



MagiCAD for AutoCAD

Release notes for version 2024 UR-2

09/02/2024

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1 New features

1.1 Common

Some user interface updates

"Apply" button is disabled if there are no changes, and "Revert changes" context menu item is disabled if there are no changes among selected items in the list, in Edit References.

"Delete" context menu item in Void Provision Manager is disabled if there is no valid selection in the list.

"Zoom to linked object" context menu item in "Show linked objects" command in Schematics, is disabled if there is no valid selection in the list.

Object ID format updates

Extended the maximum length to 256.

Added the following attributes for selection in V&P:

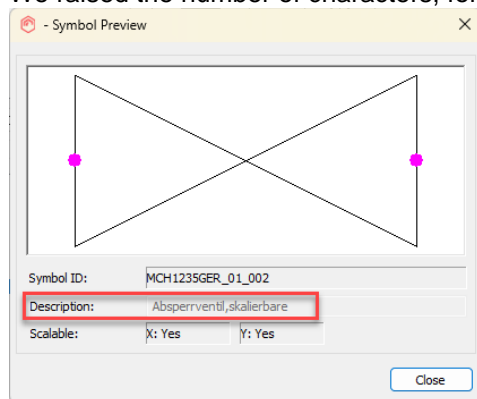
Connection size (main/main/branch)

Insulation user code

Regarding backwards compatibility the information won't be shown in older versions of MagiCAD, even if it saved in the project, but will be shown again when opening in a newer one again.

Number of characters in symbol description

We raised the number of characters, for the symbol description, from 40 characters to 256:



Maintenance zones updates

Some issues were remaining from the initial 2024 UR-1 implementation and have now been fixed:

Now generic maintenance zone is not reset when updating product data.

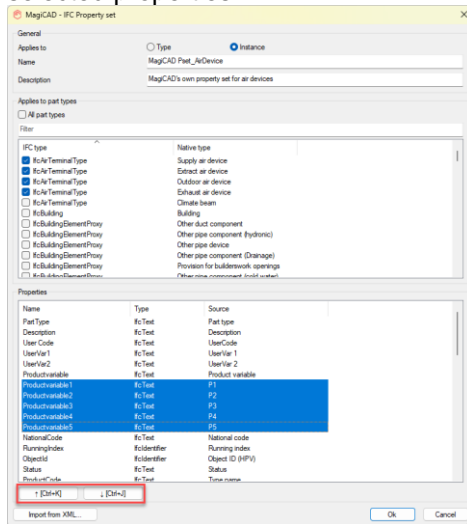
Zones used face model in 2D for devices without 3D model.

Now changing Cooling Beam/Fan Coil product size doesn't change clearance/maintenance zone visibility.

Properties arrangement in Property set manager

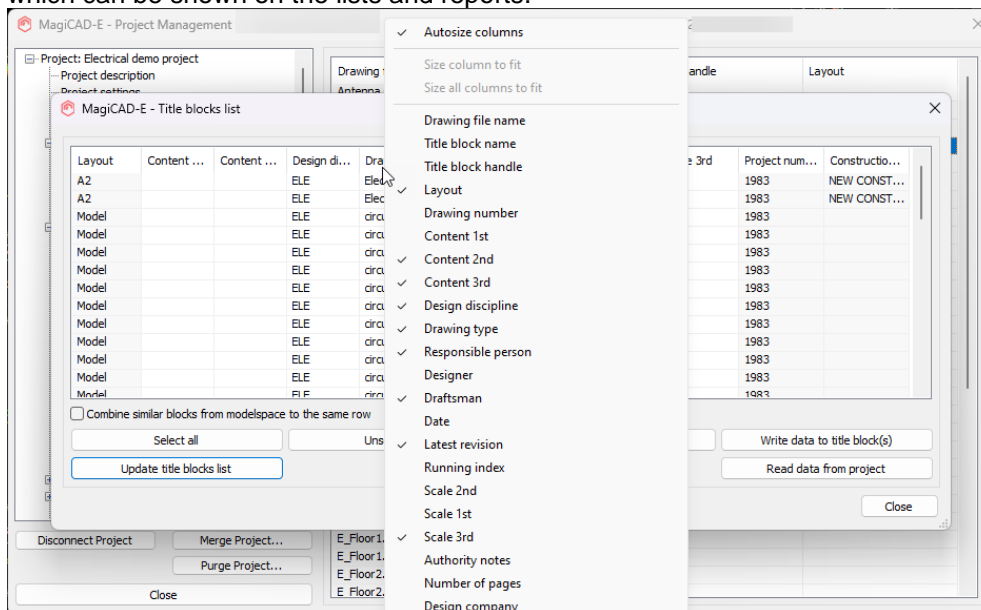
It is now possible to rearrange the list with selected properties in the Property Set manager for both Property sets and Quantity sets.

This does not affect how the IFC viewers show the properties, as they have their own individual rules for how the properties are shown, but this will help the MagiCAD users in getting an overview of the selected properties.



Enhancements to the title block lists

Columns in title block lists can now be added/hidden and they can be reordered. The column settings are saved to the project. In addition, the layout name is included as one of the "hard-coded" properties which can be shown on the lists and reports.



You can also sort by clicking on a column. Click again for toggling between ascending and descending sorting.

Reports are grouped together as long as the columns are similar

Earlier were reports grouped together but kept separated in the background if different devices were identified:

MagiCAD V&P - Report		
File Edit		
Selection areas	Flow	Number of similar
A1b	40 l/s	8
A1b	40 l/s	2

Now the rows are grouped as long as they are similar:

MagiCAD V&P - Report		
File Edit		
Selection areas	Flow	Number of similar
AAA	40 l/s	10

If there is a need to group by device, then the devices can be added as a new column:

MagiCAD V&P - Report			
File Edit			
Selection areas	Product	Flow	Number of similar
AAA	S11 "COLIBRI CCB 160-400-RO+ALSd 125-160"	40 l/s	8
AAA	S12 "WISE Colibri_a 160-RO"	40 l/s	2

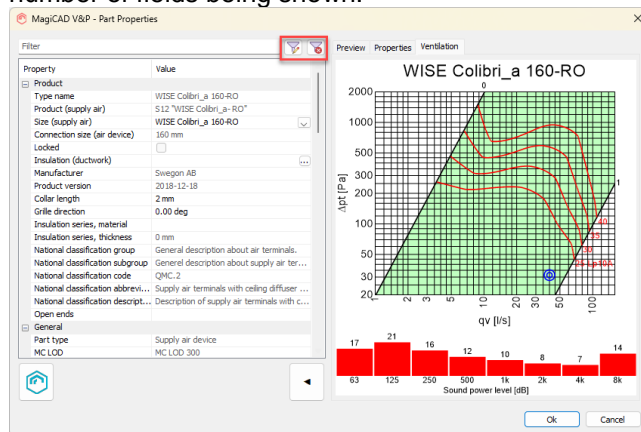
1.2 Ventilation and Piping

Common

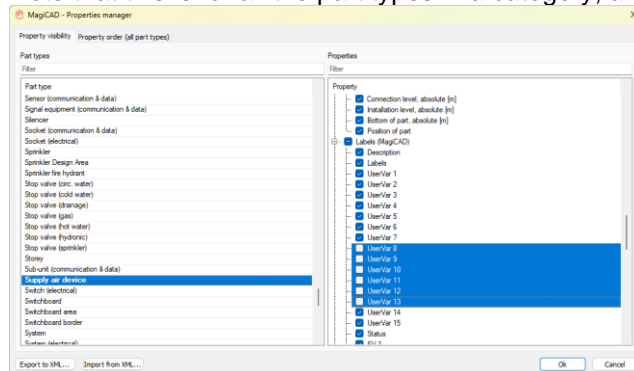
New V&P Part properties dialog includes too much information

Due to the large amount of information in the Part Properties dialogs we have added filters for the users to set up what properties they want to see in the devices.

The new dialogs, like the old ones, also don't show the fields which aren't editable and to which MagiCAD hasn't written any information to yet, like certain calculation results. This to reduce the number of fields being shown.

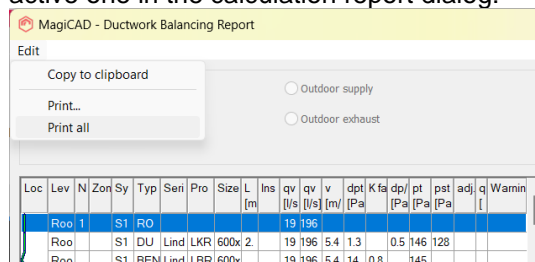


Note that this is for all the part types in a category, and not instance or product specific:



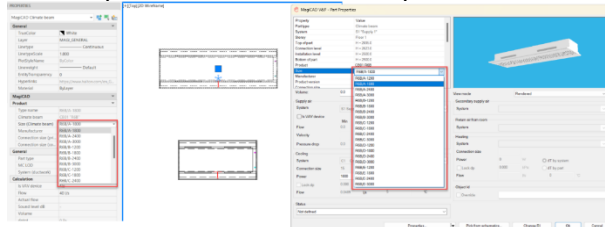
Calculation report improvement: print all systems

Using "Print all" it is possible to print all the systems that were calculated at once, instead of only the active one in the calculation report dialog:



Be able to change size of a product in part properties for a Climate beam and Fan coil unit

Now it is possible to change the size, as long as the device isn't -connected, using either MagiCAD's Part Properties or AutoCAD's Properties.



Ventilation

Add total VAV air flows to drawing texts

New parameters for total VAV air flows can be added to different dimension texts and part property lines. This provides a better overview of different flow rates in the drawing.

The following parameters can now be added to air terminal device dimension texts:

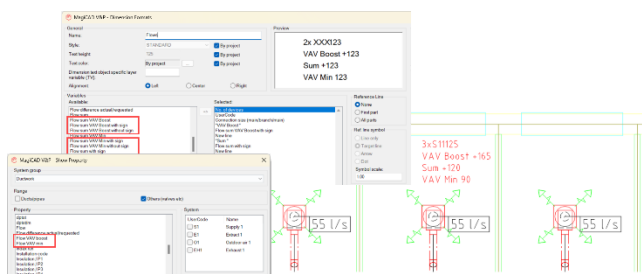
- Flow sum VAV Boost
- Flow sum VAV Boost with sign
- Flow sum VAV Boost without sign
- Flow sum VAV Min
- Flow sum VAV Min with sign
- Flow sum VAV Min without sign

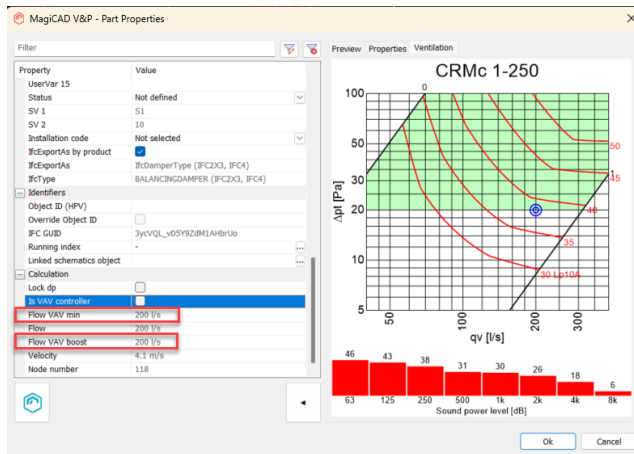
The following parameters can now be added to flow damper dimension texts:

- Flow VAV boost
- Flow VAV min

The following parameters can now be added to part property lines:

- Flow VAV Boost
- Flow VAV Min



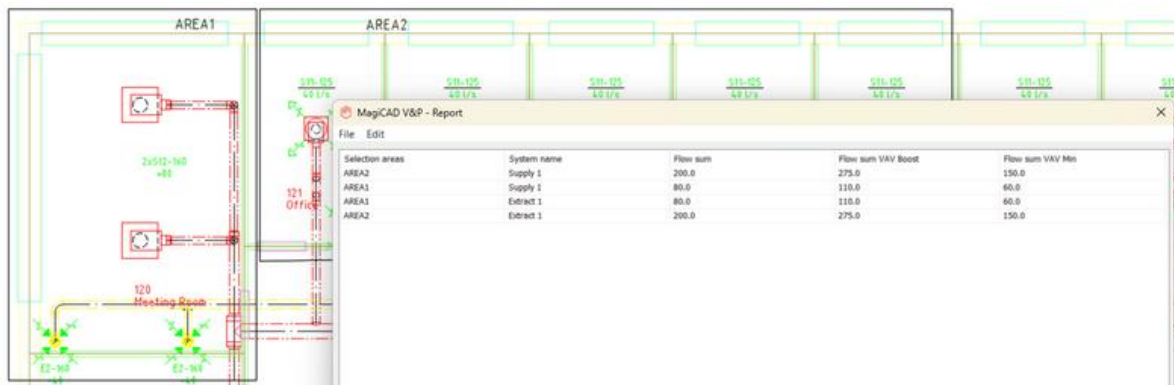
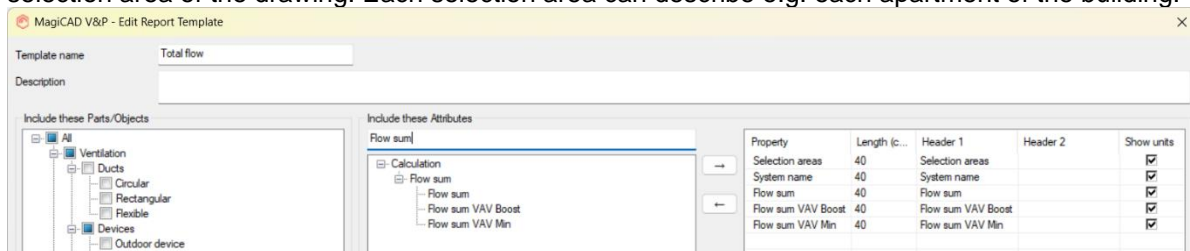


Sum up total air flows in ventilation reports

There is often a need to sum up the total air flow in and out of different areas of a building, for example to estimate the demand on an air handling unit. MagiCAD now includes three new parameters that can be used to sum up total air flows in ventilation reports.

The new parameters are Flow sum (total flow), Flow sum VAV Boost (total flow using boost flow rate for VAV systems) and Flow sum VAV Min (total flow using minimum flow rate for VAV systems). These can be added to ventilation reports in the Report template tool.

You can use these new parameters to, for example, create a report template for supply and extract devices (you can also include "None" connection-nodes under fittings-category) and add selection areas, systems and flow sum as selected attributes to create reports that show sum flow of each selection area of the drawing. Each selection area can describe e.g. each apartment of the building.



Note: If a device is not a VAV-device, then the VAV min and VAV boost flows will be 0.

Close dampers from the advanced flow analysis' report

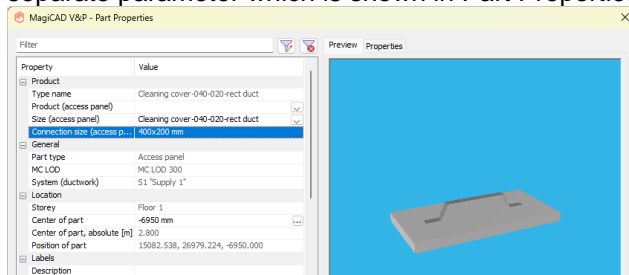
It is now possible to close dampers completely, using Extended flow analysis, in the flow analysis calculation and run simulations with it, which means that there will be no downstream from through it:

Location	Level	Nod	Zone	Syste	Type	Series	Product	Size	L [m]	Insulat	qv set [l/s]
Floor 1 [				S1	DUCT	Safe	SR-125	125	2.1		40.0
Floor 1 [				S1	BEND-4	Safe	BU-125	125			40.0
Floor 1 [				S1	DUCT	Safe	SR-125	125	0.4		40.0
Floor 1 [				S1	BEND-4	Safe	BU-125	125			40.0
Floor 1 [				S1	DUCT	Safe	SR-125	125	0.4		40.0
Floor 1 [	103			S1	SUPPLY		COLIBRI	125 (L)			40.0
Floor 1 [				S1	DUCT	Safe	SR-250	250	0.9		200.0
Floor 1 [	118			S1	FLOWD		CRMc-1-250				200.0
Floor 1 [									1.0		200.0
Floor 1 [									0.2		200.0
Floor 1 [	104								5		40.0
Floor 1 [									2.1		40.0
Floor 1 [									0.4		40.0
Floor 1 [									0.4		40.0
Floor 1 [									0.4		40.0
Floor 1 [	105								0.4		40.0
Floor 1 [									1.2		160.0
Floor 1 [	106			S1	T-BRAN	Safe		250/250			160.0

Location	Level	Nod	Zone	Syste	Type	Series	Product	Size	L [m]	Insulat	qv set [l/s]	qv [l/s]	v [m/s]	dpf [Pa]	Kfacto	dp/L [Pa/m]	pt [Pa]	pst [Pa]	adj.	qv [%]
Floor 1 [				S1	DUCT	Safe	SR-125	125	2.1		40.0	49.1	4.0	4.1		2.00	79.2	69.6		
Floor 1 [				S1	BEND-4	Safe	BU-125	125			40.0	49.1	4.0	2.0	0.205		75.1			
Floor 1 [				S1	DUCT	Safe	SR-125	125	0.4		40.0	49.1	4.0	0.8		2.00	73.1	63.5		
Floor 1 [				S1	BEND-4	Safe	BU-125	125			40.0	49.1	4.0	2.0	0.205		72.3			
Floor 1 [				S1	DUCT	Safe	SR-125	125	0.4		40.0	49.1	4.0	0.9		2.00	70.3	60.7		
Floor 1 [	103			S1	SUPPLY		COLIBRI	125 (L)			40.0	49.1	4.0	69.5			69.5	0.68	123	
Floor 1 [					DUCT	Safe	SR-250	250	0.9								81.7	81.7		
Floor 1 [	118				FLOWD		CRMc-1-250										81.7			
Floor 1 [					DUCT	Safe	SR-250	250	1.0								81.7	81.7		
Floor 1 [					DUCT	Safe	SR-250	250	0.2								81.7			
Floor 1 [	104				TAP	Safe	PSU-250/250/125										81.7			
Floor 1 [					DUCT	Safe	SR-125	125	2.1								81.7	81.7		
Floor 1 [					BEND-4	Safe	BU-125	125									81.7			
Floor 1 [					DUCT	Safe	SR-125	125	0.4								81.7	81.7		
Floor 1 [					BEND-4	Safe	BU-125	125									81.7			
Floor 1 [					DUCT	Safe	SR-125	125	0.4								81.7	81.7		
Floor 1 [	105			S1	SUPPLY		COLIBRI	125 (L)									81.7			
Floor 1 [					DUCT	Safe	SR-250	250	1.2								81.7	81.7		
Floor 1 [	106				T-BRAN	Safe		250/250									81.7			
Floor 1 [					REDUC	Safe		250/160									81.7			
Floor 1 [					DUCT	Safe	SR-160	160	1.1								81.7	81.7		
Floor 1 [	107				T-BRAN	Safe		160/125									81.7			
Floor 1 [					DUCT	Safe	SR-125	125	0.2								81.7	81.7		
Floor 1 [					BEND-9	Safe	BU-125	125									81.7			
Floor 1 [					DUCT	Safe	SR-125	125	0.9								81.7	81.7		
Floor 1 [					REDUC	Safe		160/125									81.7			
Floor 1 [	109			S1	SUPPLY		WISE Co	160 (L)									81.7			
Floor 1 [					REDUC	Safe		160/125									81.7			
Floor 1 [					DUCT	Safe	SR-125	125	2.0								81.7	81.7		
Floor 1 [					BEND-9	Safe	BU-125	125									81.7			
Floor 1 [					DUCT	Safe	SR-125	125	0.2								81.7	81.7		
Floor 1 [					BEND-9	Safe	BU-125	125									81.7			

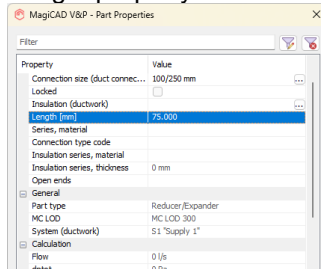
The connetion size of the access panels which are added "on top" of ducts is now available as a separate parameter

The connetion size of the access panels which are added "on top" of ducts is now available as a separate parameter which is shown in Part Properties and can be tagged using dimension texts:



Length value added to reducers

Length property has been added to reducers:



Piping

Change the sizing methods within the calculation report (Piping, both Heating & Cooling and Domestic Water systems)

It is possible to change the Sizing Method in calculation's report dialog for the pipe segments. This was done earlier for Ventilation systems, and is now available in the Piping systems.

Locatio	Level	No	Syste	Type	Series	Product	Size	Old size	L [m]	Insulat	P [W]	qv [l/s]	v [m/s]	T [°C]	Q [W]	dp/L [Pa/m]	Sizing method	Warnings
	Parking		H1	PIPE	Fe-35		25		0.8		18600	0.1549	0.24	70.0	44.9	31.8	Max pre	
	Parking		H1	BEND-9	Fe-35		25				18600	0.1549	0.24					
	Parking		H1	PIPE	Fe-35		25		1.1		18600	0.1549	0.24	69.9	55.9	31.8	Max pre	
	Parking		H1	BEND-9	Fe-35		25				18600	0.1549	0.24					
	Parking		H1	PIPE	Fe-35		25							69.8	66.6	31.8	Max pre	
	Parking		H1	BEND-9	Fe-35		25											
	Parking		H1	PIPE	Fe-35		25		2.0		18600	0.1549	0.24	69.7	107	31.8	Max pre	
	Parking	3	H1	CONN.			25				18600	0.1549	0.24					
	Floor 1	4	H1	CONN.			25				18600	0.1549	0.24					

Sprinkler

Possibility to inspect a sprinkler calculation report despite "high pressure drop" warning

Now in an error case when the pressure drop is too high, the sprinkler calculation is not simply cancelled and the results are shown so the problematic point can be found.

1.3 Electrical

Bus systems on electrical devices

Now it is possible to create bus circuits. These circuits are virtual and can have objects from power and data categories, also cables can be added to the bus circuits.

For each product, power and data, you can define number of connection and bus current which are utilized in this function.

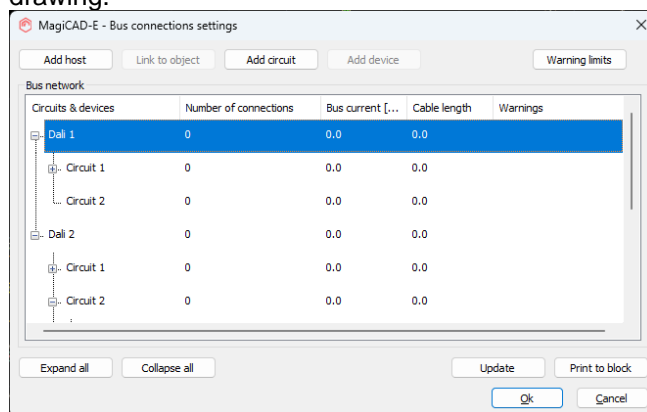
Bus connection dialogue

In this dialogue, you can create bus host and link it to object in the model. Circuits can be created under each host and objects can be defined to the circuits from the model. Also cables can be added to bus circuits but they are not visible in this dialogue.

Hosts and circuits can be renamed or deleted. Devices can be removed from bus circuits.

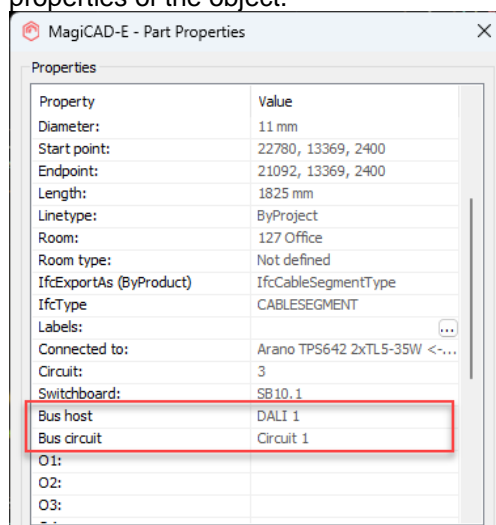
For each circuit you can see the amount of connections, bus current, cable length and possible warnings, which you can define yourself.

By double clicking on a host or a device in a circuit, it will zoom to the object if it's located in the same drawing.



Part Properties

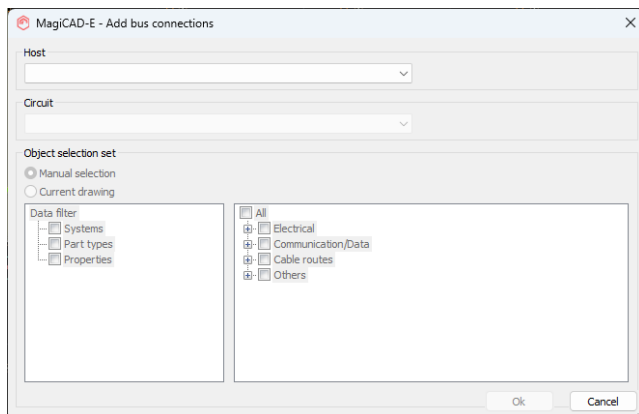
When a device or a cable have been defined into bus circuit, that information is added to part properties of the object.



Bus circuit and Bus host attributes have been added to Object selection set under properties and all objects belonging to certain bus circuit or host can easily be filtered.

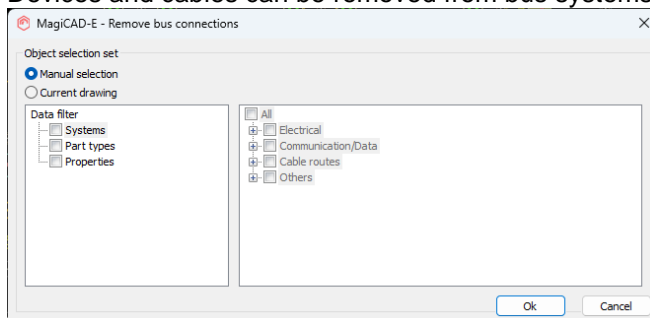
Add devices to bus circuits dialogue

Devices and cables can be added to bus systems also through this dialogue.



Remove devices from bus circuits dialogue

Devices and cables can be removed from bus systems also through this dialogue.



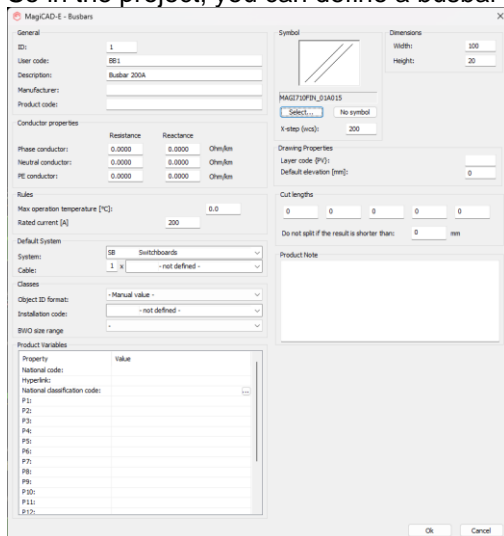
Busbar Trunking Systems

Now it is possible to model busbar trunking systems in an electrical project. Each type can be defined to have real dimensions and electrical properties.

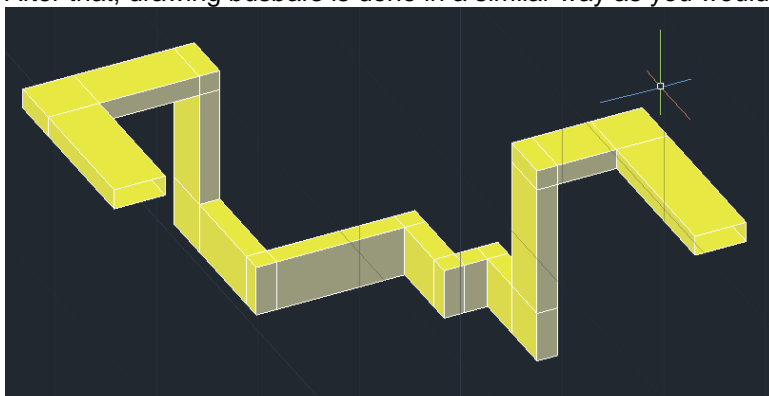
Busbars can be connected directly to switchboards from both ends of a system, or you can connect tap-off-units (= switchboards) into the middle of busbar segments or feed units anywhere along a system. When connecting directly to a switchboard, you can select it to be done with a direct connection piece or by using an elbow piece.

!!! NOTE! ELECTRICAL CALCULATIONS (VOLTAGE DROPS AND SHORT-CIRCUITS) DO NOT WORK YET WITH THIS VERSION !!! THEY WILL BE IMPLEMENTED LATER.

So in the project, you can define a busbar type in the same way as e.g. a lighting track:



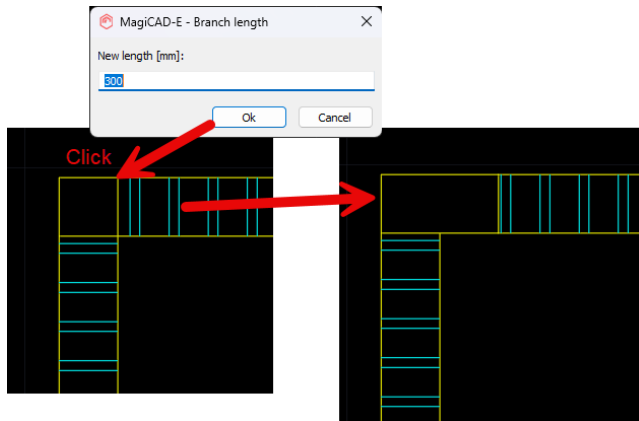
After that, drawing busbars is done in a similar way as you would draw cable trays or lighting tracks.



While drawing a busbar, you can add a feed unit (end, middle or inline feed unit) to it when the busbar is fed by a separate supply cable, but for direct connections you can place either a supply unit (for connecting a busbar to a supplied switchboard = a switchboard which the busbar is feeding) or a circuit unit (for connecting a busbar to a supplying switchboard = a switchboard from which the busbar system is fed). This way, making connections is done in a similar way or logic as with plain cables.

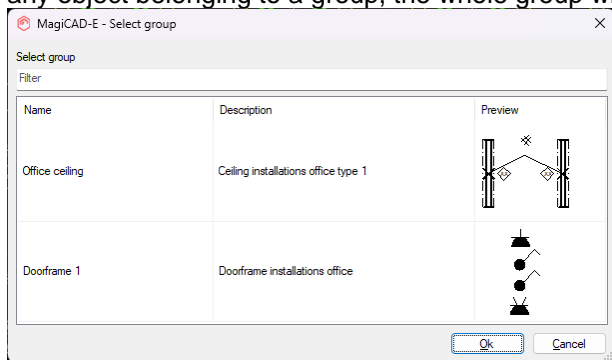
With a new **Connect Switchboard to Busbar** function you can connect tap-off-units (= switchboards which are used to act as tap-off-boxes) to busbars. When using it, it will ask to select tap-off-unit(s) and then to select a busbar. Virtual connection(s) will be made between the tap-off-unit(s) and the selected busbar.

With a new **Change Fitting Length** function, you can set desired branch length(s) in a fitting.

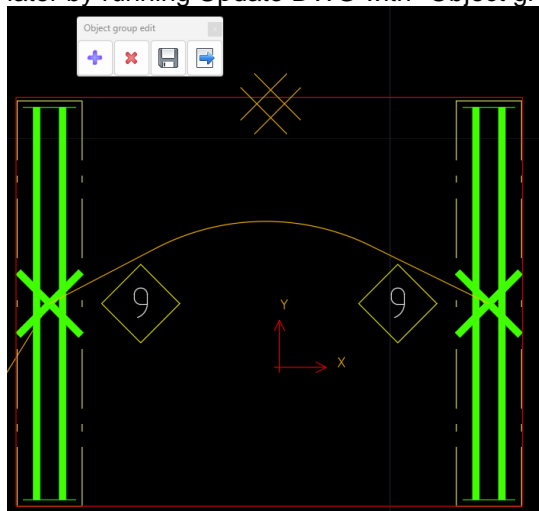


Object Groups

With this new function, you can make groups from objects. Created group is then saved to the project and it can be installed to the project. All the objects that are in the group can be accessed individually and thus are working just as any other separately drawn object. Only difference is that when you move any object belonging to a group, the whole group will move.



With Edit group function, you need to select any object belonging to a group and then a toolbar will appear where you find tools to add objects into the group, remove objects from the group and save the changes into the group template. While editing is active, you can move objects, change their elevation and use any tools available. After saving the changes to group template and exiting the editing mode you can update the changes to other instances of the group in the current drawing or that can be done later by running Update DWG with "Object groups" selected.



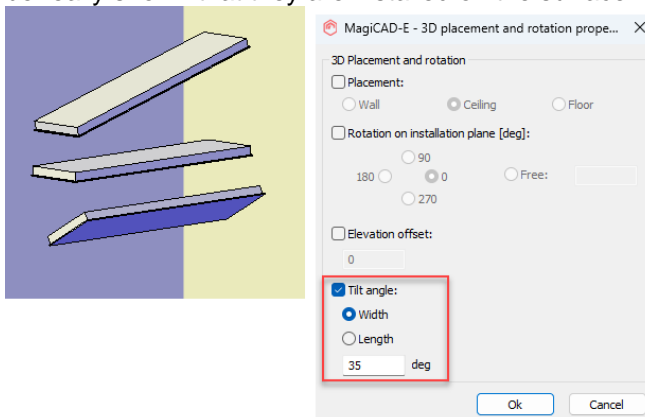
With Ungroup function, you can break any group instances and they will work as any installed object.

From viewport preferences, you can make object group boundaries visible to easily see which of your objects in the model are groups. When using Edit group function, the group that had been selected, will be shown with red boundary colour.

Created Object groups can be merged to other projects.

Tilt angle for devices

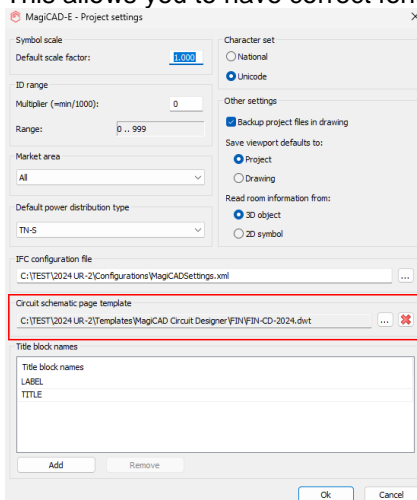
You can now set a tilt angle for devices when you are installing them, and afterwards you can use **Change Properties** for changing it. Especially with sloped ceilings, surface mounted luminaires can be really shown that they are installed on the surface.



Circuit schematic page templates in electrical projects

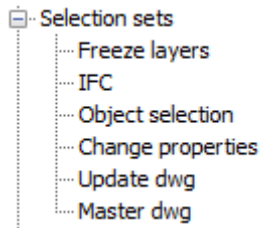
In electrical projects, you can now define a template drawing from which the frame and title blocks are taken to new circuit schematic drawings made by using the **Create Circuit Schematic** function in Switchboard Schematics.

This allows you to have correct fonts, frames and title blocks correctly defined for each project.



Selection sets in project merge

Now when saving selections sets (IFC Export, Freeze layers, Update dwg, Report, Legend, Connections to master dwg and Change properties), settings are saved to the project.



These saved sets can be merged to another project. Good filters are now easy to share between projects.

1.4 Circuit designer

Page templates in MagiCAD Electrical projects

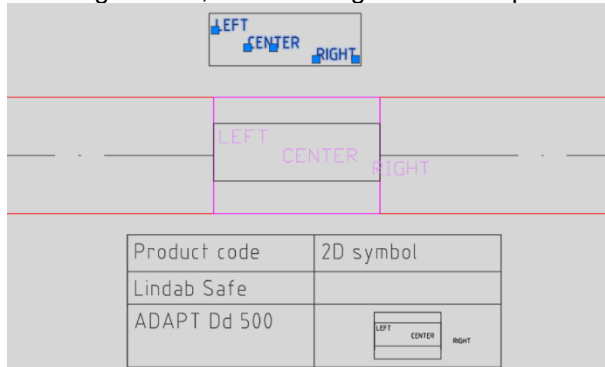
You can now define page templates in MagiCAD Electrical projects which are used when creating new circuit schematic drawings from switchboard schematics. Please see the Electrical user guide for details.

2 Resolved issues

2.1 Common

Symbol's texts did not align correctly

Texts in symbols didn't align correctly according to how they were originally created, as can be seen in the image below, from the original to the representation in a symbol and legend:



This has now been corrected.

Moving of title block properties did not work properly

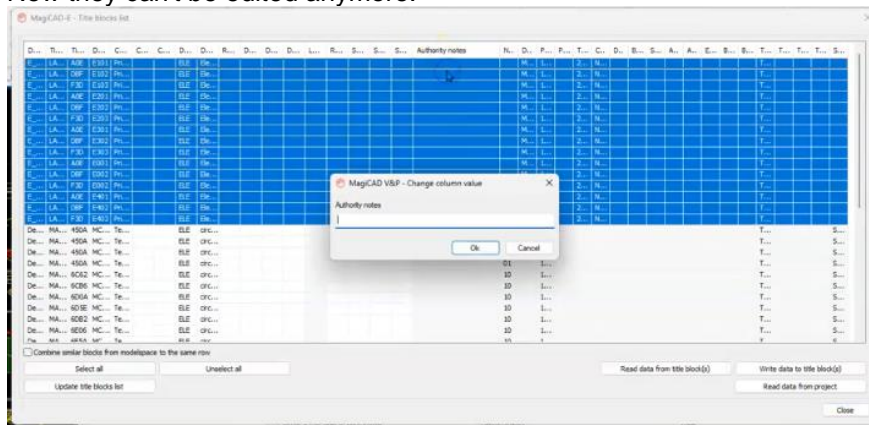
Moving of properties messed up report definitions of title blocks and the order was not maintained when you closed the project. These issues have now been fixed.

Attribute name reverted when changing the source of a title block property

The attribute name got reverted when changing the source of a title block property. Now the written value stays put.

Properties in title block list which were unintentionally editable

The fields which should have been disabled from editing were still editable from the right-click menu. Now they can't be edited anymore.

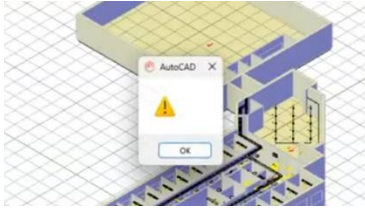


Exporting to IFC caused long run times for certain files

New improvement to speed up IFC Export in certain cases related to non-MagiCAD objects.

After working with Title blocks MagiCAD threw an undefined error

Due to internal information handling, the program did in some cases throw an undefined error. This has been corrected.



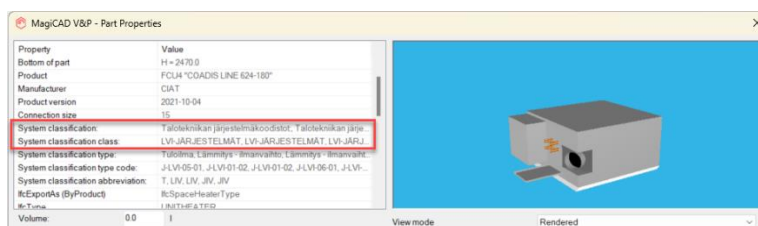
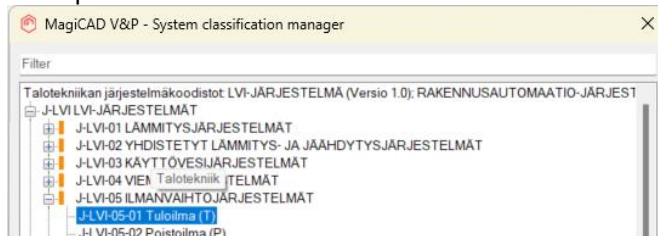
Issues after a clean MagiCAD installation

After a clean install (no previous MC versions on system), there were a number of issues in MagiCAD: IFC configuration path was empty in User Preferences.

System classification issues

The system classification started the listing from the "header" or description of the system classification, leading to the *System classification* and *System classification class* being wrong.

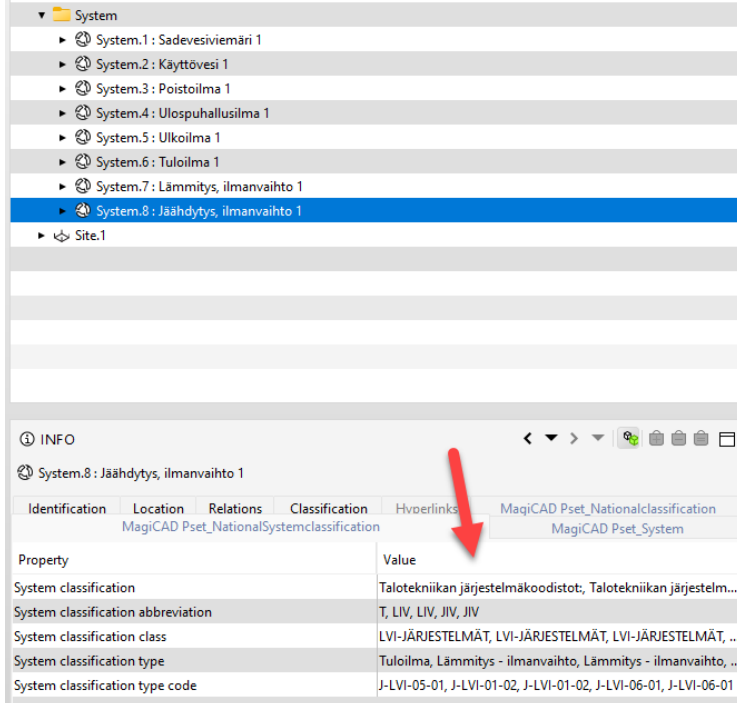
Example:



Corrected:



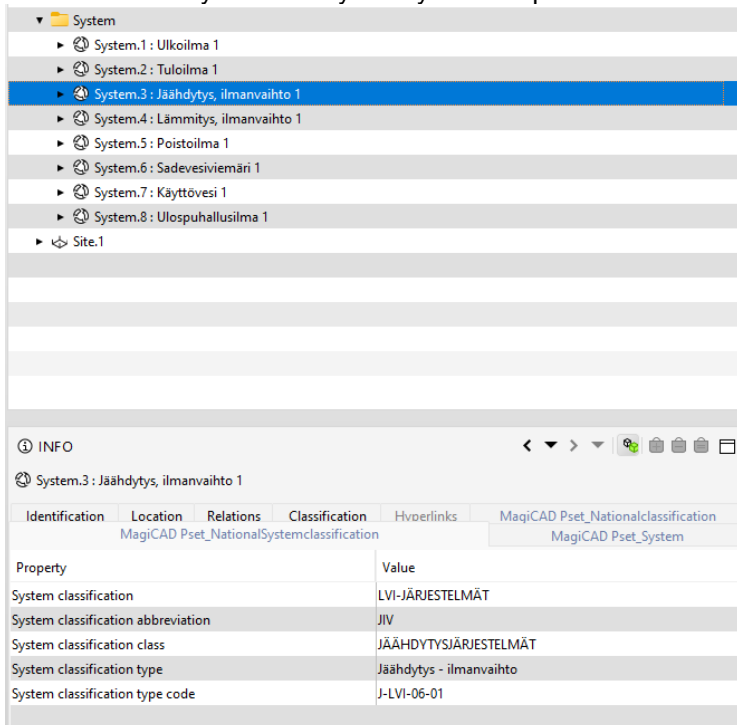
In IFC Export didn't set the system classifications correctly, as all of the system classifications were shown in each other system, which were present in devices with multiple systems:



The screenshot shows a list of systems on the left, with 'System.8 : Jäähdytys, ilmanvaihto 1' selected. The information panel on the right shows the 'Classification' tab, which is highlighted by a red arrow. The table below shows the classification details for System.8.

Property	Value
System classification	Talotekniikan järjestelmäkoodistot; Talotekniikan järjestelm...
System classification abbreviation	T, LIV, JIV, JIV
System classification class	LVI-JÄRJESTELMÄT, LVI-JÄRJESTELMÄT, LVI-JÄRJESTELMÄT, ...
System classification type	Tuloilma, Lämmitys - ilmanvaihto, Lämmitys - ilmanvaihto, ...
System classification type code	J-LVI-05-01, J-LVI-01-02, J-LVI-01-02, J-LVI-06-01, J-LVI-06-01

Now it is correctly set for only the system in question:



The screenshot shows a list of systems on the left, with 'System.3 : Jäähdytys, ilmanvaihto 1' selected. The information panel on the right shows the 'Classification' tab, which is selected. The table below shows the classification details for System.3.

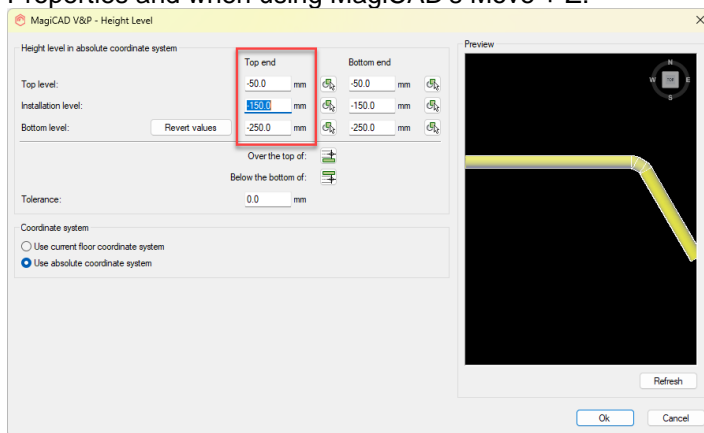
Property	Value
System classification	LVI-JÄRJESTELMÄT
System classification abbreviation	JIV
System classification class	JÄÄHDYTYSJÄRJESTELMÄT
System classification type	Jäähdytys - ilmanvaihto
System classification type code	J-LVI-06-01

2.2 Ventilaion and Piping

Common

Middle column or installation level active by default when changing the height level of sprinkler, drainage and gas pipes

Now when changing the height level of sprinkler, drainage or gas pipes the function defaults to the first column for the new Part Properties, and to the first column and installation level value for the old Part Properties and when using MagiCAD's Move + Z:



Slowness issue fixed related to drawing ducts and pipes using newer dialogs

An issue caused slowness when using the newer duct and pipe drawing dialogs. Now this works without slowness.

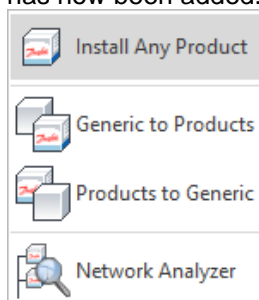
Ventilation

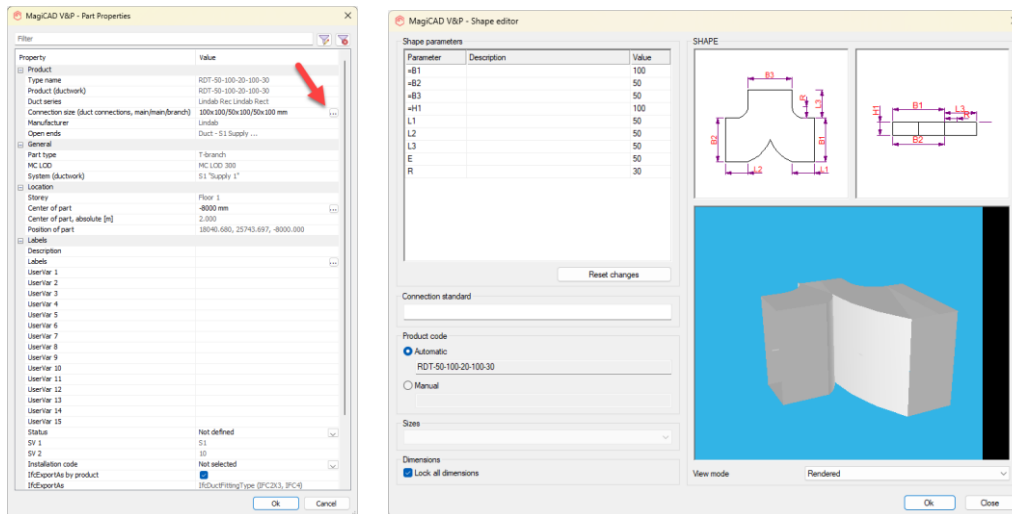
Selection area info missing from some ducts

Vertical segments with start/end point at selection area bottom/top could be identified as not belonging to the selection area even if they did.

Editing the size properties of duct fitting products in the new Part Properties dialog

The option to edit the size of fitting products wasn't available in the new Part Properties dialog, and has now been added.





Piping

Find & Replace of radiator valves

Changing radiator valves from some sizes to some specific other sizes wasn't possible in the new Find & Replace function. This bug has now been corrected and it is possible to freely change from one size to another.

Fatal error with gas device/component dialog

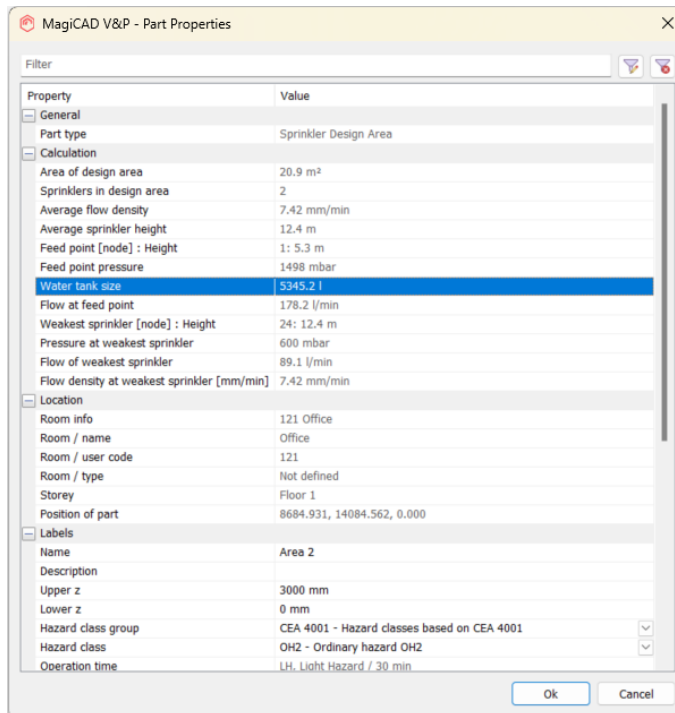
Closing the gas device or gas component installation dialog from "Cancel" or the cross "X" led to a fatal error.

This has been corrected and closing the dialog no longer leads to a crash.

Sprinkler

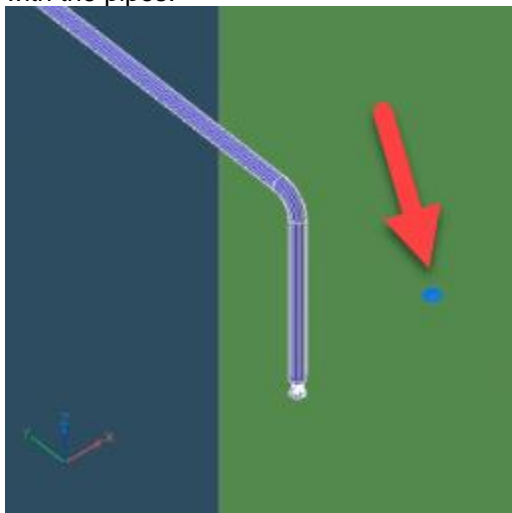
"MC flow at Root" and "MC Min Pressure at Root" and tank volume were not written to the Design Area

Some corrections to the calculation engine and the water tank has been added as a property to the design area:



When stretching sprinkler pipe reducer didn't move along

When moving a pipe using stretch, the reducer stayed in its original position. Now it moves correctly with the pipes.



2.3 Electrical

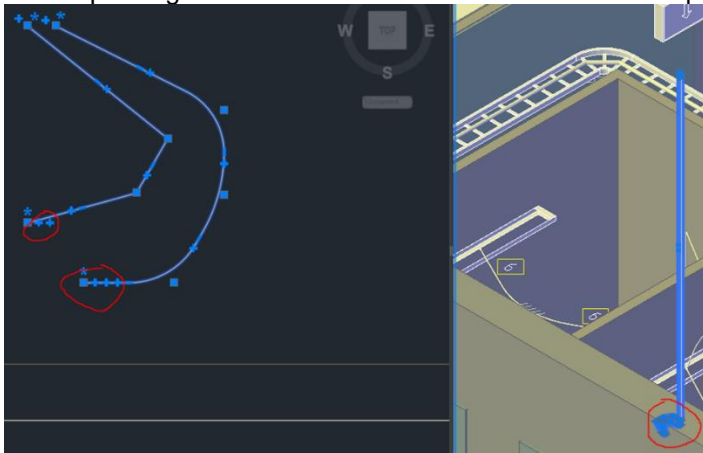
Difficulties while moving favourites toolbar

When favourites toolbar was moved to other screen than main screen, it automatically jumped back to main screen.

Now the toolbar can be moved freely to any screen.

Too many plus signs with vertical cables

When drawing vertical cables, there were a lot of plus signs like shown in the picture below. Now the middle plus sign has been removed to limit the amount of plus signs.



Title Block issues in Edit Project tools

When opening title block nodes with external edit project tools, nothing could be modified.

Now it is possible to modify the data.

Operating area layer after explode

When exploding an object which has operation area, operation area of the object went to a wrong layer.

Now the operation area will retain it's layer.

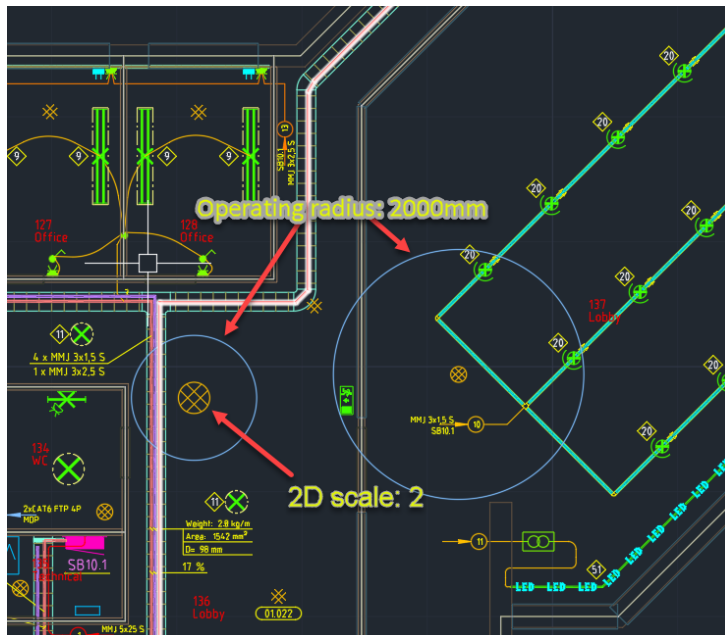
COM attribute /project/electric/class[]/product[]/power/active/W didn't work

Changes on how attributes were handled were changed in MC 2022 UR-1 and it broke the COM attribute.

Attribute handling have been fixed.

Issue with operation area size when 2D scaling is used

When object's 2D scaling had been changed and operation area defined, operation area wasn't shown in it's correct size.



Now operation area is shown it's correct size regardless of the 2D scale of the symbol

2.4 Schematics

Properties filtering didn't work correctly

The Object selection filtering didn't work properly in MagiCAD Schematics.

Property description was used instead of name and because of that Object Selection with property filtering didn't work.