Systemair MagiCAD plugin for Revit

User guide

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MagiCAD

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Chapter 1. General

About this document

This document contains instruction on using Systemair MagiCAD plugin for Revit. The plugin allows inserting Systemair air handling units into Revit.

Installing the software

Required third-party software

Revit
- Revit 2021 - 2024

MagiCAD (optional)
- MagiCAD for Revit 2023 with Revit 2021 - 2023
- MagiCAD for Revit 2024 with Revit 2021 - 2024

SystemairCAD software (optional)
- Version C2016-04.07.E7 or newer

  Download from https://www.systemair.com/Global/support/installable-product-selection-tools/Software-tools/SystemairCAD/

Installation

1. Ensure that you have required Revit version installed on your computer.
2. Install Systemair Revit plugin. Installation package can be downloaded from https://portal.magicad.com/download/ProductSearch?searchStr=Systemair&categoryId=3

   The 64-bit version of the program is installed by running the msi-file.

   Administrator privileges are recommended for installation.

Starting the program

After running the installation, Systemair panel appears to Revit Add-Ins -ribbon tab and user can start using the Systemair Revit plugin functionalities.

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Chapter 2. Functions

Systemair MagiCAD plugin user interface

Main functions

The plugin contains the following functions:

Insert Geniox AHU

- Opens the SystemairCAD where air handling units can be created and configured. User can choose products to be inserted to the Revit.

Import AHU

- Opens the File Open dialog where user can select MagiCAD AHU import file. These MagiCAD AHU import files can be created by SystemairCAD's export functionality.

Validate AHU

- Validates Systemair's air handling unit. Checks if air flows / pressures drops are still valid for the dimensioning.

Update AHU

- Updates selected Systemair's air handling unit by opening SystemairCAD. The selected air handling unit will be replaced/updated to the Revit project.

The air flows and pressure drops are read from the ducts in the Validate and Update functions if the air handling unit is connected to ducts.

Please note that pressure drops are available only if MagiCAD for Revit is installed. If MagiCAD for Revit is not exists, only airflows are read from the Revit to SystemairCAD.

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Insert Systemair AHU

Follow these steps for inserting Systemair's air handling unit into Revit:

1. Click Insert Systemair AHU button from plugin's ribbon panel in Revit.

2. Next step is that the plugin asks to point ductworks for getting air flows and pressure drops. This phase can be skipped by pressing Esc button. By pressing the Finish button, the air flows and pressure drops are read from the ducts.

   Please note that pressure drops are available only if MagiCAD for Revit is installed. If MagiCAD for Revit is not exists, only airflows are read from the Revit to SystemairCAD.

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3. SystemairCAD program is started.

Air flow and external pressure values are auto-filled with values received from Revit:

4. Configure and dimension an air handling unit and save the project file. Plugin supports also exporting several air handling units at once.

5. When *CAD Plugin Export* button is clicked the following dialog is displayed for the user:

6. Available products are shown in list view on the left side of the dialog. Some product properties are displayed on the right side of the window. Before installing product into the Revit project, the user can select systems (not necessary) for each duct connection (for each product installed to the project). Also installation height (Offset) of the product can be defined here.

7. The installation process can be started by clicking *Insert* button. Notice that it's possible to uncheck insert checkbox in case you want to exclude some of the unit's from insert operation.

8. Products can be placed to the Revit one by one by dragging them to wanted position in the view.

Import Systemair AHU

Follow these steps for importing Systemair's air handling unit into Revit:

1. Before Import Systemair AHU -operation from the plugin is used, air handling unit(s) needs to be first exported from SystemairCAD. This part is often be done by Systemair sales person who then delivers the exported file to designer. Thus, designers do not necessarily need to have SystemairCAD installed in order to use this functionality.

2. Click *Import Systemair AHU* button from plugin's ribbon panel in Revit.

3. User should browse to the folder where export file is located. SystemairCAD generates .mah-files which are supported by this plugin.

4. Once user has chosen the file and clicked open button, available products are loaded into installation dialog:

5. Available products are shown in list view on the left side of the dialog. Some product properties are displayed on the right side of the window. Before installing product into the Revit project, the user can select systems (not necessary) for each duct connection (for each product installed to the project). Also installation height (Offset) of the product can be defined here.

6. Once systems have been defined for all products, installation can be started by clicking insert button.

7. Products can be placed to the view one by one by dragging them to wanted position in the view.

Validate Systemair AHU

Follow these steps for validating Systemair's air handling unit into Revit:

1. Click Validate Systemair AHU button from plugin's ribbon panel in Revit.
2. Select air handling unit from the project which will be validated.
3. Plugins shows if validating is successfully passed or if it needs to be updated. If updating is needed user can continue to update or cancel the validation. Validation check if air flows and pressure drops matches still to the dimensioned air flow in the SystemairCAD. There is 5% tolerance in air flows and 10% tolerance in pressured drop values before the warning message is displayed.

   Please note that pressure drops are available only if MagiCAD for Revit is installed. If MagiCAD for Revit is not exists, only airflows are read from the Revit to SystemairCAD and the pressures of the original inserted air handling unit are used in SystemairCAD software.

Update Systemair AHU

Follow these steps for updating Systemair's air handling unit into Revit:

1. Click Update Systemair AHU button from plugin's ribbon panel in Revit.
2. Select air handling unit from the Revit project which will be updated.

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3. SystemairCAD starts and open file dialog is automatically displayed:

4. Selected ahu will be opened if user opens the same project file as originally. Plugin automatically passes updated airflow and pressure rise requirements to SystemairCAD:

Air flows and pressures are read from the ducts if the selected air handling unit is connected to ducts.

Please note that pressure drops are available only if MagiCAD for Revit is installed. If MagiCAD for Revit is not exists, only airflows are read from the Revit to SystemairCAD and the pressures of the original inserted air handling unit are used in SystemairCAD software.

5. After the user has finished dimensioning the AHU, the user proceeds by clicking CAD plugin export -button.

6. Plugin will perform compare operation in order to validate whether the original air handling unit have been changed into different kind of air handling unit during update in SystemairCAD. If air handling unit is still exactly the same, only technical data (such as sound data) is updated to existing air handling unit in the project. Following message will be displayed:

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

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

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