MagiCAD for Revit

Release notes for version 2020 UR-2

18/02/2020

MagiCAD

MagiCAD

Content

1   New features 2020 UR-2

1.1   Common features

Selecting 2D symbol for 3rd party rfas should not be mandatory
It is now possible to save 3rd party RFA products to the dataset without selecting a 2D symbol

Corrected also the following two issues
- If a product did not have 2D symbol, symbol updating to project adds the related parameters to 2D symbols
- The workplane based 3rd party RFAs are set to level based if a 2D symbol has been added to RFA

Provisions for builderswork openings support for fabrication parts
The provision for builderswork tool now support creation of provsions based on Fabrication parts as well as Curtain walls. There are new selections availble in the category section dialog.
From the 2020-U2 release also fittings inside walls, and segments or fittings partialy inside a wall supported.

Show/Hide Running Index
Added a range selection to Show/Hide Running Index. The available ranges are: Selected objects, Select objects and Current view.
Corrected an error where the existing text note in another view prevented showing of running index.

Alternative path for 3rd party families
Added a possibility to define a "Secondary family library folder" in the dataset settings. The existing family library folder is renamed as "Primary family library folder".
The "Primary family library folder" must always be given. The secondary location can be empty.
All the files are copied to the primary family folder when they are added to the dataset. When a family is loaded to the project, it is primarily searched from the primary folder.
If it is not found there, then the secondary is used. If a family file is not found in neither folder, a warning message is shown containing the primary family folder path.

Range selection for "Production Model Updater" has been added
Added support for the pre-selected and selected object range for the production model updater.
Contextual tab support added for the production model updater when the ducts or fittings have been pre-selected.
If the selected elements contain open connectors, they are collected to the BCF report. This also affects the network and branch range.
The product selection report no more contains the system filtering and the general results.

It is now possible to export IFC as a zip zile
Now it is possible to export and import using ifczip.

IFC file selection field wider
Added tooltip for file path name field in IFC Export dialog

IfcUnitaryEquipmentType to IfcExportAs list
Added support for IfcUnitaryEquipmentType

National code, description and volume from insulation series can now be exported to IFC

Common template updates anf changes to MagiCAD default IFC Property Sets
Default IFC property set configurations included in the installation package are being updated. See the below list of the changes:
Instance parameters MC Object Variable 1...4 have been added to all the property sets
Product code property in the property sets MagiCAD Pset Airterminal and MagiCAD Pset ChilledBeam reads the value correctly only from MC Product Code parameter.
Product code property has been added to the following property sets: MagiCAD Pset_Valve, MagiCAD Pset_FireDamper, MagiCAD Pset_FlowDamper, - - MagiCAD Pset_PipeComponent, MagiCAD Pset_PipeDevice, MagiCAD Pset_Radiator, MagiCAD Pset_DrainageDevices, MagiCAD Pset_Sprinkler
MagiCAD property set has been added to the following product categories: Distribution boxes, Manifolds, Pumps, Heating & Cooling plants, Mixing units, Fan Coil Units, Manhole & Roof drains, Gas Devices, Gas Components, Drainage Components
For improved support of the IFC standard all the MagiCAD properties with text values are now defined to use IFC property type "Text" instead of "Label".

1.2   Heating, piping and ventilation

Added a possibility to set the volume information for the hydronic connection nodes
Added a possibility to set the volume for the hydronic connection nodes and a support for the volume has been added to the heating/cooling calculation.

Air density and dynamic viscosity can be given for the ventilation systems.
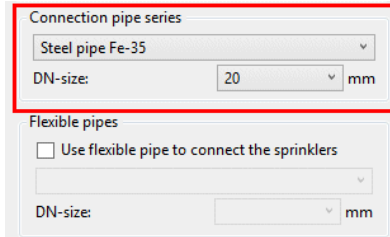The air density and dynamic viscosity can be given for the ventilation systems.

Add multi language support for fittings
The market area is set to the project when the project is opened or when it is changed. This enables MagiCAD to show the product code according to localized product code if it has been defined in the database. If the localized product code is not found then a general product code is used as earlier. This change doesn't apply the size dependent product code of the fittings, radiators and some other components. However the product code of the fitting family which is shown in the dataset is supported.

Pipe series can now be selected in the sprinkler connection

When you choose the pipe series, all the conenction pipes are created with the selected pipe series. However if you choose "Use flexible pipes to connect the sprinklers", the last section to the sprinkler heads is created with the flexible pipes.

It is now possible to select the pipe series and the connection size in the dialog.

The selected pipe series and size is used in all the connecting pipes except if flexible pipes has been selected to connect the sprinkler heads.

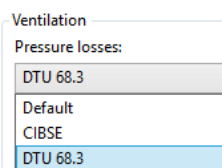**Sprinkler calculation result sorting**

The list of the equivalent lengths is now sorted. Earlier the order was random.

Sorting is done first by the product type then by the size and finally by the branch size.

Type	User code	Product	Size [mm]		Leqv [m]
Bend 90° welded		MAGI-FE-B1-25	25		0.36
Bend 90° welded		MAGI-FE-B1-32	32		0.49
Bend 90° welded		MAGI-FE-B1-40	40		0.56
Bend 90° welded		MAGI-FE-B1-50	50		0.69
Bend 90° welded		MAGI-FE-B1-65	65		0.88
Bend 90° welded		MAGI-FE-B1-80	80		1.10
Bend 90° welded		MAGI-FE-B1-150	150		2.00
T-Branch threaded		MAGI-FE-T1-25-25	25/	25	1.50
T-Branch threaded		MAGI-FE-T1-32-32	32/	25	1.50
T-Branch threaded		MAGI-FE-T1-80-80	80/	25	1.50
			80/	32	2.10
			80/	80	4.80
T-Branch threaded		MAGI-FE-T1-150-150	150/	150	8.60
Butterfly valve	SV01	D6150N	150		0.50

Support for French calculation standard DTU 68.3 for ventilation

Full support for French NF DTU 68.3 standard has been added for pressure drop calculation in ventilation.

Support for 3-Port Valve

The new product class can be used after sizing in balancing. There is a pressure loss curve which is given for main pipe where valve is installed.

Third connection is manually sized and there is no flow, so basically this class is done so that network can be drawn and balanced correctly.

Support for more sprinkler area patterns and the operation area is visible when installing the product

A rectangular sprinkler operation area has been added.

It is now possible to see the preview of the operation area when the sprinkler is installed. The operation area which has the default size from the dataset is shown at the mouse pointer.

Corrected an error where the sector operation area flipped its direction for the upside/downside sprinkler instances.

Add Tee, Tap and X-branch selection to the floating toolbar

Tee and cross have been added to the floating toolbar of drawing pipes and ducts,
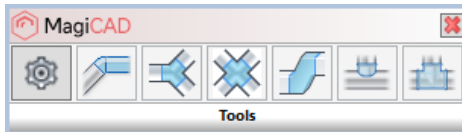
1.3 Electrical

**Calculate longest branch lengths of circuits**

Now it is possible to calculate longest branch lengths of circuits. Calculations are done via wires to the furthest elements of the selected circuits and the values are updated to the corresponding circuits. Supply cable lengths are included in the values. It is also possible to set additional lenghts to circuits which are finally summarized to the calculated values.

| MC Additional Branch Length	1500.0 mm
MC Longest Branch Length	14791.2 mm

Enhancement to data updates of electrical elements

All data updates regarding cable packets, wires and circuits have been collected into one dialog where you select which of them will be updated.
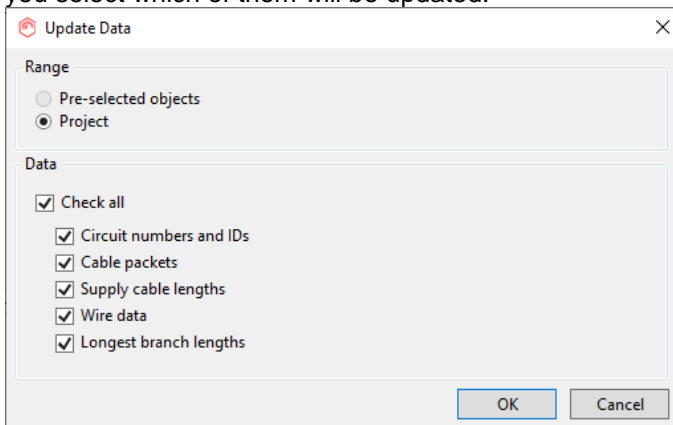
Reversed link button in Manage Circuits

Circuits can now be linked in two directions. They can either be linked from schematic to project like before, where information is mainly copied from the schematic to the project, or now also from project to schematic, where information is mainly copied from the project to the schematic. This gives users the possibility to select the workflow which is more natural to them.
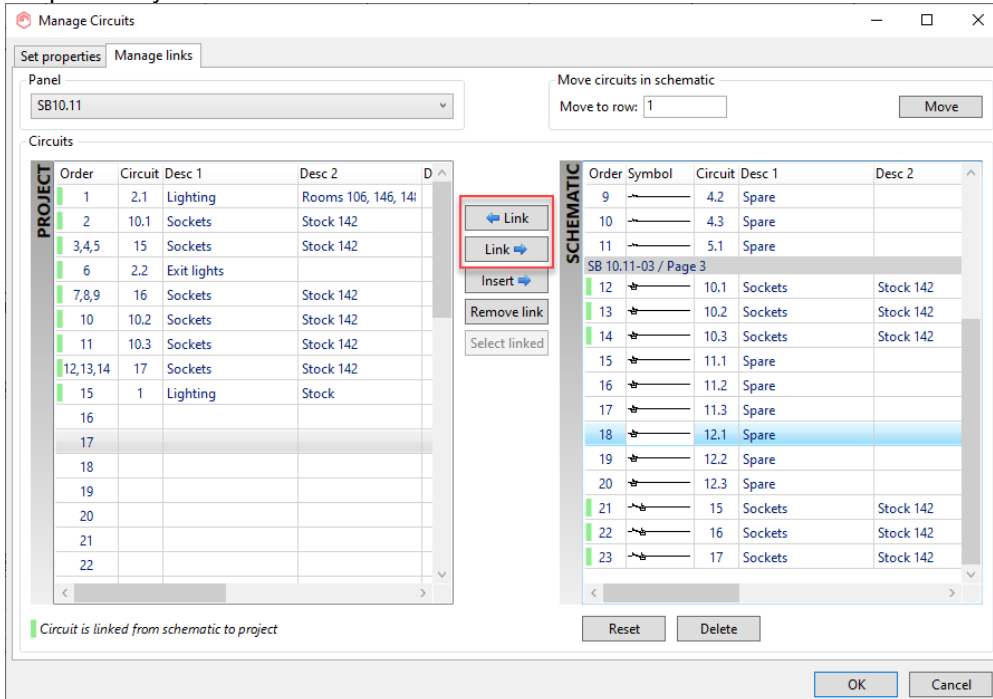
Electrical calculation including circuits

With this new calculation function it is possible to calculate a whole electrical network including all circuits. It uses real loads from the devices belonging to circuits and the longest branch lengths values of circuits.

Loads can be passive loads or socket loads, and they are automatically assigned based on the first devices in the circuits, but can also be manually selected. The difference between the load types is the RCD current that has different values for different load types.

The used fuse technology can be defined from the Settings.

The old calculation function has been renamed to "Distribution Calculations" and works as before.
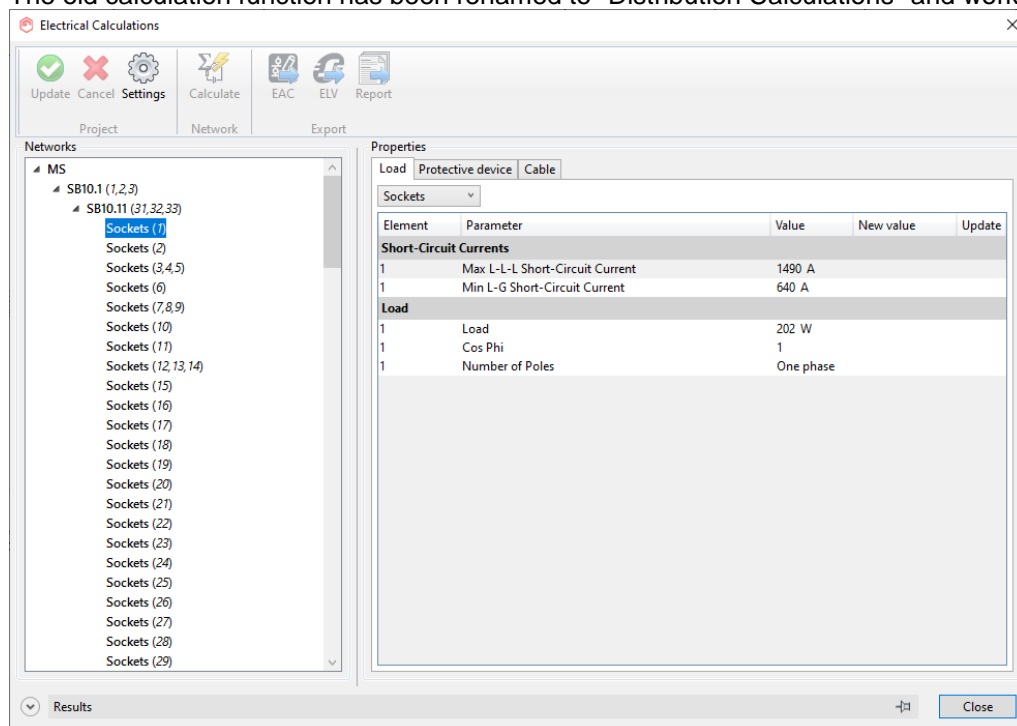
Notifications when conduits connect to cable trays

User gets a notification when drawing conduits with MagiCAD's conduit drawing function and the conduit connects to a cable tray.

User gets a notification if a conduit is connected to a cable tray while running the "Cable packet" option of the new Update Element Data function.

Manual supply cables

Now it is possible to define a wire to act as a supply cable with an instance specific checkbox. When doing so, no cable packet connection will be needed. That wire must have one open end to work. When updating wire data, the wire type is taken from the circuit to which the device in the other end belongs, and it is updated to that supply cable.

A wire with the "MC Act as Supply Cable" checkbox checked will also define the first device of the circuit. The supply cable length of the circuit is orthogonally calculated from that device to the supplying panel, and also the longest branch lenght calculation starts from the same device.

Move/Copy Branch for cable trays and conduits

A feature for moving and copying cable tray or conduit branches is now added to the electrical module. When moving or copying e.g. a cable tray branch to another cable tray, the moved/copied branch will be connected to the tray. A t-branch will be generated to the connection point.

A moved/copied branch can be rotated and/or mirrored if user whishes to do so. The placing can also be made with "accurate placement" on, which allows users to give specific lengths for the transition. With free placement, it is possible to move/copy your branch to an empty place in the model.
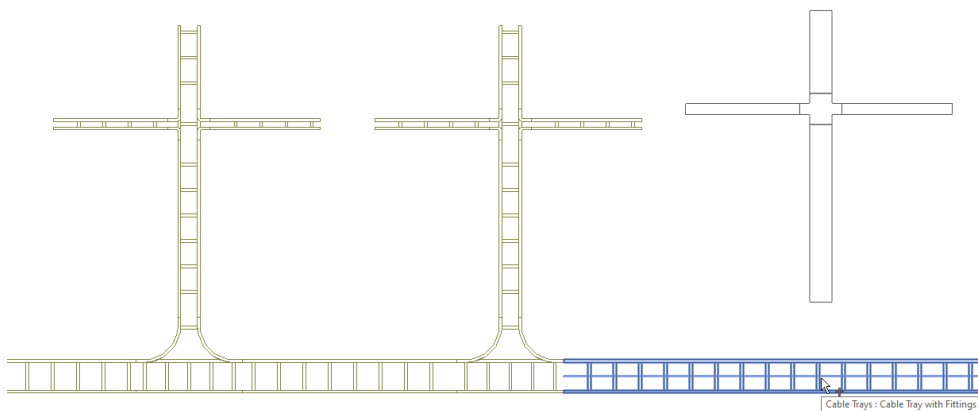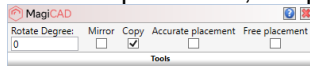
1.4 Schematics

Tool to find broken links between the schematic and the model

When the user deletes a symbol or an object in the model with a native Revit command, broken links might appear. To find those possible broken liks a method has been added which runs through all links and create a list of the broken ones.

2 Resolved issues

2.1 Common issues

BCF Manager not showing components
Fixed component list updating when new view point is added and component list is visible.

Adding new symbol to legend will overwrite the first symbol of the legend
This fixes the issue where first existing legend component is overwritten with the last legend component of appended table to same legend view.

IFC append makes faulty IFC files in certain cases
This problem is now solved.

2.2 Heating, piping and ventilation

Can't add nodes to pipes from heat exchanger
Now connection the nodes for a hydronic system can be installed where the connections are 10 meters apart from each other.
Previously only 2 meter difference was supported.

Duct taps revert to equal tee's when using the device connection tool after checking the flexible duct check box
Corrected the error in the junction type in the standard and the device connections when some other settings was changed than junction type or angle list.

Smart move: network where flex duct/pipe change direction does't work properly
Added better support for the flexible ducts in the smart move command. This was not handled correctly in every case and in the worst case this could break the whole network.
This could have happened in cases where if the last part of the connection to the air terminal had been done with a flexible duct and the rest with a rigid duct and the offset of a rigid duct is changed.

Identically named duct series are handled incorrectly in MCREV
It is now prevented to use a duct or a pipe series updater if there is a duct or a pipe type with same name. Also the flexiple curves cannot contain the same name than the rigid curves.
An error message is shown to the user and is requested to change the curve's type name before a duct or a pipe series updater can be used.

"Sprinkler Connection" OK-button is greyed out when first attempting to approve the connection
The OK button is no longer grayed when the dialog is opened.

Tap to Tee re-implementation
- Some project doesn't contain any size criterion for duct fittings and some contains size criterion where min and max values are very big. Due to that size criterion check is done for the pipes.
- Corrected the error which caused this function to fail. It occurred in case a tee which is connected connected to reducer is changed to tap and then switched back.
- Allowed to create 45 degree tee if a tap support that.
- Tap to tee logic has been changed. Earlier the command stopped at the for first error although many tee could have been created without problems.
- If there is not enough space then the related parts are disconnected and those are added to BCF report.

Updating floor heating loop length doesn't work with flex pipes
Flexible pipe length has been corrected for the floor heating loop length calculation.

Unexpexted error when sizing the network
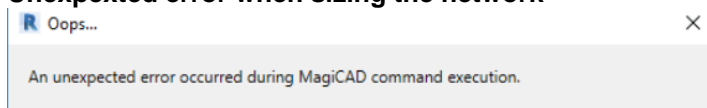
Joint part randomly caused an error to the sizing. This problem has been corrected.

Branch type selection is missing from the pipe series
It is not possible to select the branch type in the pipe serie creation. It means that if the user has a branch type tap in the routing preferences it is always replaced with a tee in the pipe series creation. Added possibility to select branch type for pipes when creating pipe series.

2.3 Electrical

Unexpected error when running "Update Circuit Number and ID" for pre-selected tags
Unexpected error should not come anymore when running Update Circuit Number and ID for pre-selected tags or to non-electrical object.

Cable channel length is wrong in IFC
Now cable channel length is correct in IFC Export.

Create Similar adds new type under switchboard
Switchboard installation and create similar always uses the first type from the family. If existing projects contain switchboard families with several types, first type is always used.
When the family is created for the first time, type name is:
If "Product" field is filled, the product code is used as type name
If "product" field is empty, family name is used as type name

Connection node creation between electrical and mechanical not working when node needs are below the lowest level
When a host connector/element is located below all levels of the current project, the owest level is used for the created nodes.

Wire drawing not working correctly with edge adjustment
When drawing wires to symbols with "Adjust wire to the edge of the symbol" on, wires were adjusted wrong if 2D and 3D symbols were in different locations.
Now wire is correctly adjusted to the 2D symbol.

Symbol Organiser doesn't work right in other scales than 1:50
Now Symbol Organiser works properly in every scale