



# MagiCAD for Revit

Release notes for version 2021

02/06/2020

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## 1 New features

### 1.1 Common

#### Improvements to Merge Parameter dialog

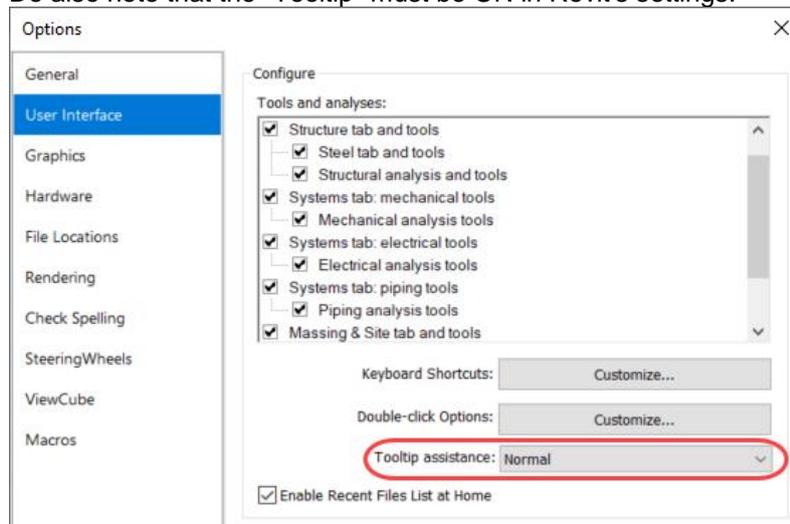
- Range selection now supports levels
- Previous selections are remembered
- Selection can be saved to a file

#### F1 button in the ribbon now opens the correct page in the online UG

Context sensitive help has been implemented in MagiCAD. Pressing F1 when the cursor is hovering over the ribbon images, opens the correct page from the user manual

Note that pressing F1 somewhere else, opens Revit's own help.

Do also note that the "Tooltip" must be ON in Revit's settings.



#### Multiple selection of parameter files - used in dataset

Additional shared parameters can be defined in MagiCAD's settings, and the files are stored to the project. MagiCAD's functionalities use the files defined for the active project.

#### Direct printout from Bill of material

It is now possible to print the bill of material as well as export it to PDF or Excel.

## 1.2 Heating, piping and ventilation

### Gas calculations

MagiCAD supports now sizing and pressure drop calculations of natural gas networks using UK/Cibse Guide C 2007 calculation method. Hospital/Industrial gases like O<sub>2</sub> or CO<sub>2</sub> are not yet supported. New device group "Gas valves" has been introduced for this purpose. Also a gas connection to the substations can be used.

Connection nodes can also be used with the gas systems.

More information here and here.

### Using heating load of the space and window information to install one or multiple radiators under the windows in a room

With this new function it is possible to use heating load of the space to select the radiators to the room.

The radiators are selected under one or more windows in the room

More information can be found from here.

### Support for ASHRAE ventilation calculation standard

MagiCAD ventilation calculation supports the most common fittings from ASHRAE 2011 standard.

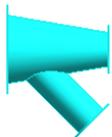
### Support for Chinese calculation ventilation standard

MagiCAD ventilation calculation supports the most common fittings from the Chinese standard.

### More accurate calculation of some fittings

Some T-branches are defined as Y-parts in MaciCAD database. They were previously also calculated as Y-parts.

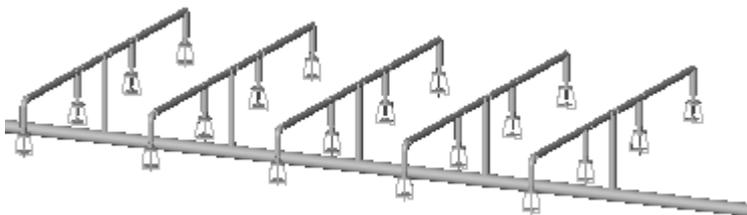
Now if the main pipes are parallel, the branch is calculated as a T-branch.



### More connection options for the sprinkler connection tool



The inline connection can now also connect sprinklers on both sides of the selected pipe.



### Freely definable usage units for DIN 1988:300 domestic water calculations

The user can now freely define the usage units. Earlier version of MagiCAD used zones as usage units.

### **MagiCAD now keeps the group when Find&Replace is used for the domestic water devices / Russian standard 30.13330.2016**

When a water device is replaced using Find and Replace tool then the new device automatically goes to the same group where the old one was.

Earlier version did not keep the group and the device had to be re added to the group manually.

This improvement applies also when a device is replaced to the usage unit when standard DIN1988:300 is used.

### **Dead leg volume option for the hot water calculation**

Dead leg options has been added all to the water sizing and balancing dialogs. A dead leg is any part of the hot water system that doesn't have a circulation.

The default volume is taken from the selected standard or if not defined in the standard, 5 l is used.

The value from the standard can also be overridden and enter the maximum volume of the dead leg.

In case of French DTU 60.11 is used, it is not possible to change the volume of the dead leg. 3 liters is defined in the standad and that is always used.

### **Update parameter support for loading units/flow of the domestic water devices**

The Flow parameters and appliance type (e.g. LU, design flow etc) can be updated from dataset to project elements with "*Update parameters*".

### **Calculation of needed system pressure for DWS**

Low/High flow limits are now disabled if specified pressure at outlet option is used.

### **Improvement of the drainage connection tool**

Several improvements have been made to the drainage connection tool.

Connection from a device to the open connector of the fitting is now possible

More accurate angles are used in connection.

New connection tool settings done where is possible to define used angles for drainage connection, standard connection and device connection.

Settings are saved to project level.

Sewer connection now gives wide range of route solutions with angles provided by the settings mentioned above.

More information on the new features in chapter 3.6 Drainage connection

### **Smarter manhole installation**

Added smart mode for the outdoor well installation which contains adjustable collar. In this mode outdoor well can be installed in a pipe.

When outdoor well is installed, the collar length is calculated automatically according to top offset. If collar length cannot be adjusted enough then also top offset has to change because connection height cannot be changed without changing pipe height.

### **Drainage flow calculation now updates information of the products**

The product codes for the fittings and pipes are now updated in the drainage flow calculation.

Earlier version showed only the ID of the product, which in some case could be only the GUID of the product

**Added T-branch selection to the floating toolbar or pipe and duct drawing****Improvement for 3-Port Valve, Find & replace**

Find & Replace preserves existing connections when replacing 3-port valves

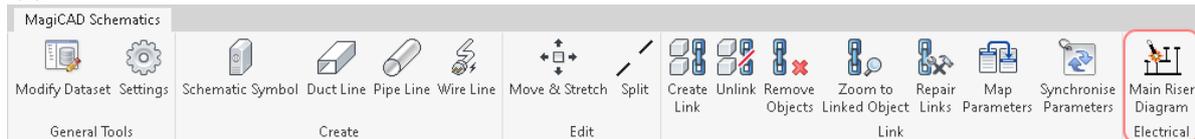
**Support for sizing of the clamps**

MagiCAD supports now sizing of the outlets with clamps around the main pipe.

### 1.3 Electrical

#### Create main riser diagram automatically

With this function, it is possible to automatically create main riser diagrams from electrical networks. Please see the "Schematics" chapter for more details since this feature is included in the Schematic module. The button is found from the Electrical panel in the MagiCAD Schematics ribbon tab.

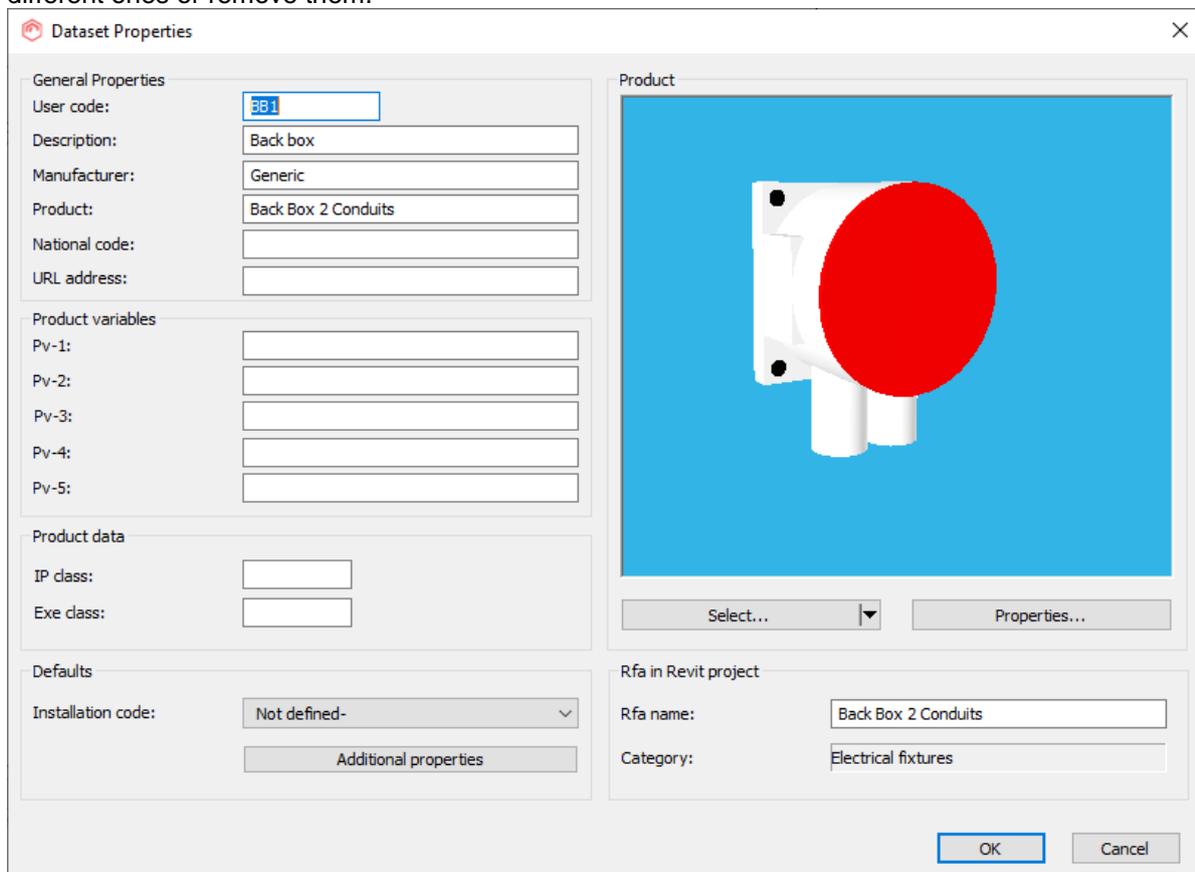


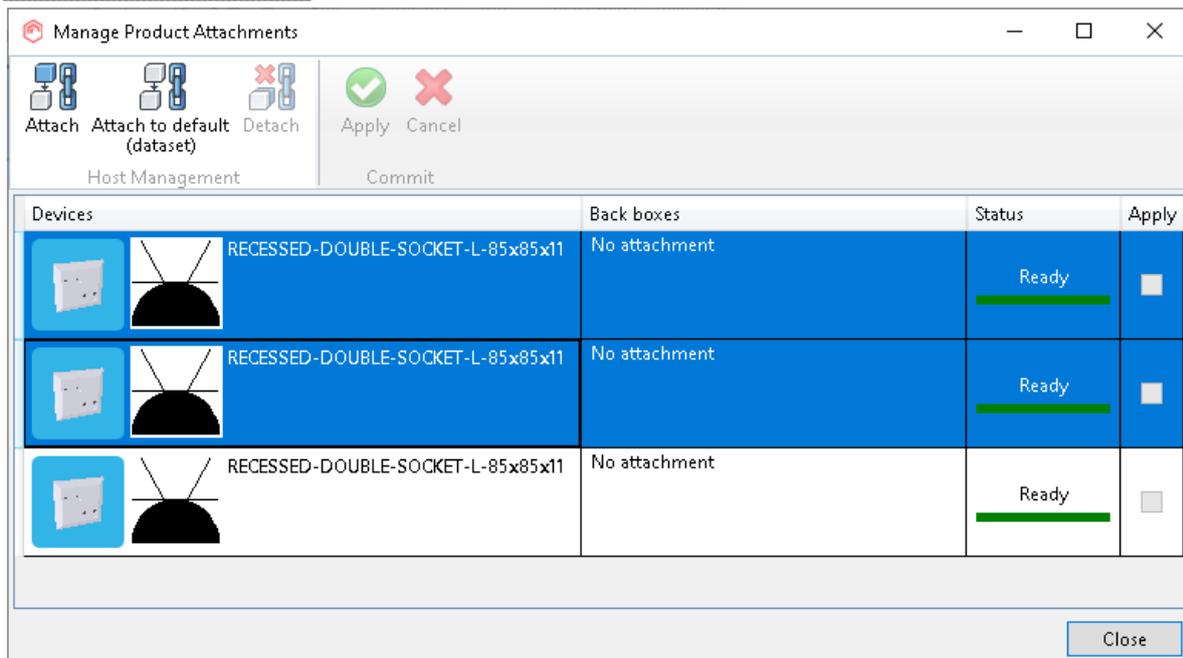
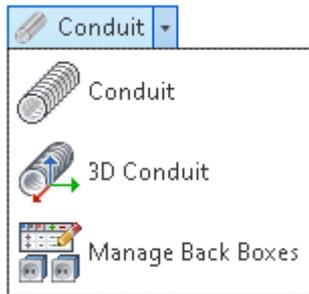
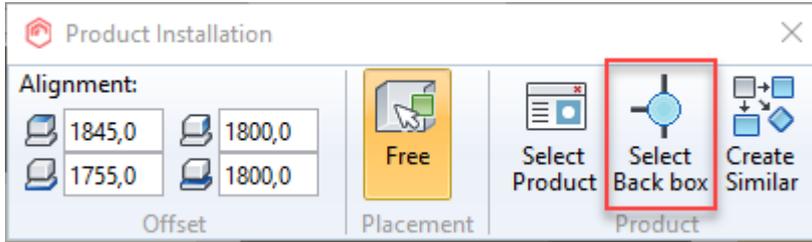
#### Back boxes for electrical products

A new product class "Back boxes" has been added. These products are used as mounting boxes behind devices, and are located inside building structures. The products have conduit connectors, so it will be easy to make designs of conduits inside concrete elements. Back boxes can be installed so that they are attached to other products or as individual objects.

In the dataset you can define default back boxes for all other devices except switchboards. From the product installation dialog you can still change the back box that will be used, if any.

A new function for handling installed back boxes has also been added under the dropdown menu of Conduits in the MagiCAD Electrical ribbon tab. With the function you can change back boxes to different ones or remove them.



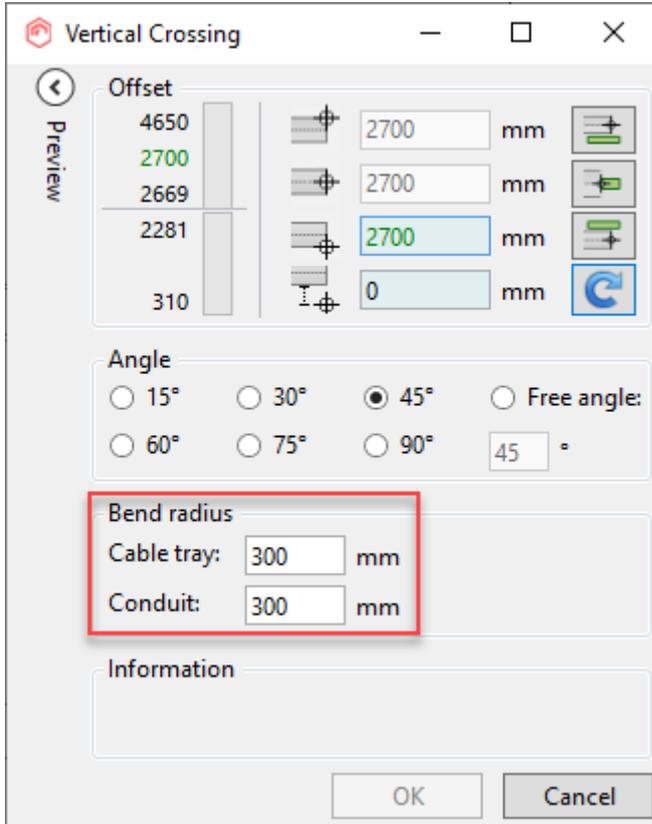


**Radius for cable tray bends should be selectable in crossing tool**

Bend radiuses for tray and conduit bends have been added to all crossing tools. User can define the bend radius used in crossing if the selected tray or conduit type doesn't have a specific bend radius defined in the used bend family.

In Multi crossing dialogs, if both a cable tray and a conduit are selected, both can have different bend radius. All selected trays and conduits use the values given in the dialog.

An error will be shown in crossing dialog if no bend type has been defined for a selected tray or conduit.



**Using Wire type management tool with calculations**

In the Wire Type Management tool there are now two new columns for wire types where user can define conductor materials and arrangements. Those selections can easily then be updated to the calculation functions to make sure that the calculations are made with correct cable information. Also, a text filter has been added for finding the correct wire type easily.

Wire Type Management

General

Type name

Name	Conductor Materials	Conductor Arrangements	Weight [kg/m]	Diameter / Width [mm]	Height [mm] (if needed)	Number of phases	Number of neutrals	Number of PEs
1	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
2	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
3	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
4	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
5	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
6	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
7	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
8	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
9	Ph: Copper PE: Copper	Live: Multi-core PE: PE Included	0	0	0	0	0	0
10	Ph: Aluminium PE: Aluminium	Live: Multi-core PE: PE Included	0	0	0	0	0	0
11	Ph: Aluminium PE: Aluminium	Live: Multi-core PE: PE Included	0	0	0	0	0	0
12	Ph: Aluminium PE: Aluminium	Live: Multi-core PE: PE Included	0	0	0	0	0	0
13	Ph: Aluminium PE: Aluminium	Live: Multi-core PE: PE Included	0	0	0	0	0	0

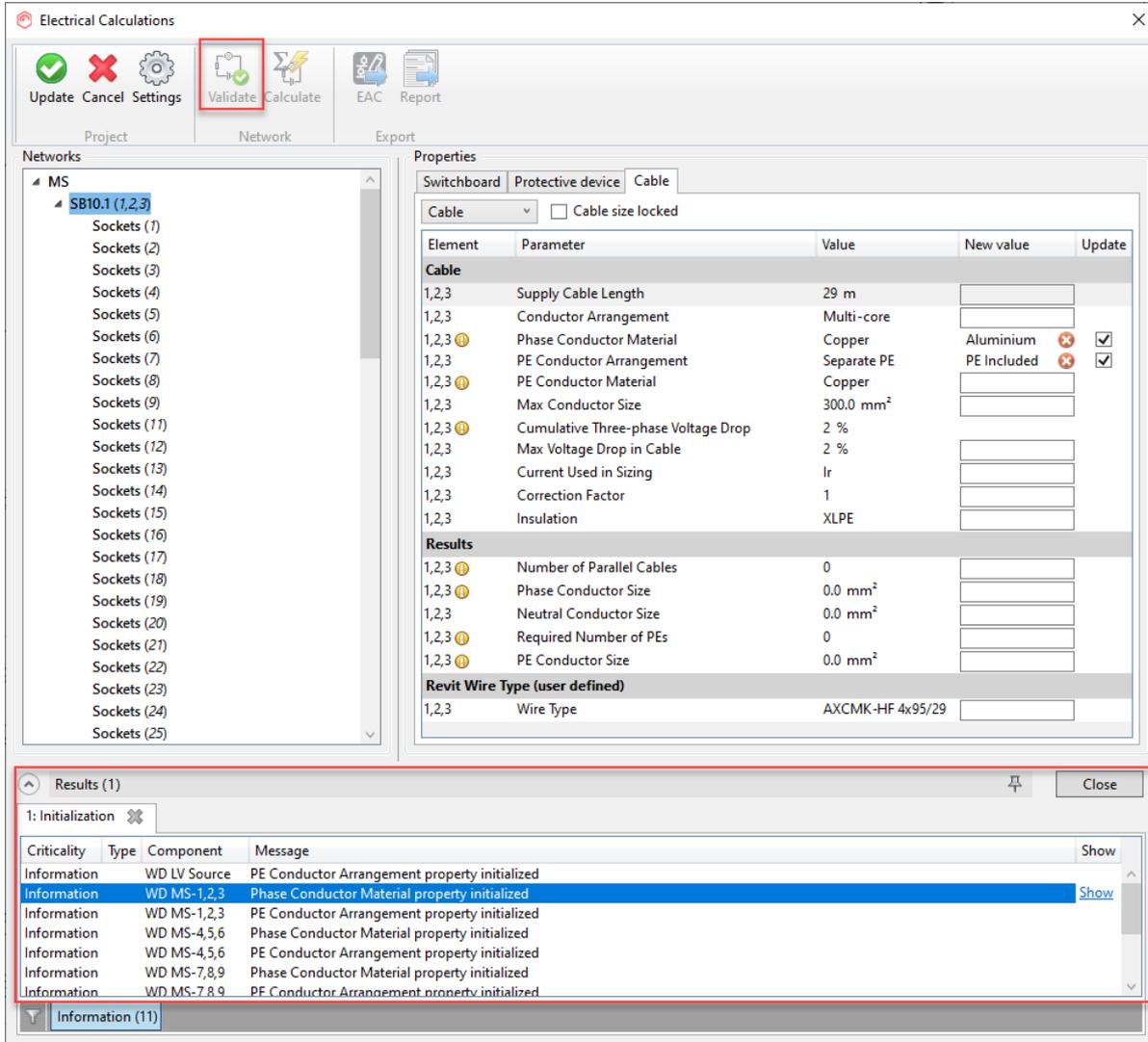
Show calculation columns

Open electrical settings... OK Cancel

When opening a calculation dialog, all circuits will be checked, and if there are differences between the wire type information and the currently active cable properties, data changes will be proposed in the "New value" column according to the selected wire type's properties. Also, when changing a wire type in a circuit, the properties (with differences) from the wire type will be set to the "New value" column to easily get correct settings for calculations.

A new "Validate" button has been added to the dialog. This function checks that cable data is synchronized with Wire type data and also checks that all circuits have cable length defined.

The Calculate function will do calculations using the current settings, it will not check data from wire types, but it will check that the cable lengths have been added.



**Removing ELV buttons from Electrical calculations**

ELV export buttons have been removed from the calculation dialogs since that file format is no longer supported by Schneider Electric.

**Horizontal switchboard schematic "data block" search order**

When making a vertical switchboard schematic, data blocks can be inserted next to each other. MagiCAD will search those data blocks primarily from up to down and secondarily from left to right. Maximum shift of data rows is 50mm so they are registered to be inside the same "data block column".

**Product Browser to show decimals for Active power**

Product Browser's properties tab now shows up to three decimals for Active Power. The Active Power property of electrical products in the dataset will now show up to three decimals, and also the maximum value is increased to 99999999,99 (100MW)

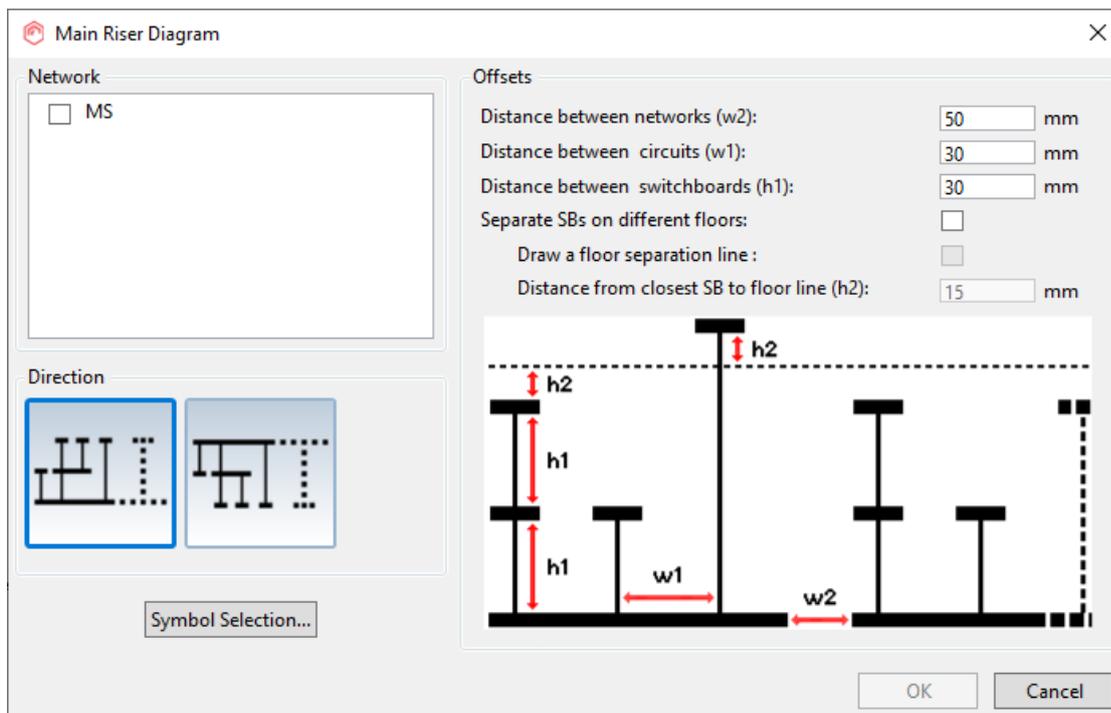
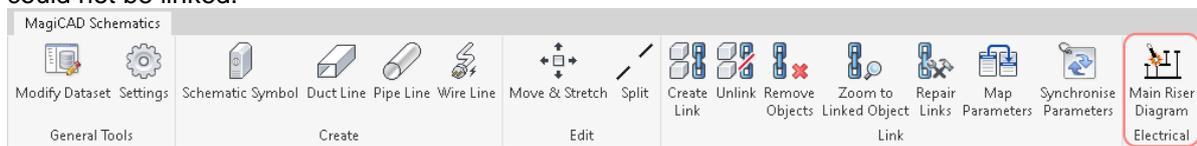
**dX and dY movement to negative sides is limited too much**

Annotation symbol templates were edited to contain more space on negative side for symbol movement to make Symbol Organiser work better with Generic Annotation symbols. NOTE! This affects only converted 2D symbols, ready-made symbols work as before.

## 1.4 Schematics

### Create main riser diagram automatically

With this function, it is possible to automatically create main riser diagrams from electrical networks. In the function's dialog you select from which network(s) you would like to draw the diagram on the drafting view you have open, set the needed offsets, select if you want to separate switchboards on different floors and if you want to draw "floor separation lines", select the creation direction and the used symbols. After pressing OK, the schematic will be drawn to your drafting view. When the diagram is drawn, all the objects are also linked to the objects in the model. Switchboards are linked to switchboards and circuits are linked to wire lines. A warning dialog will be shown if some of the objects could not be linked.



### Add parameters to multiple symbols at the same time.

Multiple additional parameters can be added to schematic symbols at the same time

### Update parameter support for Schematics + improve logic of "Update to project" in Vent/Pipe/Electrical

The number of checked options is shown in the tab header.

The additional parameters can be updated for the schematic symbols.

When the additional parameters are updated for the products and the schematic symbols, it can be selected whether the existing instance parameter values are updated or not.

Update parameter options can be selected for every discipline separately.

## 2 Resolved issues

### 2.1 Common

#### Unexpected error when using too long path names

Some functions gave an unexpected error (PathTooLong) message when a folder which is more than maximum length was used. This caused occasional crash of Revit.

The functions were Spreadsheet export, Clean-up & Deliver and Create new dataset.

This error is corrected by restricting the path length to 255 characters.

#### IFC Batch Export failed with an error

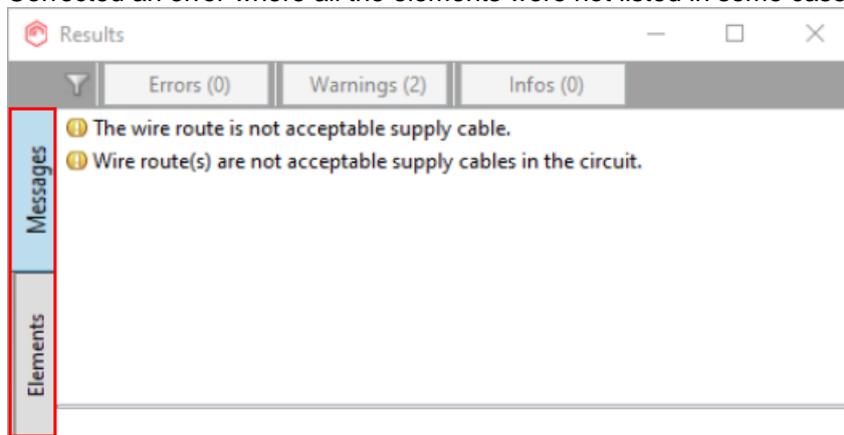
When IFC Export batch configurations is saved and after saving the storeys are renamed, those configurations didn't work.

Now storey renaming no longer break Batch IFC Export.

#### Results window permanently selects multiple messages and elements

Corrected an error where switching between view modes (Elements and messages), two or more lines might get selected and couldn't be unselected.

Corrected an error where all the elements were not listed in some cases.



#### IfcExportType set incorrectly in some cases in IFC Export

In previous versions of MagiCAD it was possible to select IfcExportAs = IfcFlowFitting. This lead to errors, since IfcFlowFitting should not have been even available.

Instad of IfcFlowFitting, MagiCAD now supports IfcDuctFittingType and IfcPipeFittingType.

#### Giving the user the possibility to manage the location of parameter file in MCREV Settings

Added functionality to select the folder in case a valid shared parameter file does not exist in the current local folder. The functionality is added to the "Settings" command in MAGiCAD.

#### Installation of the product failed due to the leading spaces in front of the RFA-name

Leading and trailing spaces are now removed by MagiCAD and they doesn't cause a problem anymore.

**Installed products were removed after in some cases**

When the *"Install product"* command was started and the devices were placed, the installed products were removed if the user opened *"Select product"* and pressed *"Cancel"* in that dialog.

Pressing *"Cancel"* cancelled the whole installation command instead of canceling only the product selection.

The same thing happened also when the product installation was started with *"Create similar"*

Now MagiCAD returns to Installation dialog without removing already placed objects.

## 2.2 Heating, piping and ventilation

### **An exception was shown when an end cap was installed**

In some cases an exception was shown when an end cap was installed at the end of a big pipe. This happened because the maximum size of the cap was smaller than the size of the pipe. This error is corrected.

### **Adjustment of the radiator valve does no longer shows adjustment value 0**

MagiCAD no longer shows the adjustment value 0 in case the required pressure drop is more than the closed position of the valve.

Now the adjustment value of the closed position is shown.

### **Duct fan category is showed incorrectly in dataset**

A duct fan in the dataset is correctly placed in Revit category Mechanical equipment. But when it is installed into the project, it was created as a duct accessory

This is now corrected.

### **Remove update elevation for the flexible segments**

Elevation parameter is no longer updated to the flexible ducts/pipes

The new projects don't contain elevation parameters at all for the flexible ducts/pipes. In the existing old projects the parameters are still visible.

### **Device connection has been improved and some error situations handled better**

Browsing of different duct series did not work in device connection if there was a duct series without proper fittings. Added an error message to the dialog when some fitting type is missing from the duct series. Earlier a separate error message was shown. Now the command doesn't end to the error and it is possible to reselect the duct serie.

Ok-button cannot be clicked if there is an error in the dialog. This change affect also to the standard connection.

Some error messages in the standard connection have been changed to warnings which are shown in orange colour. This can happen e.g in case when there is not enough space for a tee. In those cases Ok-button can be clicked.

### **Sizing may have replaced a flexible duct connection with a rigid one**

Sizing of a ventilation network may have replaced the flexible connection duct to the air terminals with a rigid duct, if the sizing removed a reducer from the connection duct to the air terminal.

This also lead to a relocated air terminal.

Corrected this both in ventilation and piping sizing so that MagiCAD doesn't join rigid and flexible ducts/pipes in case a reducer is removed between the pipes/ducts.

### **Calculation of space sound caused an exception when the space geometry contained unexpected edges**

Calculation of the space sound caused an error when invoked for a space whose geometry contained a cylindrical face with a Hermite spline edge.

This error is corrected.

**MagiCAD did not allow installation of some products**

MagiCAD could not handle the family name correctly when it contained " characters.

Corrected

**Symbol selection button is incorrectly enabled for the other pipe devices**

Corrected an error which is related to rules when the symbol selection button of the dataset properties window is enabled/disabled and when the family data is loaded when selecting a product to dataset.

## 2.3 Electrical

### **Family editor left open when running Connections to Mechanical**

This problem was related to 2D symbols which contain labels (labels show values from parameters). The problem could be reproduced at least by using "Connections to Mechanical". If the last symbol created by the functionality contained a label, the ribbon was left showing family editor buttons after the node (2D symbol/label) had been created.

### **Wire goes to 3D-element if "Family from disk" is used**

When using MagiCAD's 2D symbols for a 3rd party products, the Wire tool now connects the drawn wires to the 2D symbols instead of connecting it to the product's 3D object.

### **Unexpected error when starting to draw a wire from a device in fine mode**

If objects were installed far away from the project base point (over 1,5 km), wire drawing tool gave unexpected error. Now wire tool works even if the project base point is very far away from the objects.