



MagiCAD for AutoCAD

Release notes for version 2021

02/06/2020

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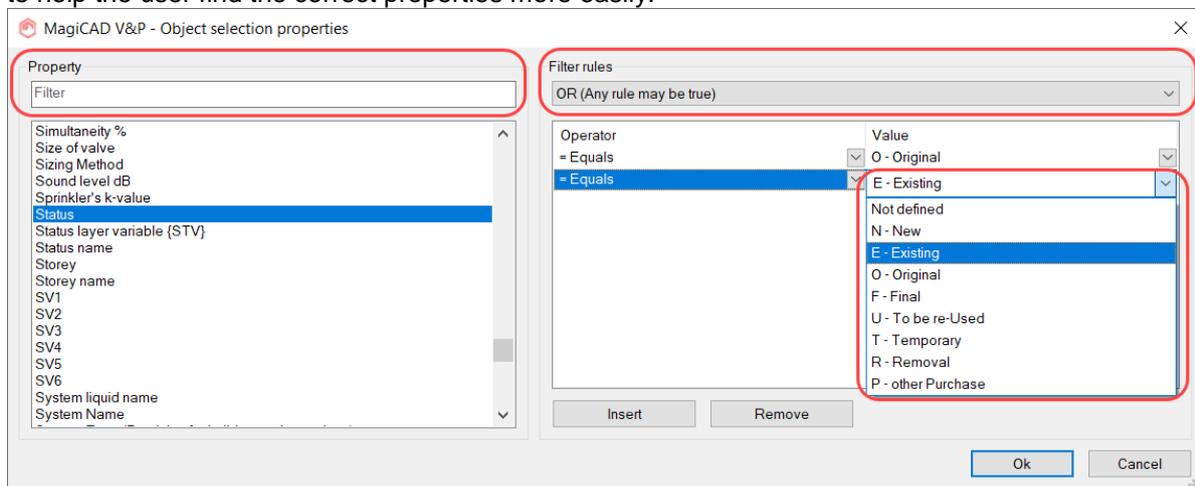
1 New features

1.1 Common

Object Selection Property filtering with AND/OR-operators

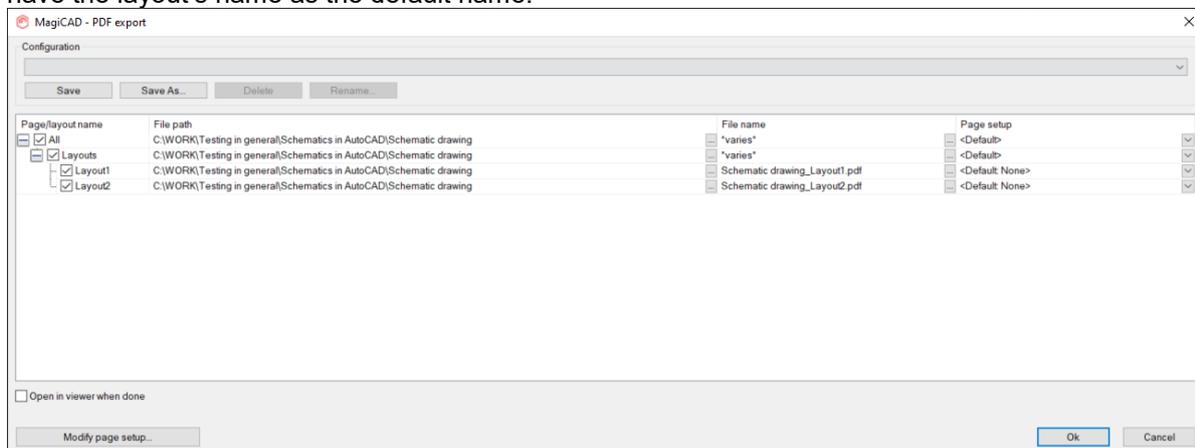
More advanced property filtering is now possible with new AND and OR operators in the object selection sets.

The dialog has also been improved with dropdown menus for values, for properties with lists that have been created in the project, to make it easier to select the correct values. A filter has also been added to help the user find the correct properties more easily.



PDF Batch Export + PDF Export enhancement

The existing PDF Export tool has been improved to allow the user to export information to any number of files the user wants and with flexible adjusting of which layouts or pages go into which PDF files. Multiple layouts can be printed to both the same or different files, or some to the same file while others to separate files etc. This means that you can set the filenames as paths in any way you want. You can also set the filenames to utilize the drawing's name as a prefix with the layout, or select to just have the layout's name as the default name.

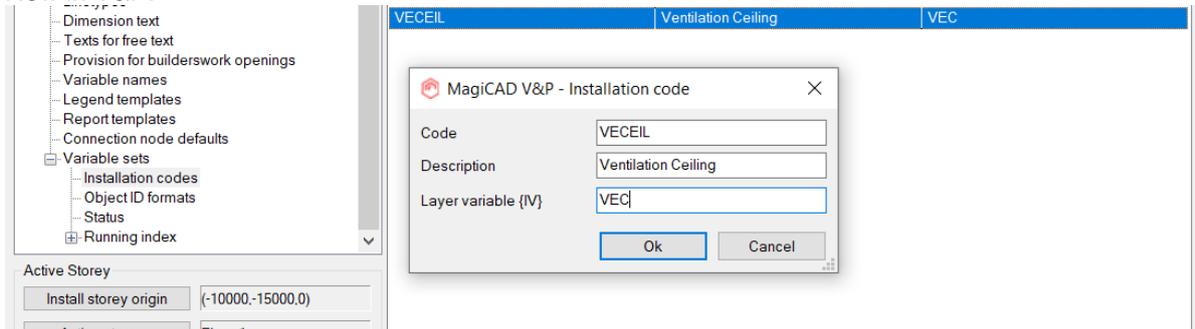


We have also added a function to export batches of PDFs from multiple different drawings and it works in the same way as the batch exports for IFCs and Reports.

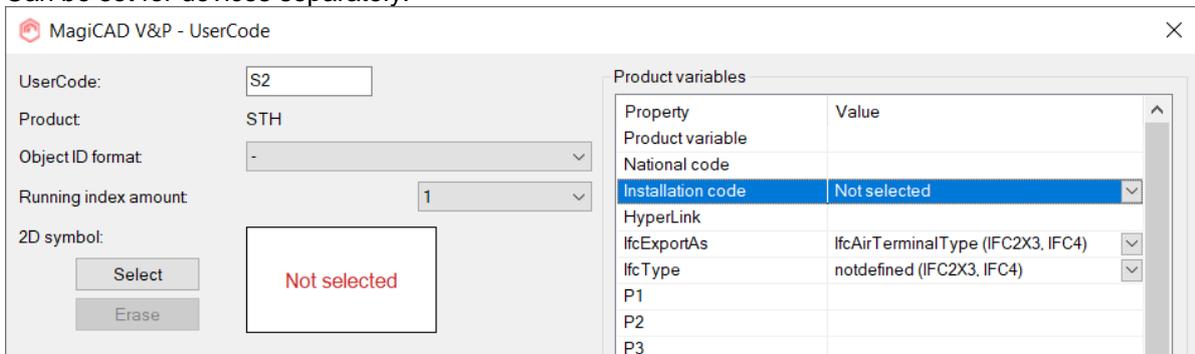
Installation codes can now be set to all devices and segments in MagiCAD V&P and Electrical

Installation codes can now be created and set for devices and segments in MagiCAD V&P. The installation codes were earlier available in MagiCAD Electrical, but have now been extended so that these can be installed in the segments, in other words cable trays, conduits and lighting tracks.

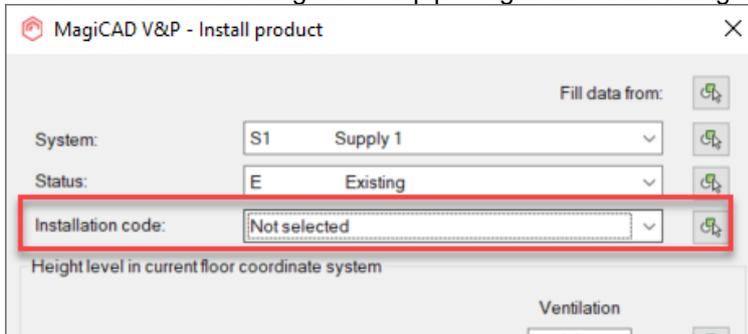
New in V&P:



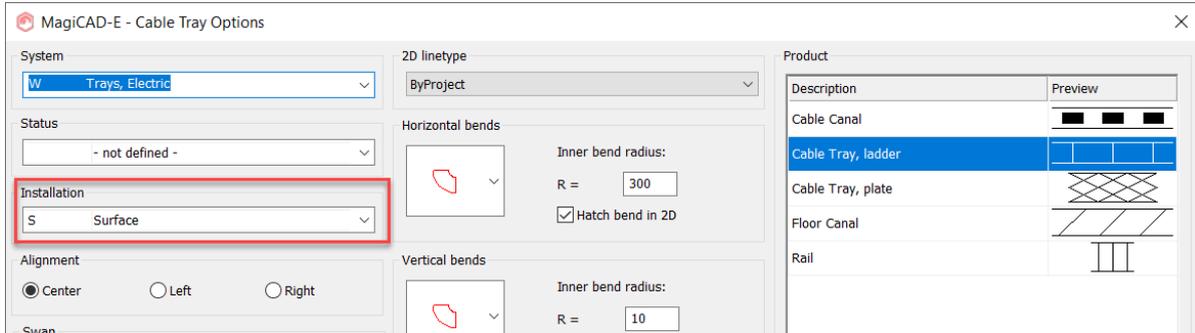
Can be set for devices separately:



Can be set when drawing duct- or pipe segments or installing devices



Can in electrical be set when drawing cable trays, conduits and lighting tracks:



This property is also available for reporting and updating the drawing:

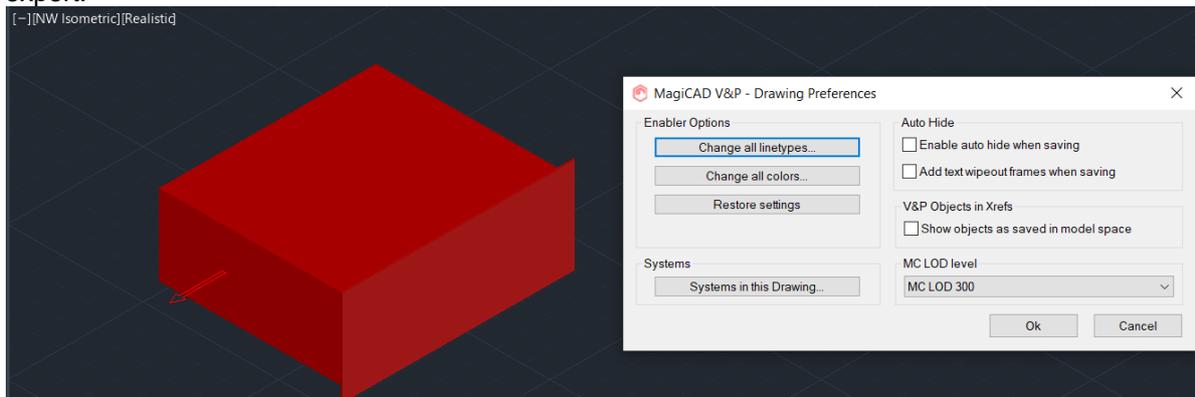
- Part properties
- Report
- Legend
- MagiCAD Export
- Dimension texts
- Part Property Line
- Change properties
- Set MagiCAD Data

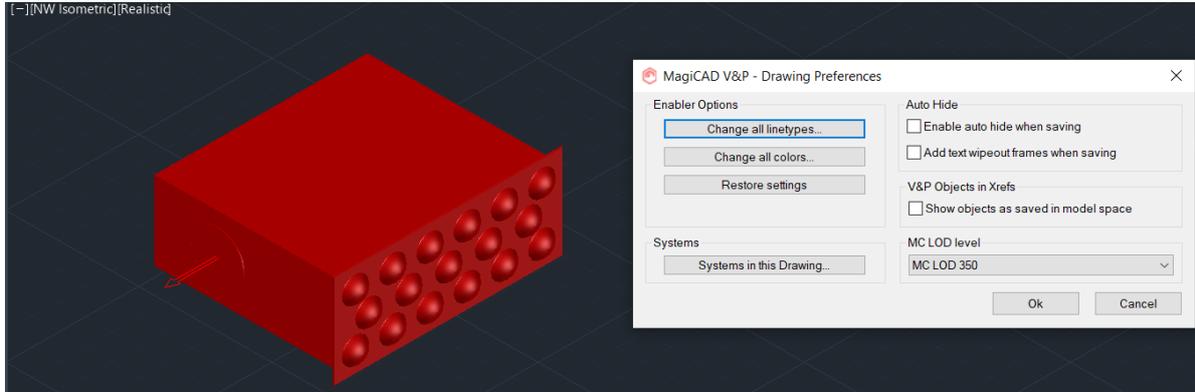
A new layer variable {IV} has also been added for V&P.

LOD Selection

We have implemented the possibility to select higher detail levels for the products in the drawings in the Drawing Preferences (current drawing) and Update Drawing data (current or multiple drawings)

The detail levels are MC LOD 200, 300 and 350 and this detail level is also visible in the IFC upon export:

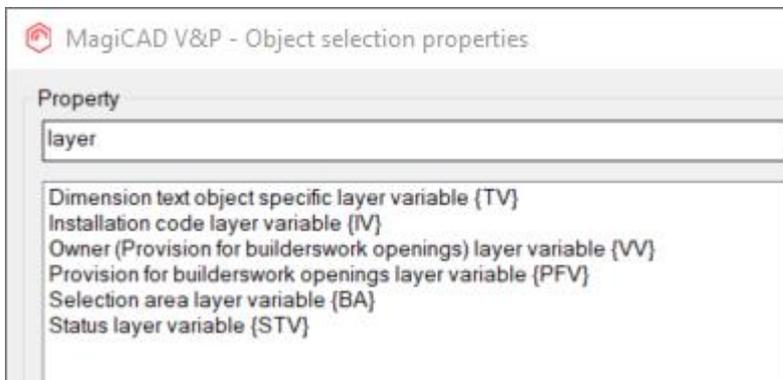




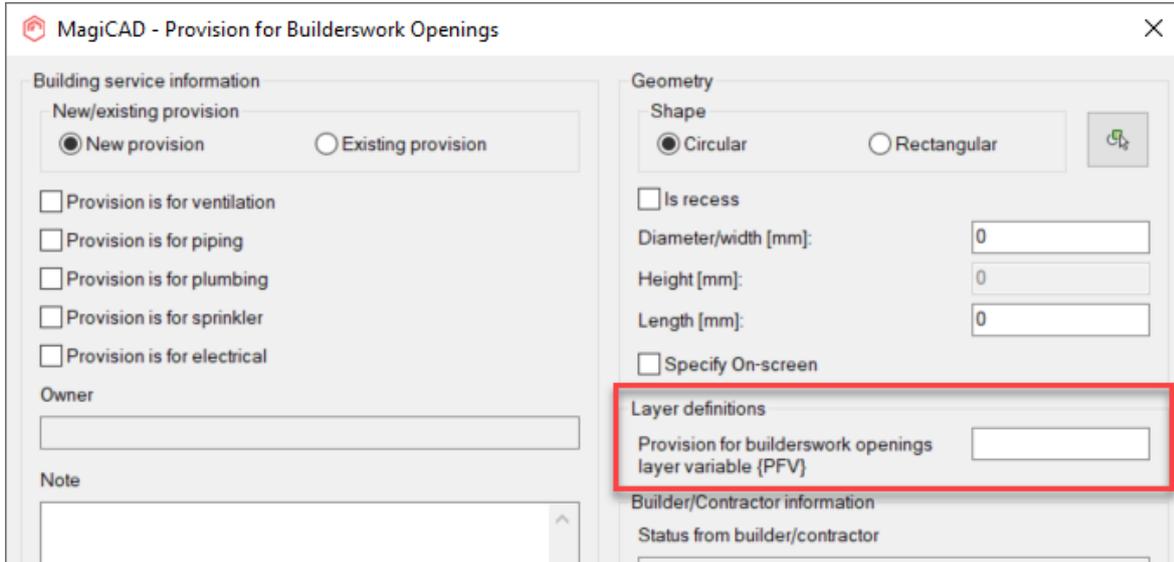
Layer variables added to the filters and the naming updated

We added these new variables to the properties for the object selection set filtering:

- Dimension text object specific layer variable {TV}
- Selection area layer variable {BA}
- Builderswork opening layer variable {PFV}
- Status layer variable {STV}
- Owner (builderswork opening) {VV}
- Installation layer variable {IV}

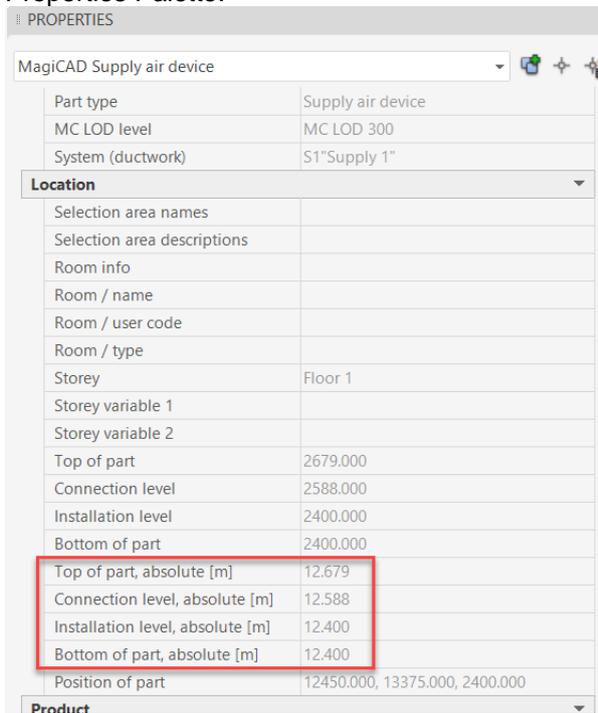


Please do note that these changes affected the naming of the layer variables in the dialogs, as the names are read from the name of the variable in the program:



Absolute elevations now have 3 decimals in AutoCAD's Properties Palette

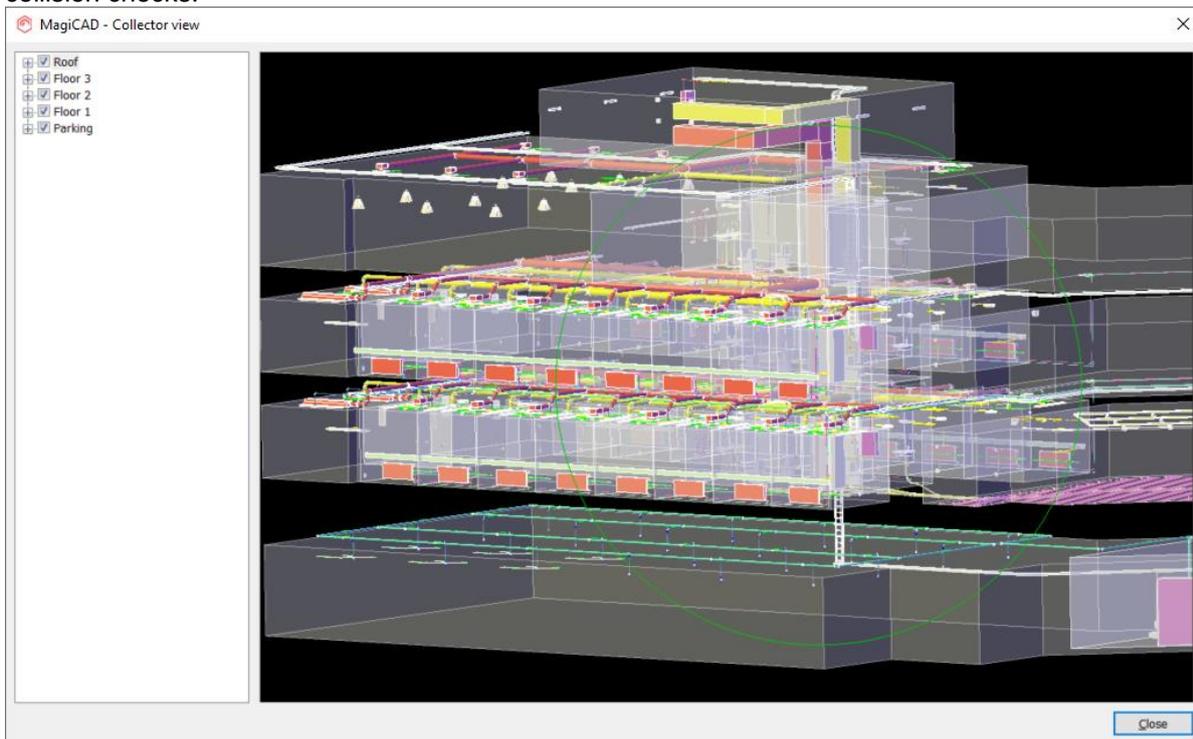
We have increased the precision of the absolute elevations from 2 to 3 decimals in AutoCAD's Properties Palette:



Collector preview

This is an unfinished feature that we now are in the early testing phase for and testers are free to suggest where they think such a feature would be of use for them in their daily work.

The feature opens a dialog where all objects are shown that are in the connected projects. This is something that for example could be utilized as an additional view when running calculations or collision checks.



The command is "MAGICCOLLECTORVIEW" / "MAGICV".

At this stage do the files from V&P, Electrical and Room need to have the same name and be in the same directory for this to work, so this can best be tested in MagiCAD's Demo project, where the structure and naming is correct for the current implementation:

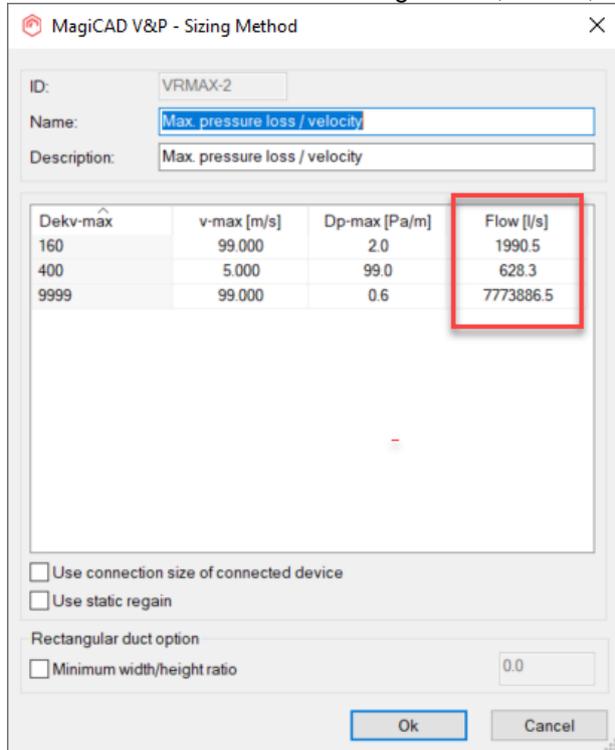
C:\ProgramData\MagiCAD\Demo Projects

If you want to set up your own project, then create a project where the project files from the different disciplines are in the same directory and they all have the same name.

1.2 Ventilation and Piping

"Flow" can now be used as a sizing criteria in the calculations

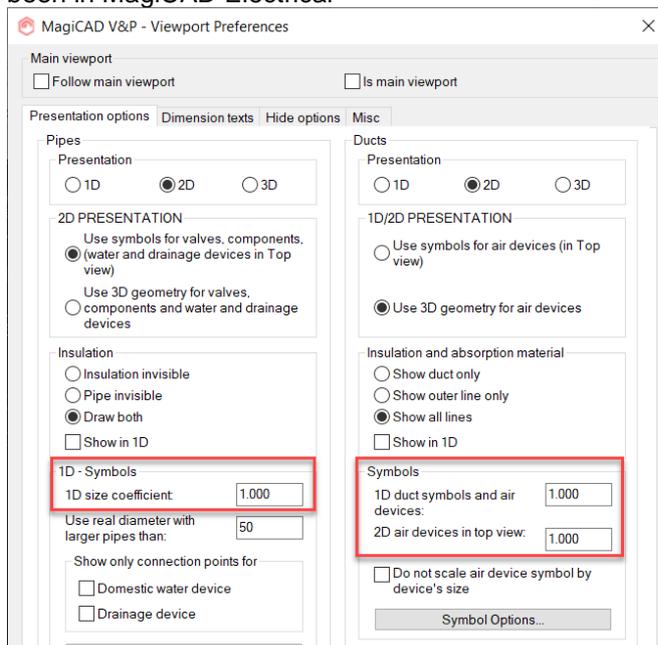
We have now added a third sizing criteria, "Flow", to the sizing methods:



Dekv-max	v-max [m/s]	Dp-max [Pa/m]	Flow [l/s]
160	99.000	2.0	1990.5
400	5.000	99.0	628.3
9999	99.000	0.6	7773886.5

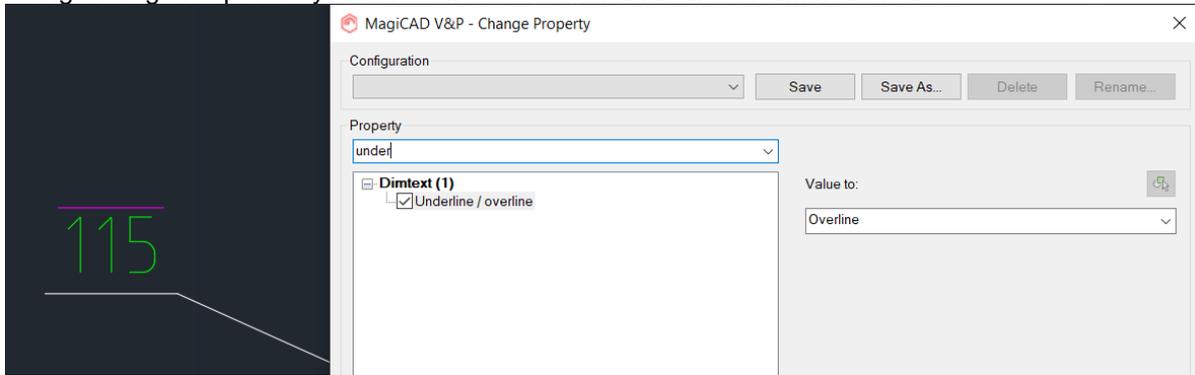
Unified symbol scale factor in MagiCAD V&P and Electrical

The symbols can now be scaled between 0.001 - 100 in both MagiCAD V&P like it previously has been in MagiCAD Electrical



Underline/overline can now be set for dimension texts using Change Properties in V&P

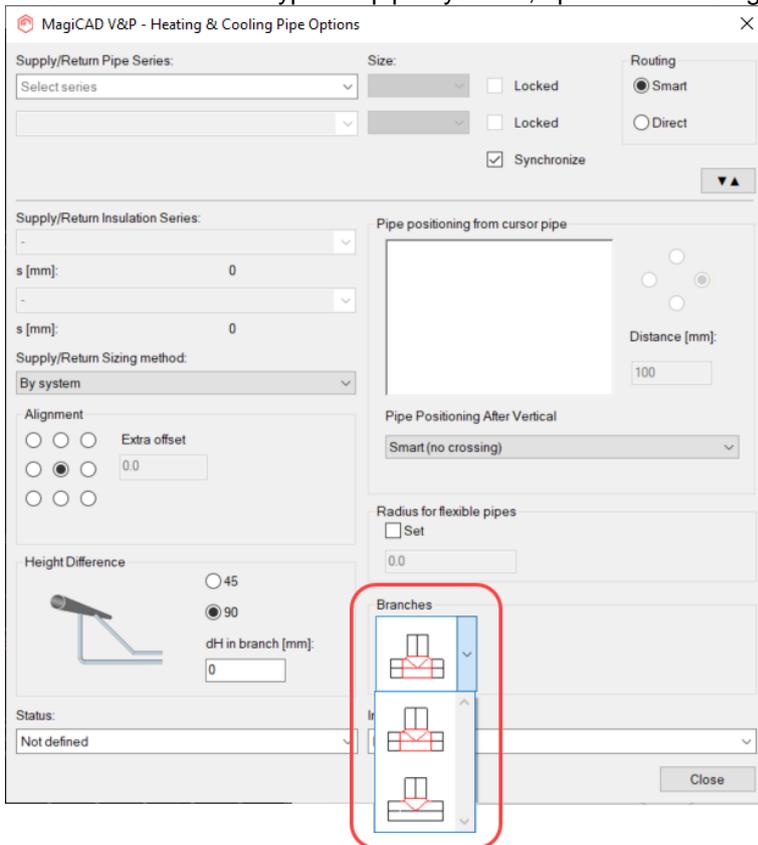
Using Change Properties you can now set the over/underline of dimension texts:



Support for outlets/taps in the piping networks (not drainage)

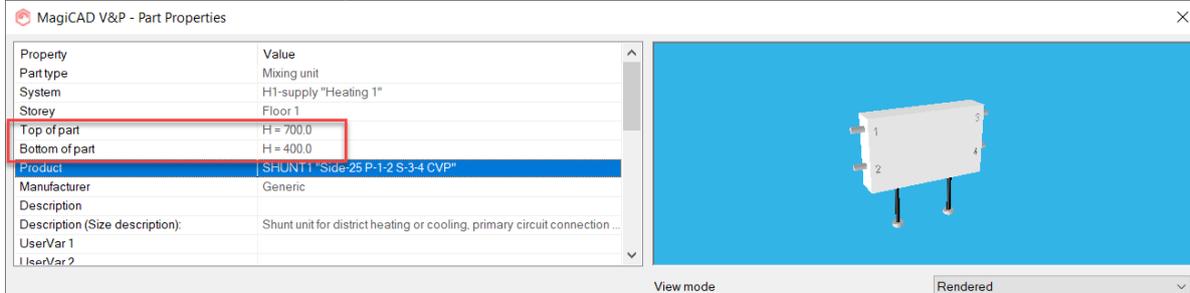
We have added the possibility to select the branch type also when drawing pipes. Earlier all branches were drawn as T-branches, but now the user have the option to select outlets/taps instead.

This is included for all types of pipe systems, apart from drainage pipes.



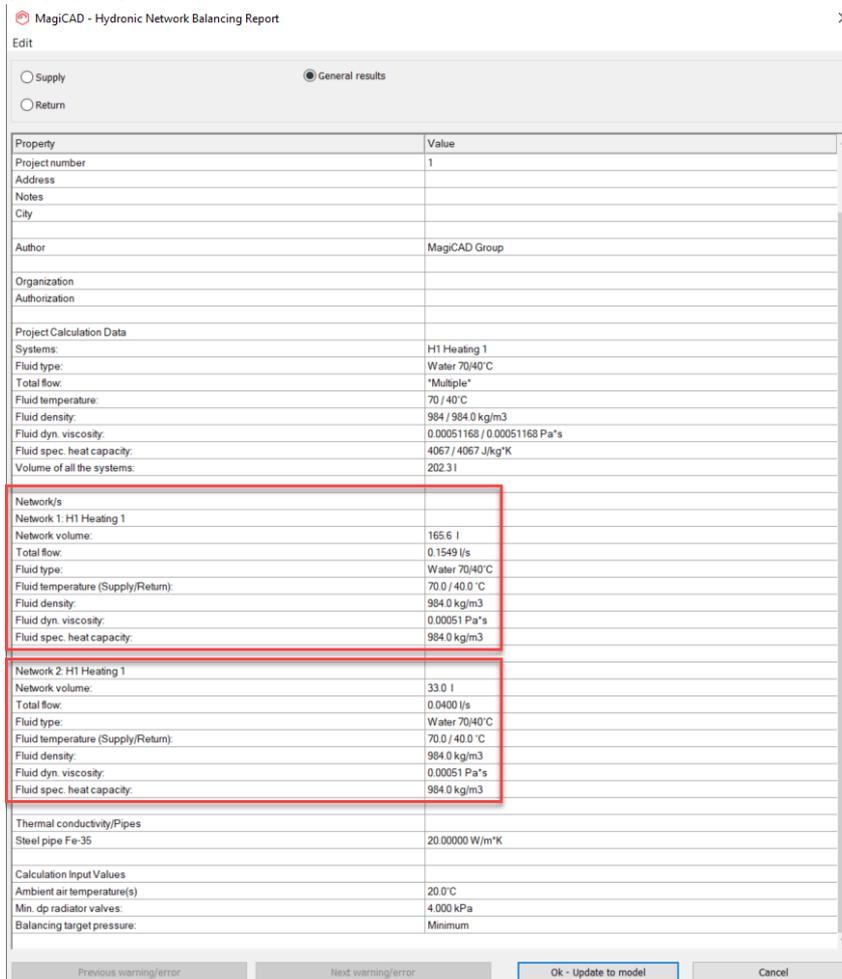
"Top of part"- and "Bottom of part" attributes have been added for mixing units

Top and bottom elevation attributes have been added for mixing units in Part Properties as well as for dimension texts and IFC Properties:



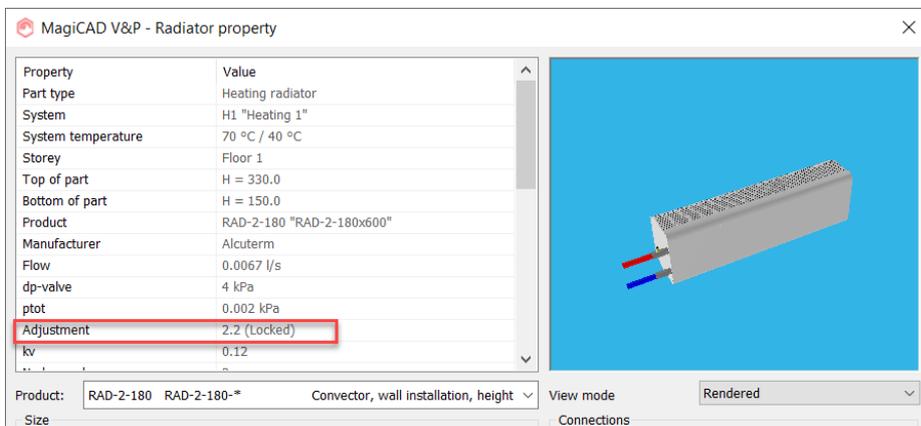
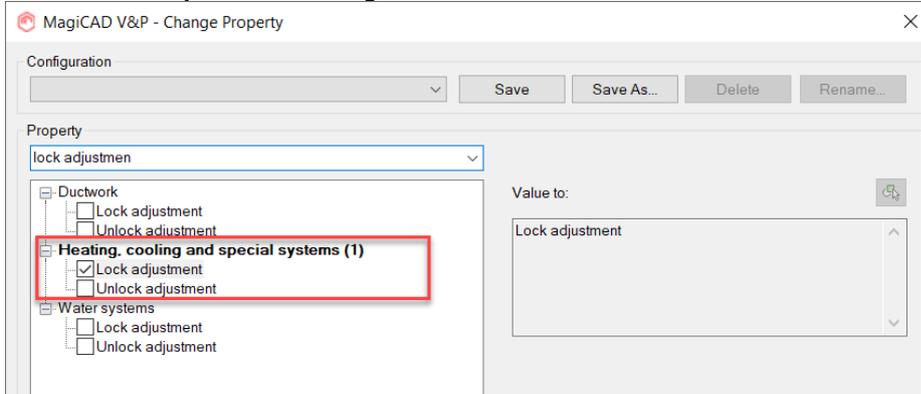
More specific information on the different parts in the network when calculating systems (heating, cooling and special systems)

When calculating a system now, the different parts of the system are shown. For example if you have heating networks with the same system, but they aren't directly connected to each other, you can see both the total volume of the systems and now we have also added information for the individual smaller networks:



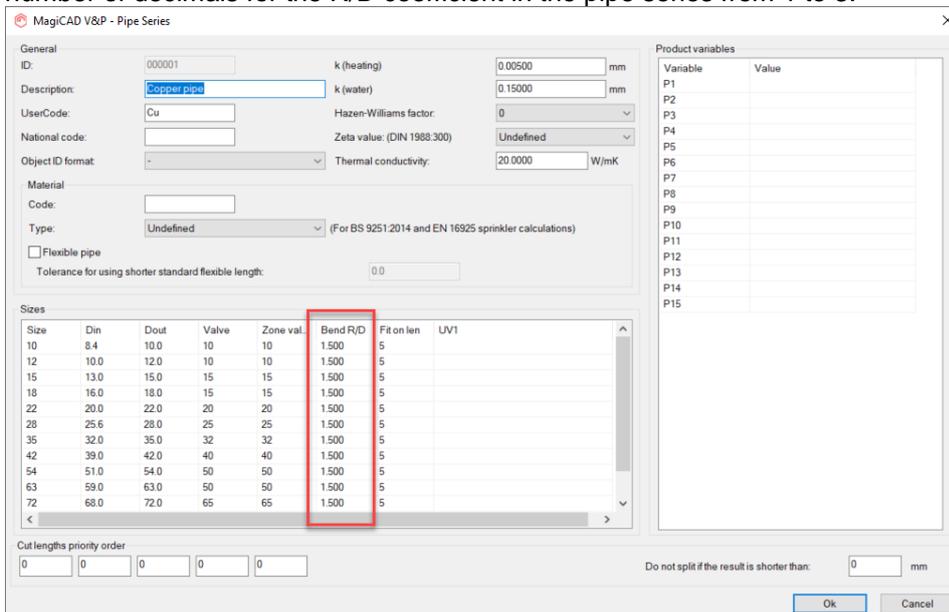
Locking adjustment for Zone valves and Radiator valves is now possible

We enabled adjustment locking for Zone valves and Radiator valves:



The Bend R/D coefficient is now more accurate for pipes

To better take into account different standards and their demand for precision, we have increased the number of decimals for the R/D coefficient in the pipe series from 1 to 3:



Calculation according to NFPA has been clarified

Issues arose when calculating the equivalent length for the parts if the real diameter differed much from the schedule 40 inside diameter.

Now we have added schedule 30 and 80, in addition to schedule 40, to the program and in case the real diameter differs more than 0.1 from the closest similar value of the diameters in the schedules, then the value is simply interpolated from the NFPA 15 table.

Manholes (external well) are very difficult to use

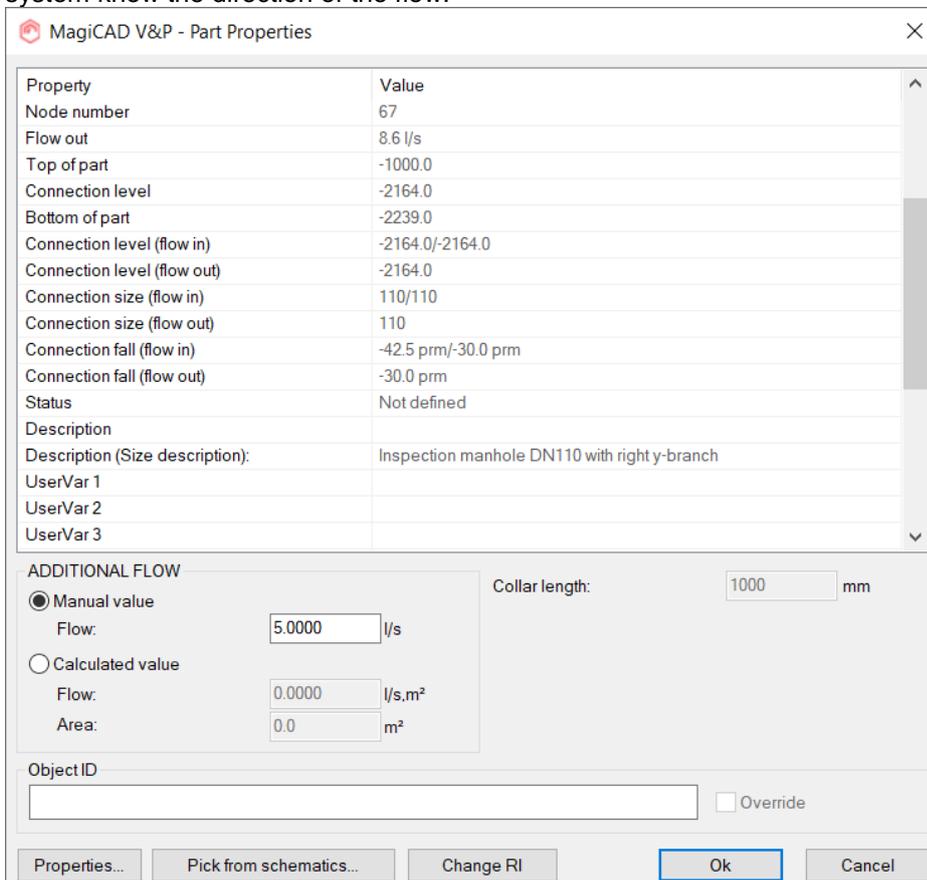
The manholes and roof drains can now be installed according to the connection height.

We have also added more parameters to the program to better show the information in for example the inspection chambers:

- Connection level (flow in)
- Connection level (flow out)
- Connection size (flow in)
- Connection size (flow out)
- Connection fall (flow in)
- Connection fall (flow out)

Flow out ("Flow" in the IFC Property Set as existed here earlier. "Flow out" holds the same value but with th

These are shown when the summation has been done for the network, as at that point does the system know the direction of the flow:



Property	Value
Node number	67
Flow out	8.6 l/s
Top of part	-1000.0
Connection level	-2164.0
Bottom of part	-2239.0
Connection level (flow in)	-2164.0/-2164.0
Connection level (flow out)	-2164.0
Connection size (flow in)	110/110
Connection size (flow out)	110
Connection fall (flow in)	-42.5 prn/-30.0 prn
Connection fall (flow out)	-30.0 prn
Status	Not defined
Description	
Description (Size description):	Inspection manhole DN110 with right y-branch
UserVar 1	
UserVar 2	
UserVar 3	

ADDITIONAL FLOW

Manual value Collar length: 1000 mm

Flow: 5.0000 l/s

Calculated value

Flow: 0.0000 l/s.m²

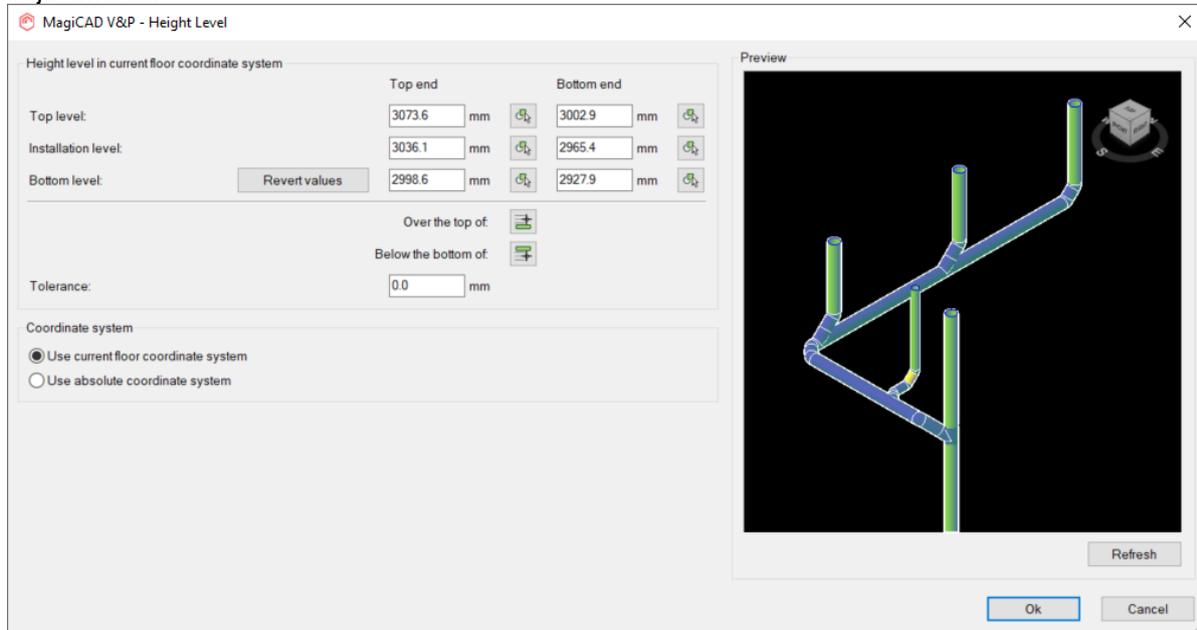
Area: 0.0 m²

Object ID: Override

Properties... Pick from schematics... Change RI Ok Cancel

Elevation changes for drainage pipes is now possible

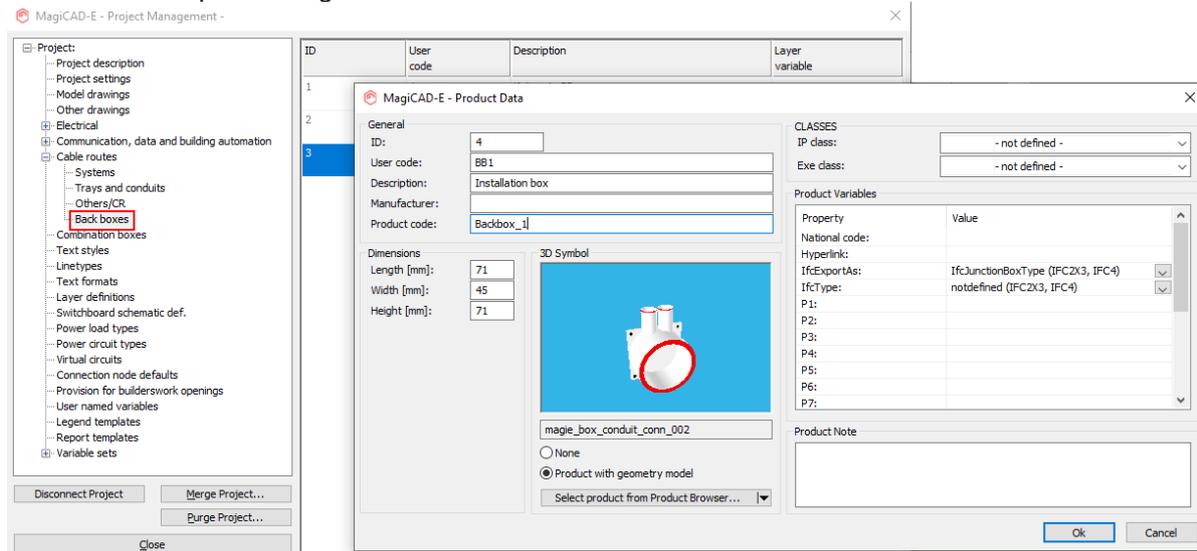
We have now implemented a way for the user to change the Z-elevation of drainage pipes. The feature is opened via part properties and has an easy preview to guide the user while making the adjustments:



1.3 Electrical

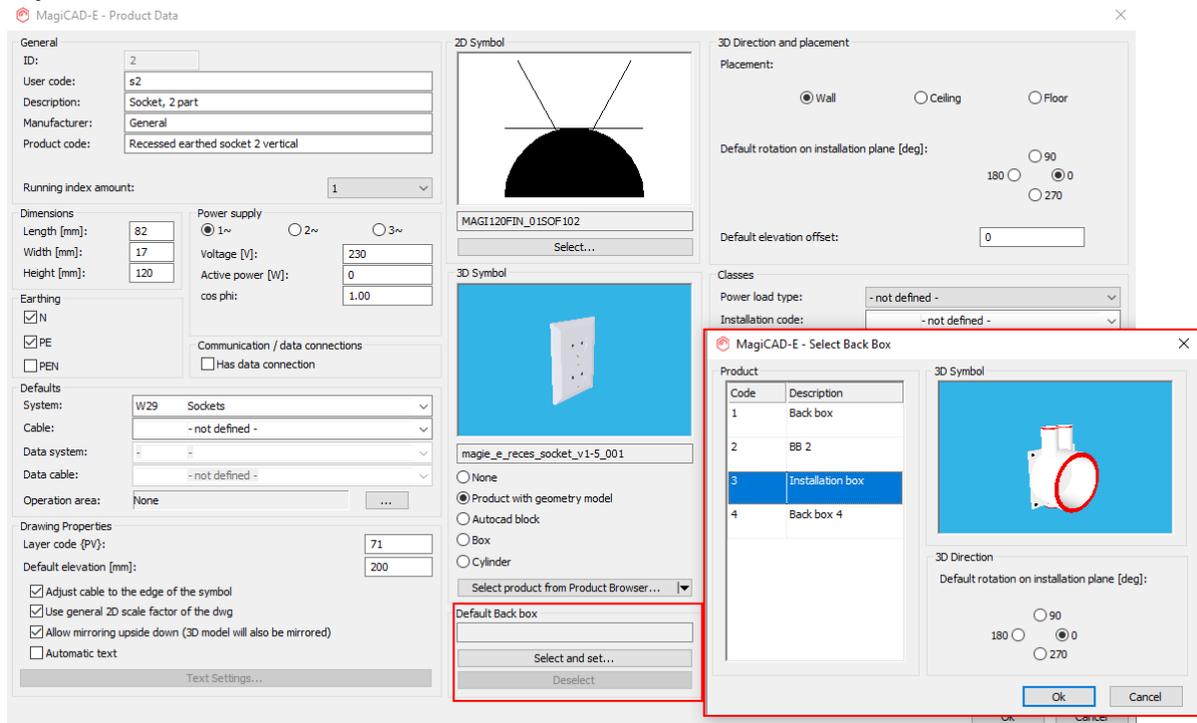
Back boxes for products

"Back boxes" is a new product class under "Cable routes". Back boxes can only be used by attaching it to some other product e.g. a socket.

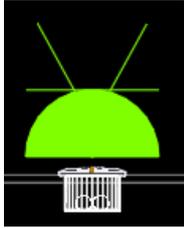


Back boxes only work with products with a geometrical model from a MagiCAD database or MagiCAD Cloud.

Usually back boxes have conduit connectors so it is easy to model conduits inside walls to these objects.



A back box will be added behind a device, usually inside a wall.

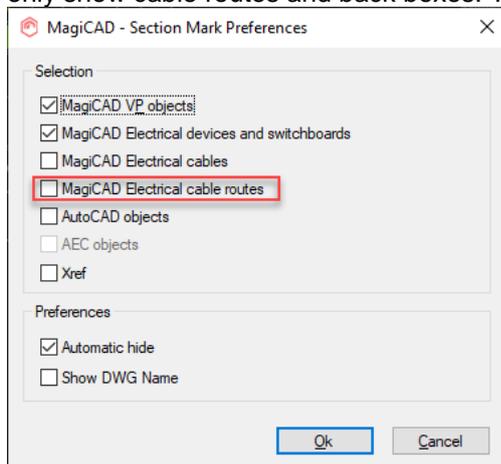


Back boxes can be exported to IFC with or without the "mother" object so it is easy for users to define what is really shown in the IFC model.

Back boxes won't cause collisions when using "Collision Control".

Object selection function finds back boxes if either back boxes are selected or devices which have back boxes are selected.

A new option has been added to the "Section" function, "MagiCAD Electrical cable routes", which will only show cable routes and back boxes. This way you can do section drawings from wall elements.



Enhancement to conduit drawing

Now you can draw a conduit with a specific bend radius by using "Direct line segments" presentation and defining a corner radius. All corners will be drawn with the selected corner radius, even vertical bends. When using "Curved" presentation settings, only vertical bends are affected by the defined corner radius value.

Corner radius is changeable with "Change Properties" or from "Part properties" of a conduit. It will change all the corners of the selected conduits to the defined value.



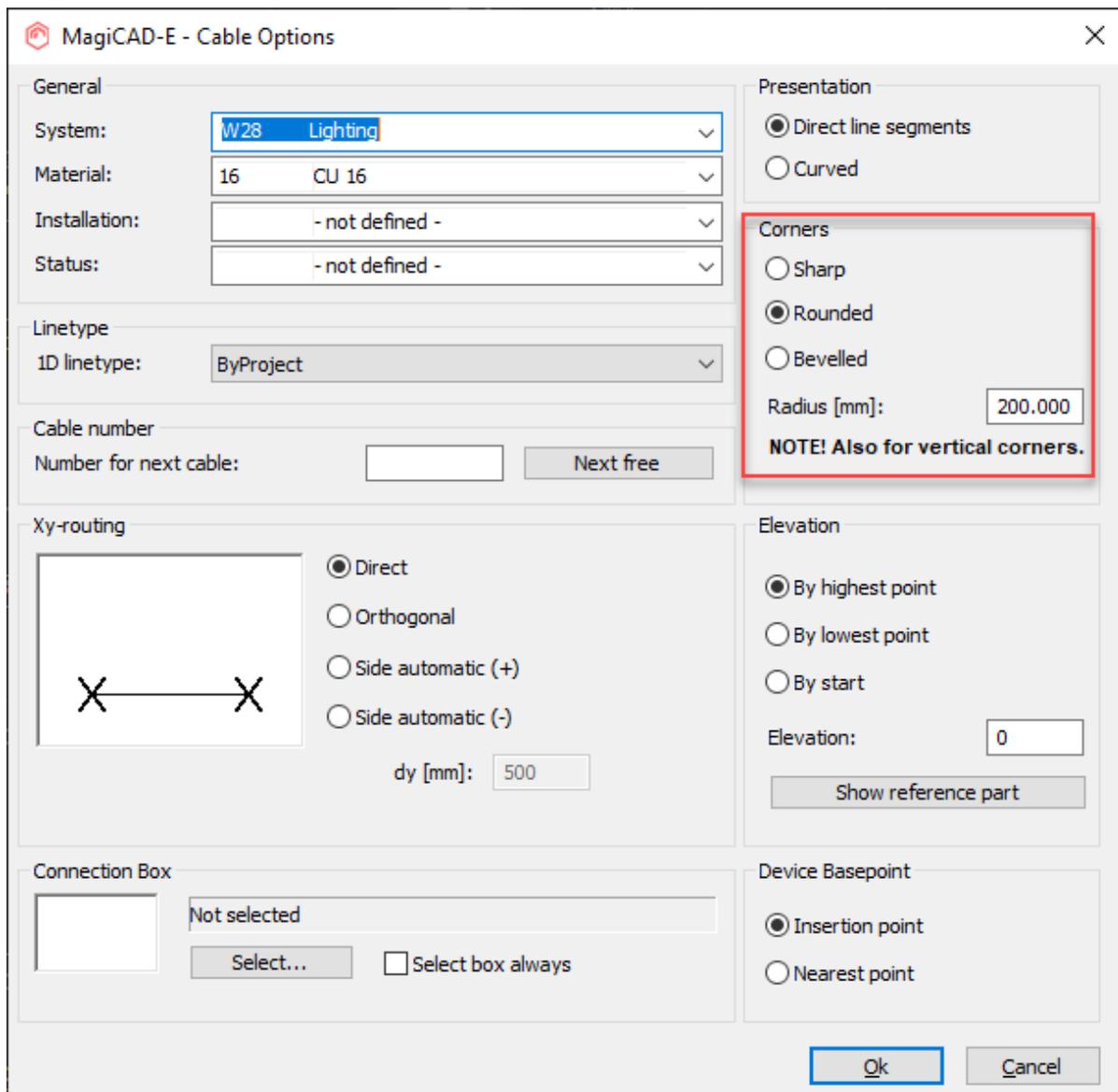
Improvements for bends of cables and cable packets

Bends of cables and cable packets are now shown with correct radius also for vertical bends in 3D view. This works for all corners of rounded and bevelled cables as well as vertical corners of curved cables.

A note will be shown in the options dialogue for knowing where exactly does a given radius affect while drawing with the current options.

The "conflict checker" detects also vertical corner radiuses and informs you if there are differences.

Changing between curved and direct line segments no longer clears values from the corner settings.



MagiCAD-E - Cable Options

General

System: W28 Lighting

Material: 16 CU 16

Installation: - not defined -

Status: - not defined -

Linetype

1D linetype: ByProject

Cable number

Number for next cable: **Next free**

Xy-routing

Direct

Orthogonal

Side automatic (+)

Side automatic (-)

dy [mm]:

Connection Box

Select... Select box always

Presentation

Direct line segments

Curved

Corners

Sharp

Rounded

Bevelled

Radius [mm]:

NOTE! Also for vertical corners.

Elevation

By highest point

By lowest point

By start

Elevation:

Show reference part

Device Basepoint

Insertion point

Nearest point

Ok **Cancel**

Enhancements to switchboard/host management

Following improvements have been made for both Switchboard Management and Host Management functions:

If two objects have the same name, they are marked with red colour

It is now possible to select which columns are visible

System and status are now visible and they can be changed for hosts and switchboards from the dialogs

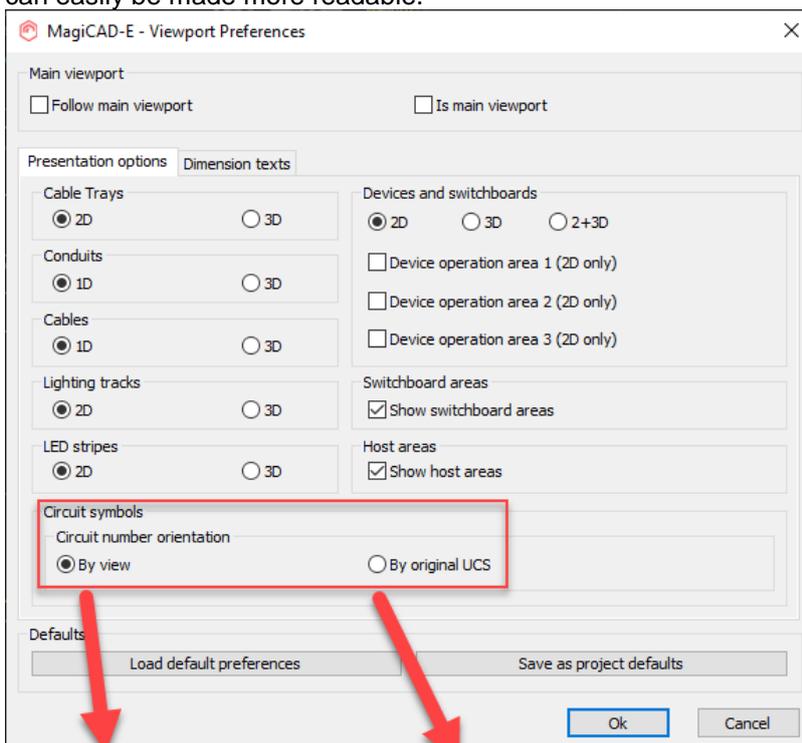
Zoom button, which zooms to and marks the selected switchboard/host

All the columns' values are now changeable with right click. The Set Properties button has been removed.

When changing the list view between "Current drawing" and "All model drawings", the active selections are maintained if possible.

Rotation angle of circuit number attribute

A new selection has been added to the MagiCAD Electrical Viewport Preferences whether the user wants to show circuit numbers aligned "By view" or "By original UCS". With these selections drawings can easily be made more readable.



This circuit number orientation option has also been added to the viewport script commands (MEVPOS and MEVPOS1) as "CI" with options "U" (By original UCS) and "V" (By view). Example usage:

MEVPOS1

Set current viewport as main viewport [ON/OFF]:off

Select mode [CT - cable trays/CD - conduits/CS - cables/DS - devices/BU - busbars/LS - led stripes/SW - switchboard area/HO - host area/CI - circuit symbols]:ci

Circuit number orientation [by View/by original Ucs]:v

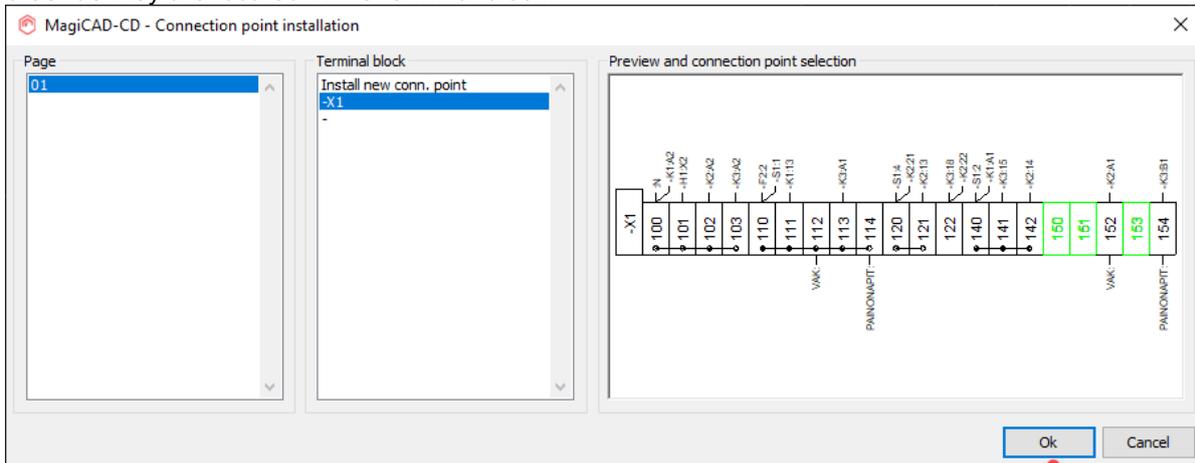
Light source to IFC property sets

Light source property has been made visible/available in the Properties Palette and IFC property sets.

1.4 Circuit designer

Installing several connection points at once

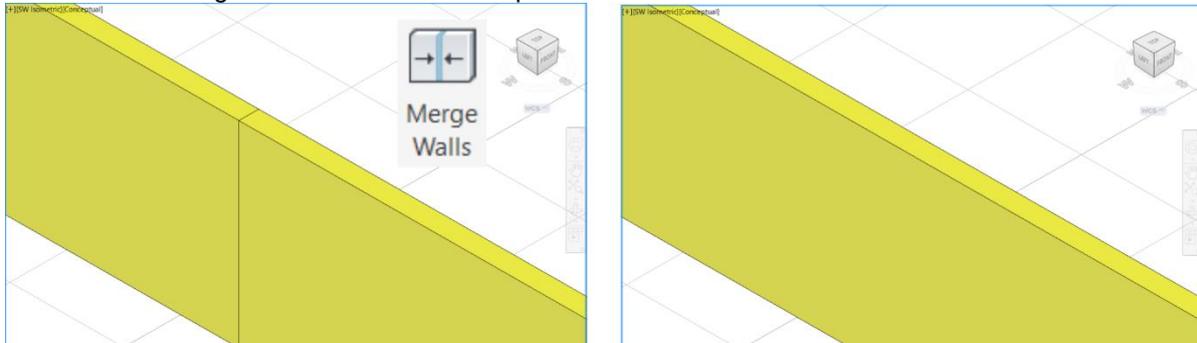
It's now possible to select multiple connection points from a terminal block with shift key. Selected connection points can then be installed one by one in to the drawing. Points are installed in the same order as they are located in the terminal block.



1.5 Room

Room - merge the wall which was split

You can now merge walls that have been split or drawn with noConnect.



Room Name and Room UserCode can now be writeble via the COM interface

Added these writable COM attributes:

"/dwg/room[]/usercode"

"/dwg/room[]/name"

1.6 Schematics

Update Drawing Data functionality is now available in Schematics

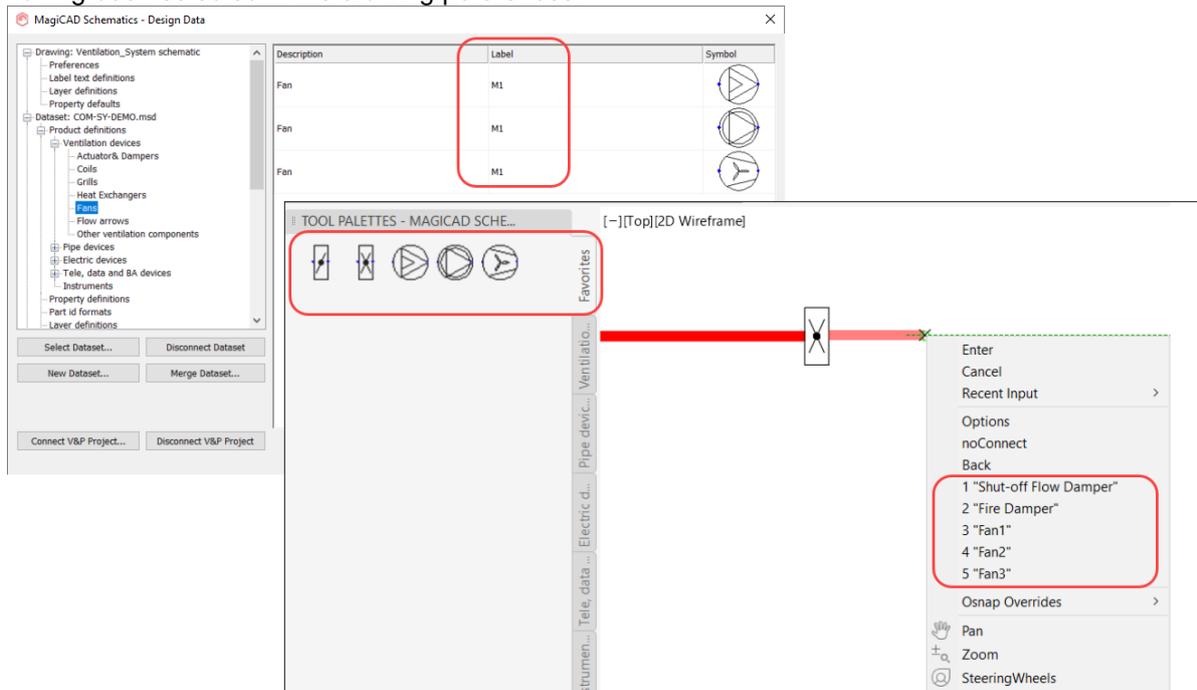
You can now update the symbols and their descriptions as well as the layers of the drawing.



Please note that when updating symbols, some might be at a 180-degree angle to what the replaced symbol was. This is due to in what order the connection points have been selected when the symbol was created and this might often vary by which end has been selected first in the modeling process.

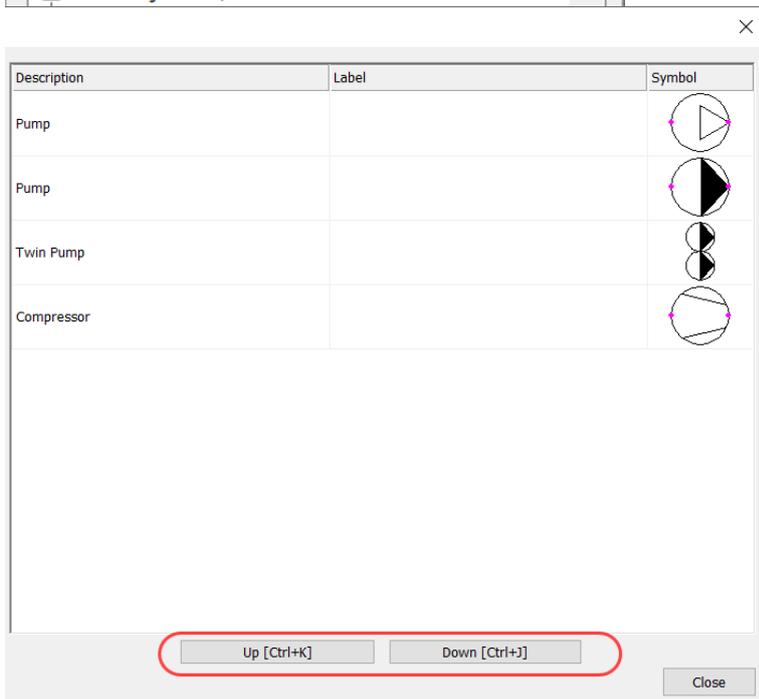
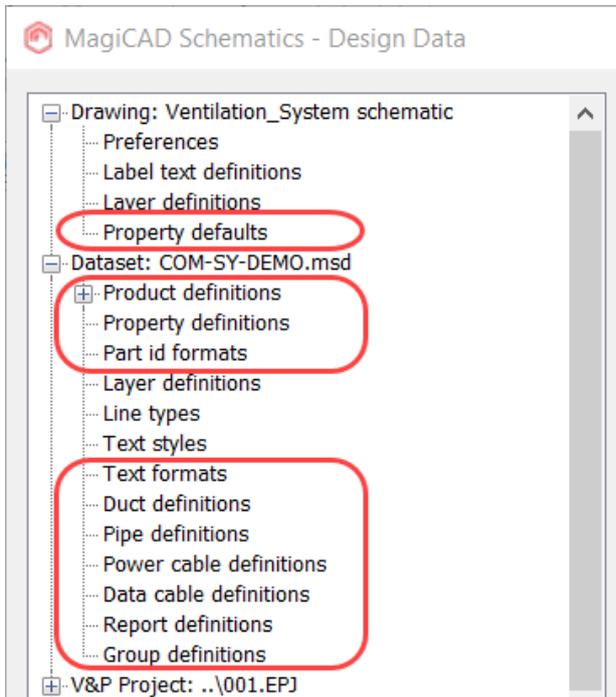
"Favorite devices" can now be selected with the help of labels

You can now set labels for the devices which will then form a "Favorites"-group in the tool palette after having been selected in the drawing preferences:



Up/down buttons for sorting lists in Schematics

We have implemented sorting for the following groups which affects the order that for example the devices are shown in when selecting them from the Tool Palette.



2 Resolved issues

2.1 Common

IFC Property set corrections

Corrections to property source texts to be in line with the capital letters of other property sources and also clarifying which "Object ID" belongs to V&P and which to:Electrical:

Changed text: "cos phi" => "Cos phi".

Changed property name: "Object ID" => "Object ID (MCE)".

Changed property name: "Object ID" => "Object ID (HPV)".

IFC Export as IFCFlowFitting did set the incorrect IFCExportType

Fittings' IFC types are better grouped now: We have changed from IFCFittingType to IFCDuctFittingType or IFCPipeFittingType

Now it is not possible to select IFCFittingType as IFC type.

Added support for IFCDuctFittingType and IFCPipeFittingType.

Now unique product string contains IFC type.

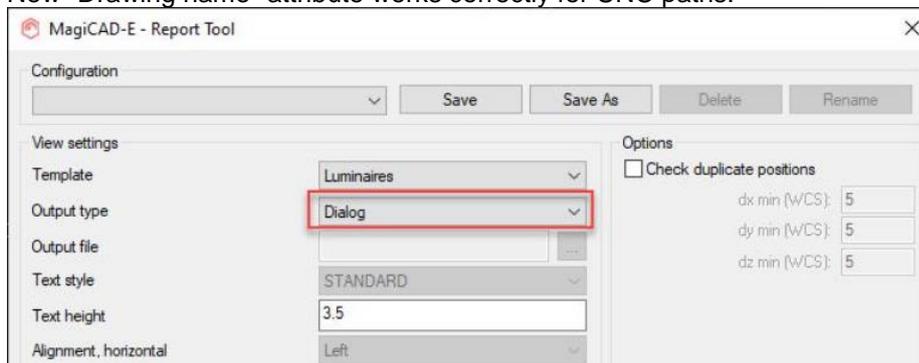
Improvements to the multi-crossing function

You can now select if the parts that the segments should cross over are in an Xref and we did also improve the information in the dialog to guide the user if there are any issues.

Drawing name attribute doesn't work with UNC paths

If drawings were on a server and it used a UNC folder path, making a report with "Drawing name" attribute, it gave "." as a result.

Now "Drawing name" attribute works correctly for UNC paths.



MagiCAD-E - Report

File Edit

Pos	Description	Manufacturer	Product code	Light source	Pow...	IP class	Count	Drawing name
9	Loop Light Beta grey	Fagerhult	Loop Light Beta grey-19570	2*49	106	IP20	32	E_Floor1.dwg
10	BLUEMOTION	Trilux	BLUEMOTION H-L SD 280 E	2x80W T5	170		10	E_Floor1.dwg
11	ZAPP 360	Glamox	ZAPP 360 218HF BRASS	2x18	36	IP20	282	E_Floor1.dwg
12	Work lamp, wc	General	Work lamp 2 sockets 2	1x18		IP21	3	E_Floor1.dwg
13	London ceiling	Ateje Lyktan	London ceiling-203100	22+40	70	IP20	3	E_Floor1.dwg
14	EXIT Here	General	EXIT Here Ceiling	1x18		IP20	1	E_Floor1.dwg
15	Ultra wall	Ateje Lyktan	Ultra wall-203866-138	2x24	53	IP20	4	E_Floor1.dwg
20	Fitted to 3-phase track or FixPoint brac	Fagerhult	Marathon Mi LED ITr-88970-402	1x49W-LED	49	IP20	15	E_Floor1.dwg
555	Glamox A10-S is a very versatile circu...	Glamox	A10-S440 140 WALL	T16-R 40W	44	IP44	6	E_Floor1.dwg
666	1x58W T8				35		5	E_Floor1.dwg

Zoom Close

The path for Axonometric drawings in V&P was also shown as wrong in the "Destination drawing" field for UNC paths.

2.2 Ventilaion and Piping

An improvements to reduce slowness in drawings

We have improved the graphics generation speed to reduce slowness in drawings.

V&P drawings got corrupted in different situations

Different actions led to drawings becoming corrupted during an active AutoCAD session. For example copying certain elements did cause this issue and what could be seen was that arrows marking the open ends disappeared, elements were shown in 1D even if other settings were on and elements turned white in other drawings when they were opened. The work around was to close AutoCAD and restart, but the issue could occur again.

We have now fixed this issue and this corruption should not occur again. This affected only MagiCAD V&P-projects.

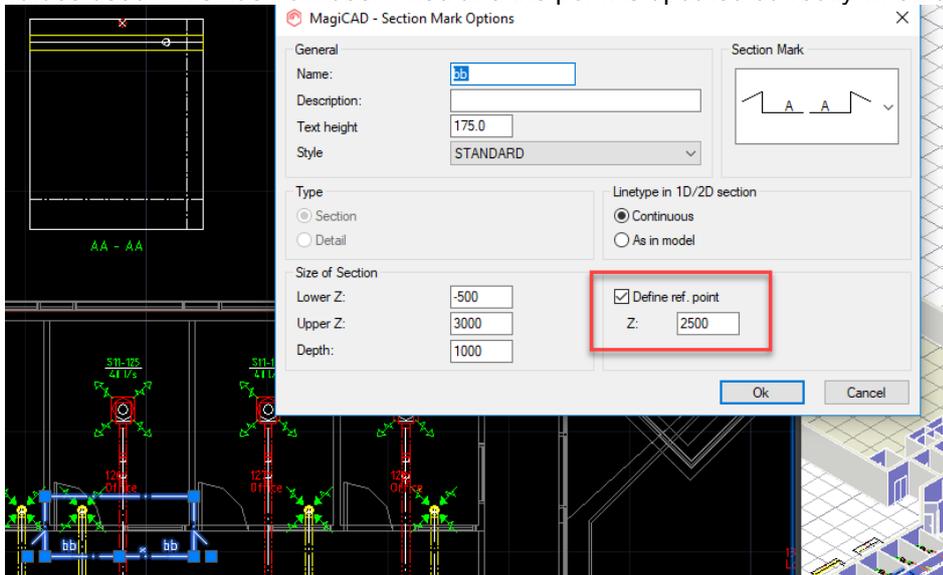
Viewport presentation problems

The viewport options sometimes changed when switching drawings. This has been fixed and no changes occur when switching viewports.

"Define ref. point" for sections didn't work correctly

The "Define ref. point" did not work correctly as the user couldn't change it afterwards.

And temporarily removing it and adding it back did always set it a the floor's level, regardless of the values used. This has now been fixed and the point is updated correctly when changes are made.



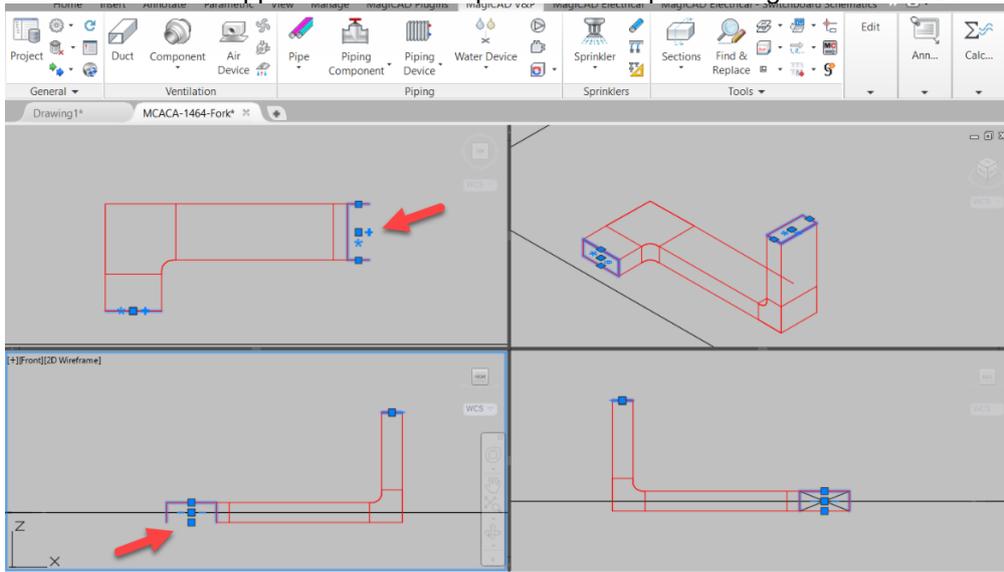
Update drawing data did not update the information to Revision cloud/arrow and the layer wasn't updated

The layer wasn't updated for the Revision cloud/arrow when the information was updated in the project or the status information was changed with Change Properties:

Now Update drawing data updates the layer of the Revision cloud/arrow.
Now changing status of the Revision cloud/arrow using "Change Properties" also updates the layer.

A part of a duct disappeared when using FORK in vertical, rectangular ducts

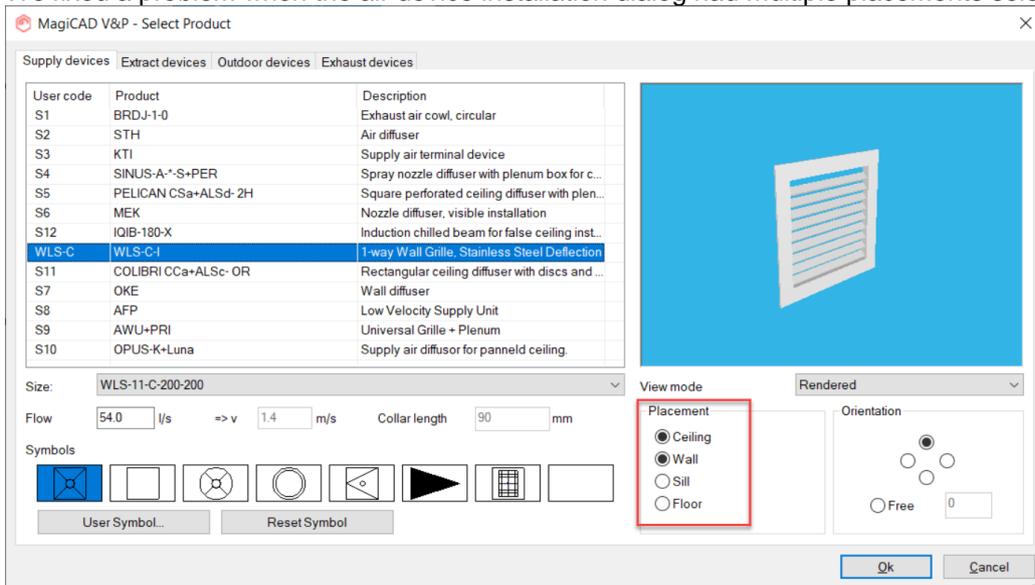
When inserting installation plates using the Fork-command, when drawing ducts, to an open end a side of the duct disappeared in the viewport if the viewport setting was set to 2D:



The issue has been fixed and now all four sides are drawn.

The Air device installation dialog had multiple placements selected

We fixed a problem when the air device installation dialog had multiple placements selected.



Dimension text disappeared when attaching ducts to air devices, air handling units and fans

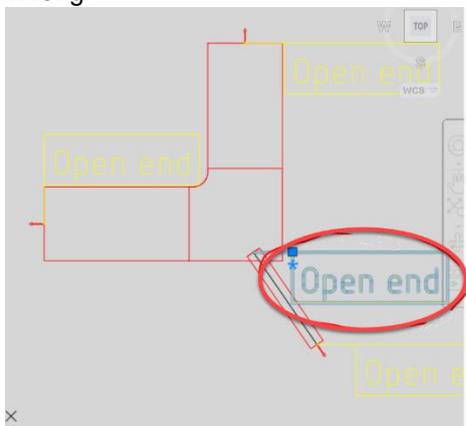
When attaching a duct to, for example, an air device with an existing dimension text, the dimension text disappeared. Now this has been corrected.

The dimension texts should however disappear, for example, when drawing a duct to a bend and the bend becomes a T-branch, if the bend had a dimension text attached to it.

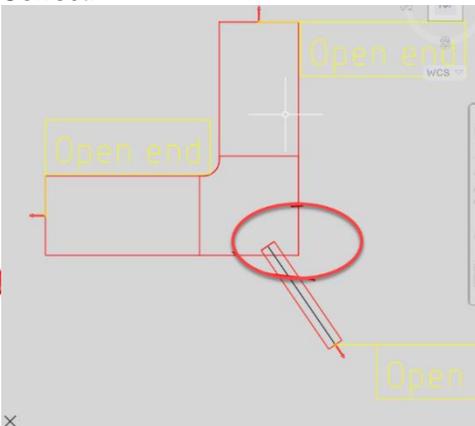
Scramble connection was shown as an open end.

Part property line was treating a scramble connection as an open end. This has been fixed.

Wrong:



Correct:



Starting to draw a pipe from some devices didn't utilize the connection size of the device

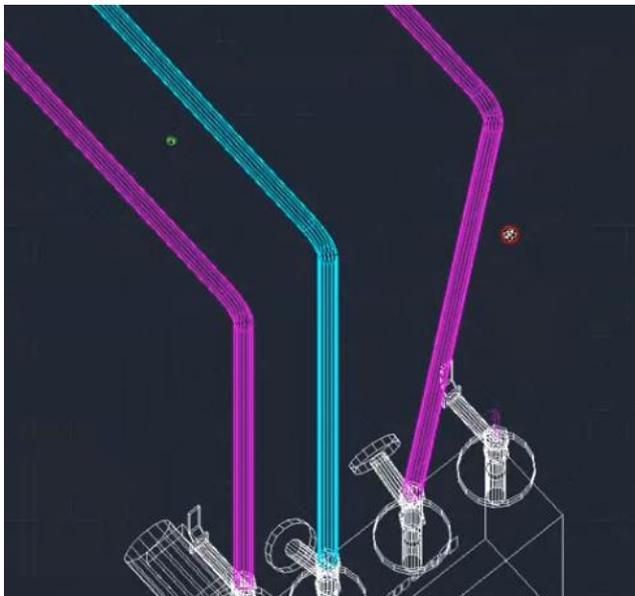
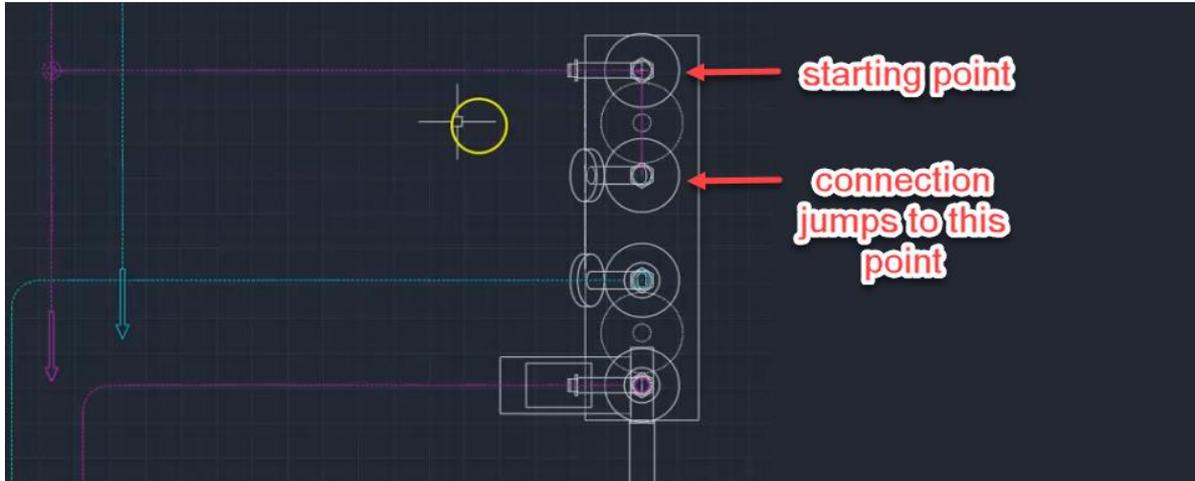
When starting pipe drawing directly from a device, the device's pipe size was not selected. This has now been corrected and the correct size is selected.

Property set not working for new mixing units

When installing new mixing units into a project and then exporting them to an IFC, these mixing units were missing the property set. This has been fixed.

Bug when drawing pipes from mixing units: The wrong port was selected

When drawing from mixing units, the connection sometimes jumped to the wrong connection point upon being connected. This happened if it was immediately connected to another pipe instead of being drawn to "an empty space" in between.



Now the correct connection point is maintained.

Adjustment of the valve in radiator

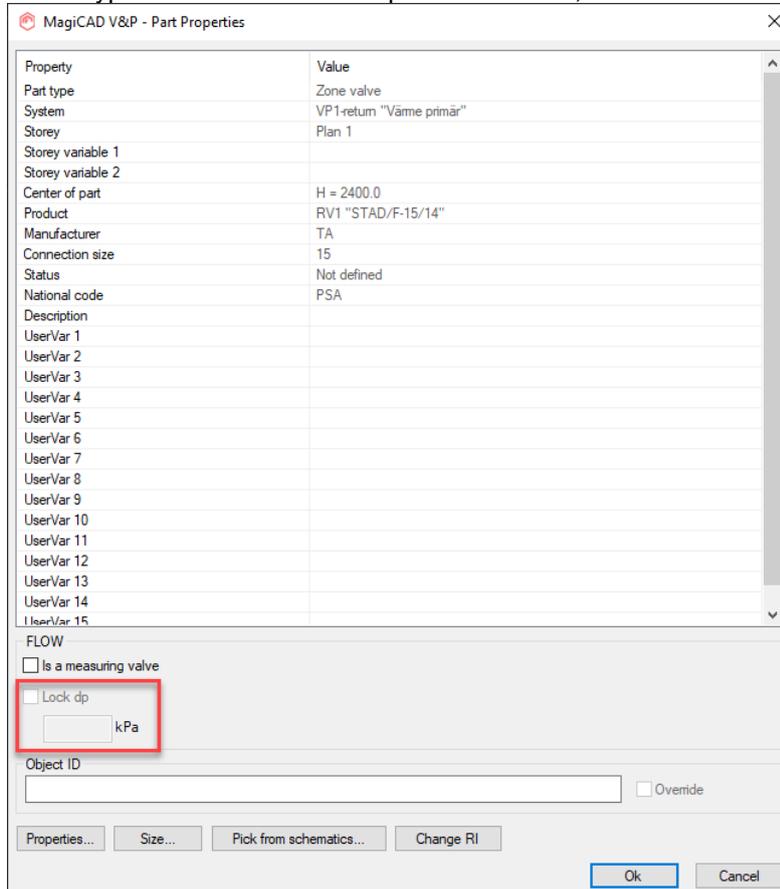
If the adjustment value of a valve was, for example, 1-4 the program did still set a lower value than 1 if the flow was small or the valve was even closed. Now the value will stay in the range of the adjustment value of the valve.

Mixing units with the control valve on the secondary side, the control valve differential pressure was not handled correctly

Control valve pressure on the secondary side of the mixing unit is now ignored.

"Lock dp" was disabled for STAD-type zone valves

STAD-type zone valve's "Lock dp" was disabled, but now it can be selected again:



F&R didn't work properly in all cases for 3-port valves

Fixed a bug using Find & Replace for 3-port valves: It didn't always set the orientation correctly and at times disconnected the pipes.

Z-move didn't work for water pipes

Fixed an issue which led to Z-offset changes not being possible for water pipes.

MagiCAD sizing didn't show the warning for high friction and high velocity, in Show Messages dialog

The warning dialog didn't show the issues for high friction and high velocity in Piping. The user needed to have "Show calculation report" ON to see the warning.

Fatal error when starting sprinkler head installation

Fixed an issue related to how we internally handle data in symbols and the crash was caused by not having a symbol selected for the sprinkler device.

2.3 Electrical

Adding Room database to the project puts two backslashes to URL every once in a while

Sometimes MagiCAD made double backslashes to the address where to find the project. When opening the drawing it gave a warning that Room database could not be found. Now only one backslash will come to the file path.

Copied circuits and devices maintain switchboard/host references when also switchboard/host is copied

When copying devices, cables and/or areas and the switchboard / host to which they are connected, copied objects maintain connection to the copied switchboard / host. Switchboards and hosts get new unique IDs when copying them.

Delete not checking Other Drawings

Deleting products from the Project didn't check if the deleted object was used in some drawing in the "Other drawings" list. Now it checks those drawings also.

Freeze layers doesn't remember saving for xrefs

Xref layers weren't properly frozen. Now freezing them works properly.

Protective device - Editing overload text deletes the text

Editing overload text format no longer deletes overload text from the protective device.

Zoom not working properly in connection reports

Zoom in connection reports now zooms properly even when the target is in another drawing.

Update DWG script missing some properties

Added "-MAGIEUPDATEDWGDATA6" / "-MEUP6" script command.

Added missing properties:

Number of elements in circuits,

ELV power in circuits,

Circuit references based on data cable connections,

Longest branch lengths of circuits.

Running index text format variable visible twice in a dimtext

Now dimension texts show values correctly if variable is added twice into dimension text format

Bugs with conduit grips

Updated conduit grip placement update and/or connection reset from conduit in the following places:

Array installation (grips were missing totally before update)

3D Model Organizer (grip placement and connection reset updated)

Change Elevation (grip placement and connection reset updated)

Change Properties/Rotation Angle (grip placement and connection reset updated)

Change Properties/Placement (updated connection reset, only done when something is changed)

Change Properties/Back Box rotation (added connection reset)

"Use separate insertion point for 3D model" installation case (grip placement updated)

AutoCAD's rotate (added connection reset check)

Merge project doesn't work if the source project file is in Read only folder

Now merge project works normally even if the user doesn't have write permissions to the folder where the source project is found

Cannot copy and update power and/or power load type between converted objects in plan <-> system schematic

Now information can be properly copied and updated between plan drawing and system schematic.

2.4 Circuit designer

Adding new auxiliary contacts to contactor doesn't use numbering rule

Now adding new contact to contactor uses numbering rule correctly.

2.5 Room

Contextual menus did not always open if multiple screens are in use.

Context menus (shown when right-clicking on an item in the project tree) were not always shown if the user had multiple monitors in use.

Heatloss calculation showed different values in different views

A bug interrupted the calculations in some cases and the correct values weren't updated to some rooms.

This led to an issue where the user saw different values, depending on if the user checked the heat losses for the rooms via the project, or via the heat loss analysis by clicking at the room's label in the drawing.

Adding Room database to an electrical project puts two backslashes to URL every once in a while

Sometimes MagiCAD made double backslashes to the address where to find the project. When opening the drawing it gave a warning that Room database could not be found.

Now only one backslash will come to the file path.

2.6 Schematics

noConnect did not work in Schematics

"noConnect" did not work in Schematics and has now been fixed.