dRofus

REVIT PLUG-IN

Version 1.3

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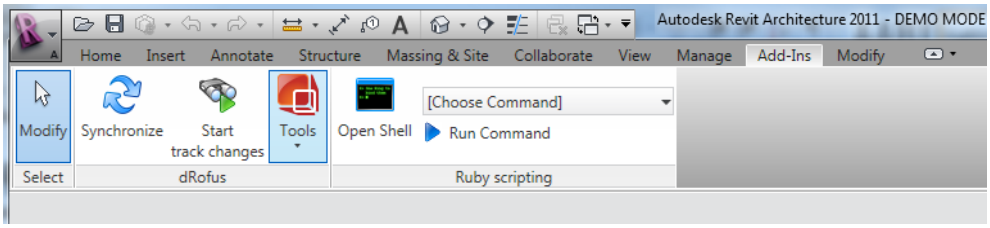
1. OVERVIEW

The Revit Plugin for dRofus is an add-in for Revit Architecture to aid Revit users to keep data in Revit up to date with dRofus. The current version of dRofus supports Revit Architecture 2011 and 2012, but support for 2009 and 2010 area available in older versions.

2. INSTALLATION

The Plug-in is distributed with version 1.0.0 and above of dRofus and register with Revit 2011/2012 the first time you start dRofus. If you have an older version installed, please download the latest installation packages from the download page and install it.

After installation of dRofus, close any open Revit applications and log in to dRofus. The Plug-in is automatically installed and available the next time you start Revit under Ad-Ins.



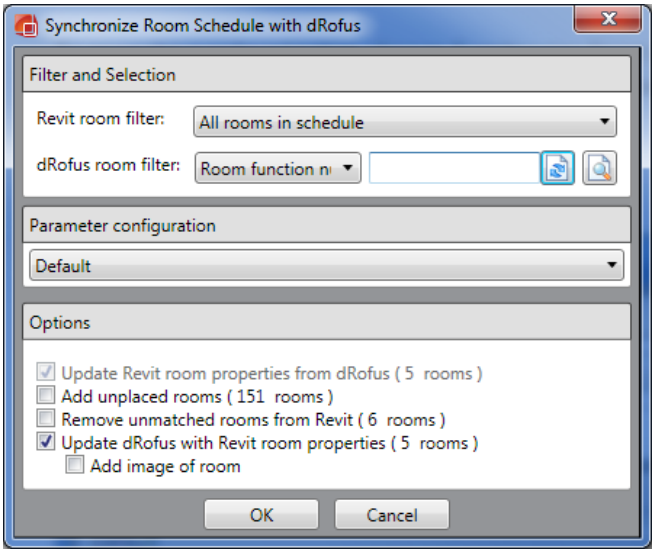
3. ROOMS

3.1. Synchronization

This function will keep the Revit Room Schedule updated with the space program from dRofus. This will let you pick a programmed room from a list when you create rooms in Revit.

To start the synchronization, choose *Synchronize Room Schedule* from the dRofus menu/ribbon in Revit. The first time you use it, you will be asked to log in to a dRofus database. Enter your login information and press OK.

The following dialog will appear:



- **Revit room filter:** Lets you synchronize a portion of the rooms in Revit.
- **dRofus room filter** Lets you synchronize a portion of the rooms in dRofus. You can filter on all room core fields and room groupings in dRofus.

Example: Chose 'Room function no' and set '01*' to synchronize all rooms in the 01 function in dRofus.

- **Parameter configuration** If set to 'Default' the synchronization will use the default settings. See 3.5 for more information.
- **Update room schedule from dRofus** will update rooms in Revit with latest data from dRofus. Only applies to matched rooms. This option cannot be unchecked.
- **Add new rooms to schedule** This will add all rooms from dRofus (based on the filter above) that does not occur in the schedule. The existence of a room is based on the room function number
- **Remove unmatched rooms from schedule** This will remove all rooms in the schedule that is not found in dRofus (based on the dRofus and Revit room filters you selected.
- **Update dRofus with design information** This will update dRofus with information from the Revit room schedule based on the selected parameter configuration
- **Add image of room** Add images of room to dRofus. See below for description.

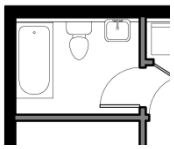
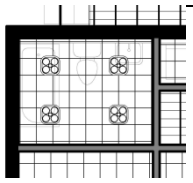
3.2. Add images of room to dRofus

When you check the "Add image of room" option when synchronizing rooms you can upload images from Revit to dRofus to use in reports etc. The images are from temporary views that are created in Revit.

You have the following options when uploading images:

- **Add image of room:** Creates a detail floor plan view of each room.
- **Generate key plan view for each room:** This creates a floor plan view for each room highlighting the room in the level.
- **Generate ceiling plan view for each room:** Generates a ceiling view for each room. This also sets the level for the room as underlay for the ceiling plan.
- **Delete existing images on room in dRofus**: If checked will remove any existing images on the room in dRofus prior to uploading new once.
- **Do not remove the generated views after upload**: The views that the images is created from are normally deleted after they have been added in dRofus. If you would like to continue working on the view and e.g. tag it further, check this option. Later image uploads for that room would then reuse this view and not create a new one. You would need to delete them manually when if you would like the plug-in to generate a new one.

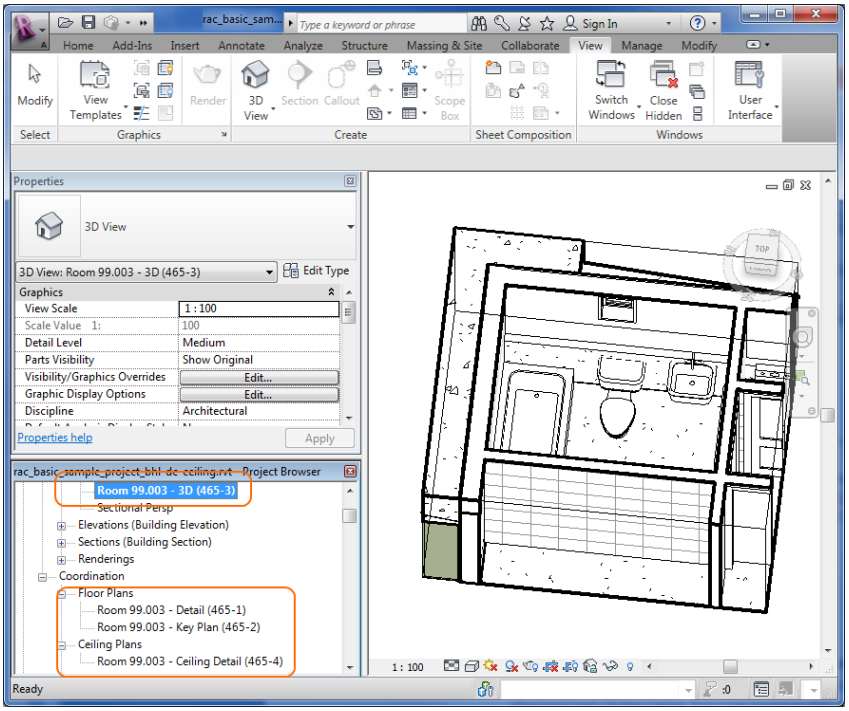
Once we create a view in Revit we also apply a view template to the view before export. This is done if view templates exists and has a predefined name. See table below for naming of view templates and sample images:

Add detail image	*drofus-detail-view-template*	
Key plan	*drofus-key-plan-view-template* (and *drofus-key-plan-highlight-style*[1])	
Ceiling plan	*drofus-detail-ceiling-plan-view-template*	

Naming of views

If you check the option "Do not remove the generated views after upload" the generated views are left in the model. The naming of the views contains the dRofus database ID of the room as the last part of the name. You can rename the view, as long as it ends with the ID in a parenthesis. This is what we use as key when uploading them to the database.

[1] The first time we create a key plan we create a analysis display style named "*drofus-key-plan-highlight-style*". You can modify this (Manage → Additional Setting → Analysis Display Style) if you would like to e.g. have another highlight color than black.



As you can see on the image above the temporary generated views for the bathroom are left in the model and the names end with "(465-X) where 465 is the id of the room and X is an index. We also set discipline to "Coordination" so that you can organize your model and not let the views interfere with the other views in the model.

Import 3D views as images

dRofus does not create 3D views for each room yet, but if you would like to import some 3D images to some rooms you can make sure that the name ends with (Y-3) where Y is the id of the room. In the example above we have created a 3D view and named this "Room 99.003 - 3D (465-3)". The next time you synchronize to dRofus this view is imported to dRofus.

Revit TIP: To create the 3D view from the sample above I just:
1) Go to View → 3D View
2) Right click on the navigation view cube and select "Orient to view →Floor plans →Floor plan: Room 99.003 - Detail (465-1)" (the detail view created by dRofus)
3) Changed the 3D angle and renamed to add the ID.

3.3. Link room to dRofus when created

You can activate the "Start placing rooms" feature and get prompted to select a dRofus room to link to whenever a new Revit room is created.

When pressing 'Start track changes', you will be able to pick an unplaced room from dRofus when you create a new room in Revit.

- Select "Start track changes"
- Select "Room [RM]" in Revit and place a room.
- A dialog box will appear. Use the 'Room filter' so search for specific rooms to place. When a room is placed in model it will disappear from the list. You can search for rooms based on all room core parameters and groups defined in dRofus.

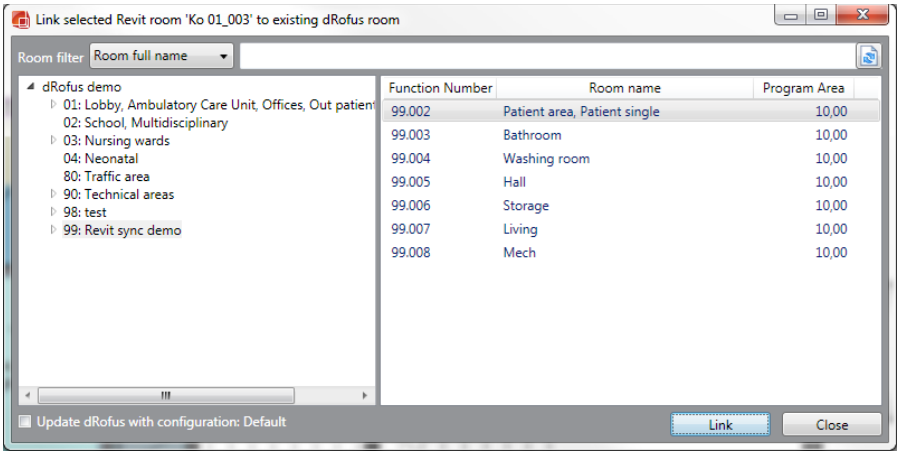
- Tick 'Update dRofus' if you simultaneously want to update dRofus with design information. What data will be updated is depending on which configuration is chosen. Read more about the 'Room attribute configuration' in chapter 3.5

3.4. Link existing rooms

When you have placed rooms in the Revit model that you want to connect to rooms in the dRofus database, you can use the 'Link existing rooms' option.

- Select a room in the model
- Click Tools→Link exixting room
- Search for the room in dRofus that you want to connect the Revit room to, using the 'Room filter' option or navigate in the department/function structure to the left.

Once you have linked a room dRofus will update the Revit room with data from dRofus. What data that will be updated will depend on which configuration is chosen.

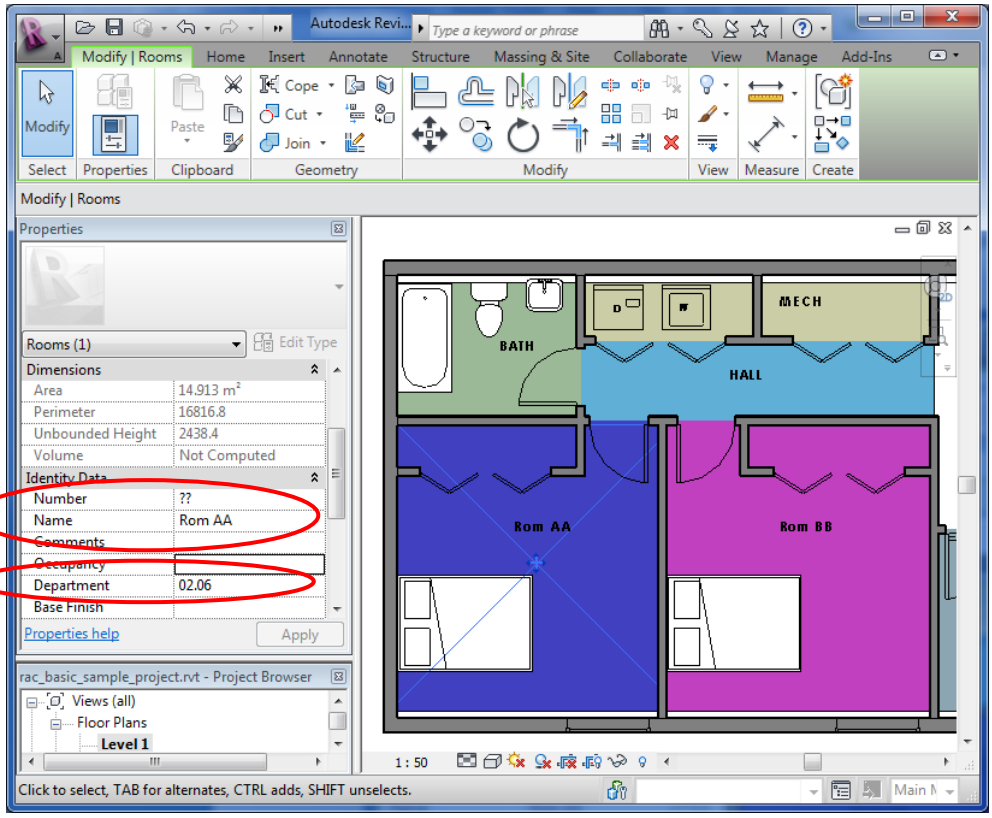


You can keep the link window open while you select another room and link multiple rooms without closing the link window.

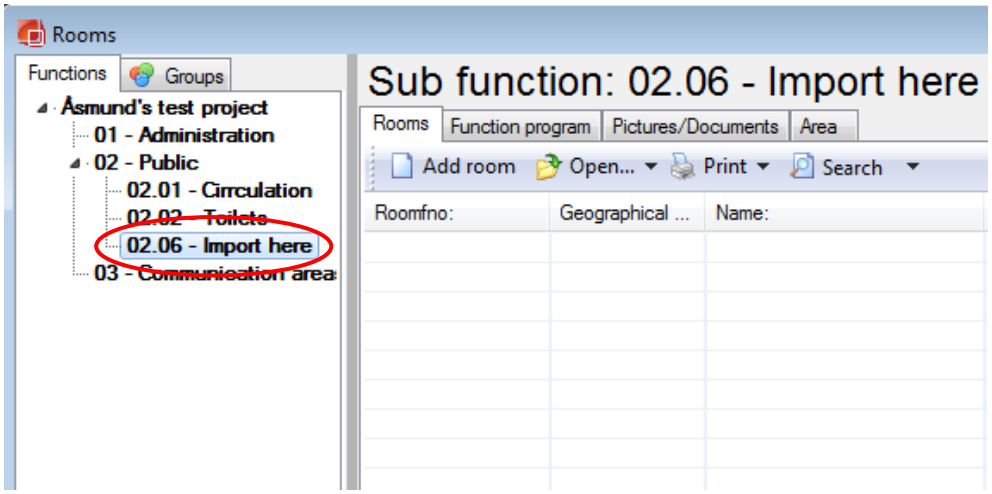
3.5. Import rooms to dRofus

If you have established a Revit model with rooms in it, you can import these rooms to dRofus without changing the room names.

Let's say we have two rooms (could be more off course) that have correct information in the Department property that we want to import to dRofus:



We want to import to this function in dRofus:



Create new import configuration

Go to Ad-ins→Tools→Room attribute configuration

You don't have to create a new configuration, its recommended that you create a copy of existing configuration:

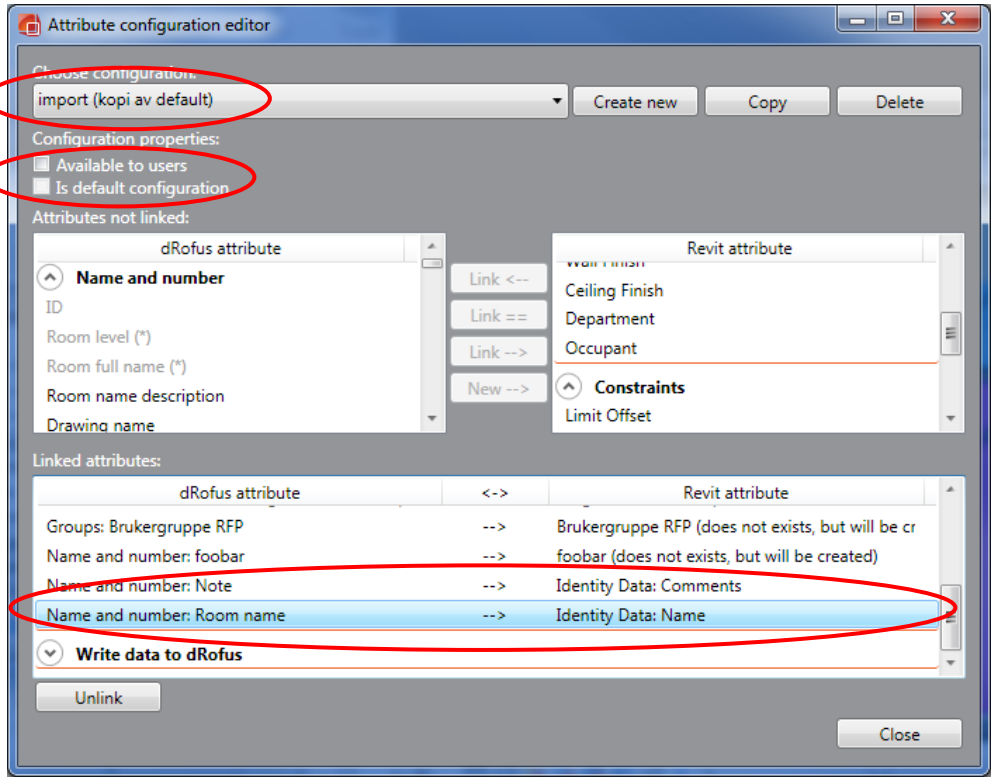
1. Open Room attribute configuration. You might have to log on to a dRofus project if you haven't already done so.

2. Choose default configuration and click 'Copy'. Give the new configuration a name.

3. If the configuration only be used for imports - make sure that "Available to users" is not checked. Then the new configuration will only be available to administrators (who can do imports).

4. Remove the attribute that writes the dRofus room name to Revit: Click "Name and number: Drawing name or name →Identity Data: Name" and click 'Unlink'.

5. Add a new configuration to write "Name and number: Name"→"Identity data: Name" (direction is not essential for use in imports)



Import rooms with the new configuration

When you import it is important that the correct configuration used (the new one you created). In the bottom left corner in the import window it should now say which configuration is used: "Using configuration: xxx". So before we do an import we need to change configuration.

To set the right configuration:

1. Click Add-ins→Synchronize rooms.

2. Change 'Parameter configuration' to the one you have created.

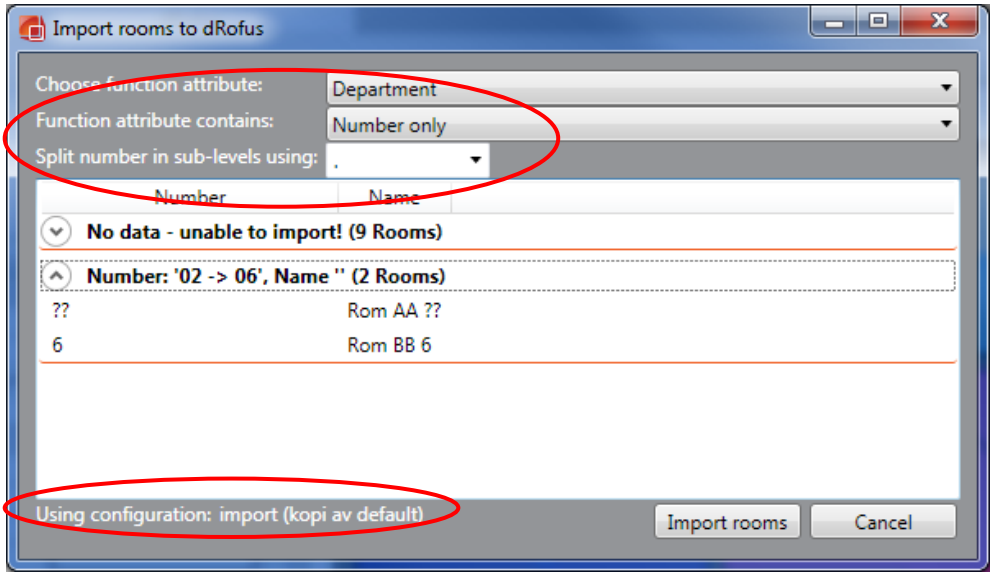
3. Click 'Cancel'

Now you can import the rooms. Go to Add-ins→dRofus→Import rooms to dRofus. Make sure that:

1. You have chosen the correct configuration

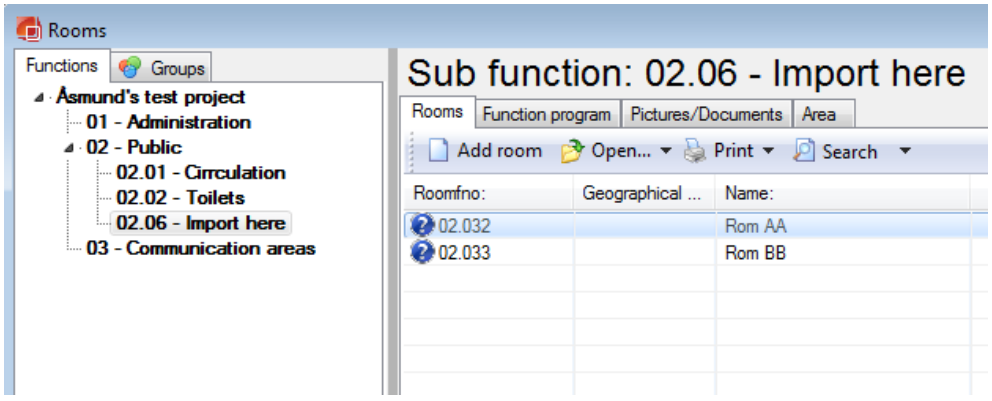
2. Correct attribute are used as room level [in this example we have used 'Department'].

3. That the attribute are read as number and are separated with "." (period symbol).

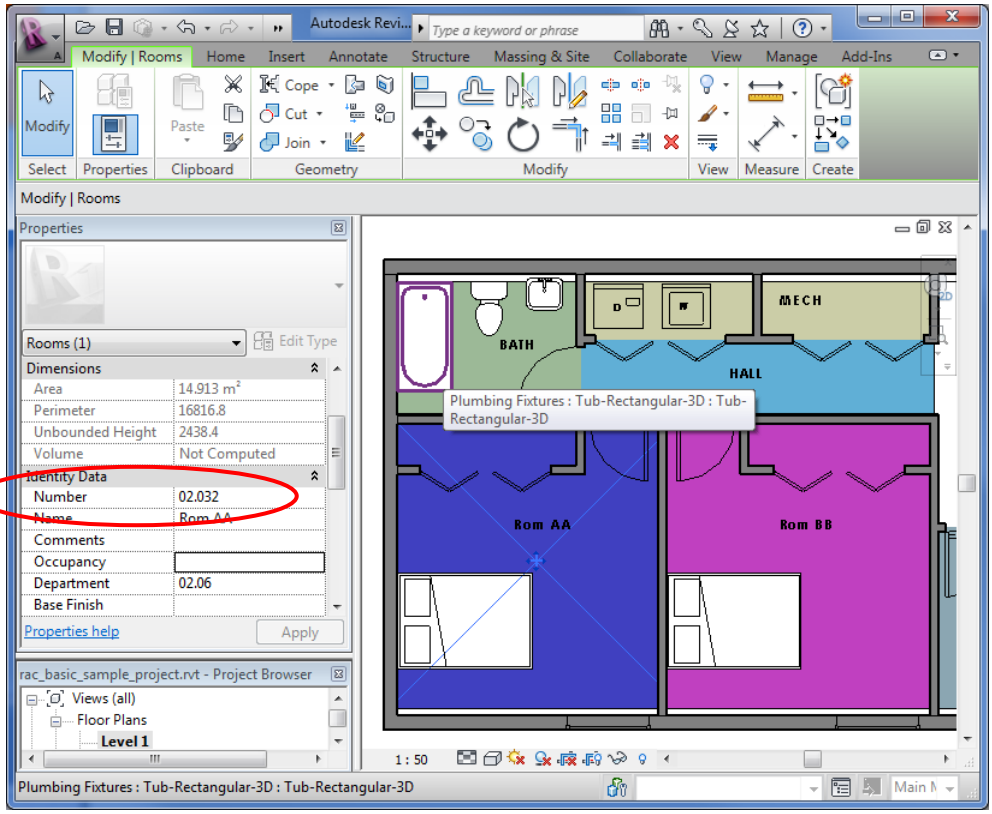


Result

Rooms should now been imported to dRofus.



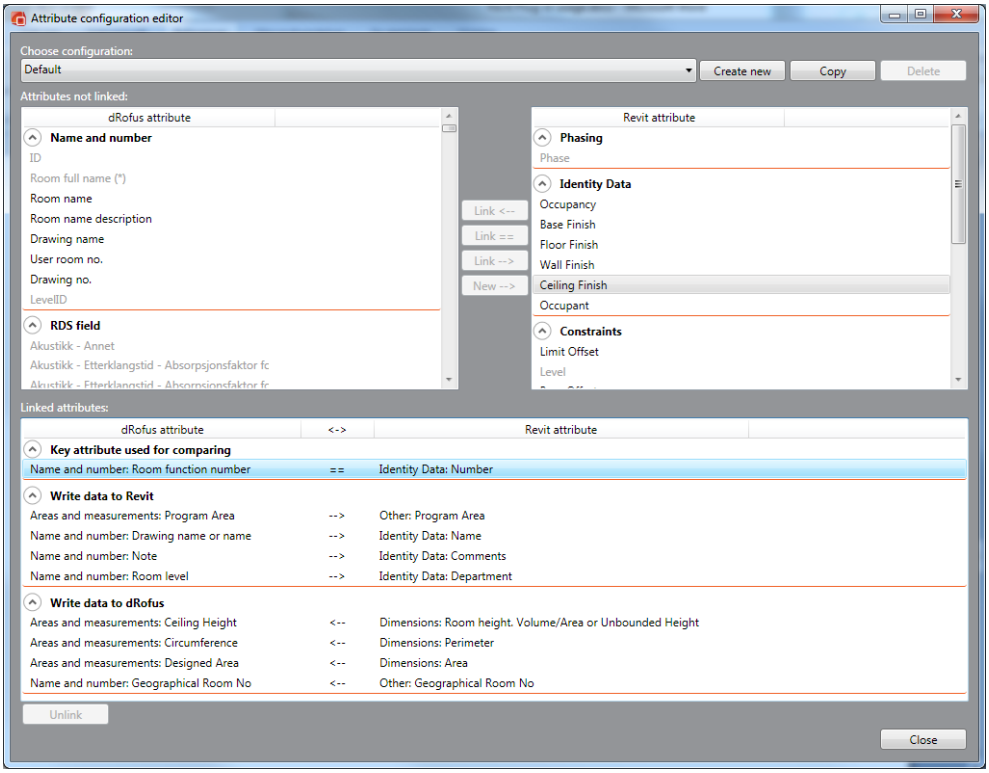
...and update parameters (room function number in Revit):



3.6. Room attribute configuration

Revit plug in comes with a standard configuration where it's defined what data is synchronized from Revit to dRofus, what data is synchronized from dRofus to Revit and to which parameters the information is written. Normally the default configuration is used it but in some cases the project may have to set up special configurations where it can choose which parameters are synced and which way and where the data should go.

Example: Architects have worked in Revit but the client wants to establish rooms in dRofus to attach room data sheets and extract reports. Architects can then import rooms to dRofus using dataflow from Revit to dRofus by setting up a custom configuration saying no parameters in Revit shall be updated from dRofus. In this case all work are being done in Revit then updated in dRofus with latest design information such as areas, room names, geographical room numbers and other optional parameters.



Creating a configuration

Every configuration needs to have a key attribute that is used for matching rooms in dRofus against rooms in Revit. You need to make sure that either dRofus or Revit produces a non empty value for this to work. We till recommend that you you the Room Function Number or ID as the dRofus side of this key if you are not very well aware of what you are doing.

The simplest and safest way to make a configuration is to just make a copy of the "Default" configuration and then make adjustments to this copy.

Note: Take extra caution with attributes from dRofus which has the same name as built in parameters in Revit. If you for example have a room core attribute or group type in dRofus that is called "Phase" or "Level" this will collide with built in parameters in Revit. The default configuration will per default try to write these attributes to a Revit parameter with the same name and this will fail because they are read-only on Revit. Either rename the attribute in dRofus or create your own configuration so you have control over wich parameter is written in which direction.

4. FF&E

4.1. Overview

With the Revit Plug-in you will be able to synchronize information about dRofus FF&E to Revit Family Symbols and keep equipment lists for rooms in sync.

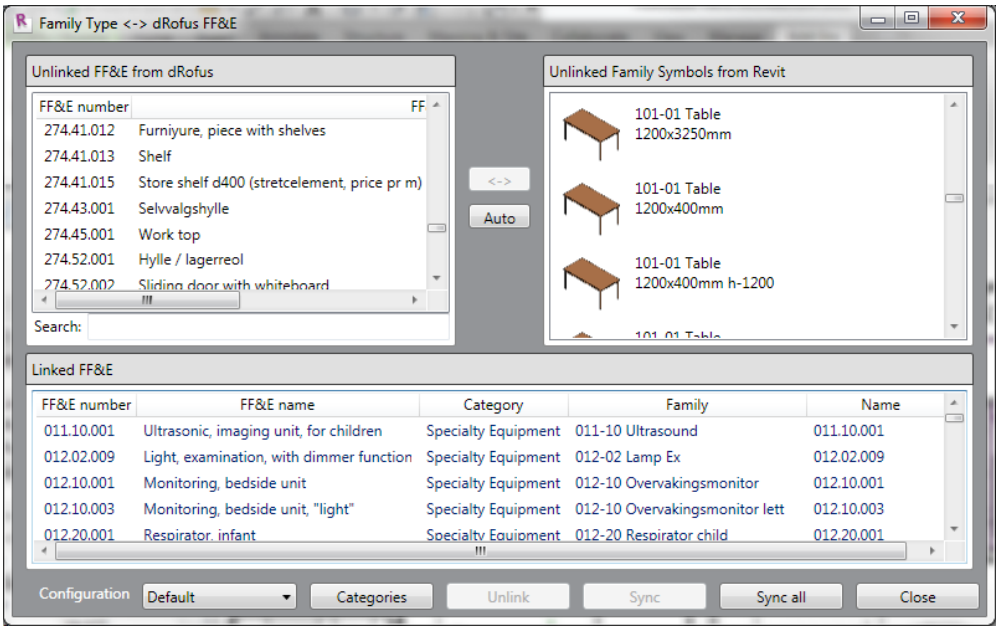
To use this you must first have the rooms synchronized and matched against dRofus.

The Family Symbols must be matched one to one against FF&E in dRofus.

4.2. Linking Family Symbols to FF&E in dRofus

This view will let use match dRofus FF&E against Family Symbols. On the top left you have unlinked FF&E from dRofus and the top right unlinked Family Symbols. Select one from each list and press the **<->** button to make the link. The already linked symbols are in the list at the bottom.

The **auto linking** feature can be used if the family symbols already contain some information that can uniquely identify them in dRofus, e.g. the article number. You will be able to choose a dRofus attribute and a Revit parameter and it will automatically create the link for each family that contains the data found in the dRofus attribute.



- **Configuration:** Choose the configuration to use for matching and synchronizing FF&E. The default configuration will use an internal dRofus ID and write this to the Family Symbol for matching purpose. The advantage of this is that the equipment unit can be moved to another group in dRofus (and thereby changing article number) without losing its connection to the Family Symbol. You add new configurations and edit them the same way as for room.

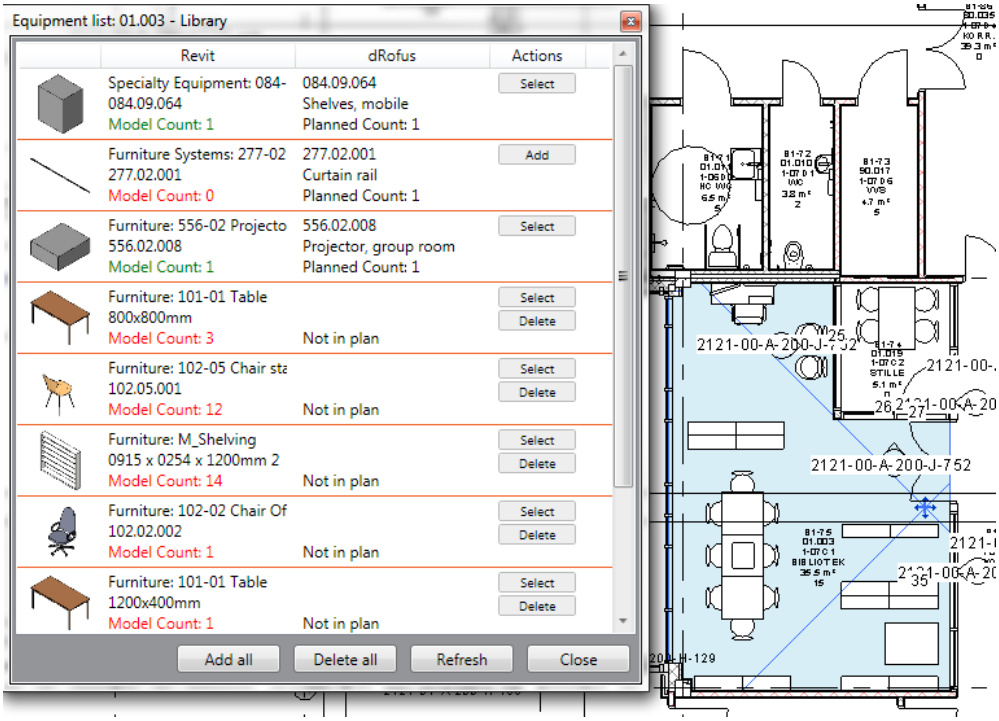
- **Categories:** Choose which categories of family symbols should be included. This will affect both the list of family symbols you see in this view and which family symbols that is included when listing equipment in room. By default the Caseworks, Furniture, Furniture Systems and Pluming are included. If you have administration rights for dRofus you will be able to save a new default by clicking *Save as default* before you close the dialog. This will then affect all uses for this project/database. If it's not saved, this will only affect the current *session (*until you close Revit or log in to another database)
- **Unlink:** Unlink the chosen linked FF&E, removing the link information.
- **Sync:** Synchronize the chosen family symbol.
- **Sync all:** Sync all linked family symbols

4.3. List of FF&E in room

When rooms and family symbols are properly linked to dRofus, you can view the dRofus equipment list for each room in the FF&E window. This window can be kept open and will change whenever you select a new room in the sheet. Depending on the matching and status of the individual occurrence you can do the following:

- **Select:** Highlights and brings the family symbols into view.
- **Add:** Adds the missing family symbol to the room by placing it in the middle of the room. Only family symbols in the furniture category can be added
- **Place:** Lets you place the family symbol interactively.
- **Delete:** Deletes the family symbol from the room when it is not in plan.
- **Link:** Links an unmatched family symbol or dRofus FF&E by bringing up the link window and highlight the symbol/FF&E.

In addition to this you can add and delete all by using the buttons and the bottom of the window.



There is currently no feature to validate the FF&E list for multiple rooms against dRofus in one operation in the plug-in. This could however be achieved by exporting the model to IFC and import this to dRofus for validation, please refer to the *IFC support in dRofus* guide.

4.4. Attribute configuration

You can make custom configurations that define which attributes from dRofus is written to the Revit Family Symbol and vice versa and how they are matched. See 3.5

Some important things to note:

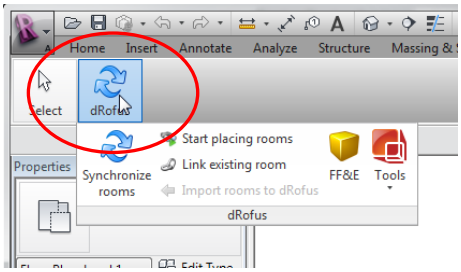
- Currently we only support project parameters, not parameters on the family itself. The workaround to import family parameters is to create project parameters with the same name as the family parameter for the desired category.
- Using the database ID as key will allow you to reorganize the FF&E catalog on the dRofus side without needing to re link the in Revit.
- Since each category have some distinct parameters it could be beneficial to create different configurations for different category.

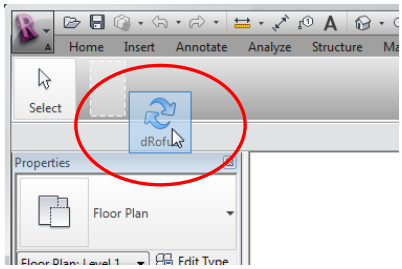
5. TIPS & TRICKS

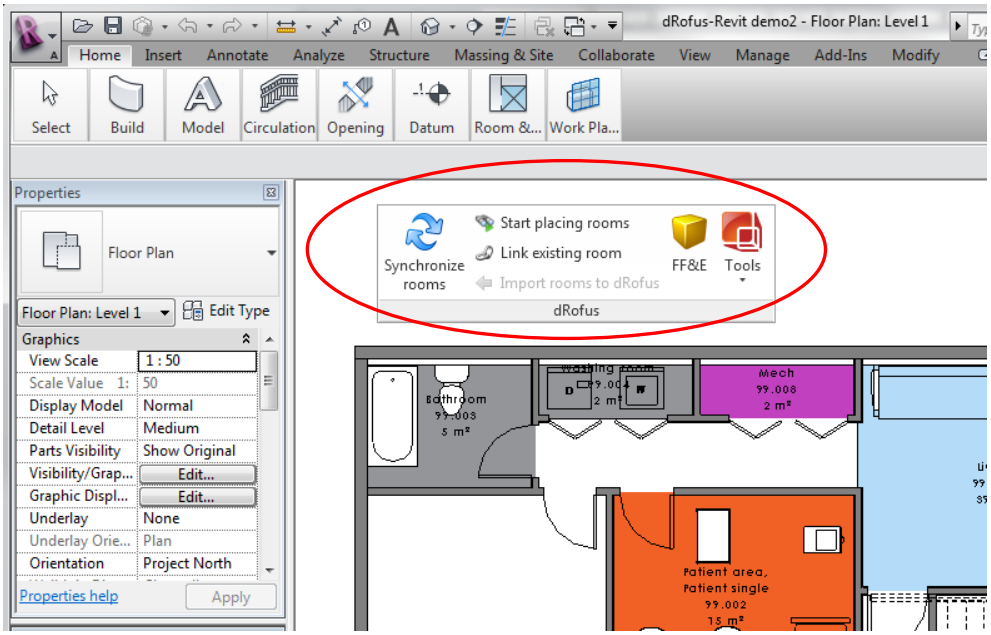
5.1. General

Revit plug-in toolbar as floating window

To avoid that the plug-in toolbar disappears when selecting different object in your model you can drag it wherever you want in your Revit interface. Go to Ad-Ins, click the dRofus plug-in and drag it to desired location.

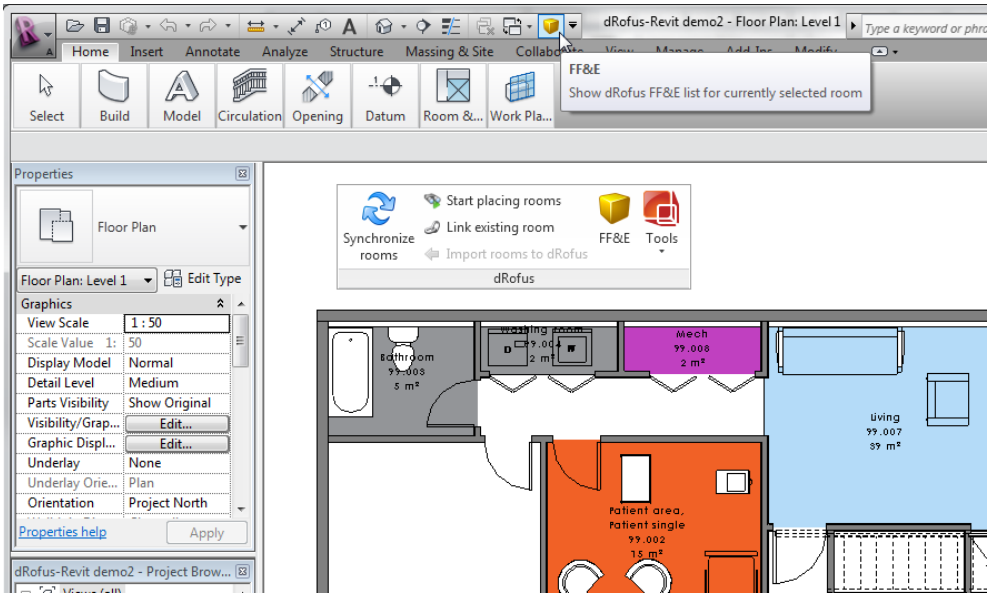






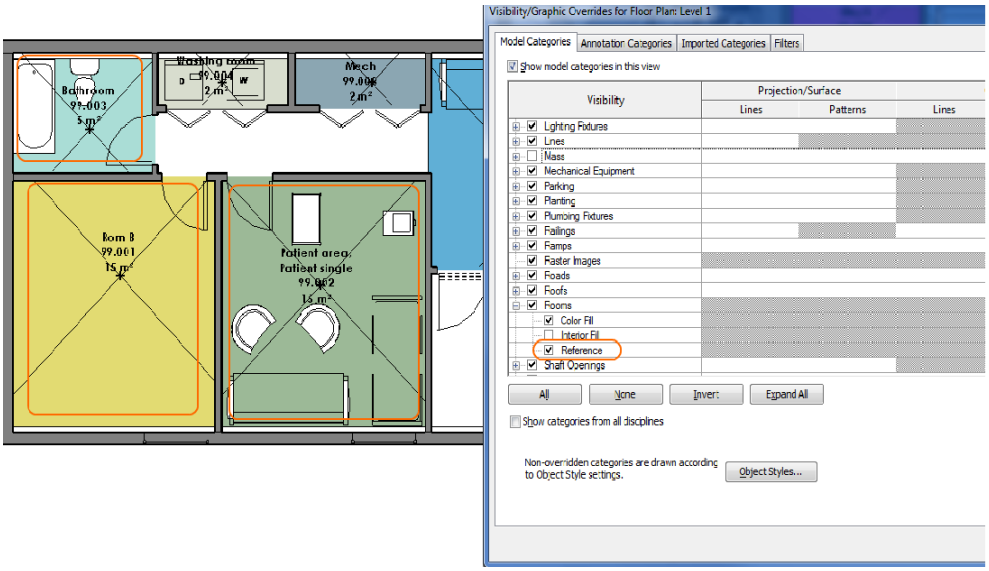
Quick access toolbar

You can add frequently used actions to the quick access toolbar by right clicking e.g. the FF&E button and select "Add to Quick Access Toolbar". The FF&E button will be accessible on the right side of the upper toolbar;



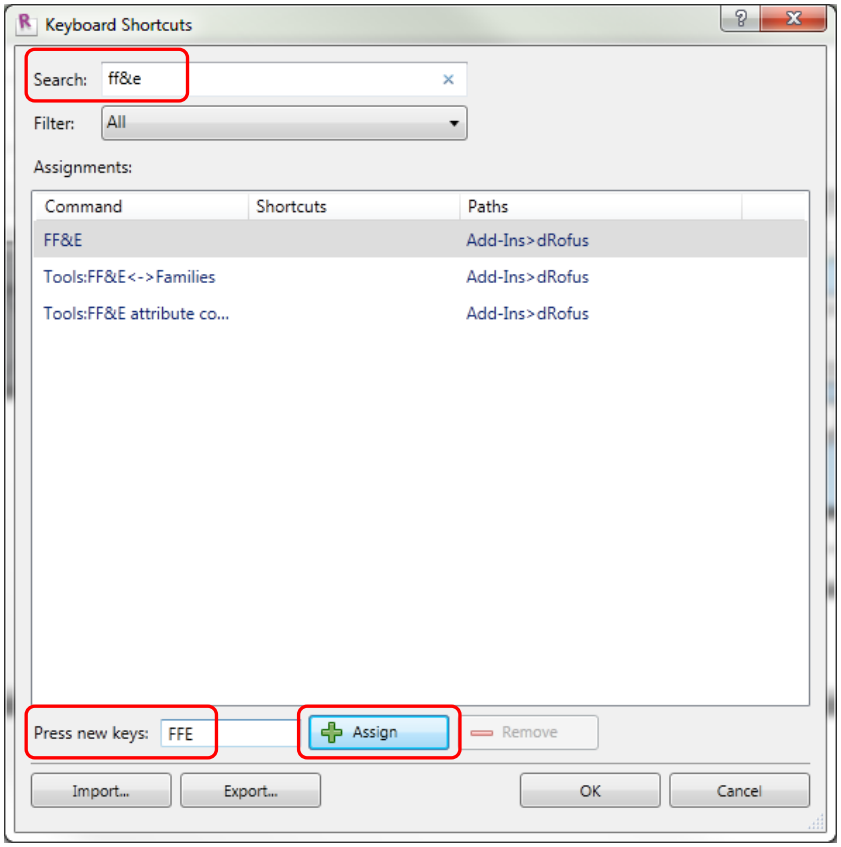
Room Reference

When working with the plug-in you are most likely working with rooms, meaning that you have to select a room object to access data like room parameters, equipment etc. One way to access the room object in the model easily is to activate Room Reference. Open the Visibility/Graphics Overrides [shortcut "v"+"g"]→Open Rooms→Activate "Reference".



Create your own shortcuts

In Revit you can create and control your own keyboard shortcuts. If you e.g. use the FF&E commando a lot you can open this window with an own defined shortcut. Go to View→User interface→Keyboard shortcuts. Search for the commando that you want to create a shortcut for, e.g. the FF & E window. Under "Press new keys" insert the shortcut you want to assign to tha command and press "Assign";



Later when you select a room and want to compare FF&E with dRofus all you need to do is press "ffe" and the FF&E window will show.

5.2. Shared parameters

Identification of parameters which attribute data is written to is purely based on names. It will search for parameters which have the same name as given in the configuration and if it doesn't exist, a shared parameter with this name will be created. Revit however identifies a shared parameter internally by a Global ID so if you do the same parameter synchronization on two different machines and try to load data from one of the files in to another later, the information will end up in two different parameters.

For large organizations or groups of people working together on the same data it is very important to understand the implications of this.

It's very likely that you want to take control of the shared parameters file yourself, creating the correct parameters in advance and share this file as a read-only file with others working on the same project or in the same organization.