MagiCAD for AutoCAD

Release notes for version 2025

30/05/2024

MagiCAD

Content

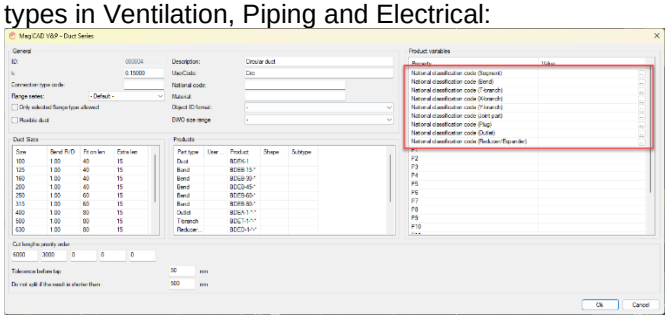
© Copyright 2024 MagiCAD Group I www.magicad.com

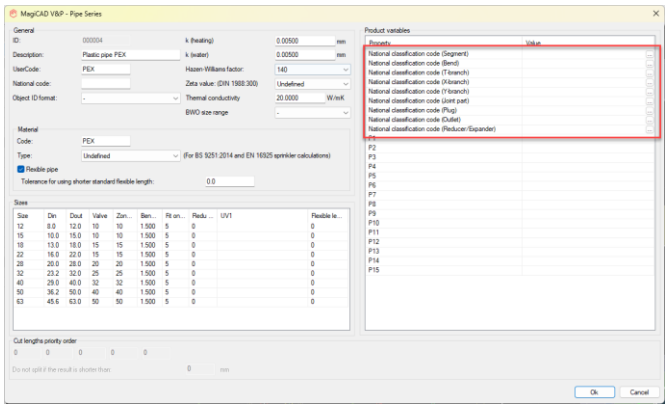
1 New features

1.1 Common

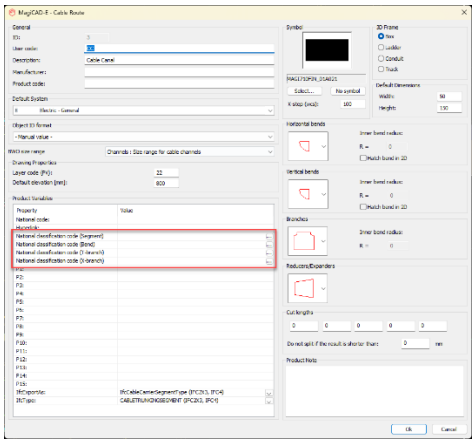
MagiCAD supports AutoCAD and Navisworks 2025
Adding support for AutoCAD and Navisworks 2025.
MagiCAD for AutoCAD 2025 will work on AutoCAD 2021-2025.

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:





© Copyright 2024 MagiCAD Group I www.magicad.com

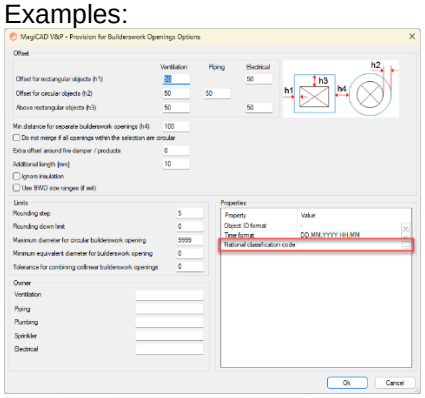


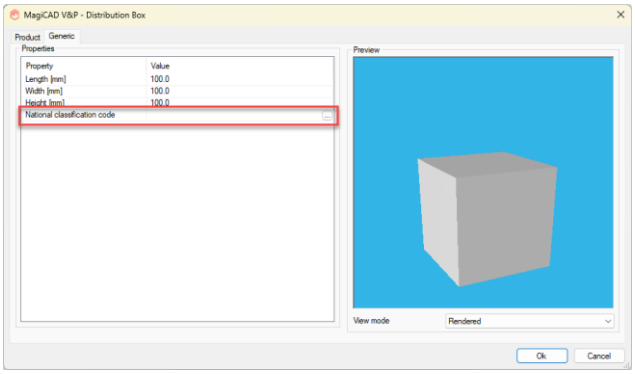
National classification codes support for generic products

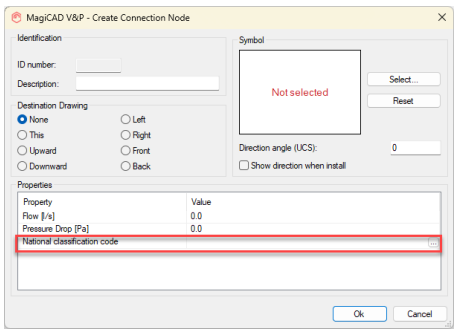
It is now possible to add National Classification Codes to products which aren't part of the project file or have been completely generic:

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:





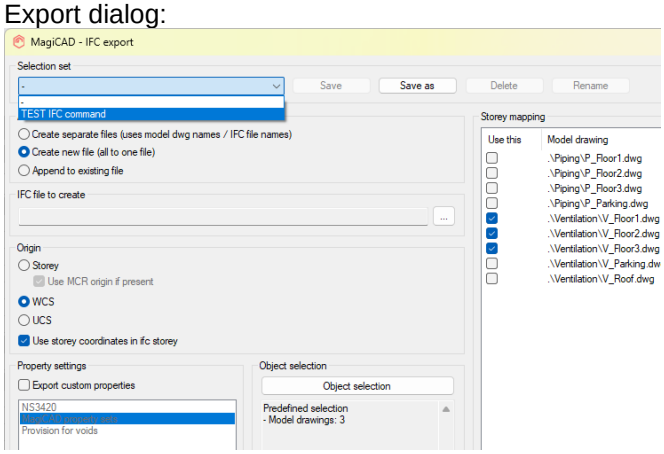


© Copyright 2024 MagiCAD Group I www.magicad.com

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 "-MAGIIFCEXPORTCURDWG" / "-MAGIIFCCD".

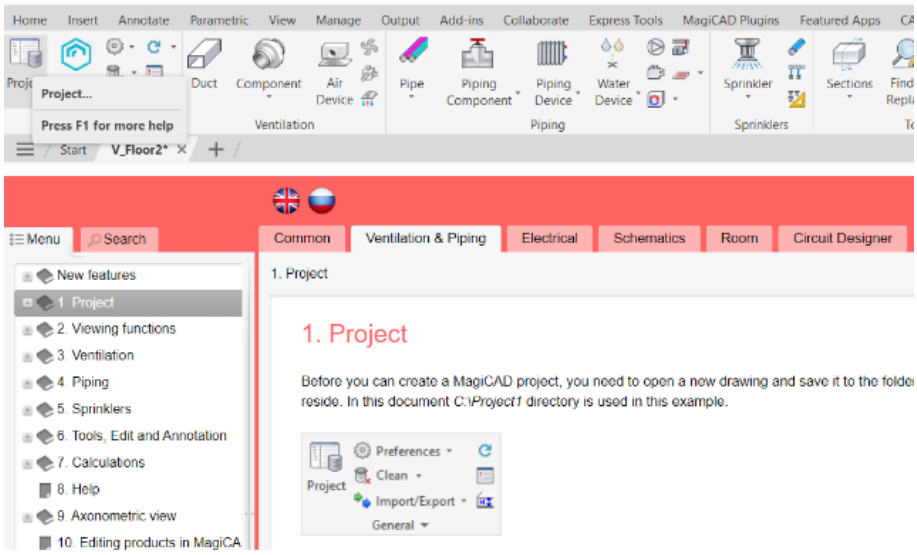
This works by running the command and then giving the name of the Selection set according to which one wants to export it. So at least one selection set must have been created and saved in the IFC Export dialog:



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

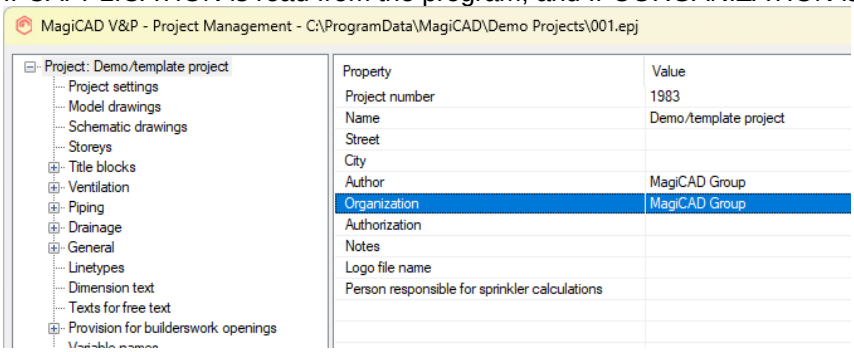
When hovering over the feature's button in MagiCAD for AutoCAD and then pressing the F1-button, the corresponding chapter opens in the MagiCAD Help Manual.
This is to assist the user in more easily finding the correct information about a specific feature from the Help Manual.



© Copyright 2024 MagiCAD Group I www.magicad.com

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:



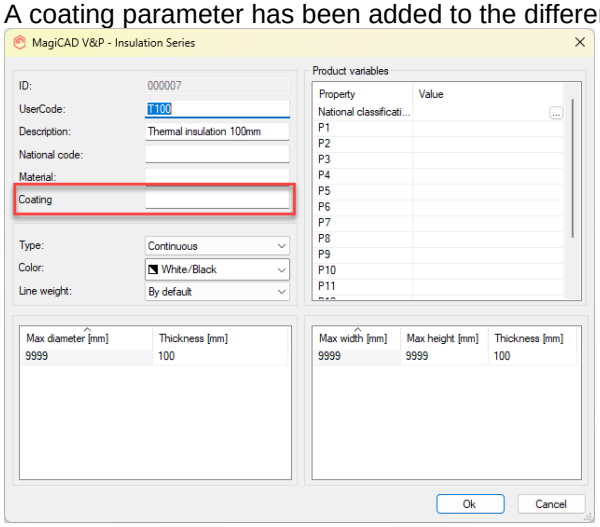
© Copyright 2024 MagiCAD Group I www.magicad.com

1.2 Ventilation and Piping

Common

Coating parameter for insulation series

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

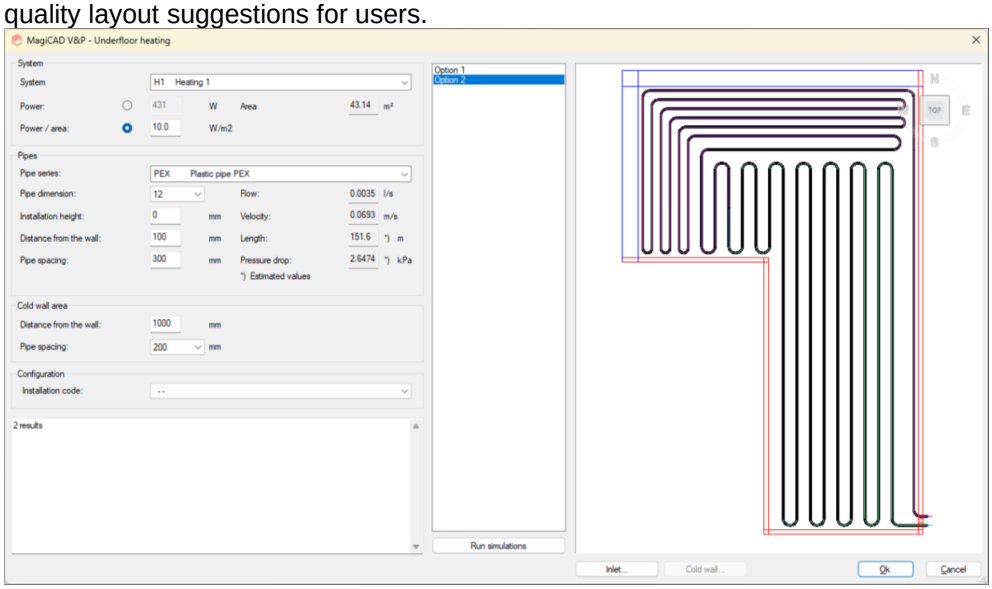


Piping

Improved automatic underfloor heating layouts

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

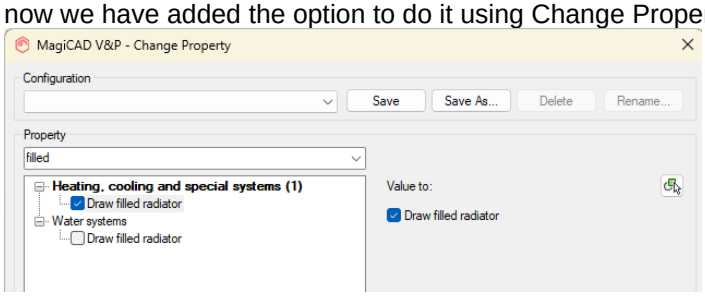
The machine learning algorithm for the Auto-Routing Underfloor Heating function has been improved. The function now takes better account of different room shapes, obstacles, and cold walls, resulting in quality layout suggestions for users.

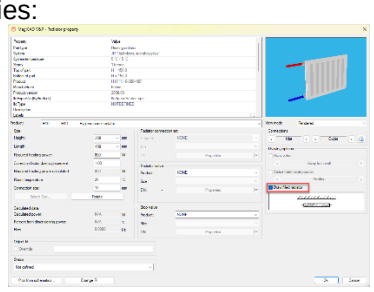


© Copyright 2024 MagiCAD Group I www.magicad.com

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:

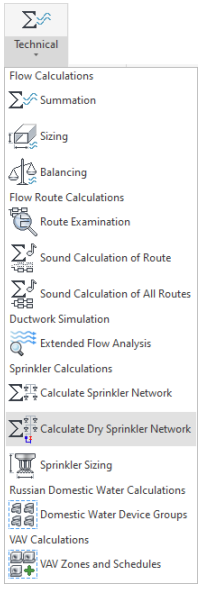


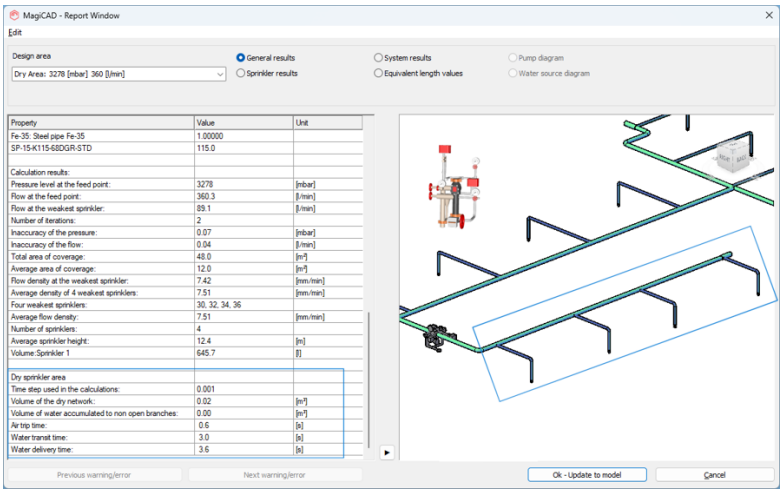


Sprinkler

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.



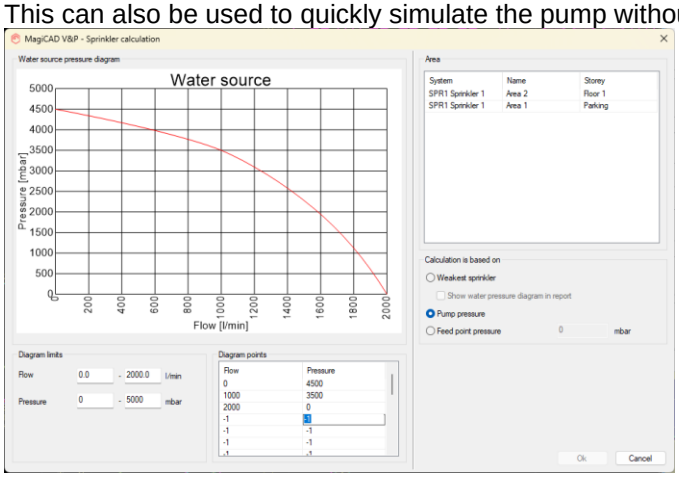


© Copyright 2024 MagiCAD Group I www.magicad.com

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.



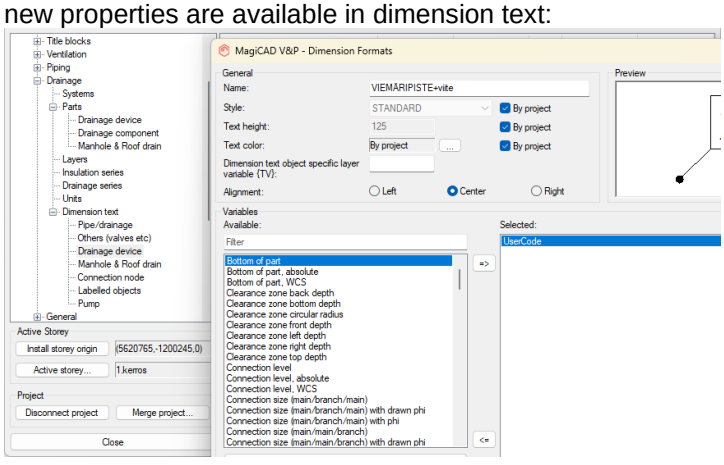
Drainage

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

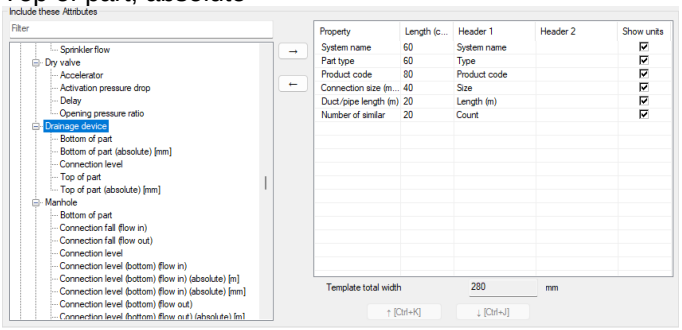
The name of the category has been changed to "Drainage device" in the project tree and a number of new properties are available in dimension text:



© Copyright 2024 MagiCAD Group I www.magicad.com

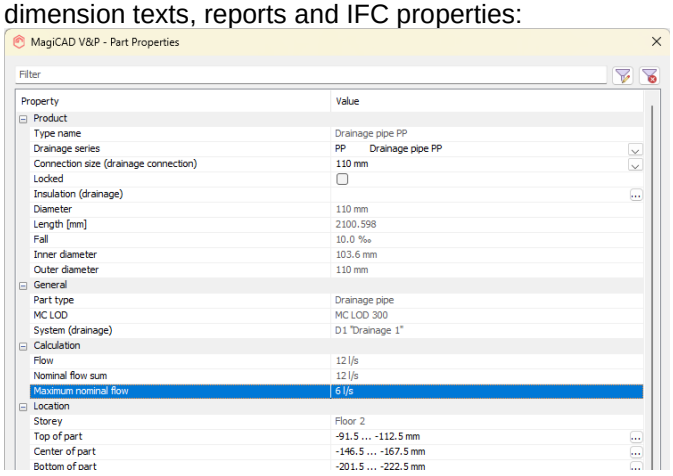
New properties in Dimension text:
Bottom of part
Bottom of part, absolute
Bottom of part, WCS
Connection level
Connection level, absolute
Connection level, WCS
Top of part
Top of part, absolute
Top of part. WCS

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:

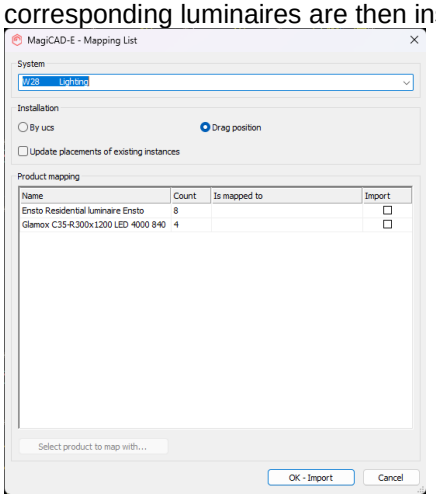


© Copyright 2024 MagiCAD Group I www.magicad.com

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.

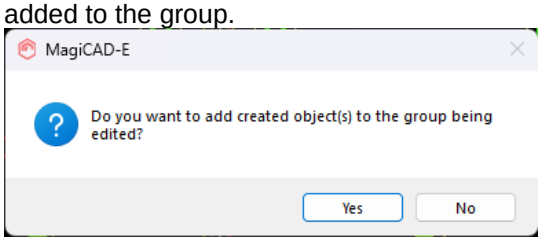
Cable Sizing & Circuit Management now shows busbars correctly

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.

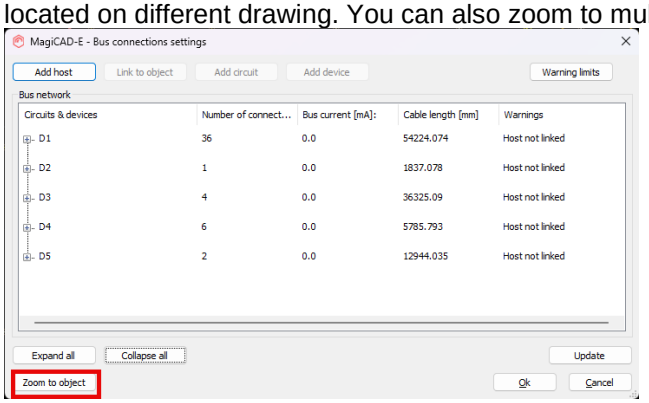
```
Objects in groups: 6
Objects not in groups: 16
```

© Copyright 2024 MagiCAD Group I www.magicad.com

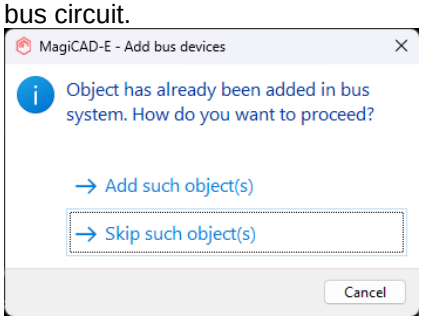
Now when updating a group and group object is moved, connected objects which are not in a group are moved as well.

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

© Copyright 2024 MagiCAD Group I www.magicad.com

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

© Copyright 2024 MagiCAD Group I www.magicad.com

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

© Copyright 2024 MagiCAD Group I www.magicad.com

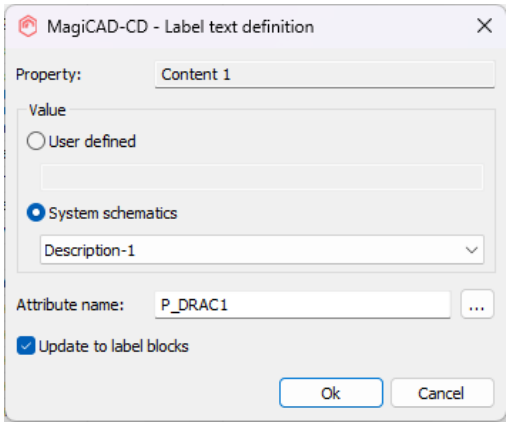
1.4 Circuit Designer

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.

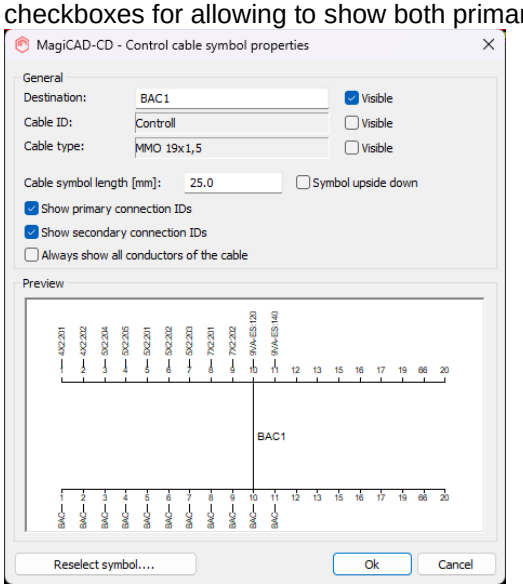
All the same attributes which can be used when creating switchboard schematics from plan drawings, can be linked from switchboard schematics to circuit schematic drawings.



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.

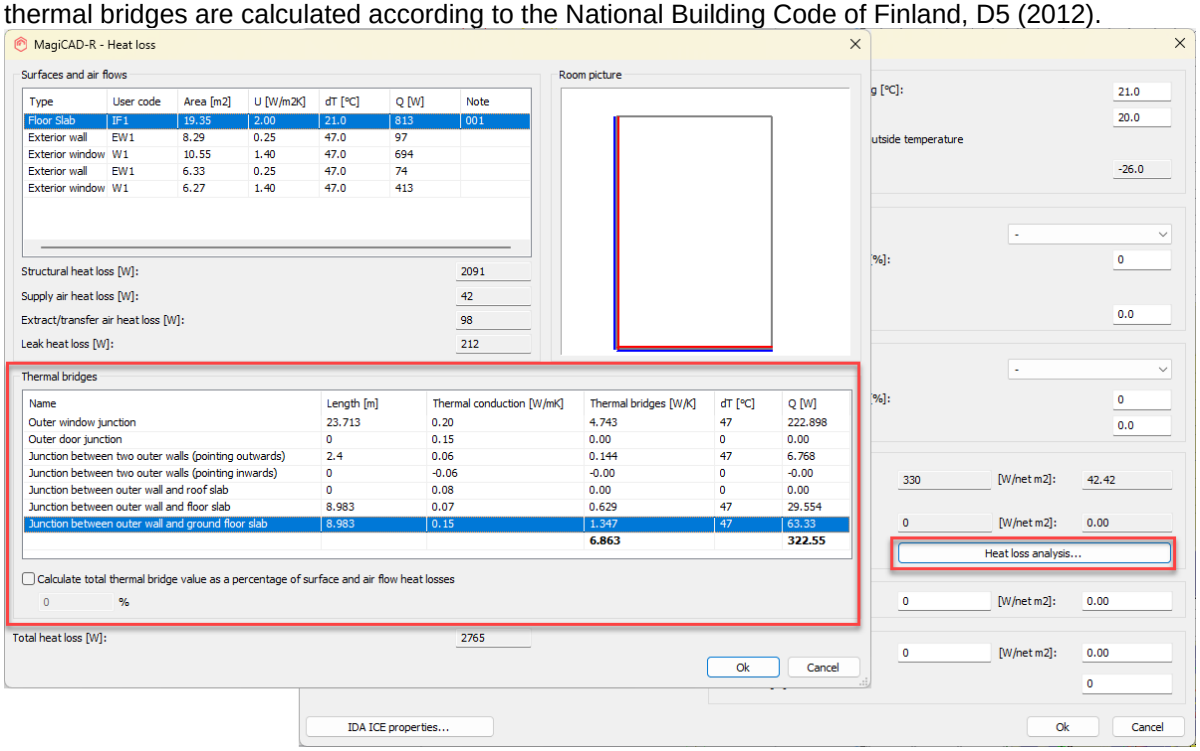


© Copyright 2024 MagiCAD Group I www.magicad.com

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).



2 Resolved issues

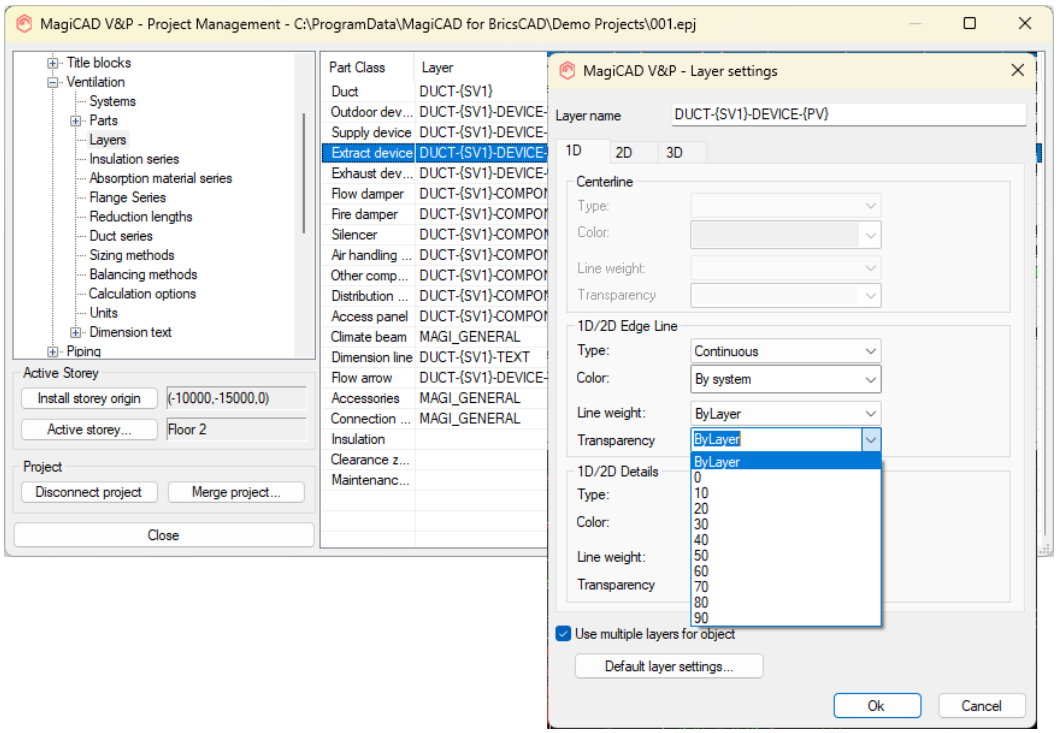
2.1 Common

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:

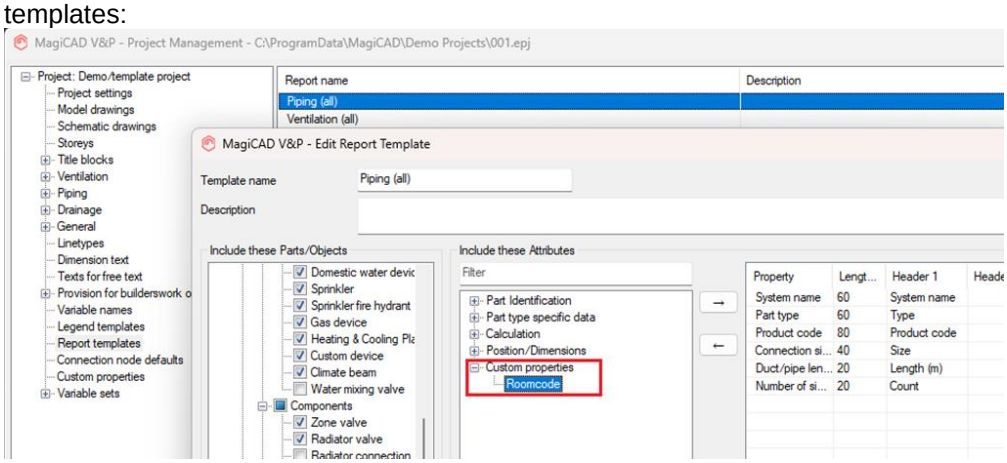
© Copyright 2024 MagiCAD Group I www.magicad.com



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:



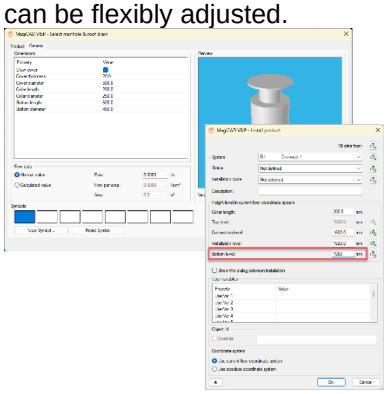
© Copyright 2024 MagiCAD Group I www.magicad.com

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,

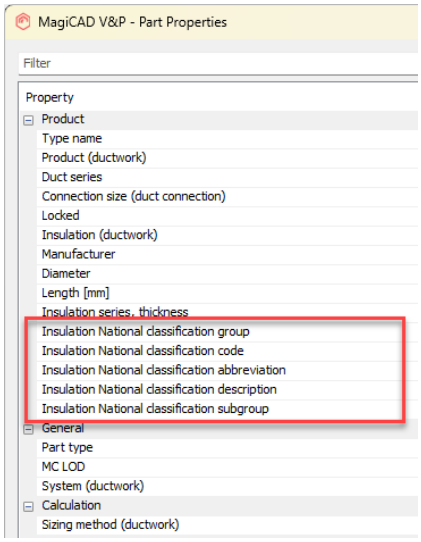
Reports,

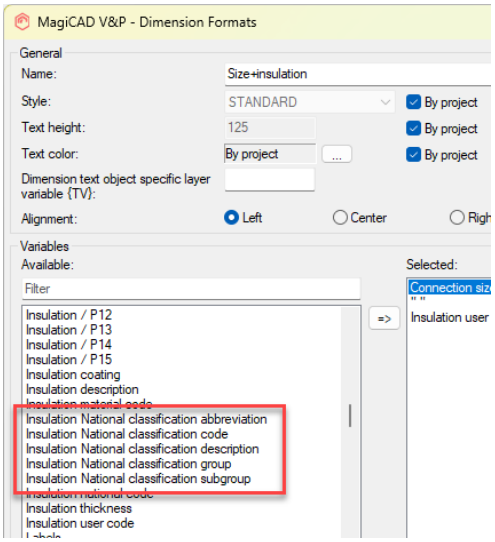
Dimtexts,

MagiExport,

IFC Export

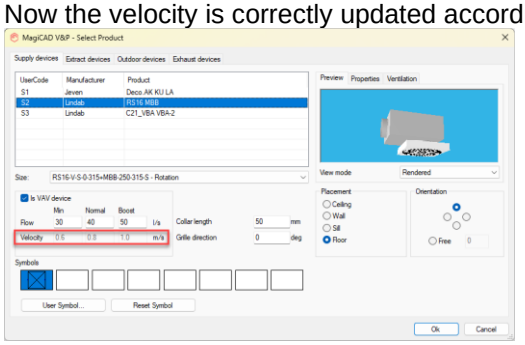
Examples:





© Copyright 2024 MagiCAD Group I www.magicad.com

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.

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 issues 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

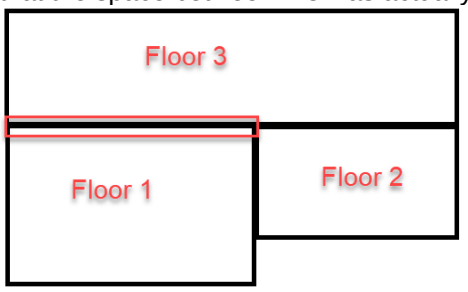
Creating legend moved cables
Sometimes when creating a legend, cables were moved to 0,0,0. This has now been fixed.

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.

© Copyright 2024 MagiCAD Group I www.magicad.com

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.

© Copyright 2024 MagiCAD Group I www.magicad.com