



MICRODESK



BIMrx

v1.1

User Guide

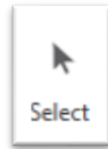
February 2019

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Overview

The Microdesk **BIMrx** tool is meant to empower Revit users to more quickly and powerfully manipulate their BIM data. The tool has two main features: 1) A tool for selecting model elements based on Revit's native Rule Based Filters; and 2) A pair of tools for exchanging data of selected elements with Excel.

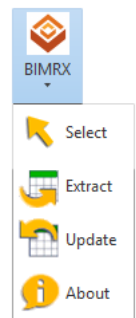


1). Select Elements using Revit's Rule Based Filters



2). Exchange Revit data of the selected objects with Excel

The **BIMrx** functionality can also be accessed from the **BIMrx** group of the "Add-Ins" panel on the Revit Ribbon as shown in the image on the right.



QuickStart

Feature 1 – Using Revit Rule Based Filters to Select Objects

- Create and manage Rule Base Filters in Revit.
- Click the **Select** button from **Microdesk** tab >> **BIMrx** panel.
- Choose the filters you would like to add to the selection.
- Decide whether to select elements from the current view, or from the whole model.

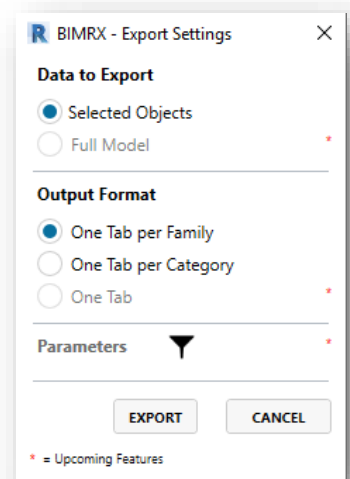
Feature 2 - Update Parameter Data Using Excel

- Select elements in Revit (optionally using the filter selection above).
- Click the **Extract** button from **Microdesk** tab >> **BIMrx** panel.
- Select the settings for your export in the **Export Settings** dialog and click the **Export** button.

In the current implementation you can only choose the output format to be either **One Tab per Family** or **One Tab per Category**.

The other options shown and marked with * will be available in future versions.

- Choose a location and file name for the Excel File that will be saved.
- Make changes in Excel, but don't change the grey/blue read-only columns.
- Save your changes. It is okay to leave Excel open.
- Click the **Update** button from **Microdesk** tab >> **BIMrx** panel.
- Select the modified Excel file.
- The import will occur, and errors will be saved in a separate Excel file.



Feature 1 – Using Revit Rule Based Filters to Select Objects

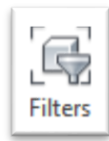
With the help of the **Rule Based Selection** tool you can use the built-in Revit “Rule Based Filters” to select Revit elements from your model.

Create a Revit Rule Based Filter

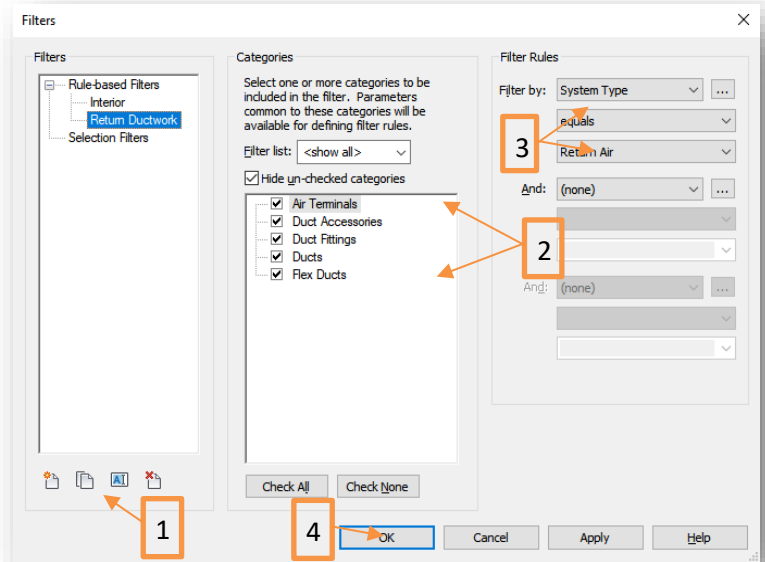
The creation of Rule Based Filters is built into Revit. We outline the process here only for completeness.

In Revit go to:

- **View** ribbon tab
- **Graphics** panel
- **Filters** button



- 1) Create a named “**Rule Based Filter**”.
- 2) Choose the desired element categories.
- 3) Add any extra filter rules.
- 4) Click the OK button.



* Note – For more information see:

<http://help.autodesk.com/view/RVT/2019/ENU/?guid=GUID-87A63C25-99A6-428D-A0FF-112E4FC9C3D7>

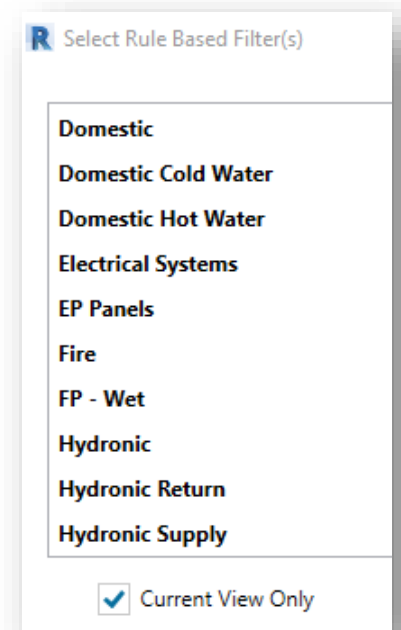
Select Objects Using the Rule Based Filter

In Revit go to:

- **Microdesk** ribbon tab
- **BIMrx** panel
- **Select** button



- When you click the **Select** button, a dialog will show you the Rule-Based Filters that exist in the model.
- Select one or more of the filters.
- Check the **Current View Only** check-box if you want to restrict the selection to the current view.
 - Otherwise the elements that satisfy the filter(s) will be applied to the whole model.
- Click the **Select** button to select the elements and dismiss the dialog.
- Click the **Close** button to dismiss the dialog with no action taken.



Feature 2 - Update Parameter Data Using Excel

Export Parameter Data

- Select some model elements.
- In Revit go to:
 - **Microdesk** ribbon tab
 - **BIMrx** panel
 - **Extract** button
- When you click the **Extract** button, a *Save File* dialog will appear. Enter a name for the Excel file to which you want the parameter data to be exported.
- Click the **Save** button. The parameter data for the selected entities will be exported to the Excel file you've specified.
- The Excel file format is described below in the section named **Excel file format**.

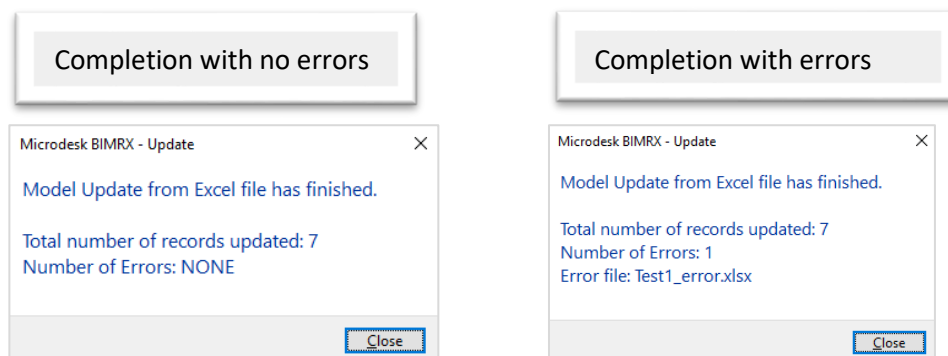


Edit the Excel File.

- Open the exported Excel file in Excel and update the desired parameters.
- Save the Excel file.

Import Parameter Data Back into the Revit Model

- In Revit go to:
 - **Microdesk** ribbon tab
 - **BIMrx** panel
 - **Update** button
- Select the updated Excel file.
 - The file can still be open in Excel, but it must have your changes saved.
- Wait for the Import to finish. There will be a message box displayed when the operation is done.
- Check to see if the updated parameter values match the values entered in the Excel file.
- If there were errors during the import a copy of the import file will be created.
 - The error file will have the same name as the original file with an “**_error**” suffix.
 - The error file format is described below in the section named **Error File Format**.



File Formatting Explained

Extracted Excel File Format

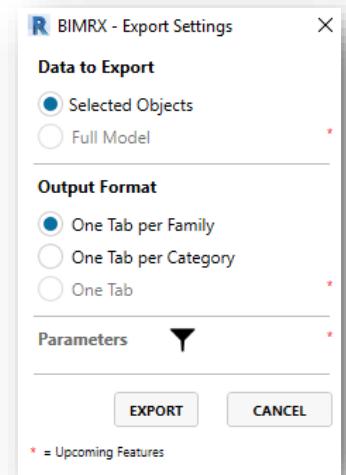
Currently there are two export formats available to select from in the **Export Options** dialog.

These are:

- **One Tab per Family:** Entities belonging to the same **Family** will be exported to one Excel tab and you will have access to all the parameters for each family type in one single tab; and
- **One Tab per Category:** Entities belonging to the same **Category** will be exported to one Excel tab and you will have access to all the parameters for each category type in one single tab.

In either case the Excel sheet will contain:

- Index Tab
- Export Catalog Tab
- Export data Tabs



The Index Tab

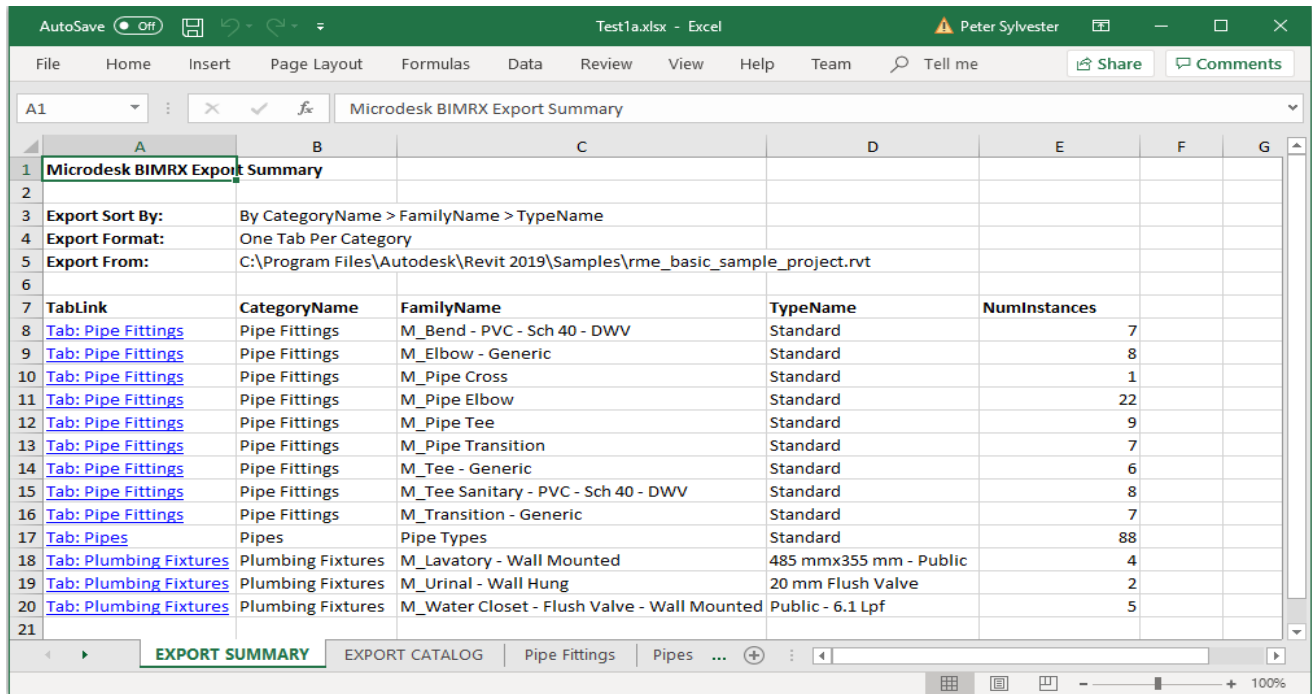
The index sheet is different for the **One Tab per Family** and the **One Tab per Category** exports.

In either case, the output begins with general information about the export, such as: Sort order, Format, Source Revit file name. Next, an indexed listing of all the Category, Family and Family Type names that are included in the export. The first column of this listing contains a Hyperlink that, when clicked, will take you to the Excel tab containing the data of the respective Family/Category.

Index page for the **One Tab per Family** exports:

TabLink	ExcelTab	CategoryName	FamilyName	TypeName	NumInstances
Tab: 1		1 Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Standard	7
Tab: 2		2 Pipe Fittings	M_Elbow - Generic	Standard	8
Tab: 3		3 Pipe Fittings	M_Pipe Cross	Standard	1
Tab: 4		4 Pipe Fittings	M_Pipe Elbow	Standard	22
Tab: 5		5 Pipe Fittings	M_Pipe Tee	Standard	9
Tab: 6		6 Pipe Fittings	M_Pipe Transition	Standard	7

Index page for the One Tab per Category exports:



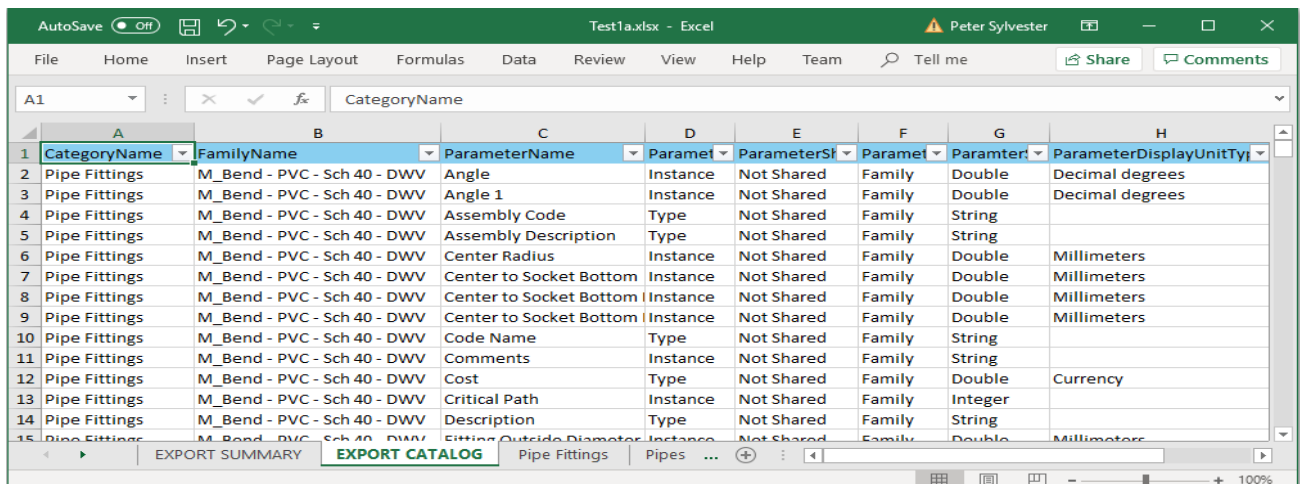
TabLink	CategoryName	FamilyName	TypeName	NumInstances
Tab: Pipe Fittings	Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Standard	7
Tab: Pipe Fittings	Pipe Fittings	M_Elbow - Generic	Standard	8
Tab: Pipe Fittings	Pipe Fittings	M_Pipe Cross	Standard	1
Tab: Pipe Fittings	Pipe Fittings	M_Pipe Elbow	Standard	22
Tab: Pipe Fittings	Pipe Fittings	M_Pipe Tee	Standard	9
Tab: Pipe Fittings	Pipe Fittings	M_Pipe Transition	Standard	7
Tab: Pipe Fittings	Pipe Fittings	M_Tee - Generic	Standard	6
Tab: Pipe Fittings	Pipe Fittings	M_Tee Sanitary - PVC - Sch 40 - DWV	Standard	8
Tab: Pipe Fittings	Pipe Fittings	M_Transition - Generic	Standard	7
Tab: Pipes	Pipes	Pipe Types	Standard	88
Tab: Plumbing Fixtures	Plumbing Fixtures	M_Lavatory - Wall Mounted	485 mmx355 mm - Public	4
Tab: Plumbing Fixtures	Plumbing Fixtures	M_Urinal - Wall Hung	20 mm Flush Valve	2
Tab: Plumbing Fixtures	Plumbing Fixtures	M_Water Closet - Flush Valve - Wall Mounted	Public - 6.1 Lpf	5

Export Catalog Tab

The Export Catalog tab contains a listing of all the Parameters for each Family Type contained in the export.

The included columns contain the following information for each parameter:

- CategoryName
- FamilyName
- ParameterName
- ParameterInstanceOrType
- ParameterSharedOrNotShared
- ParameterProjectOrFamily
- ParameterStorageType
- ParameterDisplayUnitType
- IsUpdateable
- ParameterGuid



CategoryName	FamilyName	ParameterName	ParameterInstanceOrType	ParameterSharedOrNotShared	ParameterStorageType	ParameterDisplayUnitType	ParameterGuid
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Angle	Instance	Not Shared	Family	Double	Decimal degrees
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Angle 1	Instance	Not Shared	Family	Double	Decimal degrees
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Assembly Code	Type	Not Shared	Family	String	
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Assembly Description	Type	Not Shared	Family	String	
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Center Radius	Instance	Not Shared	Family	Double	Millimeters
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Center to Socket Bottom	Instance	Not Shared	Family	Double	Millimeters
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Center to Socket Bottom	Instance	Not Shared	Family	Double	Millimeters
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Code Name	Type	Not Shared	Family	String	
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Comments	Instance	Not Shared	Family	String	
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Cost	Type	Not Shared	Family	Double	Currency
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Critical Path	Instance	Not Shared	Family	Integer	
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Description	Type	Not Shared	Family	String	
Pipe Fittings	M_Bend - PVC - Sch 40 - DWV	Fitting Outside Diameter	Instance	Not Shared	Family	Double	Millimeters

Export Data Tabs

For **One Tab per Family** exports, the export data tabs are named with a numbered that is generated sequentially for each family export.

For **One Tab per Category** exports the export data tabs are named after the Category whose exported data it contains.

The first four columns and the last two columns of these tabs contain data that identifies the element:

- CategoryName
- FamilyName
- TypeName
- ElementId
- TypeUid
- ElementGuid

These columns are read-only, and they have a gray background.

CategoryName	FamilyName	TypeName	ElementId	oltag	Wattag	Wid	TypeUid	ElementGuid
Electrical Equipment	M_Lighting and Appliance Panelboar	100 A	622023				4aded12f-bb3e-43d3-a764-654a14aded12f-bb3e-43d3-a764-654a0a8454e4-00	
Electrical Equipment	M_Lighting and Appliance Panelboar	100 A	622026				4aded12f-bb3e-43d3-a764-654a14aded12f-bb3e-43d3-a764-654a0a8454e4-00	
Electrical Equipment	M_Lighting and Appliance Panelboar	400 A	742670				4aded12f-bb3e-43d3-a764-654a19e25f779-fef2-4c09-93cf-91642a381495-0000	

The remaining columns contain values of the parameters that belong to the elements exported into the given tab.

- Cells with a blue-gray background contain read-only parameter values that will not be updated on the import.
- Cells with a light-yellow background are for parameters that do not belong to the element in the row, but they have valid values for elements in other rows.
- Cells with a white background are read/write parameter values that will be imported to Revit during an update.

Lighting Total Connect	Lighting Total Estimated Dema	Location	Main	Mains Typ	Manufacture	Mar	Max #1 Pole Breaker	MCB Ratin	Mod	Modification	Mountin
0		0 Power Riser 113	100			4	12	0			Surface
0		0 Power Riser 113	100			19	12	0			Surface
		Power Riser 113	100			38	42	0			Surface

Important:

1. In the current version, **Type Parameters** are exported as read-only. There is no possibility to import edited values into **Type Parameters**.

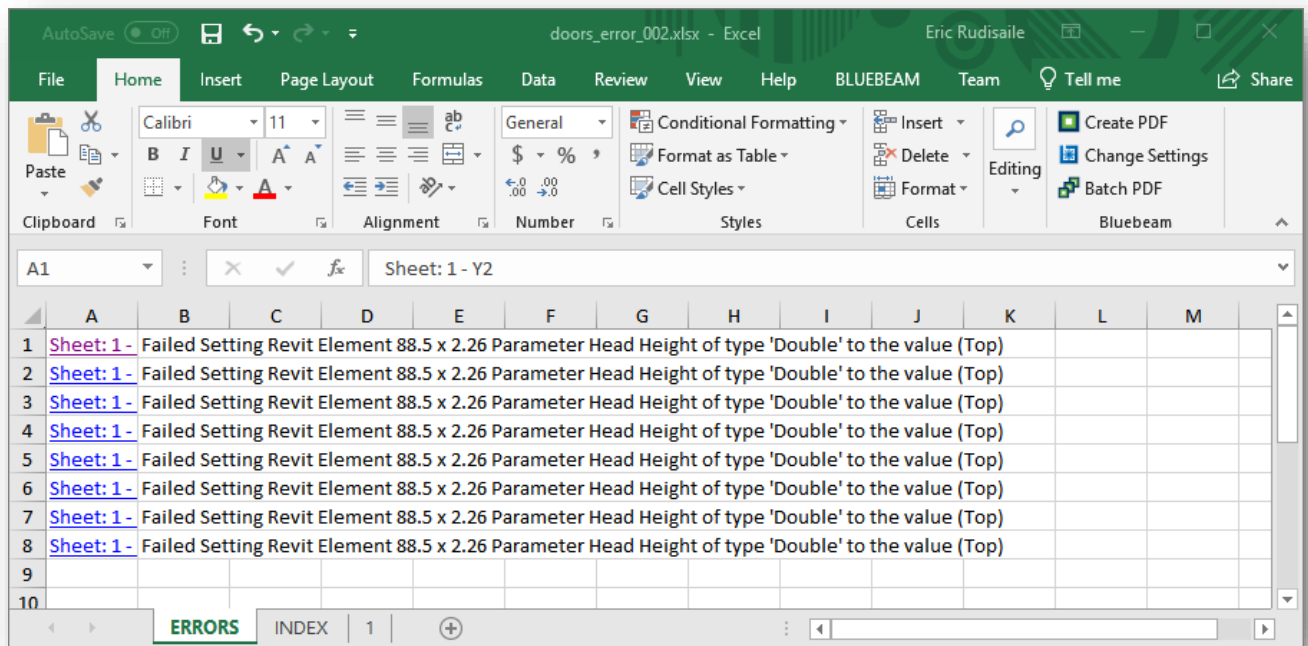
- In the exported Excel file, the Project Level parameters will appear with a “**(Project)**” suffix appended to the name of the Custom Parameter. This is necessary because Revit will allow you to have a custom Family Parameter added to your elements with the same name as a custom Project Parameter.

In addition, if the parameter is a **Shared Parameter**, the header cell of the column will have an **Excel Comment** containing the Shared Parameter GUID as shown in the image below:

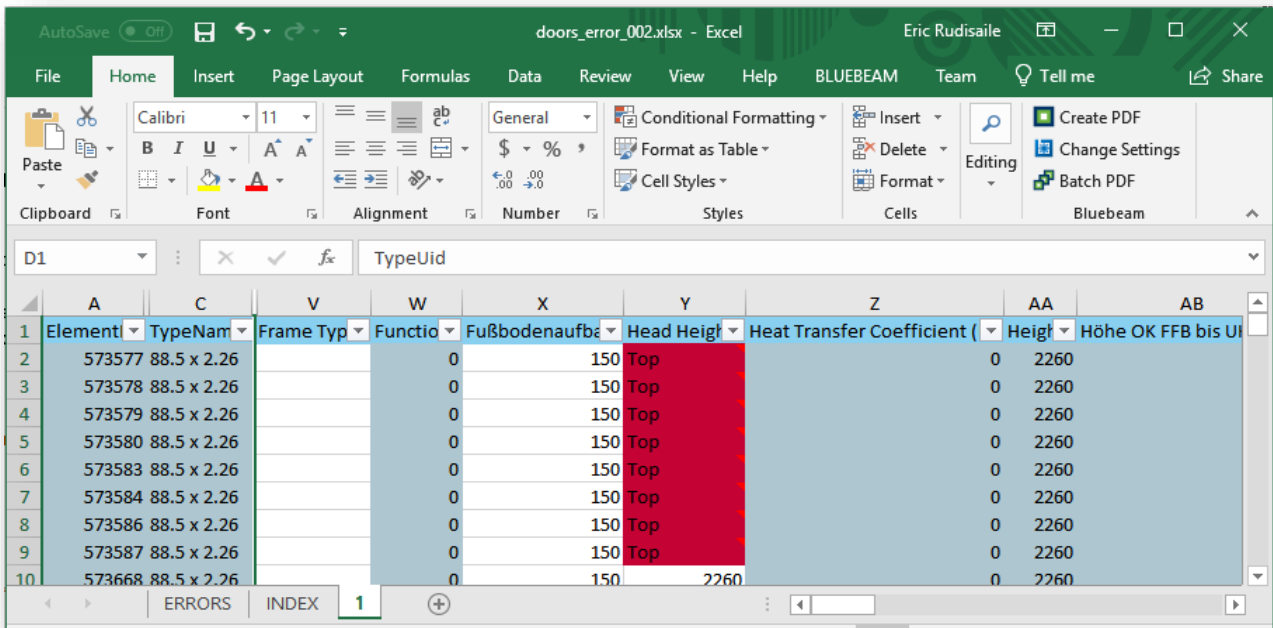
	BM	BN	BO	BP	BQ
Demar	Family Param	Project Param (Project)	Project Param1 Shared (Project)	Pr637b4721-7f14-4e40-9d65-8696f52454b2	Footer Not
0	Test	Test	Test	ps	

Error Excel File Format

- If errors are encountered during an import operation, the program will generate an Excel file containing the errors that occurred during the import.
- This file will be placed in the same folder as the original file and will have the same name as the original file with an “_error” suffix.
- The file will contain a sheet named “**ERRORS**” listing each error that occurred during the import.



- Clicking the hyperlink in the first column will take you directly to the cell that caused the error.
- The error cell will have a red background and a comment in the cell showing the error message returned by Revit while **BIMrx** was trying to modify the parameter in Revit.

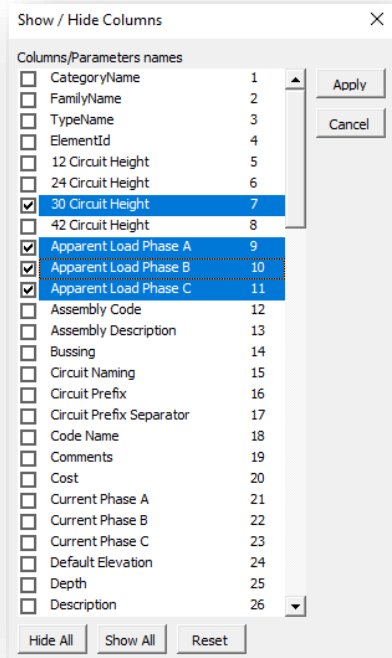


The BIMrx Excel Assistant

The **BIMrx - Excel Assistant** is a set of helper macros that can be used to simplify interacting with the extracted parameter data generated by **BIMrx**.

The Excel Assistant provides three macros:

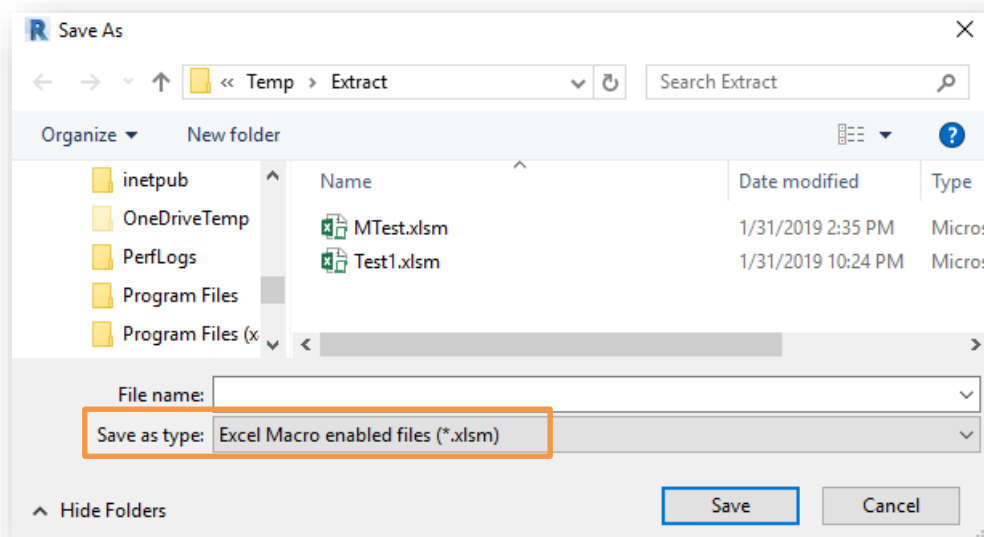
- **ShowHideColumn:** This is a general use macro that will display a list of all the column names in Row 1 of the current sheet. From the list, columns can be selected (show) or unselected (hide) and when the **Apply** button is clicked the sheet will be updated from the selections.
- **ZoomSheets:** This macro will set all the sheets the Excel document to 80% zoom.
- **AutofitColumns:** this macro will AutoFit the columns for all the sheets in the Excel document.



Activating the Excel Assistant

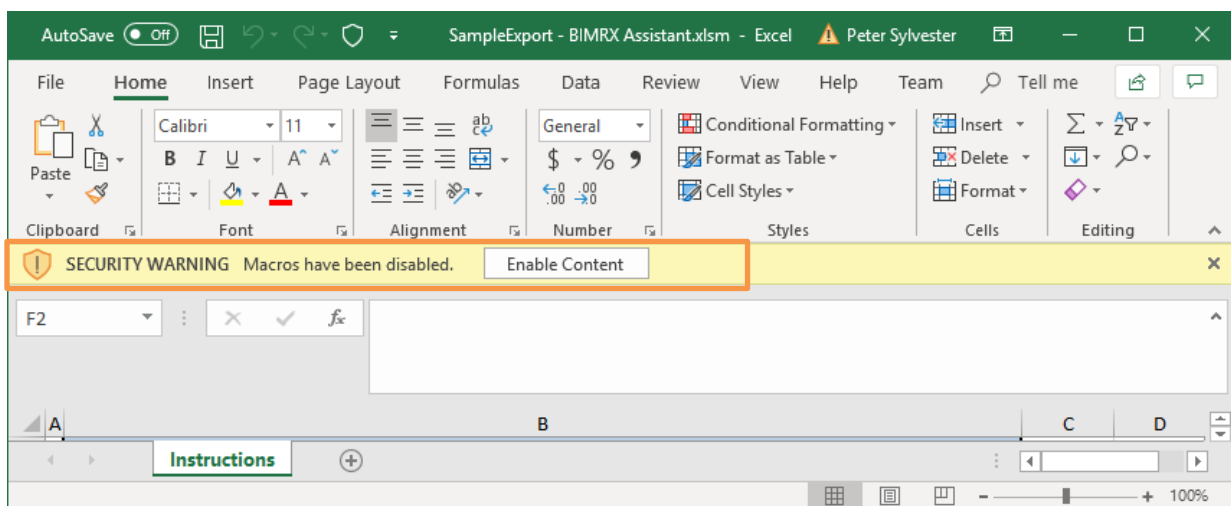
To activate the Excel Assistant, you must choose to export the Revit data as an “Excel Macro Enabled (.xlm)” Excel file.*

When choosing the file name for your data export, select ***.xlm** in the **Save as type** field of the **Save As** dialog:

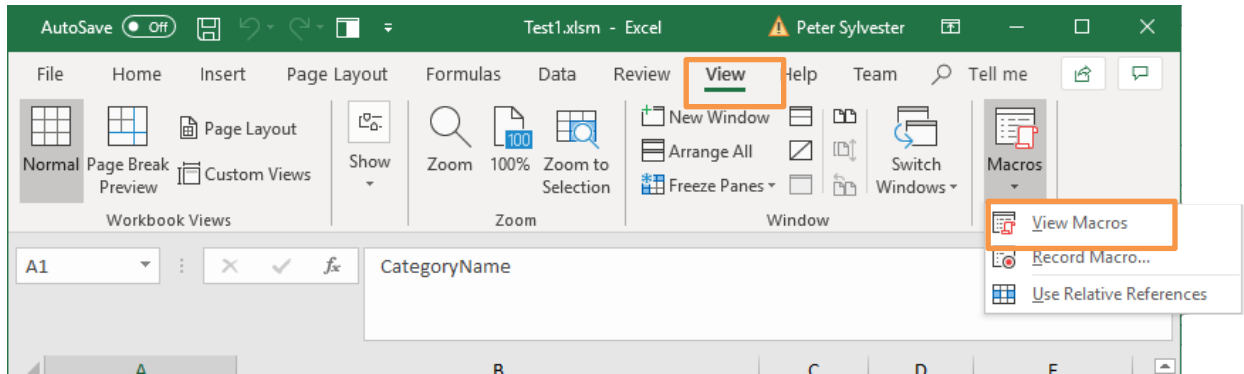


The resulting output file will contain the **BIMrx – Excel Assistant** macros.

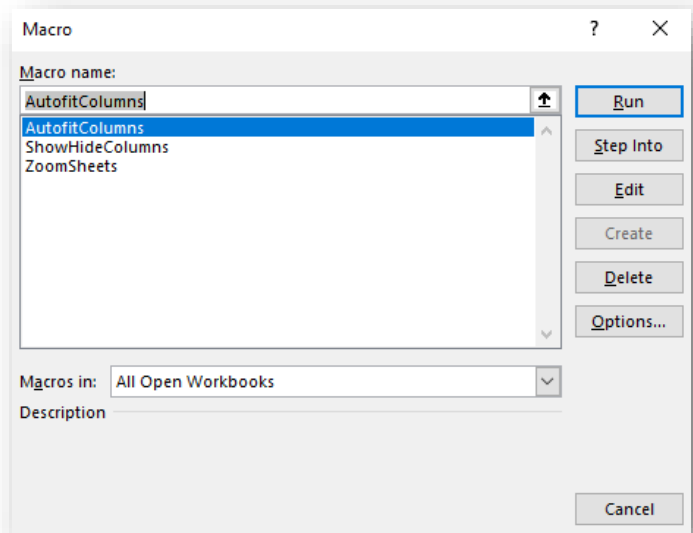
Since result of the export is a macro enabled Excel file (.xlm), permission must be provided when opening it in Excel to operate the macros.



Invoking the Excel Assistant



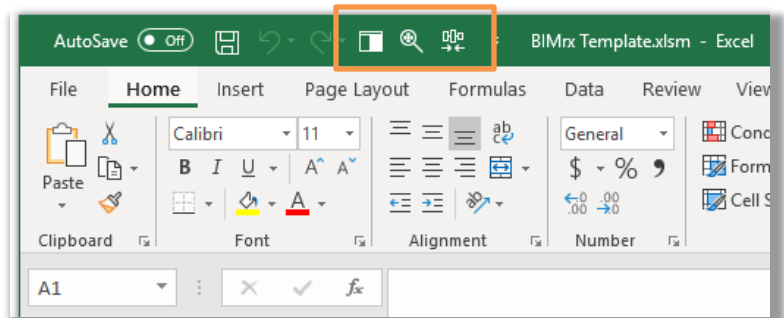
The **BIMrx - Excel Assistant** macros can be invoked from the **Excel Ribbon – View tab – Macros pane – View Macros** dialog. Then choose to **Run** the macro you want to use.



They can also be invoked from the **Excel Quick Access Toolbar**.

The three custom accelerator icons in the **Quick Access Toolbar** will invoke the following **BIMrx** macros, in the listed order:

1. ShowHideColumns
2. ZoomSheets
3. AutoFitColumns



Adding Your Own Macro Utilities

Additional macros can be added to the **BIMrx** export template by editing the macro enabled Excel export template file named “**BIMRX Template.xlsm**”. Macros you add to this template will be part of all future **BIMrx** generated exports.

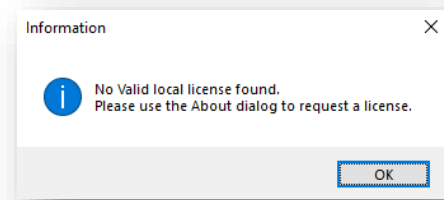
This file can be found in the plugins installation folder under:

C:\ProgramData\Autodesk\Revit\Addins\201X\Microdesk.BIMrx

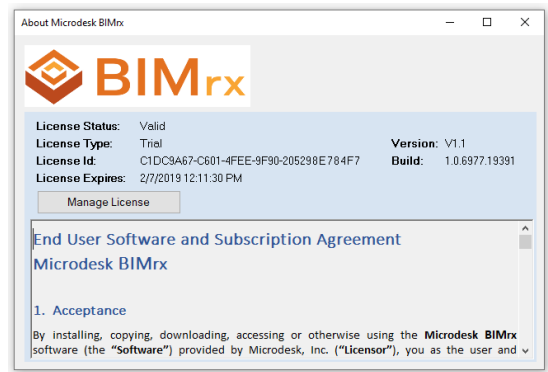
Where **201X** has one of the following values, depending on the Revit version BIMrx was installed for: 2016, 2017, 2018 or 2019.

License Activation

When you first run the tools, you will likely be told that you do not have a license and will be directed to use the about button.

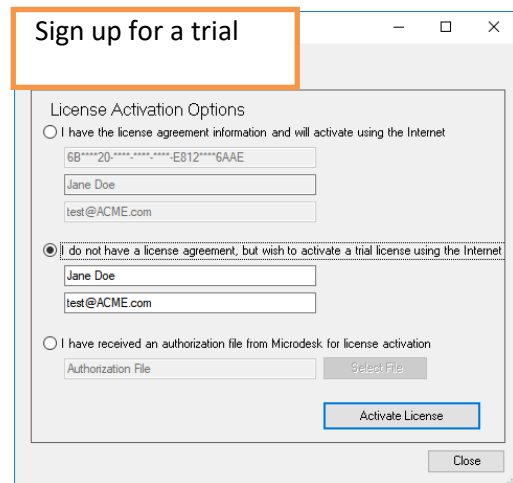
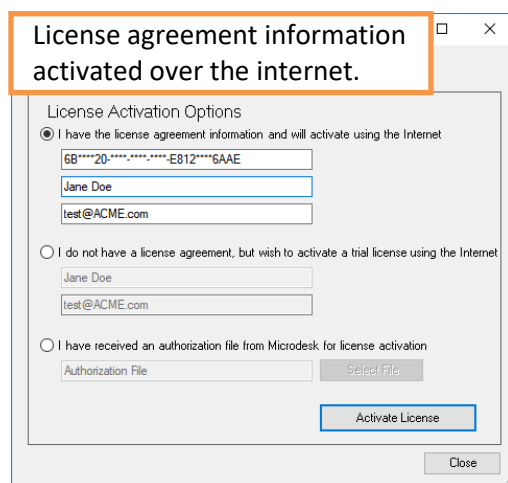


The **About** dialog contains the **Manage License** button that takes you to the **License Activation** dialog.



The **License Activation** dialog will present you with 3 options for activating a license. Choose the option best for your situation to activate the tools and start using BIMRX.

- 1) Trial License: Feel free to test out the tools for a limited time before procuring a Standard License.
- 2) Standard License: Reach out to Microdesk to acquire standard license.
- 3) License File: Use a License file that you've received from Microdesk.



Use an authorization file

License Activation Options

I have the license agreement information and will activate using the Internet

License Agreement Code

Full Name

Email

I do not have a license agreement, but wish to activate a trial license using the Internet

Full Name

Email

I have received an authorization file from Microdesk for license activation

Authorization File