



# MagiCAD for AutoCAD

Release notes for version 2019 UR-2

12/02/2019

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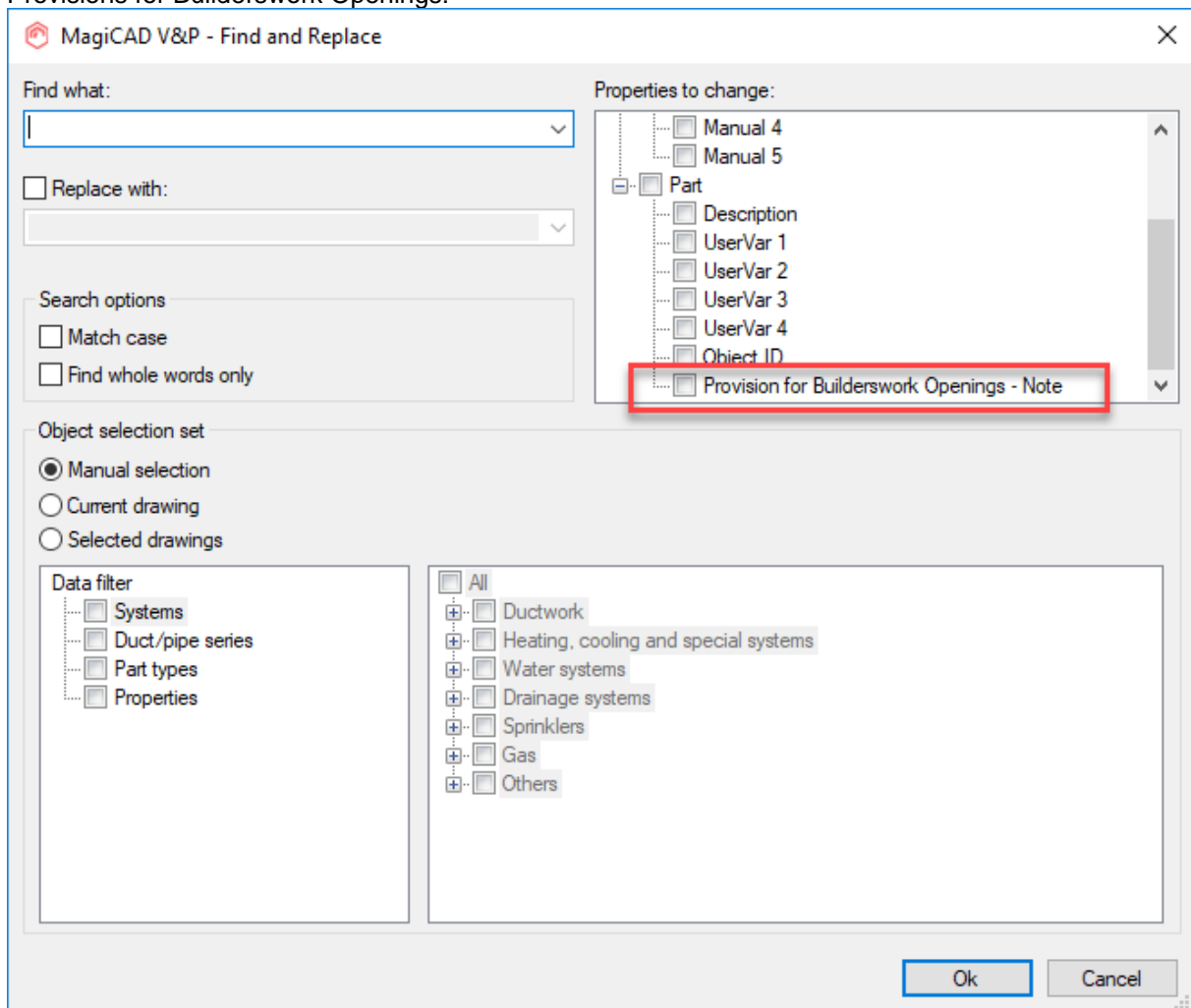
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## 1 New features

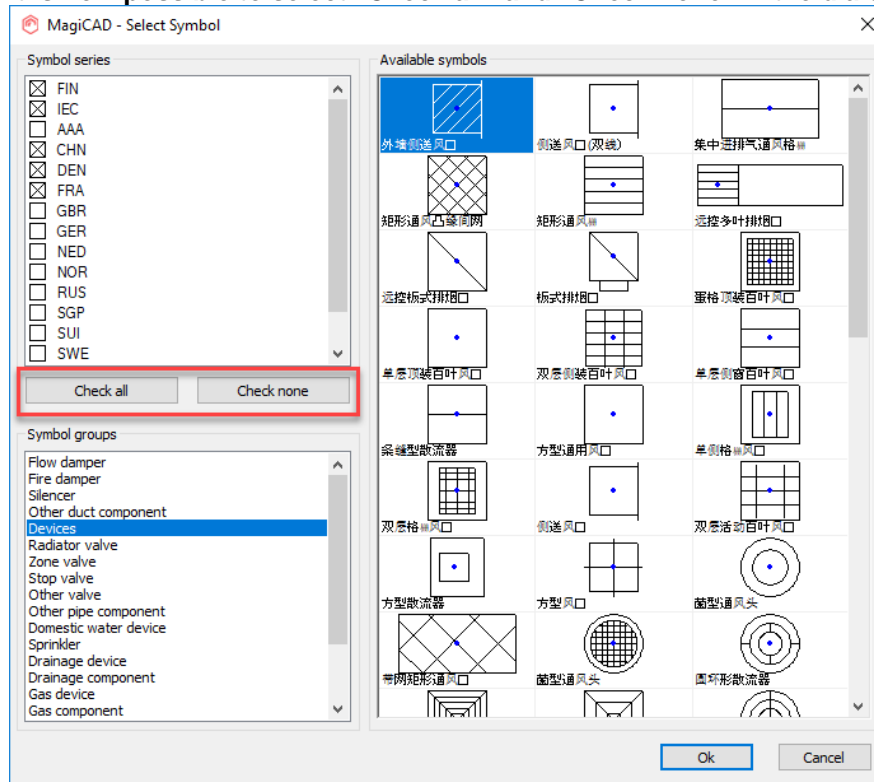
### 1.1 Common

**It is now possible to change the Note-field of provisions using the "Find & Replace Text"-function**

This option has been added to the "Find and Replace Text"-function, which edits the Note-field in the Provisions for Builderswork Openings:



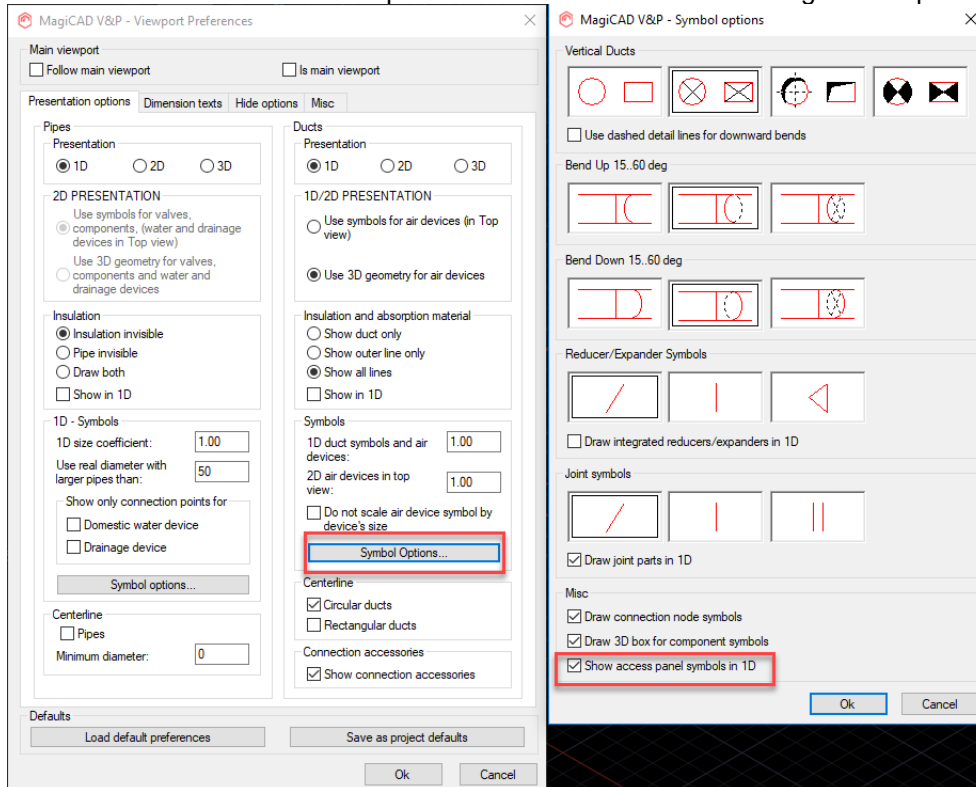
It is now possible to select "Check all" and "Check none" in the dialog



## 1.2 Ventilation and Piping

### Access panel symbols in 1D in axonometric drawings and plan drawings

The user can now show access panels in 1D in axonometric drawings and in plan drawings.

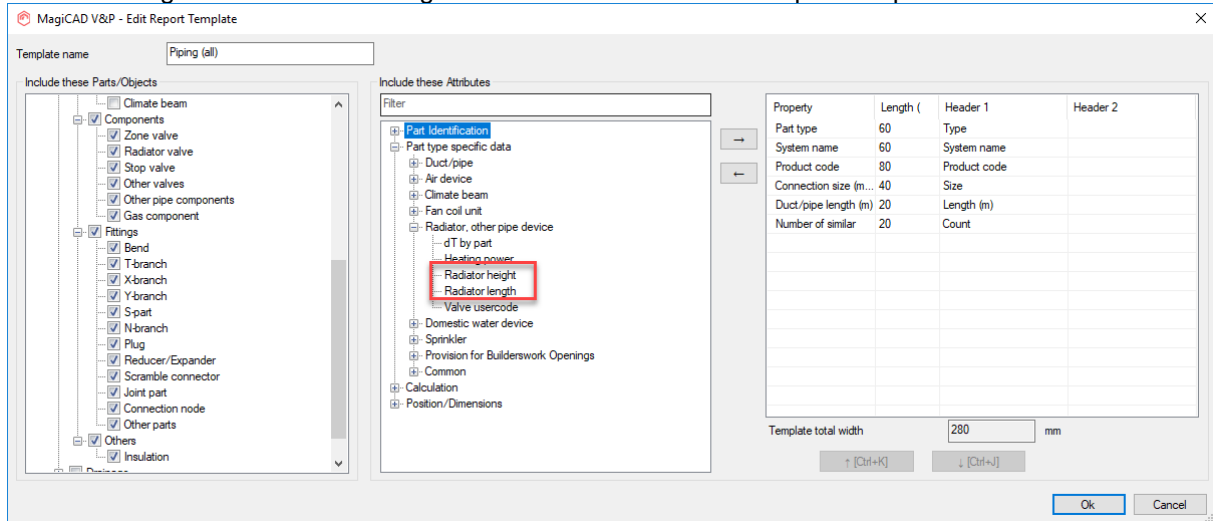


### The sprinkler connection tool does now support connections for flexible pipes

The user can now connect flexible pipes using the sprinkler connection tool and the user can also select both the pipe series and size in the updated dialog.

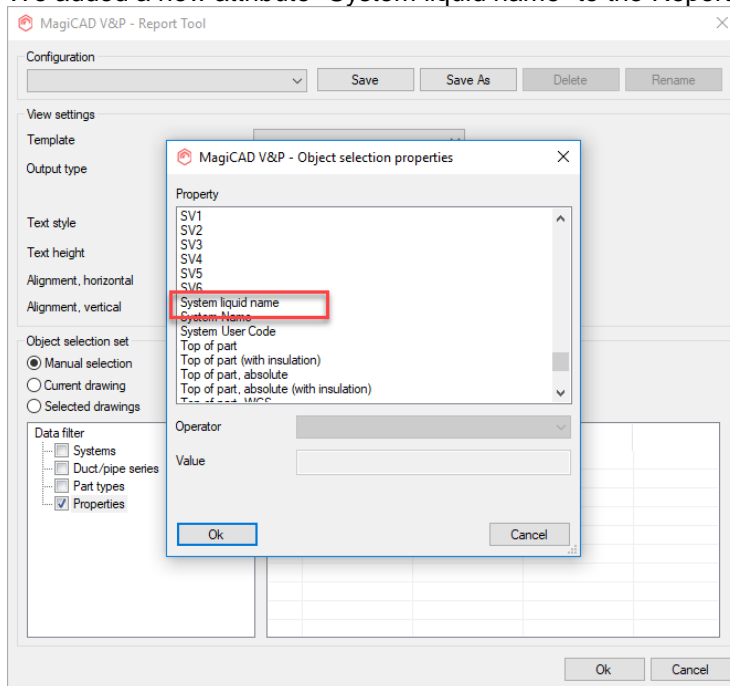
## Radiator size parameters have been added to the Report template

"Radiator height" and "Radiator length" have been added to the Report template.



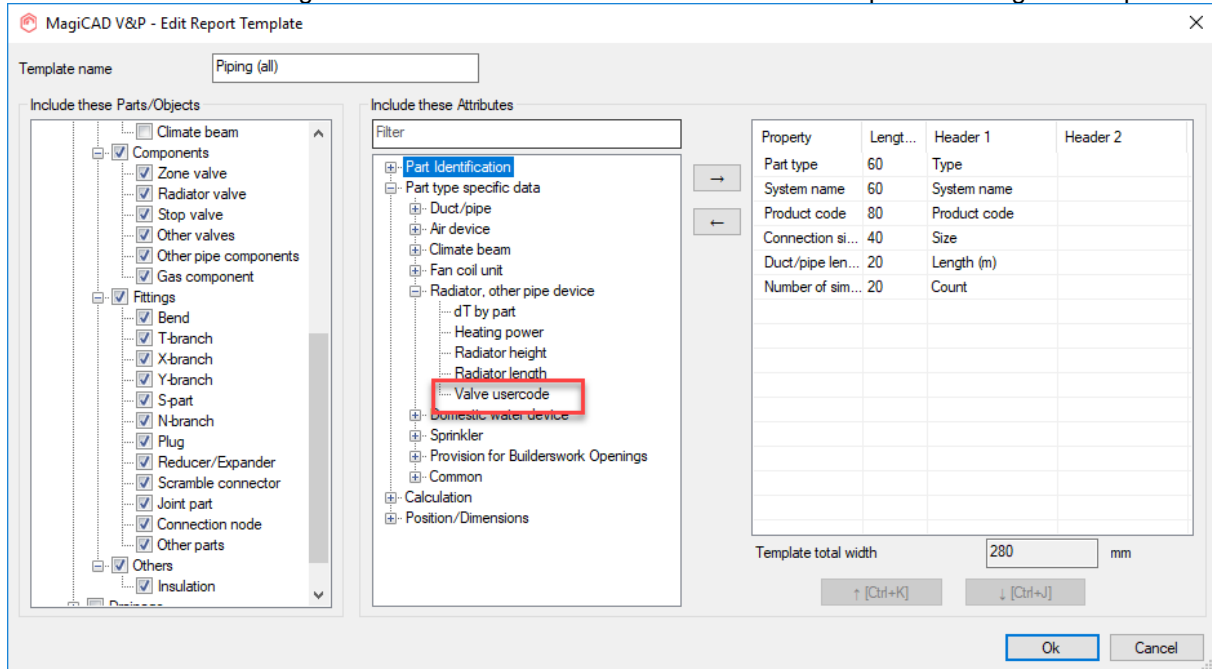
## "System liquid name"-attribute has been added

We added a new attribute "System liquid name" to the Report, MagiCAD Export and dimension texts.



### "Valve UserCode" has been added for integrated radiator valves

"Valve usercode" for integrated radiator valves has been added to the Report and MagiCAD export.



### The "Velocity"-variable is now available in the dimension texts for a number of categories

We added "Velocity" to dimension text formats for the following categories:

- Air devices
- Flow damper
- Fire damper
- Dilencer
- Other component
- Access panel
- Air handling equipment
- Connection node
- Manifold
- Pump

### Added support for the guide vanes to the pressure drop calculation of the elbows

Added support for guide vanes to the pressure drop calculation of the ventilation elbows. The calculation uses the Cibse method.

Requires a database where there are products with guide vanes.

### Renamed IFC type names

IFC type names starting with "IfcType..." were changed to just "Ifc..." which will help with the sorting and finding them alphabetically.

## New loading dialogs have been added for slow functions when calculating sprinkler networks

An issue for large systems being calculated was that the user had no way of knowing whether the program was calculating or if the program froze.

Now we have implemented loading dialogs which show the progress if the function is slow.

## 1.3 Electrical

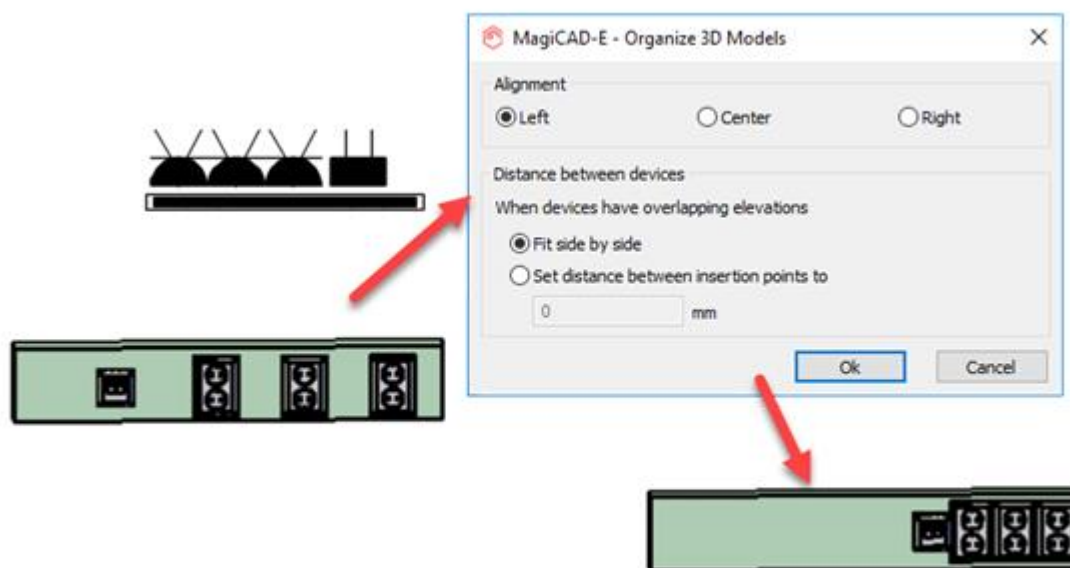
### 3D model organizer

New function for organizing 3D models to their correct places.

With the function it is possible to arrange 3D symbols to f. ex. wall. Height levels will be read from the objects.

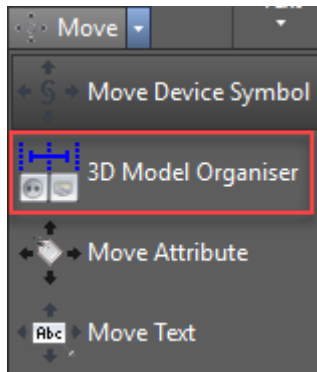
User can define the alignment and the distance between the objects that are next to each other.

Function asks 3 points: Base point, alignment point and then the direction to which objects will be rotated. Direction means to which side of the alignment line the 3D symbols should be facing.



Function can be started with a button in ribbon and with commands "ME3DMODELORGANIZER" / "ME3DMO".





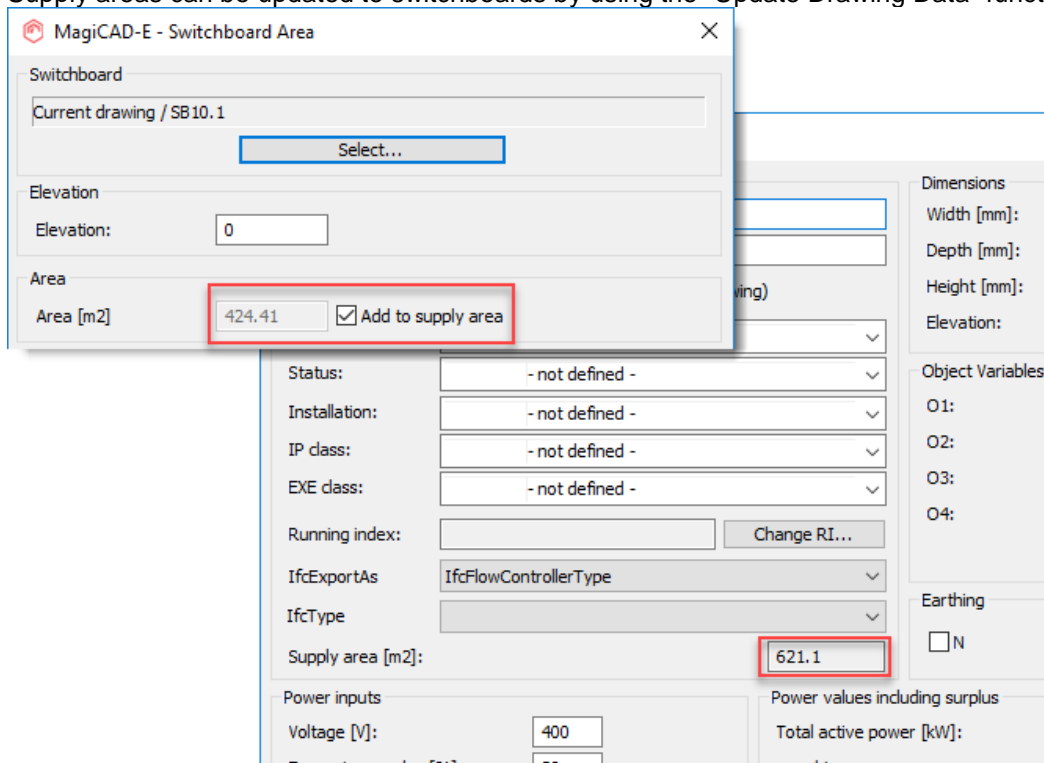
Note! The command can't be run in side view.

### Supply area of switchboards

A new attribute "Area" has been added to Switchboard Areas. The surface area of the switchboard area is calculated to that attribute. There is also a checkbox in each Switchboard Area whether that area is counted to the corresponding switchboard's total supply area parameter.

A new attribute "Supply area" has been added to switchboards. All switchboard areas that belong to that switchboard and have "Add to supply area" checkbox checked will be counted to the "Supply area" attribute in the switchboard.

Supply areas can be updated to switchboards by using the "Update Drawing Data" function.



### Adjustable inner bend radiuses for T- and X-branches of cable trays

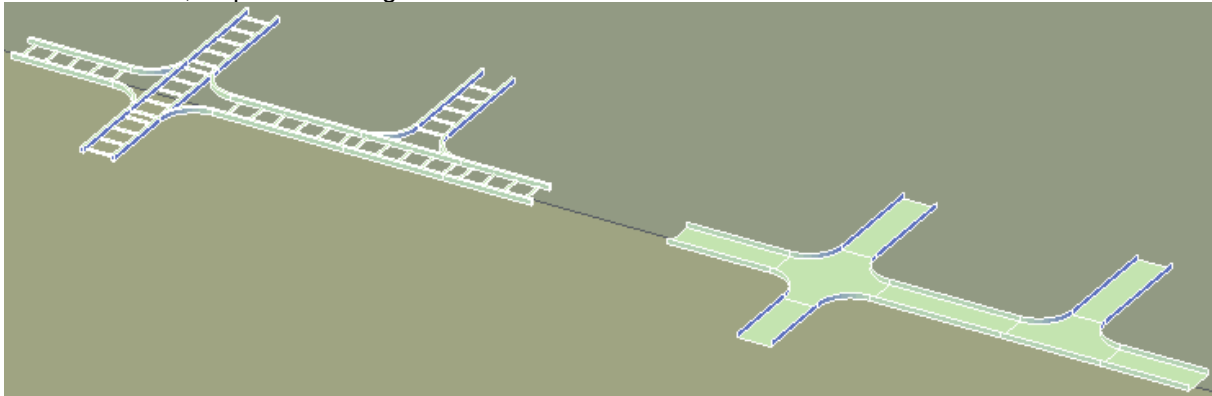
Inner bend radius is now user definable for T- and X-branches of a new long and curved branch type. The bend radius can be defined in the installation dialog and also be changed using Change Properties.

Adjustable curved branches have been added to cable trays, lighting tracks and LED stripes.

Default of 300 mm is used as the inner bend radius if changing Rectangular or Bevelled branch to Long curved branch without changing the inner bend radius at the same time.

Inner bend radius is also shown in the Part Properties dialogue.

Bill of Materials, Reports and Legends can show / count the new branches and their radiuses.



### Handling multiple circuits in switchboard schematics

Move, copy and delete functions now have a selection "multiple" on the command line and right-click menu. With it it's possible to select multiple circuits and move, copy or delete them.

The function will ask for the first and the last circuit between which it will find all the sequential circuits that needs handling, and with the move and the copy function also the new location for the circuits.

All other circuits will be moved upward or downward to give room for new circuits or fill blank spaces in the schematic.

### Property "Drawing" for switchboard schematics

Property "Drawing" has been added to switchboard schematics. It shows the drawing name where the current circuit can be found.

That property is possible to add to switchboard schematic and also to switchboard report.

**Data in Cells and Symbols**

No	Description	Trip In [A] I <sub>rcd</sub>	P [kW] S [kVA] I [A]	Cable  L [m]	Phases Earthing dv [%]	Number of el Longest load	Drawing nam
3	Lighting group 3	C	0.82	MMJ	L3	8	..\E_Floor1
		10	0.83	3x1,5 S	N,PE	16.6	
			3.59	13.1	0.61		






**Referred Circuit Symbol**

Circuit number:	3	Active power [kW]:	0.82	(tot)	0.38	(max)
Circuit type:	Lighting	Cos phi:	0.99	(tot)	1.00	(max)
Descriptions:	Lighting group 3	Apparent power [kVA]:	0.83	(tot)	0.38	(max)
		Apparent current [A]:	3.59	(tot)	1.63	(max)
		Diversity factor:	0.46			
Cable number:		Voltage drop:	1.41	V	0.61	%
Cable object ID:		Phases:	L3			
Cable type:	3x1,5 S MMJ 3x1,5 S	Number of poles:	1			
Cable length [m]:	13.1	Earthing:	N,PE			
Worst case installation:	A1	Longest load circuit branch [m]:	16.6			
Correction factor:	1.00	Overload protection:	C10			
		Protective device:	CB-C 10.0 A 0.4 s			
		Nominal current [A]:	10.0			
		Tripping curve:	C			
		Fault current protection:				
Drawing:	..\E_Floor1	Disconnect circuit reference...				
Handle:	I2A9	Plan connection:	Connect... Read			
IFC GUID:	1DeCRCD01FVvR58wROLkcW	System schematic connection:	Connect... Read...			

Ok Cancel

MagiCAD-E - Report

Edit

Symbol	No	Description	Trip In [A] Ircd	P [kW] S [kVA] I [A]	Cable L [m]	Phases Earthing dV [%]	Number of Longest lo	Drawing name
	1	Lighting group 1	C 10	1.24 1.25 5.39	MMJ 3x1,5 S 24.9	L1 N,PE 1.70	14 30.9	E_Floor1
	2	Lighting group 2	C 10	1.24 1.25 5.39	MMJ 3x1,5 S 17.7	L2 N,PE 1.31	14 23.7	E_Floor1
	3	Lighting group 3	C 10	0.82 0.83 3.59	MMJ 3x1,5 S 13.1	L3 N,PE 0.61	8 16.6	E_Floor1
	4	Lighting group 4	C 10	1.24 1.25 5.39	MMJ 3x1,5 S 18.8	L1 N,PE 1.36	14 24.7	E_Floor1
	5	Lighting group 5	C 10	1.24 1.25 5.39	MMJ 3x1,5 S 11.7	L2 N,PE 0.97	14 19.4	E_Floor1

Zoom Close

### Select switchboard / host dialog improvements

Some of switchboard/host selection dialogs were too small so they are made stretchable in following functions:

Switchboard/host border arrow

Switchboard/host area

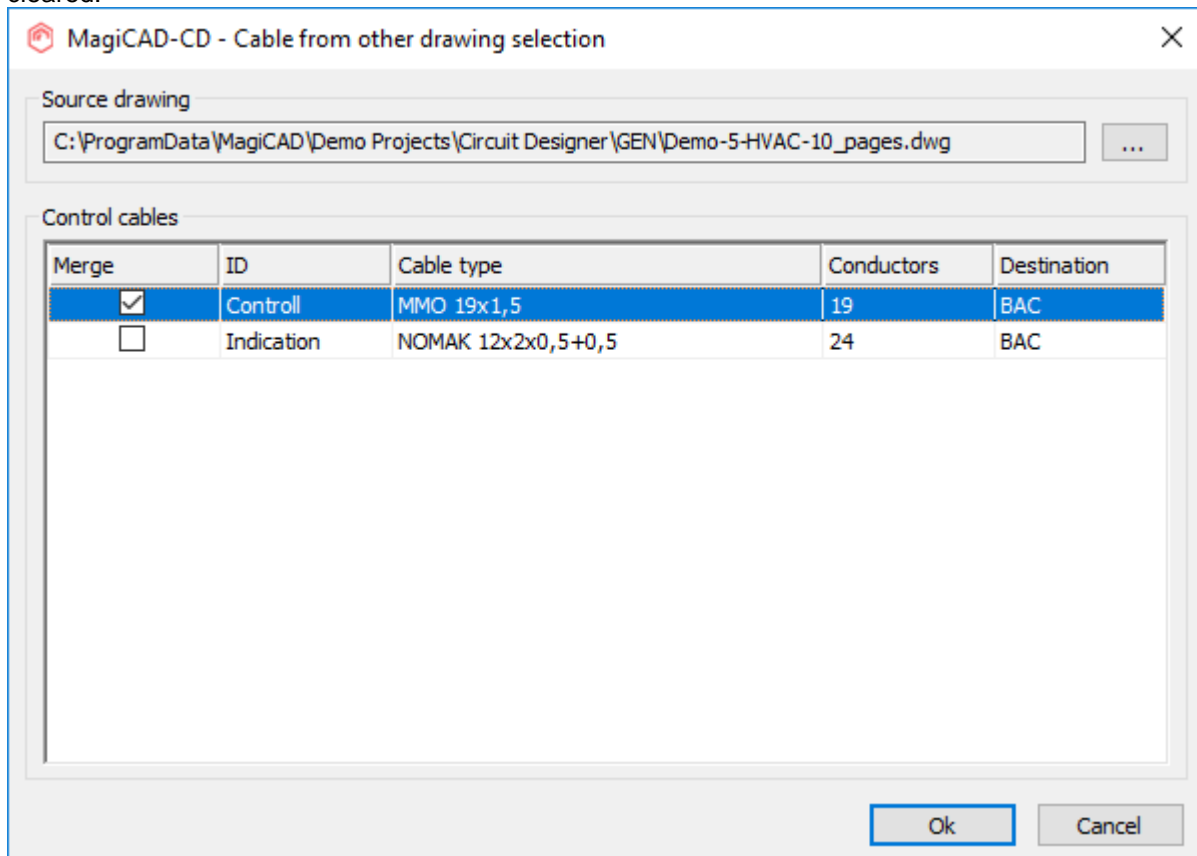
Electrical/Communications create circuit, select switchboard/host

## 1.4 Circuit designer

### Copy control cables from other drawing

Control cables can now be copied from other drawings. No need to manually define them in each drawing.

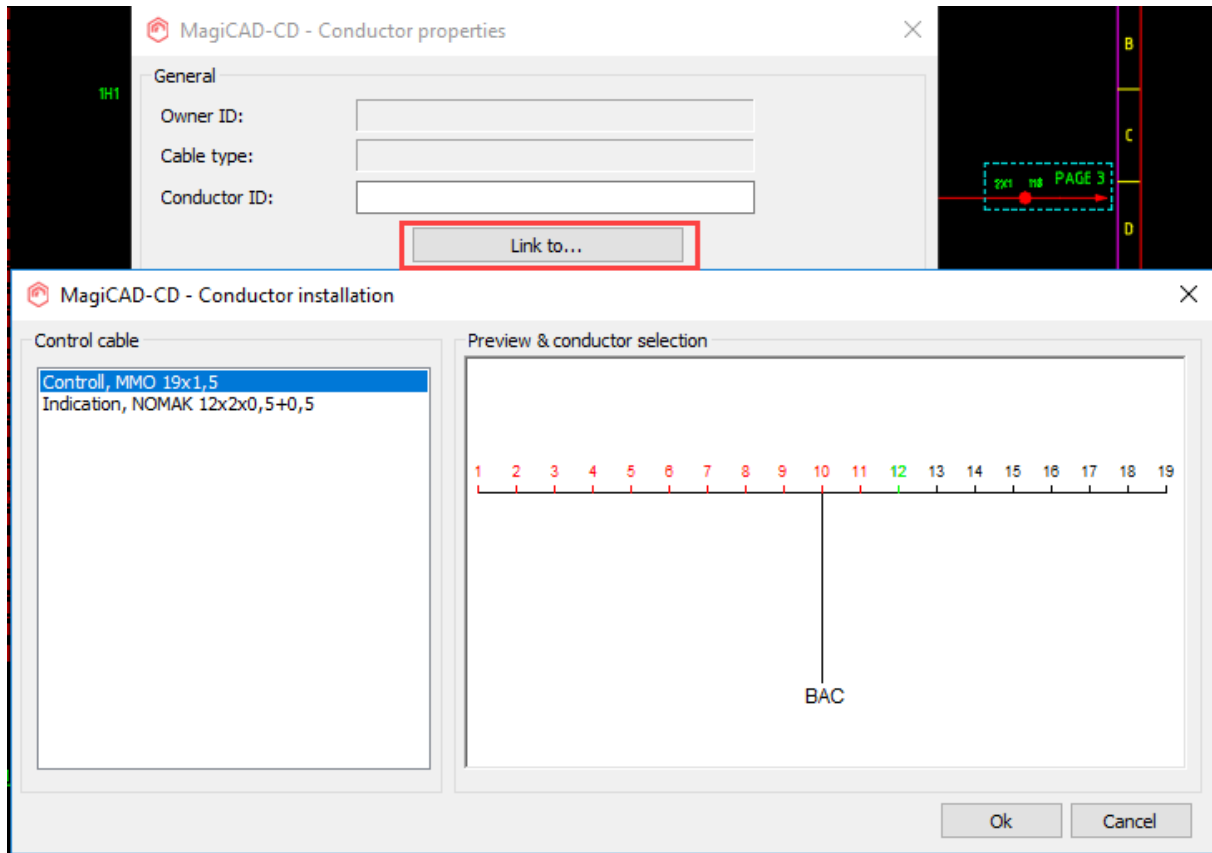
Cable ID, type, destination and the amount of conductors are copied. All conductor connections are cleared.



### Link conductor to an existing conductor inside a control cable

A conductor can be linked to a control cable through the conductor's part properties. The user no longer needs to delete and redraw the conductor and link it while drawing it.

A warning message will be shown if the user selects a used conductor and tries to close the dialogue.

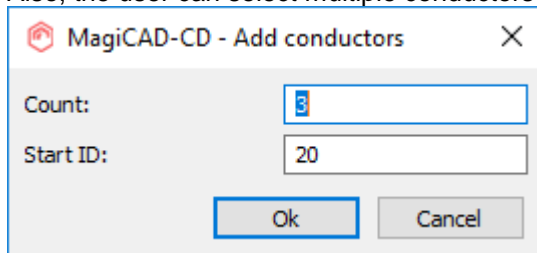


### It is possible to add several conductors to existing control cable

User can add multiple conductors to a control cable at the same time.

The user needs to define how many conductors are being added and what is the starting ID. New conductors will be added starting with the Start ID and continuing with the next free IDs after the Start ID.

Also, the user can select multiple conductors in a control cable and move or delete them.



### Maximum number of characters in label texts have been increased

Character limit for label texts have been increased to 200.

## 1.5 Room

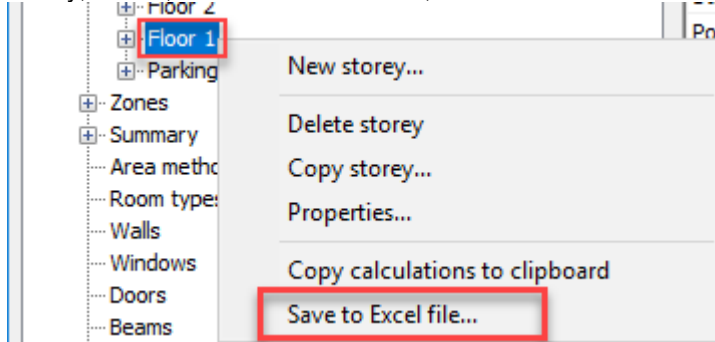
### MagiCAD Room Types have been added to make the defining of rooms more efficient

It is now possible to define Room types, which work as templates for defining rooms and setting the properties of the rooms.

"Heat Loss [W/net m2]"- and "Cooling Power [W/net m2]"-columns have also been added to the rooms-list columns.

### Excel exports of the data from the rooms have been added

The user can now make Excel reports of room lists and the supported nodes are: Storeys, each storey, zones, each functional zone, each zone within functional zones



### IFC Space Update - support for importing calculation results from IDA ICE added

It is now possible to import calculation results from the IDA ICE software, like we have supported data imported from Riuska. Calculation results should be exported from IDA ICE in IFC format.

Following room properties are included in the import:

- Manually given heat loss
- Total cooling power
- Supply airflow
- Extract airflow

### Summarise heat loss, cooling power and electrical load information

The total heat loss, cooling power and electrical load can now be viewed for the storeys as well as for the individual zones.

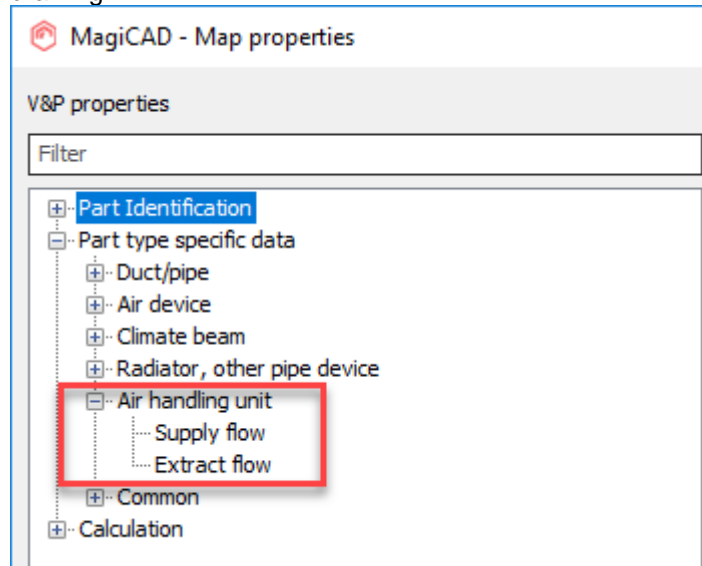
### Electrical loads can be defined for rooms and room types

Now the user can define electrical loads in both the rooms and the room types to take into account the total loads from various devices and equipment in the rooms.

## 1.6 Schematics

### New parameters in Schematics

It is now possible to map the supply- and extract air flows from the V&P drawing to the Schematics drawing.



### More properties do now have a bi-directional link to make mapping from the Schematic drawings possible

It is now possible to update Climate Beam "Cooling Power", Climate Beam "Heating Power", Radiator "Heating Power" and "Flow" properties from Schematic to Model.

This freedom does however include the risk of mismapping and overwriting calculated values so make sure the correct objects are linked.

### Updating all reports in the drawing, when saving the drawing, is now possible in Schematics

We added the possibility to update all dwg-reports when saving a drawing which minimizes the risk of forgetting to update the reports.

### "By system" color setting is now available for the ducts and pipes

It is now possible to use the color settings from a connected V&P project. The colors are linked and do also change when the colors, in the Dataset or the Project, are changed.



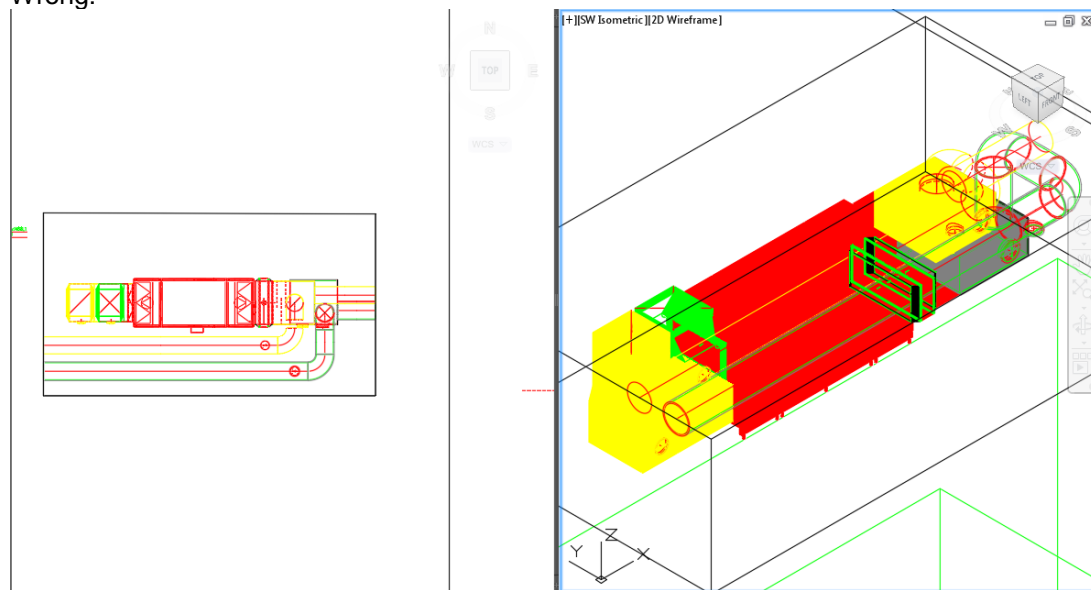
## 2 Resolved issues

### 2.1 Common

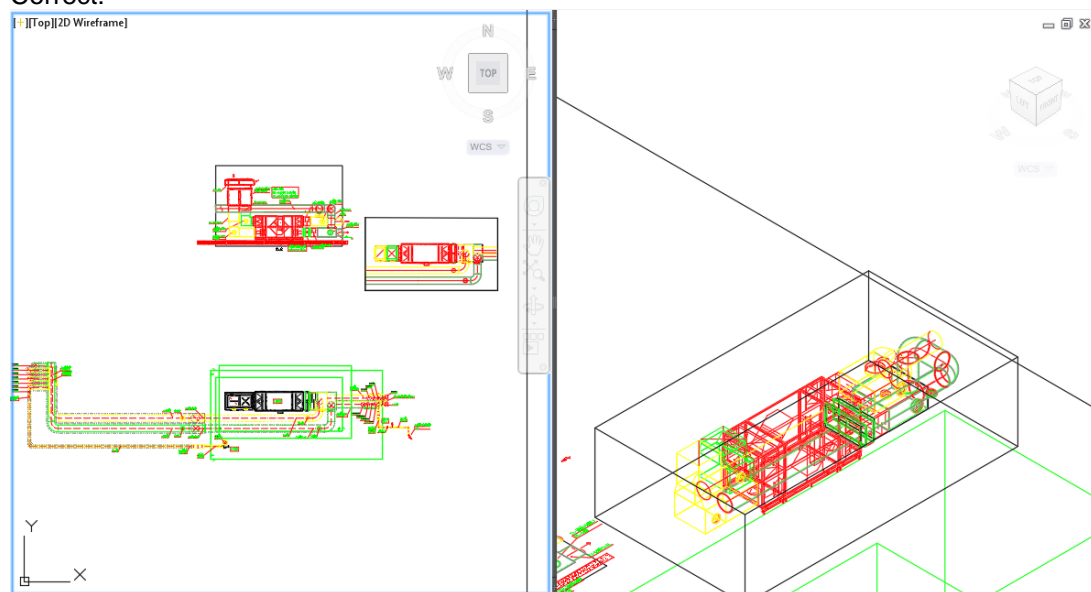
#### Block references got a solid color in some sections in MC2019 UR-1

The fixed issue: Some sections the block references get a solid color after upgrading to MagiCAD 2019 UR-1:

Wrong:

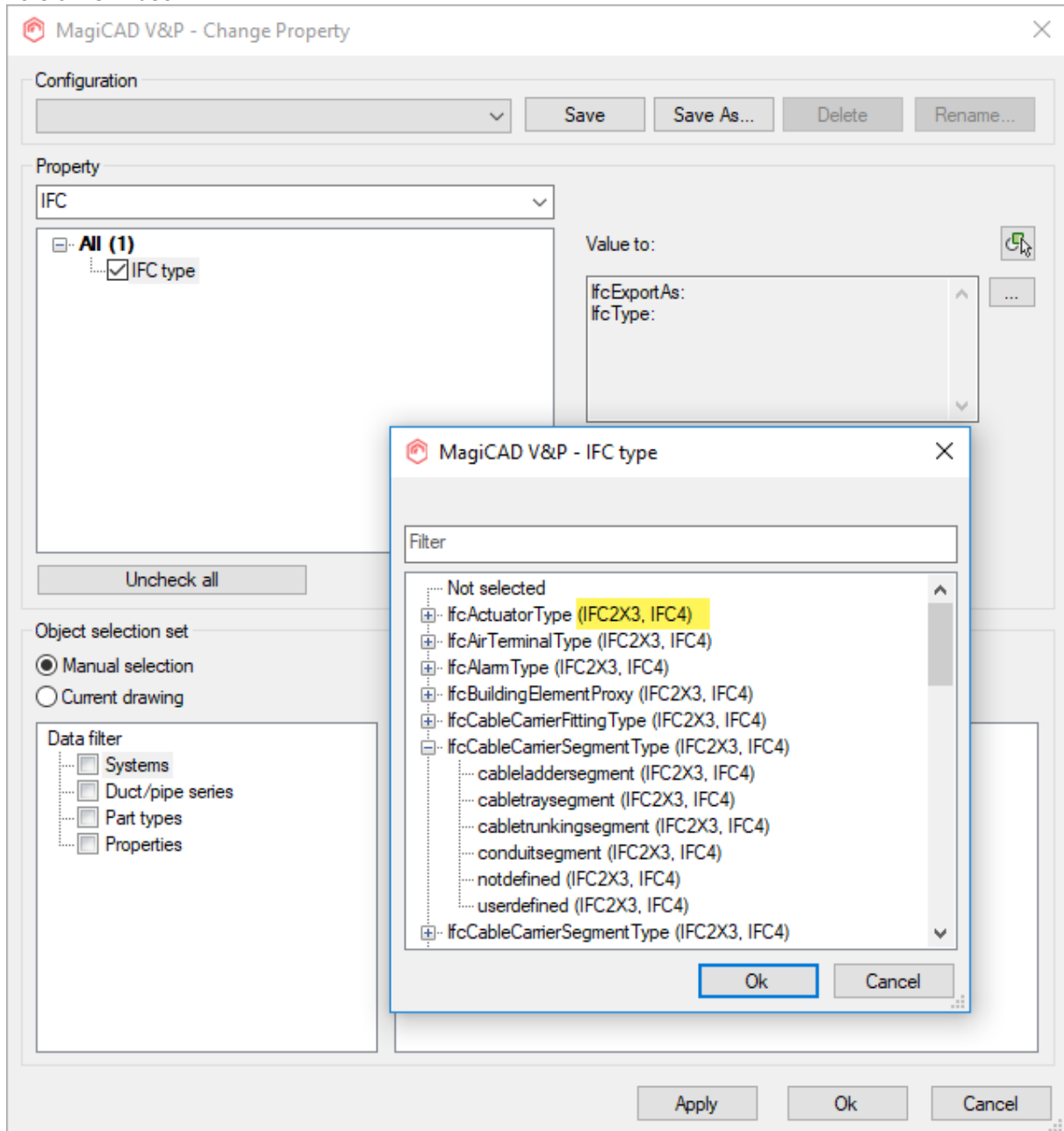


Correct:



### IFC2x3/IFC4 enumeration correction in BSPProLib

IfcExportAs/IFCType specifications have been complemented and the IFCType now shows which IFC version is in use:



Updated BSPProLib. Now Radiators are exported correctly in IFC2x3.

Removed IfcSubStationType which actually is not an IFC type.

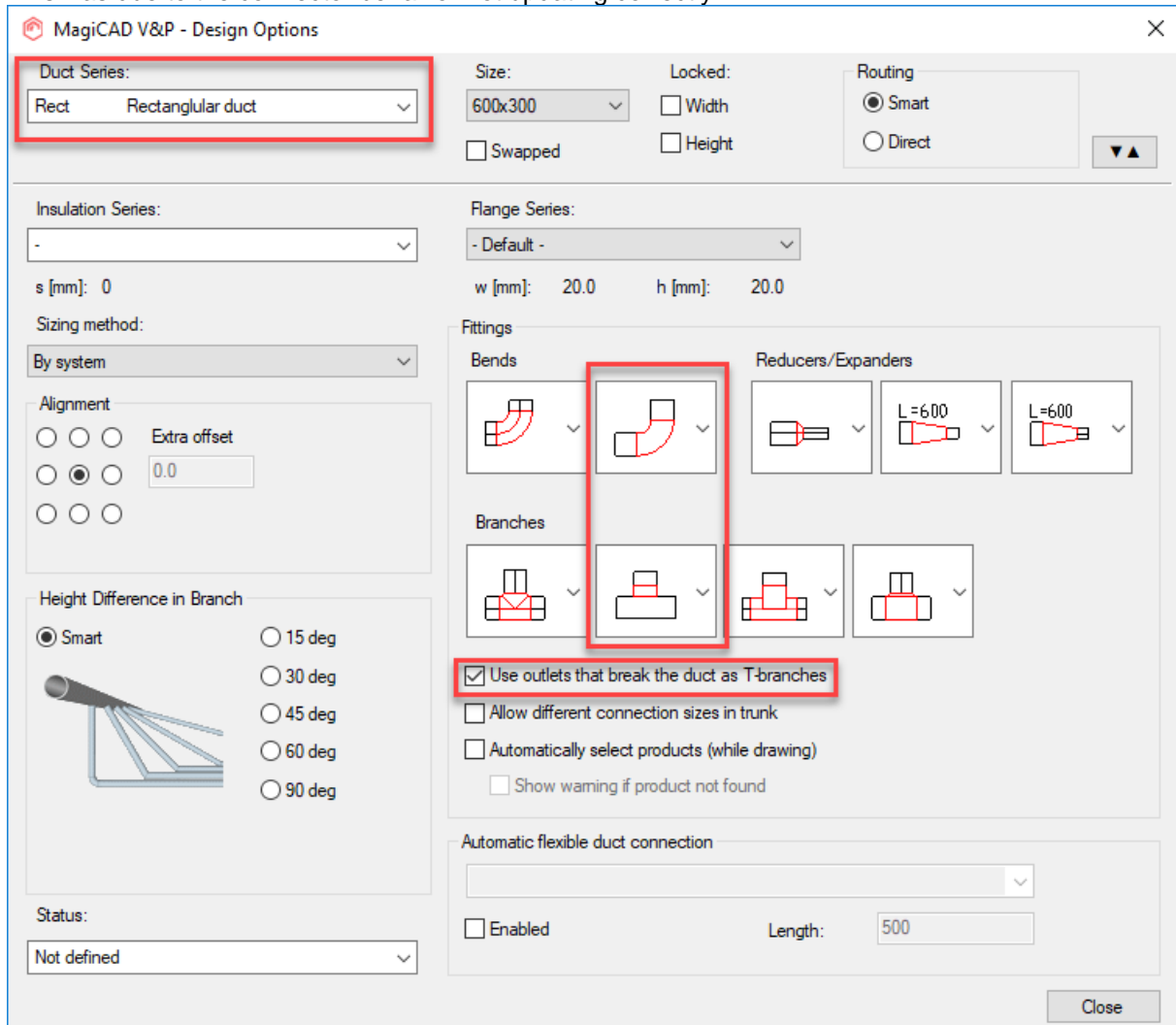
Removed IfcZoneType from list of available IFC types (not a real IFC type).

Subtypes for IfcElectricApplianceType were not shown because of a typo.

## 2.2 Ventilaion and Piping

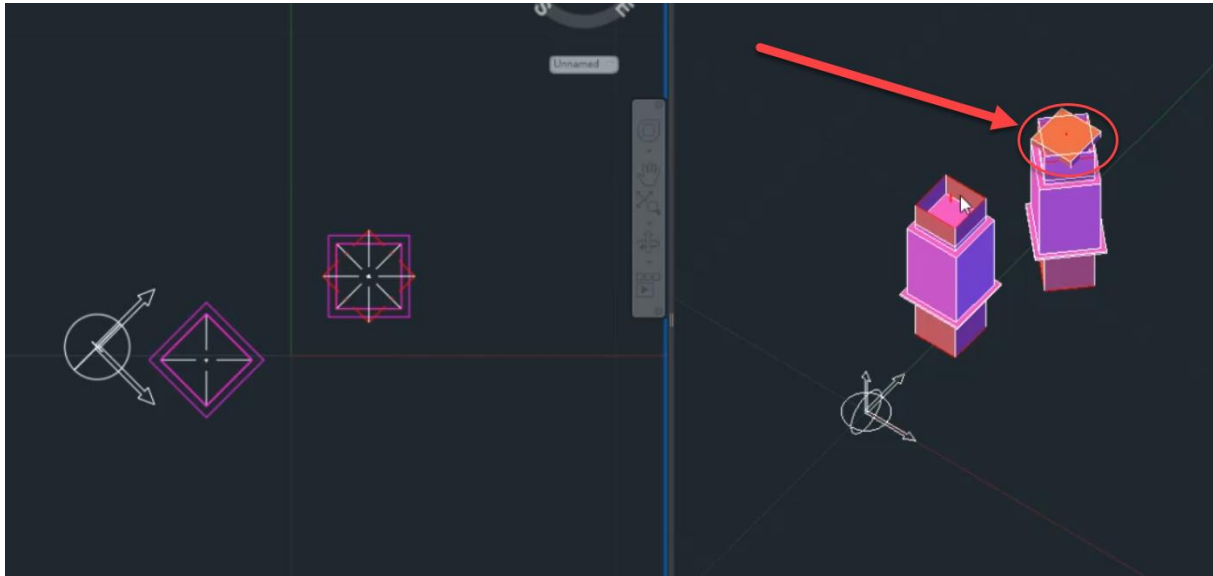
### Deleting a duct segment from a main duct with a branch will led to the program creating the wrong bend-type

Deleting a segment with the settings shown in the image initially led to the wrong bend being created. This was due to the connector behavior not updating correctly.



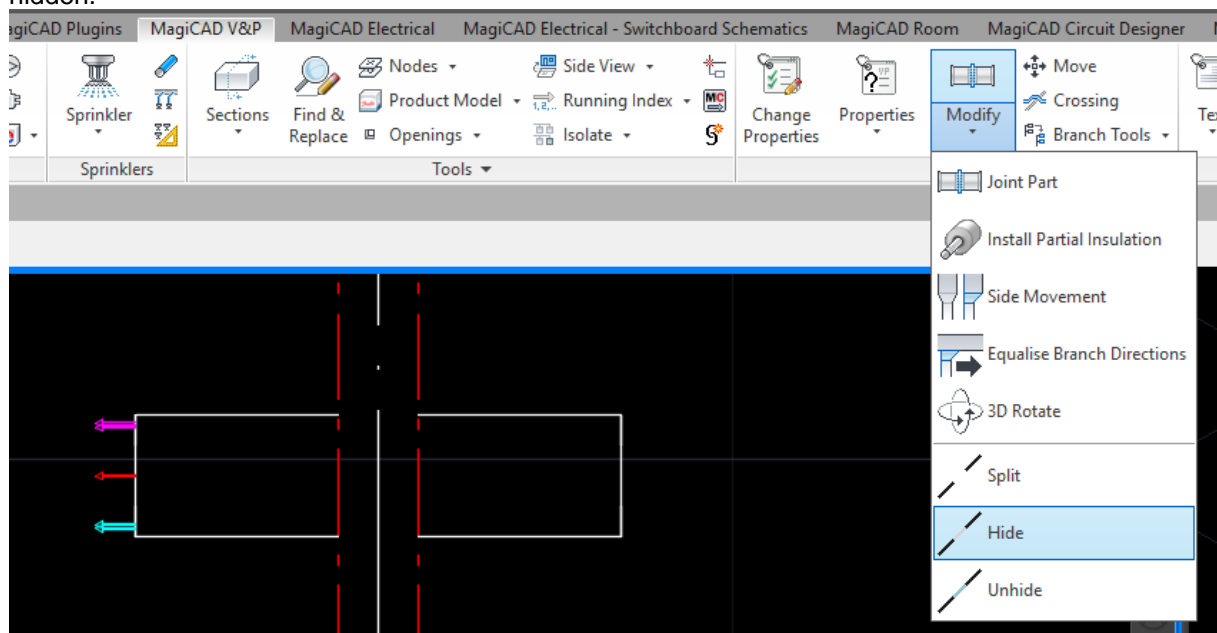
### UCS corrupts duct drawing after installing other component

After creating a new UCS, for example one with a 45 degree angle compared to WCS, and drawing upwards according to that and then installing an "Other duct component" led to situations where drawing was no longer possible after this point and the connector followed the original WCS.



### Hide wasn't saved for Climate Beams

When using the "Hide"-function for Climate Beams it worked like it should, but upon saving and re-opening the drawing all the Climate Beams were unhidden again. Now the Climate Beams stay hidden.



### It is not possible to change the outlet composition for one outlet

Zero-length Outlet now allows change between non-breaking and breaking types.

### Failed to connect sprinkler from bend to sprinkler or from sprinkler to bend

When connecting a pipe directly from a sprinkler to a bend, or from a bend to a sprinkler, MagiCAD sometimes couldn't create a reasonable connection and the result was unwanted angles for the pipes. This has now been fixed.

### An issue with changing the Z-level of radiator using MAGIMOV2

When pipes were connected to a radiator it wasn't possible to move the radiator in the Z-direction using MAGIMOV2, but this has now been fixed.

### Erasing a radiator valve from project even if it was used in the drawings

It was possible to delete a valve from the project, that had been integrated into a radiator, but that has now been fixed.

### A gap between duct and symbol in axonometric views

A gap was created between the duct and the air device symbol in an Axonometric drawing if there was a bend between the device and the main duct.

Now the duct's line extends all the way to the air device



### Dimension texts did not always have the correct orientation

Fixed an issue related to dimension texts where the texts were drawn with a different orientation than the view's and the drawing was saved. If you opened it without MagiCAD, all texts were in the view's direction. Now the dimension texts' orientation is saved according to the current viewport's settings.

### Incorrect provision height when using certain settings

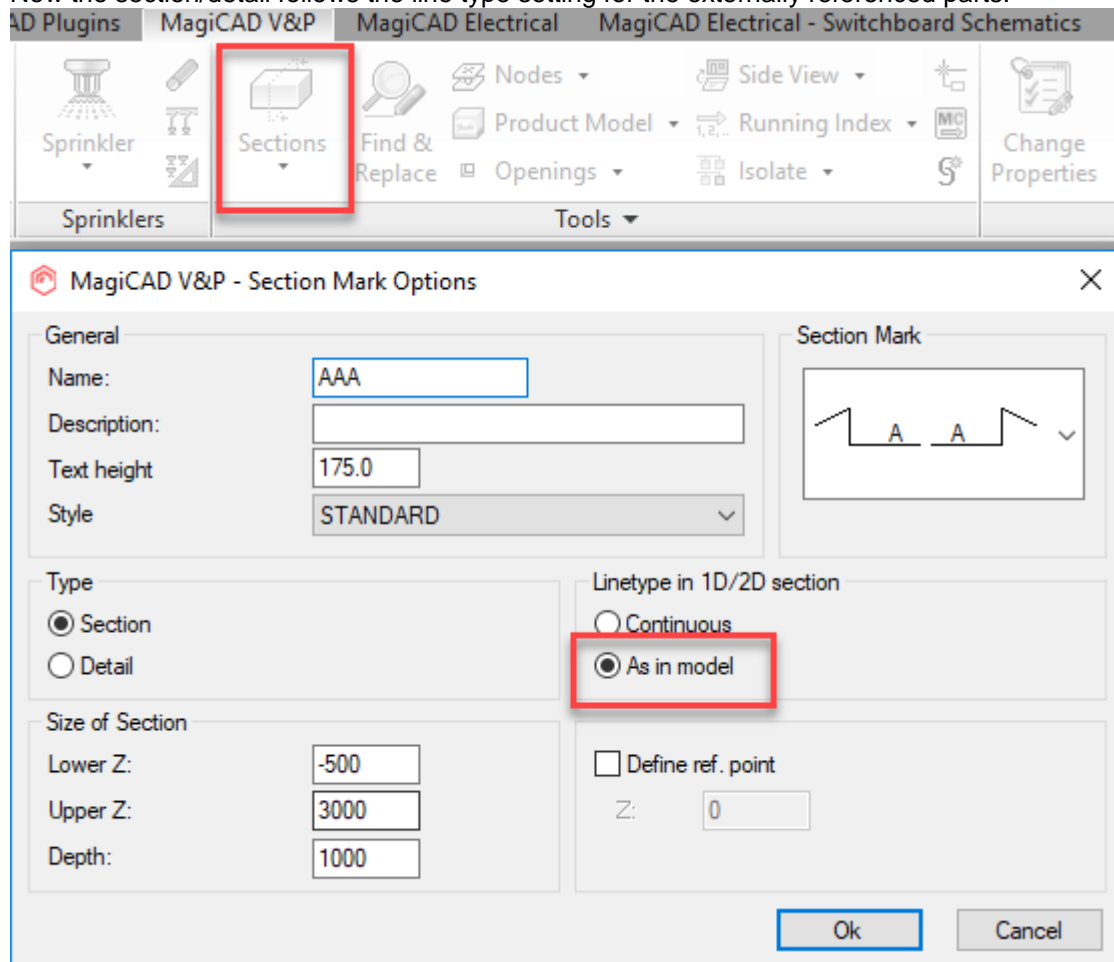
Fixed an issue which occurred when different values for "Offset for rectangular objects" and "Offset for circular objects" in the Provision for Builderswork Openings Options were used.

The height ended up being wrong for the rectangular provisions, drawn for circular elements, when using the "Specify On-screen"-option.

### Incorrect line types when creating a section on an externally referenced (xref) MagiCAD drawing

Incorrect line types were used when creating a section on an externally referenced MagiCAD drawing. All line types became "Continuous" even with "As in model" checked for "Linetype in 1D/2D section", in the Section Mark Options.

Now the section/detail follows the line type setting for the externally referenced parts.



### "National character set"-bug fixed

A bug occurred when the character set "National" was set in the project. The user could remove the national code for a pipe-series, but when the drawing was saved and re-opened the national code value appeared again in the pipes.

Now the national code will stay removed.

**The rotation angle for storey (X-Rotation) only had one decimal in V&P**

The storey origin rotation angle can now be set with 4 decimals in V&P, just like in the Electrical projects.

**Insulation material missing from bends in the IFC**

In some case bends were missing the insulation material, but this has now been fixed.

**Climate Beams were not always exported to the IFC with the correct category**

Climate beams without duct connectors were exported, for example, as "Air Terminals" and "Flow Terminals".

Now they are by default categorised as Climate beams for the IFC export.

**Some IFC properties weren't exported for pipe and duct fittings**

Pipe fittings do now have "National code" and "User code" properties in the IFC Export.

## 2.3 Electrical

**Change properties for cable tray products not working**

Fixed Change properties of cable trays to work even when product ID of cable tray is missing.

**It is not possible to select IFCExportAs and IFCType in switchboard installation dialog**

Added the possibility to edit IFC type in switchboard installation dialog.

IfcTypeElectricDistributionBoardType have been added to "IFC Property set" dialog.

NOTE! When selecting IfcElectricDistributionBoardType as export type, in IFC2x3 schema it will be exported as IfcFlowController in IFC file. IfcElectricDistributionBoardType is not supported in IFC2x3.

**Legend crashes**

Legend no longer crashes when trying to make a legend from other than the current drawing's layout.

**Cannot copy Cable Trays to another dwg**

Program crashed when trying to copy cable trays to another dwg file. That has been fixed.

**IFC/Switchboard changes**

IfcTypeDataSwitchBoardType has been removed from the IFCType list.

IFC export no longer crashes when exporting IfcElectricDistributionBoardType/switchboard in IFC2x3 schema.

**Product variables not working anymore for not defined cables**

Product variables (P1-P15) now works properly with "not defined" cables.

**Object ID formats not working properly for cables and trays**

Previously, you could not change the Object IDs of cables and trays back to manual mode with the Update Drawing Data function. This issue has now been fixed.

**Model dwg list in project slow when operated from network drive**

A new progress dialogue is shown when reading / accessing the model dwg list in the project. The same progress dialogue is also added to IFC Export and BCF Manager.

Storey names are retrieved from drawings as fast as possible. If all drawings are connected to a building database, the storey IDs are saved into the model dwg list and opening the project will be faster.

**Missing room project error message appears too many times**

MagiCAD no longer gives the same error about a missing the Room project multiple times when trying to access functions of MagiCAD Room. This happened f. ex. when running Update Drawing Data.

**RI from part properties (From Object) has issues**

In some cases when trying to get RI options by using the "From Object" button it gave an error that those are missing or that the text or group definitions are out of date.

Now all Running index data fields are filled and RI text and group can be retrieved from other objects.

**Dimension text for several objects shows only one object**

Adding multiple objects to a dimension text didn't show values correctly. This is now fixed.

## **2.4 Circuit designer**

**Mother part dialogue problems**

Small fixes to Mother part dialogue text alignments.

**Delete connection point not working when several selected active in mother part**

Deleting multiple terminals in terminal block at the same time using right-click menu option "Delete connection points" now works as it should.

**MCEX explodes control switch position symbols wrong in Circuit Designer**

When using the explode function (MCEX) to control switches' position symbols, it no longer creates duplicate attributes for the Auto

## **2.5 Room**

**Issue with exiting edit mode in Room**

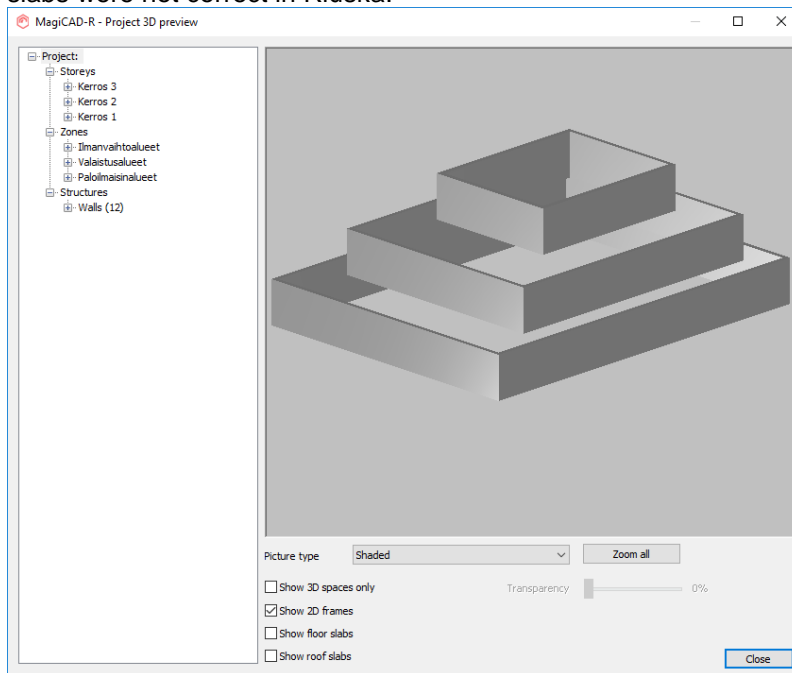
The issue was related to deleting a storey while actively editing that storey, by going into "Edit storey"-mode and then going to the project and deleting that very storey from the project.



After that it wasn't possible to exit the edit mode as it asked you to set the active storey, which wasn't possible to do in the "Edit Storey"-mode. Now the active storey can't be deleted in edit mode.

### Wrong slab type in pyramid cases

The issue: When IFC exporting certain building types (e.g. pyramid shape) from MagiCAD Room, slabs were not correct in Riuska.



The entire mid floor was interpreted as being against the outside air (all green):

Simulation project: 2018-11-20 15:22 mikael.angstrom: slabsheet 2019  
Simulation case: 1. (2018-11-20 15:22 mikael.angstrom) slabs 2019  
Weather data: Location: Finland, Helsinki 2012. Design day weather: Finland, Helsinki, Helsinki

Storey	Space	Space name	m²	m³	max. dhw/s	min. dhw/s	max. dhw/s (m²)	min. dhw/s (m²)	W	W/m²	h	K/m	Space type	IAQ level	max. °C	Calculated
6 000	301	Text2	92.8	259.7	139.2	139.2	1.5	1.5	0	0.0	0.155	0.00	Office room	Good		
3 000	201	Text2	269.7	755.0	404.5	404.5	1.5	1.5	0	0.0	0.049	0.00	Office room	Good		
0	101	Text1	467.3	1 307.8	700.6	700.6	1.5	1.5	0	0.0	0.100	0.00	Office room	Good		

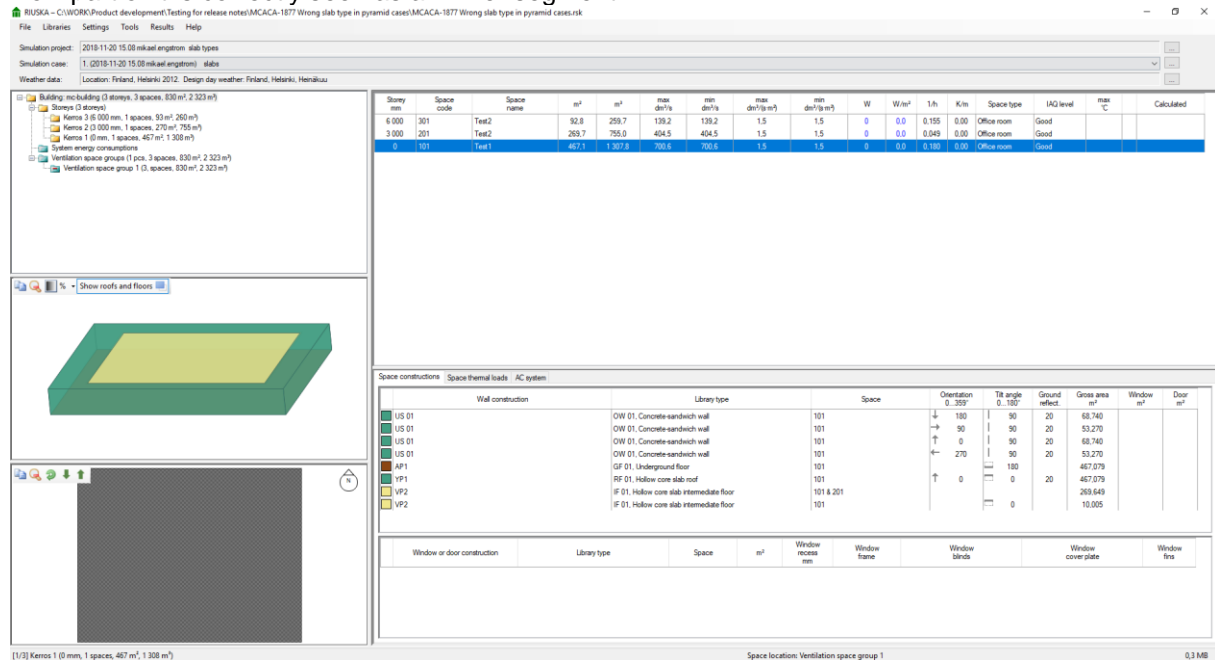
Space constructions | Space thermal loads | AC system

Wall construction	Library type	Space	Orientation	Tilt angle	Ground reflect	Gross area	Window area	Door area
US 01	OW 01, Concrete-sandwich wall	101	↓	180	0	68.740		
US 01	OW 01, Concrete-sandwich wall	101	→	90	20	53.270		
US 01	OW 01, Concrete-sandwich wall	101	↑	0	20	68.740		
US 01	OW 01, Concrete-sandwich wall	101	←	270	20	53.270		
AP 1	GF 01, Underground floor	101	—	180		467.079		
YP 1	RF 01, Hollow core slab roof	101	↑	0	20	467.079		

Window or door construction	Library type	Space	m²	Window recess	Window frame	Window blinds	Window cover plate	Window fins

[1/3] Kerros 1 (0 mm, 1 spaces, 467 m², 1 308 m³)  
Space location: Ventilation space group 1  
0.1 MB

Now part of it is correctly seen as an inner segment:



The screenshot shows the MagiCAD software interface. On the left, there's a 3D model of a building with a green roof and yellow walls. Below the model, a list of spaces is visible: "Building: mc-building (3 stories, 3 spaces, 830 m², 2 323 m³)", "Kerros 3 (6 000 mm, 1 spaces, 93 m², 265 m³)", "Kerros 2 (3 000 mm, 1 spaces, 270 m², 795 m³)", "Kerros 1 (0 mm, 1 spaces, 467 m², 1 308 m³)", "System energy consumption", "Ventilation space group 1 (3 spaces, 830 m², 2 323 m³)", and "Ventilation space group 1 (3 spaces, 830 m², 2 323 m³)".

The main window displays a table with the following columns: Storey, Space code, Space name, m², m³, max. air flow, min. air flow, max. air flow, min. air flow, W, W, 1/h, K/m, Space type, IAQ level, max. C, and Calculated. The table contains data for three spaces: 6 000, 3 000, and 0. The space 0 is highlighted in blue.

Below the table, there's a section for "Space constructions" and "Space thermal loads - AC system". It lists various construction types and their properties, including "US 01", "OW 01", "UF 01", "RF 01", "VP1", "VP2", and "IF 01".

At the bottom, there's a section for "Window or door construction" with columns for Library type, Space, m², Window recess, Window frame, Window blinds, Window cover plate, and Window fin.

The user must have a newer version of Riiska than 5.2.17 for the calculations to be correct.

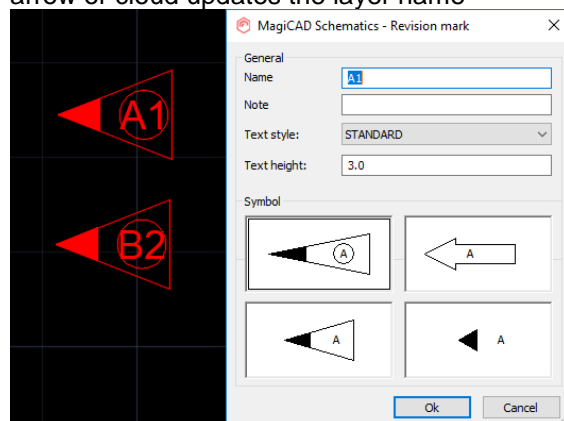
## 2.6 Schematics

### Duplicate text after running the explode-command on devices

We fixed an issue where texts in devices showed up as duplicates in Schematics after running the explode-command MSEX on them

### The revision arrow layer is now updated when revision name is changed

The {RV\*} variable works for both the revision arrow and cloud now and changing the name in the arrow or cloud updates the layer name

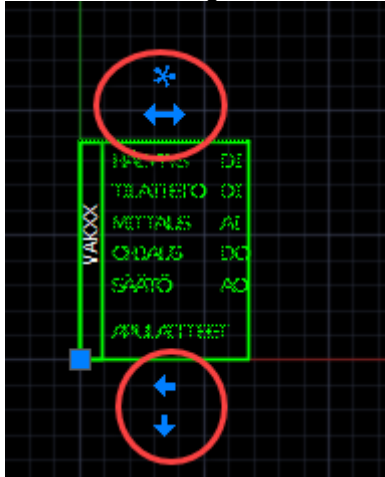


The screenshot shows the "MagiCAD Schematics - Revision mark" dialog box. It has a "General" section with fields for "Name" (A1), "Note", "Text style" (STANDARD), and "Text height" (3.0). There's also a "Symbol" section with four preview images of revision marks: a triangle with a circle inside, a triangle with a circle inside, a triangle with a circle inside, and a triangle with a circle inside. The "Ok" and "Cancel" buttons are at the bottom.

### Grips were in some cases far away from the symbols

There were issues with the bounding box for some symbols, where the grips were very far away from the object itself.

Now the bounding box should be placed correctly:



### Crash in Schematic COM

Schematic COM crashed when calling findValues(), but has now been fixed.