



MagiCAD for Revit

Release notes for version 2019 UR-2

02/12/2019

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1 New features 2019 UR-2

1.1 Common features

Building Performance Simulation Export/Update

MagiCAD supports an interface to 3rd party Building Performance Simulation tools that provides MEP designer access to information about required heating and cooling loads as well as required air flows for the spaces.

The interface has been implemented to work with following tools

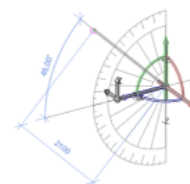
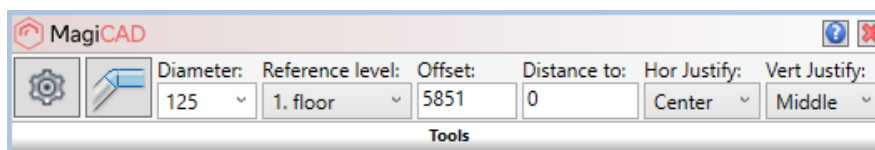
- IDA ICE, developed by Equa Simulations AB
- Riuska, developed by Granlund

Tools in MagiCAD includes

- Building Performance Simulation Export (BPS Export). Tool for preparing and exporting the MEP project to an IFC file which then can be read in to the simulation tool.
- Building Performance Simulation Update (BPS Update). Tool for reading in IFC file produced by the simulation tool and writing the heating and cooling load as well as air flow information to the space parameters in Revit
- IDA ICE Properties and Settings can be used to check more in detail the calculation results done with IDA ICE. The original IDA ICE project should be available and at least additional IDA ICE Viewer installed to the computer.

3D routing MEP design tool, Drawing in 2D and 3D

A drawing tool with user definable options and auxiliary coordinates at the end of the object has been added to the drawing of the ducts, pipes, cable trays and conduits.



Support for vertically rotate the air terminals after the installation

Installation with vertical rotation has been added for the air terminals. Collar length can be also used when rotating the instance.

- The rotation option is available when following conditions are fulfilled:
- The active view is a floor plan or a ceiling plan
- The work plane has been set for the active view

Option to leave Running Index visible after its placement

Option to show the running index after its installation has been added

Symbol manager, possibility to select all and none

"Check all" and "Check none" buttons have been added to Symbol management and Select symbol dialogs below the list boxes where the items with the checkbox exists.

Provision for Builders works openings supports more categories

PBWO can be created for the combination boxes, switchboards, connection boxes, luminaires, main units, subunits, drainage devices, roof drains, fire hydrants, heating radiators, gas devices and gas components.

IFC-export improvements

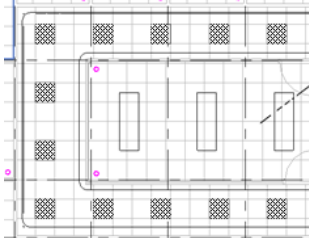
- Switchboard: Now IfcTypeElectricDistributionBoardType is shown in "IFC Property set" dialog.
- IFC2x3/IFC4 enumeration: Updated BProLib which supports more enumerations. I.e. for IfcCableSegmentType, IfcTransformerType, IfcLightFixtureTypeIfcBuildingElementProxy
- Change "IfcType...." to "Ifc...": Renamed IFC type names starting with "IfcType..." to just "Ifc..."

Improvement to the property selection in the Property set manager

- Filtering has been added to the list of the available properties in the "Property Set dialog".
- Every shared parameter from the project is available in "Property Set" and "Report Columns" dialogs even if the shared parameter file is not selected.

Install products at the center of the ceiling grid

New ceiling installation options have been added to the product installation dialog. Now it is possible to select a ceiling element, specify the properties of the ceiling grid, and perform manual or array installation to the plates of the ceiling grid. This function works with air terminals, light fittings, etc.



Removal of unused range option from BOM

An unused range option "All rooms of the current drawing" has been removed from BOM report properties dialog

Changes to the installation of additional parameters

- Added checks for missing user parameters to prevent unnecessary family document loading
- Removed setting of type parameters when existing types were installed.
- Corrected issues with family document closing when adding the user parameters.

2D Symbol support for 3rd party families

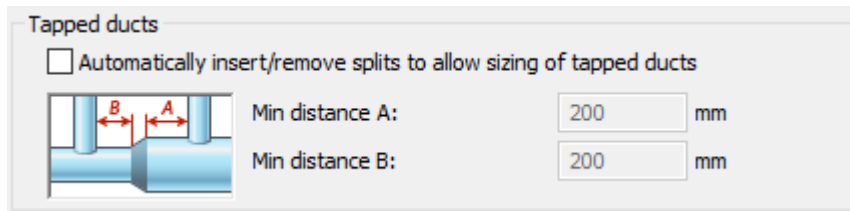
2D symbols are now possible to add to 3rd party families.

Update project button have been added to Dataset properties, which will update the 2D symbol for installed products.

1.2 Heating, piping and ventilation

Option to automatically split and join the ducts and pipes which have taps in sizing

Added possibility to automatically split or join tapped ducts and pipes in MagiCAD sizing.



Supporting the taps in pipe series

Added support for the taps (spuds) to pipe series dialog. MagiCAD piping (heating, cooling and domestic water) calculations now support taps.

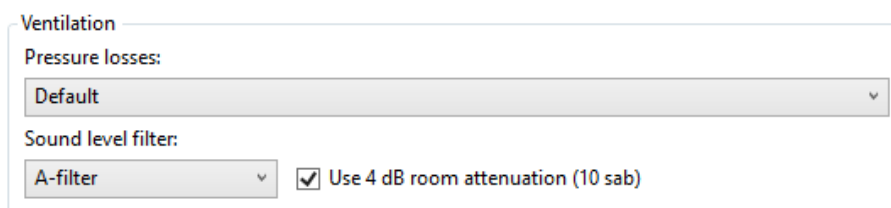
Possibility to perform the sound calculation with different filtering (dB/dBA/dBC/NR)

The sound filters can now be chosen in the MagiCAD settings. The sound calculation sets the sound level value to the parameter according to the used filter (e.g. MC ventilation LpA).

Parameter MC Sound Level By Octave Band is added to the air terminals and mechanical equipments which have an airflow. This parameter is used by the Space Sound calculation and are set without any filter and room attenuation

There is a possibility to choose between 4dB room attenuation (10 sab) and no room attenuation. This affect to the sound level value of the air terminals.

Calculation standards



Pressure drop calculation without balancing

It is now possible to calculate only the pressure losses of the network without balancing. This calculation has also also option to do a simplified calculation without any MagiCAD product data.

Manufacturer Zeta values for the fittings can now be used in the pressure drop calculation of the fittings in the piping systems

Use pressure drop coefficient (zeta) from the product database option has been added to the settings dialogs. If checked, the zeta values from the product database are used if they exists there.

If not checked, or the zeta values are not in the database, the coefficients from the selected standard are used.

Ventilation calculations support inside lining of the ducts

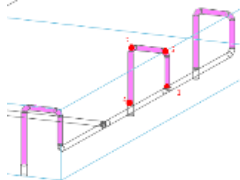
Lining properties (thickness and roughness) from a Revit lining object are now used in the sizing and pressure drop calculation of a lined duct.

Added support for the guide vanes to the pressure drop calculation of the elbows

Added support for guide vanes to the pressure drop calculation of the ventilation elbows. Both the default and Cibse calculation uses Cibse method.

Sprinkler connection tool upgrade for flexible sprinkler pipes

MagiCAD sprinkler connection tool now supports connections made with the flexible sprinkler pipes. The connection tool is made so that its last sections are created with flexible pipes. The "last sections" means the sections that are defined by x and dh fields in the connection dialog. As an example, only the magenta pipes are drawn using the flexible pipes below.



Locked pipe sizes are no more inherited in the sprinkler connection tool

When sprinkler connection was used for connecting the sprinkler head to the locked pipe, the branch pipes became also locked. This created a problem when the sprinkler sizing was used after the sprinkler connection.

The locked size is no more inherited.

Domestic water sizing according to DIN-1988:300, selection of the sizing method removed from the sizing dialog

DIN standard defines the sizing methods which must be used. That is why the selection of the sizing methods are disabled for hot and cold water pipes when DIN standard is used.

Information about the index route is written into the parameter, which enables the possibility to show the index route without recalculating

Now MagiCAD saves the index route information to "MC index route" and "MC index route circulation" parameters. The parameter is set when domestic water, heating/cooling or ventilation balancing or sound calculation is run.

Checkbox for canceling the requirement for entering calculation data when installing the sprinklers

In case the user just wants to draw the sprinkler system without calculating it, the sprinkler can now be installed without entering any data to them.

New categories are supported when exporting/importing spread sheet

The new categories which are supported in the export/import spreadsheet are: sheets, views, schedules and assemblies

It is now possible to select the insulation and the pipe series in the pipe connection tool and preview has been added to the dialog

It is now possible to select the pipe series and insulation in the pipe connection tool. The dialog is changed to modeless dialog enabling the possibility to see the connections in the project immediately. Also a 3D preview window is added to the connection dialog. These features work with radiator, waterpoint and other pipe device connection.

Dataset, use limits from the balancing methods is now off by default

The check box for defining the individual limits for adjustable devices has been ON by default. This has been changed to OFF, which means that there is no need to enter the limits.

IFC-Export: Climate Beam is now exported as IfcTypeCooledBeamType

1.3 Electrical

Re-arranging electrical ribbon

Buttons in electrical ribbon have been re-arranged to make it more user friendly even with lower screen resolutions.

Electrical calculation module upgrade

- Wire type selection have been added to Cable tab to give the user a possibility to select the wire type for circuits when calculation have been done
- Added checks for all important parameters, so if they are not set an error will be shown. (if Estimated load or supply cable length is 0, then error is shown)
- If a panel has sub panels, estimated load can be set to 0
- Discrimination warnings have been hidden from loads
- Dialog start up performance have been updated and a progress bar is shown
- Setting value to Rating parameter in Protective device tab will add it to Revit's rating parameter
- Hardcoded parameter values for cables of load. Now load circuits have big cable to minimize extra voltage drop
- Added new cable parameter: Insulation
- Supply cable length of BTS is linked to the circuit's related shared parameter
- Fixed a bug that column size is increasing when adding values to multiple rows without pressing OK in the middle
- Parameter name changes inside calculation dialog:
 - "Cable Phase Material" -> "BTS Conductor Material"
 - "Voltage Drop" -> "Cumulated 3-phased Voltage Drop"
 - "Max Voltage Drop" -> "Max Voltage Drop in Cable"
 - "Cumulated 3-phased Voltage Drop" -> "Cumulative 3 Phase Voltage Drop"
 - "1-Phased" and "3-Phased" to "1 Phase" and "3 Phase"
 - "Max voltage drop on load" -> "Max voltage drop on switchboard"

MC Cable Number parameter added to circuits and a new related schematic symbols parameter

New parameter "MC Cable Number" and related schematic symbol parameter "AN" added.

Cable number parameter is updated with Update wire data.

New function added to Manage links

Two new buttons have been inserted to Manage links function:

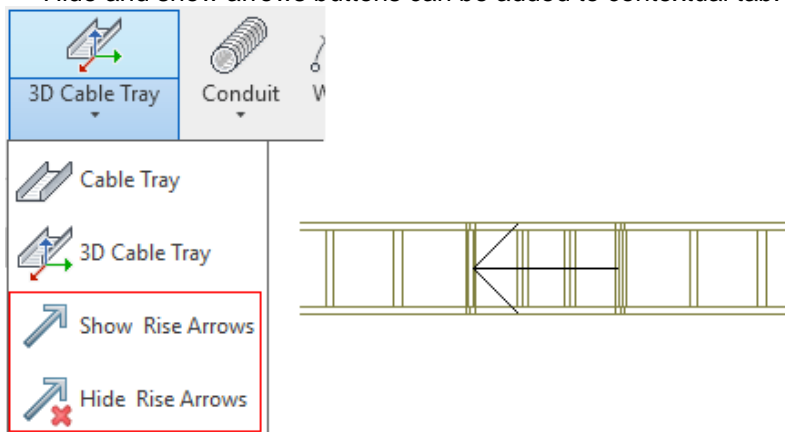
Delete: It can be used to delete circuits from the "project side". When a circuit is deleted, all information from the data blocks, all schematic symbols and links are deleted. Data blocks are left there to be re-used.

Reset: Reset button can only be used if the circuit is not linked to the project. It will remove other data than symbol, circuit number, rating, overload and fault current.

Up- and downward symbols for elevation changes for cable trays

- It is now possible to show/hide rise arrows for slanted cable trays. Arrow will be pointing towards higher endpoint of the slanted tray.
- Arrows are drawn in 45 degrees and minimum of 100mm.

Hide and show arrows buttons can be added to contextual tab.



Selection to use Generic model or Annotation symbol when converting 2D symbols

When making own 2D symbols or converting them, it is possible to select if "size by scale" or "fixed size" is used when a symbol is inserted in to a product.

Updating symbol with Update drawing

Added a checkbox to Update drawing "Symbols from dataset". It will update changed 2D symbols from products in dataset into products in the project.

New rating values for circuits

New values have been added to Rating dropdown menu in set circuit properties and Power circuit types dialog:

1600 A, 2000 A, 2500 A, 3200 A, 4000 A, 5000 A, 6300 A

1.4 Schematics

The amount of the characters is increased when defining the group name

The maximum length for schematic group name has been increased from 30 to 90 Arial Regular 10/14

2 Resolved issues

2.1 Common issues

Automatic Builderswork provisions gave unexpected results in MagiCAD 2019 UR-1

BWO internal settings have been modified to handle the situation described in MFS-4902 (a very long duct, connected to another duct via a fitting, going a long distance without changes in width/height/diameter)

Large square openings were created while it should have produced small round openings.

"Ignore circular openings smaller than" -option works correctly

BWO's "Ignore circular openings smaller than" option did not work correctly in 2019 or 2019 UR-1 releases

Creating automatic provisions smaller than the given minimum value were created.

This error has been corrected.

Unexpeted error at installation if placing two instances to same the place

Exception occurred when a product was installed twice at the same place. In such cases Revit shows an error dialog and pressing the cancel button caused the exception.

Wrong symbol size when installing flow dampers

When the flow dampers are installed, the symbol gets the correct size. When adding new sizes they all get the same symbol size as the first one.

Corrected,

Schematic symbol creation allowed too many characters compared to database

It was possible to create a symbol whose name had more characters than was accepted by MagiCAD database.

If, compared to an existing symbol, the new name had a difference only in the last two characters, the existing symbol was overwritten and the existing symbol was replaced by the new symbol.

This is now corrected.

Unexpected error when ESC was pressed during "Vertical crossing" function

When the "Alignment" dialog is shown and the user presses ESC, an unexpected error dialog will pop up.

This is now corrected.

Worksets: "Change properties" set the insulation according to the current workset, not according to the host element

MagiCAD has been changed to work in the same way as Revit. When using Revit's insulation function, the insulation is related to the host element.

Workset has been changed to be the same for the insulation as the host element has, when insulation is added to a segment with "Change properties" function.

Corrections to IFC

IFC2x3/IFC4 export enumeration corrections

- Spaces were not exported correctly in IFC 4
- radiators are exported correctly in IFC2x3.
- Removed IfcSubStationType and IfcZoneType from list of available IFC types, which actually are not real IFC types.
- IfcElectricApplianceType is now shown correctly.

IFC export result copy to clipboard causes unexpected error in Revit 2019 with some 3rd party products

IFC export results' copy to clipboard functionality has been modified to prevent conflicts with 3rd party products that monitor changes in the clipboard contents

Components got wrong location on IFC-export

Insulation objects could have incorrect positions in IFC export, which resulted in conflicts when comparing models.

2.2 Heating, piping and ventilation

Domestic water balancing was incorrect with DIN 1988:300 standard

The balancing of the domestic water was incorrect when the DIN 1988 standard was used. This was because the calculation of the water flow is done also in the balancing. The calculation of the flow requires the same input values what are given in the sizing dialog. In the previous versios they were not given and the calculation was done as a building type "School, office". No the input values are given correctly also in the balancing.

BWO size ranges did not work with the drainage pipes

BWO supports now size ranges also with the drainage pipes.

Wrong length of the ducts in the Instance code after the production model updater

The length of the ducts are written to parameter MC ProducCode_Instance after the production model updater and sizing. After the length of the duct was updated, MagiCAD updated the objects (fittings and duct components) to the product specific sizes. This means that lenght of the object can change, which in turn changed the length of the ducts connected to the objects.

Now the update is done in the correct order and the length of the duct is correct.

MagiCAD Drawing loses focus if the mouse is moved on the toolbar

When ducts are being drawn with MagiCAD's draw function and moving the mouse on the toolbar, the drawing will loses focus and is stopped.

Corrected.

Sprinkler connection creates additional pipes

When the sprinkler connection was made with the antenna connection and there were sprinkler on both sides of the selected pipe, additional sprinkler pipes were created.

The problem where additional sprinkler pipes were created is corrected.

DH in branch does not work in all situations

The given dh value was not used when the connection was made like shown in the left picture.
Now given dh is used correctly like in the picture on the right.

Pipe sizing doesn't always change fitting connector size

When the pipe sizing is done and there is fitting whose neighbour part is a reducer which is removed from the network during the sizing, the sizing did not change the fitting size correctly.
This works correctly now.

Minor correction on the names of the standards of sprinkler calculation

Corrected the standard names
Singaporean is CP52 : 2004 instead of CP52 : 2006
Malesian is AS2118 instead of AS 2008

Drawing a flexible duct causes exception when drawn in 3D view

This is corrected

Floor Heating Point is now available in Merge parameter method**2.3 Electrical****Set Properties empties values from schematic symbol attributes that are not found from the "data block"**

When adding a symbol in switchboard schematic which contains parameter information, that information should no longer be cleared even though those parameters are not found from the data block.

MC Circuit Number not cleared after removing devices from circuit

Update circuit number and ID function resets MC Circuit Number, MC Circuit ID and MC Panel Code parameter values if the element doesn't belong to any circuit.

Panels/switchboards should not summarize circuit numbers IDs etc

Only the identifiers from supplying circuit are be added to panels parameters when using "Update circuit number and ID".

Change Properties does not change system code and name for tray or conduit fittings

Now system code and name are changed also for tray and conduit fittings loaded from the dataset.