MagiCAD for Revit

Release notes for version 2020

28/05/2019

MagiCAD

Content

1   New features 2020

1.1   MagiCAD 2020 Network License Server Update

Customers with existing MagiCAD Network Licenses must update their network license server to version 19.05 or later before installing MagiCAD 2020 for AutoCAD or Revit.

What are the benefits of the new network license server version?

From MagiCAD 2020 and network license server version 19.05 onwards **MagiCAD licenses can be maintained on the same server as Autodesk Revit or AutoCAD licenses**. This is beneficial for future updates as it simplifies considerably the update process. Previously, customers needed to maintain MagiCAD licenses on a separate server, which made updating more complicated.

Autodesk Revit 2020 currently uses their Network License Manager 11.16.2.0 for license servers. If you already have a server with Autodesk Network License Manager 11.16.2.0 or later you can simply add the MagiCAD activation IDs to the Autodesk license server. (Install MagiCAD network license server 19.05 also?) Please note that the server needs to be restarted after adding activation IDs.

From a technical standpoint, the new license server version employs Internet Protocol version 6 (IPv6), which enables having MagiCAD and AutoDesk Revit or AutoCAD licenses on the same server. Previously, this could be done but it required extensive configuration work and firewall adjustments and could still occasionally lead to conflicts where connection to the server was lost.
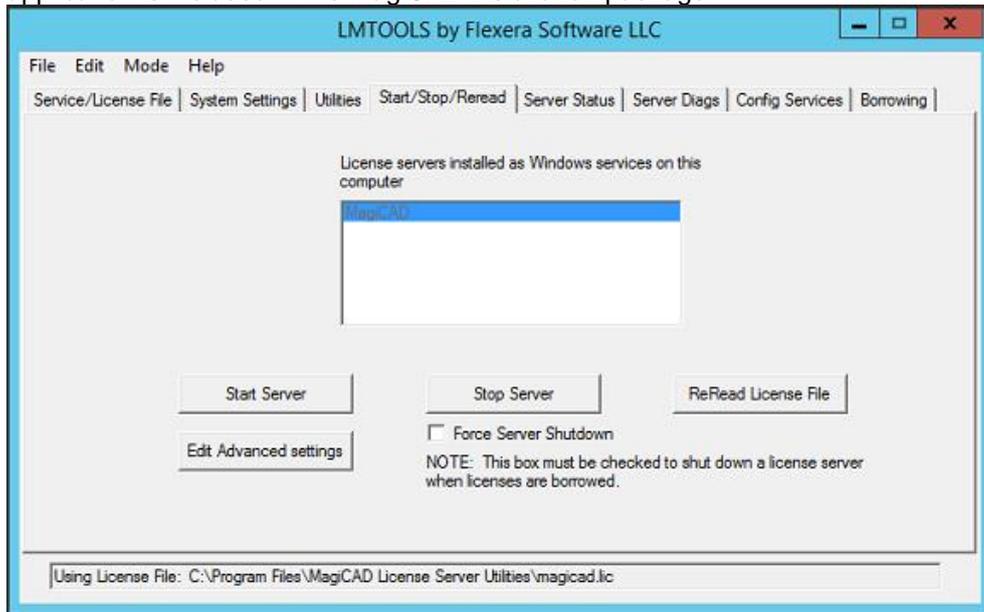
A second improvement with the new license server version is **increased stability with Windows 2016 servers**. The current server software has stability issues in Windows 2016 server environments and may sometimes perform unnecessary and repeated reboots.

The third major improvement is **easier monitoring of license use**. When licenses are borrowed from the server, the new version adds both the computer name and user name to the license log, whereas previously only the computer name was used. Including the user name makes it much easier for companies to identify where their licenses have been used

How to update the MagiCAD license server software

Stop MagiCAD license server and services

1) Before updating, use **lmtools.exe** to stop the MagiCAD license server. The lmtools.exe application is included in the MagiCAD installation package.

2) Open **Windows Services** and stop the **MagiCAD License Information Service**

3) Close lmtools.exe and the MagiCAD Network License Server Management Utility. If you have custom settings in the magicad.lic or magicad.opt files, make backups of those settings before updating. Install new version of license server software

4) Download **MagiCAD License Server Utilities version 19.05 or later** from the MagiCAD Portal using your MagiCAD activation ID.
https://portal.magicad.com/Download/ProductSearch?searchStr=utilities&categoryId=6.

5) Extract the downloaded file and execute **MagiCAD License Server Utilities x64.msi** and then follow the installer instructions.
If you had custom settings in the **magicad.lic** or **magicad.opt** files use **lmtools.exe** to stop the MagiCAD license server before you restore your custom settings.

   Restart license service and reload licenses

6) After the installation is finished use **lmtools.exe** to stop and start the **MagiCAD License Information Service** to reload licenses.

Use scenarios

The table below shows which license server versions and combinations can be used with different.

MagiCAD versions

MagiCAD software	MagiCAD network license server(s) used	Possible combination
MagiCAD 2020	Single server, v. 19.05 or later	**Yes**
MagiCAD 2020	Single server, v. 15.11 or earlier	**No**
MagiCAD 2019 UR-2 or earlier	Single server, v. 19.05 or later	**Yes**
MagiCAD 2020	Multiple servers, v. 19.05 or later in all	**Yes**
MagiCAD 2020	Multiple servers, including: v. 19.05 or later and v. 15.11 or earlier	**Yes**, but not recommended (possibly slower performance)
MagiCAD 2019 UR-2 or earlier	Multiple servers, v. 19.05 or later in all	**Yes**
MagiCAD 2019 UR-2 or earlier	Multiple servers, including: v. 19.05 or later and v. 15.11 or earlier	**Yes**, but not recommended (possibly slower performance)

New MagiCAD 2020 installations
Install MagiCAD license server software version 19.05 or later during the MagiCAD 2020 for AutoCAD or Revit installation. Use the activation ID that was delivered together with MagiCAD 2020.

Updating from MagiCAD 2019 or older to MagiCAD 2020
To update to MagiCAD 2020, you need to update the MagiCAD license server software to version 19.05 or later before installing MagiCAD 2020 for AutoCAD or Revit. Use the activation ID that was delivered together with MagiCAD 2020 and see the update instructions above.

Using MagiCAD 2019 or older and MagiCAD license server 19.05 or later
The new license server software is downward compatible and can be used with MagiCAD 2019 or older. You can simply update the license server software according to the instructions above and continue using an older version of MagiCAD software.

Using two license servers
It is possible to use a system with two network license servers. In this setup, MagiCAD will start by searching for free licenses from the first server and if none are found then continue searching from the second server.

Using two network license servers requires that you enter two server addresses in the MagiCAD Network License Server Management Utility.
Ex. port@newServer;port@oldServer

We recommend updating both servers to MagiCAD license server software version 19.05 or later. You can also use different license server software versions, however, this may result in slightly slower license operations.

Using a mixed environment with new and old license server software
This is possible, but not recommended as there is no practical benefit to using two different servers with different license server software versions. You need to simply install the desired license server software versions with their own activation IDs.

Change to network license checkouts
The new license server version also includes a change to network license checkouts and automatic license returns due to idle time.

When using MagiCAD, the periods of time when the user uses native Revit functions without activating any MagiCAD tools are counted as idle time for the MagiCAD license. The previous practice was that the MagiCAD license was automatically freed to the license pool after 15 minutes of idle time. In some cases, this could cause situations where the license was returned to the license pool in the background and then checked out by another user, rendering the license unavailable to the original user and blocking the user from completing their work.

To prevent interruptions in design work due to license unavailability, we have changed the idle time limit for the automatic license return from 15 minutes to 2 hours. If the user wants to intentionally return the license to the license pool earlier, this can be done at any time by simply ending the Revit or AutoCAD session (i.e. by closing the software). MagiCAD's idle time settings are fixed and the system administrator does not have access to them.

1.2 Common features

LOD levels in MagiCAD

We have improved the family conversion and creation of our BIM objects so that the LOD level will be possible to select at any time in a project by the user.

The diversity of different but also similar LOD definitions is something that together with requests from our users have indicated a strong need for MagiCAD to better support different LOD requirements for different stages in a project. Starting from MagiCAD version 2020 we are therefore introducing a new ´LOD technology´ for MagiCAD and MagiCAD BIM objects, something that step by step will enable user ability for selection of LOD levels depending on the current need and the project phase. In the 2021 MR version, when more LOD content have been created and added to MagiCAD, we plan to finalise this function by adding new switching functionality for faster and more convenient switching of LOD levels.

Possibility to modify generic products with MagiCreate

Added support for direct editing of generic products in MagiCAD Create from the Dataset
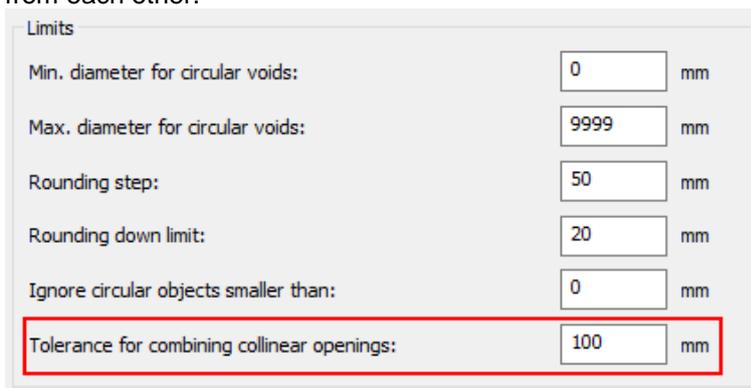With MagiCreate new sizes can be added and techical data can be changed.
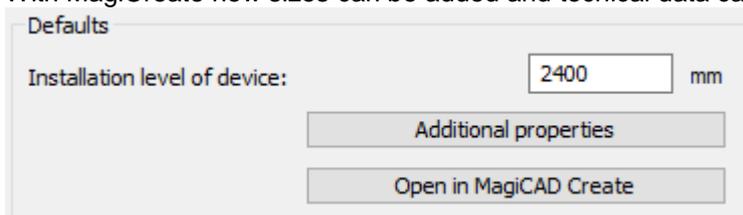
Tolerance settings for the provisions for the builderswork opening to combine collinear voids

Identical in size collinear provisions are combined if they are within certain (configurable) distance from each other.

Date of creation for the provisions for the builderswork opening object

When a provision for the opening is created, creation time is saved in MC Time parameter

Provisions for Builderswork Openings / Selection of the 2D symbol

It is now possible to choose a 2D symbols for the Provisions for Builderswork Openings. The symbols can be different depending on location and shape.
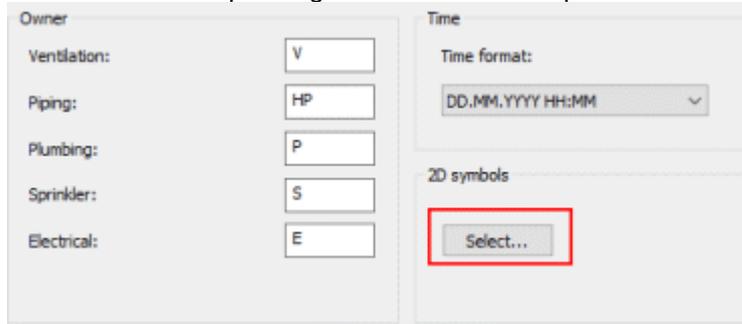

Revit walls with sweeps are now supported by the "Provision for voids"-tool

Smart move

A useful addition to our already extensive tools for offsets is to move selected objects to the top, centre or below (and justify too) of another. This is different from crossing as it is just moving an object to a new height.

A good example is that there is already a crossing created based on a duct size but the duct size changes and the user want to move the crossing object back to the same tolerance above or below the original selected object.

The smart move works so that user is requested to select one segment whose connector has to be in the horizontal direction. More information here.
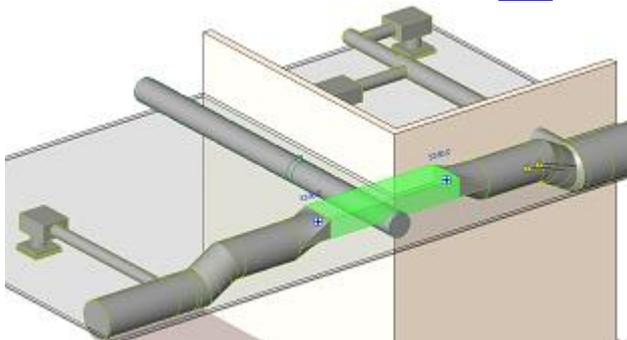

Possibility to integrate the dataset into a Revit project

The main motivation for (improving) the dataset integration has been the rise of the BIM 360 concept from Autodesk. The older MagiCAD versions didn't support the scenario where a dataset file is located at the BIM 360 cloud storage.
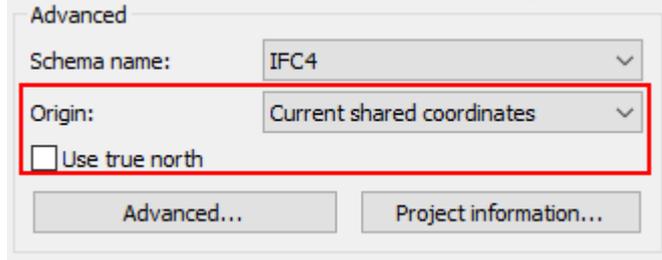
Old separate buttons to create, select and disconnect the dataset have been replaced by a new command "Manage dataset". This command opens a dialog to manage the dataset settings.

More information here
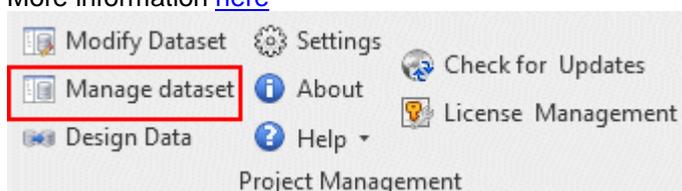
**Ability to choose the project origin of the IFC exported file**

Added a possibility to choose the project origin and if "true north" should be used in IFC export.

Branch copy, branch move with connect function etc.

It is now possible to select a branch, copy, copy+mirror, rotate+copy+mirror, delete or move it. It is also possible to select multiple branches at the same time, select supply+return of a heating/cooling or hot+cold+circulation of domestic water system Type in "Q" to rotate; type in "M" to mirror.
"Branch Copy" doesn't work for the electrical objects.
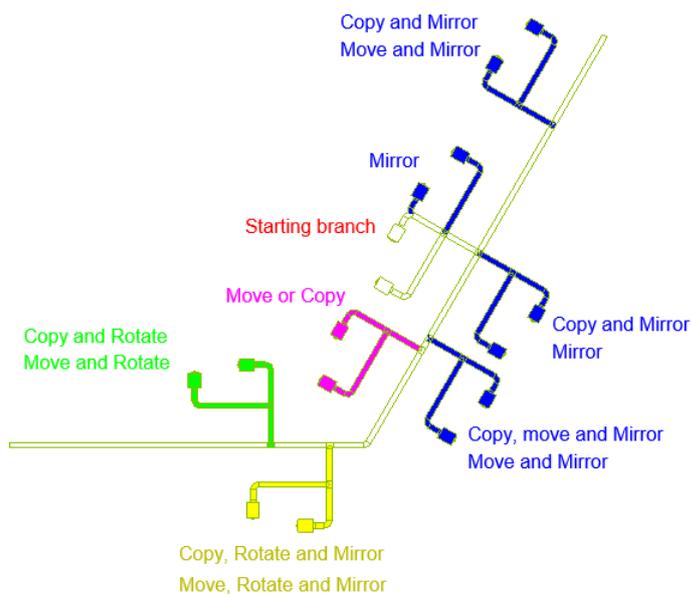
Extra fields can be added into the Sheet Manager

Added settings to the sheet manager dialog where the user can add new parameter columns to the sheet manager. The parameters are saved in the current project so that the parameter list is available when the project is reopened. More information here.

Support 20 angle with the standard connection tool

Added support for 20 degree angle for the standard connection

Renaming fitting RFAs according to specific rules

Fitting naming has been changed in the duct, conduit and cable tray series creation. Now RS naming standard is supported for all the fittings.

If RS naming standard is not used then the fitting product code is used in family name. If the same family name is already in use, then the running index is used after the product code.

Improvement of ceiling grid installation of devices

Ceiling grid installation automatically sets the work plane in the current view, if the work plane is not yet set. The work plane is set to the level associated with the current view.
Earlier MagiCAD gave an error about missing work plane.

Improvements to Clash checking

When the topic is selected, then also the elements in the topic are selected and shown. If 3D view is in question and the camera settings have been saved to a bcf file, then show elements use also those settings.

The elements in the topic are selected automatically. Elements in the topic are also isolated automatically if isolate mode is on. The camera settings are saved only in case that the elements are selected in 3D view by using

MagiCAD's add view point functionality. MagiCAd also remembers 3D view direction and zooming level.

Other improvements in clash checking

- A *"Cancel"* button has been added in the clash checking progress dialog.
- The saving style of the clash setting has been changed so that comma is always used regardless of the computer format settings.
- 3D section box added to the bcf manager.
- PDF and excel report improved so that system type, grid axis number, level and discipline information added to report.
- BCF window resizing changed. Now components/viewpoint field is fixed size. Also last used size is remembered.
- BCF report template organized so that new field better fit there.
- Support clash with linked IFC projects
- Support new provision objects
- System name is printed to pdf/excel report. It was earlier system type name. In electrical device case MC System Name parameter value is read.
- Hard and soft clash count added to clash report.

Solar computer functionality visibility changed

Solar computer ribbon button(s) are hidden if the feature is disabled from the settings. Previously it was just disabled/greyed out.

Cable tray hosted by linked IFC file: clash and elevation not detected

Clash detection with the cable tray from a linked IFC project is now supported

1.3 Heating, piping and ventilation

Calculation Design Margins

Design margins added for balancing (heating/cooling and ventilation). The design margins are used in the general page of the result window. The design margins are added to the total flow and the total pressure in the balancing calculations.
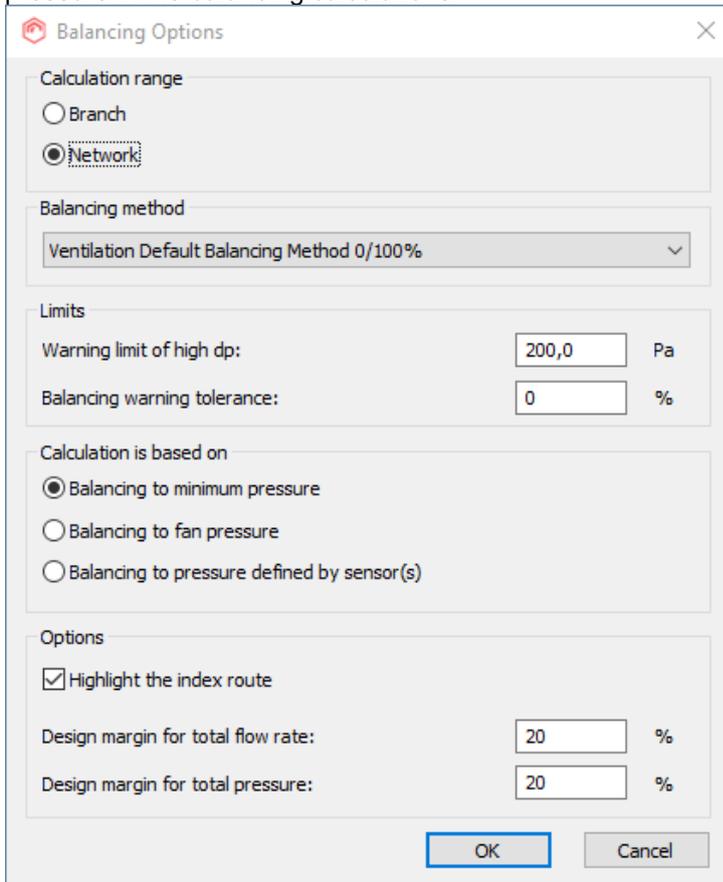
Project Calculation Data	
Systems:	S1
Total flow:	3235 l/s
Total pressure:	332.2 Pa
Including design margin 20.00 %	3882 l/s
Including design margin 20.00 %	398.7 Pa

**Possibility to change the duct/pipe size and insulation in the report**

It is now possible to change the duct/pipe size in the report and recalculate after the size has been changed. This works through the popup menu
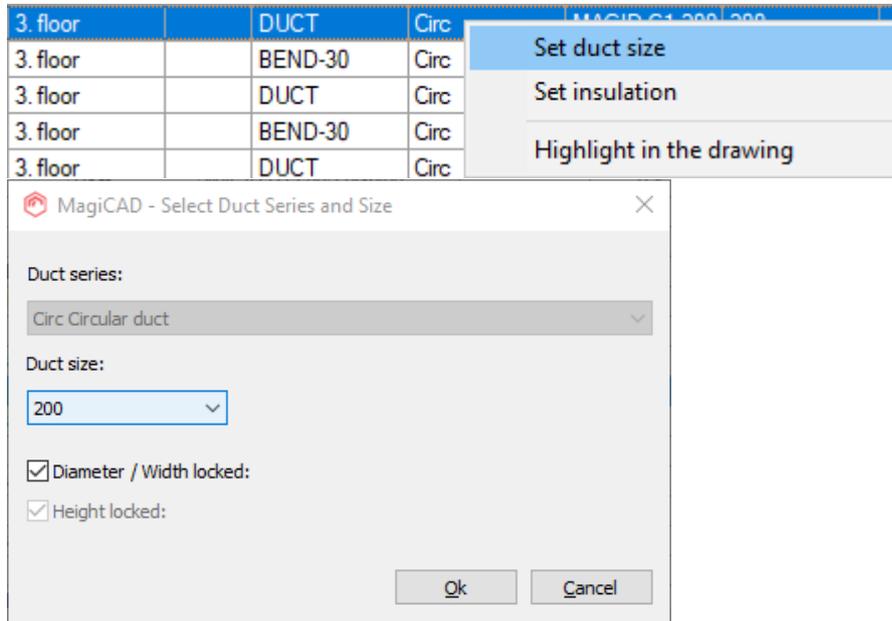
**User selectable columns for the calculation report**

Support for user selectable columns in the report has been added. The columns and their order can be selected by clicking the title line of the report.

You can then hide/show columns and change the column positions.
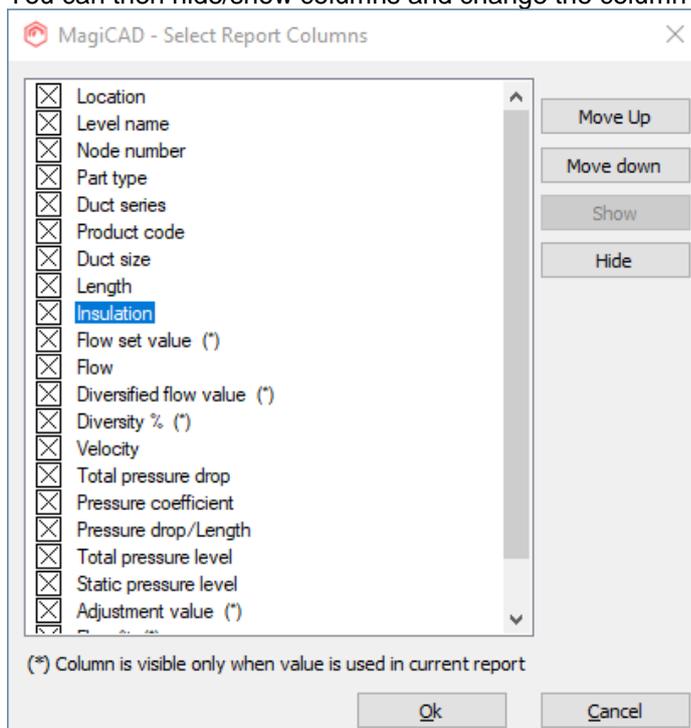
The required pressure level of the design area is added to the drop down menu in the report
Added needed pressure levels of each design area to drop down menu beside the design area names. This makes it easier to find the most/least critical design area when several design areas are calculated at the same time
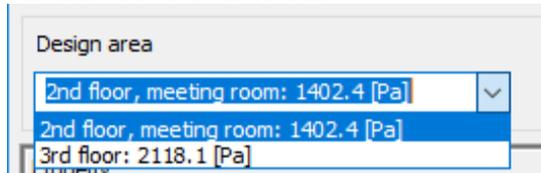
Support for mixing units in the piping design
The MagiCAD product library now includes mixing units for hydronic systems. This means that you can also add mixing units to Revit projects. You can connect both primary and secondary network pipes to mixing units with different temperatures levels defined for the systems on each side of the mixing unit. MagiCAD calculates the required flow on the primary side of the mixing unit automatically based on the power demand of the secondary network. the temperature difference that is used to calculate the flow also takes into account the mixing of liquids inside the mixing unit. Additionally, network balancing secures enough pressure drop for each mixing unit to ensure the reliable operation of the control valve inside the mixing unit.

Support for Russian domestic water standard SP 30.13330.2016
MagiCAD supports the domestic water calculation according to Russian SP 30.13330.2016 standard.

Pressure drop values for sprinkler pipes
The pressure drop values of each sprinkler pipe are set to the parameter *"MC Piping Pressure"* after the calculation.

Sprinkler calculation support EN 16925 standard
EN 16925 standard has been added to sprinkler calculation standards

Constant pressure valves for water systems
Support for the constant pressure valves has been added. The constant pressure after the valve can be entered when the valve is installed. The calculation adjusts the pressure drop of the valve so that the pressure level after the valve matches with the input value.

Heat loss calculation for heating systems
Heat losses and fluid temperatures for the supply pipes ot the heating systems are calculated.

Branch calculation of domestic water supports now separate calculations of cold/hot water pipes
If the circulation return water pipe is selected, also the hot water pipe must be selected.

Improved calculation of water volume
A possibility to enter the water volume has been added to installation dialog of the mechanical equipments and the pipe accessories. The given volumes are added to the total volume of the network.

1.4 Electrical

New wire drawing tool

The wire drawing tool has been reworked and the toolbar has been enhanced.

Now when drawing wires, you can see a preview of a wire before actually drawing it. In addition, you no longer need to select different drawing options for connecting objects, when connecting to cable packets or when drawing a wire to an empty spot in a drawing. All selections that are frequently made are available in the toolbar directly and things that doesn't need to be changed a lot are under "options" menu. It is also possible to draw chamfered wire in addition to curved and direct, and the corner radius of curved wires can be defined in options.

The "nearest point" mode has been enhanced to snap also to end points of lines.

Active dimensions (angle and lengths to X- and Y-direction) can be turned on/off for each connection type and routing type from the toolbar. This helps especially when drawing wires freely in empty spaces. After starting to draw a new wire from its start point, snapping is enabled automatically. Snapping uses either the active angle or lenght dimensions and this can be selected directly from the toolbar. Settings for the increments used in the dimensions can be found from the options.

Selecting between alternative routes can be done from a button in the toolbar or by using SPACE key from the keyboard.

Automatic circuit wiring

A new function / connection type has been included into the new wire drawing tool. It allows users to automatically draw wires between all objects in a single circuit by using the selected wiring options. Alternative routes can be selected also in this function.
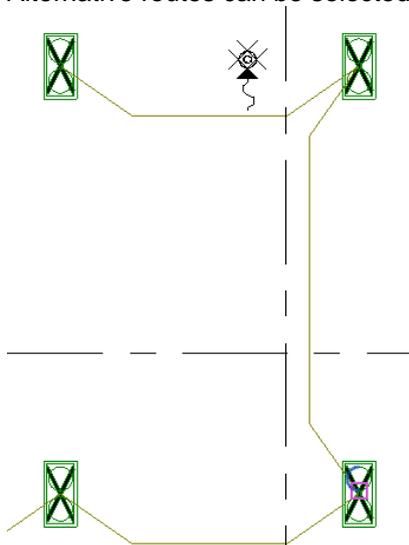
1.5 Schematics

Remove Objects

A new tool to handle situations when either a symbol or a device is removed from a linked pair. When a symbol or device is removed, you can define whether to also remove the linked object or to reset the link and keep the linked object intact. This helps to limit broken links and to keep schematic drawings and models consistent.

Advanced Move & Stretch tool

The new version of MagiCAD introduces an advanced Move & Stretch tool for modifying schematic drawings. When a line is moved all associated symbols follow and connected lines are stretched. This means that connections are automatically kept intact when the schematic drawing is modified. The same tool can be used also to move symbols separately. In that case, the tool makes sure that the symbol stays connected to the line.

2 Resolved issues

2.1 Common issues

Clash checking found clashes that should not be reported as a clash
This could happen e.g. if the pipes are insulated. Now the clash between two pipes that are connected via one or more fittings is ignored
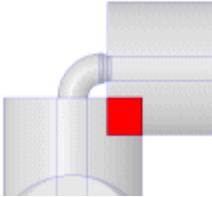
Tag tool override is now disabled when synchronizing with central file
Tag override is now disabled during the synchronization with the central file.
This was done because some customers have reported that the tags were changing after synching with the central file.

In Win10 OS the picture notes were not saved in the BCF manager's report tool
When the "pictures notes" were edited with MSPaint they were not saved in WIN 10 OS.
This is now corrected.

Rectangular void provisions for builderswork openings were not exported correctly to IFC4
The heigth and width were swapped.
This is now corrected.

2.2 Heating, piping and ventilation

Show index run on systems with connection nodes only
The previous versions did not show the index run in the report if the connection node was on a index run.
This is corrected to all reports: ventilation, piping and domestic water

Explanation of the calculation report columns
A mInor correction to the tool tip of the sprinkler calculation report. Earlier the tool tip of "Area" showed "Design area size" while it should be "Area of coverage"

Temperature conversion from Kelvin to Celcius has broken unit conversion
Bill of material from the fancoil unit or the mixing unit, so that the propertyset contains Temperature difference (and temperature difference is set to object in project).
Kelvin was shown instead of Celcius.

2.3 Electrical

Detail symbol groups not converted from MagiCAD for AutoCAD
When converting symbols from MagiCAD for AutoCAD symbols from all groups were not converted to Revit. Now all symbols are converted correctly.

Dialux import shows duplicates in luminaire mapping options
When mapping luminaires in Dialux import it showed duplicate luminaires in some cases. Now it only shows the RFA that really is in the project.

2.4 Schematics

Long value MarketArea -attribute bug
Internal handling of very long market area definition fixed
Long marketarea attribute caused electrical products to become invisible in 'Install product->Browser'.
This ws the case when there were also ventilation/piping products in same group.