Systemair Configurator MagiCAD plugin for Revit

User guide

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MagiCAD

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1 General

1.1 About This Document

This document contains instructions on using *Systemair Configurator MagiCAD plugin for Revit*. The plugin allows inserting air handling units and axial fans from Systemair Configurator to MagiCAD for Revit and Revit.

1.2 Installing the Software

1.2.1 Required Third-party Software

Systemair Configurator MagiCAD plugin works with the following MagiCAD for Revit and Revit versions:

- MagiCAD for Revit 2023 and Revit 2021 - 2023
- MagiCAD for Revit 2024 and Revit 2021 - 2024
- Revit 2021 - 2024

1.2.2 Installation

1. Download setup file from https://portal.magicad.com/download/ProductSearch?searchStr=Systemair&categoryId=3

2. Install Systemair MagiCAD plugin for Revit.

Administrator privileges are recommended for the installation.

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2 Functions for Air Handling Units

2.1 MagiCAD Plugin User Interface

2.1.1 Main Functions

The plugin's main functions for air handling units can be found in *Add-Ins* menu in Revit.

Plugin contains the following functions:

Opens the Systemair Configurator web application from where the air handling units can be created and configured. The user can choose products to be inserted to Revit.

Opens a file dialog from where the user can choose a .mah file and import the air handling unit to Revit. The same feature also works for air handling units from SystemairCAD software.

Runs a validation on the Systemair Configurator air handling unit. The plugin checks if the user needs to run the update function. The same feature also works for air handling units from SystemairCAD software.

Updates the selected Systemair Configurator air handling unit by opening Systemair Configurator web application. The selected air handling unit will be replaced/updated to the drawing. The same feature also works for air handling units from SystemairCAD software.

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2.2 Insert Topvex AHU

Follow these steps for Inserting Systemair Topvex air handling unit into MagiCAD/Revit:

1. Click *Insert Systemair Topvex AHU* button from Add-Ins ribbon panel in Revit.

2. The plugin asks to point ductworks for getting airflows, pressure drops and MagiCAD systems. This phase can be skipped by pressing *Finish* button without selecting any ducts.

3. Systemair Configurator web application is started. If the user has not already logged in to the Systemair Configurator, the user name and password are requested from the user.

Note. If you do not have a user account, you can register for one under the register tab. After registration a confirmation mail is sent to the supplied email address. The confirmation will open in the web browser. At this point, be careful not to start working in your web browser. After the confirmation close it.

4. Once the user has logged in, the project page is displayed. On this page the user can create and modify Projects that then contain air handling units. Projects have a wide variety of defaults that can be set according to the project need.

5. Adding a unit to the project opens the dialog from where the user can search for a suitable unit. If ducts were selected in step 2 the data read from the ducts will be prefilled in corresponding fields in the Systemair Configurator.

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A unit can be created either by searching by name (top left corner)

Or by doing a search using airflow and pressure drop data. The search button is located in the bottom left corner.

6. After a suitable unit has been found the user supplies the unit data. Once the unit is ready press the “Result” button in the ribbon up left to start the calculations.

7. If the air handling unit calculations are successful, the “Export to CAD” button is displayed in the right top corner. Pressing the button will close the browser window and start import into Revit.

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8. When the Systemair Configurator is closed by pressing the *Export to CAD* button, the Revit installation dialog is displayed. Geometry of the product is displayed on the top right side. The product can be zoomed with the mouse wheel.

   Before installing the product to the drawing, the user needs to select MagiCAD system (if MagiCAD drawing is available) for each duct connection (for each product installed to the drawing). Also, installation height of the product can be defined here.

9. Once MagiCAD systems have been defined for all products, the installation can be started by clicking the *Insert* button. Please note that it is possible to uncheck insert checkbox in case you want to exclude some of the units from the insert operation.

   Note! In the case of an air handling unit with vertical connections **do not** snap the duct components to the air handling unit! This will result in the air handling unit and the duct component are merged together and it will not be possible to draw a duct between them. The duct component installation height will also affect the air handling position.

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In these cases, the duct component must be inserted to the side of the air handling unit and moved into place after the insert operation.

10. The products can be placed to the drawing one by one by dragging them to the wanted position in the drawing.

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2.3 Import Topvex AHU

Follow these steps for importing a Systemair Topvex air handling unit into MagiCAD/Revit:

1. Click *Import Systemair Topvex AHU* button from Add-Ins ribbon panel in Revit.

2. Select the .mah file with the file dialog.

3. After clicking the *Open* button, the air handling unit in the .mah file is inserted into Revit using the same workflow described in the Insert Topvex AHU chapter step 8.

2.4 Validate AHU

Follow these instructions to validate a Systemair air handling unit.

1. Click *Validate AHU* button from Add-Ins ribbon panel in Revit.

2. Select the air handling unit from the drawing that should be validated.

3. The plugin shows if validating is successfully passed or if the air handling unit needs to be updated. If updating is needed, the user can continue to update or cancel the validation. Validation checks if selected air handling unit still meets the requirements of the ductwork (air flow and pressure drop). There is 5% tolerance before the warning message is displayed for airflow and 10% tolerance for pressure drop.

2.5 Update AHU

Please follow these steps to update Systemair Configurator air handling unit into MagiCAD drawing:

1. Click *Update AHU* button from Add-Ins ribbon panel in Revit.

2. Select the air handling unit from the drawing which will be updated.

3. The selected air handling unit is opened from the Systemair Configurator. The plugin automatically passes the updated airflow and pressure drop requirements from the duct connections in the drawing to the Systemair Configurator.

The user can change the predefined air handling unit type or edit unit properties.

4. When the active air handing unit is configured and recalculated without errors, the user can click *Export to CAD* button.

   Please note that the selected unit in the Configurator must be the same (same ID) than the selected unit from the MagiCAD or Revit.

5. The plugin will perform compere operation in order to validate whether the original air handling unit has been changed to a different kind of the air handling unit during the update operation in Systemair Configurator.

If the air handling unit is still exactly the same, only technical data (such as sound data) is updated to the existing air handling unit in the drawing. The following message will be displayed:

In case the air handling unit has been changed somehow (or switched to a completely another one), the plugin performs replace operation. In the replace operation the plugin deletes the original air handling unit from the drawing and places a new unit to the same position with the same MagiCAD system selections. The following dialog is displayed to user:

The dialog is purely informative, no actions are required. If the new duct components are added during update, those will be inserted to the drawing at this point. The user can see from the dialog which MagiCAD systems are automatically selected for the new air handling unit. The user can exit the dialog by clicking OK button.

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3 Functions for Axial Fans

3.1 MagiCAD Plugin User Interface

3.1.1 Main Functions

The plugin main functions for axial fans can be found in *Add-Ins* menu from Revit.

The plugin contains following functions for axial fans:

Opens the Systemair Configurator web application where the axial fans can be selected and configured. The user can choose products to be inserted into MagiCAD for Revit or Revit. The axial fan can also contain accessories.

Updates the selected axial fan by opening Systemair Configurator web application. The selected axial fan will be replaced/updated to MagiCAD for Revit or Revit. Updating the axial fan works if the user is logged in to Systemair Configurator when the axial fan will be inserted into MagiCAD for Revit or Revit.

Opens a file dialog from where the user can choose a .mah file and import the axial fan into the MagiCAD for Revit or Revit. This feature is typically used when two people are involved in the process. One person uses the Systemair Configurator web application, and the other uses the plugin in MagiCAD for Revit or Revit software.

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3.2 Insert Axial Fan

Please follow these steps for inserting axial fan from Systemair Configurator into MagiCAD for Revit or Revit:

1. Click the *Insert Axial Fan* button from the plugin ribbon panel in Revit.

2. The plugin asks to select duct from Revit. The plugin reads airflow, pressure drop and connection size from the selected duct. The pressure drop will be read if MagiCAD for Revit is installed. The duct data will be used to select a suitable axial fan in Systemair Configurator at a later stage. This phase can be skipped by pressing the *Esc* button.

3. Systemair Configurator web application will be started. If the user has not already logged in to the Systemair Configurator, the username and password are requested from the user.

4. Once the user has logged in, the project page is displayed. On this page, the user can create and modify projects which contain axial fans.

5. Once an axial fan is added to a project in Systemair Configurator by clicking *Add product* button, the page will be opened where a suitable axial fan can be searched.

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The duct data will be filled to this page if the duct has been selected earlier from the CAD software.

6. Once the axial fan has been selected, the user continues to the next page to configure the axial fan. For example, accessories can be selected to the axial fan, and the details of the axial fan can be reviewed.

7. The axial fan can be added to MagiCAD for Revit or Revit by clicking *Export to CAD* button from Systemair Configurator. Clicking the button, the plugin window will be closed, and the axial fan will be added to CAD software.

3.2.1 Adding Axial Fan to MagiCAD for Revit

Please continue reading these instructions if the axial fan needs to be added to MagiCAD for Revit.

If the platform is MagiCAD for Revit, the plugin opens *Dataset Properties* dialog from MagiCAD. In this dialog, for example, a 2D symbol can be selected for the fan.

The next, *Product Selection* dialog will be opened, and the axial fan can be inserted to Revit by using *Select* button.

The axial fan can be added to the duct or empty place when MagiCAD for Revit is used.

The axial fan in Revit:

The plugin will store technical data (flow, pressure drop, additional parameters, electrical connection etc.) to the axial fan. Additional parameters of the axial fan are shown in Properties section in Revit:

Other	
AMCA certification	☑
ERP	☑
FEI	1.130000
SFP	0.680000
SYS Accessories	8356_EV-AR/AXC 500 flex.conn. 70°C_1...
SYS Air flow	483.00 L/s
SYS External pressure	187.000000 Pa
SYS Item number	C500AXCP
SYS Total sound power level (A-weighted) - Cas...	85 db(A)
SYS Total sound power level (A-weighted) - Dis...	79 db(A)
SYS Total sound power level (A-weighted) - Inle...	82 db(A)
SYS Weight	56.000 kg
Total Efficiency	34.620000

Once the axial fan has been successfully added to MagiCAD for Revit from Systemair Configurator web application via the plugin, the axial fan can be used with MagiCAD functionalities similarly than other duct fans in MagiCAD.

The plugin will store technical data to the axial fan instance. Please note that if the axial fan is added to the Revit later from MagiCAD dataset (project), the axial fan instance does not contain the additional parameters and Systemair Configurator project related information cannot be stored to the instance.

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3.2.2 Adding Axial Fan to Revit

Please continue reading these instructions if the axial fan needs to be added to Revit without MagiCAD.

Once the axial fan has been selected from the Systemair Configurator web application, the plugin creates the family of the axial fan directly to Revit, and the user selects location for the axial fan instance.

The axial fan in top view in Revit:

The plugin adds also a 2D symbol for the fan which is visible in Revit's Coarse view:

The axial fan can be added to the duct or empty place when Revit is used.

The plugin will store technical data (flow, pressure drop, additional parameters, electrical connection etc.) to the axial fan. Additional parameters of the axial fan are shown in Properties section in Revit:

Other	
AMCA certification	☑
ERP	☑
FEI	1.130000
SFP	0.680000
SYS Accessories	8356_EV-AR/AXC 500 flex.conn. 70°C_1...
SYS Air flow	483.00 L/s
SYS External pressure	187.000000 Pa
SYS Item number	C500AXCP
SYS Total sound power level (A-weighted) - Cas...	85 db(A)
SYS Total sound power level (A-weighted) - Dis...	79 db(A)
SYS Total sound power level (A-weighted) - Inle...	82 db(A)
SYS Weight	56.000 kg
Total Efficiency	34.620000

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3.3 Update Axial Fan

Please follow steps below to update Systemair axial fan into MagiCAD for Revit or Revit.

3.3.1 Updating Axial Fan in MagiCAD for Revit

If MagiCAD for Revit is installed, use these steps to update the axial fan via the plugin:

1. The plugin asks the user to select the axial fan instance from Revit.

   Once the axial fan is selected, the plugin reads information from the selected axial fan and the duct where the fan is connected. The plugin reads airflow, pressure drop and connection size from the duct.

   If the axial fan is not connected to the duct, the plugin reads data only from the selected fan.

2. The data will be transferred to Systemair Configurator web application and the selected axial fan will be opened in Systemair Configurator.

   If the axial fan is removed from the Systemair Configurator, the Configurator opens the page where the user can configure a new fan.

   The features and accessories of the axial fan can now be modified in the Configurator.

3. Once the axial fan is configured, the fan can be added to MagiCAD for Revit by clicking *Export to CAD* button from Systemair Configurator.

   In this step, the plugin removes the existing axial fan instance from Revit and the new axial fan will be inserted to MagiCAD for Revit.

   The user decides a location for the axial fan in Revit.

   The plugin will store technical data to the axial fan instance. Please note that if the axial fan is added to the Revit later from MagiCAD dataset (project), the axial fan instance does not contain the additional parameters and Systemair Configurator project related information cannot be stored to the instance.

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3.3.2 Updating Axial Fan in Revit

If the plugin is used in Revit without MagiCAD, use these steps to update the axial fan via the plugin:

1. The plugin asks the user to select the axial fan from Revit.

   Once the axial fan is selected, the plugin reads information from the selected axial fan. The plugin reads airflow and connection size from the duct.

   If the axial fan is not connected to the duct, the plugin reads data only from the selected fan.

2. The data will be transferred to Systemair Configurator web application and the selected axial fan will be opened in Systemair Configurator.

   If the axial fan is removed from the Systemair Configurator, the Configurator opens the page where the user can configure a new fan.

   The features and accessories of the axial fan can now be modified in the Configurator.

3. Once the axial fan is configured, the fan can be added to Revit by clicking *Export to CAD* button from Systemair Configurator.

   In this step, the plugin removes the existing axial fan instance from Revit and the new axial fan will be inserted to Revit.

   The user decides the location for the axial fan in Revit view.

   The plugin will store technical data to the axial fan in Revit.

3.4 Import Axial Fan

Please follow these steps for importing axial fan from the file (*.mah) to MagiCAD for Revit or Revit:

1. Click the *Import Axial Fan* button from the plugin ribbon panel in Revit.

2. Select the .mah file with the file dialog.

3. After clicking the *Open* button, the axial fan will be added into the MagiCAD for Revit or Revit. The plugin adds the axial fan to MagiCAD for Revit and Revit in the same way how the *Insert Axial Fan* feature.

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