



MagiCAD for BricsCAD

Release notes for version 2025

30/05/2024

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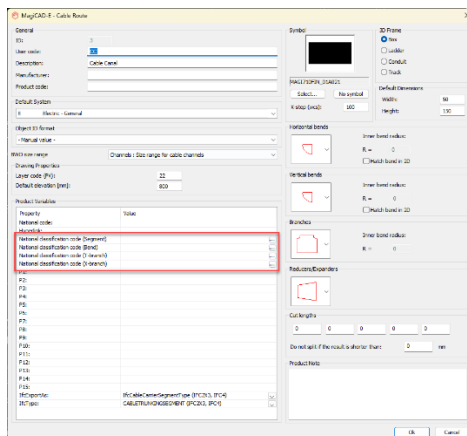
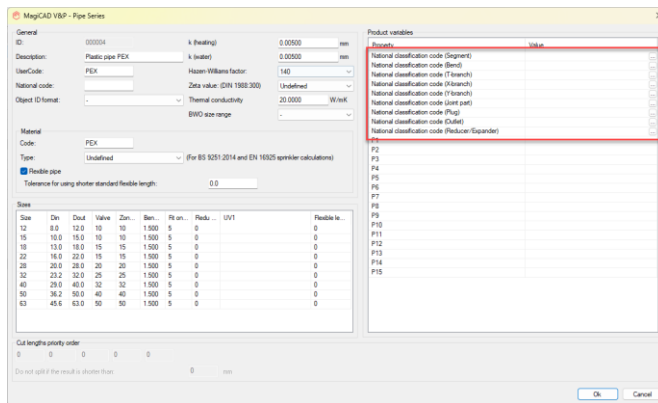
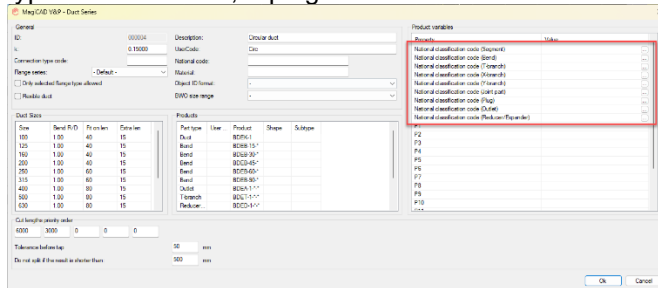
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1 New features

1.1 Common

National Classification Code for generic fittings

It is now possible to individually set the National Classification Codes for the different generic fitting types in Ventilation, Piping and Electrical:



National classification codes support for generic products

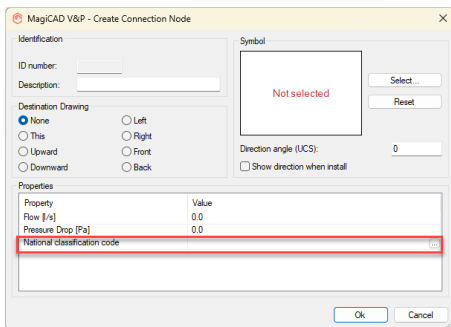
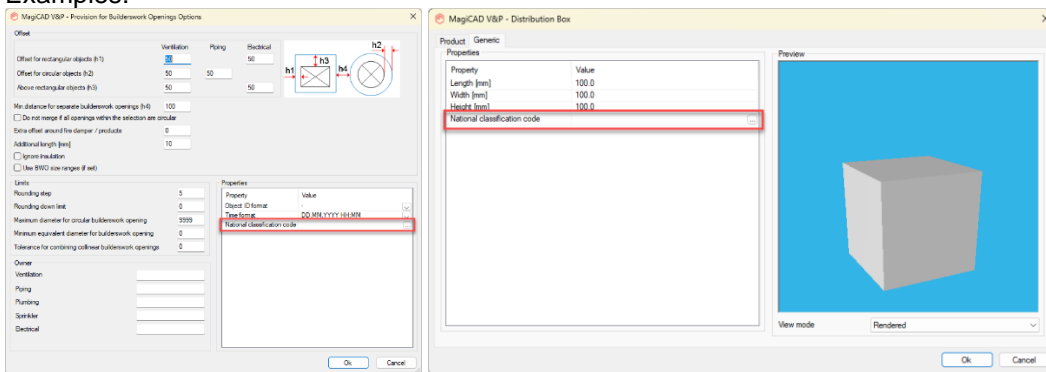
It is now possible to add National Classification Codes to products which aren't part of the project file or have been completely generic:

Generic Distribution box

Generic Manifold

- Generic Heating / Cooling plant
- Connection node None
- Generic manhole
- CAD-objects converted into MagiCAD objects
- Switchboards
- Provisions for Voids (set in the project)

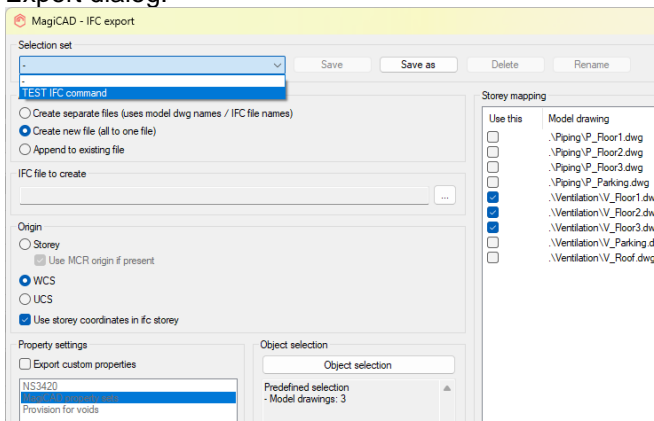
Examples:



Running the IFC Export without opening the dialog

In some cases there is a need to fast and easily export the currently open drawing to an IFC file. This can be done using the command "-MAGIIFCEXPORCURDWG" / "-MAGIIFCCD".

This works by running the command and then giving the name of the Selection set according to which one wants to export it. So at least one selection set must have been created and saved in the IFC Export dialog:

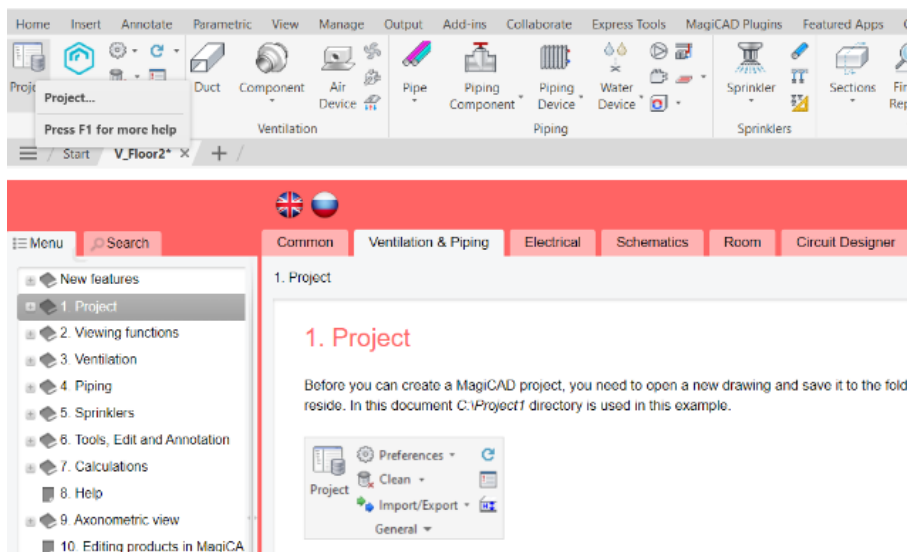


Note that even if the selection set has multiple drawings saved, that this command only exports the current drawing. Otherwise the other options are exported according to the selection set.

F1-button opens the MagiCAD Help Manual

When hovering over the feature's button in MagiCAD for AutoCAD and then pressing the F1-button, the corresponding chapter opens in the MagiCAD Help Manual.

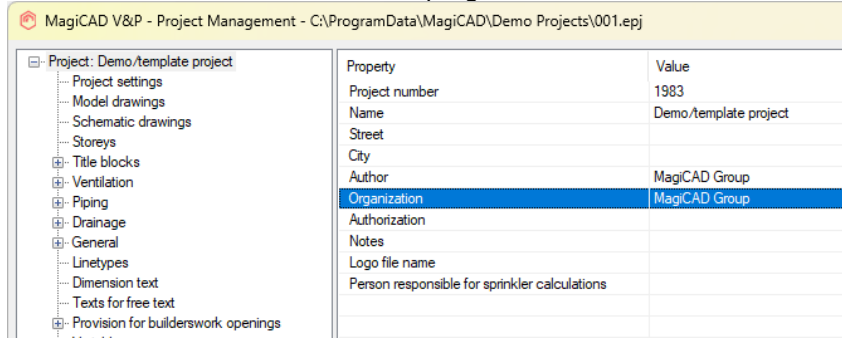
This is to assist the user in more easily finding the correct information about a specific feature from the Help Manual.



IFCAPPLICATION and IFCORGANIZATION in IFC4

IFCAPPLICATION and IFCORGANIZATION have both been added to the IFC-file.

IFCAPPLICATION is read from the program, and IFCORGANIZATION is read from here:

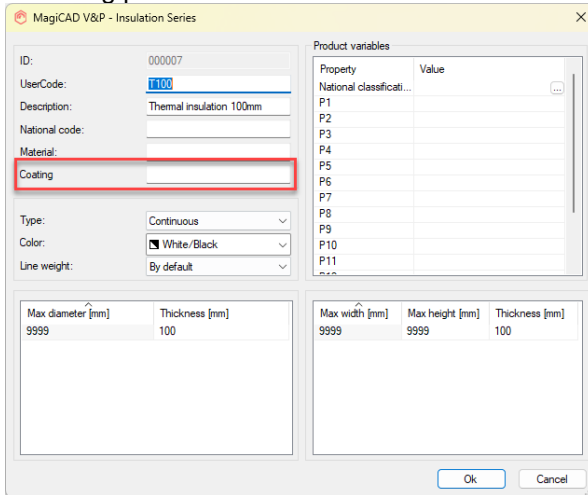


1.2 Ventilation and Piping

Common

Coating parameter for insulation series

A coating parameter has been added to the different insulation series:

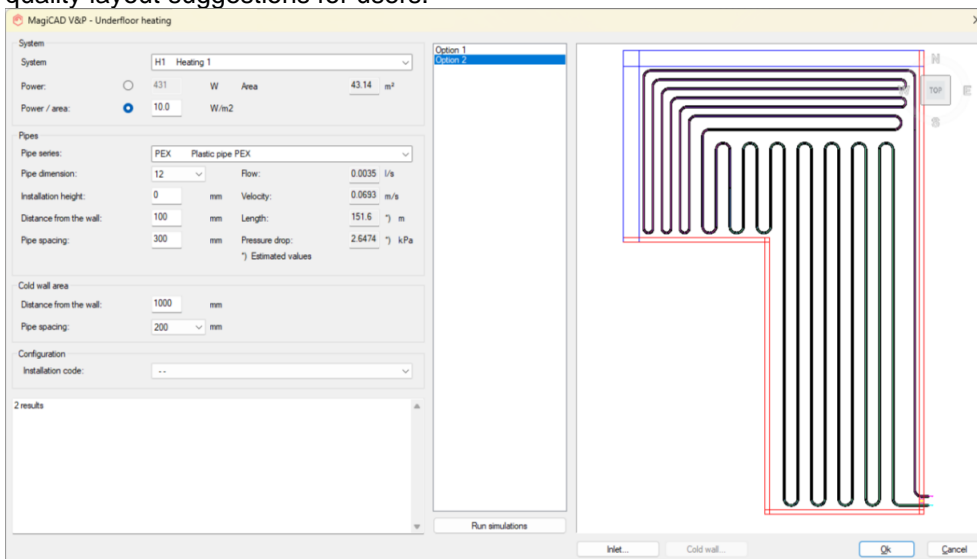


Piping

Improved automatic underfloor heating layouts

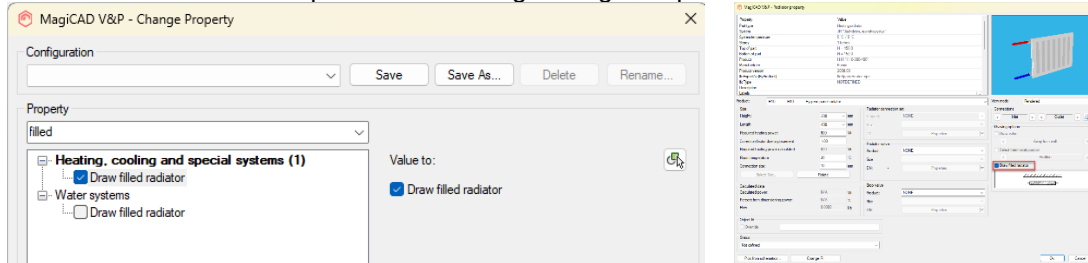
The Auto-Routing Underfloor Heating function takes better account of different room shapes and cold walls.

The machine learning algorithm for the Auto-Routing Underfloor Heating function has been improved. The function now takes better account of different room shapes, obstacles, and cold walls, resulting in quality layout suggestions for users.



Changing the filling of radiator for several ones

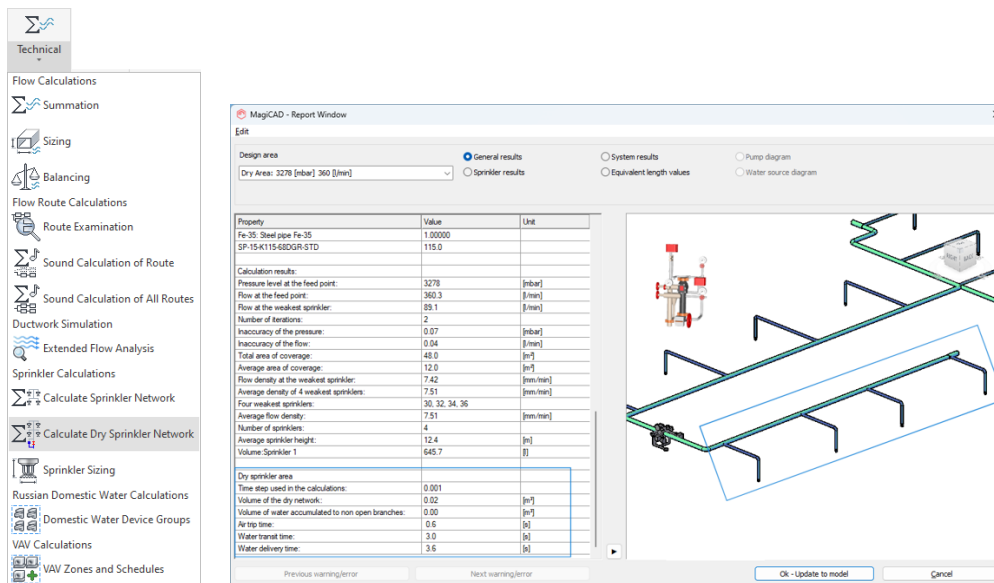
The color filling of radiators had to be done manually, and couldn't be done for multiple radiators, but now we have added the option to do it using Change Properties:



Sprinkler

Calculation of dry sprinkler systems

Dry sprinkler systems are used when part of the sprinkler network is situated in conditions below the freezing point or above the boiling point of the sprinkler fluid. The dry part of the network is filled with air or nitrogen and separated from the rest of the network with a dry pipe valve. When the sprinklers operate in case of a fire, the pressure in the dry system decreases and the dry valve opens filling the section with water. An accelerator may also be used to speed up the release of air from the pipes. Filling the empty network with water is a complex task. The movement of water is affected by many different factors, including water source properties, dry valve properties, network design, initial gas pressure, and sprinkler head properties. MagiCAD allows you to define all of the related factors and calculate an accurate water delivery time for the dry sprinkler system. [More information here.](#)



MagiCAD - Report Window

Design area: 3278 [mbar] 360 [l/min]

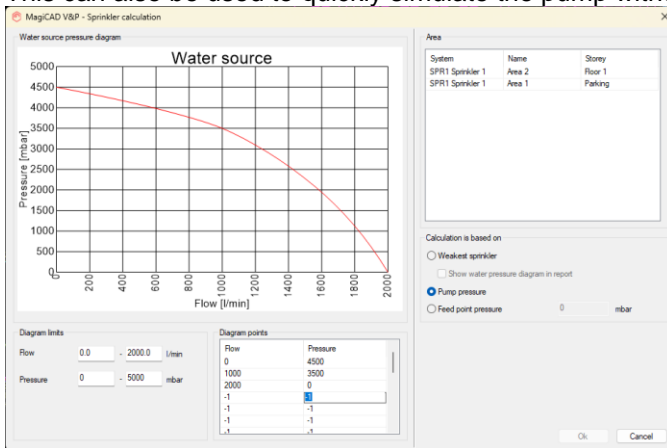
Property Value Unit

Fe-35 Steel pipe Fe-35	1.00000	
SP-15-K115-65DGR-STD	115.0	
Calculation results:		
Pressure level at the feed point:	3278	[mbar]
Flow at the feed point:	360.3	[l/min]
Flow at the weakest sprinkler:	89.1	[l/min]
Number of iterations:	2	
Inaccuracy of the pressure:	0.07	[mbar]
Inaccuracy of the flow:	0.04	[l/min]
Total area of coverage:	48.0	[m ²]
Average area of coverage:	12.0	[m ²]
Flow density at the weakest sprinkler:	7.42	[mm/min]
Average density of 4 weakest sprinklers:	7.51	[mm/min]
Four weakest sprinklers:	30, 32, 34, 36	
Average flow density:	7.51	[mm/min]
Number of sprinklers:	4	
Average sprinkler height:	12.4	[m]
Volume Sprinkler 1:	645.7	[l]
Dry sprinkler area		
Time step used in the calculations:	0.001	
Volume of the dry network:	0.02	[m ³]
Volume of water accumulated to non open branches:	0.00	[m ³]
Air trip time:	0.5	[s]
Water travel time:	3.0	[s]
Water delivery time:	3.5	[s]

Possibility to enter pressure/water flow values for the water source

The new version of MagiCAD supports Pressure level/Water flow curve for the water source. The Pressure level/Water flow curve can be freely defined by the user. No object needs to be installed in the network to use Pressure level/Water flow curve of the water source when calculating the network. In the report the water source diagram is shown with the operating points of all the calculated design areas to verify that the required pressure doesn't go above the pressure curve.

This can also be used to quickly simulate the pump without actually installing it.



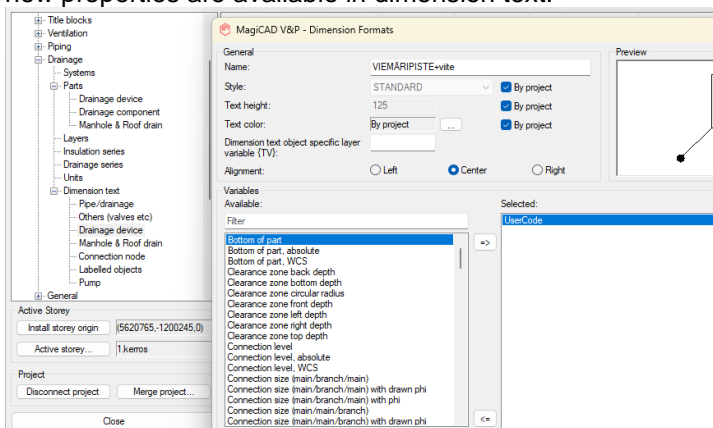
Drainage

Better calculation warning when sprinkler network starts with a valve

It was noted that the warning "Part outside of flowroutes", which normally indicates that there is additional open ends in the network, could be improved when a device is the part with the open ends. Now a warning "Device has unconnected connections" is shown in these cases instead.

Level variables updated for drainage Devices and Manholes & Roof drains

The name of the category has been changed to "Drainage device" in the project tree and a number of new properties are available in dimension text:

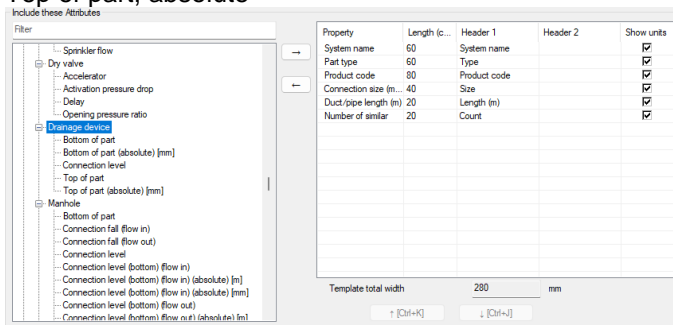


New properties in Dimension text:

- Bottom of part
- Bottom of part, absolute
- Bottom of part, WCS
- Connection level
- Connection level, absolute
- Connection level, WCS
- Top of part
- Top of part, absolute
- Top of part, WCS

In Report template:

- Bottom of part
- Bottom of part, absolute
- Connection level
- Top of part
- Top of part, absolute

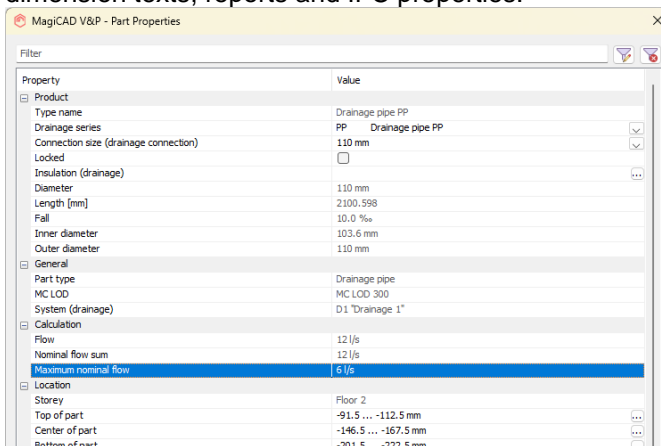


Manholes & roof drain in the Report:

- Bottom of part, absolute
- Top of part, absolute

"Maximum nominal flow" in drainage pipes

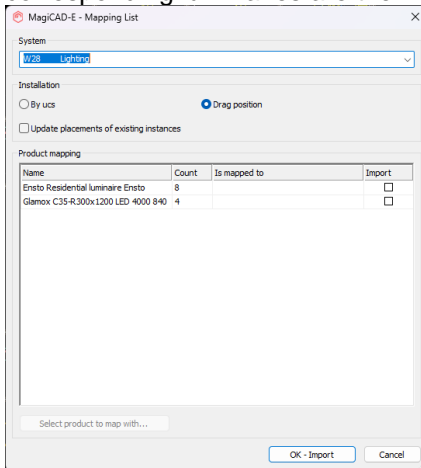
"Maximum nominal flow" is now shown in the properties of drainage pipes and is also available in the dimension texts, reports and IFC properties:



1.3 Electrical

Support for Dialux Evo

You can now import IFC files from Dialux Evo with the Dialux Import function. When importing, you need to select a floor from which luminaires will be imported into the current MagiCAD drawing. Those luminaires then need to be mapped to luminaire types in the project. After pressing OK, the corresponding luminaires are then installed to the locations defined in the Dialux IFC file.



Improvements for busbar trunking systems

Now you can define the default branch length of fittings for a busbar type in the project, by default the length is 300 mm.

The Change Fitting Length function now works also for supply and circuit units, and the length is generally measured from center to center in all fittings.

Voltage drop and short circuit calculations are now implemented.

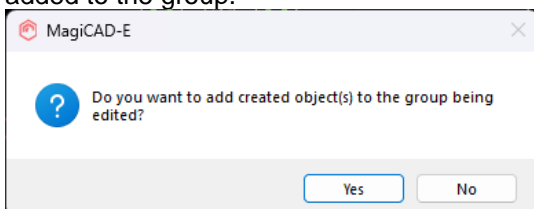
Cable Sizing & Circuit Management now shows busbars correctly

When connecting a switchboard to a busbar, you are now notified when the connection has succeeded.

Group function improvements

Circuits, combination boxes and converted CAD objects can be added to object group templates.

Now when installing objects during group editing, user is asked whether installed objects should be added to the group.



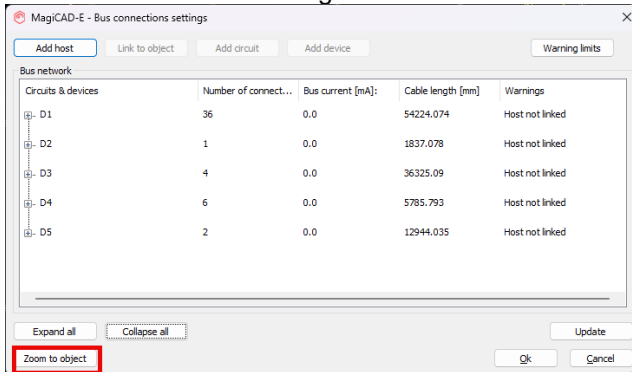
When creating a new group, after selecting objects from the drawing, in the command line you can now see how many objects were part of some other group and how many are not in any group.

```
Objects in groups: 6
Objects not in groups: 16
```

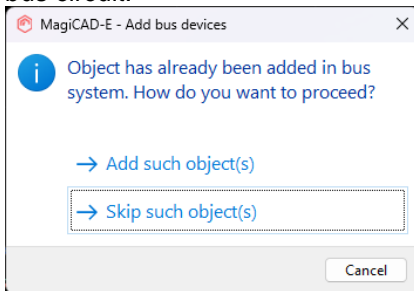
Now when updating a group and group object is moved, connected objects which are not in a group are moved as well.

Improvements for Bus systems

Zoom button has been added to bus connections dialogue. Zoom also works on devices which are located on different drawing. You can also zoom to multiple objects.



Warning is shown if you try to add a device or a cable to bus circuit which already belongs to another bus circuit.



Bus host and Bus circuit attributes have been added to Object ID format.

Supporting more attributes in functions

Support for a lot of attributes have been added to different functions.

Part property line

Ref.Point X(SOS)

Ref.Point X(WCS)

Ref.Point Y(SOS)

Ref.Point Y(WCS)

Operation area, r1

Operation area, r2

Operation area, r3

Operation area, angle

Operation area, direction

Part properties

Attenuation difference

Max no. sub-device connections
Cable corner radius
Room/Zone
Power per length

Dimension text
Case-X (for swb):
Active power
Active power with surplus
Apparent power
Cos phi
Reactive power
Total active power
Voltage
Number of phases
Power load type description
Attenuation difference
Max no. sub-device connections
Cable corner radius
Room/Zone
Power per length
Ref.Point X
Ref.Point X(WCS)
Ref.Point Y
Ref.Point Y(WCS)
Operation area, r1
Operation area, r2
Operation area, r3
Operation area, angle
Operation area, direction

Report
Attenuation difference
Max no. sub-device connections
Cable corner radius
Room/Zone
Power per length
Ik1p_net
Ik3p_net
IP_net
IP_net_lim
Total active power
Voltage
Number of phases
Power load type description
Storey origin z

Case-X

Active power
Active power with surplus
Apparent power
Cos phi
Reactive power

Object ID

Storey origin z
Active power
Voltage
Number of phases
Power load type description
Attenuation difference
Max no. sub-device connections
Cable corner radius
Room/Zone
Power per length
Bus circuit
Bus host

Legend

Attenuation difference
Max no. sub-device connections.
Cable corner radius
Room/Zone
Power per length
Total active power
Voltage
Number of phases
Power load type description

IFC property set

Total active power
Voltage
Number of phases
Power load type description
Attenuation difference
Max no. sub-device connections
Cable corner radius
Room/Zone
Power per length

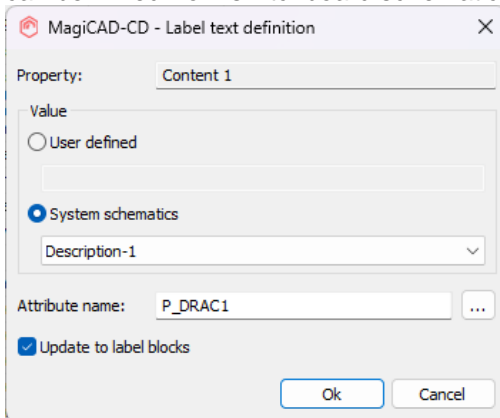
1.4 Circuit Designer

Update more data from switchboard schematic

Now when defining label texts in Circuit Designer, you can select from where the information is gathered, whether it is user defined in the circuit schematics or if it's coming from the linked switchboard schematics.

Also, for every attribute which you define in the settings, there is a selection "Update to label block" which defines whether the data is written to the label block (of every page) or not.

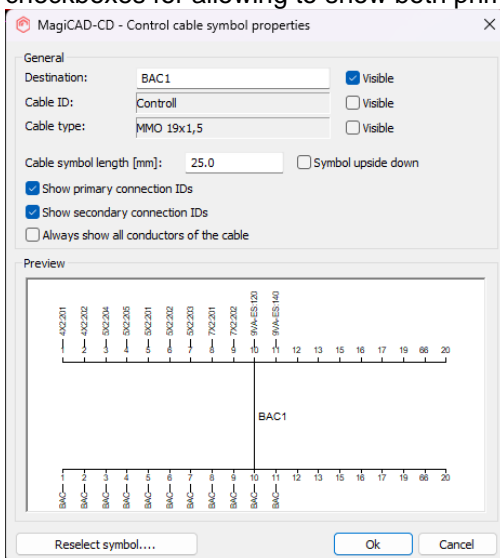
All the same attributes which can be used when creating switchboard schematics from plan drawings, can be linked from switchboard schematics to circuit schematic drawings.



Label text definitions are copied from page templates when creating circuit schematic drawings from switchboard schematics, so these attribute mappings are not needed to be done for every drawing separately.

Control Cable Symbol with both ends

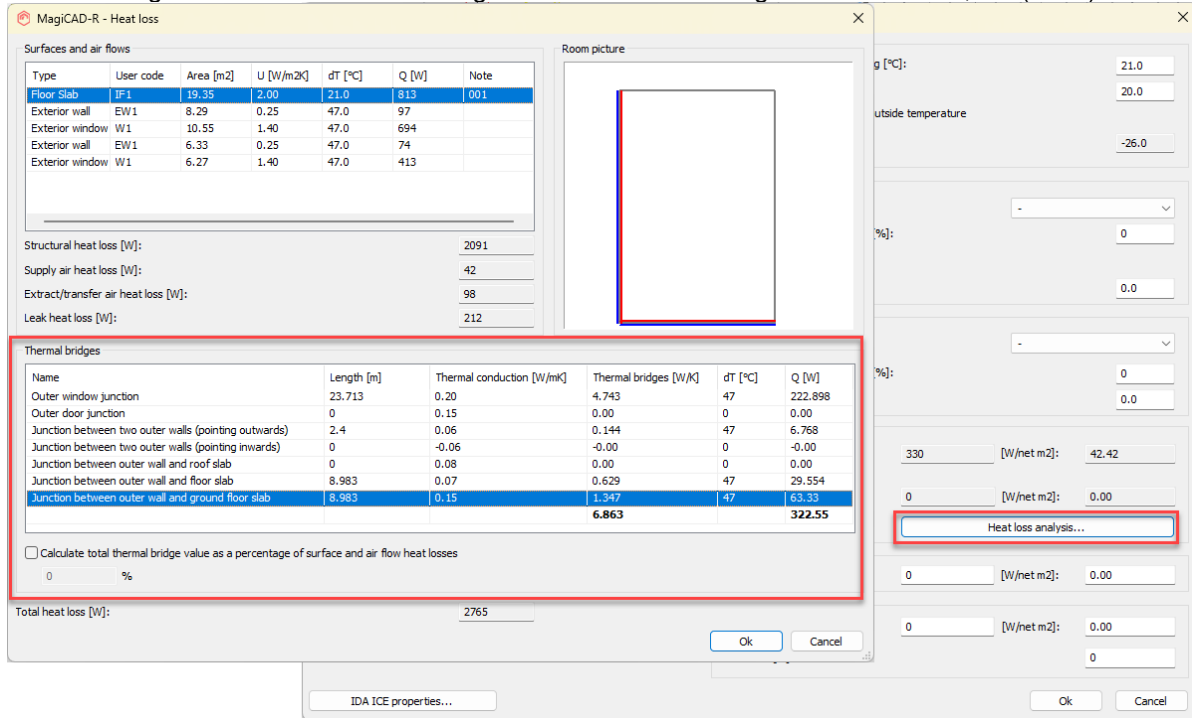
Now you can show both ends of control cable symbols. Radio buttons have been changed to checkboxes for allowing to show both primary and secondary connections at the same time.



1.5 Room

Thermal bridge calculation to Room

Under "Heat loss analysis" it is now possible to add the estimated losses for the thermal bridges. The thermal bridges are calculated according to the National Building Code of Finland, D5 (2012).



The screenshot displays the 'MagiCAD-R - Heat loss' window with several panels:

- Surfaces and air flows:** A table listing building components with their properties.
- Room picture:** A diagram of a room with a red outline.
- Thermal bridges:** A table showing calculated thermal bridge losses, with a total of 6.863 W/K and 322.55 W.
- Heat loss analysis:** A button highlighted with a red box, used for further analysis.

Type	User code	Area [m ²]	U [W/m ² K]	dT [°C]	Q [W]	Note
Floor Slab	IF1	19.35	2.00	21.0	813	001
Exterior wall	EW1	8.29	0.25	47.0	97	
Exterior window	W1	10.55	1.40	47.0	694	
Exterior wall	EW1	6.33	0.25	47.0	74	
Exterior window	W1	6.27	1.40	47.0	413	

Name	Length [m]	Thermal conduction [W/mK]	Thermal bridges [W/K]	dT [°C]	Q [W]
Outer window junction	23.713	0.20	4.743	47	222.898
Outer door junction	0	0.15	0.00	0	0.00
Junction between two outer walls (pointing outwards)	2.4	0.06	0.144	47	6.768
Junction between two outer walls (pointing inwards)	0	-0.06	-0.00	0	-0.00
Junction between outer wall and roof slab	0	0.08	0.00	0	0.00
Junction between outer wall and floor slab	8.983	0.07	0.629	47	29.554
Junction between outer wall and ground floor slab	8.983	0.15	1.347	47	63.33
Total			6.863		322.55

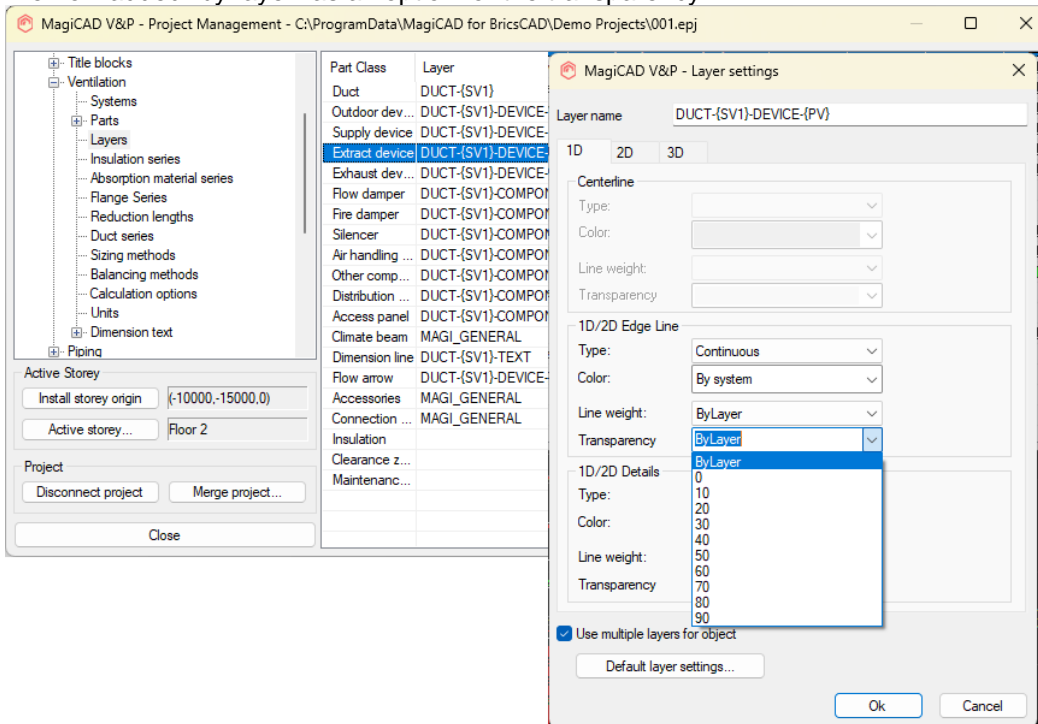
2 Resolved issues

2.1 Common

ByLayer transparency-option

In MagiCAD 2024 we added transparency to the layers in project file. With the new feature MagiCAD user could not longer control the transparency with AutoCAD, and because the new feature does not have byLayers as alternative, the transparency we offered could not distinguish layers with different status.

We now added "byLayer" as an option for the transparency:

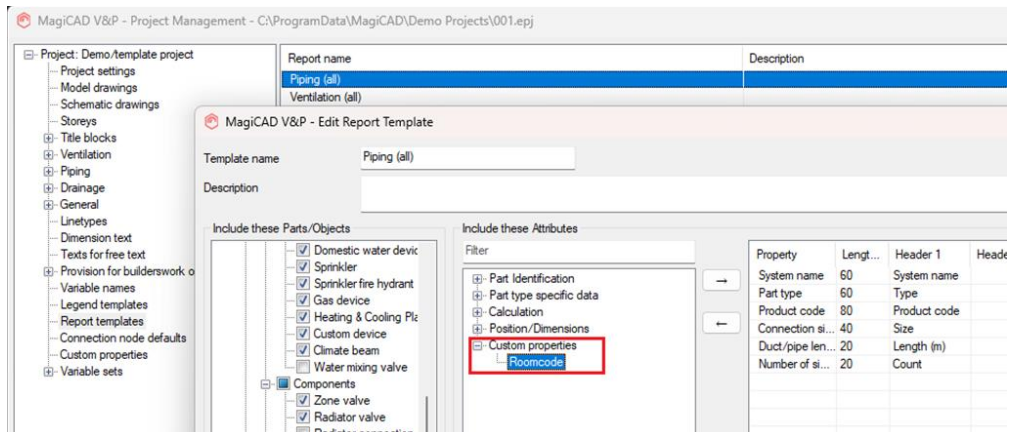


Note: When opening a drawing which has been created in MagiCAD 2025, with an older MagiCAD, and the option has been set to "ByLayer" the option will be set to 100 in the drawings of the older versions, meaning fully transparent.

Therefore, if they drawings will be opened in an older version the option should be set to 0 in MagiCAD 2025 before doing that.

Custom properties couldn't be added to the Reports or Legends

It wasn't possible to add customer properties, created by the users, to the Report- or the Legend-templates:



Pages-dialog problems (Circuit designer and Schematics)

In Circuit Designer it wasn't possible to insert or delete specific pages because the Pages-function always jumped back to the first page.

In Schematics the Pages-function got stuck on the selection of certain pages and these were dragged to new positions.

Fatal error when using CTRL + C in BricsCAD

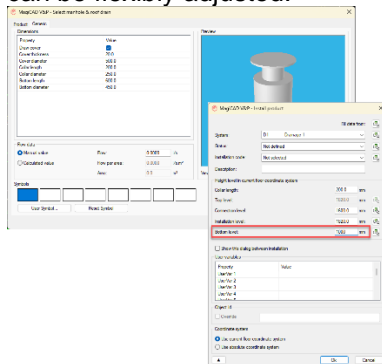
In some cases when using CTRL + C in BricsCAD it caused a crash. This issue has been fixed and this no longer causes any errors.

2.2 Ventilaion and Piping

Due to the adjusting collar length in the "Install Product"-dialog, the installation to the correct bottom elevation was difficult or impossible

It wasn't possible to change the bottom elevation without "squeezing" the product's collar, for drainage products and manholes, and in many cases impossible to set it to a higher elevation.

This has now been improved in such a way that the product isn't squeezed and the bottom elevation can be flexibly adjusted.



Insulation National classification code properties

It was possible to set National Classification Codes to insulation series, but the properties weren't available in any of the report-functions.

These have now been added to:

Properties Palette,

Old/new Part Properties,

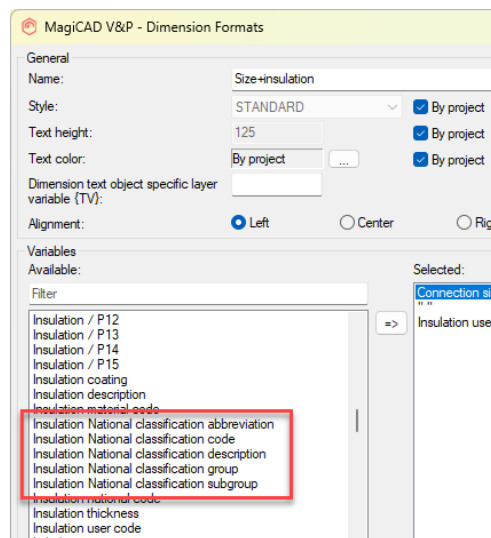
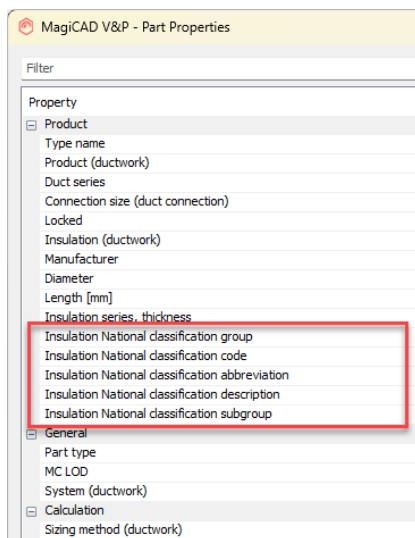
Reports,

Dimtexts,

MagiExport,

IFC Export

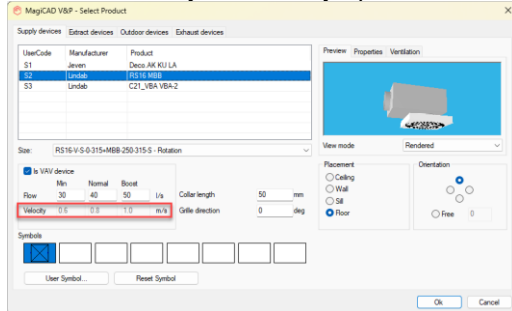
Examples:



Air flow velocity didn't update

The velocity of the air flow didn't update when changing the size or selecting another device, once a value had been set.

Now the velocity is correctly updated according to the selected size or device:



dp/m was calculated using incorrect length

The dp/m value was incorrectly calculated using only the pipe length instead of the pipe length + fitting equivalent length, and has now been corrected.

MagiCAD crash in BricsCAD 24.2.03

BricsCAD 24.2.03 showed a crash report when starting MagiCAD due to the program freezing. This fix will be visible in BricsCAD 24.2.05.

BricsCAD shut down using Find and Replace

In some cases, when using Find & Replace, BricsCAD crashed.

Could not change the revision arrow layer color

The color of the revision arrow was always black/white, no matter what color had been selected by the user in the project. This has now been fixed and the correct color is shown in the drawing.

Note: Existing arrows drawn with a faulty version can't be fixed, they must be redrawn to show correct color.

Crash when saving from paper space

Due to an issue the platform crashed when saving the drawing in paper space. This issue has been corrected.

Water sizing calculation crashed when branch selection was used

Domestic water sizing crashed when branch selection was used.

This took place when some of the automatic circulation water flow standards was used and only hot and cold pipes were selected in branch calculation, and the circulation return water was not selected.

2.3 Electrical

Creating legend moved cables

Sometimes when creating a legend, cables were moved to 0,0,0. This has now been fixed.

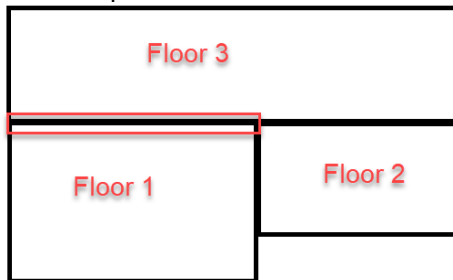
Voltage drop issues in switchboard schematics

Reference to plan dwg was reset after reading data from plan dwg in "Switchboard schematic circuit" dialogue which made voltage drop values to disappear.

2.4 Room

Room was not handling slabs correctly in some cases

If the design contained for example 2 different floors at the bottom, which were actually at the same top-level, but were created separately because they had different heights, then the program assumed that the space between 1-3 was actually towards the outside, generating much higher heat losses:



Now the program correctly identifies the spaces and doesn't assume that these spaces are towards the cold outside.