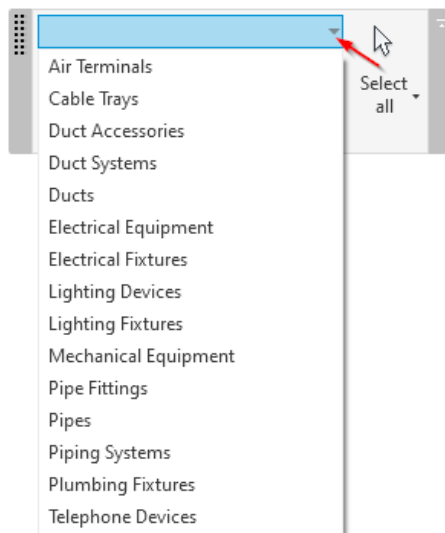## Skillpark MEP > Select by Value

The tool allows selecting model components based on the value of a chosen parameter.

Tool usage scheme:

1. The dropdown list displays the model categories of all elements used in the project. You need to select the category of elements to be included in the selection.

2. In the first text field, enter the name of the parameter by which the selection of elements should be performed. If this field is left empty, all elements from the selected category will be chosen.
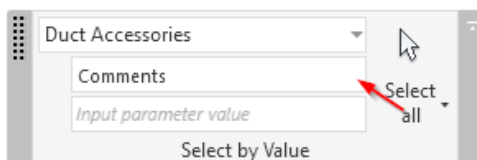
   In the second text field, enter the parameter value for selection. If this field is left empty, all elements containing the specified parameter will be selected. Additional available actions:
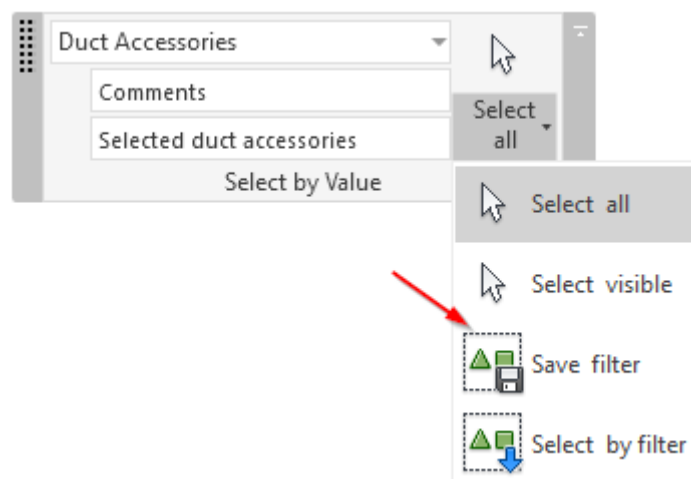   - Any value – all elements with any value assigned to the selected parameter will be selected. Enter the asterisk symbol „*".
   - Multiple values – all elements with any of the specified values will be selected. Enclose values in square brackets [ ] and separate them with a semicolon („;") e.g., [18;96].
   - Empty value – all elements with no value assigned to the selected parameter will be selected. Enter the symbol „<>".
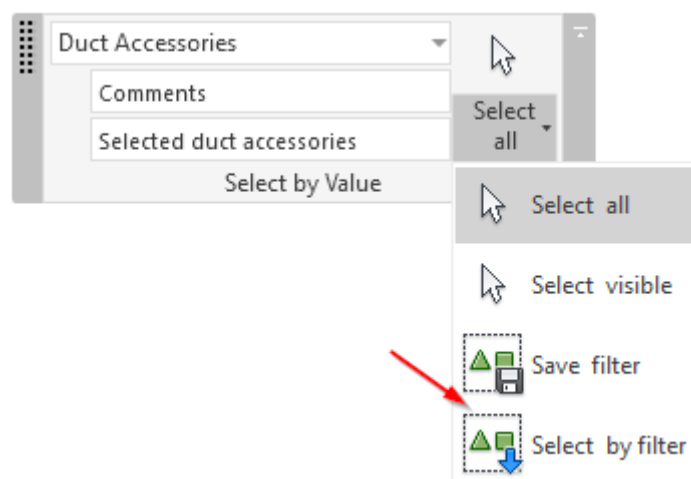
3. The tool allows you to continue the selection from either all elements (*Select All*) or only the currently visible elements (*Select Visible*).
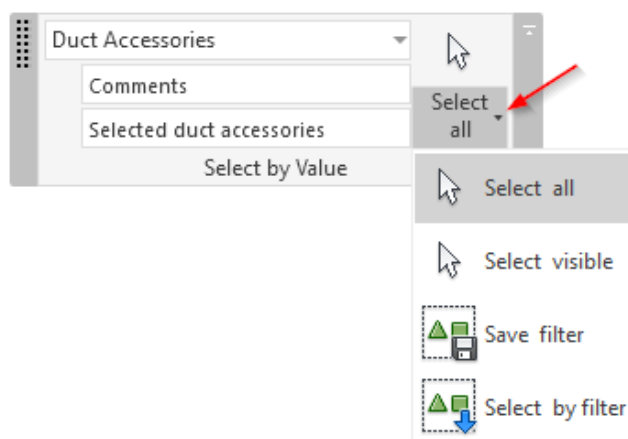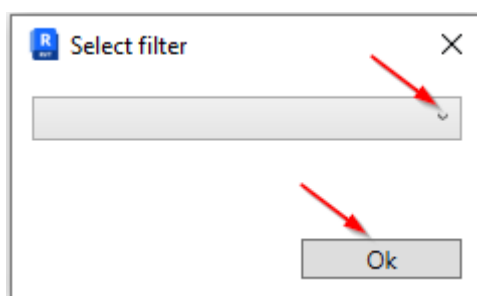
4. The tool allows saving the prepared configuration as a filter (*Save filter*).

5. The tool allows you to load a previously saved selection (*Select by filter*).

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After choosing this option from the dropdown list, select the desired filter and then click the *Ok* button.

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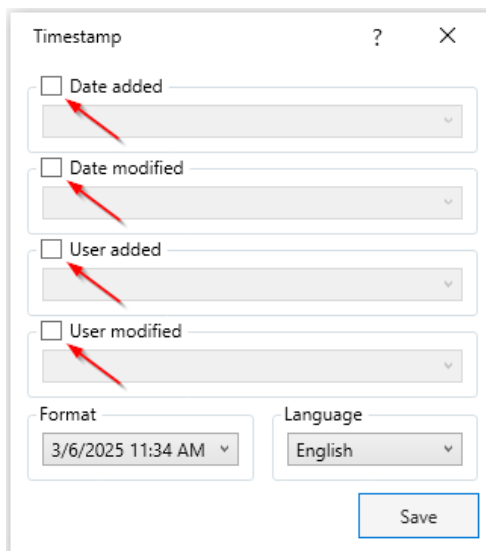
Skillpark MEP > Work in Background > **Timestamp**

The tool uses predefined text project parameters to store information about the insertion date, modification date, inserting user, and last modifying user of a component.
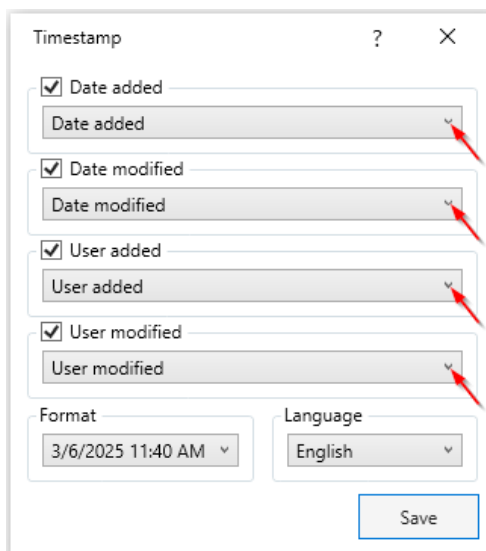
Tool usage scheme:
1. Before using the tool, four text project parameters must be defined.
2. In the configuration window, select the checkbox for the conditions under which automatic information completion should occur.
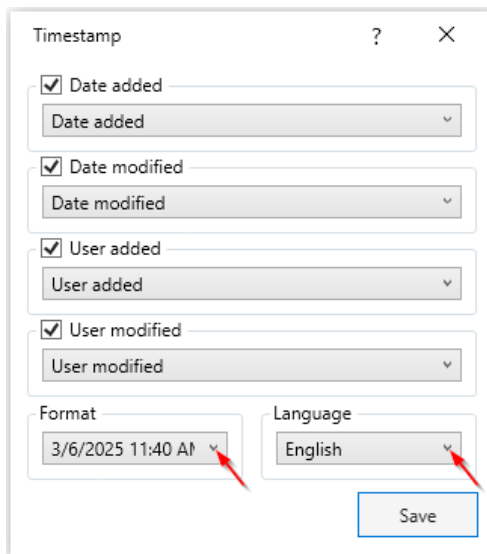
Available actions:
    a. Component insertion (*Date added*)
    b. Component modification (*Date modified*)
    c. User inserting the component (*User added*)
    d. User last modifying component (*User modified*)
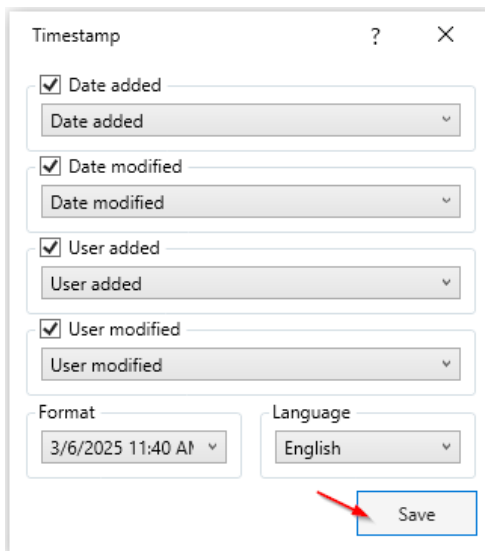
3. For each selected action, specify the corresponding text project parameter that will be automatically filled in.

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4. At the bottom of the configuration window, define the Format (*Format*) and Language (*Language*) for the insertion and modification date information. Information about the inserting and modifying user is based on the Autodesk account name of the user working in Autodesk Revit.

5. Confirm the configuration by clicking *Save*.
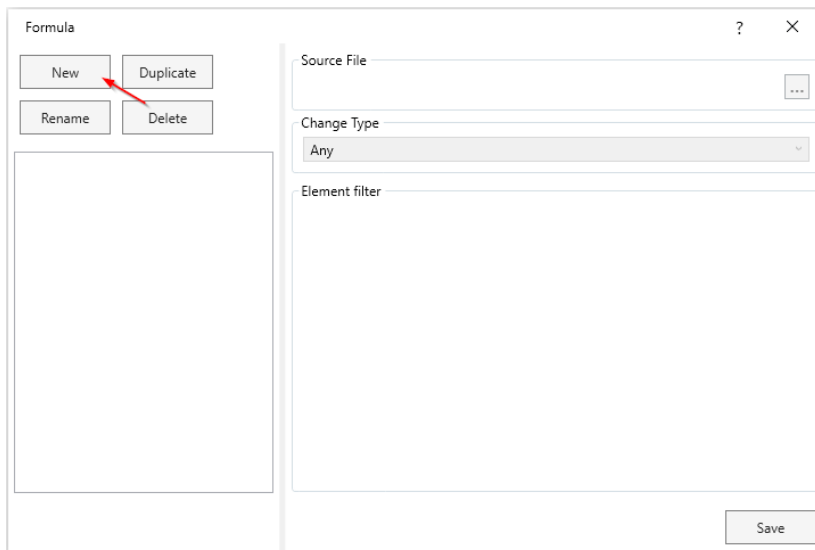
6. The tool is initialized once upon the first launch in a project and remains active throughout the project's duration.

Skillpark MEP > Work in Backgorund > Formula

The tool allows you to configure a set of formulas that continuously influence the values of selected element parameters from specified categories or a filtered selection of components based on defined conditions. The formulas use supported logical and mathematical notations and can be stored in a text file.
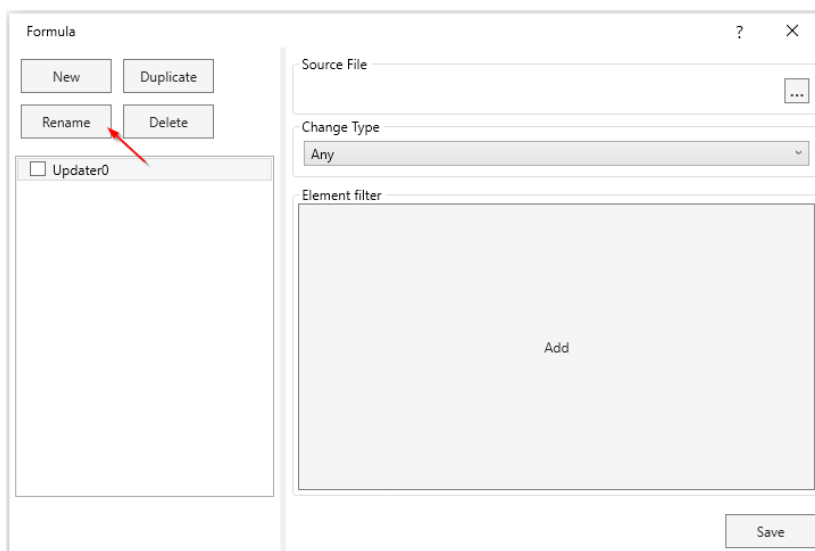
Tool usage scheme:

1. On the left side of the dialog window, there is a section displaying active and inactive formulas that affect the parameter values recorded in the current document.
2. To define a new formula, click the *New* button.
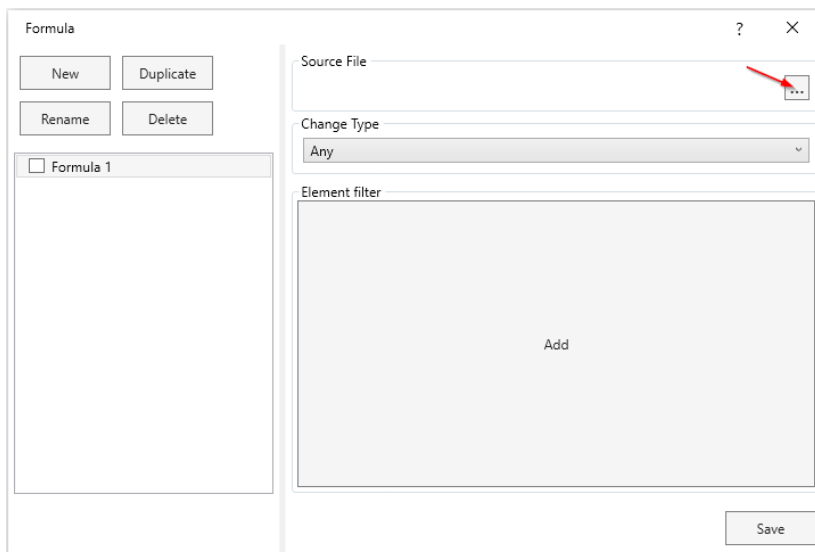
3. The newly defined formula will appear in the list with a default name. To rename a selected formula, select it from the list on the left, click *Rename,* and enter the new name in the corresponding text field.
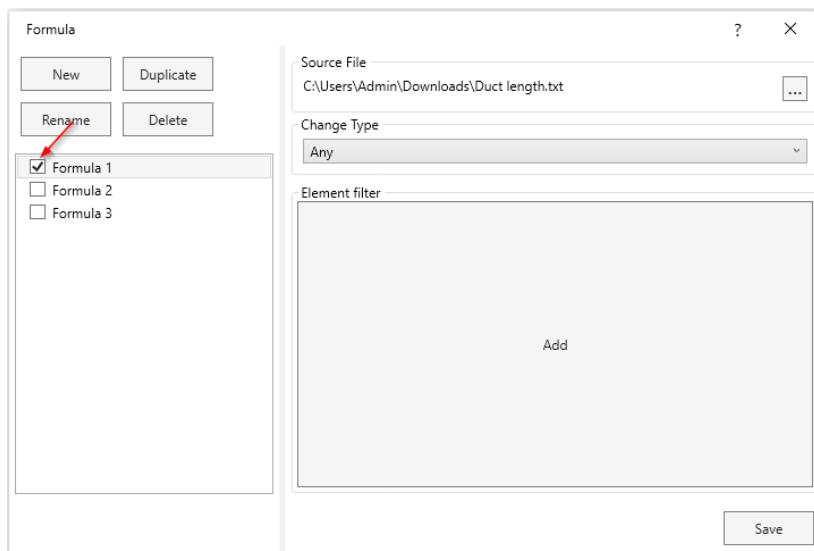
4. Next, load a .txt file with UTF-8 encoding that defines the formula using the notation supported by the tool (see *point 11* for details).

5. The tool is active only for selected formulas. If a formula is not selected, it will not be active.

6. In the *Change Type* dropdown list, select the type of project changes for which the parameter value update process will take place:

- *Any* – includes any of the three supported types of changes
- *Geometry and Parameter Change* – changes in the data and geometric layer of the component
- *Geometry Change* – changes in the geometric layer of the component
- *Element Addition* – adding a new component to the model
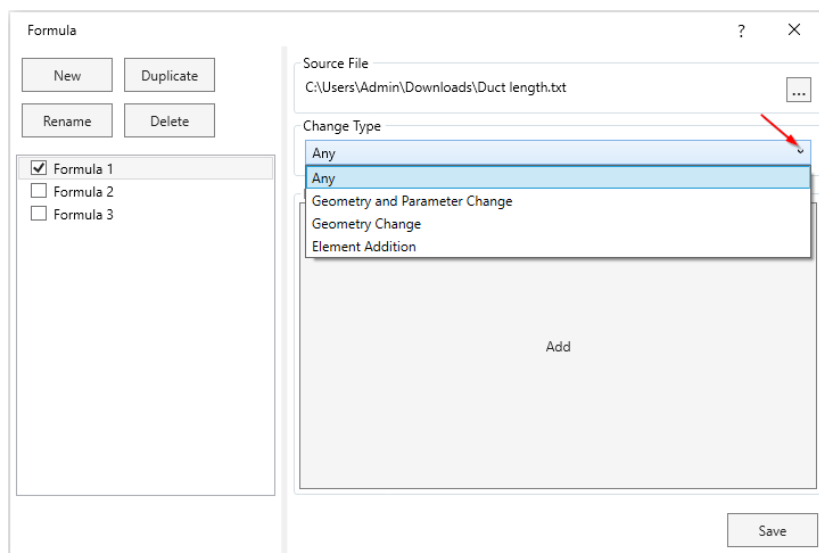
7. In the *Element Filter* section, select the model elements for which the parameter value update will occur. By clicking the *AND/OR GROUP* button, you can use quick filters (*Quick*) or slow filters (*Slow*) to define a custom selection of components.
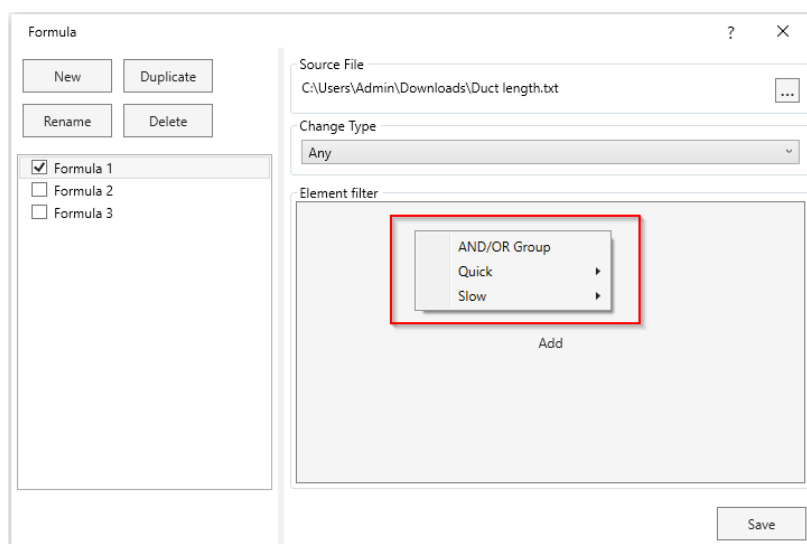
Filters from the *Quick* group allow you to select model components according to assignment to:
- Category – *Category*
- Worksets– *Workset*
- According to visibility in the selected view – *Visible in view*
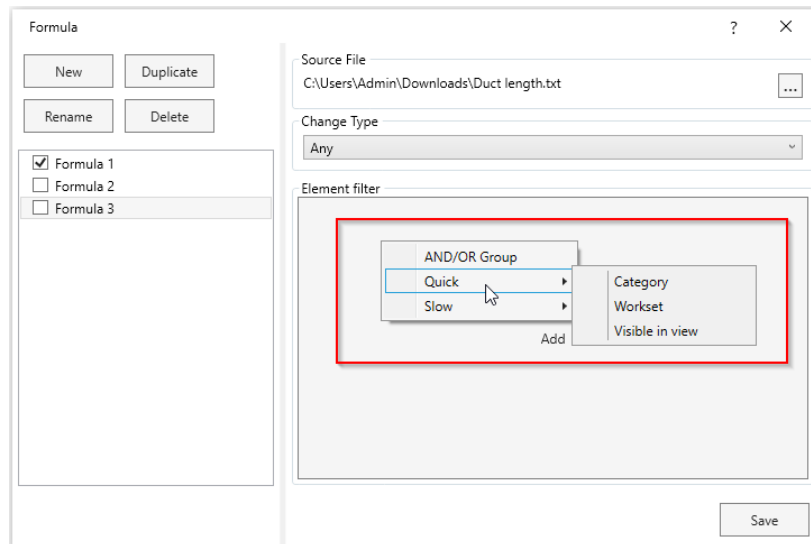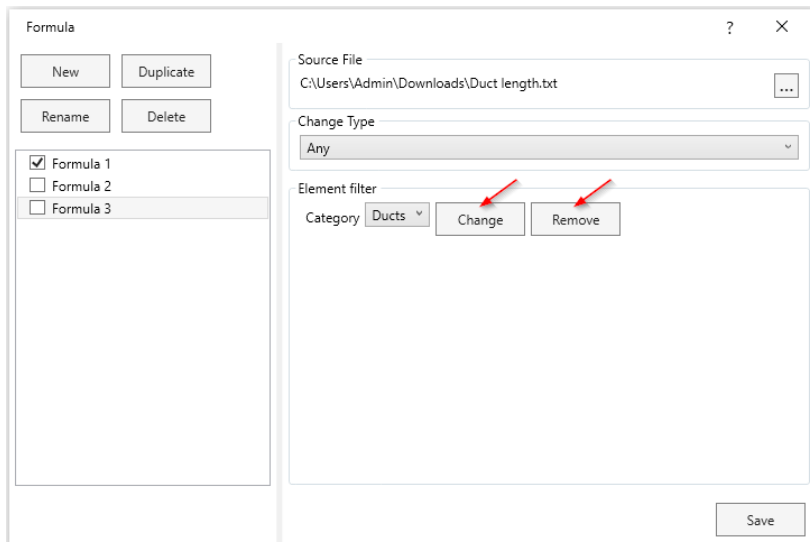
Filters from the *Slow* group allow you to select model components according to assignment to:

- Level – *Level*
- Phase – *Phase*
- Family instance – *Instance of*
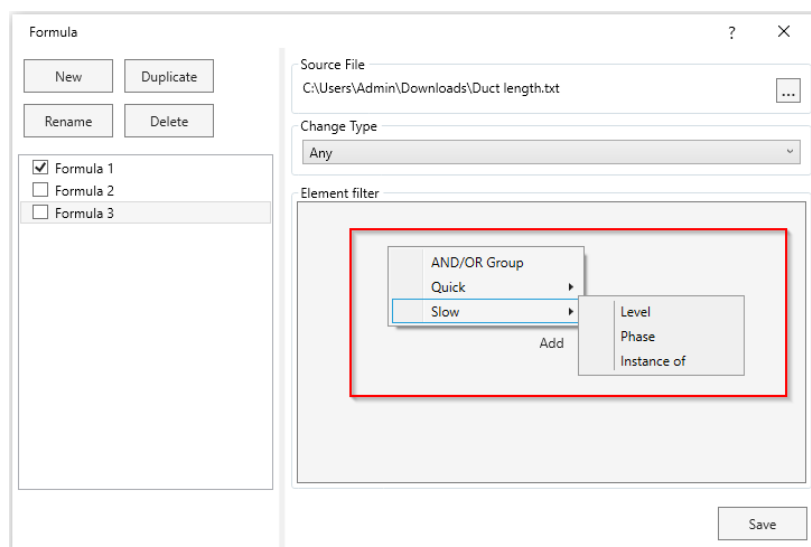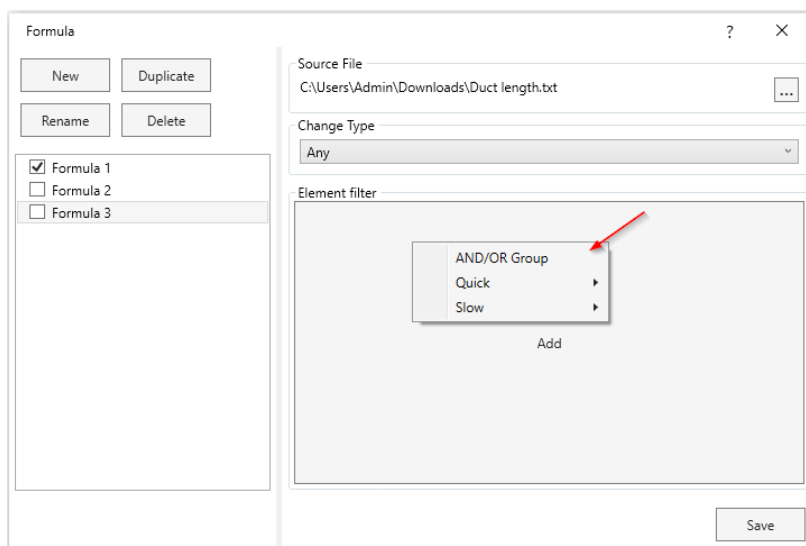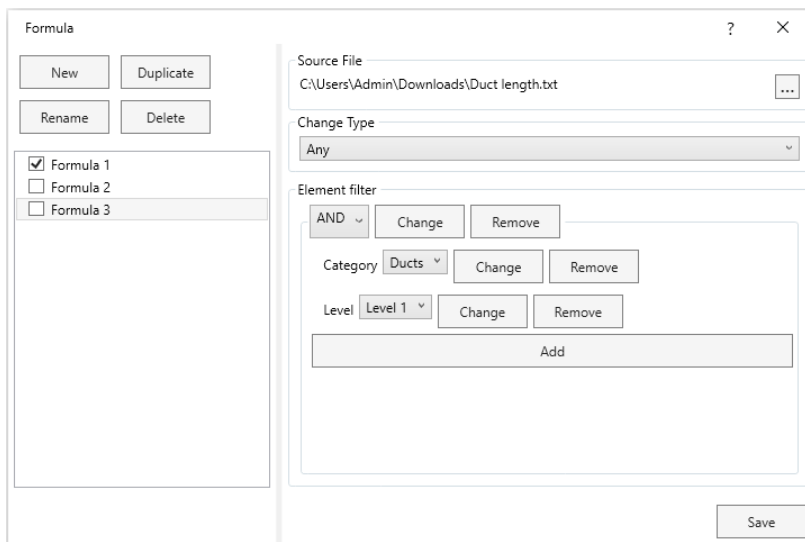
8. After selecting the appropriate filter, complete its logic by choosing the relevant values from the dropdown lists available for the selected condition. The *Replace* button allows you to modify the condition within the filter, while the *Delete* button removes the condition from the filter.
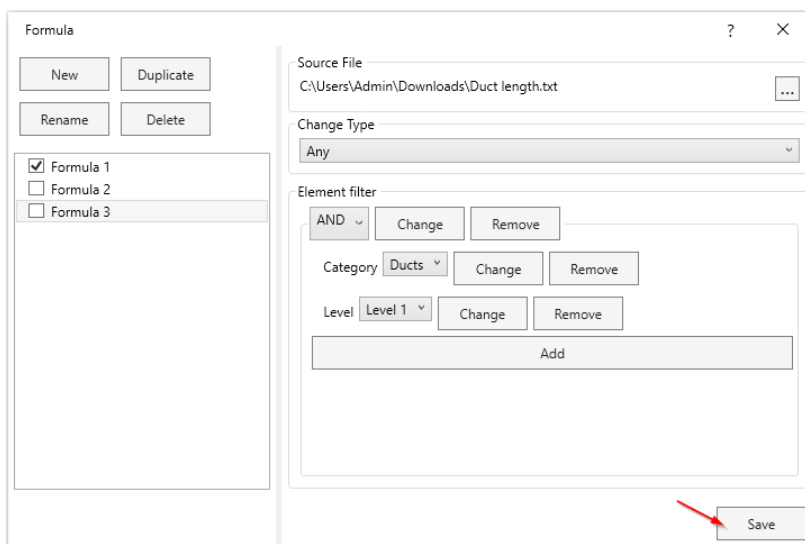
9. To create a more advanced filter in the *Element Filter* section, select the *AND/OR Group* filter type, which allows combining conditions using a logical operator, where:

- *AND* – all defined logical conditions must be met for a component to be selected
- *OR* – at least one of the defined logical conditions must be met for a component to be selected

10. Click the *Save* button to confirm the configuration.

11. For the tool to function correctly, the .txt file containing the formula must be structured based on supported logical and mathematical notations. The parameter that will receive the value must be preceded by the "@" symbol, and the formula must end with the ";" symbol.

Example formula:

```
#Reading and assigning parameter values
@Comments = "Lenght: " + string (@Lenght);
```

Example of recording other formulas:

```
#Assigning a value
a = 2;
b = 3;
c = a + b;
text = "Hello";
real = 0.314;

#Logarithmizing
log(text, " world!");

#Comparisons (score 1 or 0)
lessThan = a < b;

#Defining functions
increment = (x) -> x + 1;
seventy = increment(69);

#Adding strings
log("Hello" + "world");
```

Supported Data Types:
- *int (integer)* – integer number
- *real* – real number
- *string* – text (character string)

Each variable can change the type of value it contains. In the instruction, "any" means any type, and "num" means int or real.

List of Supported Logical and Mathematical Functions:
- *type_name(any)* – returns a string containing the type name of the given value
- *int(any)* – converts the given value to an integer
- *real(any)* – converts the given value to a real number
- *string(any)* – converts the given value to a string
- *if(int condition, any true, any false)* – returns (*true*) if the condition is met, otherwise returns (*false*)
- *or(int condition, int condition)* – returns (*true*) if the condition is met, otherwise returns (*false*)
- *and(int condition, int condition)* – returns (*true*) if at least one condition is met, otherwise (*false*)
- *mod(num x, num y)* – returns (*true*) if all conditions are met, otherwise (*false*)
- *pow(num x, num y)* – returns x raised to the power of y
- *sqrt(num x)* – returns the square root of x
- *sign(num x)* – returns 1 if x is positive, -1 if negative
- *abs(num x)* – returns the absolute value of x
- *min(num x, num y)* – returns the smaller value

- *max(num x, num y)* − returns the larger value
- *round(real x, int y)* − rounds x to y decimal places
- *to_units(num x, string units)* − converts a value from Autodesk Revit's internal unit to the specified unit
- *from_units(num x, string units)* − converts a value from the specified unit to Autodesk Revit's internal unit
- *convert(num x, string from, string to)* − converts a value from one unit to another

List of supported units.

Skillpark MEP > Assignment > **Levels Manager**

The tool assigns selected elements to a specified level without changing their absolute location within the model space.

Tool usage scheme:

1. In the workspace, select the 3D model components whose level you want to change (1), then click the *Levels Manager* icon (2).
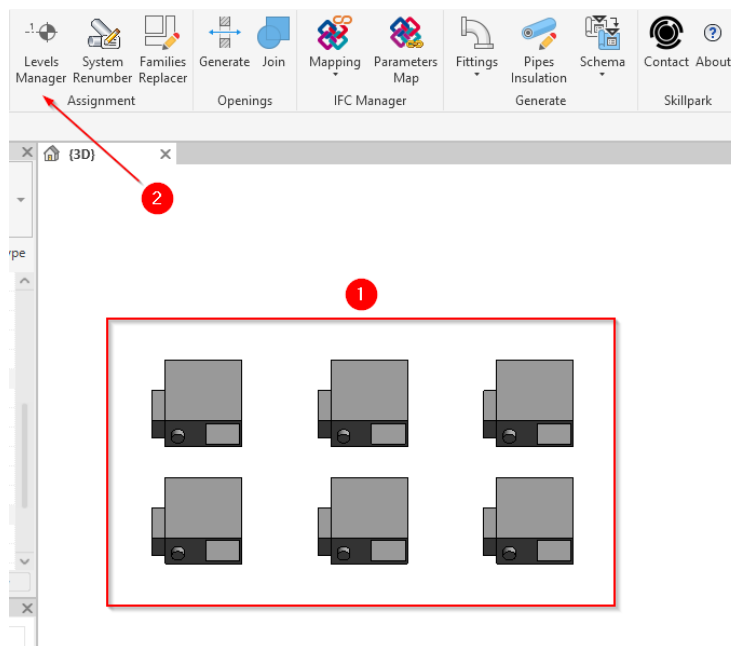
Optional**:** If you have not selected 3D model components beforehand, first launch the tool (1), then select the 3D model components in the workspace which level needs to be changed (2), and click *Finish* button (3) located on the *Options Bar*.
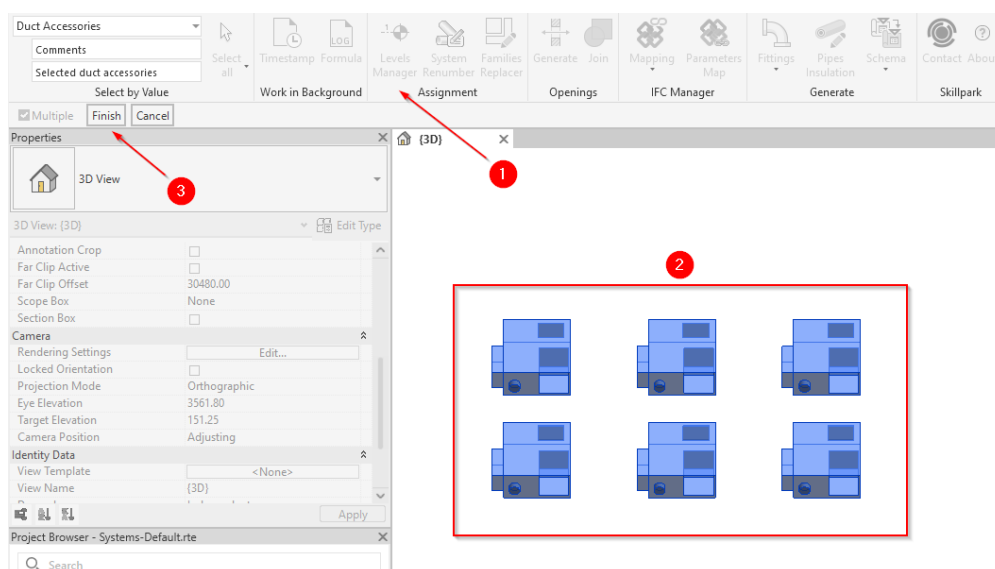
2. From the dropdown list, select the target level to which the previously selected 3D model components should be assigned.
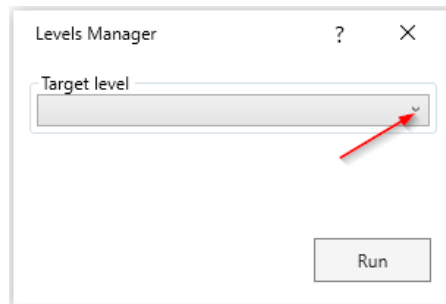
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3. To start the process, click the *Run* button.
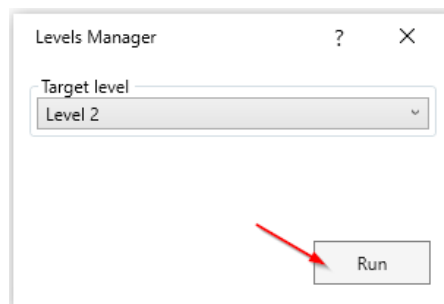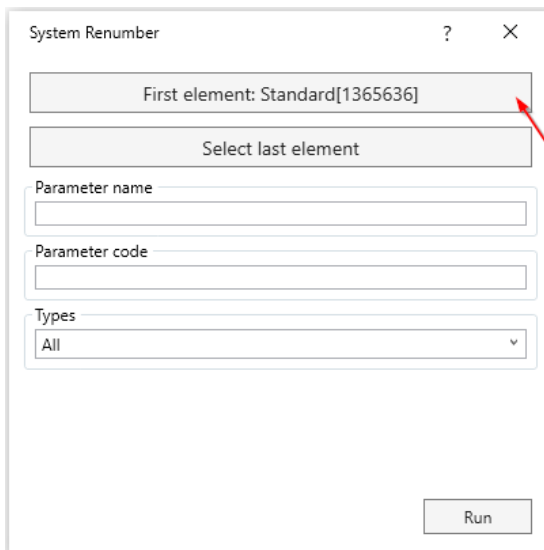
Skillpark MEP > Assignment > **System Renumber**

The tool assigns sequential numbers to system elements according to a user-defined coding scheme within a specified section of the installation.

Tool usage scheme:
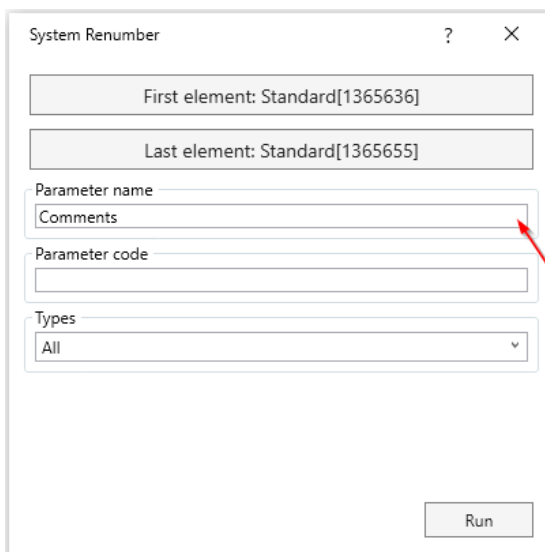
1. Click the *Select first element* button and choose the first element of the installation section to be numbered in the model workspace.
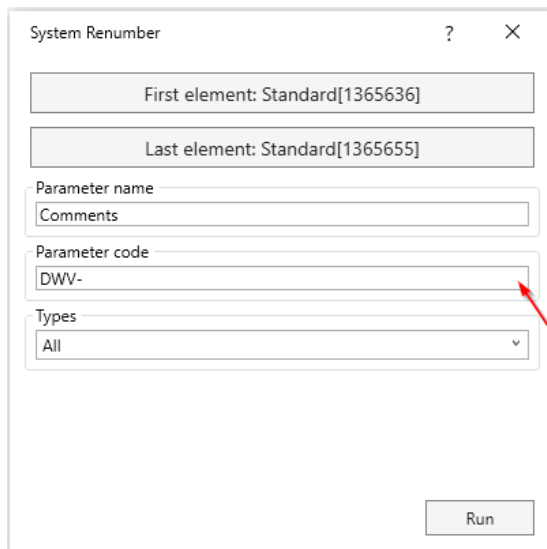
2. Click the *Select last element* button and choose the last element of the system section to be numbered in the model workspace.

screen

3. In the *Parameter name* text field, specify the name of the target text parameter in which the assigned sequential number of the element will be recorded.

4. In the *Parameter Code* text field, you can define the numbering code for the first element. The tool assigns each subsequent component in the system a sequential number that is incremented by 1 from the previous one, modifying the last recorded integer in the coding scheme.
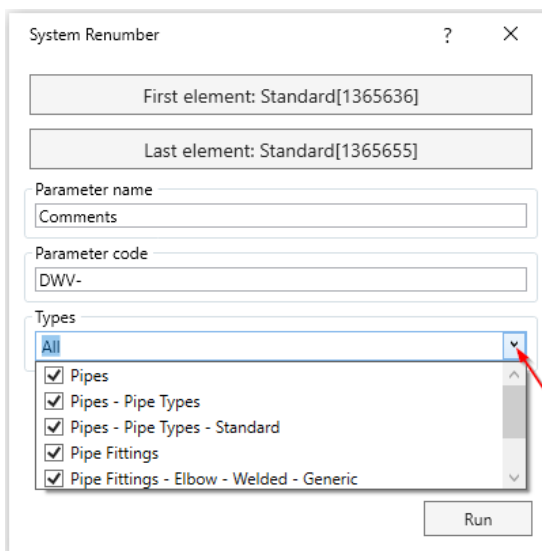
5. The *Types* field displays all component types within the selected installation section. From the dropdown list, select the types to be included in the numbering. Selection is made by checking (included) or unchecking (excluded) the checkbox next to the type name.

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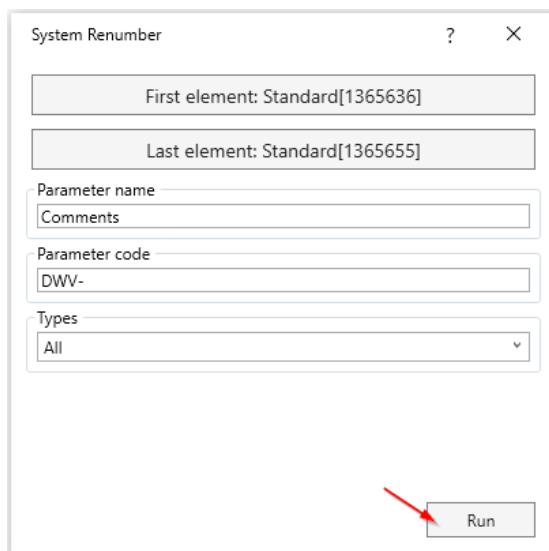
6. To start the process, click the *Run* button.
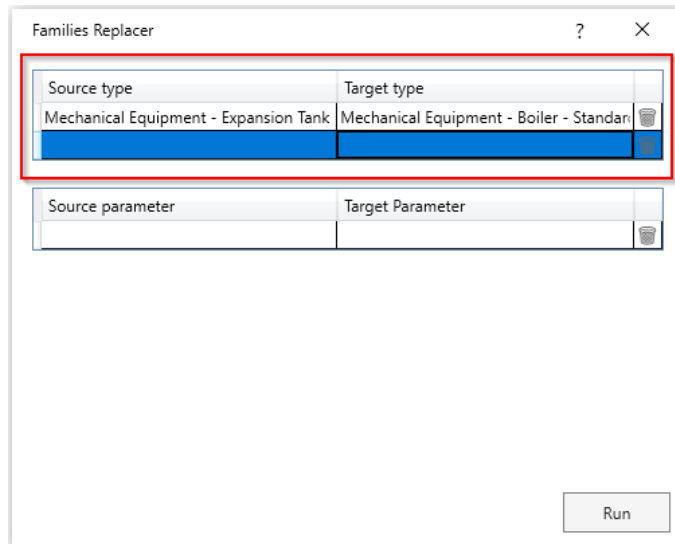
Skillpark MEP > Assignment > **Families Replacer**

The tool replaces instances of selected types while simultaneously transferring the values of specified parameters.

Tool usage scheme:

1. In the *Source Type* column, define the family types in the project that should be replaced. In the *Target type* column, define the target family types.
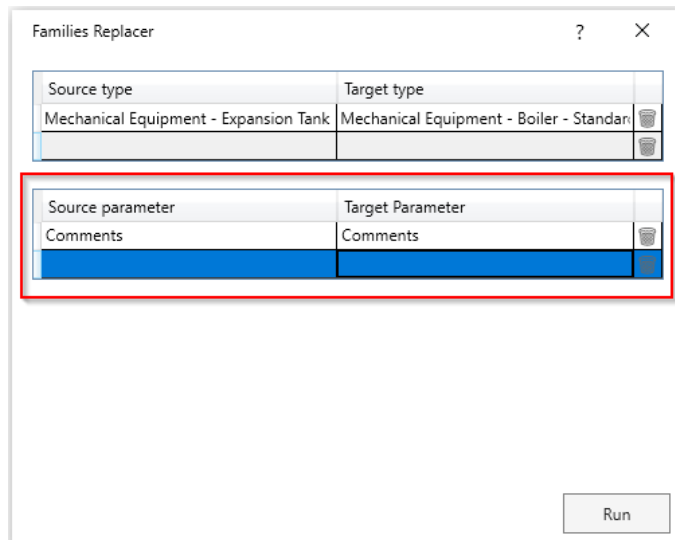
2. To add a new data row, press *ENTER*.
3. Optional**:** In the *Source parameter* column, you can define the source parameter of the component types involved in the replacement, from which information should be transferred. In the *Target parameter* column, you can define the target parameter for the component types, to which the information should be transferred. Information from instance parameters is automatically transferred if the same parameters are defined in both components.
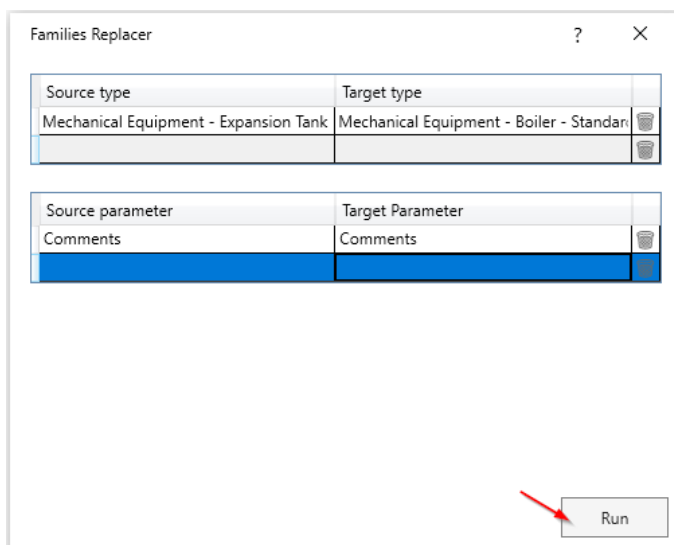
4. To start the process of replacing instances by type while transferring parameter values, click the *Run* button.
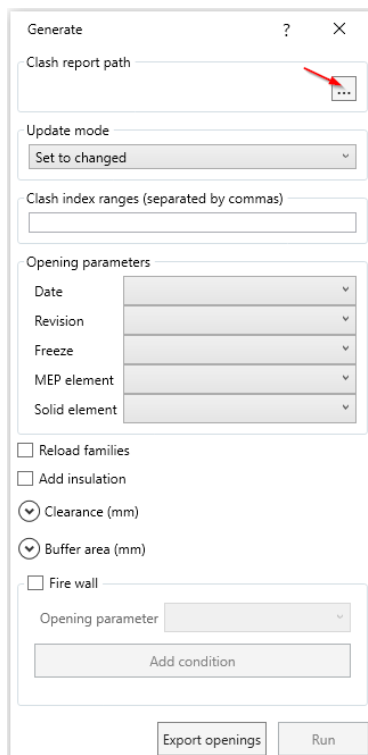
Skillpark MEP > Openings > **Generate**
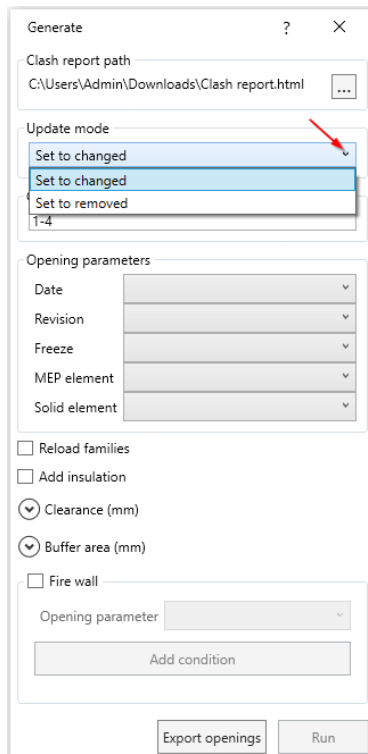
The tool places opening families in the project based on a previously prepared clash report from Autodesk Revit. It uses a predefined family type for insertion depending on the shape of the opening and the type of partition. It adds buffer space and the minimum required distance between inserted openings. It allows updating and changing the status of openings that have undergone significant modifications during the design process.

Tool usage scheme:

1. The tool requires a collision report file *.html generated in Autodesk Revit (*Collaborate > Clash Detection*) between linear <u>installation segments</u> and <u>building partitions</u>. To use the tool correctly, one of the projects included in the clash report must be opened, while the other must be linked.

2. Before using the tool, project parameters must be defined (parameter descriptions in section 6).

3. The path to the clash report file must be specified.

4. During the insertion of a new instance of the opening family, the tool checks whether an opening corresponding to the given clash already exists in the model (based on the ID numbers of the colliding components). From the drop-down list *Update mode* for existing openings, the update mode must be selected in case automatic changes are needed for an existing opening, where:
   - *Set to changed* – applies the update and changes the status of the existing opening to *Changed*
   - *Set to removed* – does not apply the update, changes the status of the existing opening to *Deleted*, and inserts a new opening

5. In the *Clash index ranges* text field, the set of clashes to be considered in the current tool run must be specified numerically, according to the sequential numbers assigned to collisions in the report. The range must be entered in the format "x-y" (from x to y, inclusive) or "x" for a single clash. To define multiple separate ranges, they must be separated by commas.
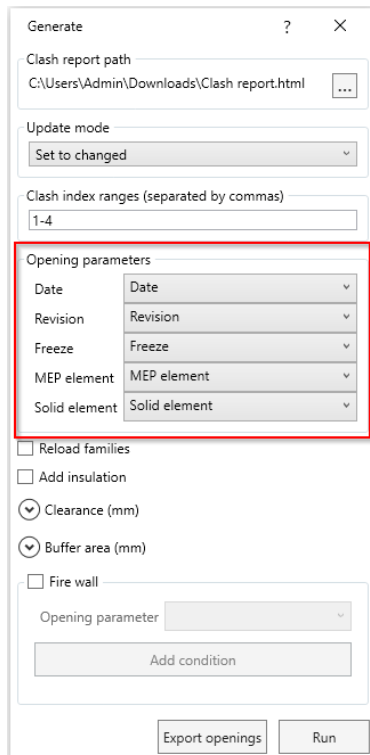
6. Using the drop-down lists *Date, Revision, Freeze, MEP Element, Solid Element*, the parameters must be specified where information will be entered:

- *Date* – a text parameter containing the insertion or last update date of the opening
- *Revision* – a text parameter containing the current status of the opening, with possible values: New, Changed, Deleted, Joined
- *Freeze* – a Yes/No parameter; if set to *Yes*, the opening will be skipped during the tool run
- *MEP Element* – a text parameter containing the ID number, name, and source model of the installation element passing through the opening
- *Solid Element* – a text parameter containing the ID number, name, and source model of the partition element containing the opening

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7. If the current situation requires reloading the original families provided with the add-on, this can be done during the current tool run by selecting the *Reload families* in model checkbox.

If the checkbox is unchecked or the active model does not contain families, they will be loaded automatically. If the model contains families incompatible with the current version of the tool, it is recommended to use the *Reload families* in model option.
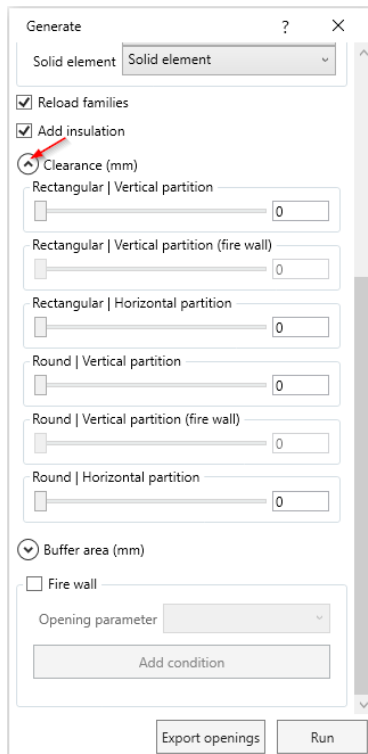
Family names used by the tool:
- Round opening (vertical partition)
- Round opening (horizontal partiton)
- Rectangular opening (vertical partition)
- Rectangular opening (horizontal partiton)

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8. To account for the insulation thickness of installation elements in the opening dimensions, the *Add insulation* checkbox must be selected.

9. To define an additional installation clearance for specific types of openings, the *Clearance (mm)* panel must be expanded, where a slider or input field allows its definition for different opening cases. The maximum installation clearance is 100 mm.
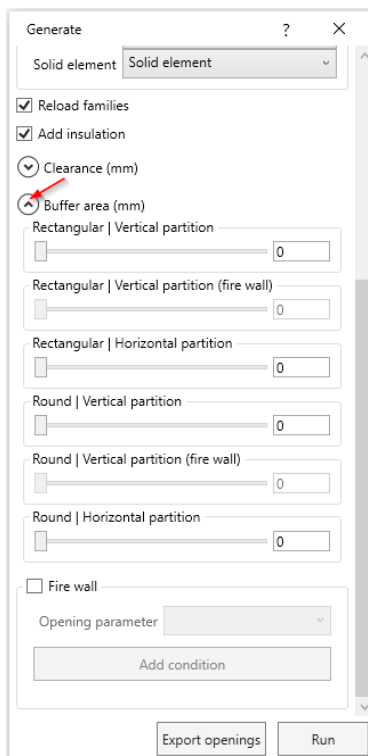
10. To define the minimum distance between openings for different types, the *Buffer area* (mm) panel must be expanded, where a slider or input field allows its definition for different opening cases. The maximum buffer area is 500 mm. Overlapping buffer areas of two or more openings may indicate the need to insert a merging opening combining them.

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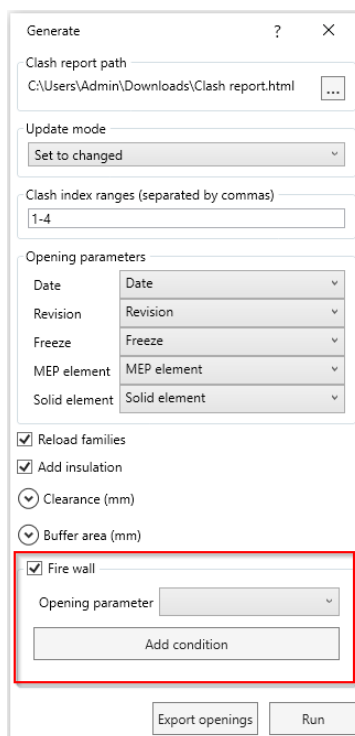
11. For fire-rated walls, separate conditions can be set. To enable wall analysis based on defining parameters, the *Fire wall* checkbox must be selected. This activates two additional configuration areas:

- *Opening parameter* – a drop-down list to select a Yes/No project parameter indicating whether the opening is placed in a fire-rated wall
- *Add condition* – allows defining a set of logical conditions for wall definition, where the first drop-down list on the left selects the wall parameter, and the second (depending on the parameter type) contains logical conditions for verification. If the condition applies to a text parameter, a comparison value must be entered in the text field. If it applies to a numerical parameter, a unit must be selected from the last list.
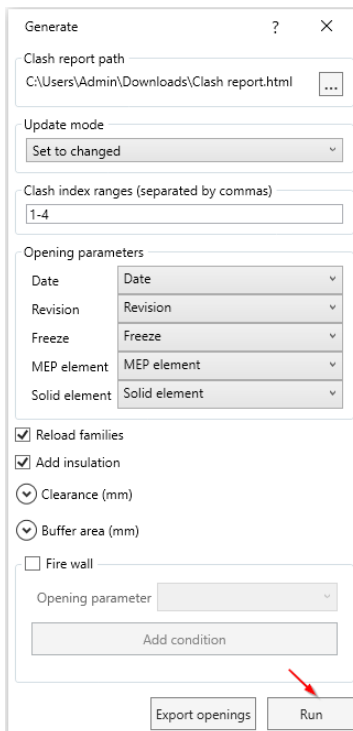
If the wall in which the opening is placed meets at least one of the specified conditions, the opening will be considered placed in a fire-rated wall. It may then have a different installation clearance and buffer area.
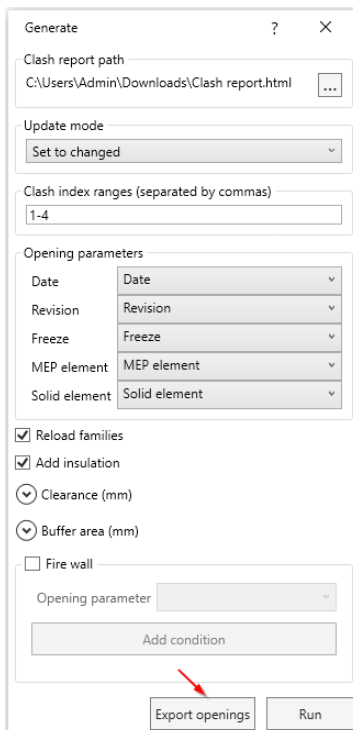
12. After completing the configuration, press the *Run* button.

13. To export the openings based on the selected configuration, press *Export openings*, then specify the location where the openings file will be saved.
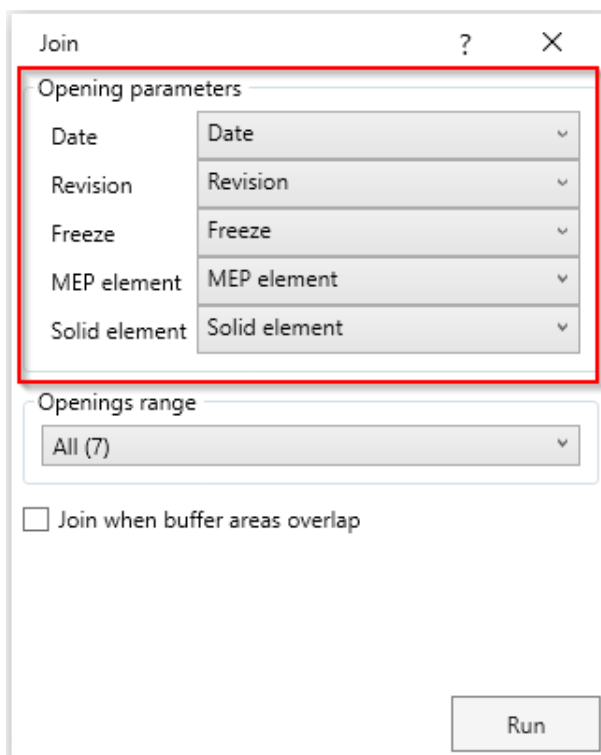
Skillpark MEP > Openings > Join
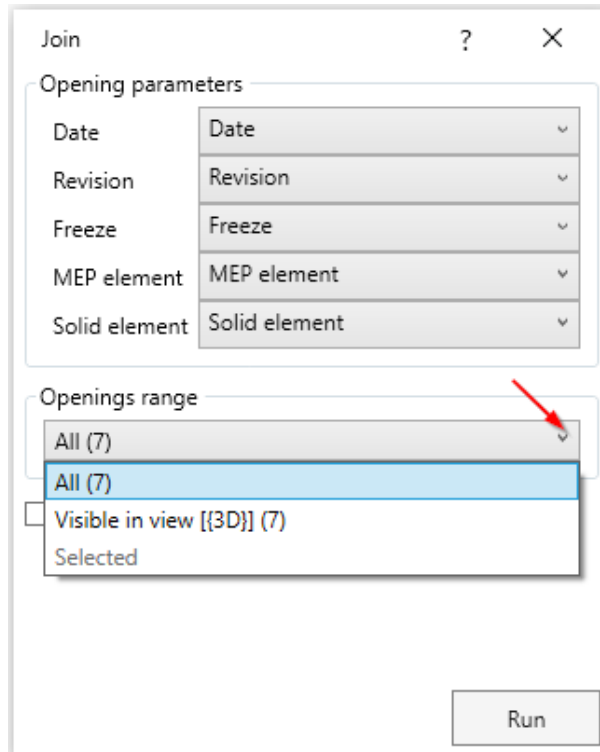
The tool analyzes the openings inserted in the model and places a collective opening for those which geometry overlaps, including in the buffer area.

Tool usage scheme:
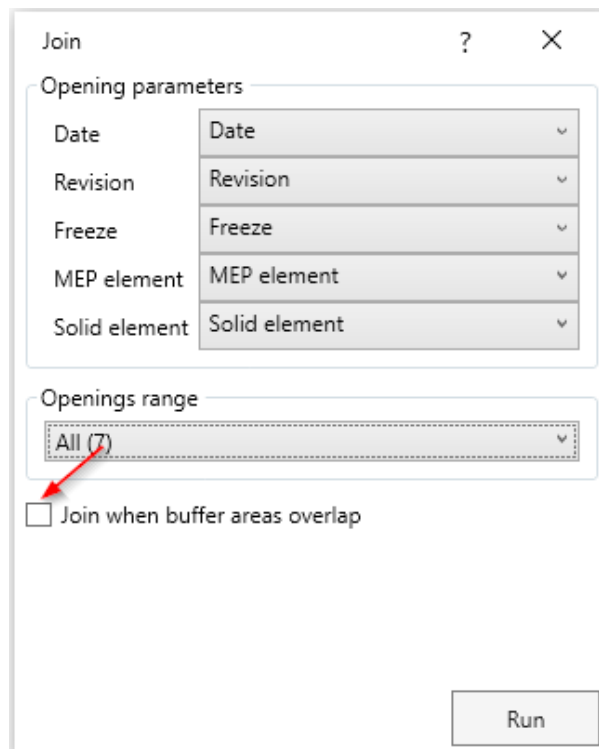
1. Using the drop-down lists *Date, Revision, Freeze, MEP Element, Solid Element*, the parameters must be specified where information will be filled in:

- *Date* – a text parameter containing the insertion or last update date of the opening
- *Revision* – a text parameter containing the current status of the opening, with possible values*: New, Changed, Deleted, Joined*
- *Freeze* – a Yes/No parameter; if set to *Yes*, the opening will be skipped during the tool run
- *MEP Element* – a text parameter containing the ID number, name, and source model of the installation element passing through the opening
- *Solid Element* – a text parameter containing the ID number, name, and source model of the partition element containing the opening

2. From the drop-down list *Opening Range*, a set of openings to be considered for merging must be selected, where:

- *All* – includes all instances of openings in the mode
- *Visible in view* – includes openings visible in the view that was active when the tool was launched
- *Selected* – includes openings selected by the user before launching the tool

3. In order to include buffer areas in the merging process, the *Join when buffer areas overlap* checkbox must be selected.

If the checkbox is selected, openings whose buffer areas overlap will be merged into one. If the checkbox is deselected, only openings overlapping in geometry (excluding the buffer area) will be merged. In this case, the

tool's generated report will contain a separate table titled *Openings too close together,* listing the ID numbers of elements whose buffer areas overlap.

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Skillpark MEP > Openings > Clean

The tool is used to remove specific types of openings from the project. It only removes openings inserted by the *Generate* and *Join* tools.

Tool usage scheme:

1. Clicking the "All" button removes all openings from the project that were created using the *"Generate"* and *"Merge"* tools.
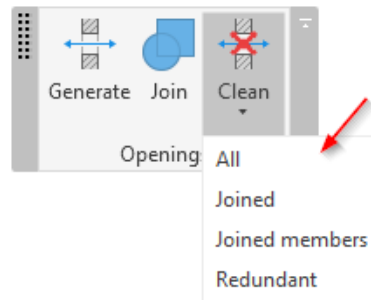
2. Clicking the *"Joined"* button removes merged openings from the project that were created using the *"Join"* tool.
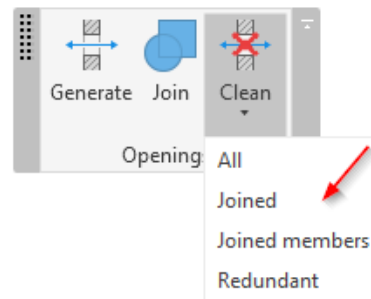
3. Clicking the *"Joined members"* button removes individual openings from the project for which merged openings were created using the *"Join"* tool.
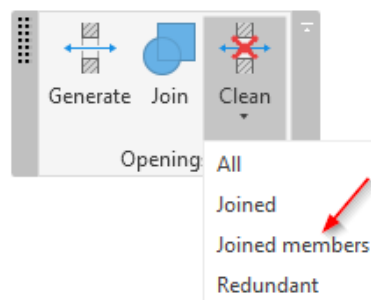
4. Clicking the *"Redundant"* button removes openings located in areas where there are no longer any clashes between installations and building partitions.
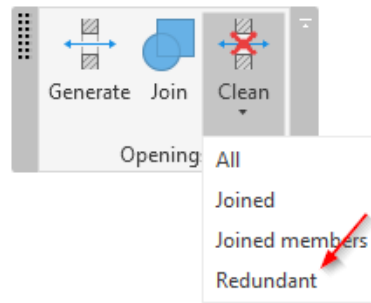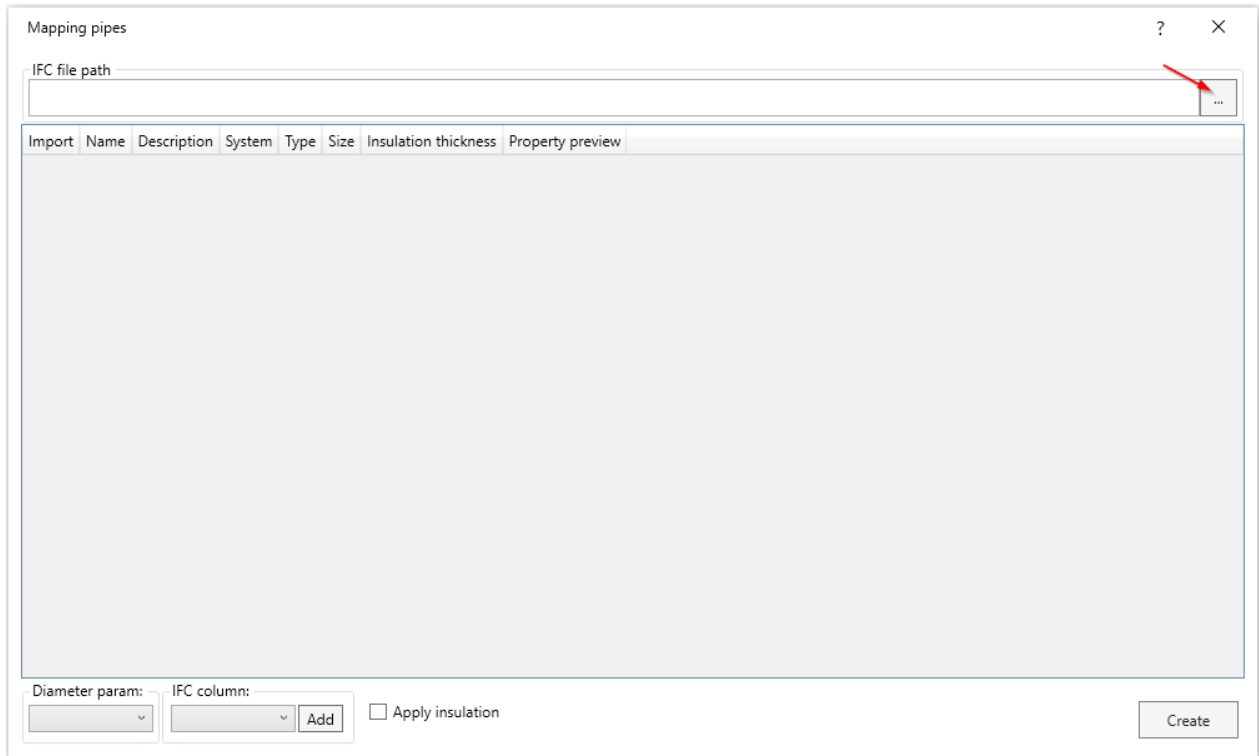
Skillpark MEP > IFC Manager > Mapping > Pipes

The tool places pipe instances at the locations of *IfcPipeSegment* class elements in IFC models. It allows sorting successive instances of IFC model elements based on a selected parameter contained within the IFC model.

Tool usage scheme:

1. Specify the file path to the IFC file based on which the pipes will be mapped in the model.

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2. In the *Import* column, select which elements should be included in the pipe mapping in the model.

3. The *Name* and *Description* columns contain information about the name and description of the IFC file components.

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4. In the *System* and *Type* columns, use the drop-down lists to select the target mapping for the pipe *System* and *Type*.

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5. The *Size* column is filled based on the selected parameter from the *Diameter param* drop-down list.

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6. To apply insulation, check the *Apply insulation* checkbox and enter the appropriate thickness in millimeters in the *Insulation thickness* column. Entering the insulation thickness alone without selecting the checkbox will not apply the insulation automatically.

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7. The *Property preview* column allows viewing the value of a selected parameter from the IFC file. To do this, select the appropriate parameter from the *IFC column* drop-down list. To add a new column with the selected parameter, click the *Add* button.

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8. To group components by a selected value in the data column, right-click on the column header and then click *Group*.

9. For grouped components, the same information can be assigned to all grouped elements.

10. To remove grouping by a selected value, right-click on the column header and then click *Remove grouping*.

11. After completing the configuration, press the *Create* button.

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Skillpark MEP > IFC Manager > **Mapping > Ducts**

The tool places duct instances at the locations of *IfcDuctSegmentType* class elements in IFC models. It allows sorting successive instances of IFC model elements based on a selected parameter contained within the IFC model.

Tool usage scheme:

1. Specify the file path to the IFC file based on which the ducts will be mapped in the model.

2. In the *Import* column, select which element groups should be included in the duct mapping in the model.

3. The *Name* and *Description* columns contain information about the name and description of the IFC file components.

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4. In the *System* and *Type* columns, use the drop-down lists to select the target mapping for the duct *System* and *Type*.

5. The *Width/Diameter* and *Height* columns are filled based on the selected parameters from the drop-down lists: *Width param*, *Diameter param*, and *Height param*.

6. To apply insulation, check the *Apply insulation* checkbox and enter the appropriate thickness in millimeters in the *Insulation thickness* column. Entering the insulation thickness alone without selecting the checkbox will not apply the insulation automatically.

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7. The *Property Preview* column allows viewing the value of a selected parameter from the IFC file. To do this, select the appropriate parameter from the *IFC column* drop-down list. To add a new column with the selected parameter, click the *Add* button.

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8. To group components by a selected value in the data column, right-click on the column header and then click *Group*.

9. For grouped components, the same information can be assigned to all grouped elements.

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10. To remove grouping by a selected value, right-click on the column header and then click *Remove grouping*.

11. After completing the configuration, press the *Create* button.

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Skillpark MEP > IFC Manager > Mapping > Appliances

The tool places device instances at the locations of successive elements from the following IFC model classes: *IfcFlowTerminal, IfcFlowMovingDevice, IfcFlowController, IfcBoiler, IfcFlowMeter, IfcSanitaryTerminal, IfcSpaceHeater, IfcValve*. It allows sorting successive instances of IFC model elements based on a selected parameter contained within the IFC model.
Tool usage scheme:

1. Specify the file path to the IFC file based on which the devices will be mapped in the model.

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2. In the *Import* column, select which elements should be included in the device mapping in the model.

3. The *Name* and *Description* columns contain information about the name and description of the IFC file components.

4. In the *Type* column, use the drop-down lists to select the target mapping for device types.

5. The *Property Preview* column allows viewing the value of a selected parameter from the IFC file. To do this, select the appropriate parameter from the *IFC column* drop-down list. To add a new column with the selected parameter, click the *Add* button.

6. To group components by a selected value in the data column, right-click on the column header and then click *Group*.

7. For grouped components, the same information can be assigned to all grouped elements.

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8. To remove grouping by a selected value, right-click on the column header and then click *Remove grouping*.

9. After completing the configuration, press the *Create* button.

Skillpark MEP > IFC Manager > **Mapping > Transfer**

The tool places instances of any elements at the locations of successive IFC model class elements, creating Revit components as local models in the selected category.

Tool usage scheme:

1. Specify the file path to the IFC file based on which the local models will be placed in the project.

2. The *Ifc class* and *Ifc type* columns contain information about the IFC class and IFC type of the components within the IFC files.

3. In the *Category* column, select the category to which elements from specific IFC classes should be assigned.

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4. If the *DontImport* category is selected, the tool will not place any elements from the given IFC class.

5. To add a data row, activate the last row and press ENTER.
6. To delete a data row, select it and press DELETE.

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7. After completing the configuration, press the *Create* button.

Skillpark MEP > IFC Manager > Parameters Map

The tool transfers the values of IFC model element properties to parameters in the model based on the GUID match between the IFC model element and the Revit component.

Tool usage scheme:

1. Click the button to select the access path to the IFC file based on which elements will be placed in the model.
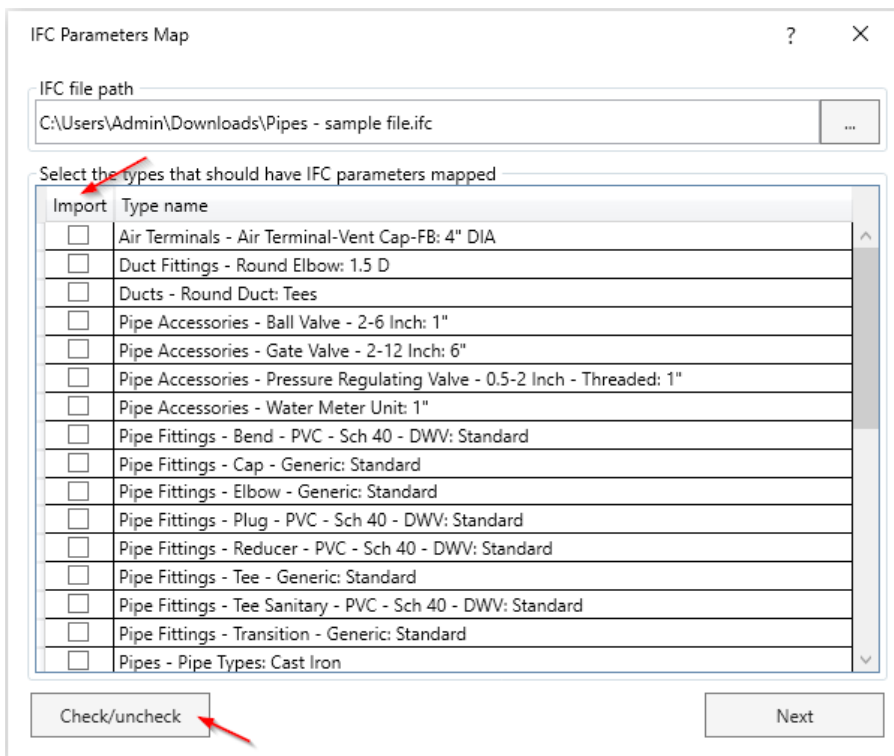
2. In the selection fields under the *Import* column, specify the types that should have their IFC parameters mapped. The *Select/Deselect* button is used to mark or unmark all elements.

3. The *Type Name* column contains information about the element types.

4. After selecting the types for parameter mapping, click the *Next* button.

5. In the *IFC Parameter Name* and *Parameter name in the project* columns, enter the respective names of the parameter from the IFC file and the project parameter. Values are transferred based on the GUID match between the element and the Revit component. To add a data row, activate the last row and press ENTER.

6. After completing the configuration, click the *Run* button.

Skillpark MEP > Generate > **Fittings > Pipes**

The tool generates pipe fittings for selected pipes belonging to the same system.

Tool usage scheme:

1. In the model workspace, select the pipe components for which the tool should automatically place pipe fitting components.
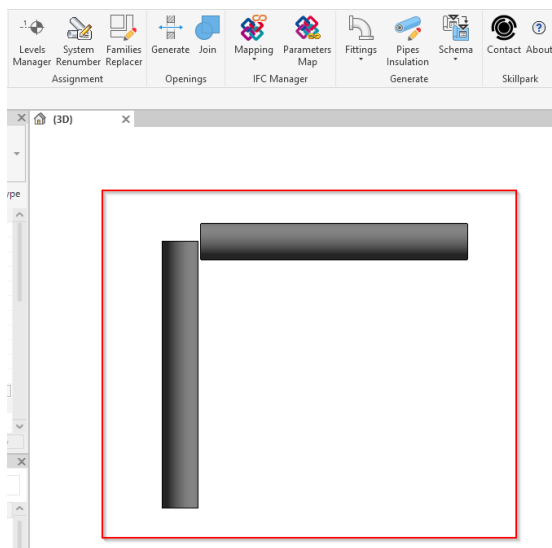
2. After execution, the tool will generate pipe fittings between successive pipe segments belonging to the same system, considering the information contained in the routing preferences.

3. Optional**:** If you did not select 3D model components, first lunch the tool (1), then select the components in the workspace (2) and confirm the selection by clicking the *Finish* button (3) located on the *Options Bar*.

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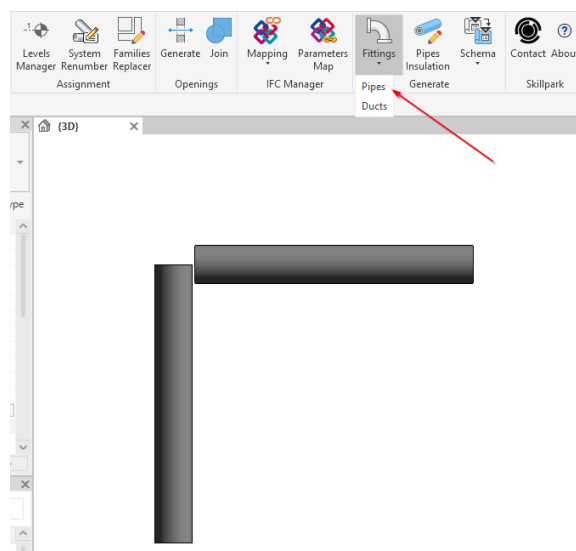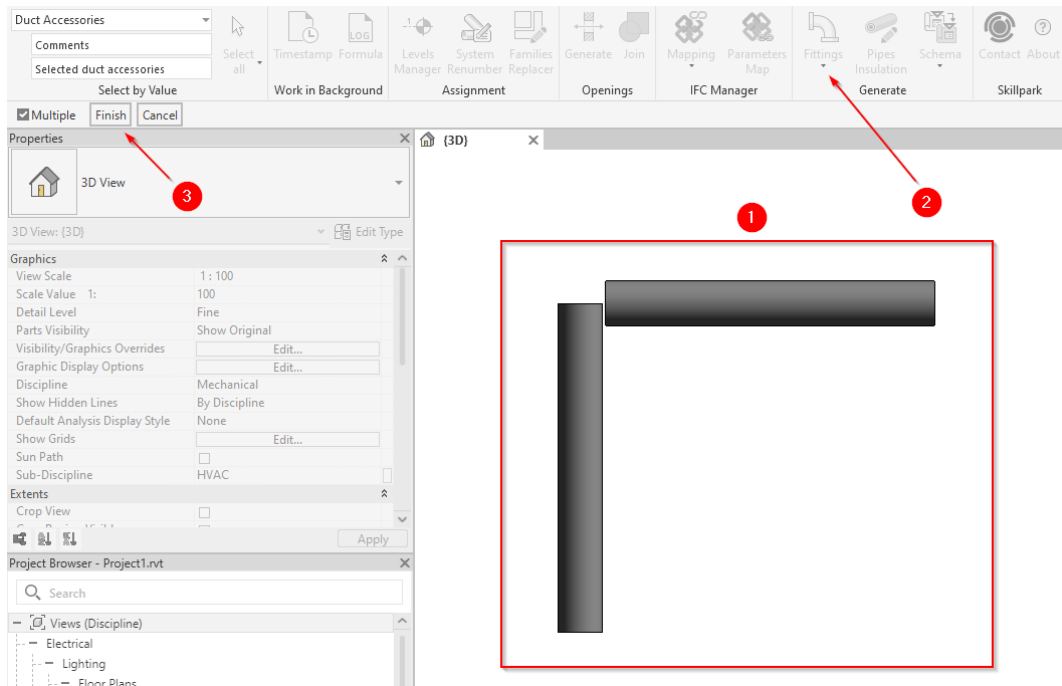
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Skillpark MEP > Generate > **Fittings > Ducts**

The tool generates duct fittings for selected ducts belonging to the same system.

Tool usage scheme:

1. In the model workspace, select the duct components for which the tool should automatically place duct fitting components.
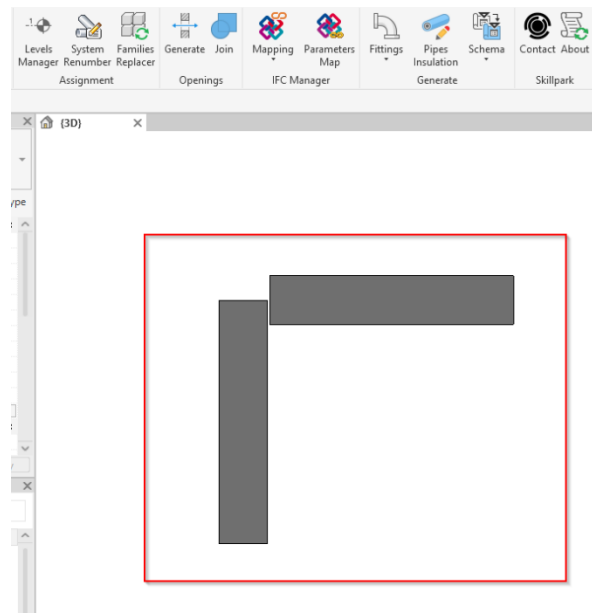
2. After execution, the tool will generate duct fittings between successive duct segments belonging to the same system, considering the information contained in the routing preferences.

3. Optional**:** If you did not select 3D model components, first lunch the tool (1), then select the components in the workspace (2) and confirm the selection by clicking the *Finish* button (3) located on the *Options Bar*.

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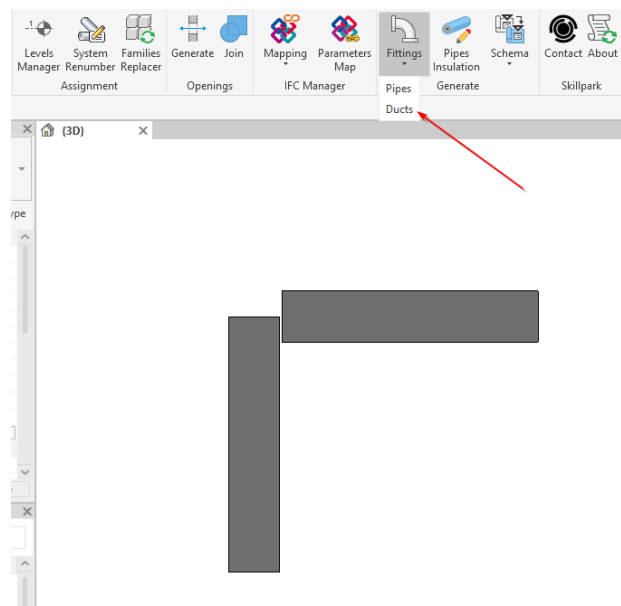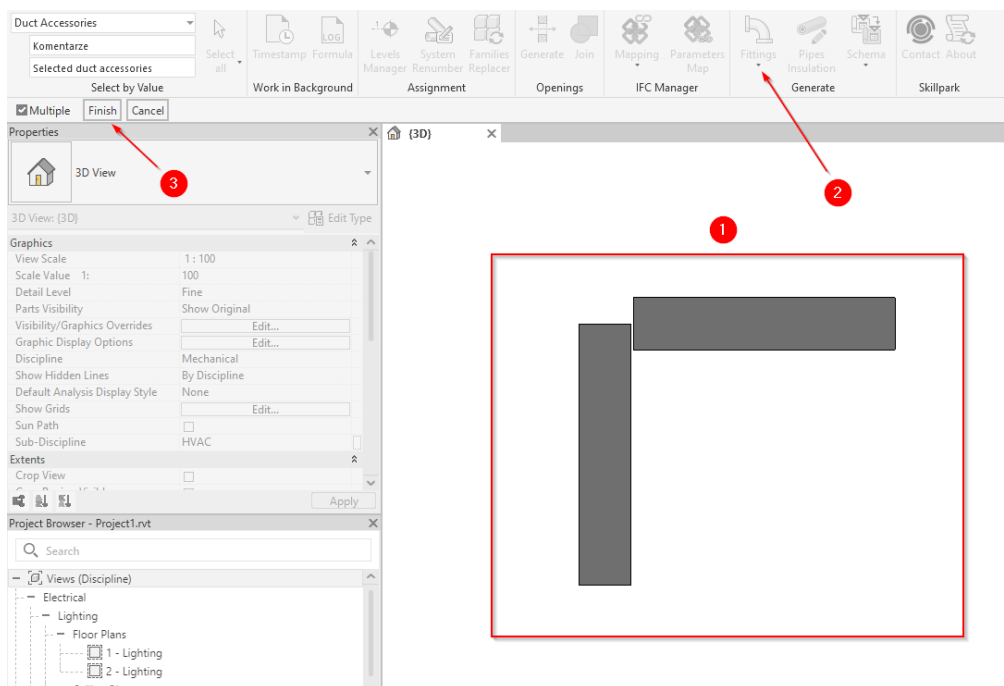
Skillpark MEP > Generete > Pipes Insulation

The tool collectively adds insulation to pipes, taking into account their classification, system type, and pipe type. It allows selecting the appropriate insulation condition in accordance with building regulations, considering the complete location of pipes within building partitions.

Tool usage scheme:

1. The upper table in the tool's dialog window lists information about pipe components in the model, including *System class, System type*, and *Pipe type*. The table data can be sorted (ascending/descending) by clicking on the column headers.

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2. In the *Condition* column, define the set of conditions based on which insulation sizes will be selected.

A list of available conditions can be accessed by clicking the button ⓘ .

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3. After clicking the *Refresh* button, the lower table in the dialog window will populate with proposed pipe insulation diameters, categorized by *System class, System type, Pipe type*, *Condition*, and *Diameter*. The *Quantity* column displays the number of components within each group.

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4. In the *Isolation* column, use the drop-down lists to select the insulation type for each pipe component group.

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5. In the *Isolation thickness* column, the insulation thickness can be manually overridden for specific pipe component groups.

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6. Optional**:** To also insulate components in the *Pipe Fittings* category, check the *Isolate fittings* checkbox.

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7. Optional**:** To allow overwriting insulation on previously insulated pipe components, check the *Overwrite existing* checkbox.

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8. To start the process, click the *Run* button.

System class	System type	Pipe type	Condition
Sanitary	Sanitary	PVC - DWV	1-5.
Domestic Cold Water	Domestic Cold Water	Copper	1-5.
Domestic Hot Water	Domestic Hot Water	Copper	6-7.
Sanitary	Sanitary	Copper	1-5.
Domestic Cold Water	Domestic Cold Water	Cast Iron	1-5.
Sanitary	Roof Drainage	Cast Iron	1-5.

Refresh

System class	System type	Pipe type	Condition	Diameter	Qua	Isolation	Isolation
Sanitary	Sanitary	PVC - DWV	4	101.60	113	Fiberglass	100
Sanitary	Sanitary	PVC - DWV	4	254.00	11	Fiberglass	100
Sanitary	Sanitary	PVC - DWV	3	50.80	143	Fiberglass	50.8
Sanitary	Sanitary	PVC - DWV	4	152.40	12	Fiberglass	100
Sanitary	Sanitary	PVC - DWV	4	203.20	1	Fiberglass	100
Sanitary	Sanitary	PVC - DWV	3	76.20	2	Fiberglass	76.2
Domestic Cold	Domestic Cold	Copper	2	25.40	403	Fiberglass	30
Domestic Cold	Domestic Cold	Copper	1	12.70	341	Fiberglass	20
Domestic Cold	Domestic Cold	Copper	5	12.70	3	Fiberglass	10
Domestic Cold	Domestic Cold	Copper	4	152.40	40	Fiberglass	100
Domestic Cold	Domestic Cold	Copper	3	50.80	46	Fiberglass	50.8

☑ Isolate fitings   ☑ Overrite existing

Run

Skillpark MEP > Generate > Schema > Import

The tool generates sanitary installation diagrams based on a properly prepared data sheet by arranging component families. The tool requires Microsoft Excel and a set of line-based families in the *Detail Items* category for proper operation.

Tool usage scheme:

1. A spreadsheet used by the tool is located in the SkillparkMEP add-in installation folder (default path: *C:\Users\User\Documents\SkillparkMEP\SchemaGenerator\example_schema.xlsx*).
   For proper functionality, the *data input standard* contained in the *Sche* sheet must be followed.

   In cell B1, define the path to the folder containing the families used in the diagrams.
   If the family folder is in the same location as the schema file, simply enter the folder name in cell B1.
   Column A, starting from row 4, should contain the elevation levels of subsequent floors.
   Columns B, C, … should be filled with information about the structure of vertical shafts, where:
   • Cell 2 – defines the shaft's assignment within a given drawing segment, and segments are separated by vertical lines.
   • Cell 3 – specifies the set of families used within the shaft, considering the character string up to the second occurrence of "–" in the family name.
   • Cells 4, 5, … – define the types of families used on each floor of the shaft, considering the character string after "#".

2. Optional: To facilitate batch data management, it is recommended to store potential variants in list form in an auxiliary sheet. Example of such data preparation is provided in the Lists sheet of the *example_schema.xlsx* file.

3. Before launching the tool, switch to or create a drafting view in the model file.
4. Select the *Schema* tool icon, then choose *Import* from the dropdown menu.
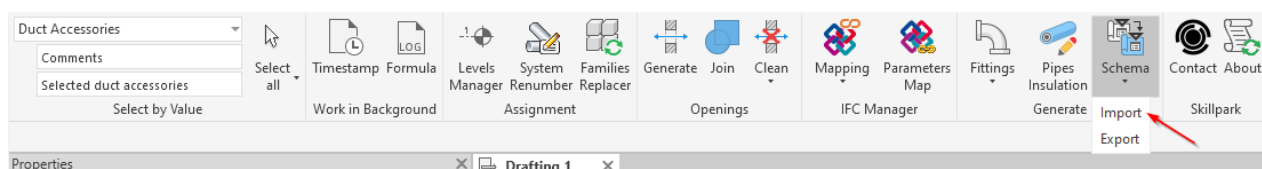
5. Specify the location of the prepared installation diagram in the Excel spreadsheet.
6. After opening the selected file, the installation diagram will be generated in the current drafting view.

Structure of Diagram Component Families:

Families created in the standard supported by the tool are located in the SkillparkMEP add-in installation folder (default path:*C:\Users\User\Documents\SkillparkMEP\SchemaGenerator\Families*). If the data in the batch sheet does not match the available family database, the tool will place a placeholder family *"IS_Lack of family or type"* in the problematic areas of the di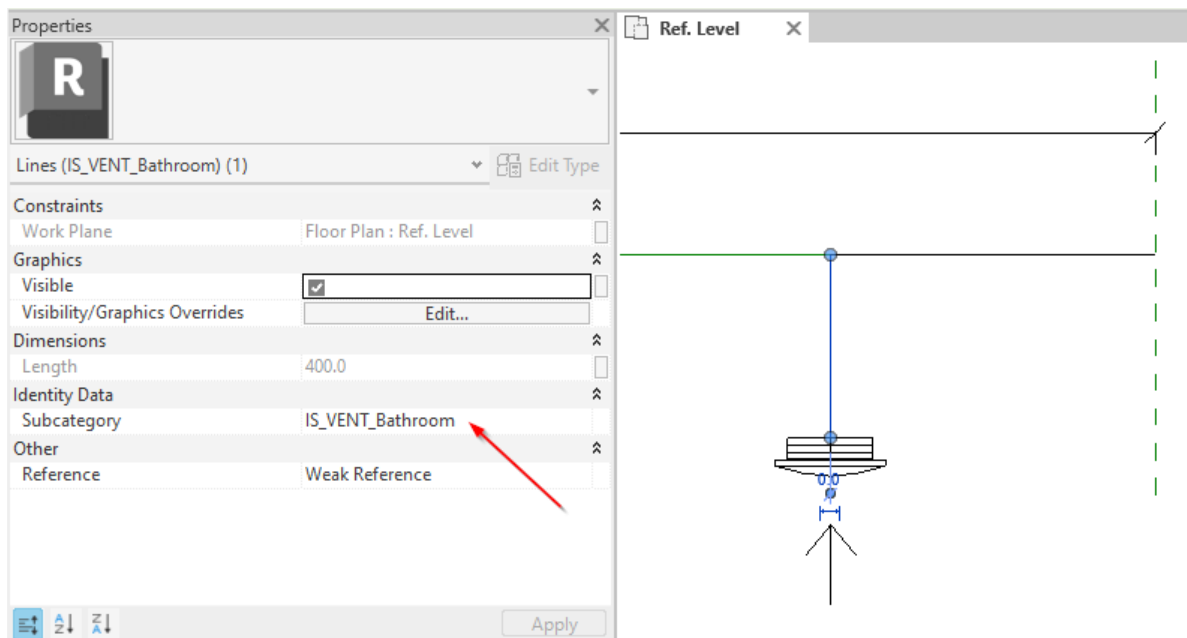agram. Each diagram component family is created as a line-based *Detail Item*, allowing it to adjust in size according to floor spacing. When creating additional component families, it is recommended to follow the same standard. When developing new families for use with the tool, ensure that subcategory functionality is maintained for appropriate lines. This ensures consistent color representation of selected elements within diagrams in the project.

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Skillpark MEP > Generate > Schema > Export

The tool exports a sanitary installation diagram to a spreadsheet based on a prepared drafting view. The tool only exports diagrams created using the *Schema > Import* standard.

Tool usage scheme:

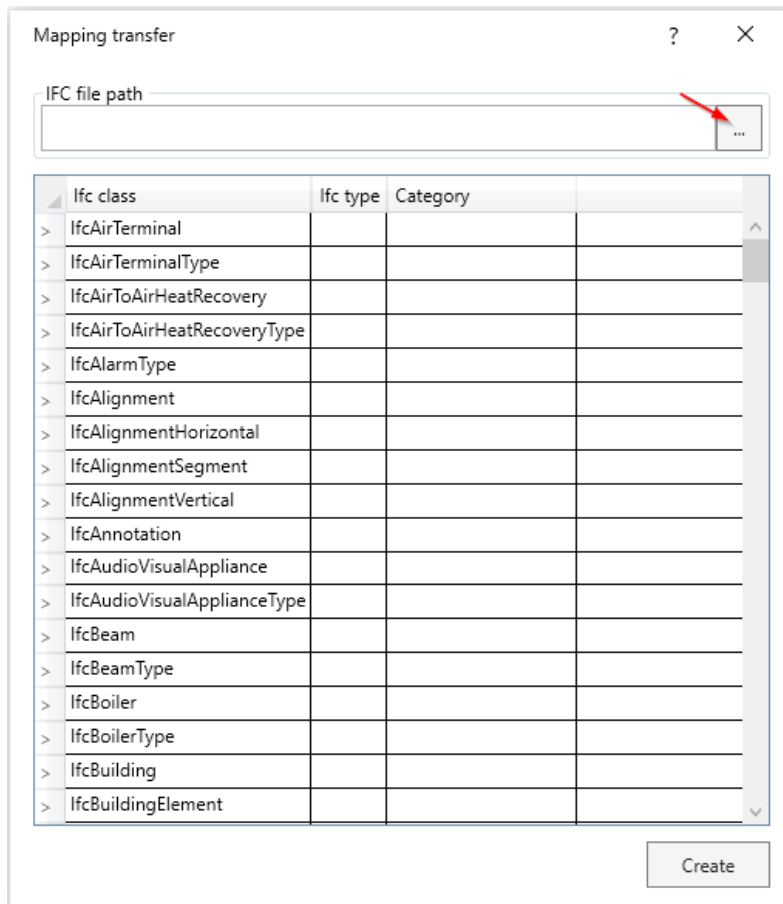1. Select the *Schema* tool icon, then choose *Export from the dropdown menu.*
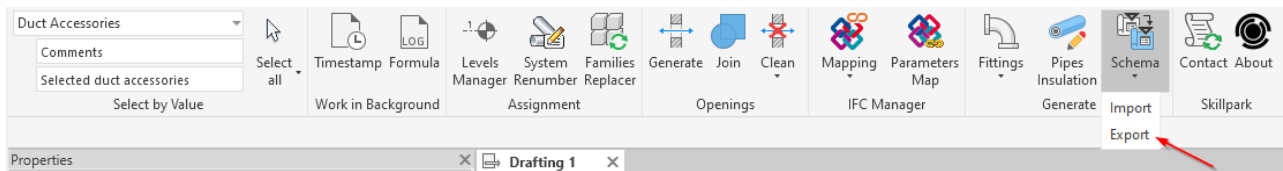
2. Specify the location where the spreadsheet containing the diagram should be saved.

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Skillpark MEP > IFC Manager > Mapping > Transfer

The tool places instances of any elements at the locations of successive IFC model class elements, creating Revit components as local models in the selected category.

Tool usage scheme:

1. Specify the file path to the IFC file based on which the local models will be placed in the project.

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2. The *Ifc class* and *Ifc type* columns contain information about the IFC class and IFC type of the components within the IFC files.

3. In the *Category* column, select the category to which elements from specific IFC classes should be assigned.

4. If the *DontImport* category is selected, the tool will not place any elements from the given IFC class.

5. To add a data row, activate the last row and press ENTER.
6. To delete a data row, select it and press DELETE.

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7. After completing the configuration, press the *Create* button.