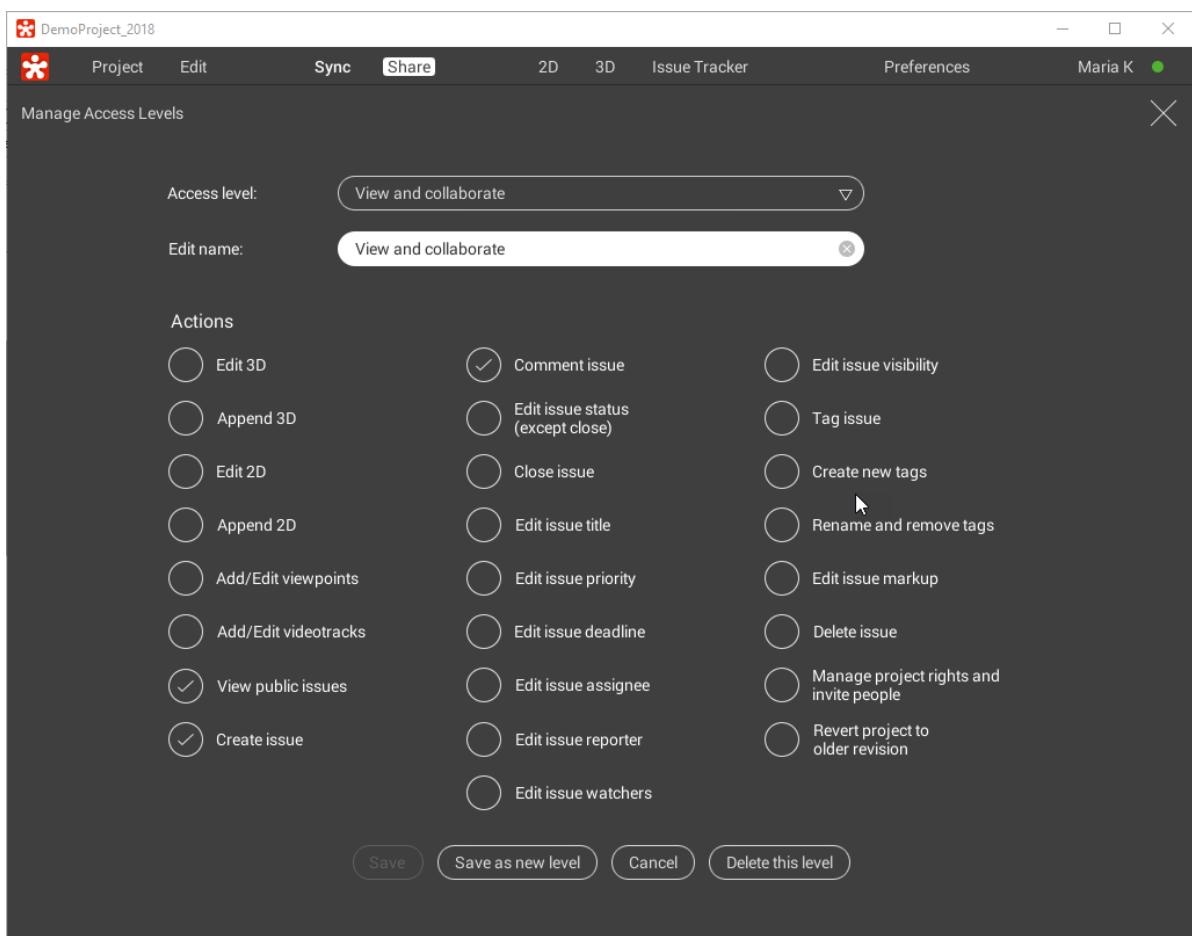
- Administrate
- Edit content and collaborate
- View and collaborate

Project owners can edit/create project access levels. Note that changes they make are only applied at the project level (unlike changes made by the [License Owner](#)^{□⁴ (the SuperAdmin) or by a license level Administrator in the Web GUI).}

Any time you invite a new user to your project, you have to assign rights to them. Note that if an invitation is issued to a person who has no team-level license, a collaborator/guest license is issued to them simultaneously.

To edit/create a new access level in Revizto application:

1. Open a project.
2. Go to the **Share** screen.
3. Click the **Manage Access** button.
4. Repeat steps 3-4 of the procedure provided for the Web GUI [access rights editor](#)^{□⁶⁹ (the interface form is similar to that in the Web GUI). Note that you have to be the project owner, or license level Administrator/SuperAdmin to edit project access rights.}



Note that even a project administrator cannot edit their own access rights.

7.4 Issue Management (Collaboration)

General Issue LifeCycle

1. Issue is created:
 - a. In Revizto (Revizto plugin in the source software) and assigned to a team member. Issue status is ***Open***.
 - b. Imported as a clash from Navisworks
2. The assignee receives an email notification (if configured). The issue automatically becomes available to the assignee in Revizto.
3. Optionally, relevant team members can be assigned as issue watchers. Issue becomes available to them for feedback and comments.
4. The assignee changes issue status to In progress and starts working on it. If needed, an open issue can be reassigned to another team member.
5. When the issue is considered resolved its status is changed to ***Resolved***.

6. The issue creator reviews the issue and closes it or changes its status back to **In Progress**. Note that a closed issue can be reopened.

Revizto uses the same color legend for issue statuses in the list and for pins in the viewer.

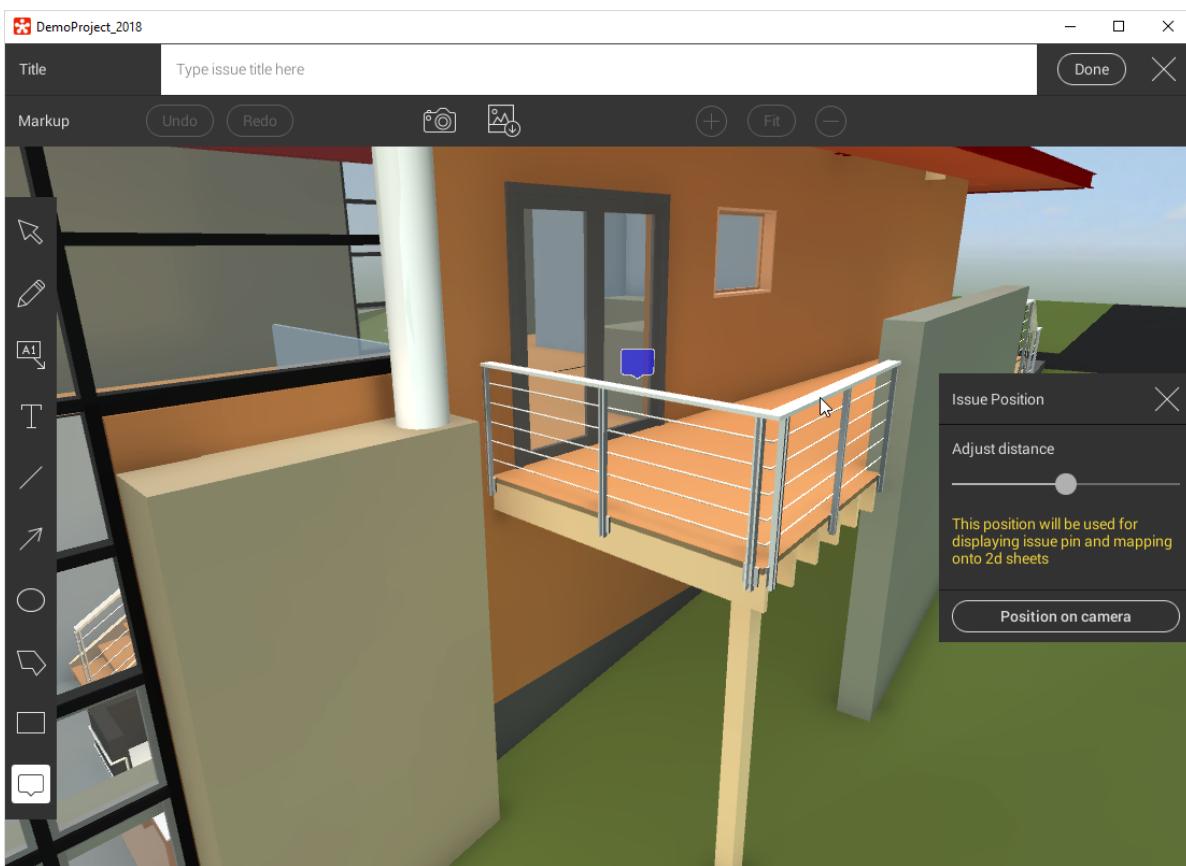
Reporting an Issue and Defining its Settings

From Revisto/Viewer

To create an issue:

1. Navigate to the place where the issue is best visible in the 2D or 3D view (select the view in the top GUI¹³⁵ menu).
2. Click the  icon in the top/bottom tool bar, if you are happy about visibility of an object that caused an issue. If you are creating an issue from 3D, you can also use available controls¹³⁹ to ensure the issue can be accurately spotted from the source tool (e.g. Revit)  and then click the  icon.

The issue editor opens. It has a transparent set of drawing tools you can use to highlight issue details. By default the Issue positioning option is selected.

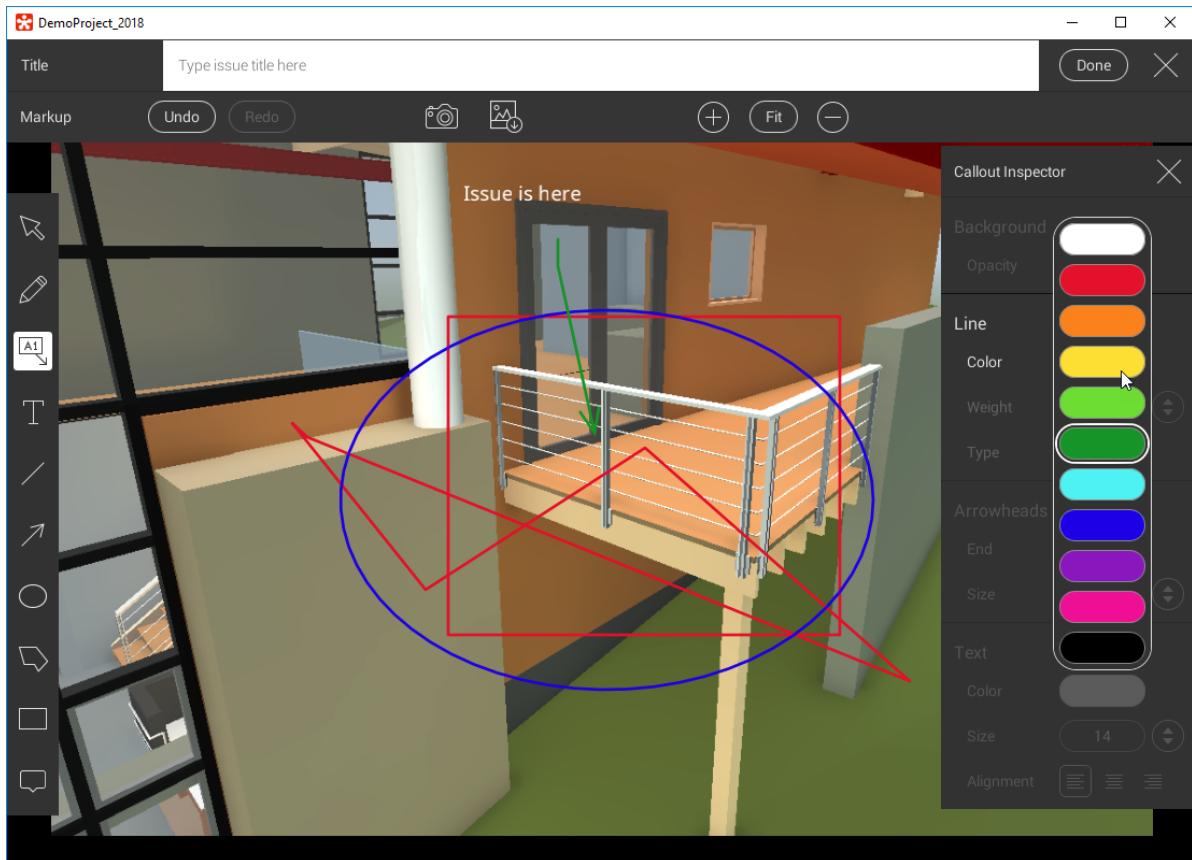


3. Make sure the issue pin (navy callout for Revizto own issues and  icon for Navisworks clashes) is positioned correctly. Use the positioning tool to adjust it. Positioning is crucial

to the way issue is displayed on 2D sheets. Choose the **Position on camera** option, to locate the issue at the camera current position.

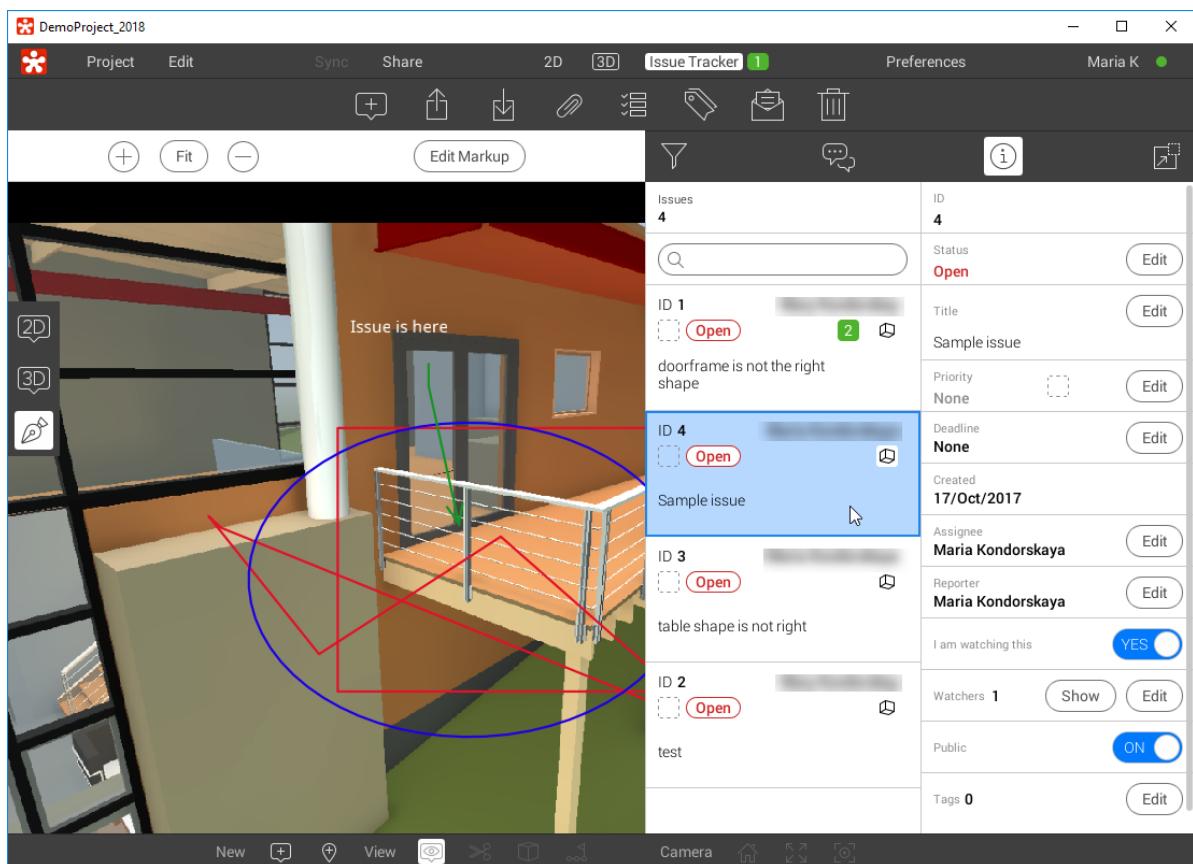
4. Use other graphical tools to highlight issue details. You can draw rectangles, circles, lines; add callouts, etc. You can also add an external image or take a screenshot.

Tip: Use GUI [hot keys](#)¹³⁷ to quicker mark up your issue.



5. Enter the issue name into the **Title** field at the top of the screen. Click **Done**.

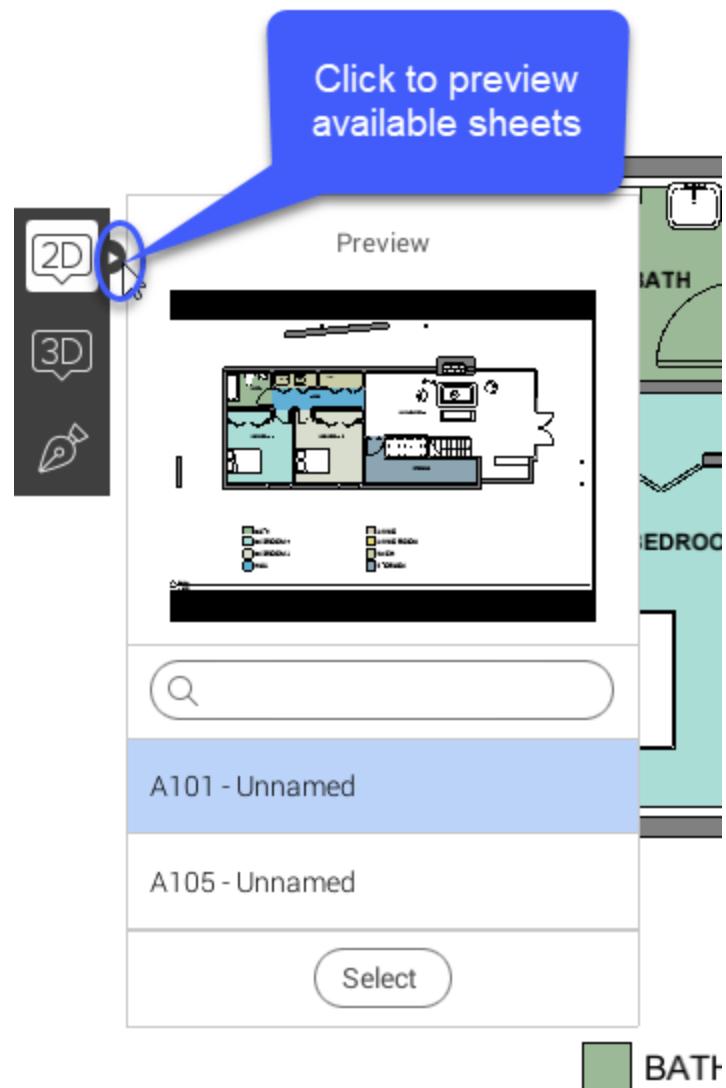
Revizto takes you to the **Issue Tracker** view. The newly created issue is selected. Its status is set to **Open**.



You can go on managing the issue content (i.e. get back to editing markup) and define the issue processing settings:

- status
- priority
- deadline
- reporter
- assignee (selected from [the project participants](#))¹¹⁸
- watchers (selected from the project participants)
- visibility: by default, issues are **Public**, that is visible to all project participants; if you turn the switch in this field off, the issue becomes restricted to the reporter, assignee and watchers.
- tags (optimize search and selection)

Note that issues created from 3D and from 2D are indicated differently in the issue list. You can open any 3D issue in 2D (use the view switch on the left) and vice versa. When 2D issue view is selected, Revizto offers all sheets where the issue location is shown. Yet, for issues initially created in 2D the original sheet comes first in the list. for 3D issues Revizto sorts available 2D sheets according to their similarity to the 3D viewpoint where the issue was created.



When you browse issues in 2D, the active issue is highlighted in blue, other are highlighted in red. To switch from issue to issue, click on a pin.

For more details on Revizto navigation options, available objects, view modes and tools, refer to the [Model Elements and Controls](#)¹³⁹ section and to the [Using 3D controls to create an Issue Example](#)¹⁴⁷ sub-section.

Reporting an Issue from a Plug-in

There is no issue reporting functionality in Revizto plug-ins. To report an issue, open the required source file and click the **New Issue** button in Revizto plug-in. It launches the relevant Revizto model in the application and allows [creating an issue](#)¹²² from there.

Issue Processing

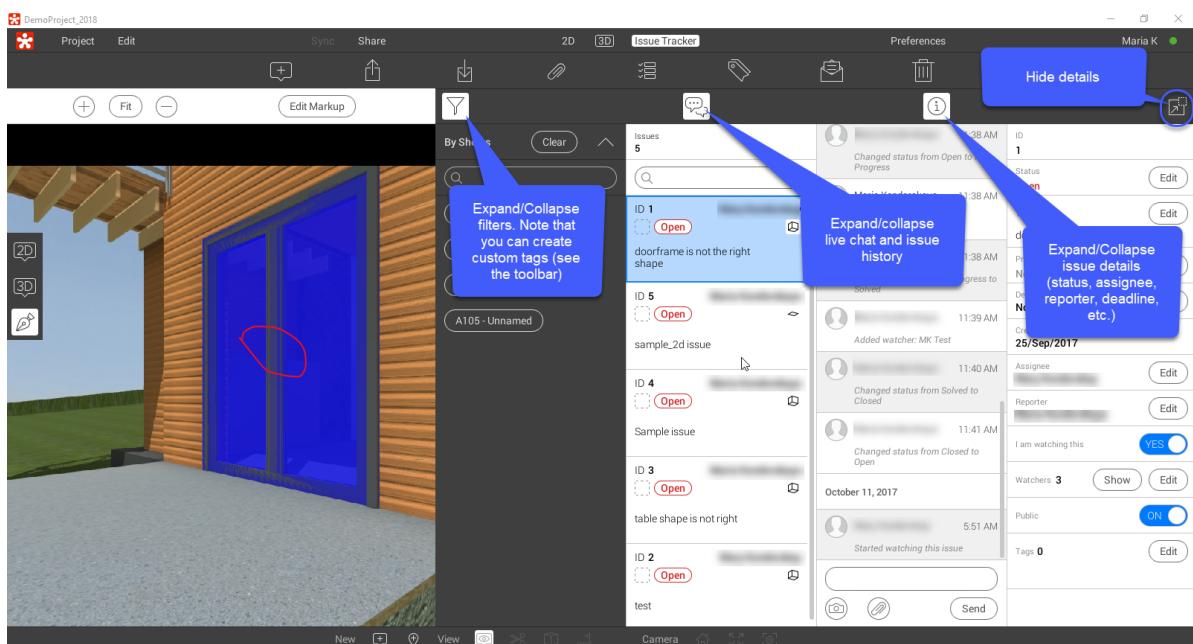
In Revizto

Team members can review and manage issues available to them in the **Issue Tracker** mode (as a rule, team members get [notifications](#)¹⁸² about changes in issues they reported, assigned to them or watched by them).

In general, the **Issue Tracker** offers the following options:

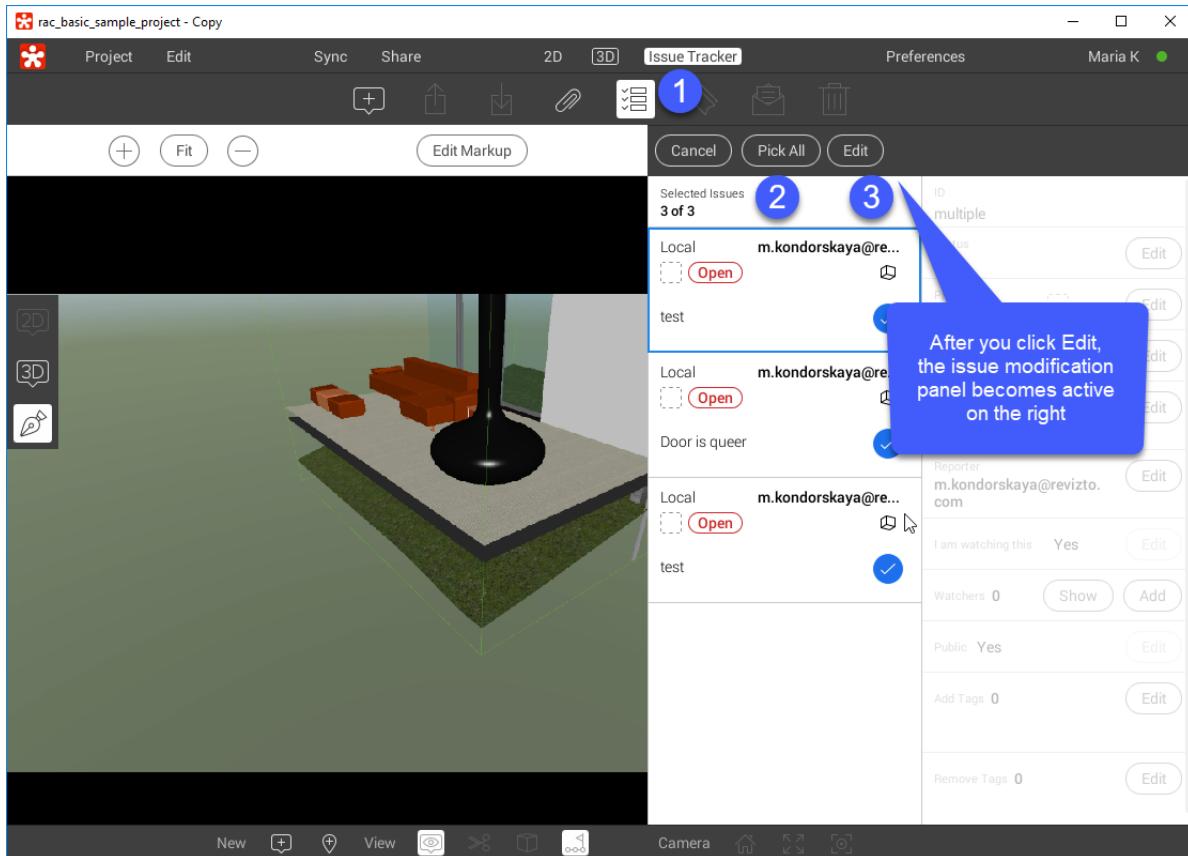
- expand/collapse issue details to view and edit them
- expand/collapse issue chat to collaborate in realtime with the team
- expand/collapse filter panel to browse across issues. Note that you can create your own tags to filter issues. Filtering by sheet is available to both issues created from 3D and 2D; if the issue location is on the sheet, filter considers it a match
- remove one or several issues
- [export/import issues](#)¹²⁸
- attach files to issues (in the chat dialogue)
- use web-camera in the chat dialogue
- access the [reporting feature of the web-GUI](#)¹²⁹ (under condition that the project is shared via the Cloud) ( icon)

Availability of specific features depends on [project level rights](#)¹²⁰ of the current user.



Tip: To simultaneously edit properties of several issues, use the multiedit icon (). It displays the whole list of project issues allowing you to select several of them and edit their

properties. The features may be useful, if, for example, you want assign several issues to the same person.



In Source Plug-ins

There is no issue tracking functionality in Revizto plug-ins. To access a current issue and take part in collaboration, open the required source file and click the **Track issue** plug-in button. It launches the relevant Revizto model in the application and shows issues available to the current user.

Tip: When you view issues in Revizto, keep the source software (Revit, Navisworks, etc.) open with the **Issue Tracker** plugin button pressed. Then, by selecting an issue in Revizto you will be able to see the relevant part of the structure both in Revizto model and in the source software. Note that you can have only one instance of source software simultaneously linked to Revizto.

Clashes

Clashes imported from Navisworks are available in the Issue Tracker. They have specific pins (



). Note that each clash-issue is a group that may contain multiple original clashes.

Navisworks statuses do not directly correspond to Revizto issue statuses. The mapping rules are given below.

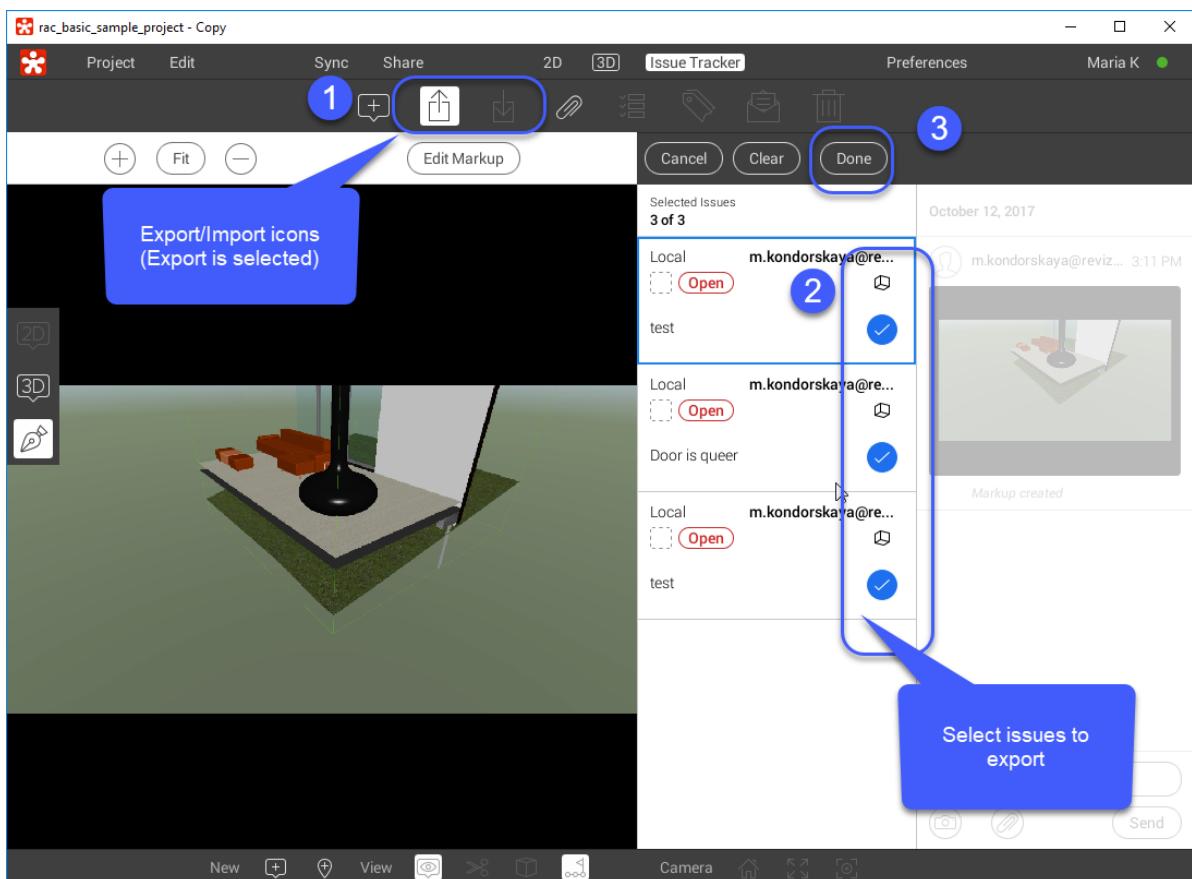
Navisworks Status	Revizto Status
-------------------	----------------

ACTIVE	Open, if non-existent. Don't change, if exists.
APPROVED	Open, if non-existent. Don't change, if exists.
NEW	Open
RESOLVED	Closed, if exists. Don't create if non-existent
REVIEWED	Closed

Attention: Issue content (attachments, etc.) is not automatically updated with the project at synchronization. Please, [load full project cache](#)^{D134} to make sure you are up to date.

Issue Export/Import Formats

You can export/import Revizto issues (see the procedure in the figure below).



By default, issues are exported as `.vimmrk` files, but you can also choose BCF (`.bcfzip`) and Excel (`.xlsx`). Same is true for issue import options.

7.5 Collaborator Reports

Each user can create issue reports for projects they are invited to. Reports are created in the **Dashboard** view of the web GUI ([My Projects > Project page](#)). This view allows building customized issue reports at the project level, scheduling generation and distribution time for each.



You can also navigate to this page from the **Issue Tracker** (✉ icon).

To create a new report:

1. Click the **Create New Report** button.
2. Define the report settings. Make sure to correctly define reporters, assignees, tags, etc.

A screenshot of a web-based configuration form for creating a new report. The form is divided into several sections:

- Name:** A text input field containing the value "New".
- Time Period:** A dropdown menu set to "Previous Week".
- Tag:** A section with two radio buttons: "All" (selected) and "Any". Below this is a text input field.
- Assignee:** A section with a text input field and a small cursor icon pointing towards it.
- Reporter:** A section with a text input field.

3. Save your settings. The system immediately generates the report and displays it on the view.

© 2017 Revizto

The screenshot shows the Revizto software interface. At the top, there's a navigation bar with links for 'Manage Users', 'License', 'Manage Projects', 'Support', and a language switch ('En'). On the far right is a user profile icon.

The main area displays a report titled 'Test_report' for the date range 'September 25, 2017 - September 25, 2017'. A blue callout bubble says: 'You can hide report details, delete your reports'.

Below the title, there are two sections: 'Issue chart' and 'Issues'.

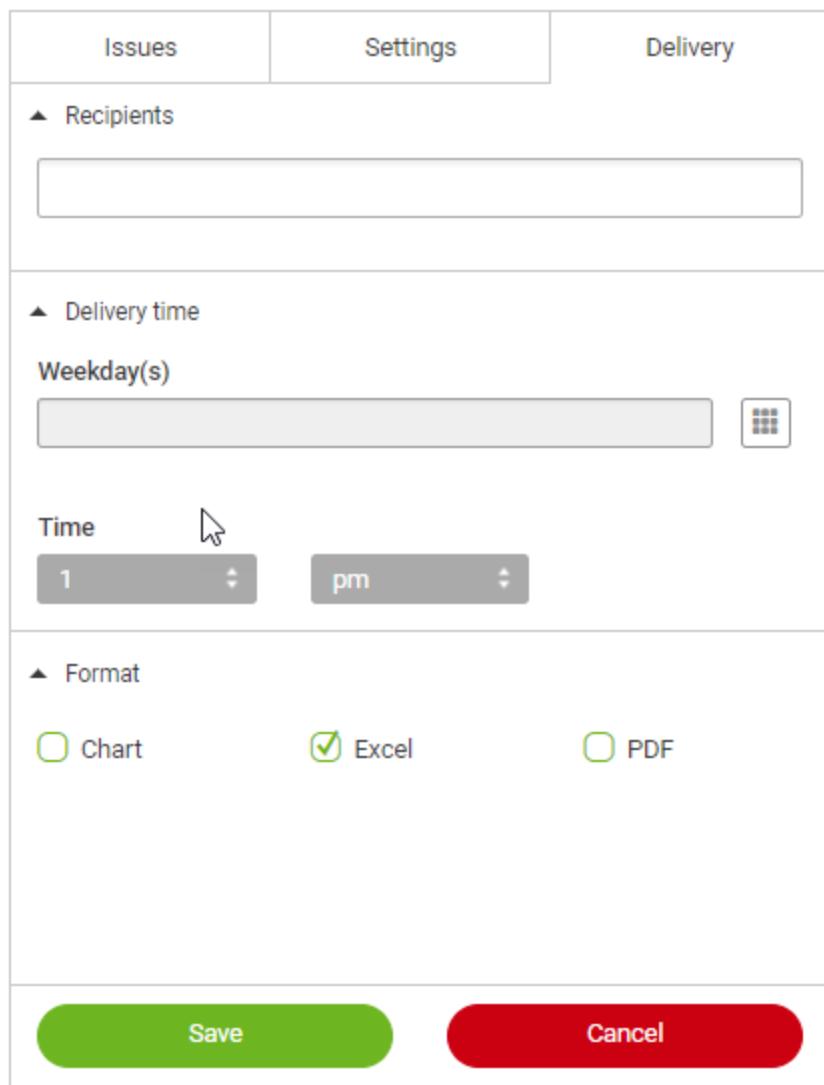
The 'Issue chart' section shows a single red vertical bar representing one issue. It has a value of '1' at both ends and '100%' written below it. Below the bar is a small red circle with the number '0'.

The 'Issues' section shows a table with one row:

Issues	Settings	Delivery
All active issues as of September 25, 2017 including Closed since September 25, 2017 ID 1 Open doorframe is not the right shape		1

A blue callout bubble next to the 'Issues' table says: 'Review issue info, edit report settings, define delivery parameters to share your report'.

4. If you want to email your report to another person, go to the **Delivery** tab of the report view. You can either launch a one-time immediate delivery or schedule regular mailings. Note that you can send reports to people outside the project and workspace. You can also define multiple delivery format/s. Note that all fields are mandatory.



Report recipients get links to documents generated in the requested format. If there are no issues matching the report settings for the selected period, reports (and links) are not generated, the recipient gets a relevant notification.

By default recipients are notified if they are scheduled to get reports.

Note on Timestamps

All timestamps in reports are based on the server time. For convenience standard timezone abbreviations are used (e.g. CEST). These abbreviations are used for convenience, yet each corresponds to a specific location. Here are locations used in Revizto timestamps.

Region	Local time used for timestamps
Usa	America/Chicago
Europe	Europe/Berlin

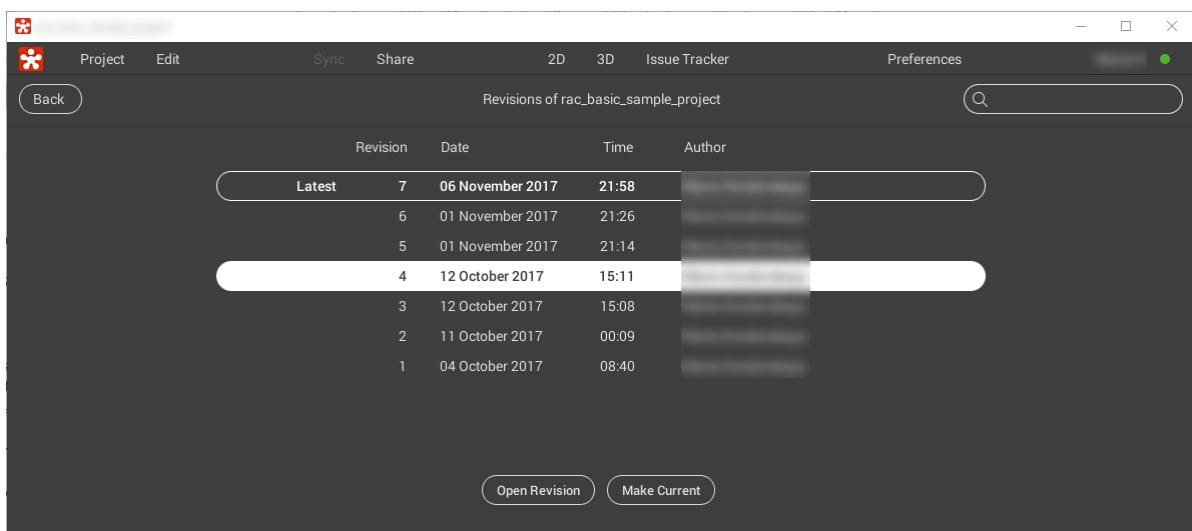
Brazil	America/Sao_Paulo
Singapore	Asia/Singapore
Australia	Australia/Darwin

7.6 Project Versioning

Users with [project access rights](#)¹²⁰ (by default, Administrate and Edit content and collaborate right sets) that include reverting it to older versions have access to the relevant function.

To revert a project to an older version:

1. In the main menu choose **Project > Revisions**. Revizto navigates to the list of revisions for the open project (name of the current project is displayed in the top left corner of the application screen). By default the latest (current) version is selected and highlighted. The application suggests opening it. You can review the list of previous versions and open any of them.
2. Select the version you want to review/restore in the list.
3. Click the **Open Revision** button at the bottom of the screen to the default view. The selected version is loaded in the view mode (i.e. you can use all 3D and 2D features, but cannot create issues, synchronize or share the project; options are similar to those available to owners of archived projects).
4. Click the **Make Current** button at the bottom of the screen to revert the project to the selected version.



Basically, in this case, an older version is shared as if it was new and replaces the current one. We expect no conflicts between processed working copies of the project.

7.7 Copying a Project

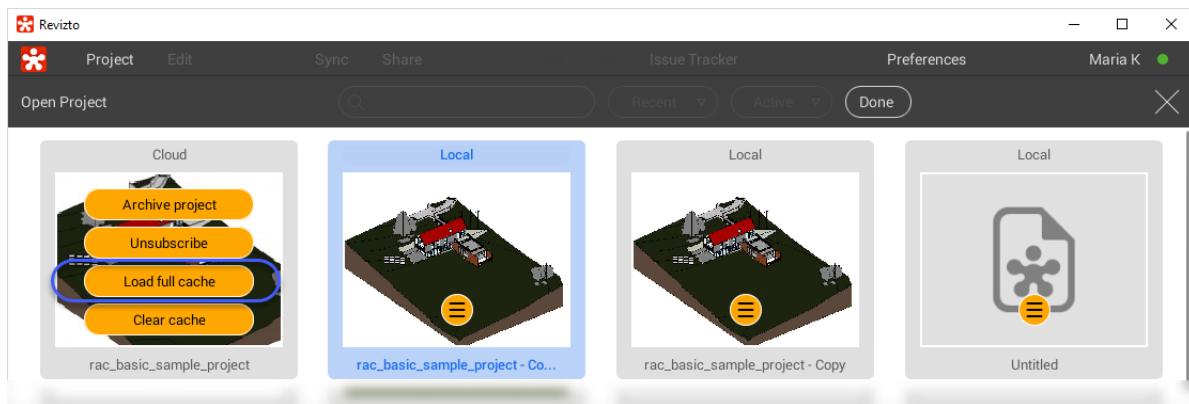
To make an identical copy of your project, use the **Save as** item of the **Project** menu. Revizto creates a local copy of the project that contains all its settings and issues, but it remains local with its creator as the only member. You will not be able to create a team before sharing the project. Hence no project/member license is used until you share the copy.

7.8 Offline Use

If you need to work offline on the shared project, or to make sure all sheets and issues are up to date, download full cache from the Cloud/Shared location.

To download full cache:

1. In the main menu open Project > Open. Then Click on the **Edit** button in the toolbar.
2. Click the  icon on the tile of the project you want to work with offline.
3. Choose the **Load full cache** option. Revizto displays the task progress and then reverts to the project list (edit mode closed).



Revizto Application

Revizto is a collaboration tool that ensures interaction between several software applications. Revizto application is only one of them, therefore this guide mainly focuses on the process, not on describing specific GUI functions. Yet, there are some functions reserved to Revizto application and/or designed exclusively for it. These are covered below.

8.1 GUI Overview

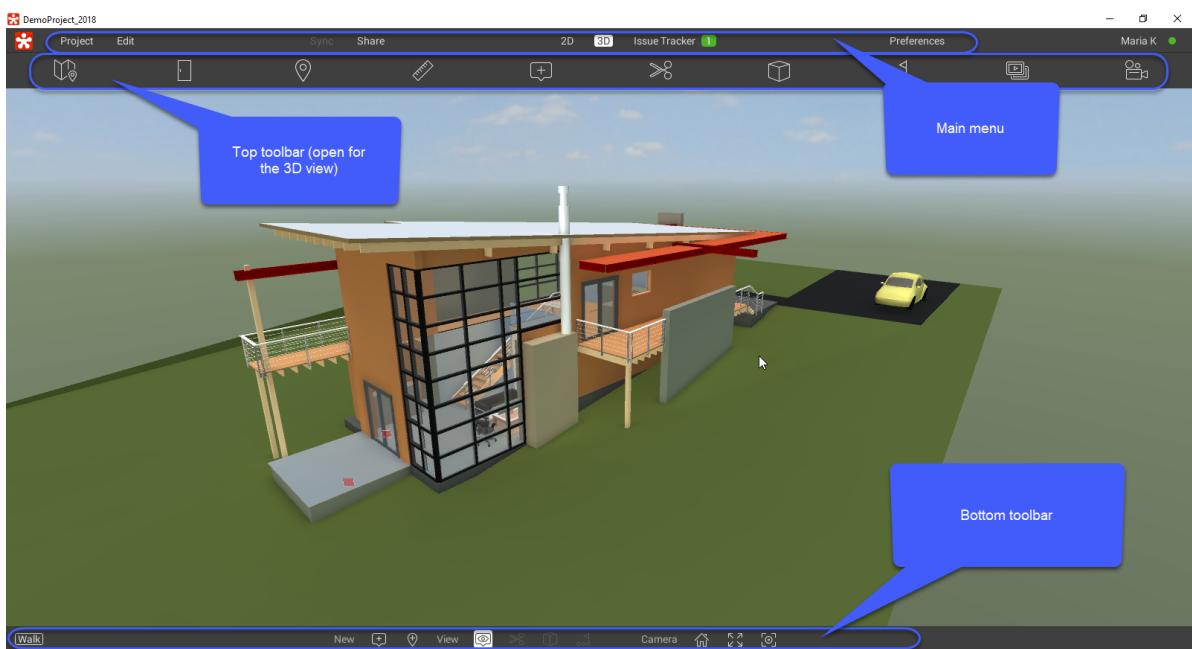
Revizto offers a transparent GUI to:

- configure software settings
- manage projects
- browse models
- view them in 3D and 2D modes
- manage issues

The GUI consists of:

- the main menu that allows navigating to general configuration settings and personal settings, switching between view modes
- the top toolbar that changes depending on the selected view and current user operation
- the bottom toolbar that is quite similar to the top one. It allows users to simultaneously access several tools without navigating back and forth. E.g. you can start building a section box that has its own top toolbar and use the bottom toolbar to create a viewpoint in a new section box. Note that the  icon is located at the bottom toolbar. Use it, to get back to your default [viewpoint¹³⁹](#) when in 3D.

Note that, for adequate GUI display, Revizto requires resolution of at least 1024 x 768 with the next step being as large as 2048 x 1536 (take it into account when defining your visual [preferences¹⁵⁸](#)).



8.2 Browsing and Hot Keys

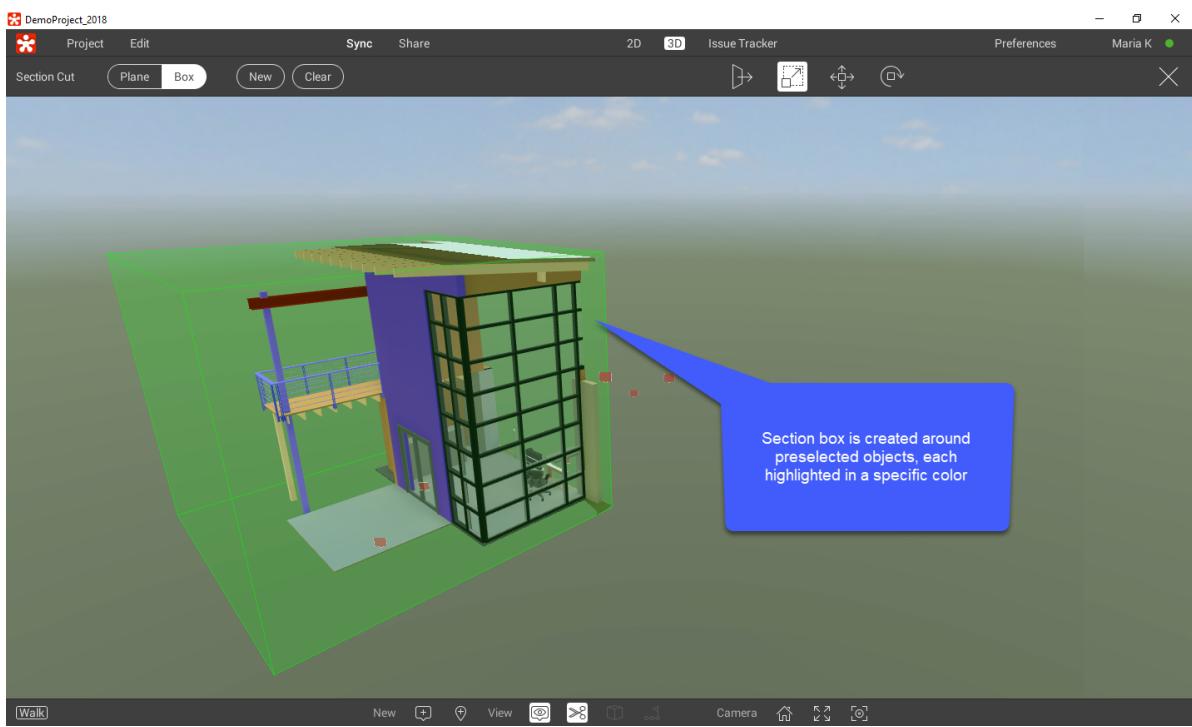
Browsing Tips

When you browse the model, you can make all issue pins invisible: deactivate the  icon at the bottom toolbar.

To quickly go to the center of the scene, click  icon of the bottom toolbar.

To fit all content of scene into the screen, click  icon of the bottom toolbar.

To quickly single out and select an object, use **Ctrl+ Click** on the object. Revizto highlights the selected object with a single color. You can select several objects, each will be highlighted in a different color. Object selection is handy for [section cutting](#)^{D145} in the section box mode, as the option is immediately applied to your selection.



Hot Keys

Function	Key Combination
General	
Full screen mode	ALT+ENTER (same to quit the full screen mode)
Switch to 2D mode	2 OR Ctrl+E (the latter option only available from scene, not from other views like, e.g. Preferences)
Switch to 3D mode	3
Switch to the Issue Tracker	4 OR Ctrl+I
Open the Project gallery	Ctrl + O
Import a project	Ctrl+Shift + O
Browse by Rooms	Ctrl + R
Launch Section cut	Ctrl + X
Browse by objects	Ctrl + B
Launch Ruler	Ctrl + M
Go to the home Viewpoint	Home icon OR Ctrl+H
Create a Video Track	Ctrl+T

Browse by Viewpoints	Ctrl+W
Create a new issue	Ctrl+Shift+I
Open a Map	M (only available from the 3D view)
Multiple object selection	Ctrl + click
Teleport (i.e. choose a spot in the 3D view and go directly to it)	Alt+click
Increase the Field of view	+
Decrease the Field of view	-
Restore default Field of view	0
Hide the right toolbar in tracker, object, rooms, viewpoints, camera share modes	Tab
Quit	Esc
Navigation modes	
Video game	F5
Revit	F6
Sketch Up	F7
Hybrid	F8
Navisworks	F9
Fly/Walk mode (reverse mouse, if available)	R
Markup Mode	
Pen	P
Callout	Q
Text	T
Line	L
Arrow	A
Ellipse	E
Polyline	Shift+P
Rectangle	R
Edit mode	Space key OR V

8.3 3D Elements, Controls and Options

Revizto allows you browsing the model by objects exported from source files (e.g. by levels, phases, viewpoints). You can also create your own viewpoints, add color coding and define transparency settings.

A wide range of controls in Revizto is designed to select and highlight objects in a way that is tailored to particularities of a source program in order to make sure that an issue is clear. For example, Revit offers orthogonal and perspective camera options. As most users prefer the former, issues detected inside Revizto model can be unclear when loaded in Revit. But, when specific controls are applied to highlight them, Revit users can get a clear view of each issue.

Elements

Levels

Levels are imported from source software. You cannot create new levels in Revizto. Normally, structural components are logically assigned to levels according to their position (bottom up), yet, different logic can be applied, especially, in complex projects. For example, all pipes and/or ducts can be combined into a single level. Or a large wall that starts at the ground floor and ends at the roof can be assigned to the top level, not the ground one. Also, there are always structural elements that are not assigned to any specific level. In Revizto they are grouped together into the **NoLevel** level.

Levels are used for navigation in the [map](#)¹⁴⁴. In Object properties levels are indicated in the **Constraints** block. Note that at this point information on levels is displayed regardless of export settings.

Viewpoints



Initial viewpoints () are exported from source files (mainly, from Revit). You can use them to navigate in the model. Also, you can create new viewpoints for better and faster navigation or to highlight an issue location.

You can select any viewpoint is the **Home Viewpoint**. (i.e. the one displayed when you click  icon at the bottom of the screen).

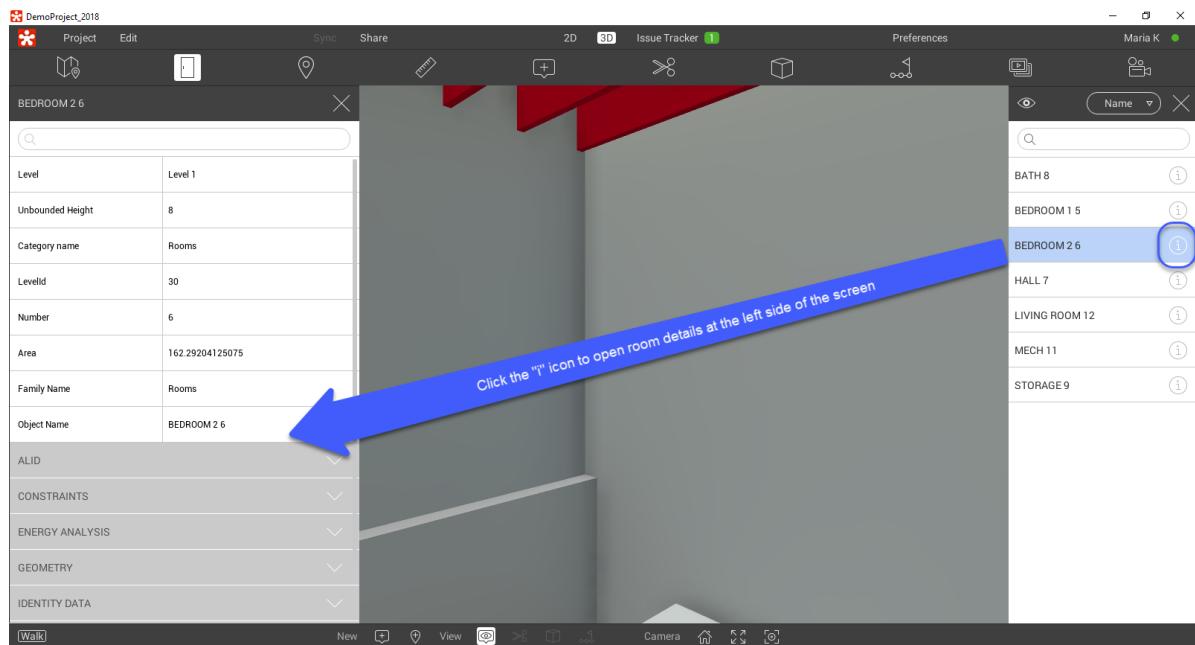
See also [Viewpoint Tutorial](#).

Rooms



Rooms () are also imported from source files and provide additional navigation options. When you open the list of rooms, it is displayed at the right side of the active screen. You can either navigate by the list, or click room shortcuts directly in the model.

Note that you can open room details, by clicking the  icon. The details pane contains all information included into the initial source export. You cannot create new rooms in Revizto, only in the source file.



Objects



Objects () represent another way to navigate in the model and customize the display. Objects are entities defined and exported from source files. These can be, e.g. walls, doors, furniture, objects around the main building, pipes, ducts, etc.

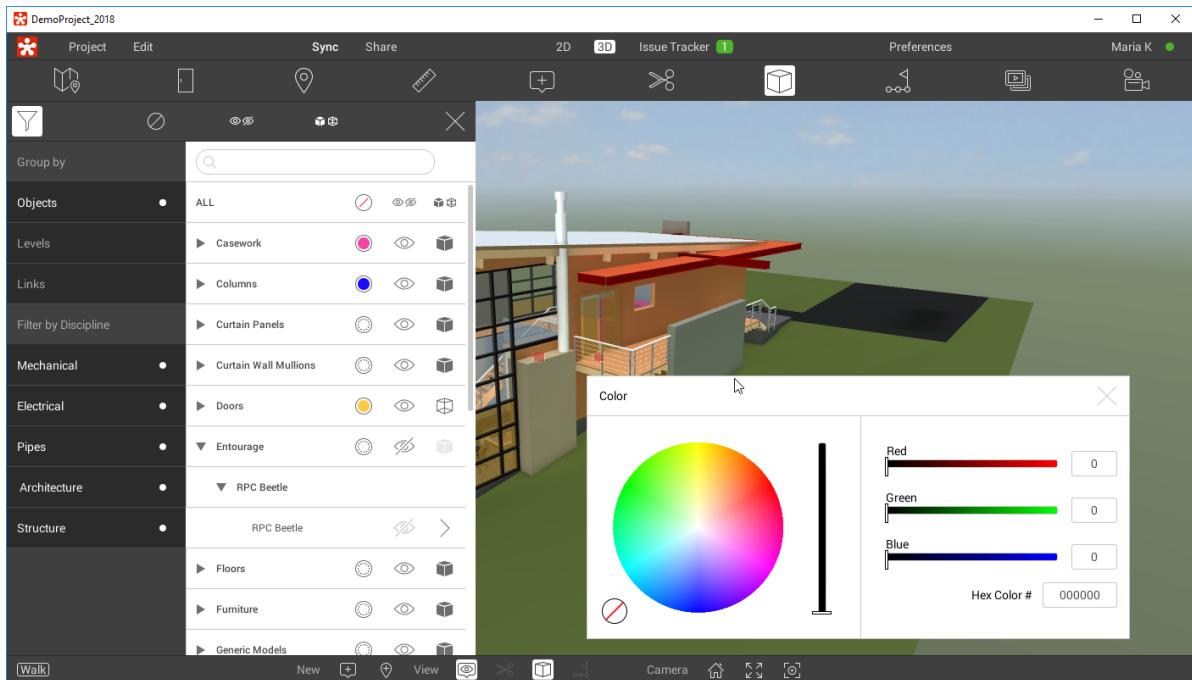
Revizto provides you a list of all objects in the model. You can:



- hide/show all objects/groups/specific objects ()
- change color for one object/object group/all objects (see the illustration below)



- make objects/groups of objects/all objects transparent ()
- use filters to (filtering by discipline also works as a hide/show option)



Phases

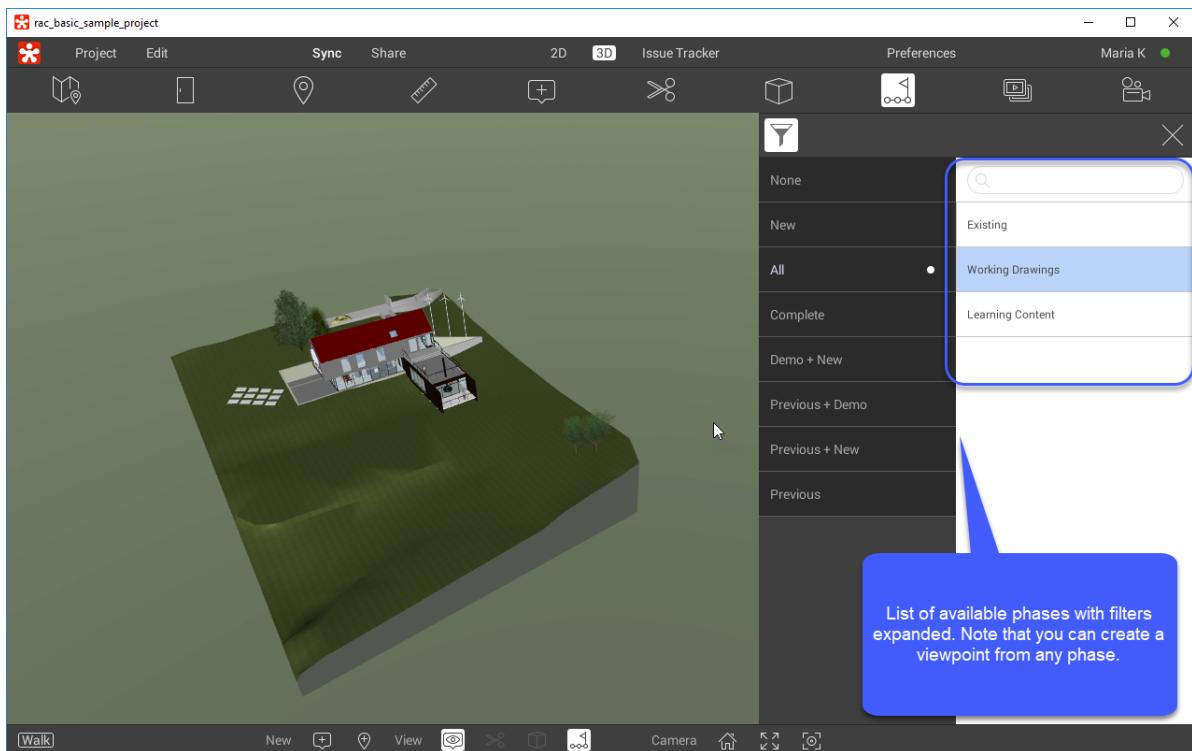
If a source [Revit model contains phases, they can be exported](#)^{□94} to Revizto. If available in the

source file and selected for export, phases can be viewed in Revizto application ( toolbar icon is active). Click it to open the list of phases on the right. As a rule, phases define stages of a construction project. You can create a viewpoint from any phase for further issue creation/management.

Phase is also indicated in the Object properties when these are expanded (regardless of export settings).

Note that a list of predefined filters is available for phases:

- **Complete** stands for finished items
- **New** stands for items that are be added to the site
- **Demo** stands for demolished (not "demonstration" as might be expected)
- **Previous** stands for the site view before project implementation started
- Combined filters allow viewing, e.g. both new items and demolished with relevant color coding



Controls

Ruler



Revizto supports three ruler (尺) operation modes:



- Laser ranger (default option) (射线). In this mode you can choose the starting point of the ruler "beam", it then snaps to the nearest intersection in gives the distance in the selected measurement unit (meters, feet, millimeters).



- Snapping (钉). In this mode you can pin both ends of the ruler flexibly. The distance is then measured.



- Minimal distance (最小). In this mode you can select any two objects in the model, Revizto then calculates the minimal distance between them regardless of obstacles, displays this distance and shows the ruler. If objects intersect the distance is given as "0".

See also [Ruler Tutorial](#).

Camera Share

The feature allows you to share your screen with members of your project team who are



currently online. When you launch the function () the list of online team members displays on the right. Choose one or several of them and invite to view your screen. The selected coworkers than receive invitations which they can accept or reject.

Video Recording

The recording feature allows you to record "screencasts" with or without voice. The controls are quite intuitive:



- Go to the recording view ()



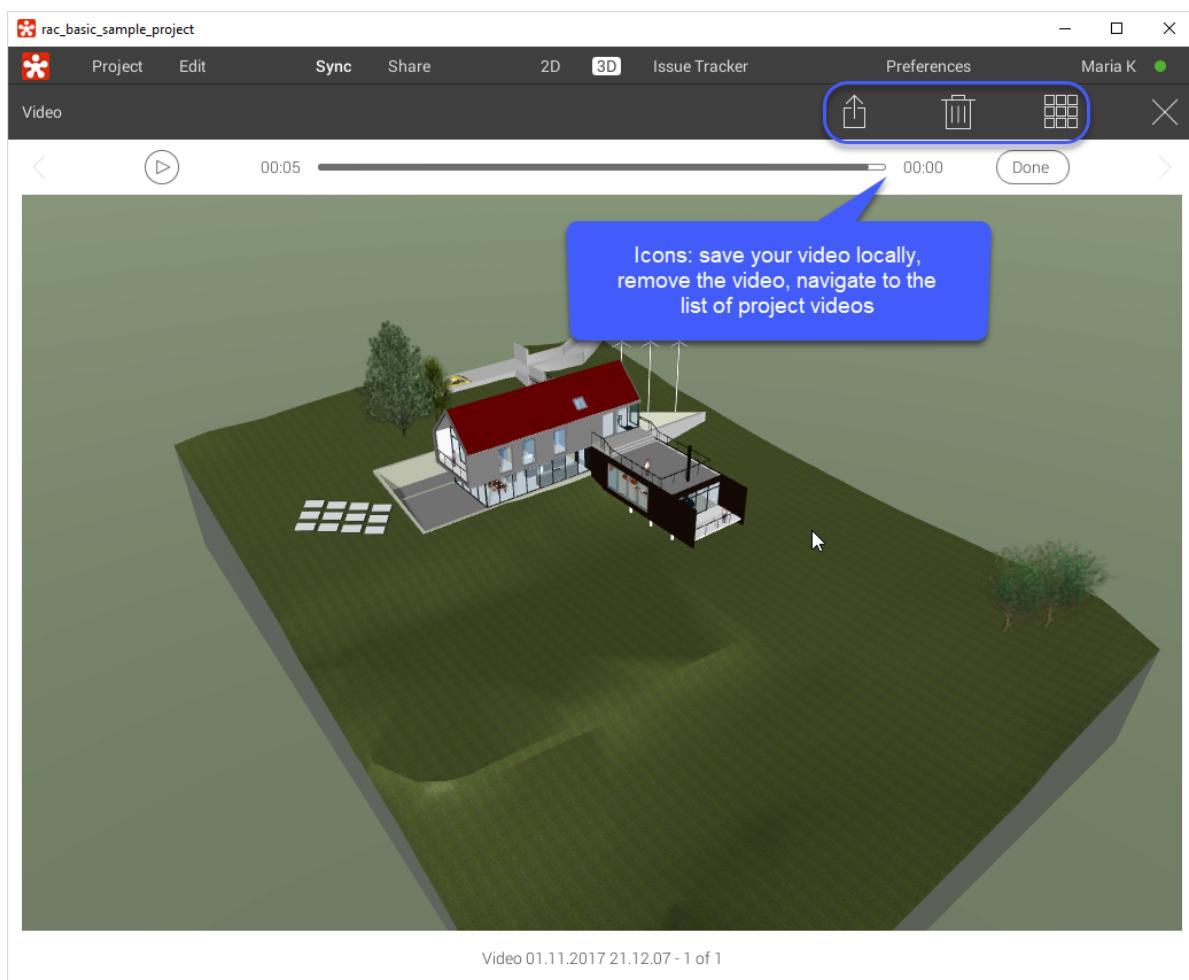
- Start recording (). When recording starts, the icon changes to a red square. Click it to stop recording.



- Turn mic on/off ()

Once recording is complete, your video is promptly rendered and displayed in the top left corner as a thumbnail, available for playing back. Click on the thumbnail to play your video and to open the toolbar that allows:

- saving your video in a local folder (.mov or .avi) to send it to people outside your license
- viewing the whole list of videos
- deleting videos



Note: You need to synchronize the project with the Cloud if you want to make a video track available for the team after the nearest synchronization.

Map

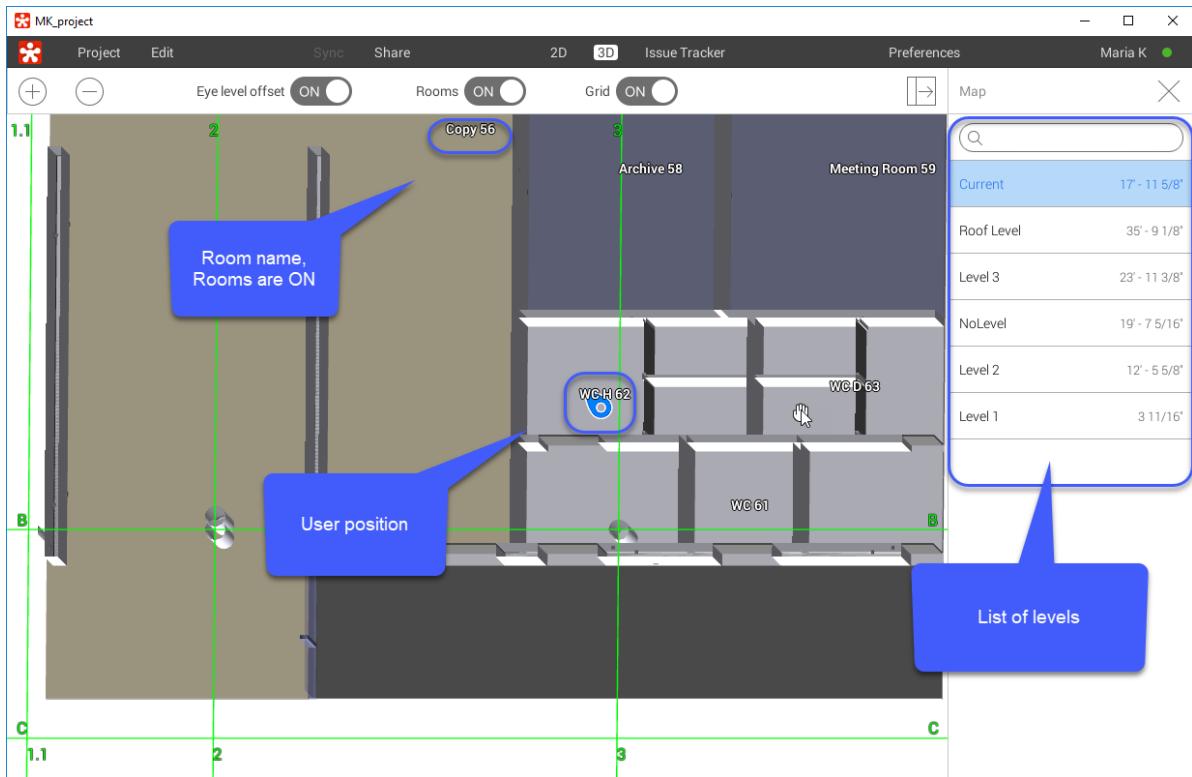


Map () allows you using levels for quick navigation to a specific spot (very much like teleporting, but levels are taken into consideration). It displays the list of levels and a map (a top view) that is adjusted according to the active level. Also there is a blue bead-shaped pin that indicates your current position. By default it is displayed at the home viewpoint.

If grids are available (exported from the source), they can be displayed in this view as well.



Use and icons at the top left to rescale the map. By default rooms are on. If there are rooms at the selected level, they are indicated. You can turn the indication off. You can turn on/off eye level offset (height is defined in preferences).



To navigate in the map:

1. Select a level in the list on the right. Adjust the scale, if needed.
2. Double-click on the spot you want to jump to. The 3D view opens in the selected spot with level settings applied.

Note that if you click on an issue pin in the map, the **Issue Tracker** is opened. For more details on issues see the [Issue Management \(Collaboration\)](#)^{D121} section.



3. Click the icon again to return to the Levels view. Note that the blue pin will indicate your last navigation path.

Section Box and Section Plane



The section cut option () allows you to cut out a fragment of the initial scene and accurately locate an issue. Revizto supports two sectioning options: box and plane. The **New** button at the top tool bar creates a new section cut with the same starting settings (point, or box) as the previous one. The **Clear** button clears sectioning settings without quitting the mode.

Note that when section cut/box is applied, some options defined in the **Graphics** view of the [Preferences](#)^{D158} screen may be temporary disabled (mainly, those related to shadows).

You can create a new viewpoint with your sectioning settings. The idea behind sectioning is highlighting issue locations and ensuring quick navigation to them in AutoDesl software (if launched alongside Revizto).

Section box creates a box that includes the selected object/s. Note that, to easily create a box around desired objects, you can select them first (Ctrl+Click). Revizto creates a box according to its default settings and your selection, but you can adjust the sectioning:

- Move face () allows moving the front face of the box
- Scale box () allows changing the size of the whole box.
- Move box () allows moving the box without changing its side back/forth, left/right. Drag by the front or right face.
- Rotate box () allows rotating the box (drag by any plane)

Active planes (dragged or moved) are displayed in blue, static - in green.

By default Revizto use the following formula to calculate the box size:

$$\text{Edge length} = 3\sqrt{\text{dist}}$$

where dist is either equal to the distance between the camera beam source and the point of intersection with the scene, or to 50 feet if there is no intersection.



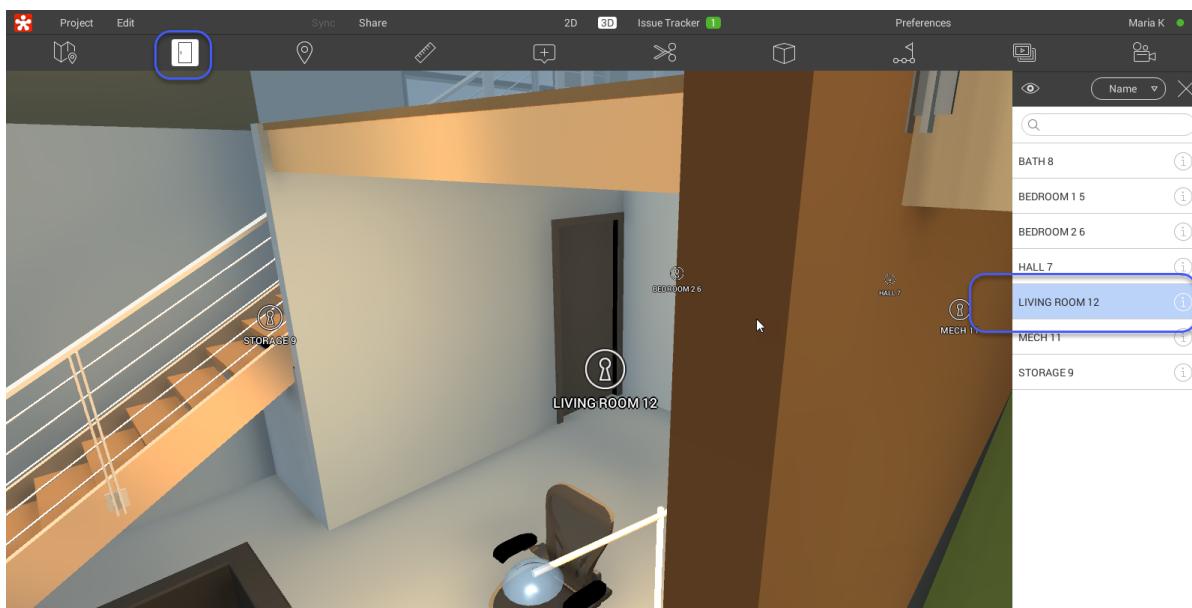
Section plane is similar to section box in moving mode (removes elements on the front), but it allows flexibly selecting the bottom and the front faces by relocating the control.



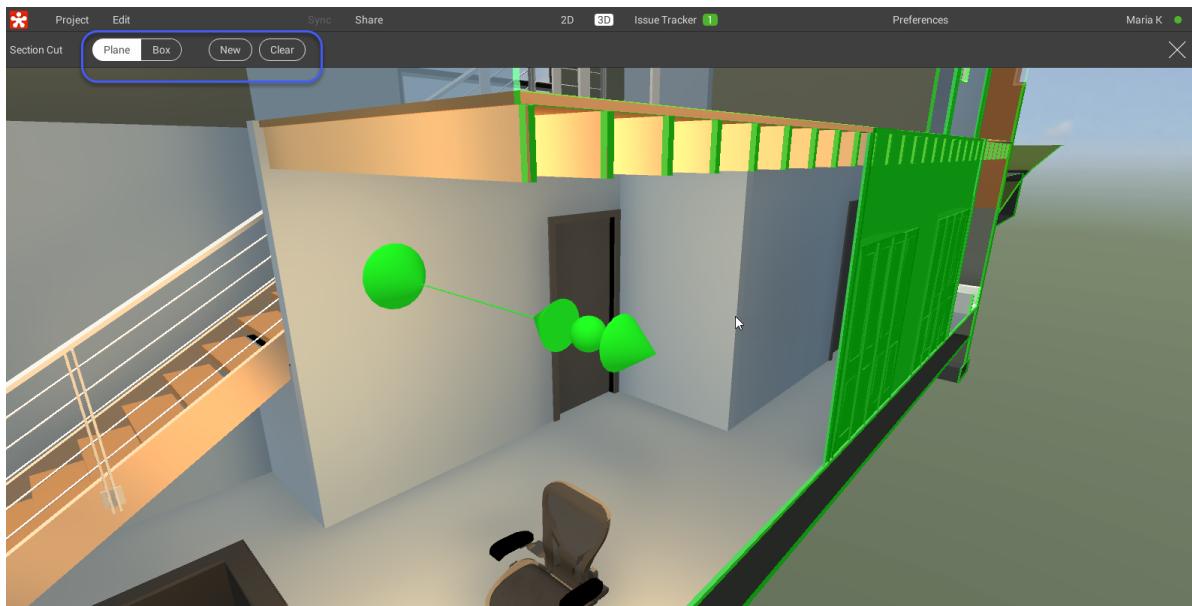
Using 3D Controls to Create Issues. Example 1

To create an issue in 3D:

1. Launch your model and go to the **3D** view (top menu option).
2. Choose a viewpoint, room or object that you want to work with. For example, let us navigate to a room (living room).

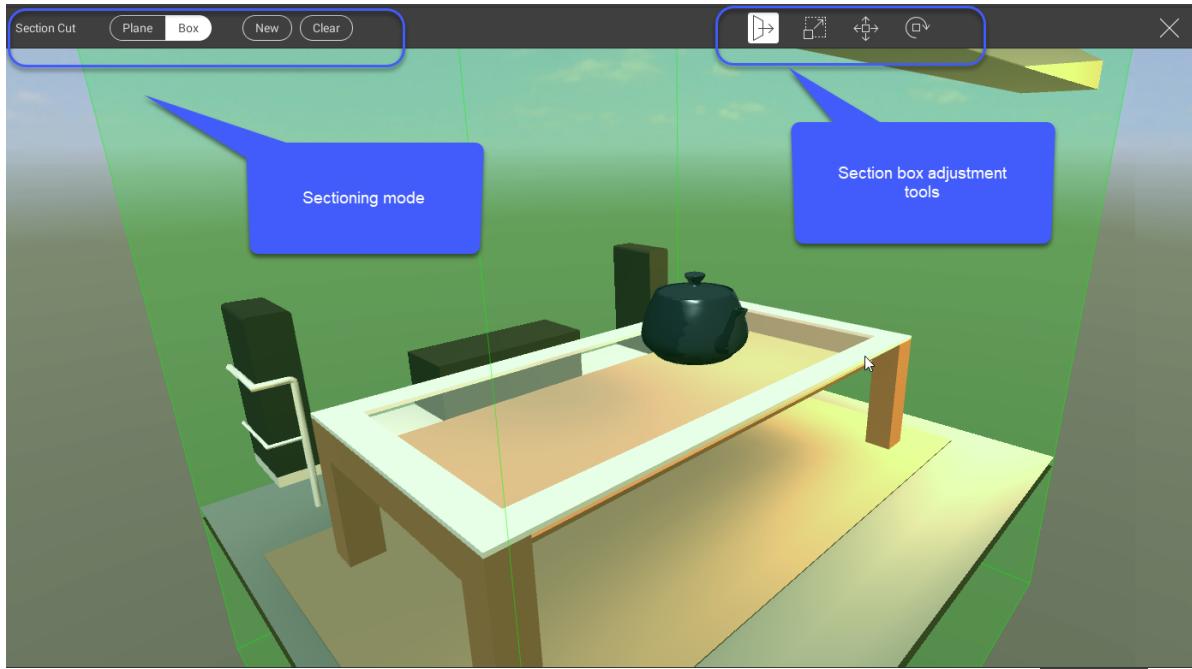


3. Then let us create a section (icon) here. For example, let us cut the side wall of the room using the **Plane** mode of the section tool.

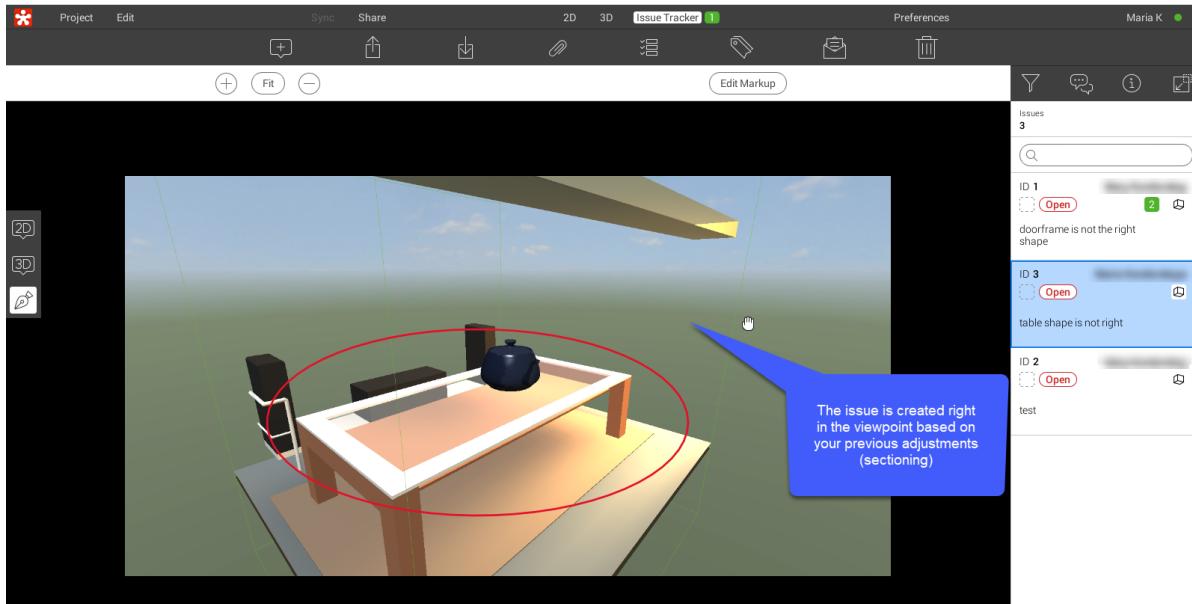


4. Then let us save the section as a view point (the viewpoint icon at the bottom of the screen).

5. Navigate to the new view point (at the top toolbar).
6. Let us then try to create another section, using the **Box** mode this time. Let us cut out the table and save another viewpoint (your previous viewpoint are all still available as well).



7. Navigate to the newest viewpoint. Let's create an issue about the table here ().



8. Assign the issue to a source author and other collaborators.

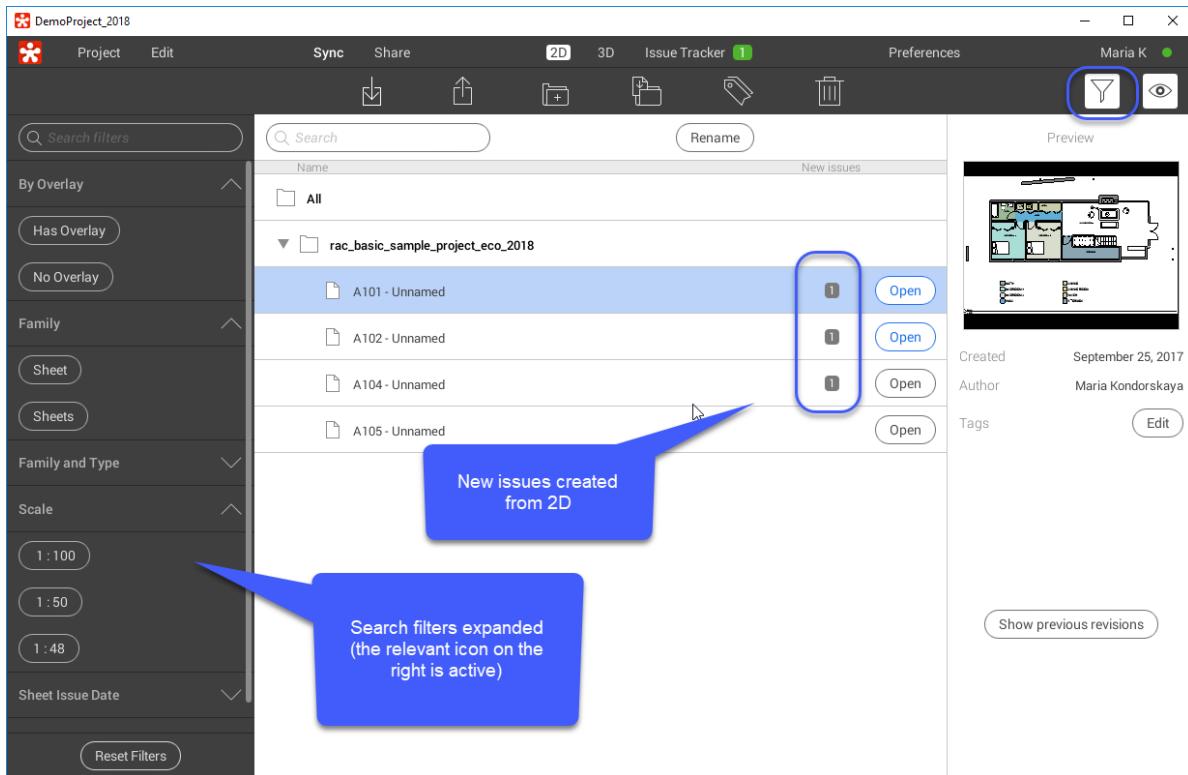
9. Synchronize the model with the cloud.

Now, when the content editor clicks **Issue Tracker** in Revit Revizto plug-in, the relevant Revizto model opens with the new issue in it. By clicking on the issue sign (the pin) a user can navigate to the same spot in the source file (as long as it is open) in Revit or Navisworks. It is especially important for Revit, as it is there that issues are corrected and navigation is less transparent due to the preferred camera type.

8.4 2D Elements, Controls, Options

In the 2D view you can manage sheets both exported with the source geometry and added later.

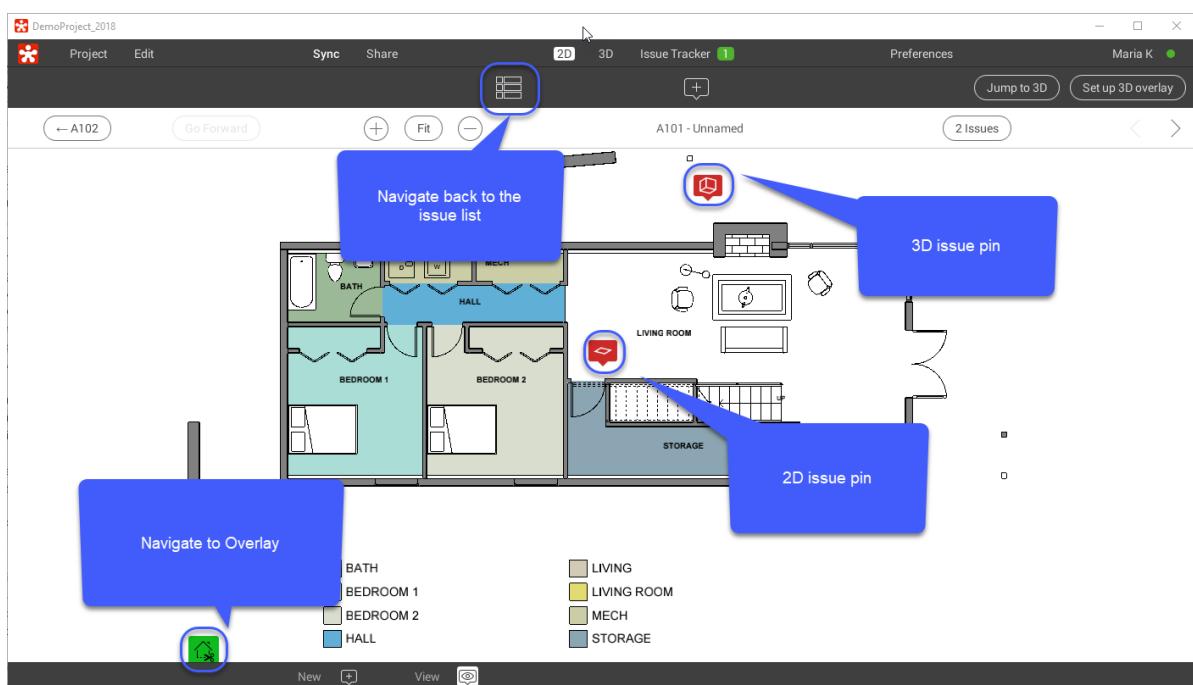
By default the view displays the list of appended sheets which can be stored in folders or loosely. If there are new issues visible on a sheet, the number of issues appears by the name of the sheet as well.



You can:

- Tag the selected sheet
- Rename the selected sheet or folder
- View previous revisions and make them current (i.e. rollback versions)
- Open the selected sheet to view to create/manage issues
- Create a 3D overlay (i.e. match a 2D sheet to a 3D model)
- Add more sheets/drawings/graphical files to your 2D library
- Jump to any point in the 3D model that is visible on a sheet (*teleport*, see also [Browsing and Hot Keys](#))
- Import sheets
- Export sheets from Revizto (as .png).

For more details on issue management see the [Issue Management \(Collaboration\)](#) section. Note that issue pins in 2D indicate whether an issue was originally created in 2D or 3D. When click on a 3D pin, the relevant issue opens in 3D issue tracker.



Importing/Exporting sheets

To add a new sheet:

1. Go to the list of 2D sheets attached to the model.

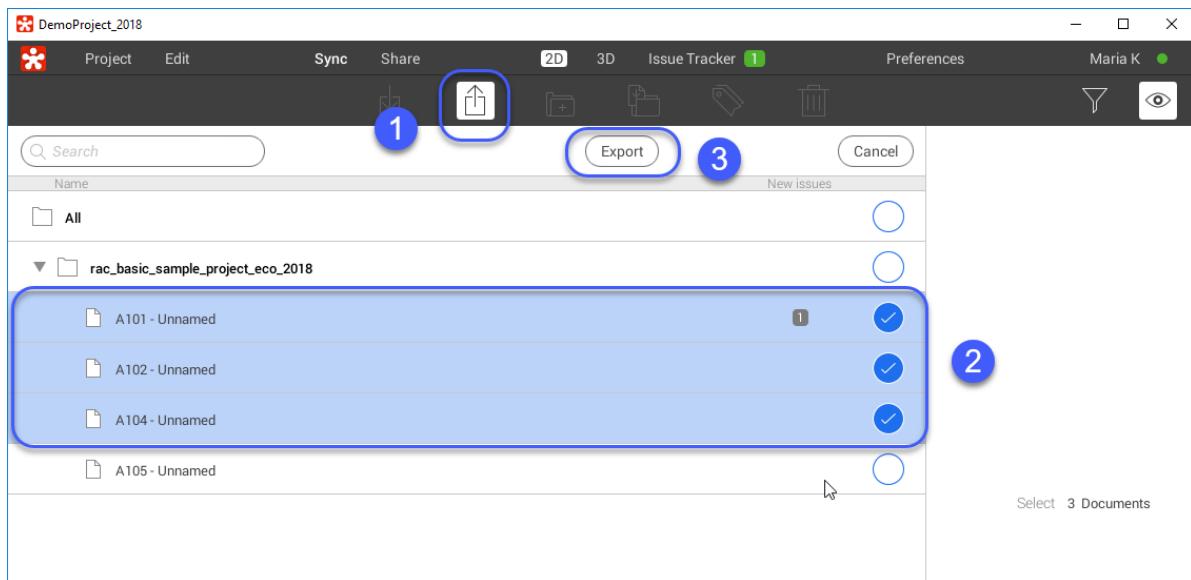


2. Click the import icon at the top toolbar (). Choose a file you want to import (supported formats are .pdf, .dwf)

Your file becomes available in the 2D library. Note that to share it with other team members, you have to synchronize the model.



The export icon () allows exporting one or multiple sheets as .png files.

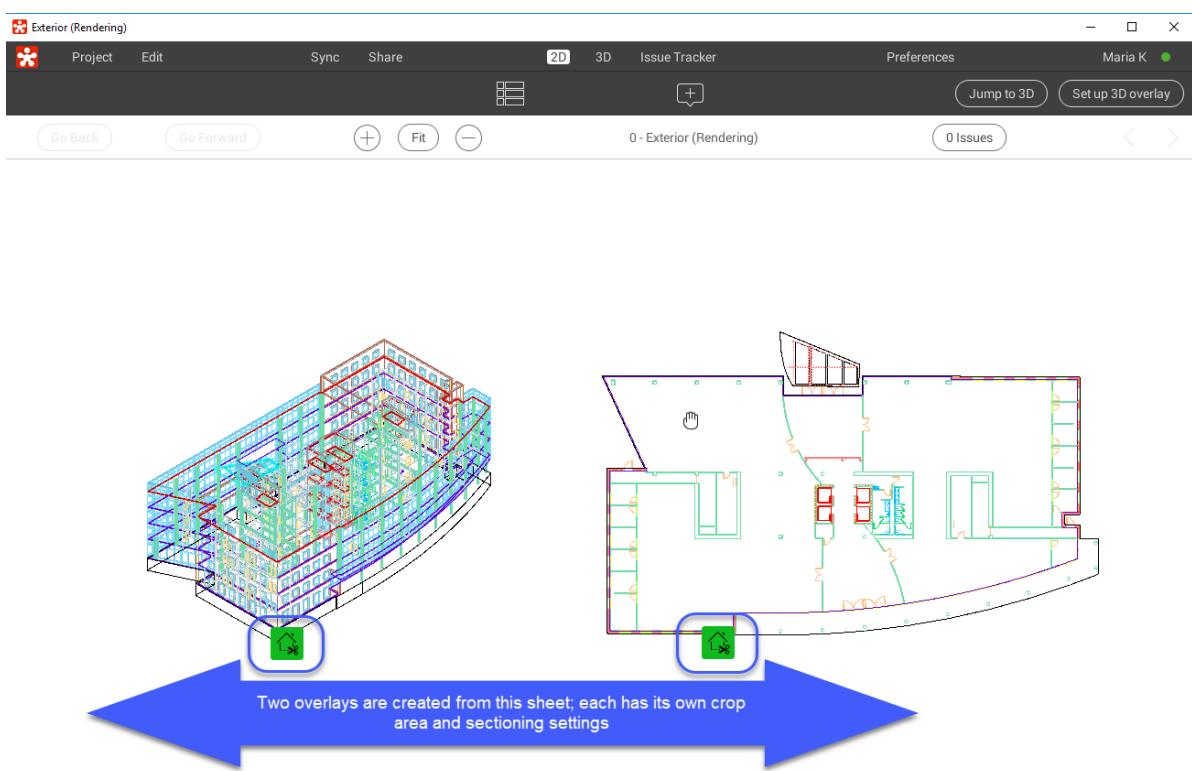


Setting up 3D Overlay

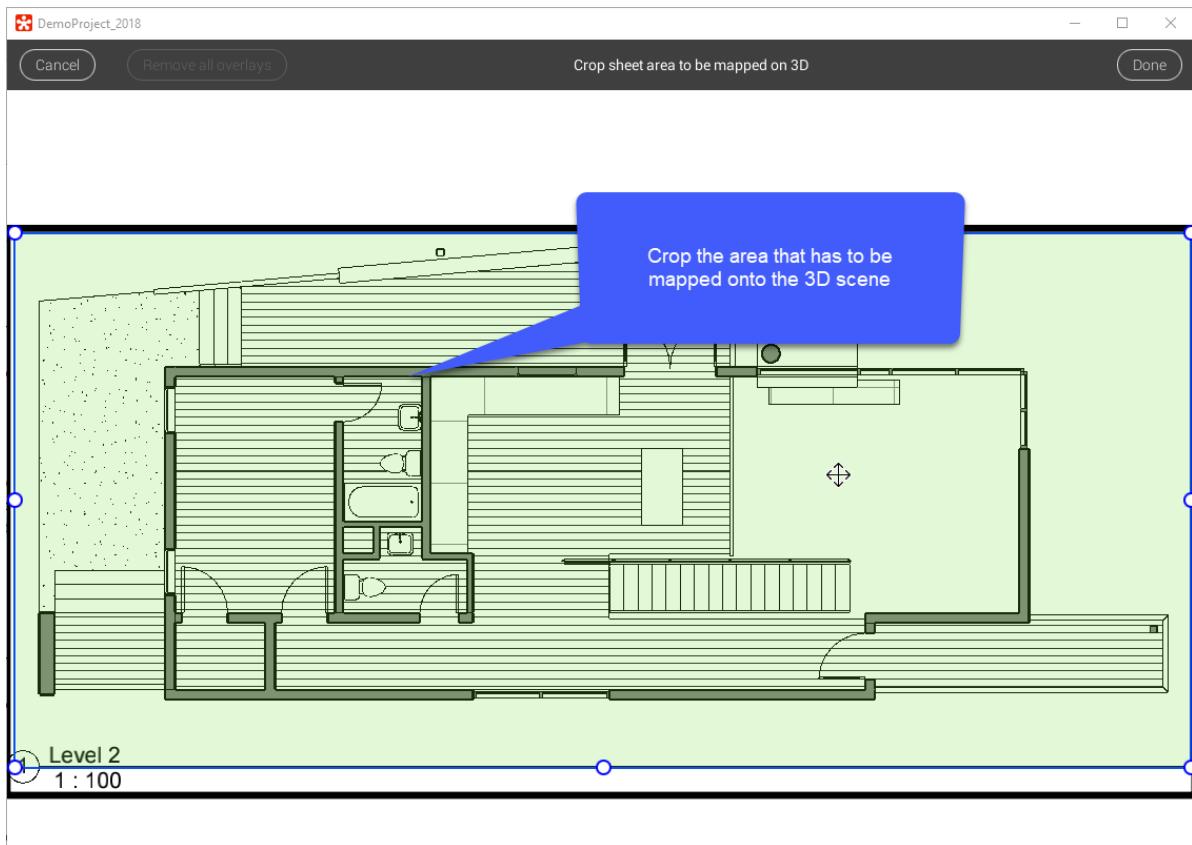
To set up a 3D overlay:

1. Open a sheet (import it first, if needed).
2. Click the ***Set up 3D overlay*** button.
3. Remove existing overlays, if needed.

Tip: While you cannot create multiple overlays from the same sheet area. So, if your cropped area covers the whole drawing, you will have to remove the an existing overlay, to replace it with a new one. But you can create multiple overlays from one sheet by cropping different parts of them (see the figure below). Usually, the option is used on sheets with several viewports (as the one in the example). Also, you can later create viewpoints and issues from overlayed scenes and use them for navigation.



4. Use the crop tool to select the sheet area for mapping (it is useful to exclude technical sheet areas like signatures from overlay).

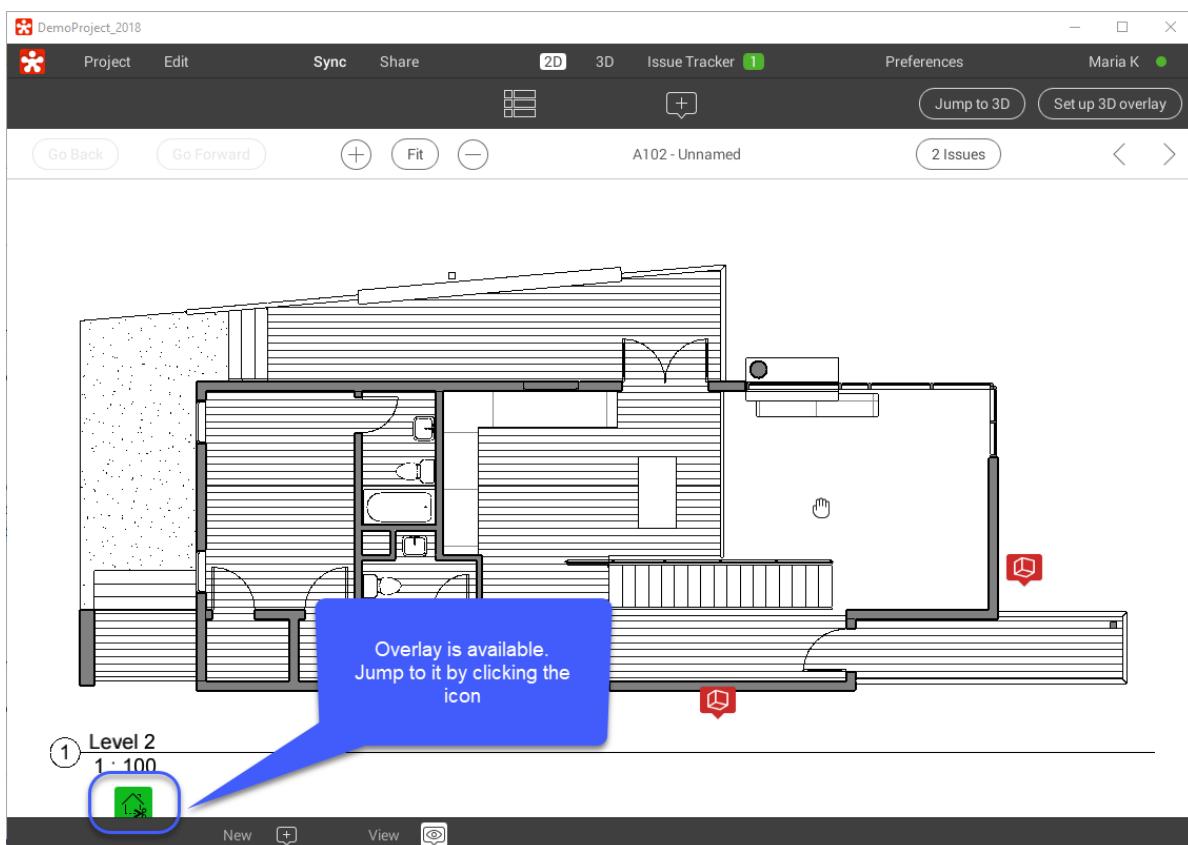


5. Click **Done**. You are automatically navigated to the section cut tool of 3D view.
6. Create a section cut¹⁴⁵. Click **Done**. The cropped sheet area is displayed at the top of your section cut.
7. Use the two yellow pins to map the sheet onto the section cut (note that there are hits on moving the sheet). Click **Done**.



The icon appears on the sheet indicating that there is an overlay (). Click it, to navigate to the relevant 3D scene. Note that you cannot edit an existing overlay, only remove it and create a new one.



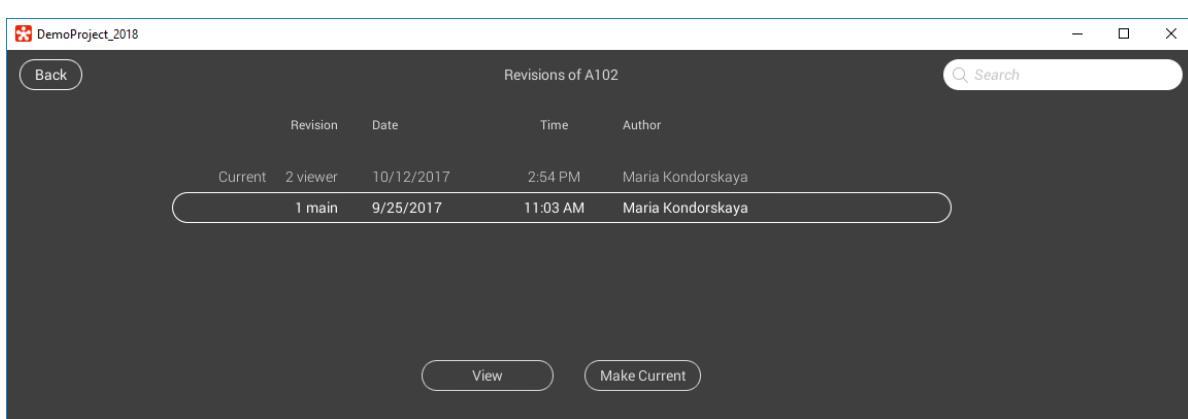


Sheet Versioning

A user whose project-level access includes editing 2D, can revert a sheet to a previous revision. A roll back has no impact on issues, but, for example, removes all tags.

To rollback a sheet:

1. Choose a sheet in the general list.
 2. Click the **Show previous revisions** button at the right panel (expand it, if hidden).
 3. Choose the necessary revision in the list and click the **Make current** button at the bottom.
- The **View** button at the bottom opens the selected revision.

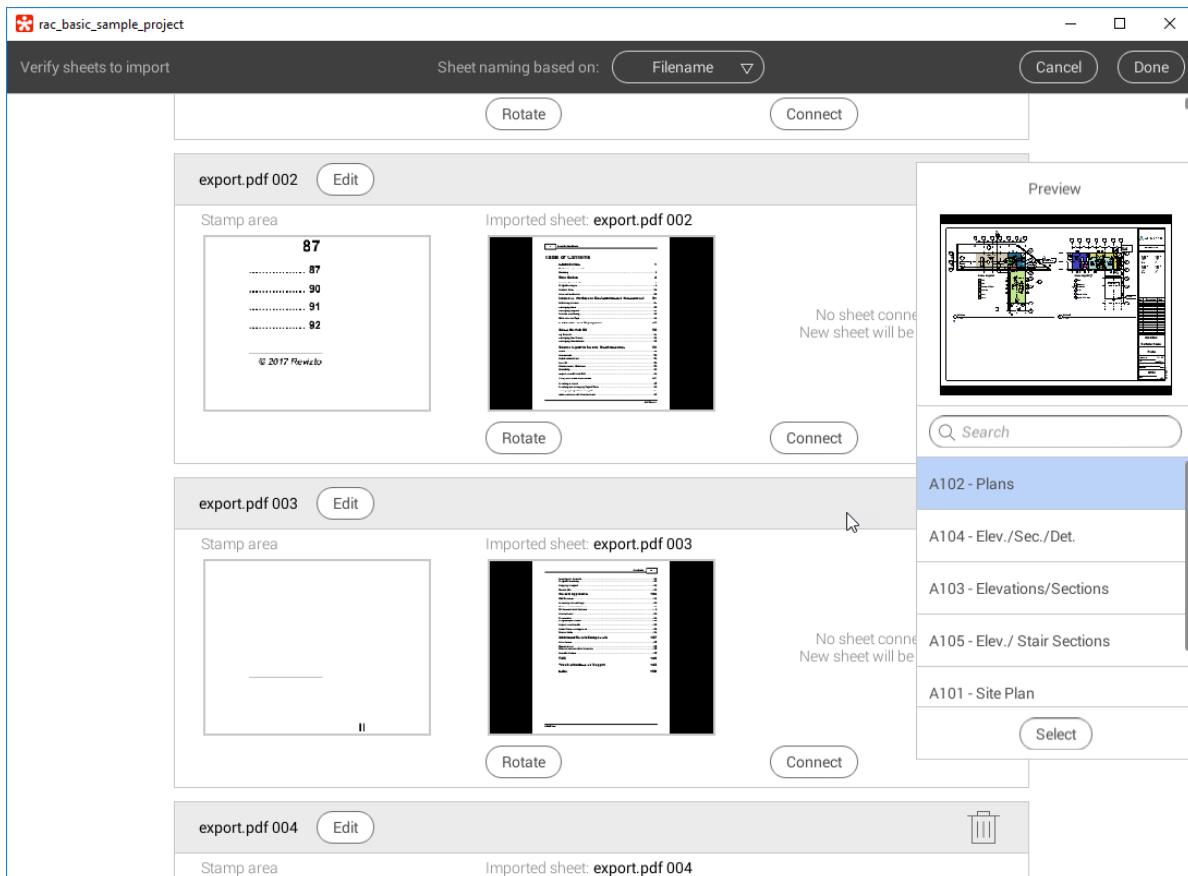


Importing Sheets

You can add .pdf and .dwfx files to the project in the 2D view. It is recommended to create a new folder for sheets added outside the source export.

To add sheets:

1. Go to 2D view and create a new folder in the file list ().
2. Navigate to the new folder, click the import icon ().
3. Choose the necessary file in the local folder. Note that for .pdf files preview is then displayed. Each page of the document is represented as a separate sheet. You can choose which to include into your import, or to exclude (e.g. table of contents).



Note: When you import a file with the same name which already exists, Revizto will automatically propose to create a new revision of this sheet. You will have an option to create a separate document by clicking the **Disconnect** button. Or anytime you can disconnect already connected sheets.

4. Select necessary items, rotate, connect/disconnect them, if needed. Click the **Done** button at the top to complete the procedure.

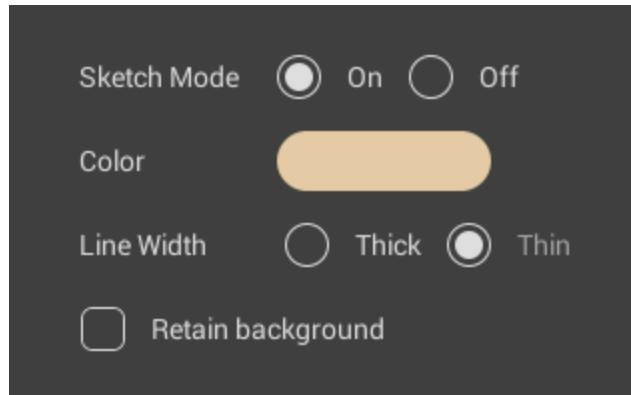
Newly exported sheets are displayed in the folder and can be used similarly to other project 2D files.

8.5 Visual Effects

In Revizto you can edit the way model is visualized, you can also add a watermark displayed on any frame to copyright your files.

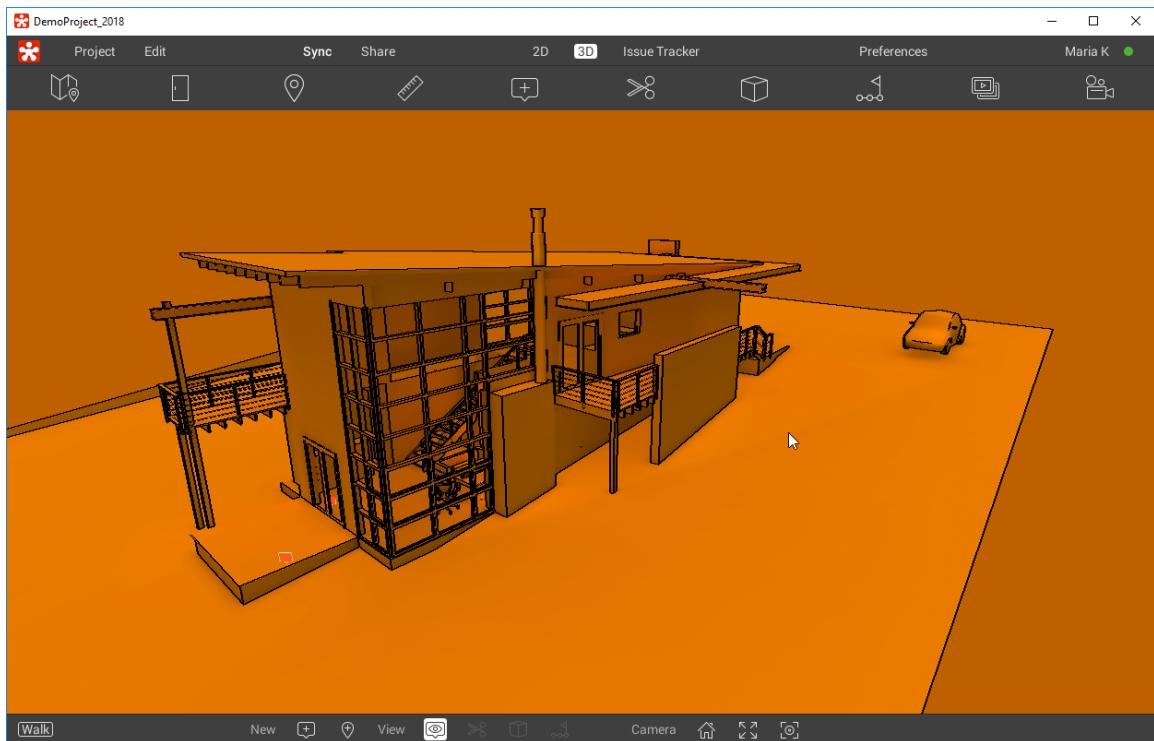
To define visualization settings:

1. Open your project in Revizto.
2. Click **Edit > Visual Effects**. By default, there is no watermark used, sketch mode is turned off, realtime shadows are on. You can:
 - a. Upload any image file to use it as a watermark.
 - b. Switch to the sketch mode and define its settings (line color and line width, background on/off).



- c. Turn off shadows.
3. Click the **Apply** button to save and apply your settings to the current model.

The figure below shows a sample sketch-mode visualization without background.

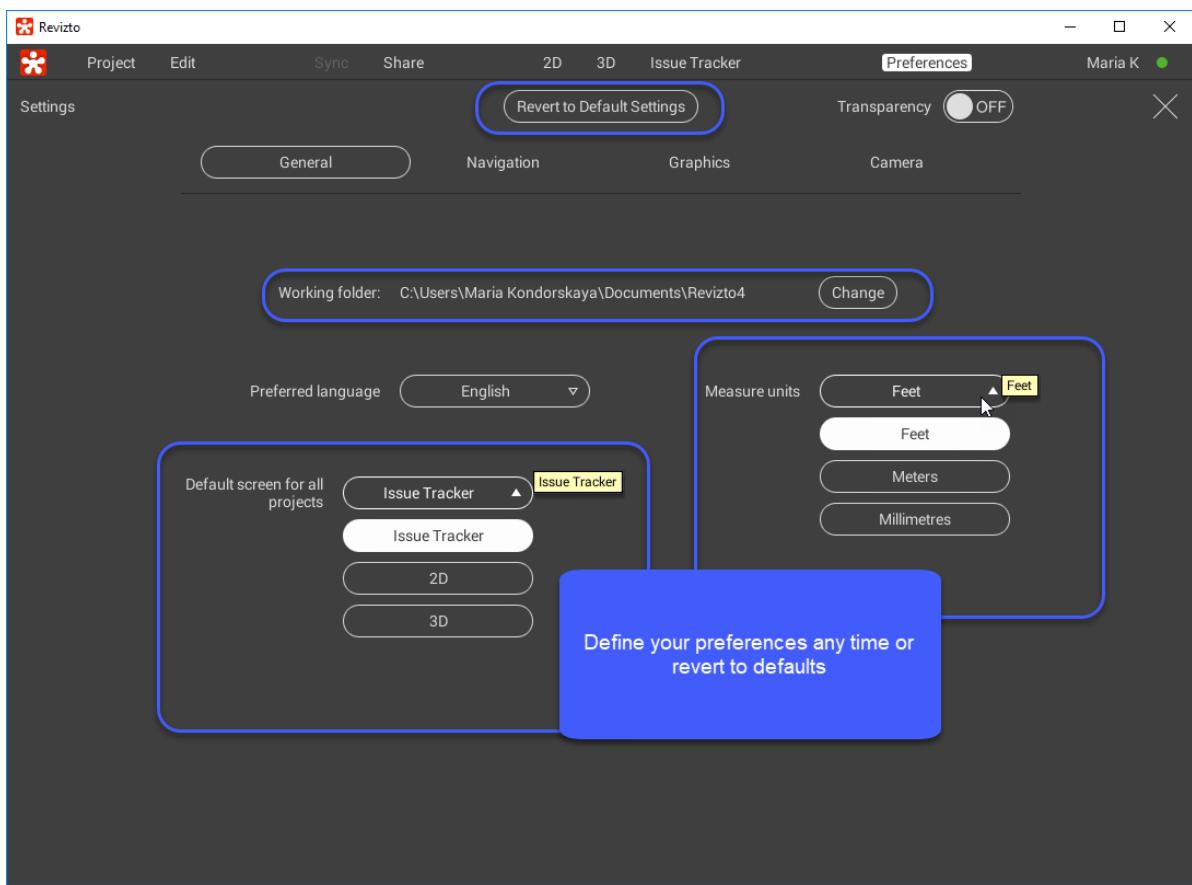


8.6 Preferences

The Preferences screen has four views: General, Navigation, Graphics, Camera. Use them to customize your local instance of Revizto. For project-level optimization options see the [Project Optimization](#)¹⁶⁴ section.

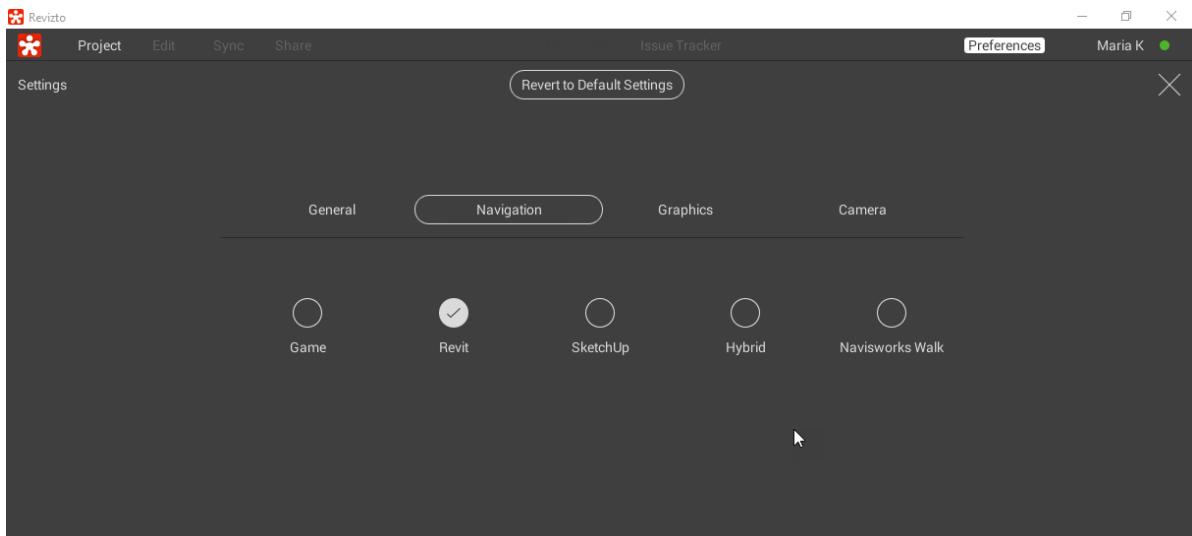
General

Normally, this view is the ending point of the [installation process](#)¹⁷⁶. Use it to define path to the working folder, set language preferences, measurement units and default view (i.e. the screen opened at launch).



Navigation

This view allows you to customize the walk mode. By default, Revit navigation mode is used, but you have four more options.



Revit mode

Function	Controls
Orbit (around scene pivot)	Shift + right mouse button, or Shift + click and hold scroll wheel
Zoom to/from pivot	Use the scroll wheel of your mouse
Pan	Click and hold scroll wheel
Change Pivot	Ctrl + click
Object Properties	Double click on the desired object

SketchUp mode

Function	Controls
Orbit (around screen center)	Click and hold the scroll wheel
Zoom to/from mouse cursor	Use the scroll wheel of your mouse
Pan (adaptive)	Shift + click and hold scroll wheel
Object Properties	Double click on the desired object

Hybrid mode

This mode uses Autodesk Forge navigation settings.

Function	Controls
Orbit (around pivot)	Hold right mouse button
Zoom to/from pivot	Use the scroll wheel of your mouse
Pan (Adaptive)	Hold the scroll wheel
Change pivot	Right-click on the desired place (on surface)
Object Properties	Double click on the desired object

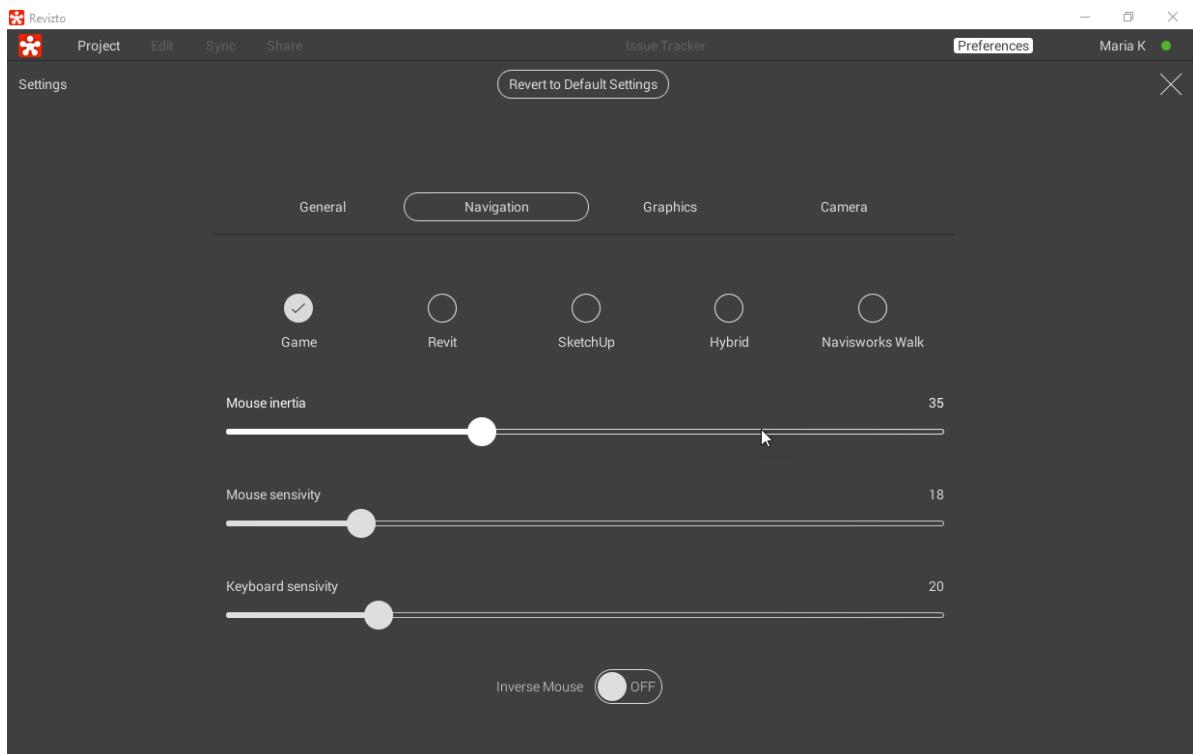
Navisworks Walk

Function	Controls
Move forward	Hold left mouse button + move mouse forward
Move backward	Hold left mouse button + move mouse backward
Turn left	Hold left mouse button + move mouse left
Turn right	Hold left mouse button + move mouse right
Increase elevation	Hold middle mouse button + move mouse forward
Decrease elevation	Hold middle mouse button + move mouse backward
Strafe left	Hold middle mouse button + move mouse left
Strafe right	Hold middle mouse button + move mouse right
Look up/down	Use the scroll wheel of the mouse

Note: Revizto also supports 3DConnexion devices for navigation.

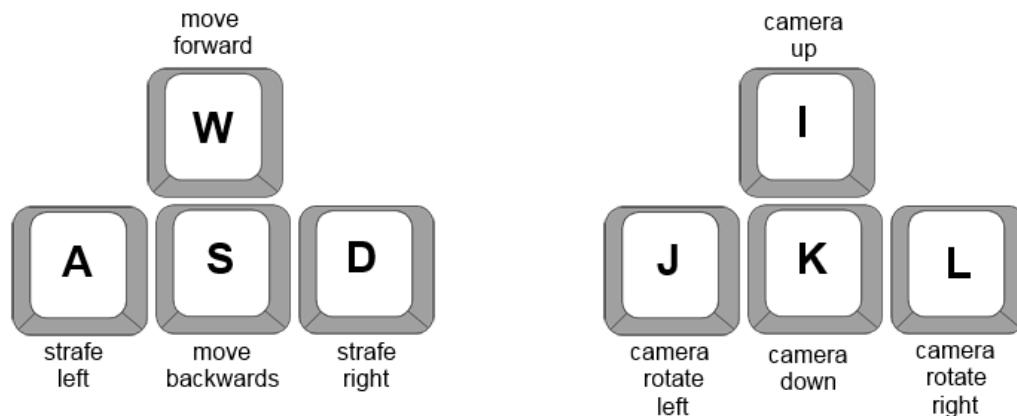
Game mode

Note that for the **Game** mode additional mouse settings are available.



Function	Controls
Hold to rotate the view (turn head)	Right mouse button
E	Float up
Q	Float down
Shift+W/A/S/D/Q/E	Move with increased speed
Double-click	Display properties of the selected object
Scroll	Zooming

In the fly mode you are flying without collisions. When walk mode is switched on, you will move with collisions and gravity. The walk mode uses controls from the game navigation mode.



For additional details see the [video tutorial](#).

Graphics

This view allows you to customize the quality of graphics and visualization mode. You can choose of one of the six modes; the recommended option is **Good** which compromises between response speed and visualization quality. The default quality option is selected by the built-in algorithm that evaluates your PC at the launch.

For each mode additional settings are available to fine-tune your visual experience. Basically, these are standard Unity effects.

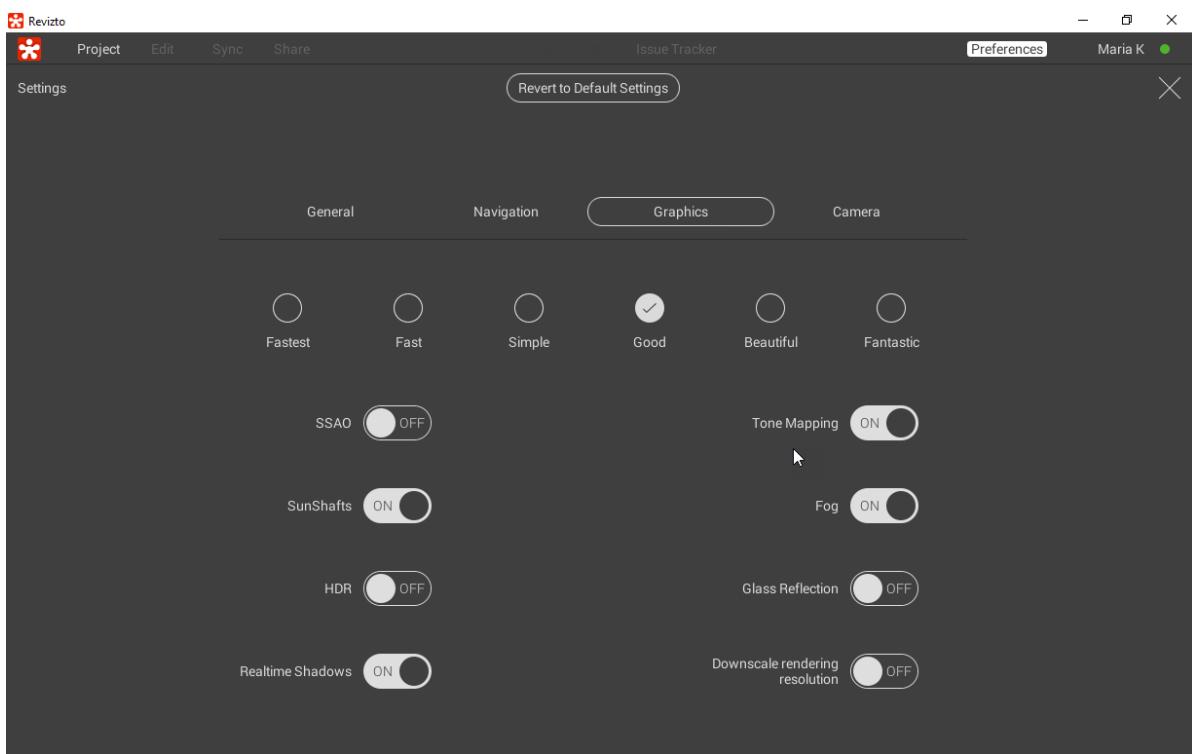
SSAO and **Realtime Shadows** regulate the way shadows are rendered in the model.

Tone Mapping and **HDR** options allow modifying the dynamic ways. **Tone Mapping** is considered a less powerful tool.

By turning on/off **SSAO**, **Realtime Shadows** and **Tone Mapping** you can regulate the quality and type of shadows in the model. Note that SSAO is more taxing on the CPU capacity and Realtime Shadows take more RAM. It is recommended to switch off both or one of them, if PC capacity is low or model is too large.

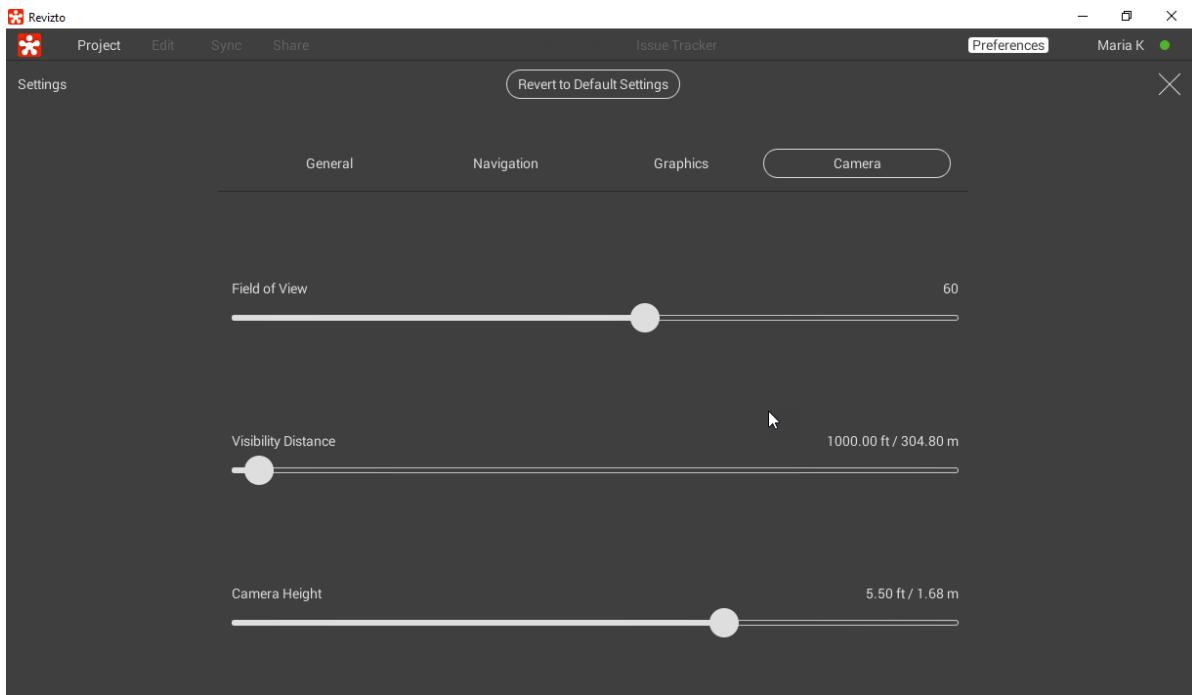
Turn on **Downscale rendering resolution** if you are using a powerful high-resolution display with higher pixel density. Otherwise long delays are likely to occur. With this option on, Revizto will choose the nearest best resolution option to promptly render views combining adequate visualization and navigation speed.

Note that some of these settings are disabled when in 3D section cut/box mode.



Camera

This view allows you to customize camera positioning: how far you can see, how wide your field of view is, how high the camera is. The defaults match an average human height.



Tips: Higher visibility distance can cause rippling shadows. To remedy for it, turn off the **Realtime Shadows** and **SSAO** in the **Graphics** tab. Turn **Transparency** on to make the current view translucent and see whether or not your settings are applied the way you want without quitting **Preferences**. For some preferences [hot keys](#)^{D₁₃₇} are available in most view modes.

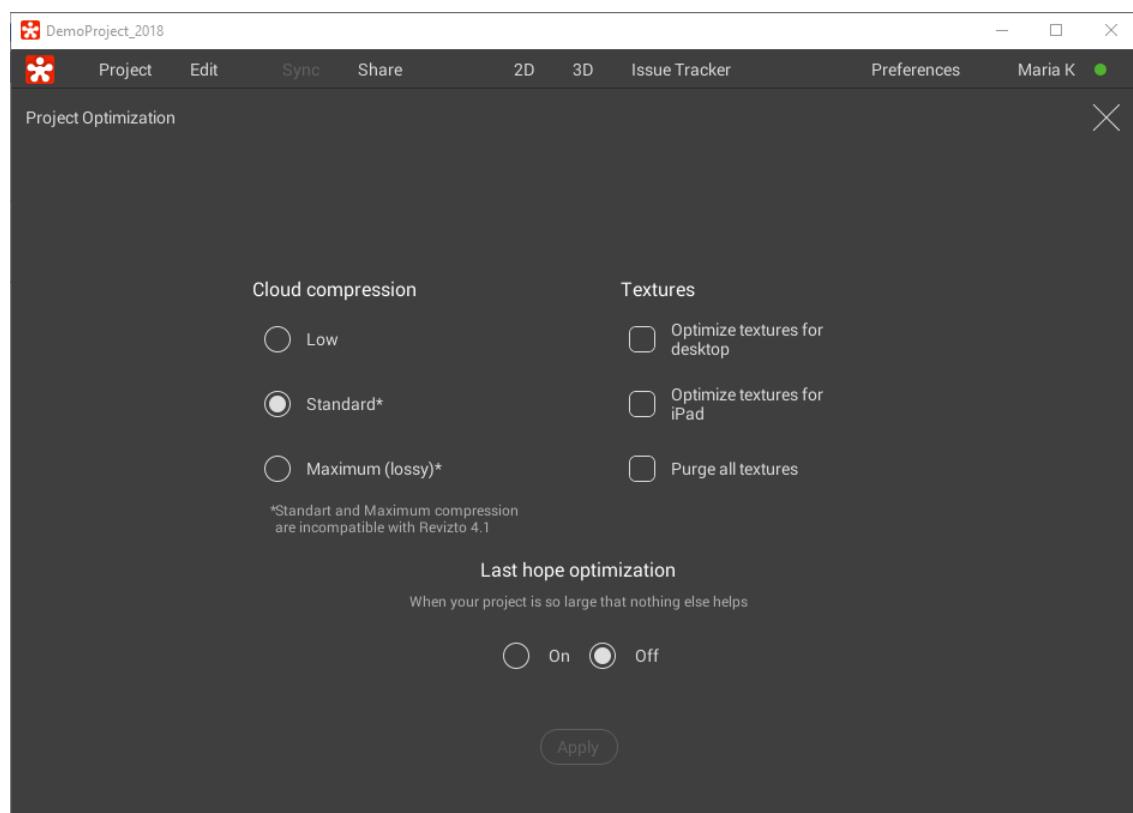
8.7 Project Optimization

Revizto provides several optimization options to resize large models and enable faster operation on portable devices. Note that the below options are applied on the project level, you can also define [preferences at the machine level](#)^{D₁₅₈}.

Note that to use the option, you need project-level rights that allow uploading models.

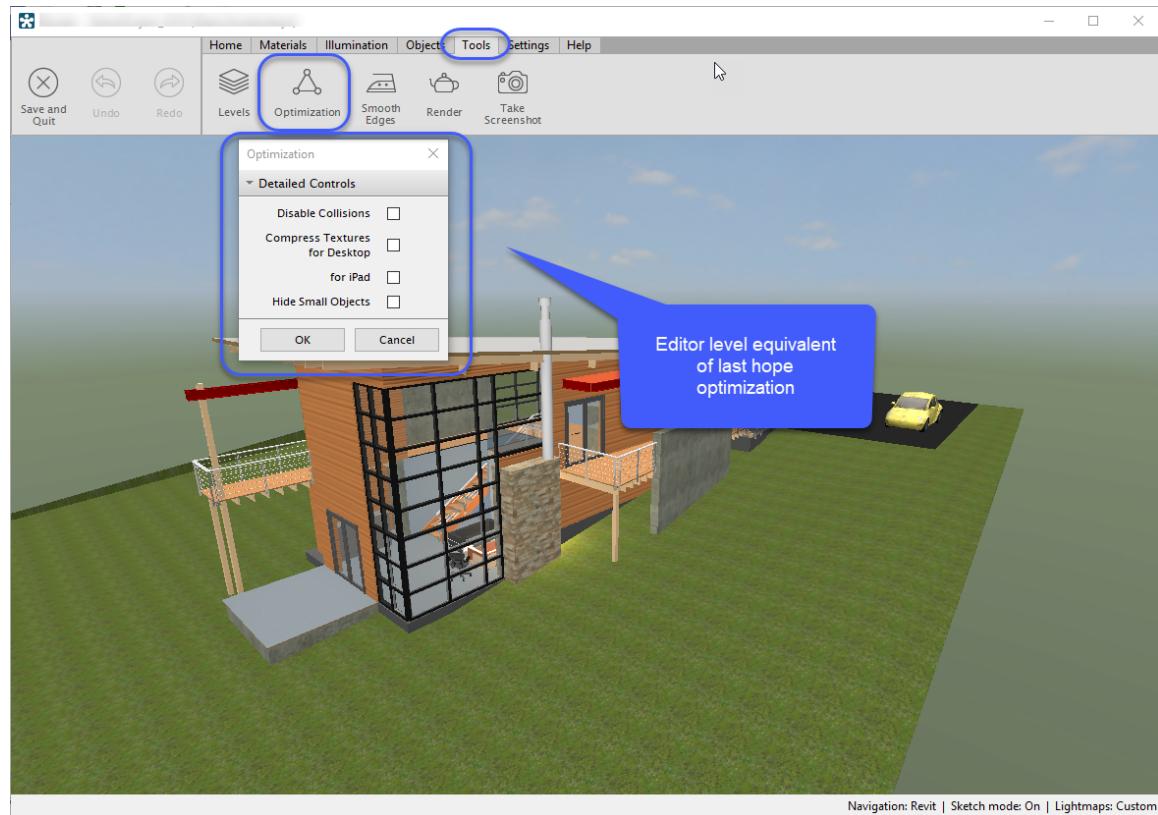
To apply optimization:

1. Open a project in Revizto.
2. Choose **Edit > Project optimization**.
3. Define optimization settings in the view that opens.
 - a. Cloud compression levels regulate the volume of data sent to the Cloud.
 - b. Texture optimization options reduce the quality of texture display. The **Purge all textures** option removes all textures in the model (solid color is used instead of textures).



- Click Apply to save and apply your settings. Note that to use optimization, you must close the project in other Revizto components.

The **Last hope optimization option** reduces the model by up to 90%. It is an equivalent of the optimization option available in Revizto scene editor (Edit > Lighting and Materials) and relies on the editor functionality.



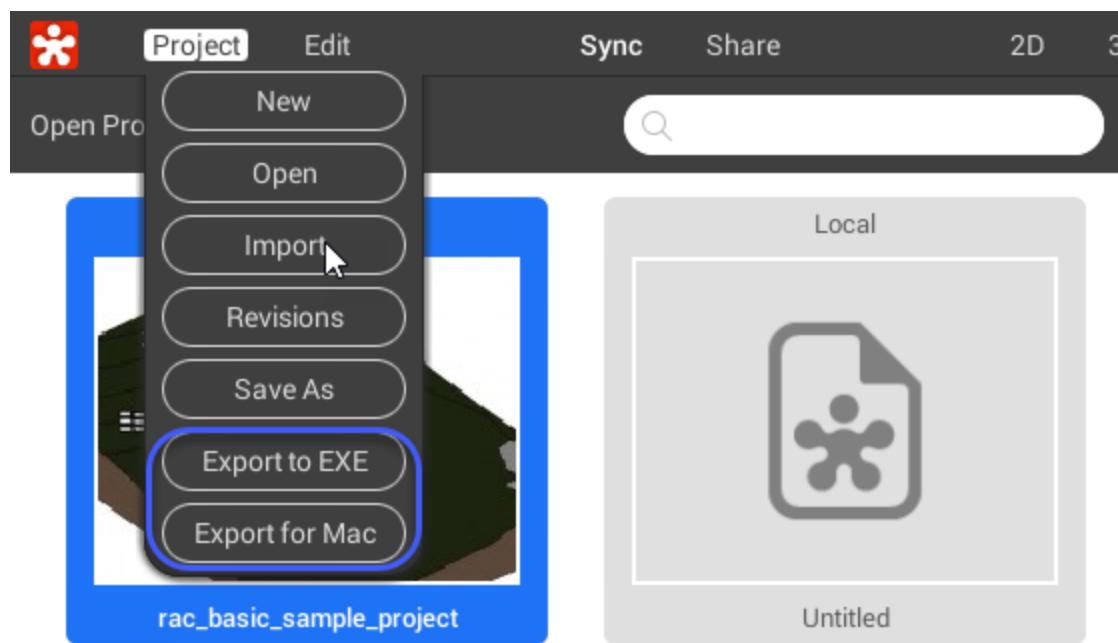
8.8 Export from Revizto

Revizto is designed for team work in Windows OS, but if you want to share a model with someone outside your team (i.e. not having a license) or using a different platform, you can export your model to .exe or for MAC. Note that exported files will not have issue management and editing functionality available in Revizto.

Export to EXE and for MAC

The Project menu allows you to export the selected project as .exe file or for MAC. The idea behind these options is sharing Revizto projects with people outside your license. Exported files can be open by Revizto application and contain all original elements, yet they have no collaboration and management options. Issues will not be displayed.

Also export functionality may be a way out of you need to meet strict security requirements and may not upload your projects to the Cloud.

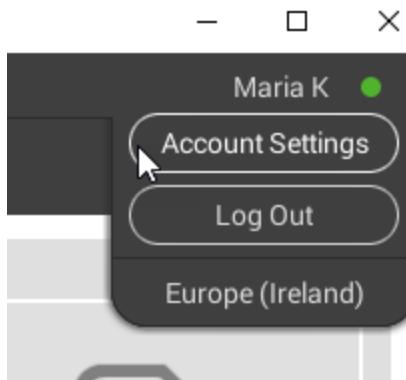


8.9 Local Profile Management

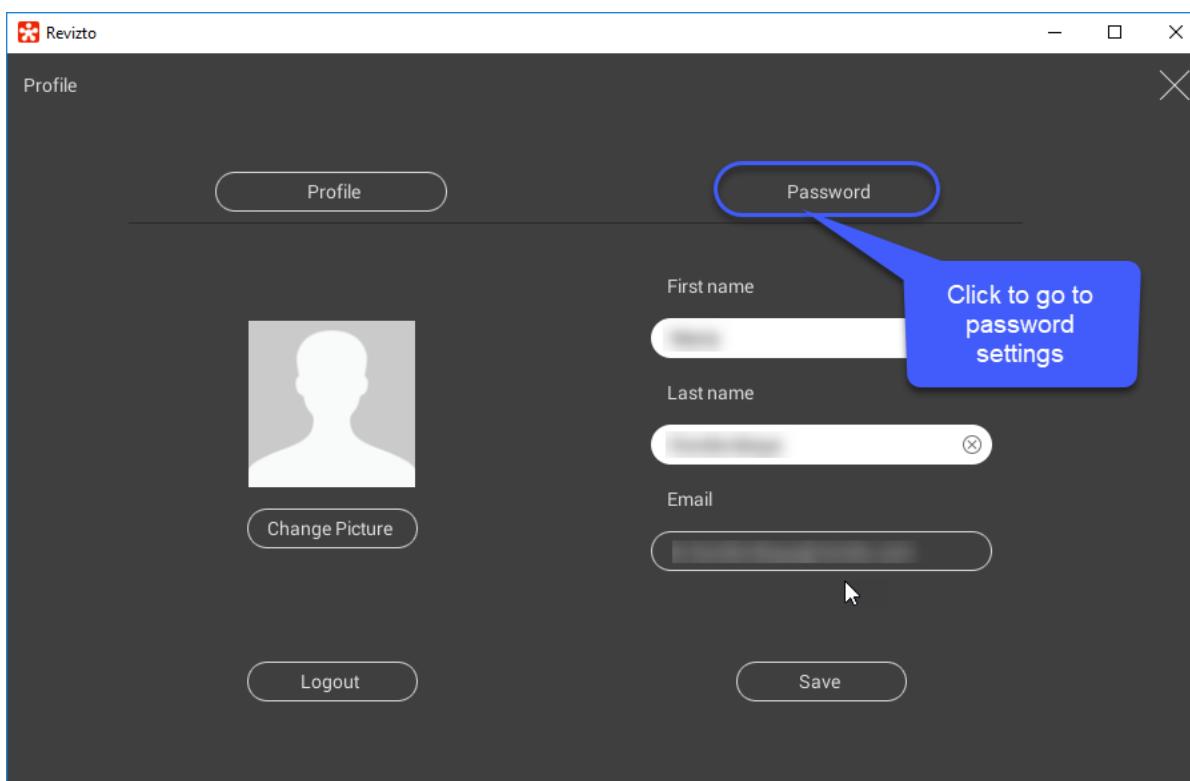
You can change your profile settings locally in Revizto application. Note that Notifications can only be configured in the [Web GUI](#)⁷⁹.

To edit account settings:

1. Launch Revizto and click on your username in the upper right corner. Choose **Account Settings**. The **Profile** screen opens.



2. Use the screen options to change your name and last name, to upload a userpic. Click Save to apply your settings. Note that you cannot change your email, as it is linked to your seat license⁶⁰.
3. Click **Password** to switch to password settings. Make changes there, if needed (the standard procedure is implemented via a clear and transparent form).



8.10 Scene Editor

Revizto has an integrated editor based on the Unity engine functionality. To access it, choose **Edit > Lighting and Materials** in the main menu.

Note that the editor is not considered Revizto core functionality, and we offer limited support to it due to low demand and priority.

Additional Revizto Components

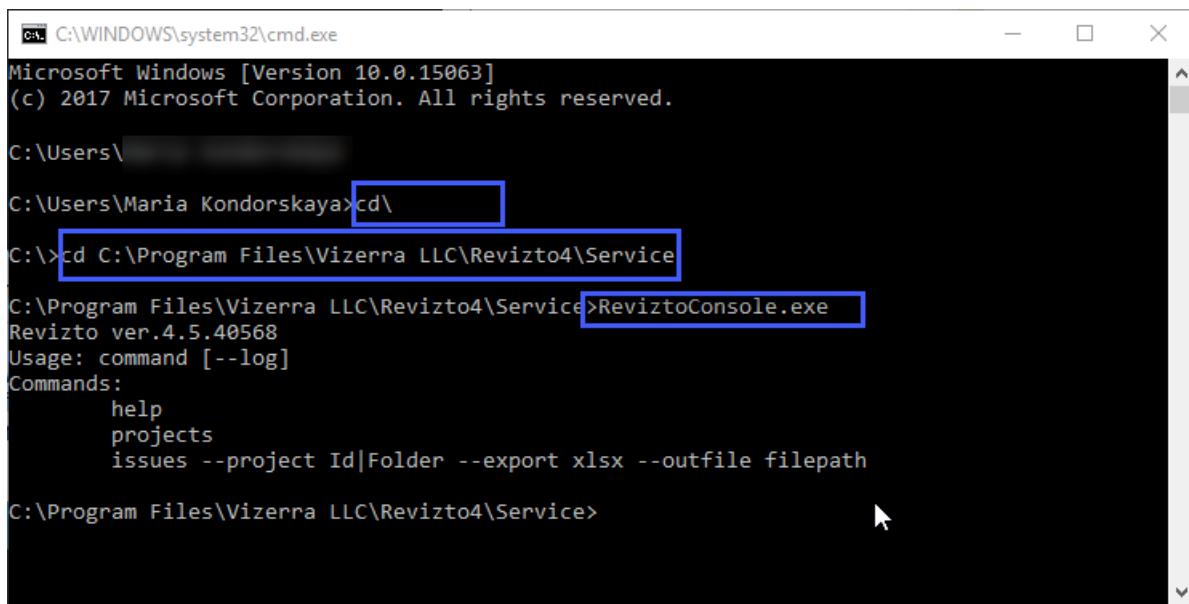
Revizto offers four additional components: the console and an iPad application.

9.1 Revizto Console

Revizto has recently offered a new component: Revizto Console. It allows exporting all issue statistics in .xlsx format and it is compatible with the Windows Task Scheduler. Also, report customization is available via user-defined scripts or third party applications.

To start the the Console:

1. Open the Windows Command Line (Win + R, cmd).
2. Enter the CD\ command. Press **Enter**.
3. Enter CD again and, then in the same line, enter the path to Revizto installation folder and give a command to start the service. Press **Enter**.
4. To the new line that appears, add >ReviztoConsole.exe and press **Enter**. The image below illustrates all the necessary steps.



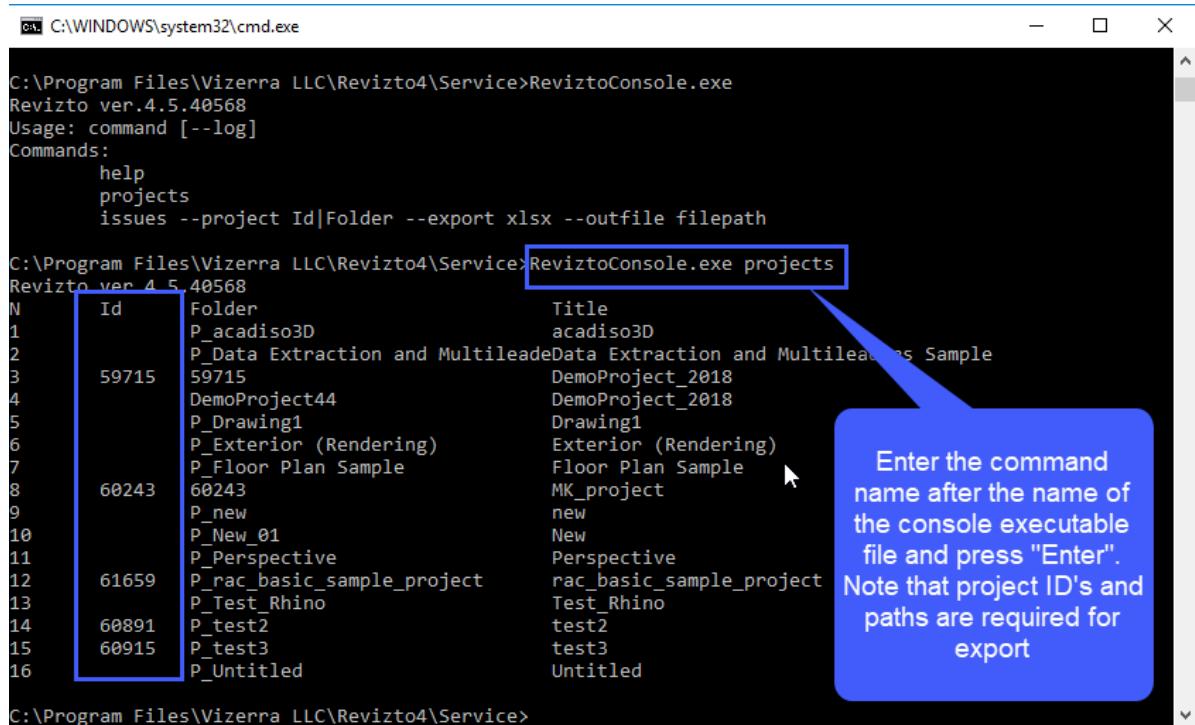
The screenshot shows a Windows Command Line window (cmd.exe) with the following text:

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.15063]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\  
C:\Users\Maria Kondorskaya>cd\  
C:\>cd C:\Program Files\Vizerra LLC\Revizto4\Service>ReviztoConsole.exe  
Revizto ver.4.5.40568
Usage: command [--log]
Commands:
    help
    projects
    issues --project Id|Folder --export xlsx --outfile filepath
C:\Program Files\Vizerra LLC\Revizto4\Service>
```

5. Here you have three navigation options (see the image below for command entry tips):

- **help**: open console's help
- **projects**: show the list of your projects with their ID, Folder and Title. You need this information to launch the **export** command.



```
C:\WINDOWS\system32\cmd.exe
C:\Program Files\Vizerra LLC\Revizto4\Service>ReviztoConsole.exe
Revizto ver.4.5.40568
Usage: command [--log]
Commands:
    help
    projects
    issues --project Id|Folder --export xlsx --outfile filepath

C:\Program Files\Vizerra LLC\Revizto4\Service>ReviztoConsole.exe projects
Revizto ver.4.5.40568
N   Id      Folder          Title
1   P_acadiso3D      acadiso3D
2   P_Data_Extraction_and_Multilead...
3   59715             DemoProject_2018
4   DemoProject44    DemoProject_2018
5   P_Drawing1       Drawing1
6   P_Exterior_(Rendering)  Exterior_(Rendering)
7   P_Floor_Plan_Sample  Floor_Plan_Sample
8   60243             MK_project
9   P_new             new
10  P_New_01          New
11  P_Perspective     Perspective
12  P_rac_basic_sample_project  rac_basic_sample_project
13  P_Test_Rhino      Test_Rhino
14  60891             test2
15  P_test3           test3
16  P_Untitled         Untitled

C:\Program Files\Vizerra LLC\Revizto4\Service>
```

Enter the command name after the name of the console executable file and press "Enter". Note that project ID's and paths are required for export

- **issues** -- project Id|Folder --export xlsx -- outfile filepath

Use the last command for issue export by providing the relevant project data. For example:

```
ReviztoConsole.exe issues --project 40635 --export xlsx --outfile "C:\Users\mk\Documents\test\test2.xlsx"
```

Note: You have to log in to Revizto to use the Console, otherwise the relevant error will appear.

VR Options

Revizto provides two VR viewers tailored to Oculus and Vive VR headsets. Basically, VR viewers are built into the core Revizto application via Unity engine and a range of proprietary integration scripts, but for improved usability and QoE we offer separate launch shortcuts for them.

When using any of the VR options, you can switch from wearing the headset to keyboard. Make sure you only use one display when in VR mode (there is no support for multiple displays now).

Note: Only mouse clicking is available on this screen.

After the project is loaded you will see the instruction screen for navigation with two or three tabs depending on which controllers are connected to the PC. Use a mouse to switch between tabs. You can open the navigation screen at any time via the F1 button.

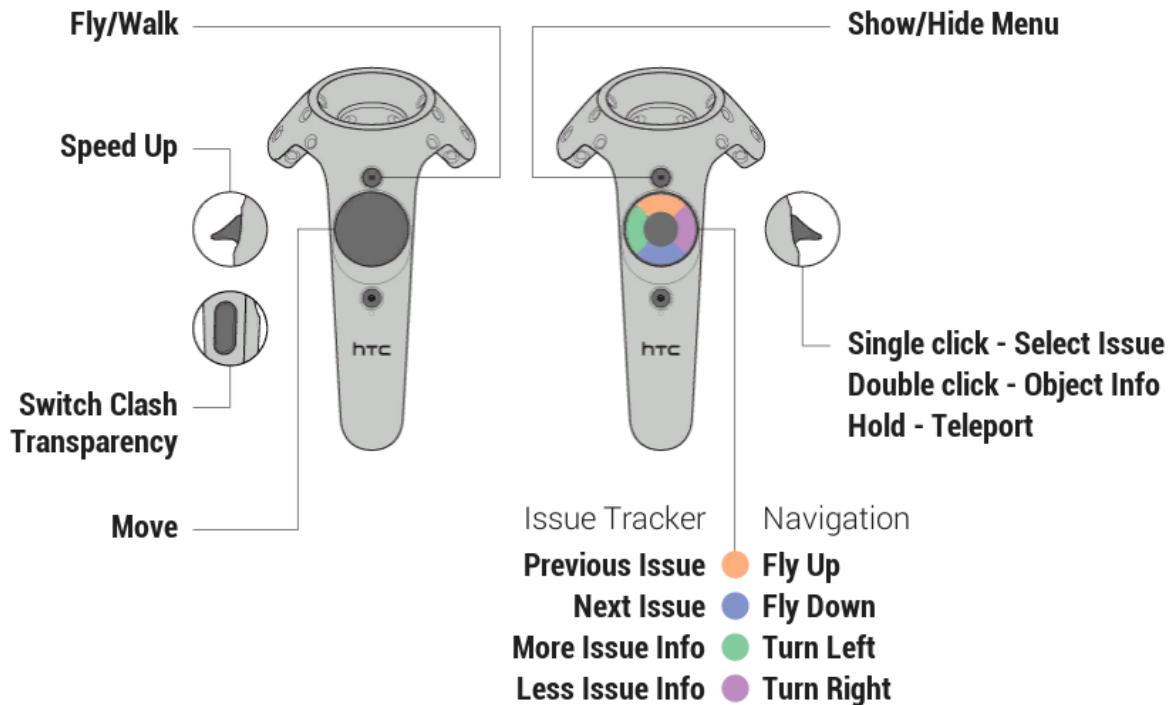
Tip: One of the largest benefits to using Revizto VR is that you're always walking through the actual model geometry. As the model is updated the Revizto VR model is updated with the changes in coordination of the design. Most VR systems require manual and time consuming work reducing polygon count by fusing pretty images to the geometry. This polygon reduction enables users to reach 90 frames a second that allows smooth end user experience on less capable hardware. When the model is updated this process starts over.

With Revizto we keep your polygons, object metadata, geometry, redlines and issue conversations in VR to allow you to make real project decision. Unlike most VR platforms Revizto lets users to walk anywhere in the model instead of being forced to teleport like google street view.

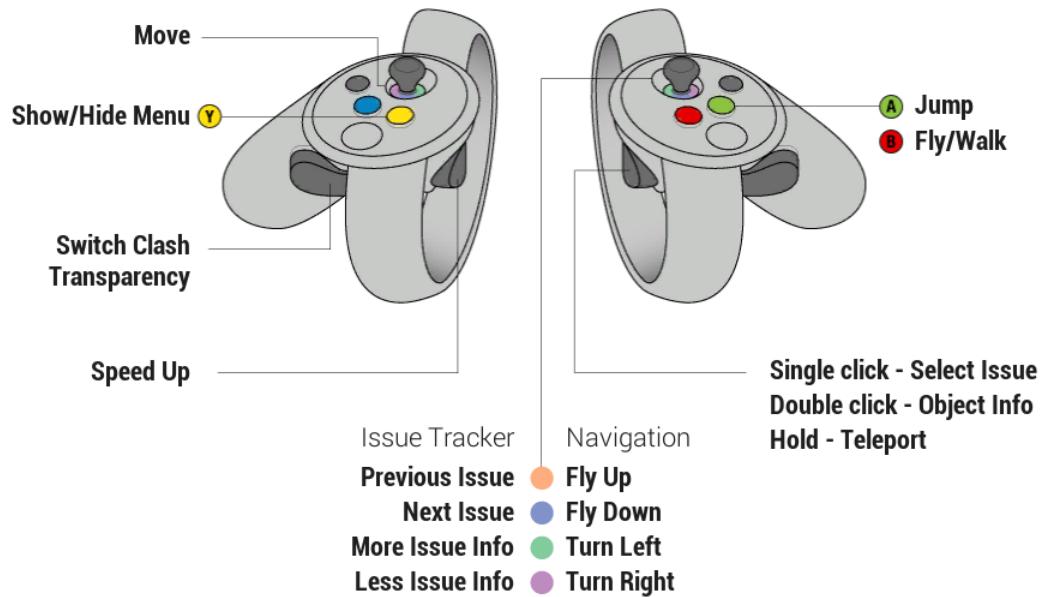
Now that you understand why the VR model can be larger, here is a workflow if your hardware is not getting you the smooth 90 frames a second:

1. Isolate/ section box just the desired area of your project that you would like to walk through. Most people are not interested in walking through every room on every floor.
2. Save this section box as a new viewpoint in the project. You can repeat step 1 as many times as needed.
3. Now open up your Revizto HTC or Oculus Viewer and launch the project. Afterwards, open a viewpoint with a section box in which you would like to walk through. This will allow your machine to dedicate all of its resources to the portion of the model you actually care about in VR. Here you can also switch between different viewpoints.

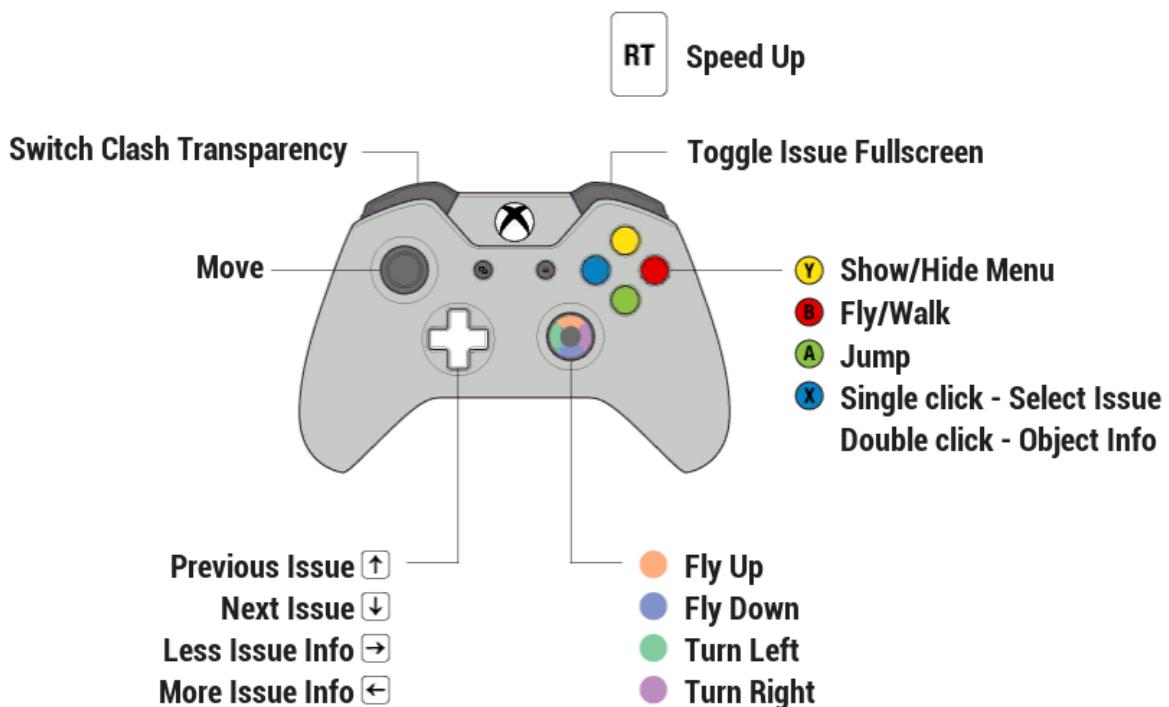
Navigation using the HTC Vive controller:



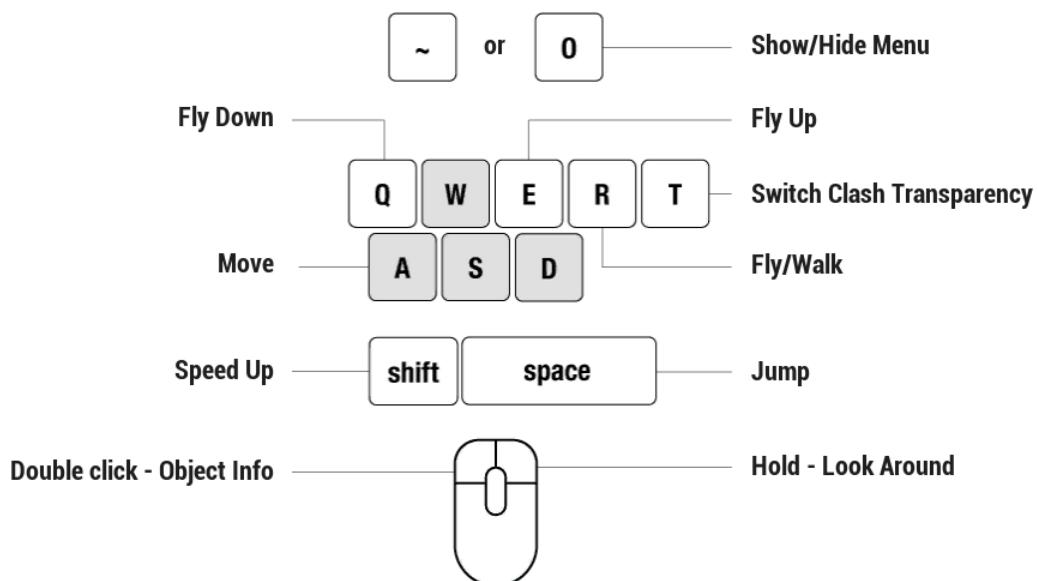
Navigation using the Oculus touch controller:



Navigation using the xBox controller:

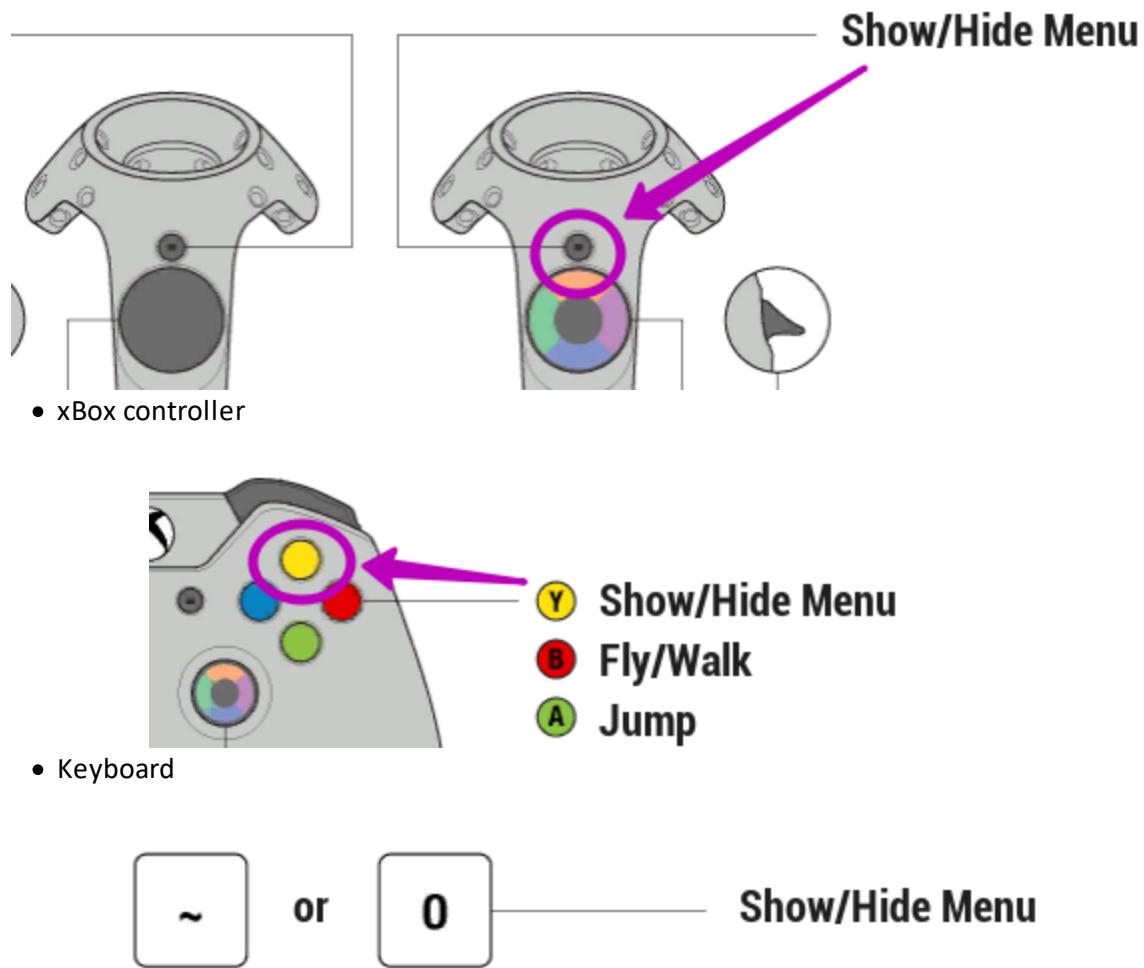


Navigation using the keyboard and the mouse:



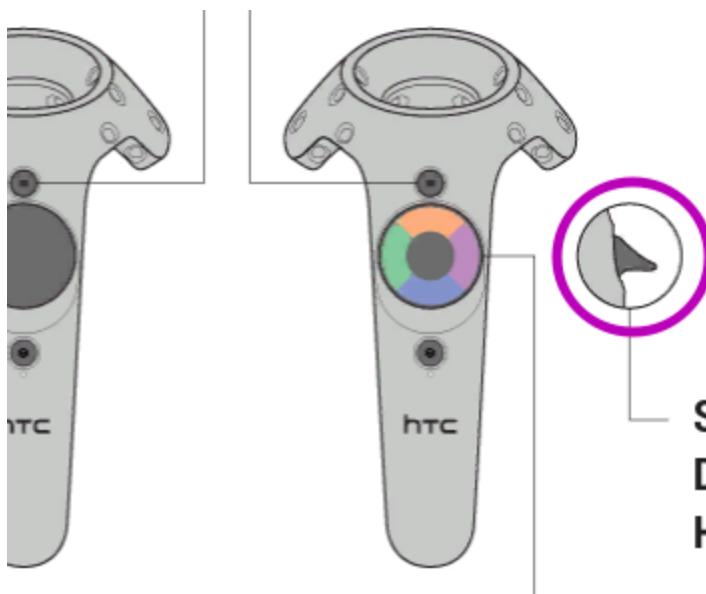
If you need to interact with objects you should hide the menu. You have the following options to do it:

- HTC Vive controller



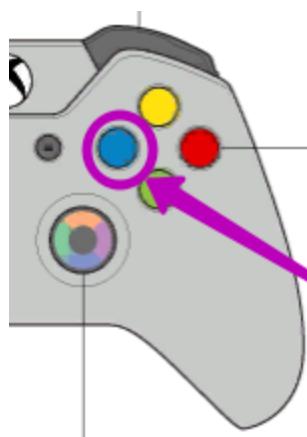
To get information about an object or open an issue:

- Point out a necessary place in the scene using the Vive controller and use the right button:



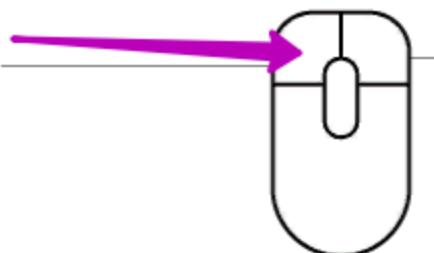
Single click - Select Issue
Double click - Object Info
Hold - Teleport

- Without the Vive controller you should turn your head to place necessary object or issue at the center of the screen. Afterwards use a blue button on the xBox controller or the left mouse button:



Y Show/Hide Menu
B Fly/Walk
A Jump
X Single click - Select Issue
Double click - Object Info

Double click - Object Info



System requirements for VR:

- GPU: VR Ready cards recommended for Oculus or Vive (depending on your device).
- RAM: min 8GB, recommended 16GB or more.
- OS: Windows 10.

Camera Sharing

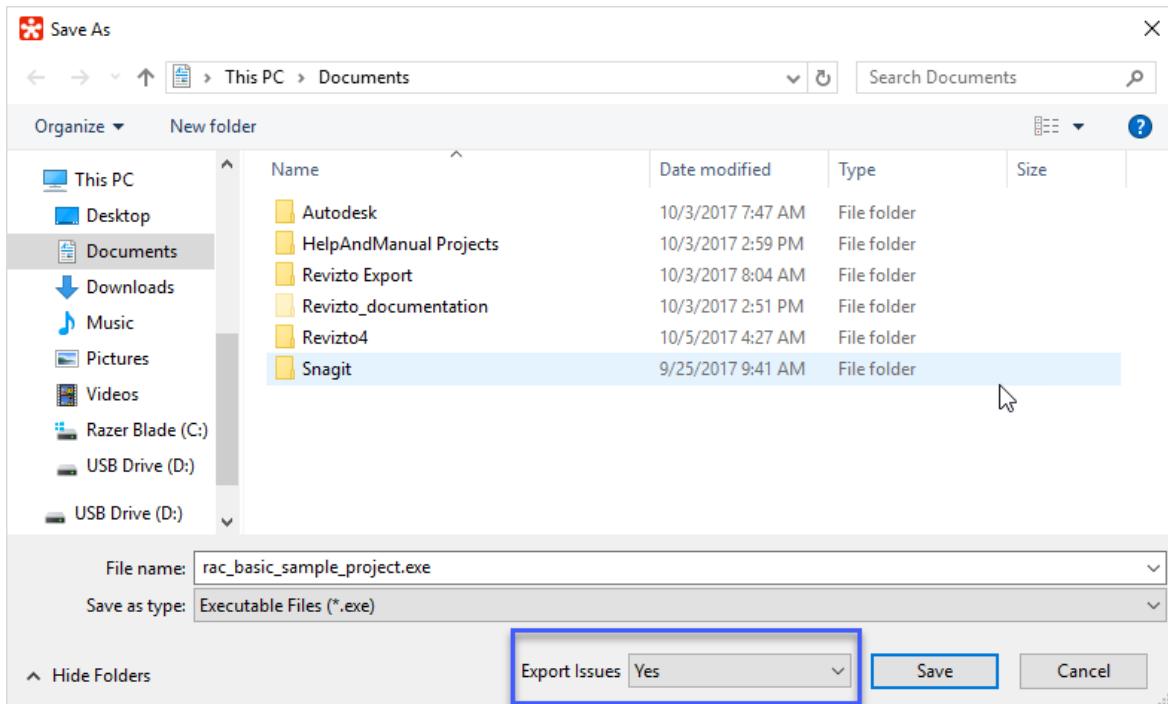
Camera sharing for VR replicates the [standard Revizto functionality](#)¹⁴². When a session is initiated, one person (the leader) can control the movement, while other people connected to the session follow (in VR or not). If a user wears a VR headset, their camera location is changing, but the viewing direction is left free (but the direction of the leader's camera is marked).

Generally, an experienced user is selected as the leader on a standard PC application, while a novice follows them in a VR headset (in the same physical room). In that way novices do not have to navigate to view the model.

[Watch the VR camera sharing tutorial](#)

FAQ

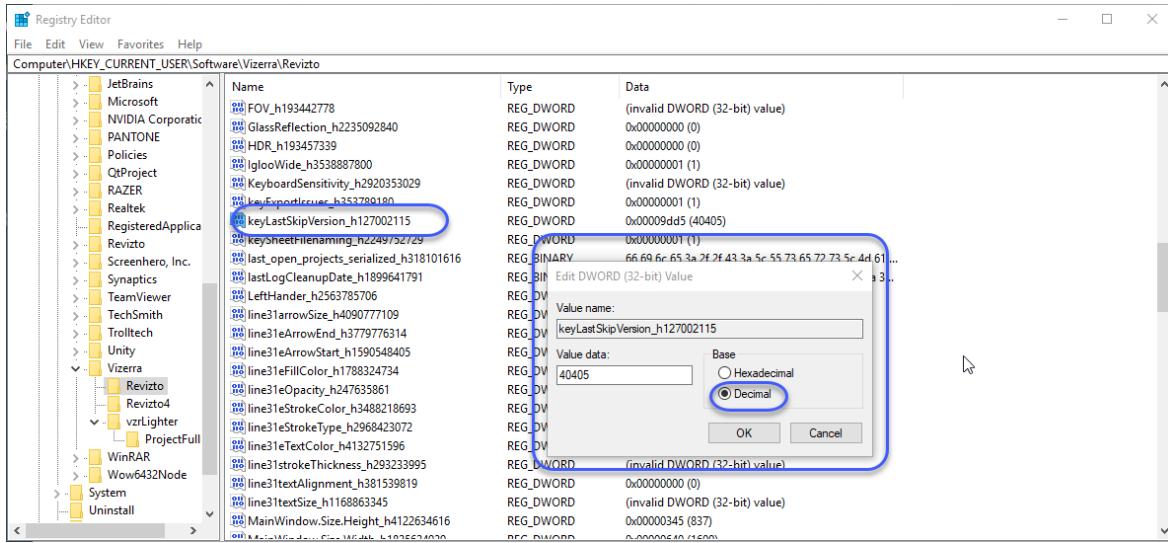
1. - We let go a team member who owns a range of projects. How to transfer ownership?
 - You have 2 options. One is to deactivate (and then delete) this user. Project ownership will be automatically assigned to the License Owner (SuperAdmin). The other option is to manually reassign project ownership before deactivating (and deleting) the user.
2. - We let go the License Owner (SuperAdmin). How to transfer the license ownership?
 - Note that only the License Owner can edit their own access level. You have to make sure that before leaving the company, employee who owns and manages Revizto license transfers their rights to another person.
3. - My company operates in Canada and has partners in the UK. Both we and our partners have Revizto licenses. Yet, I cannot invite their users as Guests to collaborate in my projects. Why?
 - In Revizto geographies are strictly divided in order to ensure maximum operation speed. Therefore, the Guest status (free collaboration access to members of other Revizto workspaces) is reserved to users within the same geography. To invite a collaborator from a team that has a license issued for another geography, you will have to create a fee-based Collaborator or Content Creator account.
4. - We often get failures and errors while exporting our source files to Revizto. What to do?
 - If your working folder is located on a network location, not on a local collaborator PC, try moving it to a local disk. Revizto uses SQL Light, therefore multiple requests to a remote folder can cause failures and errors.
5. - We want to show the project to our colleagues/partners from another company, but they have no Revizto license. Also, we don't want them to see our issues.
 - You can use the Export to EXE option (the Project menu). Also, choose No in the Export Issues field to hide your issues. The resulting file will be accessible on any Windows x64 machine without Revizto.



6. - I am currently using the French keyboard and cannot use the WASD viewer navigation option. Can I define other buttons as controls?
- No, you cannot customize control buttons, but you can use arrows instead of WASD.

7. - I exported a model from Revit to Navisworks and then to Revizto. But I cannot see the entire model, only one element. What has happened?
- When exporting a Revit model to Navisworks (or importing it from Navisworks), pay attention to export/import settings. Your problem is likely to have been caused by exporting the first 3D view instead of the entire project. Note that you can also export your model directly from Revit to Revizto and use Navisworks to export clashes.

8. I would like to turn off the update feature. Is it possible?
- Yes, you can switch off the update feature. To do it, you have to go the registry and change the HKEY_CURRENT_USER\Software\Vizerra\Revizto\keyLastSkipVersion_h127002115 set the **Value data** field to 99999 (decimal value). The option may be useful, if you want to make sure that all local users have the same version.



9. - I want to customize navigation mode, but Revizto would not save my settings. Every time I restart the application, I am back to defaults. Is there a remedy for it?

- User navigation settings are stored in the registry; the path is HKEY_CURRENT_USER/Software/Vizerra/Revizto. Normally, settings do not reset on their own. Yet, issues can occur if Revizto has no rights to save data in the registry location on your PC. Try removing the folder in the registry and relaunching Revizto. It is supposed to create the folder with default values and necessary rights to store user-defined settings.

10. - Our company subcontracts some BIM work and we usually have several Revit files compiled into the same container project. We also use Revizto for collaboration and issue tracking. Do you recommend linking our source files in Revit and then creating a Revizto project from a single Revit source file, or appending additional .rvt files is better?

- It depends on your business process. From the viewpoint of export flow, it is better to first link your sources in Revit container project. Then you are less likely to get export and synchronization issues. On the other hand, it is possible to append each source file to a Revizto project separately, which is a better option, if each source is updated according to a specific time-line. You can then create export schedules for each of the source files and manage these schedules in Revizto [Export Scheduler](#)¹⁹⁰ application.

11. - I would like to change fonts for names of Rooms and other objects in the model. How can I do it?

- Currently, Revizto does not offer font modification functionality (or other advanced formatting options).

12. - I would like to manage sheets of a shared project offline. How can I do it?

- To work offline, you have to [load full cache of the project](#)¹³⁴.

13. Can I remove a project from Revizto cloud?

Yes, after [archiving a project](#)¹⁶⁷ you can remove it from the Cloud altogether.

14. To be continued

Troubleshooting and Support

Addressing the Support Service

Before addressing the Support Service, please, read this section and the [FAQ¹⁷⁷](#). If nothing helps, email to your support contact. Make sure to attach Revizto logs (compressed as .zip) for the relevant period from your working folder.

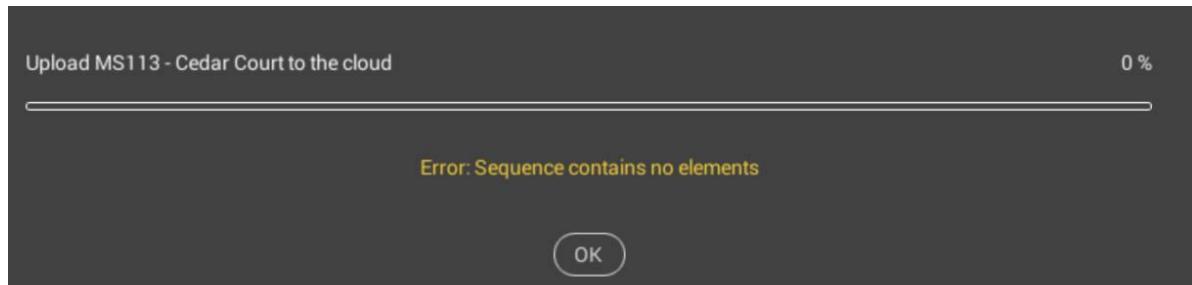
Known Issues and Solutions

Installation Troubles

Revizto uses Sentinel LDK Service to implement licenses. Components of this service may conflict with some anti-malware software. If you experience problems during installation, try turning your antivirus off temporary. You can also try

Corrupted model

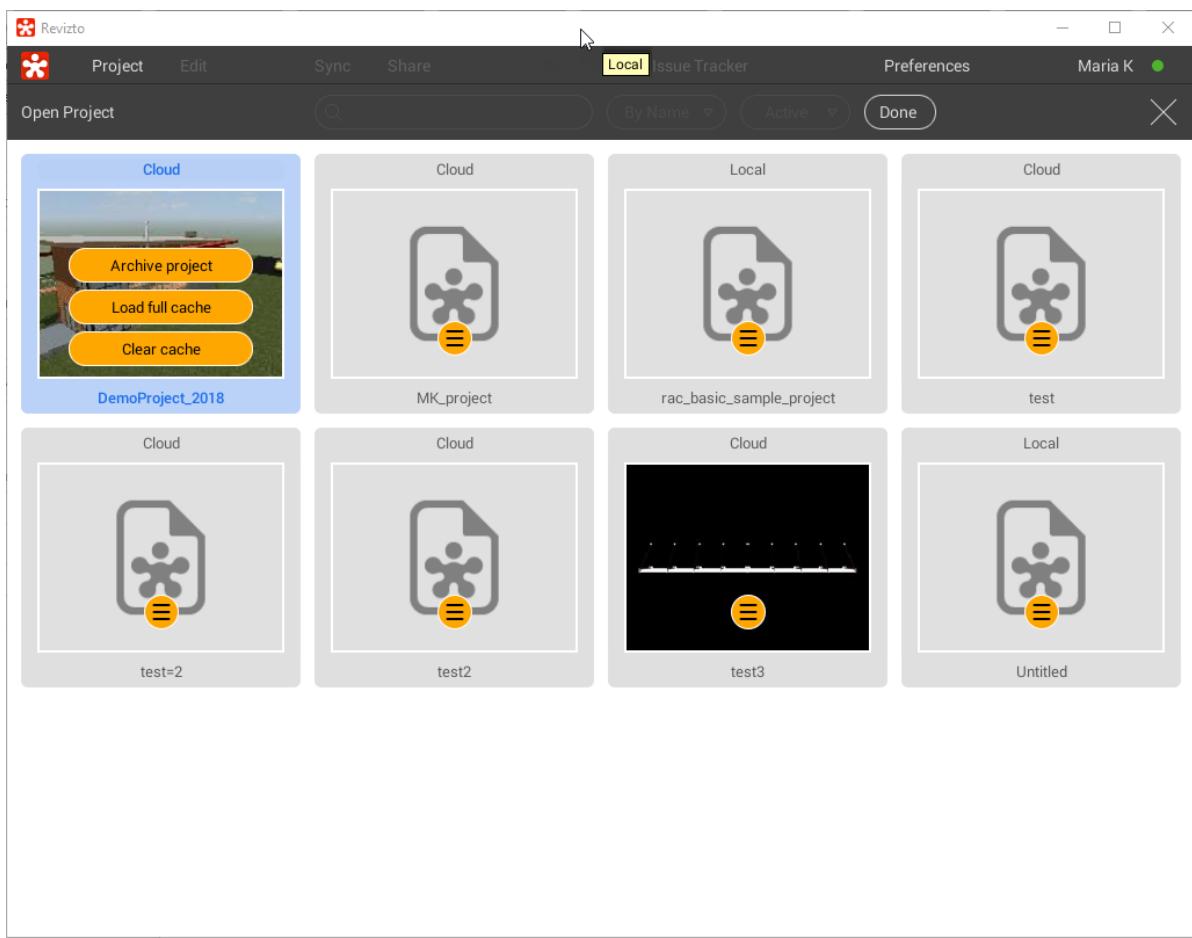
A Revizto model can become corrupted due to some user actions or local software errors/failures. Than upload errors may occur (see example below).



To remedy for it, we recommend to clear the model cache and to re-export a fresh version from the source software.

To clear cache:

1. Make sure that the model is not open in Revizto.
2. Open the list of projects in Revizto
3. Click the **Edit** button in the upper menu.
4. Click the yellow circle button displayed at the tile of the required project.
5. Choose the **Clear Cache** option. Confirm your action.



The project folder then disappears from the local working folder and you are free to create a fresh export without conflicts.

Failure to Download Model Updates

If users fail to check for model updates and get license invalidity messages, make sure that SSL inspection option is turned off on your firewall (or add Revizto servers to the exception list). If the problem persists, address the Support Service with your Revizto logs attached.

Cannot Launch ReviztoService. Application Will Be Terminated Error

If you get the message Cannot launch ReviztoService. Application will be terminated, try the following:

1. Launch the task manager and kill `ReviztoService.exe`, if running.
2. Remove the `.lock` file in the local working folder.
3. Try running the application again.

Another option is defining the location of the working folder manually.

1. Create a folder in "My Documents" called "Revizto4" (if not there already).

2. Go to the local registry, find the

`HKEY_CURRENT_USER\Software\Vizerra\Revizto4\WorkingFolder` value.

3. Change registry value of Working Folder to C:\Users\USERNAME\Documents\Revizto4 (Replace USERNAME with your current Windows username).
4. Try to launch Revizto.

Working Folder Migration Issues

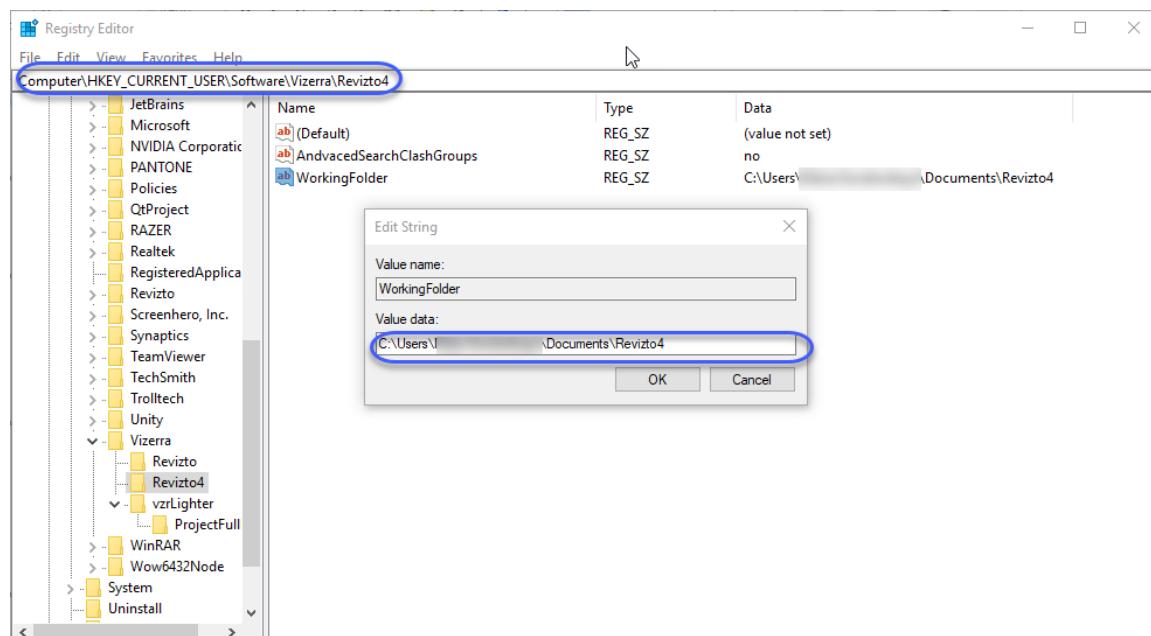
When you change your working folder location, issues can occur due to various reasons (e.g. unstable Internet connection at the moment). There are two ways to resolve them.

If you do not have local data that you have to save:

1. Close Revizto and all Autodesk programs.
2. Launch the Task manager and make sure to kill all processes related to Revizto.
3. Open your initial (old) working folder and empty it.
4. Launch Revizto, go to **Preferences** and change the working folder. Make sure that the new folder is empty.

If you want to save your local changes:

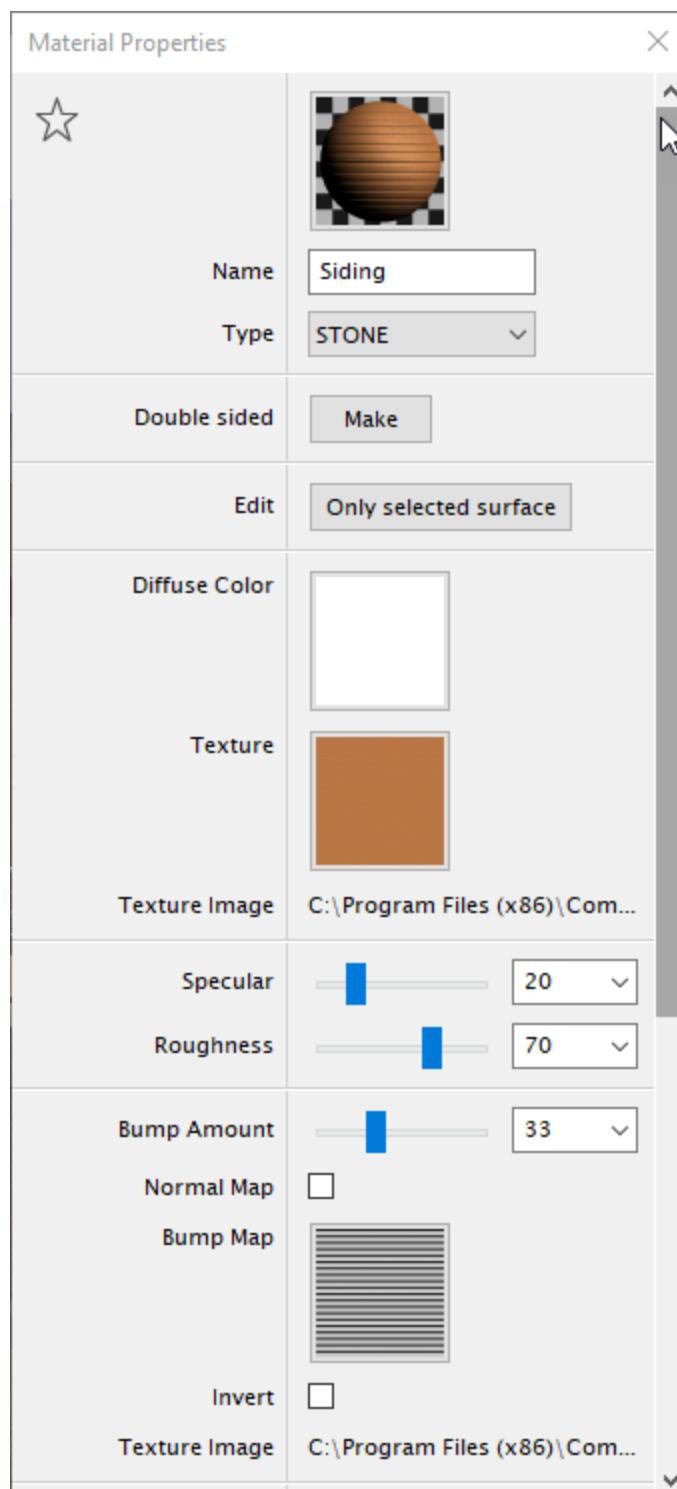
1. Close Revizto and all Autodesk programs.
5. Launch the Task manager and make sure to kill all processes related to Revizto.
6. Open the Windows registry editor (enter `regedit.exe` in the search box by the Start menu).
7. Find the `HKEY_CURRENT_USER\Software\Vizerra\Revizto4` folder. Change the Working folder value. Make sure to enter data in the same format. Note that you need local administrator rights to change the registry
8. Launch Revizto and check whether it works.



Modelling Error

Some basic BIM editors (e.g. early versions of SketchUP) only allow importing front faces of objects (e.g. walls). Therefore, when browsing a resulting Revizto model, you will not be able to "enter" a building (walls are most likely to be rendered as transparent from the inside). Also, if front/back planes were confused in the original file, in Revizto model objects with inverse planes may seem missing (basically, they will look transparent from the outside and visible from the inside). The remedy for it is checking sources before export (to avoid the issue, make sure to use clear front/back color coding in the source file to avoid confusions when creating your design).

Another option (not recommended) is using Revizto scene editor (**Edit > Lighting and Materials**) to copy the front face on the back. Click an object to select it in the editor. **Material Properties** dialog pops up. Click the **Make** button in the Double sided field. Repeat for all flawed planes. Note that we strongly discourage you from relying too much on this option as it doubles the size of Revizto model and has to be repeated after each export.



Sheet Misalign at Export

When exporting sheets from Revit make sure to export non-rotated sheets. Otherwise, Revizto will be unable to align them properly with the 3D view from the start. You will have to either re-export your source files or create overlays manually.

Sheets are not Exported from AutoCAD

To remedy for the issue re-export your source and try one of the following:

- a) Click **Select** by the **Export Sheet** checkbox in the **Export Options** window. Make sure that 2D is duly included in the export, then proceed.
- b) Make sure you are in the **Paper space** mode in AutoCAD before launching export.

For more details on exporting from AutoCAD, see the relevant section [AutoCad/ArchiCad¹⁰⁵](#).

If the problem persists, contact the support service.

Disappearing Elements in Vive Mode

Some users may see that elements (valves, pumps) are missing when they walk in the model. Yet, they usually reappear when one gets closer to them. The problem usually appears in the Vive mode. The known cause for it is Revizto optimization. To maintain a specific frame rate, it has to dynamically unload some of the objects. This is true for both standard and VR viewer, but VR viewer is more resource intensive so it has to unload more to be responsive enough. Some users report that upgrading to SSD somewhat mitigates the problem.

Navisworks Clashes fail to Export

Make sure that you are not using the Reviewed status in Navisworks for issues that still may need some processing. According to current export rules (not available to users for change), this status is exported to Revizto as Closed.

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