

MKit Plug-in Manual

For Revit

Version 1.2

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1. Abstract

This document is considered as an instruction for the Plug-in named “MKit” in Revit, added functions intent to improve modelling performance, more automatic less tedious.

2. Prerequisites

This plug-in is available to the Revit version, 2020 or later, make sure the correct installation.

This program is available on *Windows* only.

3. Installation

Click *Install.exe* for installation, a window will show as below (Figure 3.1); select target Revit version and installation directory for custom installation; User can leave the setting as default by just clicking *Ok* for default installation. If user installed previous version of this plug-in, it will ask for overwriting.

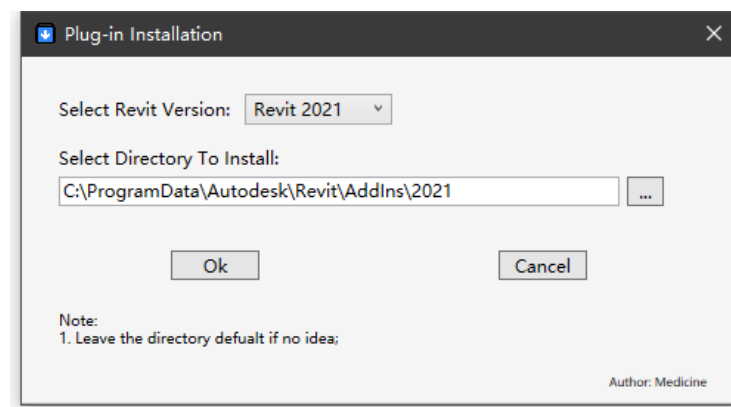


Figure 3.1 Installation window

After installation, user would see the function button on Revit panel in tab MKit as below (Figure 3.2)

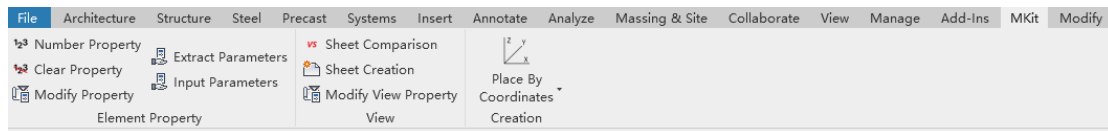


Figure 3.2 Ribbon Panels

4. Uninstallation

Click *unInstall.exe* for uninstallation, select which Revit version to implement uninstallation program based on the window (Figure 4.1).

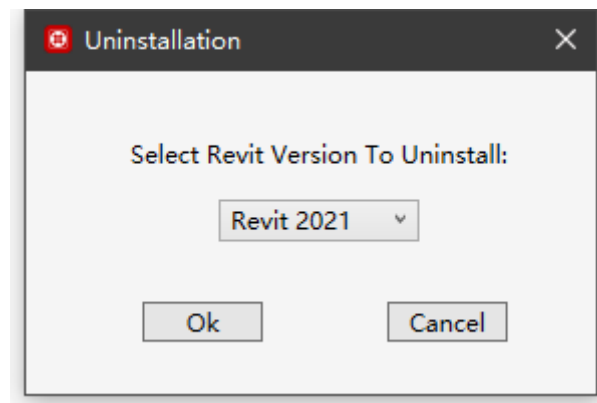


Figure 4.1 Uninstallation window

5. Function Introduction

5.1. Number Property

Number selected elements in model, the number will be displayed in the selected property value; only property in string format is available. The manipulation flow is as below:

1. Click button to invoke function and select desired elements;
2. After selection, select target property in selection window;
3. Type desired format and select order in the window below (Figure 5.1) to number, only integer is available in the number and spacing block.

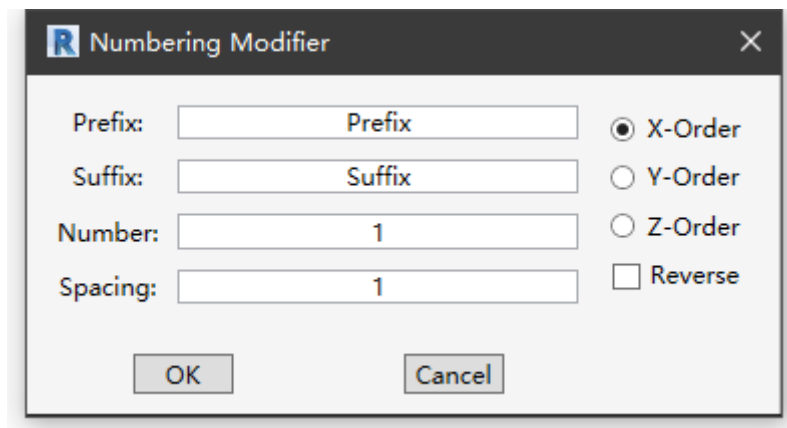


Figure 5.1 Numbering window

The numbering process will number the element based on the coordinate of elements. When finished user can find result in the selected property of element.

5.2. Clear Property

This is an advanced function for removing value of properties of elements; user can select multiple properties to remove their value.

5.3. Modify Property

Modify the value of specified property in string format, the dialog will be shown as below (Figure 5.2) after selecting elements in this function.

If the *target string* is empty, the value of property will be the *replace string*;
 if the property of elements has value, e.g. "column-stael-1", "column-stael-2", etc. ,
 and user needs to correct it as "column-steel-1", just type "stael" in the *target string*,
 and type the correct "steel" in the *replace string*, then the program will finish the
 modification task.

This function will help user select the elements of desired family type via a selection dialog, if elements of multiple types are selected.

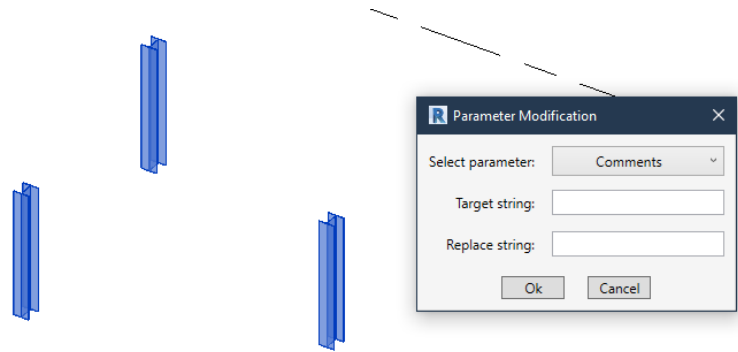


Figure 5.2 Dialog for modification

5.4. Extract Parameters

Extract the selected properties value of instances of one family to the .xlsx file. As below (Figure 5.3), user can select the desired properties, which are listed on the property palette when instances are selected, to be extracted.

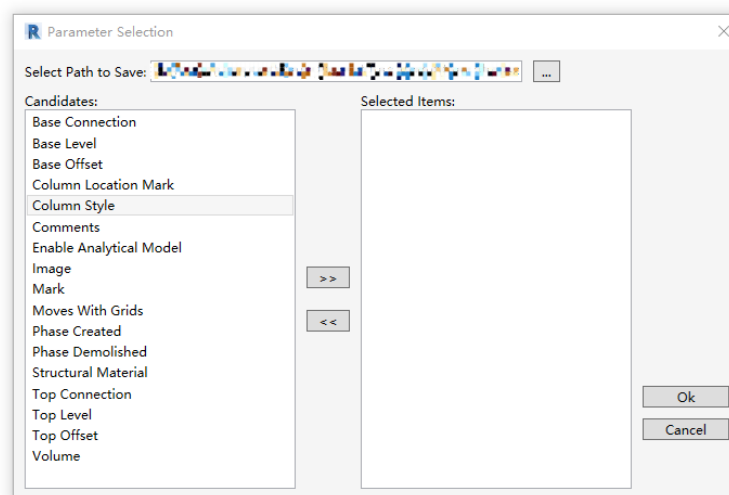


Figure 5.3 Extracting property value

The output .xlsx file can be further edited for information input.

5.5. Input Parameters

User can further edit the .xlsx file exported by function *Extract Parameters* for information input. This function is able to read project parameters, which gives a way to flexibly modify parameter.

Example:

Exported parameters of column family as Figure 5.4, then modify the value of *Base Offset* to -3500, import the modified file to current model for parameter modification.

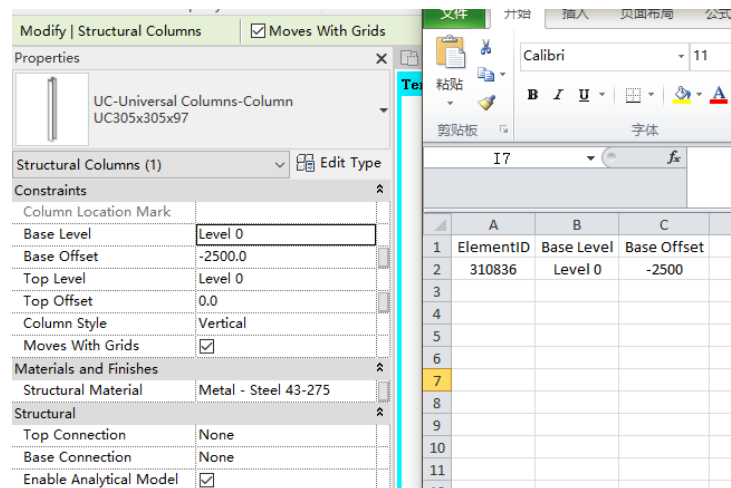


Figure 5.4 Exported parameters in .xlsx file

5.6. Sheet Comparison

Compare properties, number, name and revision, of sheets in model with desired drawing list table in xlsx file.

The content in xlsx file shall be in the format as below (Figure 5.5), only 3 columns without table head, the columns represent drawing number, drawing title and revision number respectively. Meanwhile, ensure the sheet in model has these mentioned arguments, if not, the comparison would be failed.

	A	B	C
1	1831/T/OP5/MHK/A01/100	LOCATION PLAN	A
2	1831/T/OP5/MHK/A01/101	GENERAL ROAD LAYOUT PLAN (SHEET 1 OF 2)	A
3	1831/T/OP5/MHK/A01/102	GENERAL ROAD LAYOUT PLAN (SHEET 2 OF 2)	A
4	1831/T/OP5/MHK/A01/103	PLAN OF WORKS AREA	A
5	1831/T/OP5/MHK/A21/001	BLOCK PLAN, EVA LAYOUT PLANGENERAL NOTES	A
6	1831/T/OP5/MHK/A58/020	SCREEN WALL -LAYOUT PLAN, GENERAL NOTES AND TYPICAL DETAIL AT TEMPORARY PRACTICE GREEN	A
7	1831/T/OP5/MHK/A58/101	METAL FENCE DETAILS	A
8	1831/T/OP5/MHK/A58/110	TEMPORARY PRACTICE GREEN - GENERAL ARRANGMENT PLAN	A
9	1831/T/OP5/MHK/A58/111	ADVANCE PREPARATION WORKS TREE SURVEY PLAN	A
10	1831/T/OP5/MHK/A58/112	ADVANCE PREPARATION WORKS TREE TREATMENT PLAN	A
11	1831/T/OP5/MHK/A58/113	ADVANCE PREPARATION WORKS TREE PROTECTION PLAN	A
12	1831/T/OP5/MHK/A58/120	TEMPORARY PRACTICE GREEN - TYPICAL ARTIFICIAL GRASS DETAIL 01	A
13	1831/T/OP5/MHK/A58/121	TEMPORARY PRACTICE GREEN - ARTIFICIAL GRASS DETAIL 01	A
14	1831/T/OP5/MHK/A58/122	TEMPORARY PRACTICE GREEN - ARTIFICIAL GRASS DETAIL 02	A
15	1831/T/OP5/MHK/A58/123	TEMPORARY PRACTICE GREEN - PRECAST CONCRETE KERB PHYSICAL BARRIER DETAIL	A
16	1831/T/OP5/MHK/A58/124	PROTECTION MEASURES FOR EXISTING TREES (SHEET 1 OF 2)	A
17	1831/T/OP5/MHK/A58/125	PROTECTION MEASURES FOR EXISTING TREES (SHEET 2 OF 2)	A
18	1831/T/OP5/MHK/A58/127	TEMPORARY PRACTICE GREEN -GATE DETAIL	A
19	1831/T/OP5/MHK/A58/128	TEMPORARY PRACTICE GREEN -FENCE DETAIL	A
20	1831/T/OP5/MHK/C01/003	GENERAL NOTES FOR CIVIL WORKS	A
21	1831/T/OP5/MHK/C01/010	GENERAL NOTES FOR SITE FORMATION AND SLOPE WORKS	A
22	1831/T/OP5/MHK/C02/101	ROAD SETTING OUT PLAN (SHEET 1 OF 2)	A
23	1831/T/OP5/MHK/C02/102	ROAD SETTING OUT PLAN (SHEET 2 OF 2)	A
24	1831/T/OP5/MHK/C05/001	GENERAL NOTES AND LEGEND FOR CONTOUR PLANS AND GEOLOGICAL SECTIONS	A
25	1831/T/OP5/MHK/C05/100	GROUND INVESTIGATION PLAN (FOR INFORMATION ONLY)	A
26	1831/T/OP5/MHK/C05/110	CONTOUR PLAN FOR EXISTING FILL (FOR INFORMATION ONLY)	A
27	1831/T/OP5/MHK/C05/112	CONTOUR PLAN FOR COMPLETELY / HIGHLY DECOMPOSED ANDESITE (C / HDA) (FOR INFORMATION ONLY)	A
28	1831/T/OP5/MHK/C05/113	CONTOUR PLAN FOR CORESTONE (FOR INFORMATION ONLY)	A
29	1831/T/OP5/MHK/C05/115	INFERRED ROCKHEAD CONTOUR PLAN (FOR INFORMATION ONLY)	A
30	1831/T/OP5/MHK/C05/117	GROUND WATER LEVEL CONTOUR PLAN (FOR INFORMATION ONLY)	A
31	1831/T/OP5/MHK/C05/200	GEOLOGICAL PROFILE (SHEET 1) (FOR INFORMATION ONLY)	A

Figure 5.5 Correct format

If there is difference between sheets and xlsx file, a xlsx file will be created with name “Comparison_Result”, click prompt link to find it (Figure 5.6);

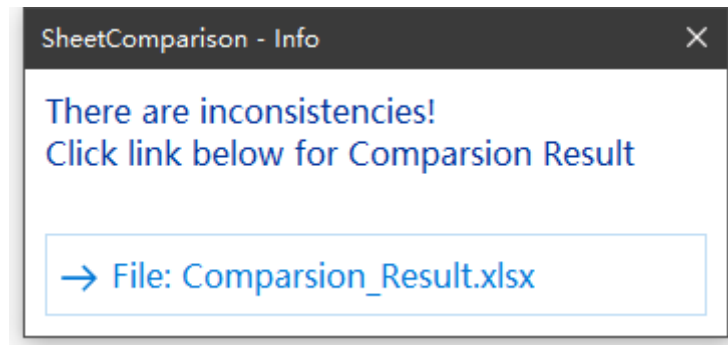


Figure 5.6 Window for comparison result

No file will be created if the comparison finished with no difference.

5.7. Sheet Creation

Batch creation of sheet by input drawing list table in xlsx file; the table shall be with 2 columns, Drawing Number and Drawing Title, without table head as below (Figure 5.7). The manipulation flow is as below:

	A	B
1	1831/T/OP5/MHK/A01/100	LOCATION PLAN
2	1831/T/OP5/MHK/A01/101	GENERAL ROAD LAYOUT PLAN (SHEET 1 OF 2)
3	1831/T/OP5/MHK/A01/102	GENERAL ROAD LAYOUT PLAN (SHEET 2 OF 2)
4	1831/T/OP5/MHK/A01/103	PLAN OF WORKS AREA
5	1831/T/OP5/MHK/A21/001	BLOCK PLAN, EVA LAYOUT PLANGENERAL NOTES
6	1831/T/OP5/MHK/A58/020	SCREEN WALL -LAYOUT PLAN, GENERAL NOTES AND TYPICAL DETAIL AT TEMPORARY PRACTICE GREEN
7	1831/T/OP5/MHK/A58/101	METAL FENCE DETAILS
8	1831/T/OP5/MHK/A58/510	TEMPORARY PRACTICE GREEN - GENERAL ARRANGMENT PLAN
9	1831/T/OP5/MHK/A58/511	ADVANCE PREPARATION WORKS TREE SURVEY PLAN
10	1831/T/OP5/MHK/A58/512	ADVANCE PREPARATION WORKS TREE TREATMENT PLAN
11	1831/T/OP5/MHK/A58/513	ADVANCE PREPARATION WORKS TREE PROTECTION PLAN
12	1831/T/OP5/MHK/A58/520	TEMPORARY PRACTICE GREEN - TYPICAL ARTIFICIAL GRASS DETAIL 01
13	1831/T/OP5/MHK/A58/521	TEMPORARY PRACTICE GREEN - ARTIFICIAL GRASS DETAIL 01
14	1831/T/OP5/MHK/A58/522	TEMPORARY PRACTICE GREEN - ARTIFICIAL GRASS DETAIL 02
15	1831/T/OP5/MHK/A58/523	TEMPORARY PRACTICE GREEN - PRECAST CONCRETE KERB PHYSICAL BARRIER DETAIL
16	1831/T/OP5/MHK/A58/524	PROTECTION MEASURES FOR EXISTING TREES (SHEET 1 OF 2)
17	1831/T/OP5/MHK/A58/525	PROTECTION MEASURES FOR EXISTING TREES (SHEET 2 OF 2)
18	1831/T/OP5/MHK/A58/527	TEMPORARY PRACTICE GREEN -GATE DETAIL
19	1831/T/OP5/MHK/A58/528	TEMPORARY PRACTICE GREEN -FENCE DETAIL
20	1831/T/OP5/MHK/C01/003	GENERAL NOTES FOR CIVIL WORKS
21	1831/T/OP5/MHK/C01/010	GENERAL NOTES FOR SITE FORMATION AND SLOPE WORKS
22	1831/T/OP5/MHK/C02/101	ROAD SETTING OUT PLAN (SHEET 1 OF 2)
23	1831/T/OP5/MHK/C02/102	ROAD SETTING OUT PLAN (SHEET 2 OF 2)
24	1831/T/OP5/MHK/C05/001	GENERAL NOTES AND LEGEND FOR CONTOUR PLANS AND GEOLOGICAL SECTIONS
25	1831/T/OP5/MHK/C05/100	GROUND INVESTIGATION PLAN (FOR INFORMATION ONLY)
26	1831/T/OP5/MHK/C05/110	CONTOUR PLAN FOR EXISTING FILL (FOR INFORMATION ONLY)
27	1831/T/OP5/MHK/C05/112	CONTOUR PLAN FOR COMPLETELY / HIGHLY DECOMPOSED ANDESITE (C / HDA) (FOR INFORMATION ONLY)
28	1831/T/OP5/MHK/C05/113	CONTOUR PLAN FOR CORESTONE (FOR INFORMATION ONLY)
29	1831/T/OP5/MHK/C05/115	INFERRED ROCKHEAD CONTOUR PLAN (FOR INFORMATION ONLY)
30	1831/T/OP5/MHK/C05/117	GROUND WATER LEVEL CONTOUR PLAN (FOR INFORMATION ONLY)
31	1831/T/OP5/MHK/C05/200	GEOLOGICAL PROFILE (SHEET 1) (FOR INFORMATION ONLY)

Figure 5.7 Drawing list table for sheet creation

1. Click button to invoke function and select desired title block in window shown, if no title block is needed, click cancel button and a window displayed of prompt that asks whether to continue process (Figure 5.8);

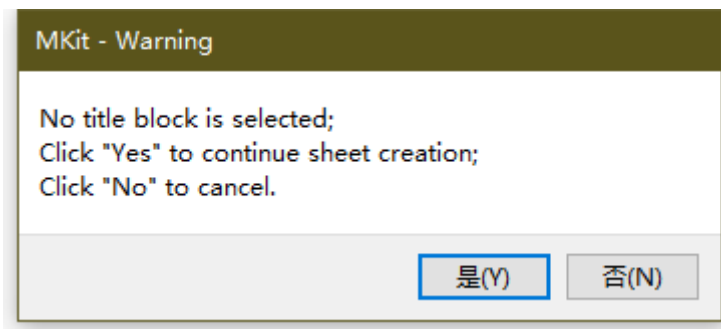


Figure 5.8 Prompt window

2. If a title block is selected or order to continue is given, navigate to the target file for sheet creation.

When finished, check created sheets in project browser window.

5.8. Modify View Property

This function intent to improve the modification performance on views such as floor plan view, ceiling plan view, elevation, schedule, sheet, etc. After user clicks the function button, a dialog will be shown as below (Figure 5.9), select desired views to modify its property as the work flow of function *Modify Property*.

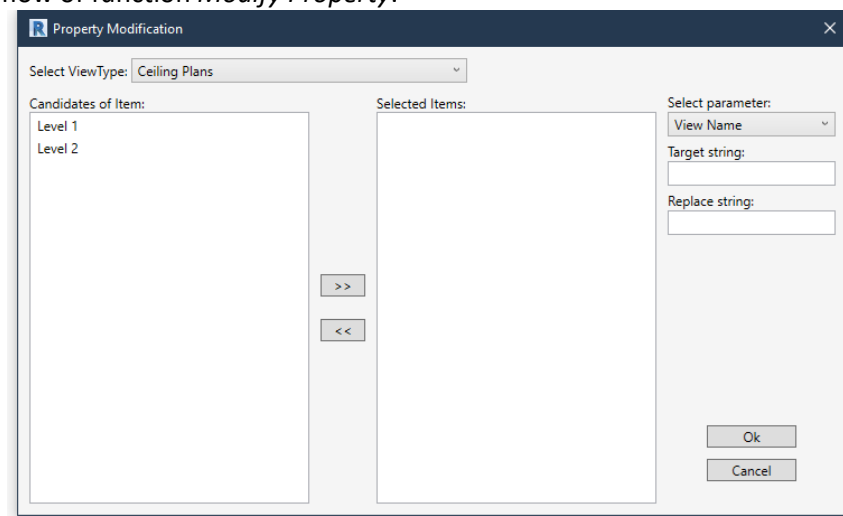


Figure 5.9 Modification view property dialog

5.9. Place By Coordinates

Enable user to batch placing family instances via .xlsx file with shared coordinates (X, Y, Z); the family should be point-based; the coordinates information should be as shown in Figure 5.10.

A	B	C
825877.291	841952.983	0
825882.004	841952.752	2
825887.552	841962.218	-1
825891.858	841962.321	2
825899.686	841962.647	2
825907.240	841966.162	2
x	y	z

Figure 5.10 Coordinate format

5.10. Place By Coordinates And Orientations

Enable user to batch placing family instances via .xlsx file with shared coordinates (X, Y, Z) and orientations (based on *Ture North*); the family should be point-based; the coordinates information should be as shown in Figure 5.11.

	A	B	C	D	E
1	825877.291	841952.983	0	45	
2	825882.004	841952.752	2	45	
3	825887.552	841962.218	-1	45	
4	825891.858	841962.321	2	45	
5	825899.686	841962.647	2	45	
6	825907.240	841966.162	2	45	
7					
8	x	y	z	angle(deg)	
9					

Figure 5.11 Coordinate and orientation format

6. More Information

This document is updated regularly according to the progress of development of MKit Plug-in.

7. Update Log

1. Add the new functions; *Extract Parameters* and *Input Parameters* for improve the modification performance via interaction with *xlsx* file.
2. Add the new functions; *Place By Coordinates* and *Place By Coordinates And Orientations* for improve the creation performance via interaction with *xlsx* file.